4.0 ENTERPRISE BUSINESS ARCHITECTURE (EBA)

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The Enterprise Business Architecture (EBA) is essentially a model of the components within the State that enable the execution of its mission. Key concepts modeled within the EBA or the characteristics of the EBA's structure include:

- Business processes (i.e., value streams or value chains) that create business outcomes.
- Business outcomes that are organized and managed as Lines of Business (LOB) that involve both services to end customers (i.e. residents) and services provided internally as enabling or supporting the service delivery to residents.
- Business functions and sub-functions that further define the LOBs.
- Organizations, governance formality, and the interaction of the organizations responsible for executing business processes and creation of business outcomes.
- Business outcomes and value chains which are measurable through delivered value or quality or throughput.

The following sections describe the As Is or current state, the To Be or future state, and the activities or projects required to close the gaps for the EBA.

4.1 EBA CURRENT STATE

The current state of the EBA for the State of Hawai`i is organized in a siloed, bottom-up fashion with only a few Departments actually having or practicing EBA. This current state has evolved primarily due to the manner in which funding is provided for programs. The Departments with larger overall funding also have a larger percentage of funding to dedicate to IT and IT maturity. Larger organizations, usually referred to as the "haves", such as the Department of Education and Department of Health, are in this category. IT funding is often tied to an external program from a federal or special project, Departments with large exposure to federal funding are more likely to have some type of EBA.

While the Departmental EBAs might not be considered "formal", they do reflect many of the characteristics of a working EBA. Given the disjointed nature of federal funding to a State as well as special projects often the resulting EBA and related IT spending does not take the holistic view that a mature EBA would provide.

Another factor associated with the current state of the EBA, is the fact that the State has not (until July 2011) had a dedicated CIO or a chartered and tiered governance process. While the larger Departments such as Education and Health have a Departmental CIO and some remnants governance, the interactions and opportunities to work in a single strategic direction across the State have been limited. This lack of a State CIO and governance has led to a lack of a single vision for the State's IT organizations to move towards.

To offset the siloed and high variability in IT maturity the resulting business architecture from an organizational view has historically been managed by each Department through their Administrative Services Office (ASO). The ASOs in turn have worked to minimize or overcome the lack of an enterprise approach relative to: How business is conducted and services are delivered effectively and efficiently within the State (i.e., EBA),

- How information is required and shared across the State (i.e., EIA), and
- How IT solutions and their supporting infrastructure technology is planned, funded, created, integrated, deployed, maintained, and retired to maximize business outcomes (i.e., ESA and ETA).

The lack of a statewide EBA has resulted in systems and processes that are not compatible and this often leads to manual entry, data errors, delays in service, duplicative systems and infrastructure, and aging technology that translates to escalated overall IT costs for the State. While many Departments feel they may be optimizing their IT spending it has been shown that this lack of an enterprise view provided by the EBA leads to greater overall IT spending for the State. Figure 10 illustrates the disjointed, inefficient, cost heavy, and fragmented service delivery environment across the State.

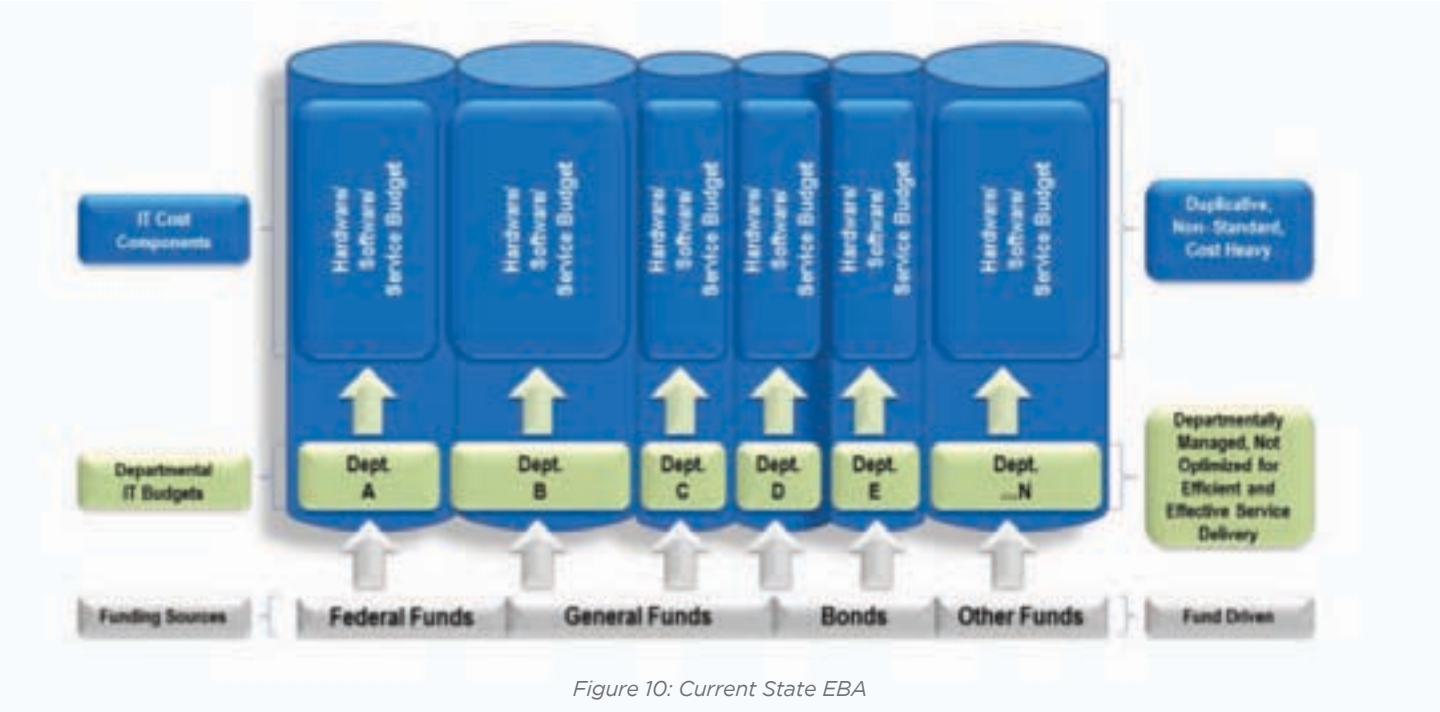

Figure 10: Current State EBA

4.2 EBA FUTURE STATE

The defined future state of the EBA is composed of a series of integrated value streams across the State's Departments that can be further developed by LOB
and State of Hawai`i tailored reference models. By using LOB and tailored reference models to define the enterprise, the State will be positioned to move in an organized manner away from the siloed approach of repetitive processes, duplicated information, and non-integrated IT solutions and infrastructure or technology.

The EBA future state, depicted in Figure 11, provides a view of:

- LOBs that provide support services externally to residents and other stakeholders and the LOBs that provide required support to the mission delivery LOBs; defined within the Business Reference Model (BRM);
- cross-cutting or enterprise solutions that are required for the State to more effectively provide services and conduct business defined within the Service Reference Model (SRM); and
- quantitative indicators, defined within the Performance Reference Model (PRM), to help determine what success means in the future state and whether the State is achieving success or not.

The following sections discuss the BRM, SRM, and PRM in more detail.

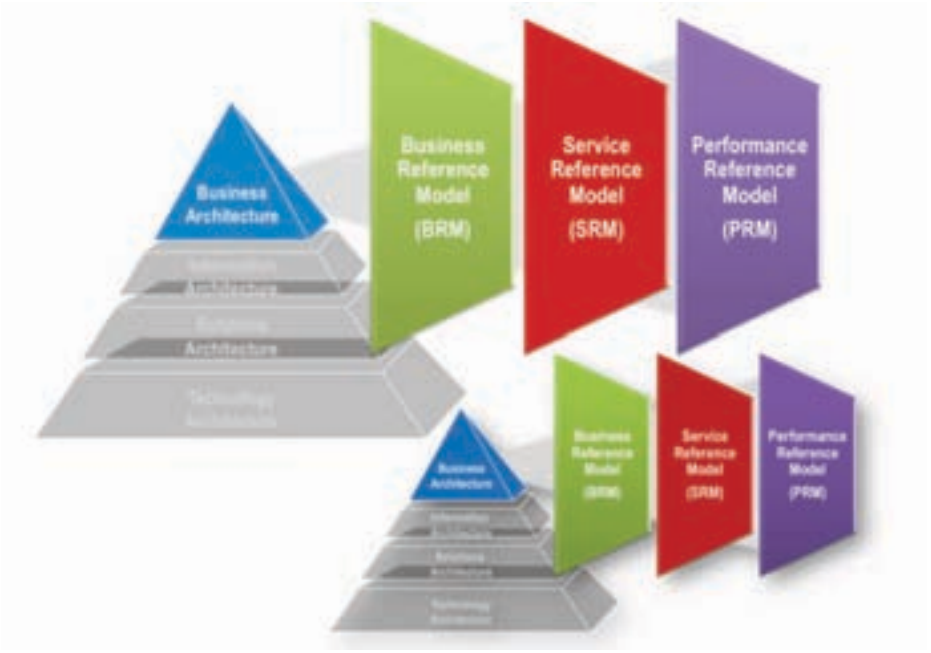

Figure 11: BRM, SRM, and PRM Components of the EBA

4.2.1 BUSINESS REFERENCE MODEL (BRM)

The BRM is the first step in:

1. identifying the opportunities for horizontal integration of IT based on mission support to residents and common services that support mission delivery,

2. improving the management of technology investments for the entire State using an enterprise portfolio perspective for selection of IT spending, and

3. providing a critical building block in defining the complete EA.

The BRM provides an organized, hierarchical construct for describing the day-to-day business of the State of Hawai`i's Executive Branch. While many tools exist for describing organizational constructs - organization charts, location maps, etc. – the BRM represents the business or services performed by Departments from a functional perspective. The various functional perspectives are outlined as individual LOBs with further detail given as sub-functions or services of each individual LOB.

The BRM represents the link between the LOB and the final recipient of the LOBs' services. This is the beginning point for the value chain development for the State and is a representation of how the business of the State is performed functionally.

Figure 13 represents a summary and detailed level a representation of the BRM and business functions within each LOB. While many of the LOBs identified in Figure 13 correlate directly to a Department within the State, the LOB is not intended to represent a single Department. In most cases, a LOB will have business functions that are shared across multiple Departments. For example, the LOB for public health includes many of the business functions provided by the Department of Health (DOH) for the State, many of these functions for public health are shared with other Departments such as the Department of Education (DOE) which is responsible for the health of students while attending school. This is an example of how a single Department within the State is identified and designated as the lead for the LOB for public health while other Departments within the State are identified as being a LOB participant while still others are designated as stakeholders in the policy and other activities the LOB provides. The public

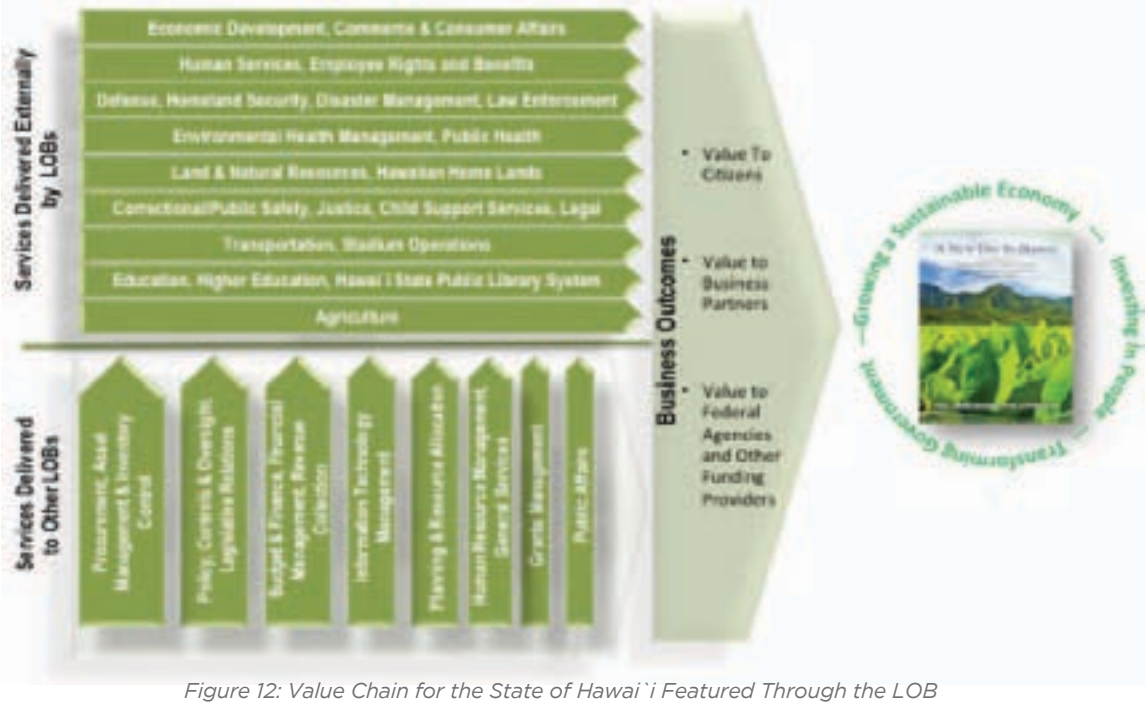

Figure 12: Value Chain for the State of Hawai`i Featured Through the LOB

The State's EBA and its accompanying newly defined BRM is the first layer of the State's EA and it is where analysis starts for other layers of the EA in terms of information, service components, solutions, and technology. Figure 12 depicts the BRM from a summary perspective and defines the high level business outcomes or value chain for the State as a whole. Additional definitions and details regarding each of the functions and sub-functions and functional interfaces or dependencies within these business services will ultimately be documented in the EA repository.

health example also illustrates how the BRM's enterprise view supports the business of government and supports the integration of IT. Without the BRM view, the value chain that delivers public health services to the residents of Hawai`i would be narrower and lose the perspective of the LOB participants and stakeholders.

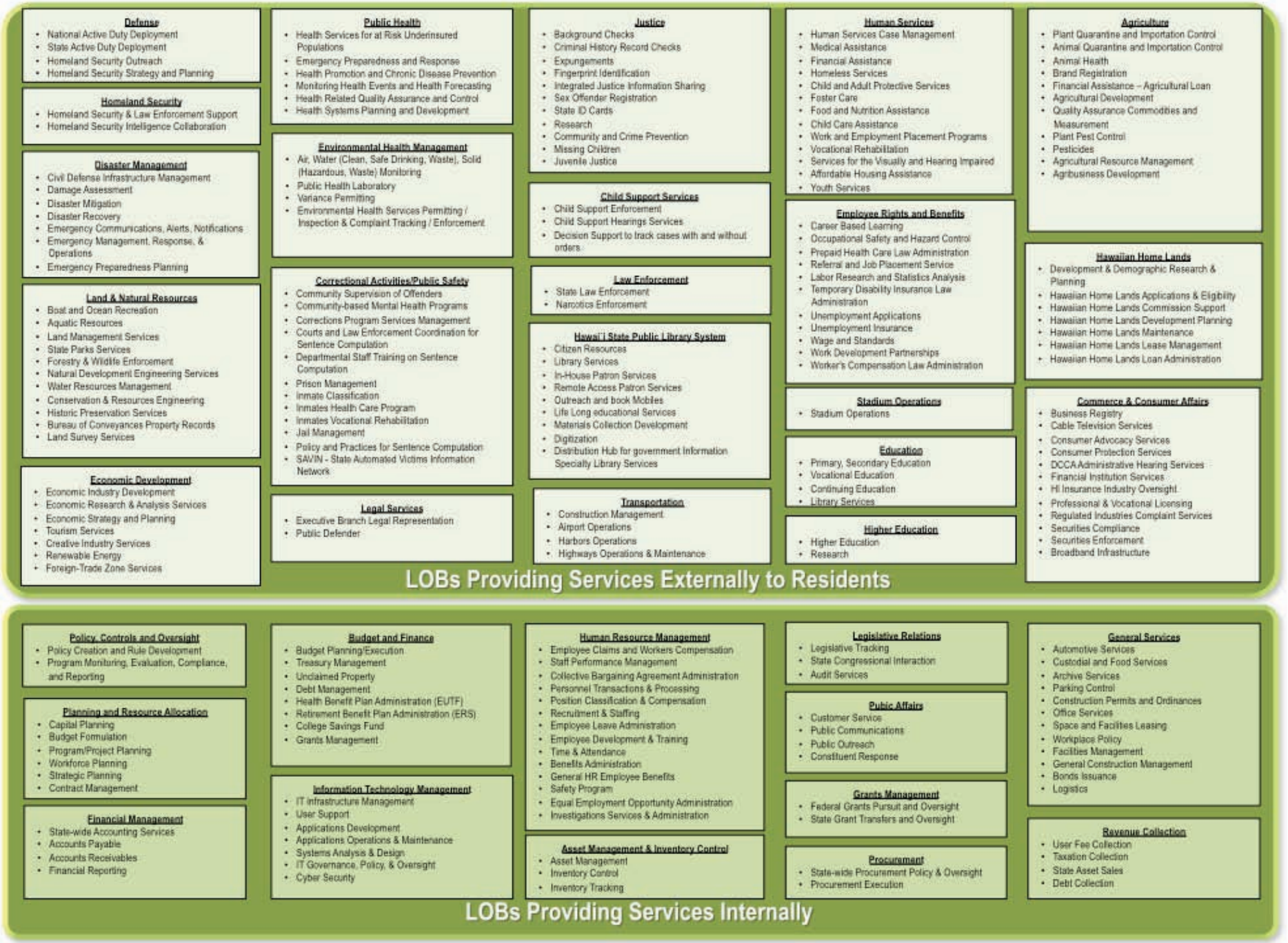

Figure 13: Detailed BRM and Business Functions within the LOBs

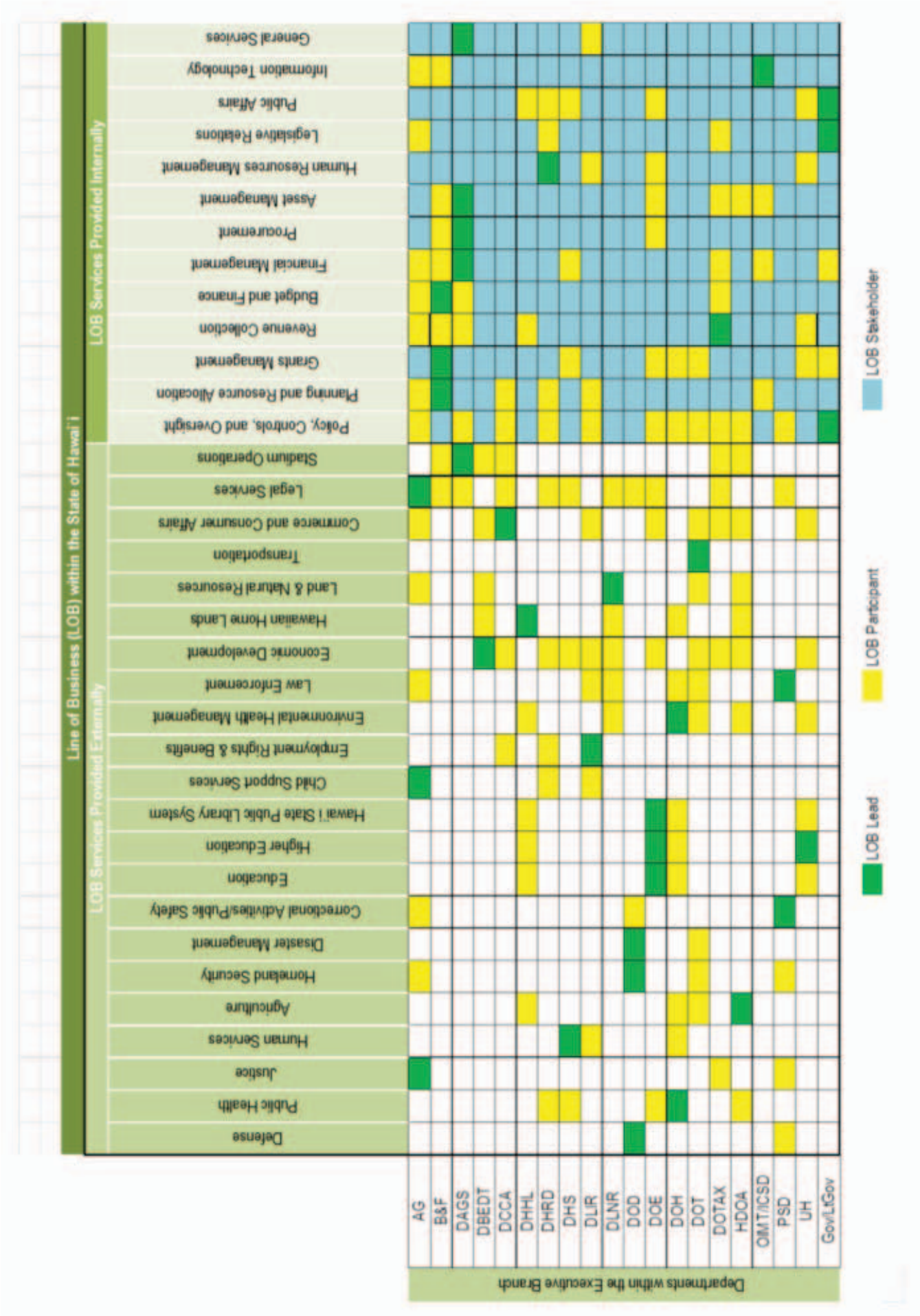

Figure 14: LOB Leads, Participants, and Stakeholders

Figure 14 depicts LOB lead with an identified Department, the relationships of other Departments with the LOB, and also the stakeholders for a LOB. The boxes marked as bright green depict Department that has been designated as the LOB lead with yellow shading indicating the Department(s) interest or information needs in the LOB (LOB participant). Blue indicates stakeholders for the LOB by Department.

4.2.2 SERVICE REFERENCE MODEL (SRM)

The next element of the future state EBA represents the enterprise services (those required across the State) and will be a key component to any direction for and investment in IT for the State and its Departments or LOBs. Enterprise services represent a business-driven approach for classifying the required business functions that are common across multiple LOBs (e.g., those functions described in EBA current state as being performed by the ASOs in each Department).

These enterprise services are described in the Service Reference Model (SRM) and represent horizontal service components that span across multiple LOBs. Figure 15 depicts how the SRM and specifically the enterprise services relate horizontally to the LOBs.

The SRM is organized across horizontal service areas (independent of the business functions) and provides a leverage-able foundation for reuse of information, applications, or solution components, and technologies.

The BRM and SRM components are rolled forward into the ESA and further detailed. All BRM functional components are translated into LOB services within the ESA, and the horizontal or cross-cutting SRM services are translated into shared or common enterprise services; following an "everything is a service" paradigm which is explained further below.

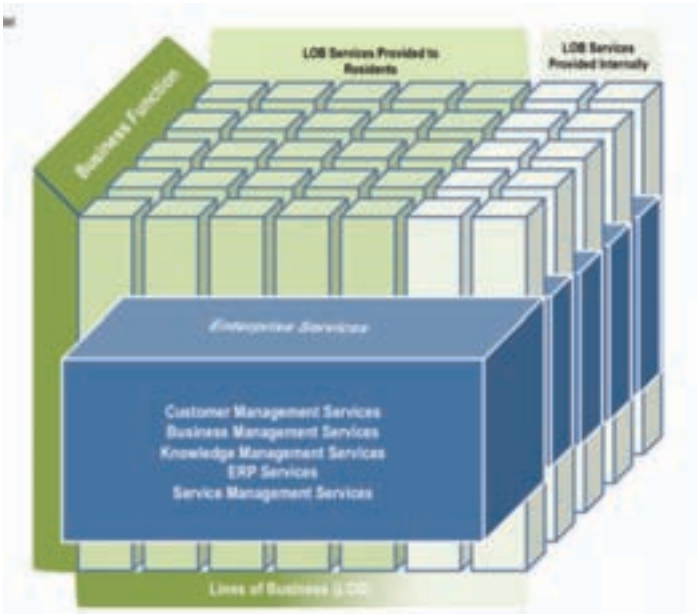

Figure 15: SRM Relationship to LOB Business Functions with the Added Dimensions of Enterprise Services

The SRM is a critical piece of the State's EA due to the common services and activities associated with the SRM. These common activities and processes are where IT for the State will focus development efforts for common information, common data, common technology, and common infrastructure. It is in the SRM that IT investment has the highest Return on Investment and provides the greatest impact to automation of State services and processes. The SRM is where investment of IT starts for the State's CIO.

4.2.3 PERFORMANCE REFERENCE MANAGEMENT (PRM)

The PRM is designed to clearly identify and illustrate the cause-and-effect relationship or "line of sight" between inputs, outputs, and outcomes. PRM is built upon "line of sight" relationships and is critical for the executive leadership, IT management, project managers, and other key stakeholders to understand how, and to what extent key inputs enable progress toward desired business outcomes regarding mission achievement and delivery of services to residents. The PRM captures and reports, based on the "line of sight", how value is created for each LOB as inputs impact outcomes. Guiding the entire PRM are the "strategic outcomes" identified in the New Day Plan, Strategic Plan, and the Departments' Measures of Effectiveness (MoE) and both are illustrated in Figure 16.

Figure 16: PRM Line of Sight from Input to Business Outcome

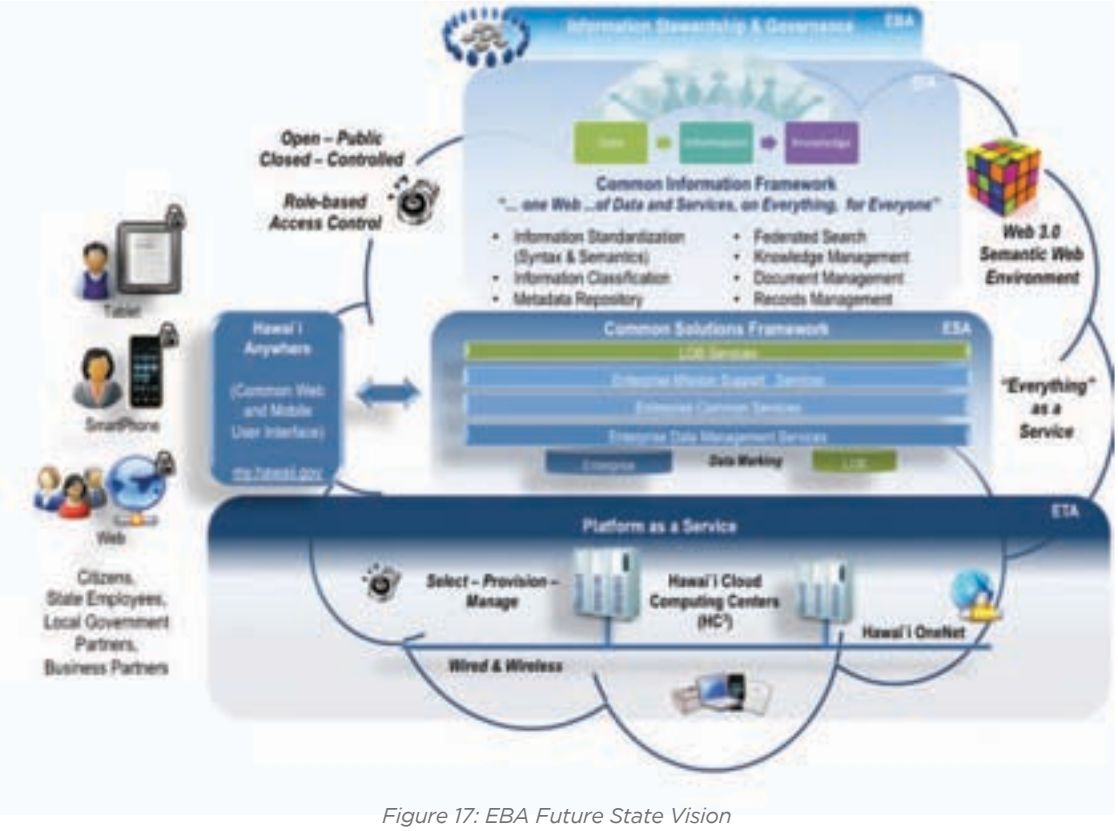

Figure 17: EBA Future State Vision

The following areas define the PRM focus for the State of Hawai`i :

- Mission and Business Results Measurements - captures the outputs Departments' outcomes the State seeks to achieve. These measures commonly include New Day Plan directives, Strategic Plan strategies, and Departmental and Program MoE.
- Functional Effectiveness - captures how well a Department, LOB, program, or specific process is serving its identified user base/constituents. These measures commonly revolve around constituent benefit, service quality, service accessibility, etc.
- Process and Activity Indicators - consists of outputs directly from the process supported by an IT investment. These measures commonly revolve around productivity, financial management etc.
- Technology - captures performance directly related to the technology investment. These measures commonly involve cost, quality assurance, information and data availability, and reliability.
- Human Capital Management - related to the ability of a Department to have the right people with the right skills in the right positions. This measurement area will be developed in accordance with bargaining unit rules to determine true effectiveness.

These measures will be captured and communicated as part of an electronic dashboard to track and the outcomes will be monitored. These outcomes provide the indicators as to how well IT is supporting and enhancing the ability of LOB's to accomplish their mission.
For times when the performance of an LOB increases the changes made should be leveraged across other LOB's to achieve similar results. In cases where a performance indicator decreases the change should be reversed.

The PRM is critical in defining performance in a timely manner that allows for rapid and accurate decision making by the various IT governance committees.

The composite view of the future state EBA is provided in Figure 17.

4.3
EBA TRANSITION AND SEQUENCING (T&S) PLANNING SUMMARY

The T&S Plan for the EBA is focused on areas that are not inherently technical in nature, but instead on areas such as organization of IT staff, process steps, development of meaningful measures and looking in to the future of IT trends. T&S Plan elements associated with the EBA start with alignment to the goals and standards established for business transformation and IT is depicted in Figure 18.

The advantage to the EBA T&S activities is that many of these areas will be worked in parallel with emphasis not on the urgent and immediate actions but on strategic and long-term activities. The T&S goals associated with the EBA and also derived from the Strategic Plan have implications for the EIA, ESA, and ETA. The EBA transitioning and sequencing initiatives include the following:

Figure 18: Business Transformation Strategies Required to Achieve the Future State EBA

4.3.1 REENGINEER ADMINISTRATION OPERATIONAL FUNCTIONS

As noted in the current state, the ASOs work to minimize or overcome the lack of an enterprise approach relative to reengineering existing processes and implementing associated systems is required beginning with those having the highest immediate return on investment (ROI) enterprise-wide:

- Time and attendance reporting and tracking
- Department of Labor and Industrial Relations unemployment distribution via checks
- Enterprise-wide document management and tracking and records management
- Enterprise-wide legislative bill tracking

4.3.2 REPLACE THE EXISTING FINANCIAL AND BUSINESS MANAGEMENT SOLUTION

The Final Report as well as the analysis of the LOBs and Departmental reporting needs clearly identified the overwhelming need to plan, procure, and implement a new financial and business management solution that accommodates:

- revenue collection/accounts receivable [Department of Taxation (DOTAX) and other organizations with revolving funds]; accounting, procurement and acquisition;
- inventory management; accounts payable including payroll and time and attendance reporting, [Department of Accounting and General Services (DAGS) and Department of Human Resources Development (DHRD)];
- budgetary planning and financial management [Department of Budget and Finance (B&F)]

4.3.3 UPGRADE THE IT INFRASTRUCTURE

The need to plan and upgrade the State of Hawai`i IT infrastructure and the facilities that house this infrastructure to support information needs was identified repeatedly as an overarching business need. This upgrade includes not only the retirement of existing hardware but also the creation of a disaster recovery environment.

4.3.4 INFORMATION STEWARDS LEADS, PARTICIPANTS, AND STAKEHOLDERS

As an extension of the BRM and the identified LOBs identify and assign information stewards/leads, participants, and identify all stakeholders for each identified LOB for all data sets within the State.

4.3.5 REMOVE BARRIERS TO INFORMATION SHARING

Identify and reengineer existing processes that inhibit information sharing within the State with priority on newly identified needs including:

- Patient Protection and Affordable Care Act (PPACA) implementation
- Geographic Information System (GIS information utility
- Longitudinal information
- Death Records information
- Business License information
- Unpaid Business Tax information

4.3.6 SIMPLIFY AND SECURE INFORMATION GATHERING FROM CITIZENS

Identify the complete set of information required from citizens and business entities within the State, gathering once and enforce re-use by across the State. Address and resolve information management, privacy, and protection issues associated with the management and use of the identified information set

4.3.7 ENSURE REQUIRED SERVICES ARE DELIVERED

Within each Department define all services defined by statute/act or administrative directive and crosswalk these requirements to actual services being performed. Based on service identification results, evaluate the effectiveness of the current organizational structure for the Executive Branch of State.

4.3.8 PROMOTE PROCESS REENGINEERING WITHIN THE STATE

While numerous processes will be improved via the implementation of new systems, many of the activities performed within the State are independent from IT solutions. For these independent processes (e.g., tax collections, tax return receipt and processing, job requisition processing) perform reengineering prioritized based on projected ROI within each Departments.

The investment initiatives to accomplish these T&S goals are defined and further specified within the following sections of the EA that describe EIA, ESA, and ETA.