5.0   ENTERPRISE INFORMATION ARCHITECTURE (EIA)

5.0
ENTERPRISE INFORMATION ARCHITECTURE (EIA)

The overarching Enterprise Information Architecture (EIA) for the State of Hawai`i is described in this section. The EIA is discussed in terms of the current or As Is state of information management, the future state or To Be vision for information management, and in terms of the implications for actionable focus areas to be expanded in the gap closure or T&S Plan.

The State's Strategic Plan has as its primary vision the realization of a State government that is operating as a fully integrated enterprise. This was echoed in the future state vision for the EBA as well. This vision of full integration includes:

1. the streamlined and efficient operation of all business processes,

2. secure and reliable access to information anytime, anywhere, and to anyone who is authorized to see it, and

3. the effective delivery of information to all citizens, state employees, and other stakeholders using a state-of-the-art, highly optimized, and standardized technology infrastructure.

Consequently, the information management objectives for the State cited in this architecture were developed to facilitate the realization of that vision.

The continuum in Figure 19 depicts the progression in the discipline of information management. This progression takes an enterprise through management of data, to the management of information, to the end goal of managing knowledge. Each element in the progression must be mastered before taking

the next step. With this in mind, the EIA has been defined to support the State of Hawai`i in this progression in order to achieve the future state vision.

5.1   EIA CURRENT STATE

The current state of information management was characterized as part of the Final Report and the lack of information sharing across Departments and organizations within the State was noted. The assessment surveyed critical information needs and information flows used in conducting the Department's business and the corresponding critical information sources and databases. In assessing information management and data sharing across Departments (or across divisions or programs within Departments), there were several noted instances where systems were dedicated to making critical data available for analysis and decision making on a broader scale. Examples included the Financial Accounting Management Information System (FAMIS) data mart and the Department of Health's (DOH) data warehouse. However, across the State these noted instances or examples were the exceptions not the rule, and the overarching findings related to information management indicated that within the State a data sharing culture a was not present. These findings are summarized in Table 2 and are presented from two different information sharing perspectives:

• Perspective 1: Effective use of information at the individual or user level for analysis and decision making.

• Perspective 2: Application or system integration used to support the streamlining and integration of business process.

Table 2: Current State Information Sharing Assessment Results From Two Information Sharing Perspectives

Information Sharing Perspective	Assessment/Question of Need	Findings
1.1 Individual analysis and decision making perspective	Do people have access to the information they need to effectively do their jobs and make key decisions, and more specifically, do the key user communities of State workers, workgroups or project teams, management, and the public have the requisite access?	• Across the enterprise, the facilitation of end user access to data through a data mart warehouse approach including ad-hoc query and reporting tools was not common. • IT systems in legacy mainframe environments were not well positioned to facilitate end user analysis and reporting to minimize the need for manual intervention by already overtaxed employees. • State workers were found to rely heavily on the content and presentation of pre programmed reports. The continual maintenance of these reports is expensive and the entire approach is often inadequate to address rapidly changing needs and requirements. • Solutions provided explicitly for "making information available to a broad user community" were sparse, indicating that the engineering of solutions to support this level of sharing is not an area of emphasis within the State's Business or IT culture.

Information Sharing Perspective	Assessment/Question of Need	Findings
2.1 Application or system integration perspective	Do applications that support mission execution have access to information that they need that might exist outside their own internally maintained set of data?	• The State's current management of data and data sharing is characterized by numerous silos of data and information, and a large number of complex and interdependent data feeds. • Where no actual data feeds exist, interfaces are often accomplished via the printing of information from one system and manual re-entry of that same data into another system, resulting in the effective use of resources, introduction of errors, and unnecessary time lags. Examples include the fixed asset inventory, personnel benefits, and time and attendance processes. • There are essentially no shared databases within or across Departments. The GIS database is one notable exception. • The poor level of data sharing and information management is likely the result of the natural tendency of Departments to adapt and address their own data needs without the benefit of any statewide, enterprise-level policies, approaches, and solutions that encourage, facilitate, and enable application data integration and sharing.

5.2 EIA FUTURE STATE

State of Hawai`i Information Management Future State Vision by 2022:

Information management is optimized and information capital effectively captures, uses, and transfers knowledge.
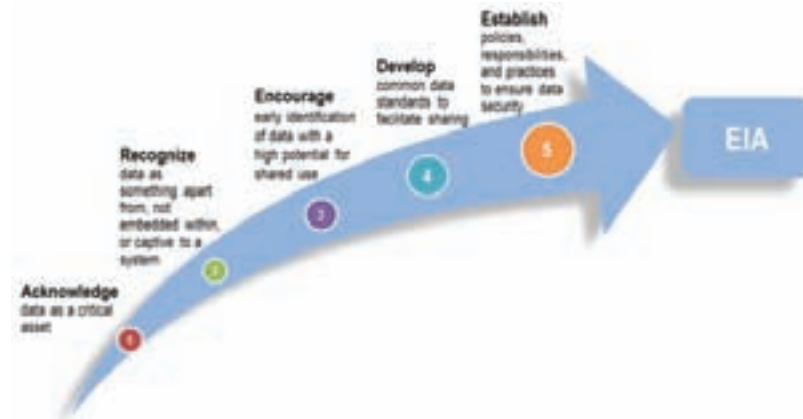
The future state design for the State's information management practices is one where information and data are recognized/acknowledged by everyone as a statewide asset and are managed and shared effectively among all State organizations. As with any critical statewide asset, appropriate management processes and methodologies will be established to enable and facilitate sharing and reuse. The purpose and role (as depicted in Figure 20) of the future state EIA is to:

• acknowledge or bring visibility to the concept that information and data as a critical state asset.

• recognize the fact that a data or information asset is something apart from and not embedded within or captive to information systems that might use it.

• encourage or promote the identification of critical information and data that has a high potential for shared use;

Figure 20: Purpose and Role of the Future State EIA

• develop a common information/data structure to facilitate sharing across systems and organizations.

• establish policies, responsibilities, and practices that ensure the on-going security of data and information from the three requisite security perspectives of confidentiality, integrity, and availability.

5.2.1
INFORMATION MANAGEMENT AND USAGE

The future state vision for information management and usage within the State of Hawai`i includes the realization of a Web 3.0 environment as characterized by the World Wide Web Consortium, "Evolution toward one Web …of Data and Services, on Everything, for Everyone".

A major component of a Web 3.0 environment is the establishment of a semantic web. In such an environment the web not only provides a linkage to and presentation of documents and files to people but it also serves as a vehicle to link and present data in a computer interpretable format for direct consumption by software systems. Both individuals and programmatic constructs such as web services or computer applications can easily integrate or "mash up" any kind of data. This semantic web of data provides an environment in which data is not embedded within systems, but rather exists independently from them. In addition, differences in vocabularies and formats are essentially overcome and result in real and significant opportunities for data reuse.

The realization of this vision requires a common information framework within the State that:

• Represents a disciplined environment that prevents the creation of redundant information, ensures the integrity of an "item of information" at the time and point of origin, and channels any subsequent use or update of the item of information to its single authoritative storage location.

• Promotes blending of structured data (e.g. data content in relational databases), with semi-structured data (e.g. data and messaging content in an email); and unstructured data (e.g. textual and graphical content in a document or web page) in a manner that make search and traversal across these information structures are transparent as possible
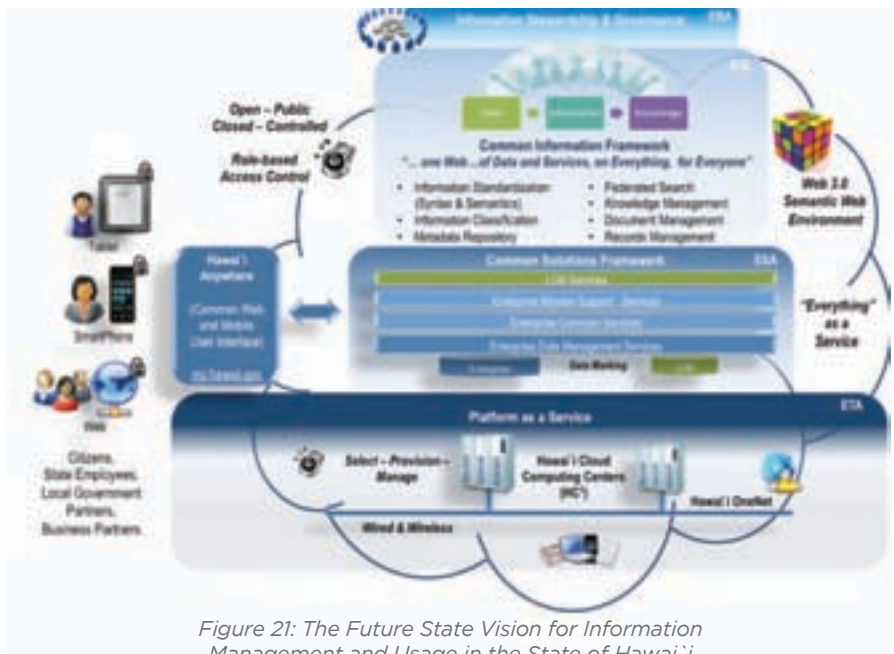
• Promotes a mature management discipline that ensures all data: is well-designed and structured consistent with the "real world objects" of the State government. These objects would include all those from the operational and subject domain data for State business services, and would include all critical dimensions such as time and geospatial data to fully support historical analysis of operations at a point in time or location, or that support any associated trending analysis; is appropriately stored, secured, and protected; and, has no unnecessary boundary that hides or impedes access for any authorized person or business process.

• Allows people and processes, whenever practical, to search and relate data and information across multiple LOB without having to design and program that capability in advance or in other words, boundaries across applications and organizations will, to the extent practical, be non-existent.

• Includes a common or universal information standardization and mapping capability built on real world objects in the State government. Standardization of this mapping capability will facilitate web enabled traversal among information sources much like we navigate among document links in the environment of today.

• Supports the inclusion of all appropriate State data and information into a mature knowledge management system or discipline where knowledge is given

Figure 21: The Future State Vision for Information Management and Usage in the State of Hawai`i

a preeminent value as a critical State resource and by extension provides for a corresponding emphasis on supporting the information and data assets that underlie that knowledge. A mature knowledge management discipline will support the capture of all operational and subject domain knowledge and facilitate its effective use for educating, problem analysis, and decision making for all State management and staff.

• The operation of all the above with the assurance that all necessary policies ensure that the confidentiality and integrity of the information is achieved at all time.

The future state vision for information management and usage in the State of Hawai`i is summarized in Figure 21.

Two key features of the future state vision – the Semantic Web and knowledge management. These are described in more detail below.

5.2.1.1 SEMANTIC WEB

Standards, protocols, languages, and methods that support the ten-year vision for the State's EIA was established using numerous standards and protocols originally created by organizations such as the World Wide Web Consortium (W3C). These standards and protocols enable an effective transformation of the Web from a vehicle for the linking of human interpretable document content to a vehicle that additionally provides

for the linking of computer interpretable data. Key elements of the Semantic Web framework and the related evolution are described below and have considerable implications for the State of Hawai`i . Several of these are discussed below.

XML (eXtensible Markup Language) is a foundational element or a scheme for providing a format for tagging metadata or describing the attributes of a "real world object", such as the author of a Web page. Prior to emergence and adoption of XML, data was almost exclusively stored in database or file formats, where only one or a limited set of applications understood the structure and format of the data to make effective use of it.. XML provides a more or less universal self-describing data syntax that is both human readable (to an extent) and machine interpretable. Presenting data in an XML format does in fact support and improve upon the exchange and sharing of data – but that exchange and sharing is still largely only accomplished within a limited community of applications in a single problem domain that share and understand the semantics of the data described with the XML syntax.

The emerging protocols and technologies associated with the Semantic Web provide the next evolutionary step as a standard approach for describing "resources" (the real world objects referred to above) from a semantic perspective, enabling an ability to link across resources from multiple domains and establishing and leveraging semantic relationships. The foundational protocol

is the Resource Description Framework (RDF); the RDF and other related standards and protocols can be seen in Figure 22 below. These standards and protocols enable the meaning (semantics) of the data to be embedded with the data in a computer interpretable manner that supports a semantic linkage among the data – creating the aforementioned web of data as to opposed to the simpler web of documents. From the W3C "Semantic Web Activity" Web site (http://www.w3.org/2001/sw/): "The Semantic Web is about two things. It is about common formats for integration and combination of data drawn from diverse sources, where on the original Web mainly concentrated on the interchange of documents. It is also about language for recording how the data relates to real world objects. That allows a person, or a machine, to start off in one database, and then move through an unending set of databases which are connected not by wires but by being about the same thing."

Semantic web's Protocol and RDF Query Language (SPARQL) as a query language for accessing data/databases in order to retrieve and manipulate data stored in RDF format. It is considered as one of the key technologies of semantic web.

Making effective use of these new standards and protocols to achieve the benefits of data with embedded semantics will require the State to make a significant investment and to place a real emphasis on the support of a st requisite polices, practices and technologies. Figure 22 provides additional examples of the numerous protocols for the Semantic Web from W3C.

5.2.1.2 KNOWLEDGE MANAGEMENT

Knowledge is the last element in the information continuum and knowledge management is the discipline that outlines the lifecycle process of identifying, capturing, organizing, and leveraging knowledge assets to improve overall performance and efficiency. Further as noted above in the discussion of the information sharing perspectives, knowledge management discipline is when individual experience, expertise, and insight is captured, standardized, and then transferred or shared with others. This discipline effectively supports the expansion of organizational insight and knowledge and will facilitate the achievement the future state vision for the State.

To achieve this vision, the State's knowledge management capabilities will have overcome the data and information overload phenomenon and will facilitate targeted access to the

relevant tailored information needed within a specific problem domain. Going forward, business processes will systematically incorporate new insight and knowledge into operational processes, policies, and actions. Given that the people involved in a community of practice around a business service are constantly learning, the intent of knowledge management is that their experience and expertise is institutionalized. The community's experience is organized into operational histories that facilitate the analysis of trends over time and the relevant impact of any significant event.

Initial implementations of both the EA and the LOB Segment Architectures are planned for development during the second half of FY2012. Moving forward these architectures will be maintained and used as the "north star" guidance for achieving the desired integration of all information assets, systems, and technologies. Individual information system projects will obtain integration and standardization requirements from these architectures and will design and implement the target systems in compliance with the architectures.

State of Hawai`i Knowledge Management Future State Vision by 2022:

The State of Hawai`i will be widely recognized and characterized as a knowledge-based organization where mature data and information management process that supports a cultural awareness regarding the preeminence of knowledge as an enterprise resource to be harnessed and reused at an advanced level of problem solving. It is expected that the State will be widely recognized and characterized as a knowledge-based organization.

Figure 22: Example Protocols for the Semantic Web from W3C

5.2.2 EIA ELEMENTS

To support the utilization of the EIA within the State, three primary focus areas are defined:

1. The Common Information Framework—establishes the common goals, end objectives, strategies, policies, and guiding principles for definition and management of enterprise information.

2. The Conceptual Information Architecture—establishes a classification system through a subject area hierarchy of the State's information assets to facilitate stewardship leadership boundaries and associated responsibilities; and, supports the identification of authoritative and duplicative information resources.

3. The Requirements for Information Delivery and Sharing establishes requirements for the Enterprise Solution and Technology Architectures to achieve the future state vision for the EIA.

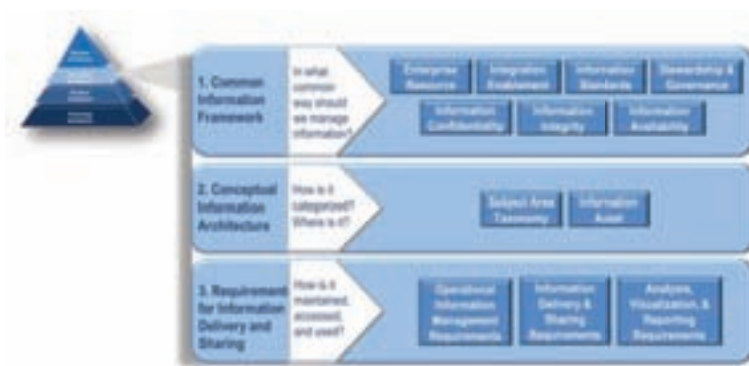Figure 23 illustrates the three focus areas and their purpose.

Figure 23: Focus Areas of the Enterprise Information Architecture

The following sections provide additional insight into these three focus areas:

5.2.2.1 COMMON INFORMATION FRAMEWORK

The guiding principles for the State's Common Information Framework, while outlined above, are expanded upon below. This framework provides the foundation for achieving the future state vision.

ENTERPRISE RESOURCE

The first order of importance is the recognition of data, information, and knowledge for the State of Hawai`i as a critical, valuable resource or asset that must be managed consistent with any other valued resource.

As a result, the State of Hawai`i manages this important resource or asset in a manner that will:

• control the quality of information at the point of origin,

• facilitate the sharing of information across the enterprise,

• minimize redundant information,

• provide the timeliness of information for the intended purpose, and,

• ensure the confidentiality, integrity, and availability of the data in compliance with State and Federal regulations and laws.

In this context, information is defined to include structured data (data maintained within computer databases), semi-structured data (email), and unstructured information (documents, images, web content, etc.).

To achieve the future state relative to information as an enterprise resource, government operations within the State must be conducted within an open and transparent environment, enhancing the public trust and empowering citizens, State employees, and other stakeholders through access to information. There will be a thorough and strong classification approach to ensure that data and information that should be protected from dissemination by law or regulation will be "marked" and managed appropriately. (Note: The majority of State's information is already public in nature and the future state environment provides greater availability and transparency by facilitating open access to all public information.)

Challenge Faced by the State Relative to Treating Information as an Enterprise Resource

To discuss the treatment of information as an enterprise resource is direct and straightforward; however, moving from discussion to action will require a cultural change throughout the State and within the Departments in terms of how information is viewed, treated, and managed going forward. There are two significant challenges to effecting this cultural change.

First, because data and information are inherently less tangible than hard IT assets (e.g., systems and infrastructure components that have very evident cost drivers) executives/managers often equate "data" and "data management" to "bits and bytes" that are addressed in the context of storage and server infrastructure. Information and data management must be viewed as separate from hard assets and stand on its own as a discipline to address the classification and management of data at level above that of storage management.

Second, in some instances the value of information and data has been recognized and elevated, but the culture has allowed significant autonomy at the Department or program level but not at the enterprise level. The Departmental or program manager is often allowed to be entrenched as the "owner" of information and therefore controls data availability. In reality, it is often a struggle to achieve appropriate data availability within a Department, much less across Departments.

KNOWLEDGE MANAGEMENT

A streamlined and efficient operation of all business processes is enabled through effective access and use of information. It is the intent of the State of Hawai`i to achieve optimal business performance through integrated business functions and using enterprise information provided by common information repositories. These repositories will not be unnecessarily constrained by organizational (i.e., Department, Agency, Branch, Attached Office, or Program) boundaries. Key tenets regarding integration enablement include:

• The State of Hawai`i will manage the design and implementation of integrated information repositories (e.g. operational and analytical databases based on its EA Methodology that works in tandem with the Systems Development Life Cycle (SDLC Methodology and promotes compliance with the EIA.

• To facilitate information enablement, emphasis will be placed on managing information architectures at both an enterprise level and LOB level. The CIO and OIMT will have primary responsibility for managing at the enterprise level and the Department Directors or other individuals designated as the LOB Lead will have primary responsibility for managing at the LOB level. The architectural components that exist at the LOB level will be referred to by the moniker of LOB Segment Architecture.

• Integration will be achieved through analysis of integration requirements at both levels and architecting information solutions and technologies to satisfy those requirements.

INFORMATION ARCHITECTURE LEVELS FOR SHARING

As noted above, management of the scope of common or shared information across the State is done at two levels: the enterprise level and the LOB level. Corresponding management practices for associated governance across the stakeholder community will be applied at these same two levels.

STEWARDSHIP/LEADERSHIP RESPONSIBILITY AND GOVERNANCE STRUCTURE

For the benefit of all internal and external stakeholders, management and oversight of common information assets, systems, and supporting technologies will be based on a stewardship/leadership approach. Stewardship/leadership responsibilities for management and oversight will be established at two levels of integration – the enterprise level and the LOB level. The overarching responsibilities and requirements are:

• All information and data assets will be managed as valued assets to the State. Information and data assets will have appropriate stewardship responsibility assigned either at the enterprise or LOB level. Information stewardship leadership responsibilities are essentially the same at each level and vary only according to the body of stakeholders represented by the lead.

• Primary responsibility for establishing the EIA resides with the CIO and OIMT. The CIO is supported by the OIMT EA Program. Governance of the EIA will be the responsibility of the OIMT EA Program. This organization will establish information architecture policy and standards that apply for the State. The CIOC has been established to provide initial direction and approval of the EIA. Whenever necessary, the CIO Working Group (a subcommittee of technical experts from a representative segment of the CIOC or other subject matter experts) will be formed to further clarify issues and propose standards.

The role of "information steward/lead" will be established within each of the LOBs. These individuals will have primary responsibility for an information subject area and its associated business processes and applications. The leads will be responsible for assuring the quality of information is enforced and enterprise standards are followed. Their primary role of the steward/lead will be to understand the data, business rules, and toolsets in order to properly define the data and monitor its quality, accuracy, consistency, security, privacy, and to facilitate information sharing.

INFORMATION DESCRIPTION

Information used within the State will have a uniform description to support information sharing. The development of the standard information description will enable Departmental stakeholders to agree on the structure (syntax) and meaning (semantics) of the information. The standard information descriptions are documented as artifacts of the EIA. Information description artifacts include metadata (data about data) and information/data models using industry standards such as entity-relationship (ER) models.

INFORMATION CONFIDENTIALITY

All information lifecycle management activities and specifically information access and delivery will be done in a secure and reliable manner. In addition, all federal and state laws and regulations regarding information confidentiality and privacy will be complied with at all times. Industry best practices regarding information assurance, security, and privacy serve as standard practices within the State, and are performed as part of on-going operations, and routinely evaluated and assessed to ensure operations are being conducted in compliance with the practices.

Items or portions of information that fall under confidentiality and privacy requirements will be appropriately classified and "marked", and information access and delivery systems to ensure that appropriate access permissions have been granted and that appropriate computing boundaries for sensitive information are maintained and sensitive items of information would not cross these boundaries.

Responsibility for information assurance, security, and privacy will rest with the CIO and the OIMT security officer.

INFORMATION INTEGRITY

LOB leads have primary responsibility for ensuring the confidentiality, integrity, and availability of information. Business rules that define and establish the integrity of information will be adhered to in information creation and update operations. Items of information (or information objects) are managed to ensure a single point of origin and an authoritative source. Redundant information sources – the same intended

information from multiple sources – must be avoided and eliminated when identified. Copies of information are controlled and information location is tracked and controlled to ensure traceability to the authoritative source and point of origin.

INFORMATION AVAILABILITY

Access to the right information anytime and anywhere to anyone who has an appropriate need for it should be enabled and assured. Information access is supported through the effective utilization of state-of-the-art technological interfaces such as the Web and mobile devices for citizens, State employees, and all other stakeholders through an optimized and standardized technology infrastructure.

5.2.2.2
CONCEPTUAL INFORMATION ARCHITECTURE

The Conceptual Information Architecture is an enterprise level information model that categorizes government information into a hierarchy of subject areas in greater levels of detail. The top two levels of the taxonomy mirror the top two levels in the Conceptual Business Architecture (LOB and Business Services), promoting a common stewardship/leadership structure between the business functions and information perspectives. Further levels of decomposition identify key business information entities or objects for which information must be defined and maintained. A common information model streamlines information exchange processes within State government and between State government and external stakeholders (e.g., citizens, business entities, Federal government). In addition, the information taxonomy will support the sorting of existing data assets according to their authoritative sources and will facilitate the recognition and elimination of redundant information sources.

The next two diagrams identify the top level subject areas for the core mission LOBs and the support service LOBs. These diagrams set the stage for assignment of stewardship or lead responsibilities and then moving through subsequent segment architecture and data/service standardization projects to continue the development and maturation of the EIA over time.

Figure 24 identifies the top level subject areas and notional information dependencies for the core mission LOBs. Further expansion of the Core Mission LOB subject areas is accomplished through the segment architecture projects. Information sharing in these areas will mostly be within the LOB, with some exceptions indicated by the notional information dependencies crossing the LOB subject areas.

Figure 25 identifies the top two levels of subject areas and notional information dependencies for the Support Service LOBs. All core mission LOBs have information dependencies with the support service LOBs. The level of sharing is predominately at the enterprise level.
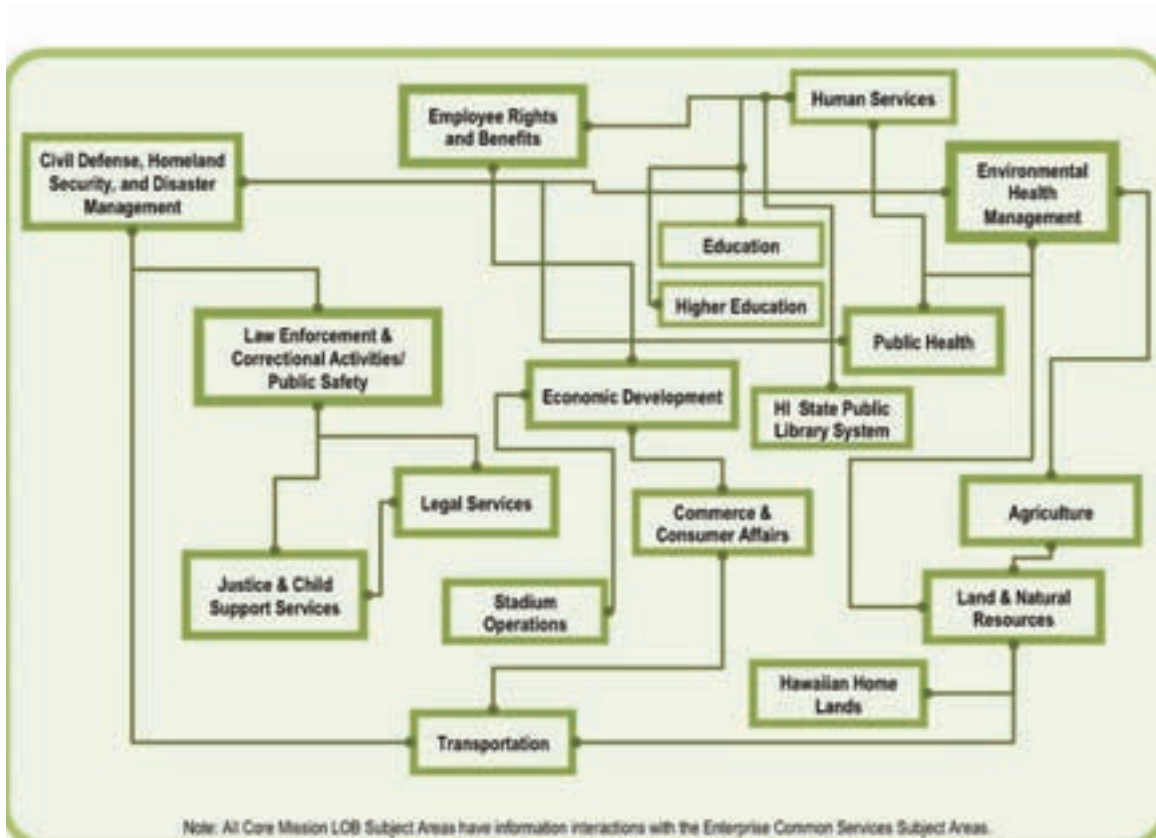

Note: All Core Mission LOB Subject Areas have information interactions with the Enterprise Common Services Subject Areas.

Figure 24: LOBs Providing Support Externally Subject Area Diagram
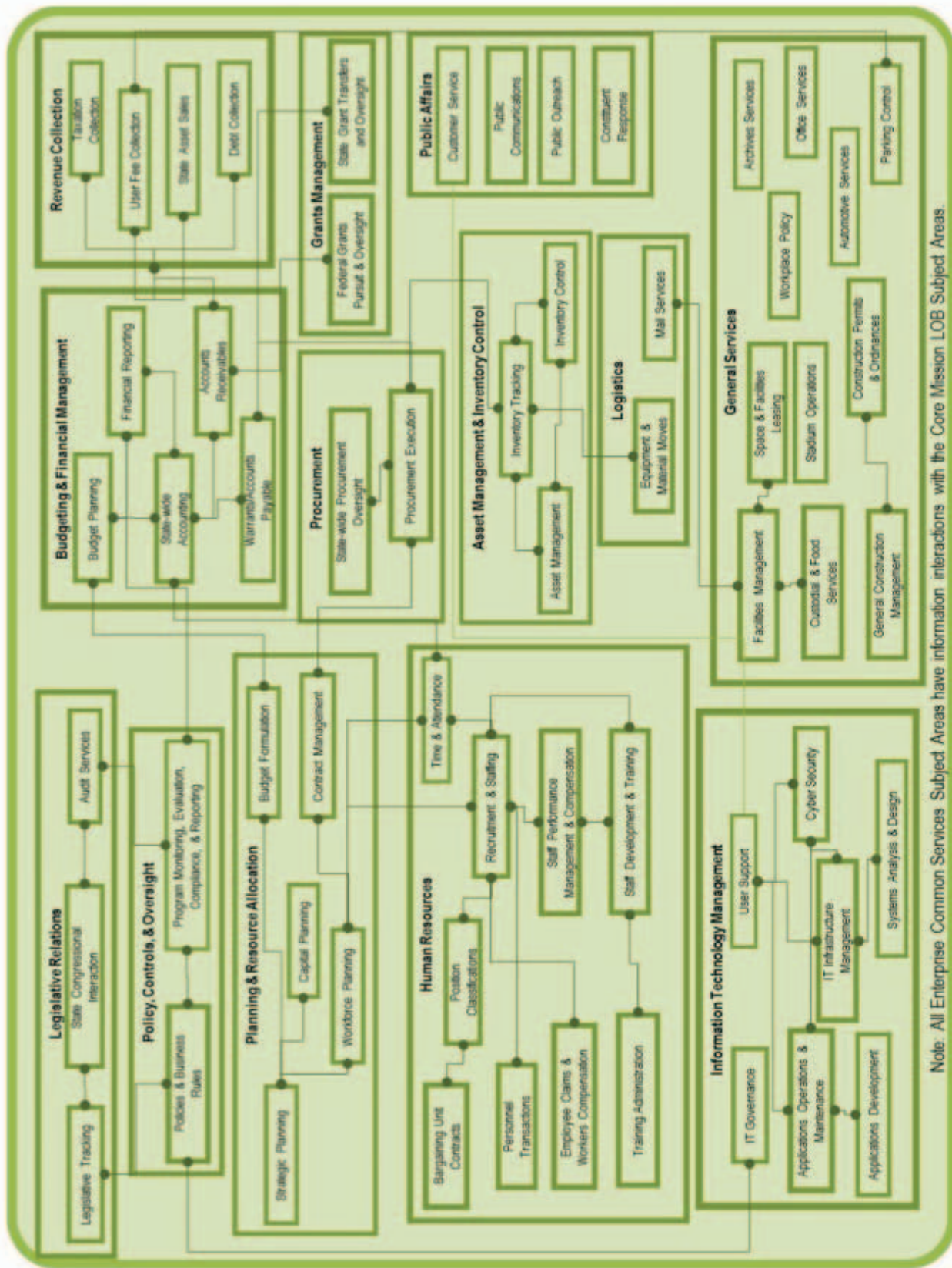
Figure 25: Representative View Support Area LOB Subject Area Diagram

It is the essence of the EIA to fully expand the enterprise information definition over time to establish common information descriptions, common data models, common data element definitions, and common data structures. Common data models may include ER models, National Information Exchange Model (NIEM), and in the future Semantic Web protocols such as Resource Description Framework (RDF). As the common definitions are implemented across the State, integration efforts and information quality will be improved.

The EIA is further detailed, iteratively and incrementally, through segment architecture development, data/service standardization projects, and solution architecture projects. The EA program and LOB information leads work collaboratively within these projects to create information standards (models, data structure, service components, and business rules) that ensure that all Departments and stakeholders' requirements are met. Pragmatic progress must be balanced with the evolution of stakeholder involvement through incremental version releases. The standard information models are stored in the EA repository within OIMT.

5.2.2.3
REQUIREMENTS FOR INFORMATION DELIVERY AND SHARING

The EIA places requirements upon both enterprise solutions and technologies needed to realize the information architecture future state vision. This section outlines those requirements that would flow down to the ESA and ETA respectively.

OPERATIONAL INFORMATION MANAGEMENT REQUIREMENTS

The operational information management requirements relate to the data and information management practices to support business operations, such as data storage, retention, and management.

All State data is maintained within databases using standard Data Base Management Systems.

Management practices for databases housing State data are common and standard to safeguard the confidentiality, integrity, and availability of the data. Database management standards and products are defined in the ETA.

Databases and other legacy data assets must be identified, inventoried, and have their metadata cataloged for inclusion in the EIA. All databases are considered official in nature and managed as such.
A common EA solution will be used for this purpose.

Databases are recognized and managed as separate valued resources apart from the applications that use them. Databases are designed for use by multiple applications and positioned and managed to this end. The data management philosophy is that data about a business object would be created by one application but may then be referenced by multiple applications from the same database – with direct access to the database or through a service. The ESA will enforce these principles.

State databases are categorized according to the two levels of sharing – enterprise and LOB and two primary types of databases will be established and used within the State:

• Operational database—primary support of operations and characterized by optimization for transactional processing through normalization (Third Normal Form (3NF) or greater).

• Analytics database—primary support of analysis and reporting and characterized by de-normalized design. An analysis and reporting database is principally built upon data derived from operational databases.

Standards and practices related to the administration of official databases will be established in the ESA and ETA.

INFORMATION SHARING AND DELIVERY REQUIREMENTS

Information sharing and delivery of shared informed will occur through three primary approaches within the State:

1. official databases,

2. master data sets, and

3. web services.

A catalog of data assets is maintained as part of the EIA within the EA repository as a tool in locating common data. Data assets may be located in an official database or in official master data set established for collaboration and sharing.

Tools are present to allow for XML (or eventually RDF) data sets to be extracted from enterprise and LOB databases to support internal exchange of data across the LOBs. Data for public access is made available through XML data sets (RDF in the future) hosted in a data.Hawaii.gov domain.

A catalog of web services is maintained as part of the ESA within the EA repository as a tool in locating common services.

Standards and practices for data and web service implementation and access are established in the ESA and ETA.

ANALYSIS, VISUALIZATION, AND REPORTING REQUIREMENTS

The ESA will establish a standard solution pattern for application solutions that support analysis, visualization, and reporting. The data analytics solution pattern will in turn establish requirements for the specific technology products needed for data derivation, and extraction, transformation, and loading (ETL); data query; analysis and trending; visualization including geospatial data; and dashboards and end user reporting.

EIA TRANSITION AND SEQUENCING PLANNING SUMMARY

Investment initiatives for achieving the future state of the EIA include the following projects:

5.3.1
ESTABLISH THE ENTERPRISE DATA AND SERVICES ADMINISTRATION

Within the EA Program, a series of activities and accomplishments must be completed to establish these enterprise-wide data and services management standards and practices. These include:

5.3.1.1
GOVERNANCE STANDARDS AND PRACTICES

Establish governance standards and practices which include the role of the information steward/LOB lead and the processes for collaboration, agreement, documentation, and change management of common enterprise or LOB data and services – a process the industry may refer to as master data management.

5.3.1.2
COMMON DATA AND SERVICES ARCHITECTURE

Establish the common data and services architecture within the EA tool and repository, inventories of enterprise and LOB data assets and services; and the approach and practices for defining shared (or master) data standards.

5.3.1.3
DATA AND DATABASE ADMINISTRATION STANDARDS AND PRACTICES

Establish data and database administration standards and practices for creating and maintaining official enterprise and LOB databases.

The investment initiatives to accomplish these three activities are further defined and specified within Section 7 in the ETA.

5.3.2
ESTABLISH ENTERPRISE COMMON DATA AND SERVICES FOR THE ERP IMPLEMENTATION

Within the scope of the support services LOBs to be included in an ERP system, establish standard data and services for key enterprise business objects. These include: Organizations, Programs, Employees, Citizens, Facilities, Assets; General Ledger Accounts; Projects; etc.

The investment initiatives to accomplish this are defined within Appendix A, ERP Implementation.

5.3.3
ESTABLISH ENTERPRISE COMMON DATA AND SERVICES FOR THE AFFORDABLE CARE ACT

Within the scope of new business processes to support the Affordable Care Act, establish data standards and shared services for key common business objects.

The initiatives to accomplish this are defined within Appendix A, Health IT.

5.3.4
ESTABLISH ENTERPRISE COMMON DATA AND SERVICES FOR THE SUPPORT SERVICES

In addition to the data and services standardization initiative for the ERP system implementation, establish data standards and shared services for key common business objects within the remaining support services LOBs to include: Legislation, Policies, Program Performance Reporting, and Grants.

The initiatives to accomplish this are defined within Section 7 and Appendix A.

5.3.5
ESTABLISH ENTERPRISE COMMON DATA AND SERVICES FOR THE CORE MISSION LOBS

As business needs drive priorities and opportunities, establish data standards and shared services for key common business objects within the each of the core mission LOBs.

The initiatives to accomplish this are defined within Appendix A.