



State of Alabama  
**INFORMATION  
TECHNOLOGY  
STRATEGIC  
PLAN**

**Fiscal Years 2015-2018**

Initial Release v1.0

April 15, 2014

Office of Information Technology

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STATE OF ALABAMA  
Secretary of Information Technology

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ROBERT BENTLEY  
Governor

L. BRUNSON WHITE  
Secretary Information Technology

April 15, 2014

The Honorable Robert Bentley  
Governor  
600 Dexter Avenue  
Montgomery, AL 36130

Subject: Delivery of the Information Technology Strategic Plan

Dear Governor Bentley,

It is a pleasure to present you with the Office of Information Technology's initial State of Alabama Information Technology Strategic Plan. We believe the process that is the driver for this plan is the linchpin in accomplishing our objectives of making Information Technology in the State of Alabama more efficient, safer and more effective.

This plan began with a survey of 11 agencies representing a significant percentage of Information Technology spend within the State. The critical issues that were identified as part of this survey, coupled with the strategic priorities of this office are the basis for determining our way forward in achieving our objectives.

As we move forward, a substantial effort will go into establishing work groups around the goals that are established in the plan to address each critical issue. This effort will involve a broad spectrum of agency and Information Technology professionals from state government.

We are excited about engaging in this planning process and look forward to achieving the state's objectives.

Yours truly,

A handwritten signature in blue ink, appearing to read "L. Brunson White".

L. Brunson White  
Secretary



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## Version History

Date	Version	Name	Description of Revision
4/15/2014	1.0	Mason Tanaka	Initial release



## ACKNOWLEDGEMENTS

The following individuals and organizations are recognized as contributors to this plan. The State of Alabama is grateful for their contributions of time and effort to improve the efficiency, safety and effectiveness of the State's Information Technology.

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## EXECUTIVE SUMMARY

Alabama's investment in Information Technology (IT) plays a critical supporting role in attaining the State's business goals, as well as, ensuring goods and services are delivered to our citizens in an efficient, safe, and effective manner. The 2015-2018 Alabama IT Strategic Plan offers technology direction and guidance for state agencies and other entities, and supplies a foundation upon which to base technology investment decisions supporting Alabama's business direction for the next four years.

While IT continues to play an integral part in the State's business activities, industry trends show initiatives that focus on the integration of people, processes, and technology will deliver the most value and benefits to the State. To further articulate this point, value and benefits translate into more streamlined processes, as well as, timely access to better information to make better decisions. This allows the State to deliver more value-added services to its citizens and advance the State's efforts in improving the efficiency of state government.

*"As we improve the state's I.T. structure, we'll improve how we serve the people of Alabama. For too long, the state's I.T. structure has been decentralized, and that has resulted in a lack of overall efficiency. We can correct that. We can ensure that more I.T. systems are compatible between state agencies. We can optimize the state's I.T. resources. This will help our agencies run more efficiently, while also benefiting taxpayers and state employees alike."*

*L. Brunson White  
Secretary*

This plan is also designed to be incorporated into Alabama's existing strategic planning and budgeting processes, and to be available to state agency decision-makers as guidance on the direction of IT as they prepare their strategic plans, budget requests and operating plans. This document is part of an overarching planning process that ensures the following:

- A shared vision for IT that is consistent with the State's vision, mission and business goals.
- Alignment of IT initiatives with business priorities.
- Dissemination of knowledge about IT-related critical issues.
- Address the agencies' business needs through the use of IT.

The IT Strategic Plan will be reviewed, updated, and re-published annually, allowing the opportunity to review and adjust to changing conditions. As the State of Alabama evolves, its needs and priorities will change, and this plan will be revised accordingly to reflect changes to priorities, goals and objectives.



# 1 INTRODUCTION

## 1.1 OFFICE OF INFORMATION TECHNOLOGY

Recognizing the need for a central policy function for Information Technology (IT) at the cabinet level, the Alabama legislature introduced a bill in the 2013 session to address this shortcoming. The Office of IT (OIT) was formed through the passage of Senate Bill 117, and was signed into law by Governor Robert Bentley on May 21, 2013. As enacted, Act 2013-68 also established the position of Secretary of IT— the first time in Alabama’s history that a cabinet-level position was created specifically for IT. In April 2013, Gov. Bentley announced the appointment of L. Brunson White as Alabama’s first Secretary of IT. Located in the Alabama state capitol, the Secretary and the OIT will focus on three primary statutory mandates: IT Strategic Planning, IT Governance, and IT Resource Utilization.

**OIT Mission:**  
To Empower The State Of Alabama To Achieve its Objectives Through Efficient, Effective and Safe Information Technology.

**OIT Vision:**  
To Transform the State of Alabama Into the Most Efficient State in the United States.

Figure 1-1: OIT Mission and Vision

## 1.2 PURPOSE

The purpose of this IT Strategic Plan is to provide direction and guidance to state agencies and other entities on how IT supports the business needs and objectives of those agencies, and the State of Alabama. The foundation for this guidance is the alignment of agency-identified critical issues and the State’s vision for IT over the next four years. This plan also serves the purpose of enabling state agencies to clearly define the framework for subsequent decision-making and implementation of IT resources and investments.

## 1.3 SCOPE

This plan focuses on the State’s IT strategic plan and planning process. The planning process is to develop the vision, strategic goals and objectives for the State’s IT. IT directors from state agencies provided insight into the critical issues affecting their agencies. Their input has been evaluated and prioritized, and used to develop the strategic goals and objectives defined in this plan.

Though not explicitly addressed in this plan, development of the tactical and operational policies and procedures is the next step in the OIT planning process implementation. Tactical and operational planning ensures that alternative IT strategies, initiatives and operations are defined, selected and managed in accordance with the strategic vision, goals and objectives. The diagram below depicts the interrelationship between the strategic and tactical planning, and how each drives and/or supports one another.

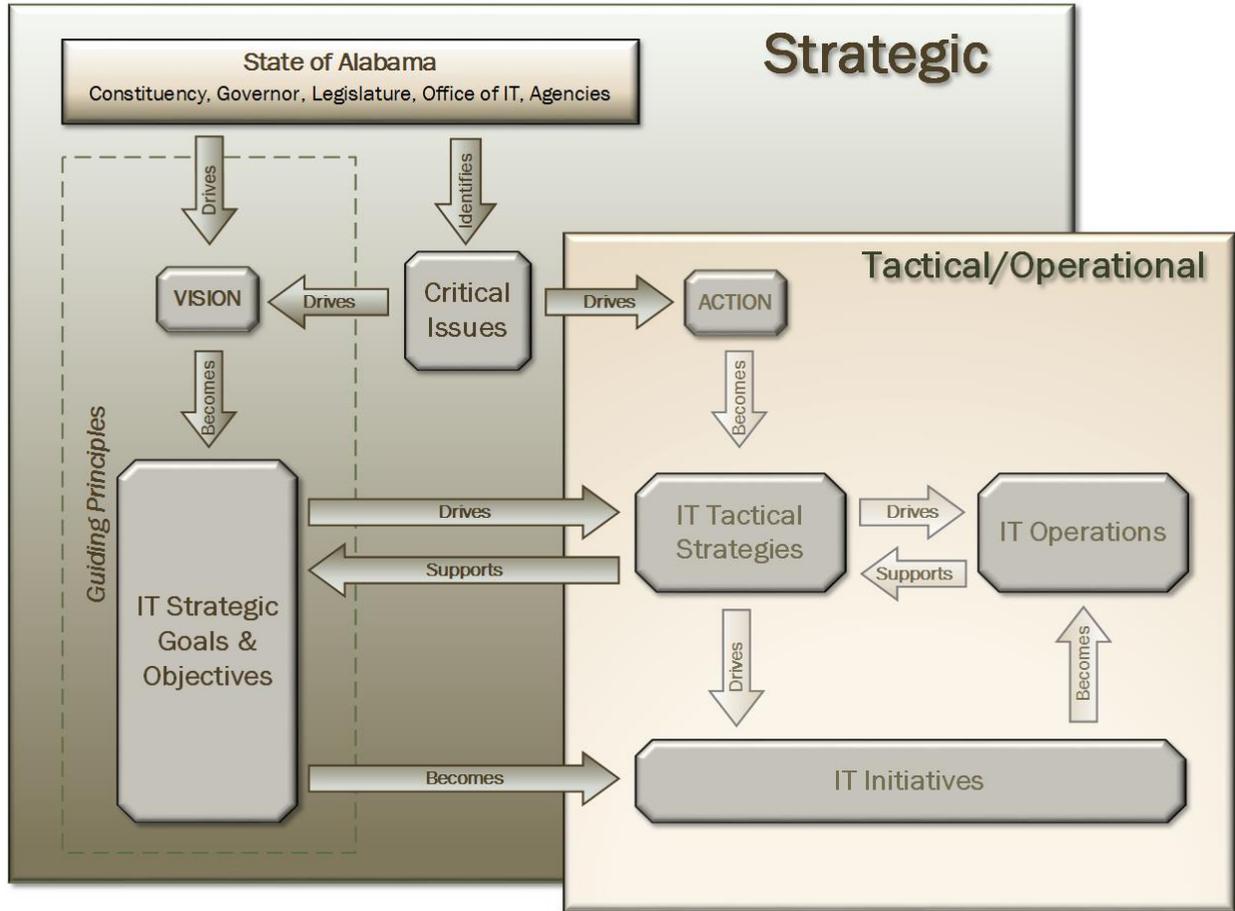


Figure 1-2: Strategic and Tactical Planning Interrelationship

### 1.4 DEVELOPMENT APPROACH

The IT Strategic Plan for the State of Alabama is developed to address specific, critical issues that negatively affect the way the State conducts business and delivers goods and services to its citizens. The approach taken in developing this plan focused on input provided by state agencies. Members of the Chief Information Officer (CIO) Advisory Council<sup>1</sup> were used as a focus group and brainstormed over the course of two months to identify the critical IT-related issues that provide the greatest risk in preventing the State from providing mandated services. During these sessions, issues were identified, refined, prioritized and categorized. The result is a list containing the top 12 issues (see Figure 1-4, page 5); these are deemed the critical issues and have been selected for inclusion in this strategic plan. Once the issues were identified, the workgroup developed Strategic Goals and Objectives to address each issue.

<sup>1</sup> The CIO Advisory Council is comprised of ten (10) IT Directors or other agency representatives. They represent a broad cross-section of state agencies. The council advises the Secretary and the OIT on IT related matters.



Throughout the development process, three guiding principles, Efficiency, Safety, and Effectiveness, guided the creation of this plan. Section 2.1 provides additional detail to each Guiding Principle. All of the Strategic Goals and Objectives identified by the workgroup had to meet one or more of these principles.

The process for developing this plan was divided into three basic phases (as shown in Figure 1-3 below).



Figure 1-3: Strategic Plan Development Phases

#### 1.4.1 Phase I: Identify Issues, Problems, and Shortfalls

Phase I of the process brought members of the CIO Advisory Council together to brainstorm and identify Issues, Problems, and Shortfalls affecting their agencies. Members of the council were then asked to grade how these issues affects their agencies based on a High, Medium, and Low scale. See below:

- High Priority = 5 points
- Medium Priority = 3 points
- Low Priority = 1 point

Adding point values to the grades enabled the OIT to give each issue a total numerical priority score. Based on the scores, the issues were prioritized. The data collected from the agencies were used to identify the strategic goals that are the foundation for this plan. The chart below (Figure 1.4) is a summary of the critical issues, ranked by priority score. The numbers at the end of each graph represents the total number of priority ratings (10-11 raters) in each



category. Reference [Appendix 9.3](#) for the full dataset showing agency scoring and ranking.

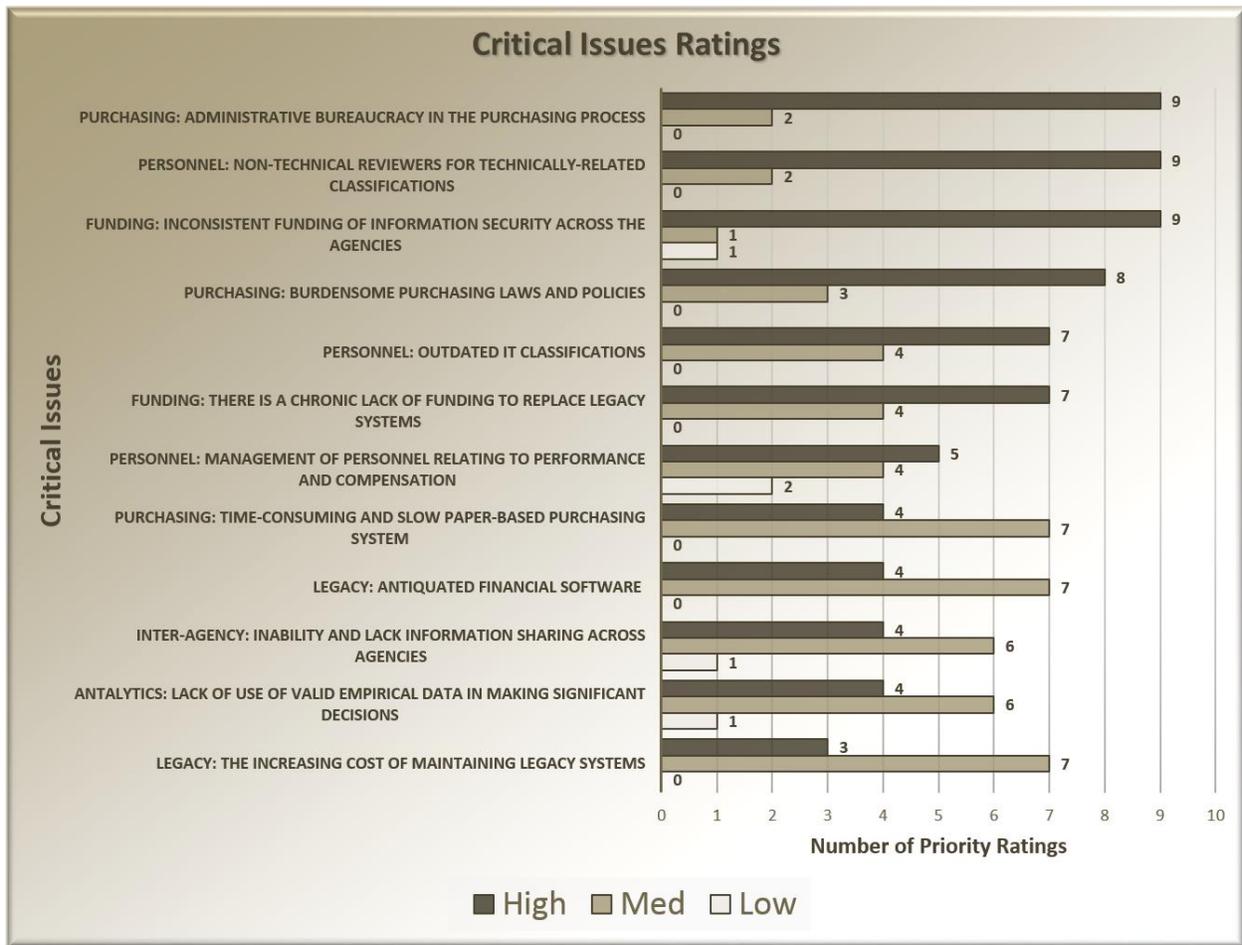


Figure 1-4: Critical Issues Ranking

### 1.4.2 Phase II: Identify Strategic Goals & Objectives

During Phase II of the process, the OIT and the Strategic Planning workgroup developed the Strategic Goals and Objectives that address the critical issues that were identified in Phase I. The Strategic Goals identify the intended accomplishments of the State’s strategy for the utilization of IT. The Strategic Objectives directly identify what the OIT sees as the outcome of the State’s business improvement efforts.

### 1.4.3 Phase III: Develop Strategic Plan

Once the Critical Issues were identified, and the Strategic Goals and Objectives defined, the plan development began. Members of the workgroup researched each item and added detail to each section. The plan then went through an extensive review process, and has been finalized for this release.



## 1.5 PLAN STRUCTURE

This plan is divided into 4 components.

- **Introduction** (Section 1):  
This section contains general information regarding the plan, such as; Purpose, Scope, and Development Approach.
- **Strategic Plan Overview** (Section 2):  
An overview of the main body of the plan containing information on the Guiding Principles, and an overview of the Critical Issues, Strategic Goals and Objectives.
- **Critical Issues, Strategic Goals and Objectives** (Sections 3-8):  
This is the main section of the plan. This section is divided by Functional areas and groupings of the Critical Issues. Within each area, the Critical Issues are discussed, with a Strategic Goal and multiple Objectives addressing each issue.
- **Appendices** (Section 9):  
The Appendices contain reference information, such as, the Glossary, Summary matrix, and a matrix of the Issues Survey.

See [Appendix 9.2](#) for a summary matrix of this plan.

## 2 STRATEGIC PLAN OVERVIEW

### 2.1 GUIDING PRINCIPLES

All agencies have legislative, judicial, or executive mandates that define their mission. These mandates are reflected in their business processes. The goal of IT is to support the agency's business processes and to use IT to make business processes more effective and more efficient. Effectiveness is the degree to which IT is successful in producing a desired result. Efficiency is the ability of IT to improve the achievement of business processes or goals with the minimum expenditure of time, effort, money, and other resources.

IT supporting the existing business process is often referred to as maintenance or ongoing operational IT support and costs. IT projects are defined as supporting new business processes or making business processes more effective or efficient. IT projects involve investment of IT staff time and investing in IT. The anticipated result of IT projects (or IT investment) is some type of return – an increase in savings, reliability, safety, efficiency, and/or effectiveness.



The Guiding Principles of Efficiency, Safety and Effectiveness are the precepts that guided the OIT as the State’s IT Strategic Goals and Objectives were identified. The guiding principles articulate fundamental values, and provide overall direction throughout the strategic planning process, irrespective of changes in its requirements or resources. Figure 2-1 below shows the relationship between the guiding principles and strategic goals.



Figure 2-1: Guiding Principles and Strategic Goals Relationship

### 2.1.1 Efficiency

Facing increasing demands on our agencies, paired with stagnant or declining budgets, the State must optimize its use of IT. Information Technology offers countless opportunities for the State to maximize efficiency within an agency’s business operations, and therefore drive cost savings while fulfilling its business needs of providing quality services to Alabama’s citizens. By gaining efficiencies in the way the State delivers and operates IT, and by reducing redundant IT expenditures, the State can maximize the return on IT investments.

### 2.1.2 Safety

Making computing safer and more secure is another important guiding principle. Unauthorized access is a major threat to network safety and security. Real and perceived network safety and security is vital for citizens to use state IT and believe their information is safe. Network security consists of the provisions made in an underlying IT network infrastructure to protect the



State’s network and the network-accessible resources from unauthorized access. The State of Alabama must keep network safety and security in the forefront of everyone’s behavior, not just state IT personnel.

### 2.1.3 Effectiveness

In addition to making sure that the State’s IT utilization is as efficient as possible, the State must make sure that state IT is not only working on the right things but also doing so in the correct way. Because improvements to IT moves at a rapid pace, what’s new today often seems to be replaced by something even newer and better tomorrow. Just keeping up with this fast-paced environment can be a challenge for even the most efficient state governments. However, at the same time, IT advances have opened up new opportunities. By using IT effectively, it is possible for the State of Alabama to do more with fewer resources. State IT must promote the most economical and effective use of the State’s IT resources.

## 2.2 CRITICAL ISSUES

As mentioned earlier, Phase I of the plan’s development process brought members of the CIO Advisory Council together to brainstorm and identify Issues, Problems, and Shortfalls affecting their agencies—later denoted as Critical Issues. Twelve of the highest priority issues have been identified and categorized for inclusion in this plan (reference [Appendix 9.3](#) to see the scoring of each issue). These critical issues are:

### Purchasing

- Administrative Bureaucracy in the Purchasing Process.
- Burdensome Purchasing Laws and Policies.
- Time-Consuming and Slow Paper-Based Purchasing System.

### Personnel

- Non-Technical Reviewers for Technically-Related Classifications.
- Outdated IT Classifications.
- Management of Personnel Relating to Performance and Compensation.

### Funding Shortfalls

- Inconsistent Funding of Information Security Across the Agencies.
- Chronic Lack of Funding to Replace Legacy Systems.

### Aging Legacy Applications and Infrastructure

- Antiquated Financial Software.
- Increasing Cost Of Maintaining Legacy Systems

### Data Analytics

- Lack of Use of Valid Empirical Data in Making Significant Decisions.

### Inter-Agency Communication and Coordination



- Inability and Lack of Information Sharing Across Agencies.

### 2.3 STRATEGIC GOALS AND OBJECTIVES

Based on the Critical Issues, the OIT and the Strategic Planning Workgroup identified six Strategic Goals, with each goal having multiple Objectives. The matrix below shows each Strategic Goal with the corresponding Critical Issue area.

*Note: The Strategic Goal Numbers and the Critical Issue Areas are hyperlinked within this document to easily navigate to the corresponding section.*

Strategic Goal Number	Strategic Goal	Critical Issue Area
<a href="#">Strategic Goal 1</a>	Transition Purchasing Into a World-Class Strategic Sourcing Capability That Yields Significant Cost Savings	<a href="#">Purchasing</a>
<a href="#">Strategic Goal 2</a>	Develop and Maintain a Trained and Productive IT Workforce with the Skill Sets Necessary to Keep Pace with IT	<a href="#">Personnel</a>
<a href="#">Strategic Goal 3</a>	Establish a Risk-Based Approach to IT Management	<a href="#">Funding Shortfalls</a>
<a href="#">Strategic Goal 4</a>	Seek Cost-Effective Methods of Modernizing State/Agency Data Processing Capabilities	<a href="#">Aging Legacy Applications &amp; Infrastructure</a>
<a href="#">Strategic Goal 5</a>	Improve Business Decision-Making by Applying Data Analytics.	<a href="#">Data Analytics</a>
<a href="#">Strategic Goal 6</a>	Create an Open Line of Communications Between Agencies From the Top Down to Improve Collaboration and Awareness of IT Projects, Strategies, and Training Statewide.	<a href="#">Inter-Agency Communications</a>

Figure 2-2: Strategic Goals and Corresponding Issue Area

Each of the critical issues identified above in Figure 2-2 is further detailed in sections 3 through 8 of this report. Each section focuses on one of the critical issue areas and provides specific:

- Background information to provide context
- Details pertaining the each of the identified critical issue
- Definition of the related strategic goal
- Actionable objectives to move toward the strategic goal



## 3 PURCHASING

Agencies must acquire IT services costing \$15,000 or more through either the Request For Proposal (RFP) process or the Invitation To Bid (ITB) process. The RFP process requires the review of the Contract Review Permanent Legislative Oversight Committee and the Governor. Only professional services may be obtained through the RFP process.

Agencies acquire all IT hardware, all software and all non-RFP professional services costing \$15,000 or more through the ITB process by the Division of Purchasing within the Department of Finance. It does not matter if the products are acquired by purchase, lease, lease purchase or fee (licenses). State Purchasing does provide for IT enterprise contracts for specific IT services, and specific manufacturers' IT hardware or software.

State Purchasing impacts the acquisition three major ways: 1) approval process and generating a purchase order for contracted goods and services, 2) the ITB process to acquire IT goods and services not on state contract, and 3) the ITB process to create new state contracts.

### 3.1 CRITICAL ISSUES

#### 3.1.1 **Administrative Bureaucracy in the Purchasing Process.**

Administrative bureaucracy surrounding the purchasing process is stifling the State's ability to acquire products and services that innovate. There needs to be a better understanding by IT personnel and State Purchasing of the frustrations each experience in dealing with the other. Policies and procedures should be documented to prevent endless correct and resubmit cycles. Both agency IT and Purchasing should have realistic expectations. Agencies need to understand, and their planning cycles accommodate State Purchasing's (or Central Accounting's) end of year close out.

#### 3.1.2 **Burdensome Purchasing Laws and Policies.**

IT personnel and State Purchasing need to work together so that IT requests conforms to current existing requirements and identify processes that can be streamlined – from gaining approval to utilizing an existing contract or developing a new contract for bid. Where feasible the State should use enterprise contracts. There needs to be a process with state Purchasing and the Central Accounting System (CAS) needs to be flexible in their cutoffs and processing so the State can take advantage of unexpected one time federal or private grant money.

#### 3.1.3 **Time-Consuming and Slow Paper-Based Purchasing System.**

Potential bottlenecks in the approval process at both the agency, State Purchasing, Legal or other processes should be identified for possible resolution and/or inclusion in the new purchasing process.



**NOTE:** The State of Alabama Accounting and Resource System (STAARS) implementation should address these issues with the CGI Advantage Procurement module. This module will significantly upgrade the existing module called the Statewide Purchasing System (SNAP). Many of the existing manual processes will be automated with this implementation.

### 3.2 STRATEGIC GOAL 1 - TRANSITION PURCHASING INTO A WORLD-CLASS STRATEGIC SOURCING CAPABILITY THAT YIELDS SIGNIFICANT COST SAVINGS.

The breadth and scope of products and services needed for the State to deliver services to its citizens is astounding. With much of the public sector functioning under disparate, legacy, and manual processes, agencies are left with a fragmented approach to purchasing processes, which, in turn, translates to slower and less efficient service for their constituents. During budget-burdened times, this loss in efficiency translates into significant losses to the bottom line.

The State can dramatically improve services through transitioning the existing procurement process to a single, end-to-end system (STAARS) that automates workflow to provide for a secure environment for transactions and data. This system can pull together the State’s procurement community to more effectively serve agencies and citizens while driving down costs.

Potential cost savings include staff time and salaries to process, track, manage, and approve requisitions and purchase orders. Developing appropriate IT enterprise contracts will result in more competitive pricing and volume discounts. The resulting reduction in staff time and salaries to develop and award contracts will result in additional cost savings. Using existing cooperative purchasing agreements is another potential savings of staff time and salaries to write, bid and award contracts. Cost savings coupled with better documented and streamlined processes will make the system more responsive for both State Purchasing and agencies as well as the process more responsive to the needs of the State.

Developing appropriate IT enterprise contracts will result in more competitive pricing and volume discounts.

#### 3.2.1 Objective 1.1 - Conduct Business Process Review with the Goal of Streamlining Purchasing Processes.

The State is upgrading the State/agency accounting systems, payroll and purchasing systems (STAARS). These upgrades should include integration with Enterprise Change Management (ECM) and workflow to facilitate the approval and retention process. Documenting and analyzing the current process will show areas of potential savings for both the current manual process and any future process.



**3.2.2 Objective 1.2 - Identify And Resolve Legal or Administrative Procedure Issues or Requirements Including Public Record Retention and Federal/State Audit Requirements.**

Requisitions and Purchase orders require several levels of approval and the documents are subject to federal/state audits. There may be record retention issues for either State Purchasing or the agency under the State's Records Disposition Authority (State Records Commission). Utilization of workflow and/or electronic signatures may require changes in the agency's Administrative Code (Alabama Administrative Procedure Act). Legal and administrative procedural issues, electronic signatures and retention issues need to be identified and addressed for any potential automation or other cost savings proposals.

**3.2.3 Objective 1.3 - Evaluate The Feasibility of Participating in Cooperative Purchasing Agreements With Other States For Specific IT Goods or Services.**

Comparing current IT purchases on enterprise contracts against similar or same products available through State Cooperative agreements would demonstrate the feasibility of using such agreements. Cost differentials have to consider the cost for contract development, bid, evaluation and award as well as the loss of fees on enterprise contracts.

**3.2.4 Objective 1.4 - Identify, Develop and Evaluate Enterprise IT Contracts.**

The State must take advantage of enterprise contracts for data processing and telecommunications hardware, software, IT services etc. based on the needs of agencies. An analysis of the IT software inventory will provide information on commonly used software. The IT hardware inventory will be able to provide data on aging IT hardware that needs to be upgraded or replaced. These analyses of survey data combined with the focus groups will show the opportunities from enterprise contracts.



## 4 PERSONNEL

Acquiring and retaining a skilled IT workforce is critical to the successful utilization of information technology.

IT requires manpower to install, configure and program hardware, telecommunications and software applications to support the agencies business processes. Acquiring and retaining a skilled IT workforce is critical to the successful utilization of IT. According to FY 2013 statistics<sup>2</sup>, approximately 15% of the State IT or IT administrative support staff are currently eligible to retire and another 15% are within five years of being eligible to retire according to a recent IT survey of Alabama agencies.

The State Personnel Department is responsible for identifying qualified applicants to fill job vacancies in a valid, legal-defensible and timely manner. State Personnel is responsible for maintaining a competitive classification and pay plan, which supports the attraction and retention of qualified State workers.

State agencies use the temporary IT Personnel Services contract (T013) to frequently hire eight different types of IT positions. State agencies issued over \$5.3 million in purchase orders in FY 2013 for this purpose. In January 2014, State Purchasing issued, but has not yet awarded, an expansion to the number of IT positions covered by the T013 contract.

Personnel issues ranked among the top two issues identified by a focus group of state IT directors. Specific issues are listed below.

### 4.1 CRITICAL ISSUES

#### 4.1.1 Non-Technical Reviewers for Technically-Related Classifications.

The evaluations of technically-related personnel applications are being conducted by non-technical reviewers. While the application and selection process has to be legally defensible, the use of non-technical reviewers does not always result in the best candidates making the registers. The current application consists of:

- Education (dates attended, credit hours, degree, course work applicable to the position, etc.).
- Professional license or certificates.
- Work history, which asks for a description of job duties in detail.

<sup>2</sup> Source: State of Alabama Agency IT Assessment Survey conducted in June 2013 by ISD at direction of the Governor and the Legislature.



It is difficult to assess the skill, knowledge, and experience of an applicant against a specific position requirement of the agency seeking a register with such limited information.

Additional information is needed to evaluate candidates and to create a viable register whether that approach incorporates a more technical review or having supplemental instruments, additional testing, supplemental questionnaires, and/or other processes to gather appropriate applicant information to evaluate applicants for specific IT positions within a classification.

**4.1.2 Dated IT Classifications.**

There is a disconnect between actual skills needed and the requirements for some of the IT classifications. Programming languages, supported platforms and the methods agencies use to serve their customers are all rapidly changing. These rapid changes create a need for specific IT skillsets or IT knowledge that is not covered by a more generic IT classification or option. Additionally, such specialized skills or education may require better compensation to be competitive.

**4.1.3 Recruitment and Management of Personnel Relating to Performance and Compensation.**

The management of personnel, in acquiring and managing the correct talent as well as their performance and related compensation, is negatively impacting the State’s ability to execute. There appear to be several factors impacting State Personnel’s ability to produce viable IT registers. Agencies need to communicate IT staff requirements and number of staff positions well in advance of the anticipated hire date. There has to be a pool of potential applicants with the required skills and knowledge willing to work at the pay plan defined for each job classification.

The management of personnel, in acquiring and managing the correct talent as well as their performance and related compensation, is negatively impacting the State’s ability to execute.

State Personnel requires time and staff effort to create registers, and depending on the job requirements, candidate pool, pay plan and number of positions involved and other factors, it may be cost prohibitive. It is difficult to balance the anticipated need for IT staff against the work and timeframe required to create viable registers.

Funding constraints controlling merit raises cannot be addressed, but some issues are controlled by statute, legal decisions, administrative procedures, or rules of the State Personnel Board. Agency rules concerning evaluation scores and merit raises impact the performance evaluations and compensation. There needs to be a process to evaluate limitations on performance evaluations and



compensations to provide incentives necessary to keep the State competitive with the private sector for highly skilled and motivated IT employees.

There should also be a process of establishing performance standards to prevent inflated ratings. The process should include a methodology for identifying positions whose duties and responsibilities are not commensurate with the position, as well as, those whose workload is not full time. A process such as evaluating the job duties and responsibilities of employees in similar classes across all agencies may identify positions whose workload, tasks, and responsibilities may be insufficient for the class. Employees in the same class should have similar duties and responsibilities and those tasks should be full time and have similar performance standards.

#### **4.2 STRATEGIC GOAL 2 - DEVELOP AND MAINTAIN A TRAINED AND PRODUCTIVE IT WORKFORCE WITH THE SKILL SETS NECESSARY TO KEEP PACE WITH TECHNOLOGY**

The IT workforce is critical to the better ongoing and developing utilization of IT to increase the effectiveness and efficiency of the agencies' business processes. It is a broader issue than just State Personnel. It encompasses the acquisition, retention and training of qualified staff at a competitive salary with the skills, education, or experience to perform the necessary work.

##### **4.2.1 Objective 2.1 – Establish a Structured and Recurring Review Process for IT Classifications**

The State agencies' current and anticipated IT staffing skills or IT knowledge needs must be identified and compared to current IT merit classifications, pay schedules, and available applicants. A comparison of current IT staffing requirements to the existing registers would show areas needing improvement.

A process should be developed that allows State Personnel to identify anticipated IT staffing needs as well as some legally defensible method or process of listing only applicants with specific skills (experience) or knowledge on registers for specific positions. The process should allow a method of using supplemental forms or instruments to establish viable registers for agency IT positions.

A part of this process should be an analysis of the reasons why IT staff voluntarily separate from the State either through resignation or at the earliest retirement stage. There should also be a comparison of the voluntary separation rates of IT and non-IT staff classifications. We need to understand the reasons behind voluntary separations whether it's to avoid disciplinary actions or good performers being frustrated with the system.



#### 4.2.2 Objective 2.2 – Establish Professional Development Programs for IT Classifications

Advances in IT tend to be released in cycles. New products are released and other products are no longer supported or maintained by the manufacturer. The difference in product lines or generations could be relative small or drastic. If the change is significant, IT staff may need more intense training to install, configure or support the new product lines. Additionally, the need for such training is based on the product release cycles or the agency acquisition cycle.

Agencies need to collaborate on training when deploying new or replacement hardware or software to reduce the cost per employee.

Agencies need to collaborate on training when deploying new or replacement hardware or software to reduce the cost per employee. Consideration should be given to developing multi-vendor enterprise contracts to provide training for the IT supported or used by the State.

The State has an investment in current merit staff. As technology changes or as the IT staff needs of the agency changes, the State must plan for re-purposing IT merit staff. Such employees should be given the opportunity to develop or acquire new technology skills before any involuntary separation.

#### 4.2.3 Objective 2.3 – Establish and Re-evaluate Career Path for IT Classifications.

The traditional career path is based on increasing complexity of job functions (technical skills or responsibilities), but at some point, further advancement requires supervision of staff. State agencies are faced with a quandary of either promoting or taking the risk of losing skilled personnel. There should be an assessment of the need for a technical skill path that doesn't require supervision so the State can retain qualified technical staff.

#### 4.2.4 Objective 2.4 – Establish and Re-evaluate Competitive Compensation Packages for IT Classifications.

IT staff compensation fluctuates according to skills, knowledge, and the market place competition. A 2011 NASCIO study<sup>3</sup> found that an overwhelming 78.6 percent of state CIOs confirmed that state salary rates and pay grade structures present a challenge in attracting and retaining skilled IT talent. Comparison of the current compensation plan compared to the hourly bid price of IT contract staff may reveal insight into the current compensation plans. A job market and

<sup>3</sup> NASCIO, "State IT Workforce Under Pressure", January 2011



compensation analysis of states similar to Alabama may indicate current compensation problems.

## 5 FUNDING SHORTFALLS

Funding will always be an issue; for the foreseeable future there will be insufficient funding to accomplish all the desired projects in the short-term. Complicating the funding challenge is the differing and often disparate business goals of the various state agencies, each with its own unique funding challenges. For example, one agency may be very security-focused and invest in the latest firewall platform, while another organization invests in upgrading a major financial system, while many other organizations struggle to fund the upgrade of aging desktop computer systems.

The differing and often disparate business goals of the various state agencies present each with its own unique funding challenges.

Each of these organizations makes their own decisions about how to allocate limited resources. In addition, sometimes those who understand well the business mission of the organization do not fully understand the IT supporting that mission. The result is inconsistent application of funds across state agencies and a chronic lack of sufficient funding to allocate to legacy system upgrades.

### 5.1 CRITICAL ISSUES

#### 5.1.1 Inconsistent Funding of Information Security Across the Agencies.

Cyber attacks have become common and costly occurrences. According to a 2013 survey conducted by the Ponemon Institute<sup>4</sup>, the average annualized cost of cyber crime for 60 benchmarked organizations (in various industry sectors) was \$11.6 million per year, with a range of \$1.3 million to \$58 million. Most organizations (in any industry) cannot budget for such expenditures.

Mitigation of cyber attacks requires security-enabling technologies such as Security Incident and Event Management (SIEM), intrusion prevention systems, application security testing and enterprise governance, risk management and compliance solutions. Some of these security-enabling technologies can be expensive, but the potential cost of under-implemented or poorly implemented security can be astronomical and these costs continue to

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<sup>4</sup> The Ponemon Institute conducts independent research on privacy, data protection and information security policy.



grow. The 2013 Ponemon study showed a \$2.6 million (or 26 percent) increase in the mean cost of cyber attack from a similar study done in 2012.

Most organizations are under-funded for cyber security; some are not funded for cyber security at all. For many organizations, security measures are just another operational expense. Some organizations have to find ways to recover those costs by building them into the service fees charged to customer-agencies. Such cost-based decisions force organizations to choose between doing only what is absolutely required rather than doing all they can to proactively protect the personal and sensitive information of the citizens of Alabama. A risk-based approach will yield a more consistent result.

### 5.1.2 Chronic Lack of Funding to Replace Legacy (Fragile) Systems.

Information systems have a life cycle and they need to be properly managed throughout every phase of that life cycle. When it comes to system life cycle management, some organizations use a “get it and forget it” methodology, deploying a system to meet a current need and not re-evaluating that need as the system ages.

Large expenditures are made to acquire the system, but typically the cost of continued operation is absorbed into organizational overhead. Needs change, technologies evolve, and the cost of maintaining these aging systems continues to rise. As vendors move technology forward, earlier versions of their products are retired and are no longer supported. In addition, there are already a limited and dwindling number of personnel resources on the State registers with the technical skill sets necessary to support many of our aging legacy systems. These situations create added risk to the organization.

## 5.2 STRATEGIC GOAL 3 - ESTABLISH A RISK-BASED APPROACH TO IT MANAGEMENT.

A comprehensive risk-based approach to IT management takes into account organizational assets, threats against those assets, and vulnerabilities or exposures to those threats.

A comprehensive risk-based approach to IT management takes into account organizational assets, threats against those assets, and vulnerabilities or exposures to those threats. It also incorporates technological issues related to the configuration of the computing infrastructure as well as organizational issues related to how people use the computing infrastructure to meet the business objectives of the organization. The approach should also be sufficiently flexible so that organizations can tailor it to their unique needs enabling decision-makers to develop relative priorities based on what is important to their

organization. This risk-based approach to IT management enables organizations to better gauge resource estimates (e.g., funding, staffing, etc.) to achieve business goals in a cost-effective and prioritized manner.



### 5.2.1 **Objective 3.1 - Ensure Sufficient Funding For Organizations to Achieve Information Security Objectives With an Acceptable Level of Residual Risk.**

There are three parts to this objective. First: “sufficient funding.” Organizations need to know how much funding is needed to achieve security objectives. Second: “security objectives.” Organizations need to determine their security and resource requirements and how they will fulfill them.

National Institute of Standards and Technology (NIST) Special Publication 800-53, Revision 4<sup>5</sup>, is the de-facto standard for many agency, state, and federal information security policies. Addressing allocation of resources, 800-53 recommends that organizations:

- Determine information security requirements for the information system or information system service in mission/business process planning;
- Determine, document, and allocate the resources required to protect the information system or information system service as part of its capital planning and investment control process; and
- Establish a discrete line item for information security in organizational programming and budgeting documentation.

To satisfy the third part of objective 3.1, “with an acceptable level of residual risk,” organizations need to understand that not all risk can be fully mitigated, often times because it is not cost-effective to do so. Organizations need to identify and formally accept the risk that remains and make appropriate contingency plans in the event such a risk actually occurs. It would also be appropriate to consider an enterprise approach to some risk mitigation and contingency planning efforts.

### 5.2.2 **Objective 3.2 – Manage Information Systems Using a Risk-Based Standard for System Life Cycle Management**

The System Development Life Cycle (SDLC) is a systematic process defining the stages for information system design. This approach closely parallels the software development life cycle in terms of the formal processes and stages of development. A number of system development life cycle models have been developed to meet the needs of organizations including: waterfall, fountain, spiral, build and fix and rapid prototyping. Irrespective of the model used, the basic classification stages of the product development life cycle remain the same. A typical system life cycle model has five phases: Initiation, Design /

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<sup>5</sup> NIST Special Publication 800-53, Revision 4, “Security and Privacy Controls for Federal Information Systems and Organizations,”



Development, Implementation, Operation/Maintenance, and Disposal. (as shown in the diagram below).

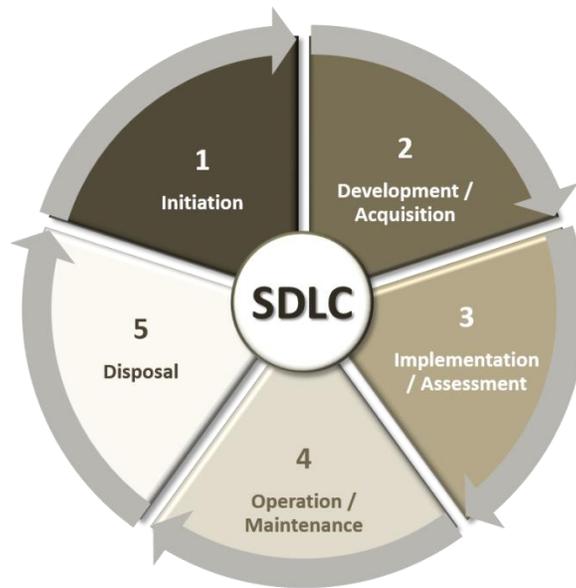


Figure 5-1: System Development Life Cycle (SDLC) Model

NIST Special Publication 800-37, Revision<sup>6</sup>, provides a disciplined and structured process that integrates information security and risk management activities into the system lifecycle. The functional steps in this risk management framework include:

1. CATEGORIZE the information system and the information processed, stored, and transmitted by that system based on an impact analysis
2. SELECT an initial set of baseline security controls for the information system based on the security categorization
3. IMPLEMENT the security controls and describe how the controls are employed within the information system and its environment of operation
4. ASSESS the security controls using appropriate assessment procedures
5. AUTHORIZE information system operation based on a determination of risk
6. MONITOR the security controls on an ongoing basis, and report the security state of the system to designated organizational officials

Overlaying the risk management framework with the system life cycle model illustrates how these processes align (in the figure below).

<sup>6</sup> NIST Special Publication 800-37, Revision1, “Guide for Applying the Risk Management Framework to Federal Information Systems,”



Figure 5-2: Risk Management Framework / System Life Cycle Overlay

Organizations should define mission/business processes with consideration for information security and the resulting risk to organizational operations, organizational assets, individuals, other organizations, and the State. They should ensure that all capital planning and investment requests include the resources needed to implement every aspect of the system life cycle including the information security program. Resource allocation should include funding for the initial information system or information system service acquisition and funding for the sustainment of the system/service through its entire life cycle from initial acquisition to retirement and disposal.

Disposal, the final phase in the SDLC, provides for the orderly termination of a system and closeout of any contracts in place. Information security issues associated with information and system disposal should be addressed explicitly. When information systems are transferred, become obsolete, or are no longer usable, it is important to ensure that state resources and assets are protected.

Usually, there is no definitive end to a system. Systems normally evolve or transition to the next generation because of changing requirements or improvements in technology. System security plans should continually evolve with the system. Much of the environmental, management, and operational



information should still be relevant and useful in developing the security plan for the follow-on system.

## 6 AGING LEGACY APPLICATIONS AND INFRASTRUCTURE

Discussions about aging legacy systems are often focused on mainframe applications, but nearly every organization in the State maintains some legacy systems. There are server-based applications running on the dated versions of the Microsoft Windows operating system and database applications running on several different versions of SQL Server. Some servers and other devices are running out of warranty and without any maintenance agreement. Throughout the State's IT infrastructure there exists a range of components from state of the art to obsolete but functioning. Infrastructure and application maintenance becomes a challenge in this environment. System administrators must remain current on a much wider range of platforms and skills, and vulnerabilities will exist on these legacy systems that cannot be fixed, patched, or protected against.

### 6.1 CRITICAL ISSUES

#### 6.1.1 Antiquated Financial Software.

The current Financial Resource Management System (FRMS) has been in place for many years. The infrastructure this system runs on is aging but not necessarily antiquated; however, the software as well as the business processes are in need of a refresh. Fortunately, a new financial management system is currently in development and enterprise-wide deployment will take place in a phased approach over the next few years. Several strategies were analyzed in determining the most cost-effective way to improve the efficiency and effectiveness of the State's financial and human resources operations.

#### 6.1.2 The Increasing Cost of Maintaining Legacy Systems.

The cost of maintaining major assets tends to increase as the asset ages. Consider a car; the annual cost of maintaining a 10-year old car with over 100,000 miles on it is considerably more than a similar 2-year old, 20,000 mile model. As a result, some who maintain those old cars tend to put off the minor repairs and only address the more critical issues doing just enough to keep it running. When the big breakdown finally occurs, they scramble to find another vehicle at whatever price the market demands at that time. Some agencies have treated their IT the same way.

There are a number of costs, direct and indirect, that will continue to increase throughout a system's life cycle. Maintenance agreements are like warranties;



the older the item being maintained, the more the maintainer is likely to charge, directly affecting the cost. Conversely (or in addition), if an organization has the personnel to perform their own maintenance they also face the costly challenge of keeping those personnel proficient on a diverse and sometimes antiquated set of skills. Attracting and retaining these personnel increases the organization's labor costs, indirectly affecting system maintenance cost.

## 6.2 STRATEGIC GOAL 4 - SEEK COST-EFFECTIVE METHODS OF MODERNIZING STATE/AGENCY DATA PROCESSING CAPABILITIES.

IT is foundational to the delivery of services to State citizens. Building systems and infrastructure that are cost effective, support efficient operations, and provide the cutting-edge application of technology requires managing risks aggressively and effectively. This requires an enterprise-wide approach to risk management; a continually evolving and responsive program that adjusts to changing threats, vulnerabilities, and needs that encourages creative solutions within a structured framework yet provides flexibility to individual organizations. When an IT system can no longer adjust to the changing threats, and the risk to keep the system active reaches a critical point, a decision to modernize must be evaluated and considered.

Building systems and infrastructure that are cost effective, support efficient operations, and provide the cutting-edge application of technology requires managing risks aggressively and effectively.

### 6.2.1 Objective 4.1 - Modernize the Current Financial Management System.

The CGI Advantage application, State of Alabama Accounting and Resource System (STAARS), is the planned replacement for the current financial management system. The STAARS application provides modernized support for both financial and human resources functions. Users of this functionality currently rely chiefly on a software application hosted on a mainframe system, a very reliable, but aging application. The updated functionality will be deployed in phases to speed the release of the most widely-needed functions while also reducing overall programmatic risk.

### 6.2.2 Objective 4.2 – Plan, Prioritize, Continually Execute Technology Refresh, and Modernize When Appropriate.

Attackers are proactive. They are constantly seeking new ways to exploit our systems and gain access to our data. Incident response is reactive. Usually by the time we become aware of a successful attack the damage is done and all that is left is the costly clean up. Keeping systems patched is a proactive way to fend off attackers; it is also a necessary practice for maintaining a legacy system. Vulnerabilities will be found in operating systems, hardware, firmware, and software as these products age. Applications built on a development



environment, ColdFusion for instance, also become vulnerable to security threats over time unless they are continually patched throughout their life cycle. Organizations need to ensure that system patching is funded throughout the operations and maintenance phase of the system’s life.

Eventually it becomes less practical to keep patching an aging system and a decision on modernizing must be made. Organizations need to evaluate their systems periodically to determine well in advance of when that point will be reached. Organizations need to identify systems which are aging, at or near end of life, no longer supported by the vendor, or for which a replacement system is already available, examine these systems’ capabilities and criticality, and develop a prioritized modernization strategy. Costs are going to increase, but by being proactive and planning ahead organizations can forecast these costs into their budget request cycles.

## 7 DATA ANALYTICS

Data Analytics (DA) is the science of examining raw data with the purpose of drawing conclusions about that information. Data analytics refers to qualitative and quantitative techniques and processes used to enhance productivity and business gain (increase efficiency or effectiveness). The application of data analytics changes raw data into data intelligence. Simply put, data analytics allows better business decisions, improves business efficiencies and verifies the effectiveness of current processes. Data analytics can assist in identifying areas of risk, fraud, errors and/or misuse.

Data Analytics refers to qualitative and quantitative techniques and processes used to enhance productivity and business gain

The traditional role of IT allows the centralized collection, storage, and retrieval of data. Retrieval may be in the form of documents, reports, or an occasional Ad Hoc report. Data analytics enhances the use of this data by moving beyond this traditional role into descriptive and predictive modeling, and ultimately optimization as shown in the diagram below.

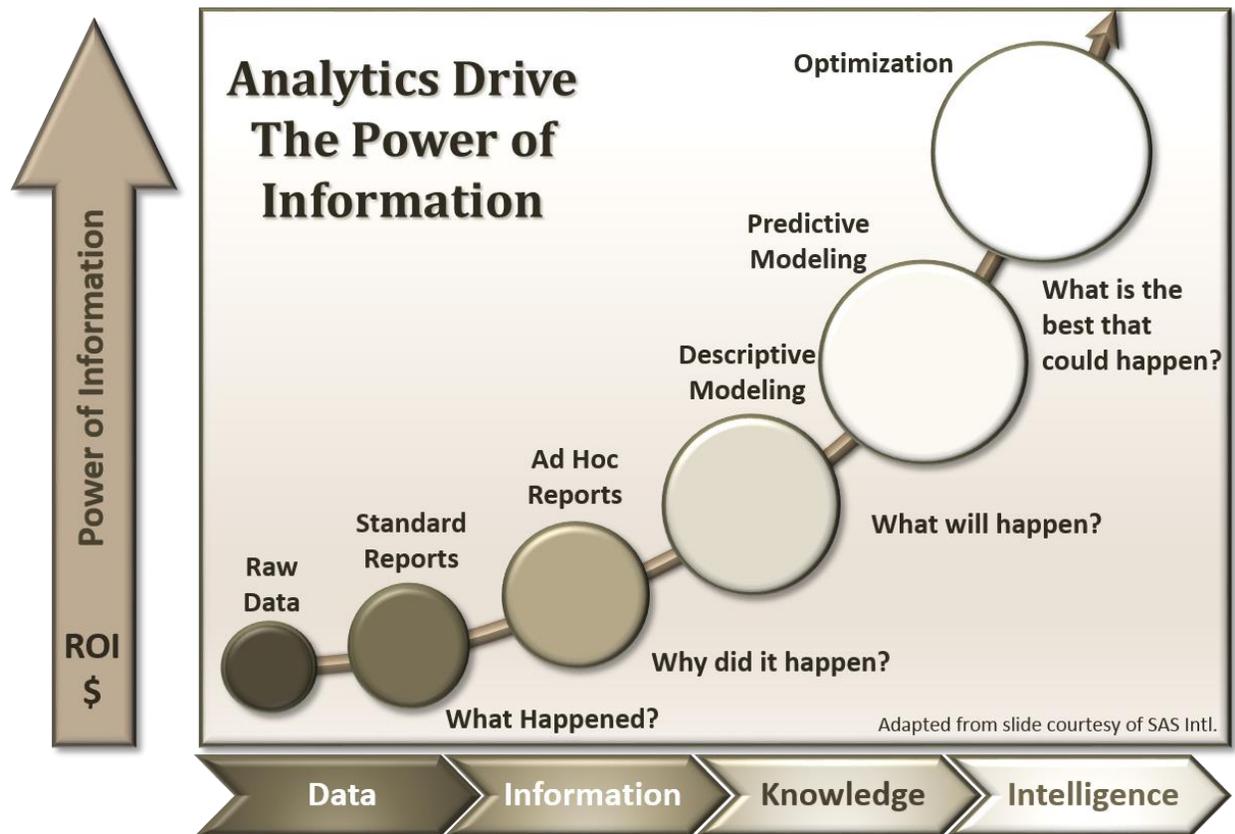


Figure 7-1: Data Analytics Drive the Power of Information

## 7.1 CRITICAL ISSUE

### 7.1.1 Lack of Use of Valid Empirical Data in Making Significant IT Decisions.

The State should make all significant decisions based on valid empirical data. Significant decisions are the ones involving a significant amount of money, significantly affect current business processes, and/or putting consumers or staff safety at risk. IT projects should involve predicted measurable improvements in effectiveness or efficiency. The results of IT projects should be evaluated against the anticipated improvements.

The existing IT operational environment should be monitored and evaluated for reliability and availability, problem areas identified and corrective action plans or projects developed. The key for evaluating continuing operations / maintenance or IT project development is developing quantitative measures such as cost, the return on investment, risk assessment and risk mitigation. Data and the application of data analytics help agencies make better informed decisions on the application of IT.



The focus should be on identifying and benchmarking (measuring) significant problems or feasible opportunities for applying IT toward improvement; whether such improvement is measured in lower costs, reduced time, risk or litigation avoidance, or some other measurable increase in effectiveness or efficiency.

## **7.2 STRATEGIC GOAL 5 – IMPROVE BUSINESS DECISION-MAKING BY APPLYING DATA ANALYTICS.**

### **7.2.1 Objective 5.1 – Develop Data Analytics Methodologies, and Identify Monitoring Approaches.**

Agencies need to understand the use of data analytics in the decision making process, and how the approach helps agencies make better business decisions. Agencies need to develop approaches for identifying data, how to do secondary analysis of existing data, or how to quantify the data and how to use the data in the decision making process. Agencies need to understand the importance of establishing a repetitive continuous methodology or process for monitoring the services and applications supported or provided by IT. Both the agencies and IT need understand the importance of communicate using data visualization.

### **7.2.2 Objective 5.2 – Define and Benchmark IT Problems or Opportunities for Improvement, or New Processes.**

Agencies need to understand how IT impacts their operations and business processes. Agencies also need to understand how anticipated changes in requirements or additional requirements impact IT. IT managers need to develop relationships with agency management staff and others so IT management will be informed of anticipated changes so IT staff can make appropriate plans. Agencies also need to be aware of IT systems and IT solutions built and used inside organizations without explicit organizational approval -- also known as “shadow IT”. Results for IT services can be measured in reduced downtime or increased availability, lower costs per client or employee, reduced time to complete a process, providing better management tools and reports at all levels of the organization from the executive to staff interacting with the agency customers, reduction in errors, help desk calls, etc. Anecdotal evidence is not statistically significant.

IT problems must be quantifiable in frequency, impact, probable costs if not corrected, and costs for correction. Opportunities for increased effectiveness, efficiencies, or risk mitigation must also be quantifiable. Agencies need to evaluate the quality of data used for benchmarking and understand the limitation of the data. How old the data is, how accurate the data and how valid the data is for benchmarking are all important factors.



**7.2.3 Objective 5.3 –Develop and Implement Quantifiable Decision Models.**

Agencies must be supported in their need to develop decision models and determine the availability of empirical data. Data can be quantifiable statistics and used in descriptive models, predictive models or continuous improvement (optimization) models. Known data in decision models can be an aid in making better business decisions.

Limited IT staff resources and budgetary constraints are real issues that must be addressed in the decision models. Other assessment factors include Return on Investment (ROI), risk assessment, and risk mitigation strategies along with costs and other factors. The process should include an evaluation of those factors to determine the impact and the significance of the decision so priorities can be developed.

**7.2.4 Objective 5.4 – Implement Decisions and Monitor Progress and Results.**

Decisions are based on assumptions and quantifiable data. Implementation should follow general project management or other corrective action plans to monitor costs, progress and the underlying assumptions and data.

Communication with agency management is a key factor. Data visualization with easy to understand graphics should be used to convey milestones, progress, costs and implementation timeframes.

Over time, the agency should develop a continuous monitoring of IT services and applications as problems are corrected or improvements made. There needs to be a process for providing IT services management data. IT services and applications should be translated into Key Performance Indicators (KPIs) or dashboards to facilitate the both the impact and performance of IT on a scheduled ongoing basis

## **8 INTER-AGENCY COMMUNICATION AND COORDINATION**

The State of Alabama has approximately 150 state agencies, boards and commissions under the State government umbrella. In today’s government, IT plays a major role in how those agencies complete their day-to-day job functions or mission. Each agency, board or commission has their particular requirements for IT equipment, policies, processes, software and personnel to complete their job function or mission. Often these requirements are not communicated or shared outside of their state agency, board or commission.



## 8.1 CRITICAL ISSUE

### 8.1.1 Inability and Lack of Information Sharing Across Agencies.

The lack of information sharing related to IT creates an inability to effectively promote sharing of IT resources and knowledge across state agencies. This can cause duplications in IT projects, infrastructure, training and funding at the State level. This shortfall of Inter-Agency communications and coordination has been identified as a critical issue in the IT process for the State.

## 8.2 STRATEGIC GOAL 6 – CREATE AN OPEN LINE OF COMMUNICATIONS BETWEEN AGENCIES FROM THE TOP DOWN TO IMPROVE COLLABORATION AND AWARENESS OF IT PROJECTS, STRATEGIES, AND TRAINING STATEWIDE.

Effective communications through the use of technology and information sharing will only strengthen Alabama by enabling us to deliver more efficient and effective technology services and shared solutions.

Communication is key to ensuring that all state agencies are aware of IT projects and overall IT strategies in the State of Alabama. Effective communications through the use of technology and information sharing will only strengthen Alabama by enabling us to deliver more efficient and effective technology services and shared solutions. The efficiencies from information sharing of services and solutions will create a better overall experience for the citizens of Alabama.

### 8.2.1 Objective 6.1 - Establish and Maintain Information Sharing of All Major IT Projects For Alabama.

A process of open communications and information sharing of IT projects should be made available to all state agencies. The definition of a major IT project should be established based on cost and capacity of the technology to serve other functions or agencies in state government.

Developing this process and utilizing technology to share information between state agency IT directors will enable Alabama to make more effective decisions when purchasing and designing IT solutions for state government.

### 8.2.2 Objective 6.2 - Establish User Groups and Working Groups to Effectively Evaluate and Share Ideas For Technology Products.

IT departments in Alabama state government use many different technologies from different vendors to support their agencies' business needs. Most of the time more than one agency is using the same technology product for similar needs but, in a different manner than another agency. The lack of information and idea sharing can cripple the overall IT structure and process in Alabama.



A process should be developed for user groups that communicate on a scheduled basis to discuss best practices and share ideas for the most common technologies used throughout state government. The user groups should be created upon surveying agencies to identify the most common technologies used by state agencies. The creation of user groups will promote sharing of ideas, best practices and will create working relationships with other IT practitioners across multi agency lines.

A process should be created to establish working groups to evaluate and recommend new technologies for the State of Alabama. The working groups should be established based on major IT projects to facilitate communications across state agency lines. The working groups' goals should be to evaluate and recommend the best technology products for the State of Alabama as a whole. By creating these working groups along with input from the users groups, Alabama can take advantage of unifying major IT systems to reduce overall costs and improve efficiency.

**8.2.3 Objective 6.3 - Establish an IT Training Curriculum and Schedule Based on the Sharing of Information and Needs of All State Agencies.**

Currently state training for IT professionals is contracted out by each agency to meet their specific needs. Training is often just for one or two people from an agency on a specific technology. This approach to training state IT professionals promotes higher costs, stifles relationships and collaboration on technology across agency lines, and can hamper the overall learning process for IT professionals in state government.

A process for sharing information for professional IT training requirements from all agencies should be established. This process should bring in qualified trainers to Alabama to train on technology products rather than sending our IT professionals at different times all across the country to get non-unified training on the same technology product.

By creating this information sharing process we can identify the common needs for professional IT training from all agencies. This should enable the State of Alabama to provide a higher quality and effectiveness of training based on the requirements of IT professionals in the State at a potential lower cost. By having IT professional's representing several state agencies in the same class it should promote a better learning environment, create long lasting working relationships between agencies IT professionals, and allow future collaborations on IT projects based on the same technology and training.



## 9 APPENDICIES

### 9.1 GLOSSARY OF TERMS

The following terms and acronyms are used in this document.

Term or Acronym	Description
CAS	Central Accounting System
CIO	Chief Information Officer
ECM	Enterprise Change Management
FRMS	Financial Resource Management System
ISD	Information Services Division
ITB	Invitation To Bid
KPI	Key Performance Indicator
NASCIO	National Association of Chief Information Officers
NIST	National Institute of Standards and Technology
OIT	Office of Information Technology
RFP	Request For Proposal
ROI	Return On Investment
SDLC	System Development Life Cycle
SIEM	Security Incident and Event Management
SNAP	Statewide Purchasing System
SQL	Structured Query Language
STAARS	State of Alabama Accounting and Resource System
T013	State’s Temporary IT Personnel Staffing Contract Vehicle



## 9.2 STRATEGIC PLAN SUMMARY MATRIX

Guiding Principles	Critical Issue Area	Critical Issues	Strategic Goals	Objectives
Efficiency Effectiveness	Purchasing	<ul style="list-style-type: none"> <li>Administrative Bureaucracy in the Purchasing Process</li> <li>Burdensome Purchasing Laws and Policies</li> <li>Time-Consuming and Slow Paper-Based Purchasing System</li> </ul>	<p>STRATEGIC GOAL 1</p> <p>Transition purchasing into a world-class strategic sourcing capability that yields significant cost savings</p>	<p><u>Objective 1.1</u> - Conduct Business Process Review with the Goal of Streamlining Purchasing Processes.</p> <p><u>Objective 1.2</u> - Identify And Resolve Legal or Administrative Procedure Issues or Requirements Including Public Record Retention and Federal/State Audit Requirements.</p> <p><u>Objective 1.3</u> - Evaluate The Feasibility of Participating in Cooperative Purchasing Agreements With Other States For Specific IT Goods or Services.</p> <p><u>Objective 1.4</u> – Identify, Develop and Evaluate Enterprise IT Contracts.</p>
Effectiveness	Personnel	<ul style="list-style-type: none"> <li>Non-Technical Reviewers for Technically-Related Classifications</li> <li>Dated IT Classifications</li> <li>Recruitment and Management of Personnel Relating to Performance and Compensation</li> </ul>	<p>STRATEGIC GOAL 2</p> <p>Develop and maintain a trained and productive it workforce with the skill sets necessary to keep pace with technology</p>	<p><u>Objective 2.1</u> – Establish a Structured and Recurring Review Process for IT Classifications.</p> <p><u>Objective 2.2</u> – Establish Professional Development Programs for IT Classifications.</p> <p><u>Objective 2.3</u> – Establish and Re-evaluate Career Path for IT Classifications.</p> <p><u>Objective 2.4</u> – Establish and Re-evaluate Competitive Compensation Packages for IT Classifications.</p>
Safety Effectiveness	Funding Shortfalls	<ul style="list-style-type: none"> <li>Inconsistent Funding of Information Security Across the Agencies</li> <li>Chronic Lack of Funding to Replace Legacy Systems</li> </ul>	<p>STRATEGIC GOAL 3</p> <p>Establish a Risk-Based Approach to IT Management</p>	<p><u>Objective 3.1</u> - Ensure Sufficient Funding For Organizations to Achieve Information Security Objectives With an Acceptable Level of Residual Risk.</p> <p><u>Objective 3.2</u> – Manage Information Systems Using a Risk-Based Standard for System Life Cycle Management.</p>
Efficiency Safety	Aging Legacy Applications and Infrastructure	<ul style="list-style-type: none"> <li>Antiquated Financial Software</li> <li>Increasing Cost Of Maintaining Legacy Systems</li> </ul>	<p>STRATEGIC GOAL 4</p> <p>Seek Cost-Effective Methods Of Modernizing State/Agency Data Processing Capabilities</p>	<p><u>Objective 4.1</u> - Modernize the Current Financial Management System.</p> <p><u>Objective 4.2</u> – Plan, Prioritize, Continually Execute Technology Refresh, and Modernize When Appropriate.</p>
Efficiency Effectiveness	Data Analytics	<ul style="list-style-type: none"> <li>Lack of Use of Valid Empirical Data in Making Significant Decisions</li> </ul>	<p>STRATEGIC GOAL 5</p> <p>Improve Business Decision-Making by Applying Data Analytics</p>	<p><u>Objective 5.1</u> – Develop Data Analytics Methodologies, and Identify Monitoring Approaches.</p> <p><u>Objective 5.2</u> – Define and Benchmark IT Problems or Opportunities for Improvement, or New Processes.</p> <p><u>Objective 5.3</u> – Develop and Implement Quantifiable Decision Models.</p> <p><u>Objective 5.4</u> – Implement Decisions and Monitor Progress and Results.</p>
Effectiveness	Inter-Agency Communications and Coordination	<ul style="list-style-type: none"> <li>Inability and Lack of Information Sharing Across Agencies</li> </ul>	<p>STRATEGIC GOAL 6</p> <p>Create an Open Line of Communications Between Agencies From the Top Down to Improve Collaboration and Awareness of IT Projects, Strategies, and Training Statewide</p>	<p><u>Objective 6.1</u> - Establish and Maintain Information Sharing of All Major IT Projects For Alabama.</p> <p><u>Objective 6.2</u> - Establish User Groups and Working Groups to Effectively Evaluate and Share Ideas For Technology Products.</p> <p><u>Objective 6.3</u> - Establish an IT Training Curriculum and Schedule Based on the Sharing of Information and Needs of All State Agencies.</p>



### 9.3 CRITICAL ISSUES SURVEY RESULTS

Agency 1	Agency 2	Agency 3	Agency 4	Agency 5	Agency 6	Agency 7	Agency 8	Agency 9	Agency 10	Agency 11	Priority Score	Ave Score	Issues, Problems & Shortfalls
<b>Purchasing</b>													
High	High	High	High	Medium	High	High	High	High	Medium	High	51	4.636	Administrative Bureaucracy in the Purchasing Process.
High	High	High	High	High	High	High	Medium	Medium	Medium	High	49	4.455	Burdensome Purchasing Laws and Policies.
Medium	Medium	Medium	High	Medium	High	Medium	High	High	Medium	Medium	38	3.800	Time-Consuming and Slow Paper-Based Purchasing System.
<b>Personnel</b>													
High	High	High	High	High	High	High	High	Medium	Medium	High	51	4.636	Non-Technical Reviewers for Technically-Related Classifications.
Medium	High	High	High	High	High	Medium	High	Medium	Medium	High	47	4.273	Outdated IT Classifications.
High	High	Medium	High	Low	High	Medium	Medium	Medium	Low	High	39	3.545	Management of Personnel Relating to Performance and Compensation.
<b>Funding Shortfalls</b>													
High	High	Low	High	High	High	High	High	High	Medium	High	49	4.455	Inconsistent Funding of Information Security Across the Agencies.
Medium	High	Medium	Medium	High	High	High	High	High	High	Medium	44	4.400	There is a Chronic Lack of Funding to Replace Legacy Systems.
<b>Aging Legacy Applications and Infrastructure</b>													
Medium	High	Medium	High	High	Medium	Medium	Medium	Medium	High	Medium	38	3.800	Antiquated Financial Software.
	Medium	Medium	Medium	Medium	Medium	High	Medium	High	Medium	High	36	3.600	The Increasing Cost of Maintaining Legacy Systems.
<b>Data Analytics</b>													
Medium	High	Low	Medium	High	Medium	Medium	High	High	Medium	Medium	36	3.600	Lack of Use of Valid Empirical Data in Making Significant Decisions.
<b>Inter-Agency Communication &amp; Coordination</b>													
Medium	High	Low	High	Medium	Medium	Medium	High	High	Medium	Medium	36	3.600	Inability and Lack of Information Sharing Across Agencies.