

# 2010 State IT Annual Report

## Executive Summary

The state of Georgia is making significant changes in the way its technology is managed. We are making these changes so state government can keep up with the ever-changing world. Trends in both government and the private sector are consistent with the direction we are taking. While we still have a tremendous amount of work to do, we are succeeding in our efforts to better connect Georgians with their government through technology and deliver the services they expect.

Going forward, our biggest challenges are creating a transparent environment and better governance for the state's IT enterprise. More specifically, we need to:

- Make clear improvements to the governance model for IT expenditures
- Require agencies to maintain and manage technology budgets
- Develop a framework for the state's application portfolio so we can make rational decisions about the state's systems

As we continue down our path, the technology function must be attuned to the business needs of state agencies and the constituents they service. Agency chief information officers must have a seat at the decision-making table.

The state spends more than \$1 billion annually on technology. We must ensure that decisions about how we spend those dollars are made with the citizen in mind, and our technology investments better enable them to connect with their government.

## Where We've Been

### Overview

The serious deficiencies of the state's IT enterprise have been well documented. Both the Governor's Commission for a New Georgia and an independent assessment determined that Georgia was carrying too much risk, and its IT problems were too great for the state to solve on its own. The problems have been widespread and deep:

- PCs running operating systems too old to support current anti-virus software over the past five years
- Service interruptions due to inadequate backup power for critical IT systems
- Failure to backup important data due to broken servers
- Underfunding of disaster recovery and security.

In particular, **inadequate security** has had a tangible effect on Georgians; more than 4.5 million notification letters have been sent to people whose private information may have been exposed from state computers.

Correcting problems of this magnitude required decisive action. After what was arguably the most competitive and transparent procurement in the history of Georgia state government, the state outsourced IT infrastructure services to IBM beginning April 1, 2009, and managed network services to AT&T beginning May 1, 2009. In addition, the Georgia Technology Authority (GTA) - which provided technology services to state and local government agencies - was reorganized to shift its focus to managing the delivery of services.

The business model projects savings of \$181 million over the life of the IBM and AT&T contracts, and Georgia is already seeing the cost efficiencies made possible by modern technology.

[Overview](#)

[IT Snapshot](#)

Accomplishments

## IT Snapshot

The current state of Georgia's information technology is a non-integrated environment that is difficult to understand or use. The state must make improvements while controlling costs and continuing to support the various functions performed by the state; few state functions are performed without the use of technology.

As the state transforms IT, it cannot afford long or frequent disruptions to IT and the services it supports. The state must continue to focus on the overall missions of state agencies as transformation takes place.

Examples of poor integration of IT abound. For example, the state operates over 100 independent e-mail infrastructures to support various agencies. If a citizen is receiving services from more than one agency, he or she has to maintain two different user accounts with unique credentials. This is neither cost effective for the state nor convenient for the citizen.

The reasons for this poor level of integration are historical, and they have been costly. Until 10 years ago, few agencies shared applications, and their IT departments didn't use their combined requirements to develop purchasing power. Each agency's IT department procured, operated and supported all of the systems required by the agency, and IT budgets were integrated with the services being provided. The ability to obtain quantity discounts or leverage resources was non-existent with minor exceptions. It was even impossible to know the cost to operate many of the systems.

The state's IT transformation is providing greater transparency in how state agencies spend technology dollars, allowing agencies to make better decisions about IT investments.

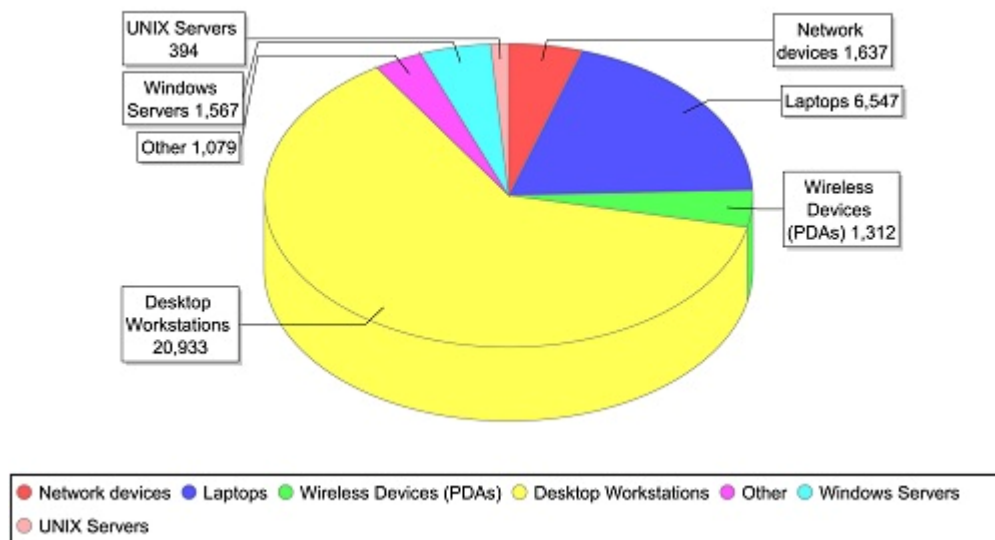
IT Hardware Assets

Tracking IT Investments

Communications Services

## IT Hardware Assets

The state operates almost 400 Windows and 1,600 Unix servers. However, there are more than 1,000 other servers that defy categorization. That means **about one-third of the state's servers are non-standard or non-mainstream**, and the state must perform non-standard training of its staff to support them.



Modern organizations base their IT hardware procurement decisions on many factors, with total cost of ownership (TCO) being the primary financial consideration. TCO takes into account all long-term costs of operating a system, including such things as hardware maintenance and support, replacement of aging equipment, the stocking of spares and the training of the support staff. While TCO includes the hardware purchase price, it is often not the major factor.

Georgia traditionally acquires its hardware as part of larger procurements for business solutions. TCO may be part of the acquisition decisions, but it is frequently missing or not fully defined. This lack of transparency may lead to poor decisions during the procurement and ongoing operations. It may also lead to other issues such as:

- Hidden expenses that must be paid,
- Poor ability to share spare equipment across projects,
- Use of non-standard or non-mainstream equipment, which becomes critical to the state but is expensive to support, and
- Little planning or budgeting for equipment end-of-life.

The Georgia Enterprise Technology Services (GETS) Program has addressed this problem by standardizing on specific models of equipment that must be used for future procurements. For example, the state has established standards for its desktops, and will procure them from two companies. This standardization will lead to cost savings through standardization of support processes, and the combined volume will lead to more competitive pricing.

## Tracking IT Investments

The state of Georgia spends approximately \$1 billion every year on information technology, including services, equipment, application development and maintenance, and personnel. However, knowing exactly how much is spent, where the money actually goes and what taxpayers are getting in return is difficult to identify.

The General Assembly has charged the Georgia Technology Authority with compiling information from state agencies about their IT expenditures and presenting a report to state leaders every year (see O.C.G.A. 50-25-7.10). With comprehensive and accurate information, state leaders can make facts-based decisions about the allocation of limited state resources to support technology.

In FY 2009, 78% percent of required agencies reported \$943 million in IT. Even then, some state entities are not required to report, such as the University System of Georgia. Unfortunately, **the level of required agency compliance fell significantly for FY 2010** when 61 percent submitted data.

<b>Agency Participation Year to Year</b>		
	<b>FY 2009</b>	<b>FY 2010</b>
Agencies Required to Report	<b>69</b>	<b>74</b>
Agencies that Reported	<b>54</b>	<b>45</b>
Percentage	<b>78%</b>	<b>61%</b>
Agencies Not Required to Report	<b>16</b>	<b>15</b>
Agencies that Reported Voluntarily	<b>11</b>	<b>5</b>
Percentage	<b>69%</b>	<b>33%</b>
Agencies Receiving IT Services from Another Agency	<b>33</b>	<b>30</b>

Agencies reported \$1.12 billion in IT during 2010. Although this number is reasonably consistent with 2009, the composition of the number changed significantly. The reported spend on application support nearly doubled from \$383 million to \$733 million while the project portfolio and infrastructure operations showed a decrease of nearly \$174 million. The cause of this swing is not completely known. Of the agencies submitting data, 13 percent provided only partial information.

The table below shows the dollars invested in the support of IT operations for the state as reported for FY 2010. It also provides related data for 2009 for comparison to identify increase or decrease from the preceding year.

2010 State IT Overview		FY2009	FY2010	Increase or (Decrease)
<b>Infrastructure Operations</b>				
	Non -GETS Agencies		\$23,118,085	
	GETS's Agencies, Non-GETS Services		\$26,175,509	
	GETS's Agencies, w/GETS Services		\$172,260,785	
<b>Total:</b>		<b>\$274,800,000</b>	<b>\$221,554,379</b>	<b>\$(53,245,621)</b>
<b>Project Portfolio</b>				
<b>Total:</b>		<b>\$284,300,000</b>	<b>\$163,403,020</b>	<b>\$(120,896,980)</b>
<b>Application Support</b>				
<b>Total:</b>		<b>\$383,600,000</b>	<b>\$ 733,292,722</b>	<b>\$349,692,722</b>
<b>Aggregated Total :</b>		<b>\$942,700,000</b>	<b>\$1,118,250,121</b>	<b>\$175,550,121</b>

The changes in IT expenditures between FY 2009 and FY 2010 may not be due to actual agency change in spending but more accurate reporting; however, the failure of many agencies to report their expenditures may also skew the results.

In previous years, GTA developed projections to fill the gaps resulting from the lack of agency submissions. However, beginning with FY 2011, GTA provided the agencies with more control over their submissions and will no longer use projections but will rely on data reported by state agencies.

Though much progress is being made to improve IT financial management, challenges still exist throughout the enterprise and require attention. In FY 2010, GTA identified some of the challenges in how IT budgets are created, tracked and mapped to expenses according to state accounting practices (See white paper below). These problems have existed within the state for some time and will require a consolidated effort across agencies to address them.

Georgia's leadership needs a clear, complete and accurate accounting of how state agencies are spending taxpayers' dollars on IT.

**Associated Document(s): See attachments located at end of report  
Tracking IT Agency Reporting (Attachment A)  
Consolidated Enterprise IT Fiscal Oversight (Attachment B)**

## Communications Services

The state of Georgia's many agencies and political subdivisions are large consumers of voice and networking (data) services, with **82,436 telephone** and **1,806 data circuits**. GTA provides these services to **over 1,400 customers across Georgia**, including both the federal and local governments.

The federal and local governments require an additional 66,125 telephone and 376 data circuits to meet their needs. By combining the state's communication services needs and allowing other governments to leverage Georgia's buying power, GTA is able to obtain bulk-pricing discounts that benefit all three levels of government.

GTA's contract with its service provider calls for specific performance levels to be met for all voice and data circuits. The vendor actively monitors the circuits and frequently takes proactive steps to address issues before they impact agencies.

GTA also operates a 7 by 24 help desk for all of its communications and IT infrastructure services, supporting customers' needs when they are most critical.

## **Accomplishments**

Agencies throughout Georgia state government are using technology to achieve their missions. What distinguishes their investments is not the dollar amount or scope of work as much as their success in attaining benefits for the state and its citizens. We have compiled a few examples that illustrate not only a variety of technologies, but also the benefits that innovative approaches bring to customers:

- The Georgia Bureau of Investigation's migration to a new server environment is saving money and improving the performance of the critical applications law enforcement officers rely on.
- The Department of Driver Services developed and implemented a digital licensing system to enhance the security of driver's licenses and IDs while also improving customer service.
- The Georgia Emergency Management Agency is using social media, such as Twitter and YouTube, to reach citizens with important messages about disaster preparedness.
- State agencies, local governments, Board of Regents institutions and school districts can now access the Window Shopper - a one-stop shop for items on statewide contract, like shopping on-line at home.
- The PeopleSoft Governance Council provides direction and sets priorities for the operation of the PeopleSoft system, allowing projects to be delivered successfully, and recovering expenses related to the system.

[GBI Server Migration](#)

[GETS Financial Transparency](#)

[State Network Consolidation](#)

[Window Shopper](#)

[Driver's License Services](#)

[Project Governance Successes](#)

[GEMA - Social Networking](#)

[PeopleSoft Governance Council](#)

## **GBI Server Migration**

### **Move to new server environment leads to savings, better performance**

The Georgia Bureau of Investigation will save **\$1.9 million**, twice as much as expected, as a result of its migration to a new Unix-based server environment at the state data center.

The new environment provides support to critical applications used by the GBI and state and local law enforcement and judicial agencies. The applications and the data they contain must be available 24 hours a day, every day; when law enforcement officers stop a car, they must be able to verify the driver's license, check the vehicle registration and access the criminal records database.

### **Critical applications need reliable, accessible environment**

Formerly residing on aging servers, many of the applications are among the state's first IT systems, some dating back to 1973. The applications comprise the Georgia Crime Information Center, which maintains Georgia's computerized criminal history database that includes the fingerprint and criminal history records of more than 2.6 million people.

The Georgia Criminal Justice Information System (CJIS) Network, provides direct access to computerized databases maintained by Georgia agencies, agencies in other states and the FBI Criminal Justice Services Division. Georgia's CJIS network has more than 1,500 member agencies operating over 10,000 computers able to communicate instantly with federal, state and local criminal justice agencies throughout the United States. The CJIS network handles more than 13 million messages per month in support of Georgia's criminal justice agencies.

## **Effective planning, cooperation lead to success**

The project team – made up of IBM, the GBI and GTA – completed migration of the GBI's most critical applications to the new server environment in mid-July 2010. The migration was executed smoothly, resulting in no problems and, most importantly, no down time for the law enforcement officers who rely on the applications around the clock.

As other agencies complete their migrations, they should realize significant savings as well.

## **Migration reduces risk, brings other benefits**

Besides greater cost efficiency, the new server environment supports the IT transformation goal of reducing operating risks such as service interruptions and security breaches. Among its advantages are:

- High levels of availability and performance
- Enhanced security
- Scalability to easily handle expanding workloads

## **GETS Financial Transparency**

- Through the Georgia Enterprise Technology Services (GETS) Program, GTA has created a sustainable IT model for the future that projects a savings of \$181 million over the life of the contracts with IBM and AT&T. These long-term partnerships enable the state to make investments in technology that we could never make on our own: through IBM, we are investing **\$184 million in our IT infrastructure**, and through AT&T, we are investing **\$99 million in our network**.
- With GETS, GTA has begun to provide transparency into agency information technology usage and costs - information previously not available in state government.
- The privatization of infrastructure and managed network services has introduced a consolidated, transparent view of IT service consumption, asset inventory and agency expenditures for technology services. Customers have a usage-based cost structure for IT services and pay only for the services they consume. This cost structure allows for economies of scale and uses private industry standards for the way IT services are consumed and billed.
- One of the most noticeable financial benefits of GETS is **access to online invoices** with the capability to drill down to detailed information about service cost and usage. This capability allows GETS customers to review and validate line item charges with ease. As a result, the state only pays for those goods and services received.
- GETS enables GTA to measure the financial benefits of privatization. With the ability to see the consumption level and cost for all GETS services, usage and trend analysis by type of service is now possible. As more state entities enroll in the GETS Program, Georgia will have access to more detailed technology financial data than ever before.

## **State Network Consolidation**

- **Network Transformation Means Speed, Redundancy and Security**
- Georgia state agencies are experiencing close to a **100 percent increase in network capacity** thanks to the re-engineering of the state's wide area network (WAN). Modernizing the network is also benefiting agencies by providing greater redundancy and enhanced security.
- The work is part of the state's ongoing technology transformation, which is consolidating the state's IT infrastructure, improving management of the state's network and developing Georgia's next-generation government cloud. As part of one of the largest public sector IT transformations in the world, AT&T began providing managed network services to Georgia state agencies in April 2009. The transformation includes **a complete redesign and upgrade of the state's data network**. Georgia's managed network services encompass 7,700 physical sites, 2,000 firewalls, 1,800 routers and 133,000 telephone lines.
- "The speed at which we are transforming the state's network would not be possible without our private-sector partners," said Patrick Moore, state CIO and executive director of the Georgia Technology Authority, which is overseeing the transformation. "Given the pace of change in the technology industry, managing technology services from private-sector partners should be a core competency of government. They are providing the depth of experience and resources we need to make changes faster, more efficiently and ultimately at a lower cost. Our new model is enabling us to keep pace with the demands of our constituents by providing state agencies with a modern, reliable and secure network."
- Proactive network monitoring means **service interruptions are resolved more quickly**. On a regular basis, 80 percent or more of all trouble tickets for network data services are generated automatically. As a result, technicians are dispatched and service is restored often before an agency notices a problem.
- Agencies are benefiting from other transformation changes. Prior to the network re-engineering, for example, Internet traffic entered and exited the state's data center through the same route, which inevitably led to congestion and slow response times similar to the I75-85 connector. Following changes implemented by AT&T, traffic now flows from agencies directly to the Internet.
- Several agencies report dramatically improved network performance as a result of the rerouting.



- Before the changes, "OPB had very little success in streaming video of the state House and Senate's general sessions or committee meetings," said Terry Wolf, OPB's Chief Information Officer. But afterward, "...users report a completely difference experience...We have at times had over 20 staff simultaneously viewing legislative streams this past week at OPB."

### **Great security and redundancy**

- AT&T's redesign has also deployed additional cloud security. Its managed security services include firewall, intrusion detection and prevention, managed e-authentication, vulnerability scanning and incident response.
- "The state of Georgia needs an approach to security that not only safeguards their data and other assets, but also identifies and stops cyber threats before they reach their network perimeter," said Ed Amoroso, chief security officer and senior vice president, AT&T Services, Inc. "AT&T's cloud-based approach will allow the number of firewalls to be reduced, making it easier to identify potential vulnerabilities."
- With another re-engineering success, the state's entire network can now fail over to AT&T facilities in Nashville, Tenn., providing agencies with full Internet and wide area network redundancy for the first time to ensure critical state operations continue in the event of a disaster or other emergency.

## **Window Shopper**



Investments in technology don't always have to be mammoth initiatives with a huge price tag and long implementation schedule. DOAS found that with a minor enhancement to an existing application the agency could serve an extended customer base and improve the bottom line.

**Team Georgia Marketplace** has introduced a streamlined electronic procurement tool for agencies using the state's enterprise PeopleSoft application. In August, DOAS expanded the opportunities through a web portal that provides access to a repository of online catalogs for items on statewide contract. The **Window Shopper** website makes electronic procurement of negotiated items available to all agencies, Board of Regents institutions, local governments and local school systems. The site serves as a one-stop shop for information needed to create a purchase order for items on statewide contract.

Some of the advantages Window Shopper offers include:

- State-of-the-art, user-friendly search capabilities, very similar to the experience of shopping online at home;
- Time and money savings from purchasing items from statewide contracts rather than issuing bids for items that are readily available at deeply discounted prices;
- Pricing and feature comparisons of items;
- Ability to easily save an order to attach to an e-mail to a supplier or print and fax orders; and
- No more cumbersome searches through the statewide contract index to find frequently purchased items.

The site currently contains 96 catalogs, representing over 200 suppliers and 86 statewide contracts.

DOAS has also realized other benefits from the Window Shopper website. An increase in the number of purchases made using the Team Georgia Marketplace results in a more accurate item-level detail of purchases made throughout the state. This information is beneficial in validating current statewide contracts as well as analyzing volumes for future price-setting with suppliers.

Making statewide contracted products available to a broader market also increases the administrative fees DOAS captures, which allows the agency to fund its procurement operations without relying on state funds.

Window Shopper represents a creative use of technology that is helping DOAS further its mission of making procurement in the State of Georgia "Faster, Friendlier, and Easier".

## **Driver's License Services**



The use of modern technology enabled the Department of Driver Services (DDS) to develop a **digital licensing system** designed to prevent fraud and identity theft by significantly enhancing the security of driver's licenses and IDs. As an added benefit, the new system and its business processes strengthen customer service because issuing a license or ID now takes less time.

The Secure, Automated, Faster, Friendlier and Easier Driver's License (SAFFE DL) **earned DSS the Agency International Award** in September 2010 from the American Association of Motor Vehicle Administrators (AAMVA), a nonprofit organization committed

to enhancing safety and security through motor vehicle administration and law enforcement.

DDS began issuing the SAFFE driver's licenses/IDs in fall 2009, and they include the following security features:

- Fine lines run across the background of the license/ID.
- The card holder's signature is laser-engraved over his/her photograph, and the surface of the signature is raised.
- Two small photographs of the card holder are positioned in the lower right side.
- The state seal on the front of the card glows when viewed with ultra-violet light.
- A kinegram, or optically variable image, on the back of the card changes as the card's orientation changes.

These security features are designed to prevent counterfeiting or alteration of information and photographs. They also make it easier for law enforcement to identify fraudulent licenses and identification cards.

Besides all these features, the SAFFE license/ID also includes a two-dimensional barcode across the back containing all the information appearing on the card. The barcode complies with AAMVA standards and can be read by law enforcement, government entities and retailers. It can quickly verify whether the license/ID has been altered.

As an added security measure, anyone obtaining a license/ID for the first time or renewing their license/ID at a DDS center will be issued an interim license with many of the same security features and some additional ones.

By making an investment in technology, DDS was able to comply with federal mandates for more secure driver's licenses and IDs while also improving customer service to Georgia's drivers.

## **Project Governance Successes**

GTA has been conducting project assurance in some version since late 2000. During this 10-year period, GTA has learned many lessons.

Lesson #1 is that historically agencies are challenged in the early planning stages of large or complex technology initiatives; they usually end up with weak requirements, inferior procurements, ambiguous contract language, and a deficient project management plan and schedule. Georgia has mandated the use of Independent Verification and Validation (IV&V) services as a best practice to address these shortcomings.

The I-85 Express Lanes Project at the **State Roads and Tollway Authority (SRTA)** is an example of how using IV&V helped avoid these mistakes. SRTA began the project in 2009 and was able to drive the procurement of key services and keep this vital project on track, saving time and money.

- This \$60 million project effort faced a number of significant risks from the start, the first being the procurement of qualified vendors to support and manage the entire engagement. While we knew that one of the most significant challenges to successful projects was the planning and initiation steps, this project faced an even higher hurdle with a strongly competitive, contentious and sometimes litigious vendor community.

SRTA needed to assemble a team of contractors for this complex initiative and they engaged an IV&V partner to assist. The IV&V process ensures early detection of problems and quickly escalates issues to business owners for efficient resolution. Using their partner's expertise and following these proven processes SRTA was able to execute a complex and critical procurement stage without any significant problems or protests. IV&V guided SRTA through a two-step procurement process that eliminated potential risks or challenges to a successful procurement. The procurement process was somewhat longer, but the results saved the state more time and possible legal costs in the long run.

Lesson #2 is that even well-managed technology initiatives cannot be planned perfectly for events that are years into the future. When a complex project hits a critical impasse between the schedule and required functionality, it requires an intervention. GTA's Enterprise Performance Management Office (EPMO) has used a defined Recovery Process based on industry best practices in several projects over the years. It was used again in FY 2010.

The **Department of Community Health/Medicaid Management Information System (DCH/MMIS)** began planning in 2006 for a \$59 million replacement project for the system and fiscal services that support the state's Medicaid program. When the project ran into schedule delays, GTA's recovery process provided the support to get the project back on track and deliver a quality system successfully.

- The DCH contract with the vendor (EDS/HP) stipulated the system be operational by July 1, 2010. During the latter half of 2009, it was apparent that the team had a critical path plan which left no room for errors or changes.

In early 2010, GTA intervened on behalf of DCH and the project team following the basic steps of assessment, analysis,



negotiation and execution. The recovery team was able to negotiate a more viable plan, first with the governor and then with DCH and the vendor. This recovery and intervention supported DCH in the successful delivery of one of the largest and most complex system replacements in the state of Georgia and is considered one of the most successful MMIS implementations in the country.

## GEMA - Social Networking



- When research at the Georgia Emergency Management Agency showed that nearly 80 percent of Georgians are not prepared for an emergency, the agency undertook an effort to "spread the word" in every way possible. GEMA understood that raising awareness would require engaging citizens in ways that hadn't been tried before. Traditional media and outreach events would not be enough.
- The agency decided on an innovative approach - **utilizing social media to connect with citizens** in a more interactive way. Over the past year, GEMA has used a variety of social media outlets to increase its ability to get information into people's hands more quickly and more frequently.
- **Facebook**
- In early 2009 GEMA's social media initiative began with a Facebook page for the Ready Georgia campaign. This page contains preparedness information for all types of potential disasters - natural or man-made.
- The agency now has a second Facebook page with information about

training classes, events, exercises and disaster response activities. More than 1,000 people "like" GEMA on this page, which means that more than 1,000 people are regularly receiving updates on GEMA's mission and functions. GEMA is working with the Federal Emergency Management Agency on an agreement to use this page for joint communications during disaster response and recovery.

- **Twitter**
- GEMA also joined Twitter in an effort to reach people on the go. Through the Twitter account, which has more than 1,200 followers, the agency disseminates press releases, weather updates, disaster situation reports and other time-critical information. Using Twitter to communicate urgent messages, such as the Georgia Bureau of Investigation's Levi's Calls, ensures that the message is in the hands of citizens in real time. The Twitter account is linked to the GEMA website via an RSS feed, providing the ability to deliver regularly changing web content such as blogs and news headlines.
- **YouTube**
- GEMA currently has 10 videos posted on its YouTube channel. So far, the public service announcements and videos about family preparedness and business continuity have totaled more than 3,000 views. The videos are fun, short and catchy. People are encouraged to watch with their families and discuss.
- GEMA works with multiple agencies and private-sector partners to ensure sufficient and meaningful content. A new tool posted in collaboration with the Department of Community Health helps citizens build a customized readiness kit for their families in preparation for biological threats. Alerts from the National Weather Service, GBI, and other emergency organizations are funneled to the social media links. Home Depot serves as a partner to the Ready Georgia Campaign to provide content and monetary support for communication efforts.
- Even though social media is touted as "free" technology, there are still resource costs associated with maintaining the sites and keeping them current. GEMA has engaged a firm experienced in multi-media to assist in developing strategies and conducting research to gauge effectiveness, including tracking numbers of visits to the sites and the demographics of visitors. Research drives every decision that GEMA makes regarding expansion or reduction of its social media efforts. The most recent survey indicated that people who are aware of the Ready Georgia campaign are twice as likely to be prepared for disaster events as those not aware. Social media is helping to increase that awareness.
- GEMA has taken an unconventional approach to communications technology and is using it to achieve the agency's mission. A 12-point business plan tied to the videos GEMA produces and other content disseminated throughout the state helps to ensure effectiveness. GEMA continues to use social media for critical, timely information sharing and hopes to share with other agencies the benefits and lessons learned from the experience.

## PeopleSoft Governance Council

The PeopleSoft Enterprise Resource Planning (ERP) System supports many of the finance, accounting, procurement and human resource functions performed at 72 state agencies. Operating a single ERP system is in the best interest of the state as it allows the state to keep its related expenses down and to standardize system processes and procedures.

The responsibility of operating the PeopleSoft ERP System has moved between various agencies within the state, and it is now operated by the State Accounting Office (SAO). Wherever the system has been operated, the hosting agency has had

difficulty managing the competing demands among agencies and recovering its PeopleSoft-related expenses. What was needed was a single governance authority, recognized by all participating agencies.

The PeopleSoft Governance Council was created in October 2007 to provide direction and set priorities for the operation of the PeopleSoft system. This multi-agency council:

- Establishes criteria by which it makes decisions.
- Reviews all proposed projects that involve the system.
- Determines how to apportion the operational and project costs to the various agencies that use the system.

As a result, most major PeopleSoft projects have been delivered successfully, and SAO has been able to recover its PeopleSoft-related expenses.

**The PeopleSoft Governance Council has proven itself as a strong model for enterprise application governance.** Georgia's agencies have other business functions that could be supported by enterprise applications under a similar governance model. An enterprise approach to these business functions would allow for a stronger focus on transparency of operational expenses while developing additional efficiencies by enabling integration.

## Where We're Going

### Overview

Georgia is well on its way to achieving an ambitious goal set in 2007: Move the state's IT enterprise out of its "horse and buggy days" and into the 21st century. We have turned to private-sector leaders in technology service delivery, which is resulting in saving money, staying current with modern technology and ensuring confidential data remain safe and secure from outside threats. We will continue our work with private-sector partners to transform the state's use of technology through consolidation and integration.

We will also strengthen the governance of the state's IT enterprise. Through greater transparency in IT project management, operations and costs, state leaders will be able to make fact-based decisions about investments in technology – and we will make sure technology and business are seated together at the decision-making table.

With dependable, modern and secure technology systems and a strategic partnership between technology and business, we will be able to provide innovative business services and ensure a consolidated, transparent IT enterprise where decisions are made with the citizen in mind.

#### Overview

#### Server Consolidation

#### Governance

#### Reducing Risk

#### E-Government

### Server Consolidation

The bottom line for any server consolidation program is to **save money** and **reduce risk**. Georgia's server consolidation program has the same goals.

The agencies involved in Georgia's Enterprise Technology Services (GETS) Program run about 1,300 servers in various data centers and server closets scattered across the state. These facilities are mostly classified as low-end, Tier 1 facilities at best, meaning they lack redundancy and can suffer from significant outages and downtime. They are frequently located in office buildings that are exposed to insufficient physical security, fluctuating power grids and water damage from fire suppression.

When Georgia's Enterprise Server Consolidation Project is complete, those **1,300 servers** will have been replaced by about **700 servers**, which will mostly operate in the state's primary data center. This data center is designed to comply with the

requirements of the Uptime Institute's Tier 4 Standard (Tier 4 is the IT industry's highest level of uptime resiliency). These requirements are designed to meet the needs of an enterprise the size of the state of Georgia and the criticality of its life-impacting services.

The use of a primary data center will also save the state money by allowing multiple agencies and systems to leverage centralized services and staff. Data centers have unusual physical and cyber security requirements as well as power and HVAC needs. By using a single data center, agencies will be able to share the costs associated with these specialized needs.

Each agency will be billed for the operation and support of their servers on a per unit basis. This will lead to a greater understanding of what each application's infrastructure costs and will allow agencies to make informed decisions regarding their needs.

All of this sounds expensive, but it will actually save the state millions of dollars. These savings result from the outsourcing contract for IT infrastructure services that is administered by the Georgia Technology Authority. The net effect of the Enterprise Server Consolidation Project will be reduced risks, reduced costs and financial transparency.

## **Governance**

The state is making significant progress in the governance of its technology enterprise.

In the past, a large percentage of technology projects failed to deliver their promised benefits, exceeded their budgets or were completed well past their original implementation date. Several strategies have been adopted in recent years to assure greater success for technology projects. We are seeing positive results from those efforts, which include greater oversight by state leaders of high-dollar initiatives.

There is still progress to be made; however, in how the state makes decisions about technology investments. Many times decisions are reached without adequate information to understand the potential costs, risks and impacts of new technology solutions. We have worked to ensure that investments are implemented efficiently, but we now need to focus on whether those investments deliver the services and benefits needed by the state.

The Georgia Technology Authority is working with business and technology leaders in state agencies to improve their collaboration. Our goal is to make sure these leaders are at the table together when making decisions about strategic directions for service delivery and new investments. We are eliminating barriers to their collaboration. As part of this, we are shifting the thinking and focus from "how to keep the lights on" to enabling business services with technology. One recent example is where individual agencies invested in time-tracking software. After seeing the pattern emerge, GTA was able to find a collaborative, enterprise approach that will save all agencies dollars in future support costs, while providing an easier and less-costly path for other agencies that want to take advantage of the enterprise solution.

Going forward, the state needs to improve its management of the business applications supporting critical agency services. Agencies invest more on the development and support of their business applications than any other category of technology expenditures. However, the evidence points to a lack of adequate lifecycle management. We need to do a better job of planning upfront for new systems, upgrades to existing business applications and even their eventual retirement or replacement.

A strong governance program for the state's IT enterprise will ensure the best decisions possible are being made about investments in both technology infrastructure and services in support of the business and Georgia's citizens.

### Assurance

### Collaboration

### Application Portfolio Management

## **Assurance**

In government, **four out of five technology initiatives will fail or not fully deliver on their initial promise**. In the last five years, the state has invested over \$450 million in large technology projects which, based on industry trends, had a risk of costing the state \$212 million more than planned and delivering only 79 percent of what was requested, with 29 percent of these projects cancelled outright.

The state of Georgia has significantly improved on the success rate of technology project delivery through training, education and consultative support. These efforts have included industry based, standardized approaches to project

management, and better tools, communication and oversight of the largest, most complex and critical projects in state government. One of the most important tools that have been used to improve project delivery effectiveness and success rates is project assurance.

### **Higher Return on Investment for Projects**

**Project assurance** is a structured review of technology projects to evaluate and determine how they can be successful. Project assurance looks at project organization, sponsorship, plans, risks, issues, change, dependencies, resources and processes to determine how well they are being executed in context of the specific project, and then makes recommendations to mitigate risks. It does not conduct quality assurance of project deliverables but is concerned with the way projects are being managed. It provides line management with an independent view of the project status and makes recommendations as needed.

### **Independent Verification & Validation (IV&V)**

Some projects that are large and complex represent a critical risk to the business of the state and require extra care in their project assurance. In these cases we use Independent Verification and Validation (IV&V). The key difference with IV&V is the emphasis on 'Independent'. GTA procures **independent, third party assurance services** to perform project assurance for the largest and most critical technology projects. Each of these vendors has been vetted for a high-level expertise in project management practices and industry expertise.

This approach to project assurance ensures that industry best practices will be incorporated into the project effort that project issues and risks will be identified and addressed early, and that project decisions will be based on verifiable data. Using independent vendors to deliver confirmed facts and data to key decision-makers improves the State's effective return on IT investments by reducing project failures, by increasing the percentage of projects that are delivered within budget and schedule, and by more closely aligning projects to business priorities and strategy.

An assessment of the IV&V practice in 2008 estimated a savings of **\$29.6 million** on a cost of IV&V services of approximately \$2.1 million.

#### Critical Project Review Panel

#### Enterprise Performance Life Cycle

#### Independent Verification & Validation

## **Critical Project Review Panel**

Failed or challenged technology projects affect core state services and waste critical resources. However, industry research has shown that executive involvement is a significant contributor to technology project success. Executive reviews of projects focus on issues earlier, which leads to greater success.

The **Critical Project Review Panel** provides the oversight to ensure these technology initiatives deliver on their objectives within the budgets and schedules defined.

The panel, which has been operating for over six years, has demonstrated a consistent improvement in project success and outcomes. Over the last three years, the panel reviews coupled with project assurance have **saved taxpayers over \$80 million** that would have been lost to failed or challenged technology projects.

The Critical Project Review Panel works to understand and respond to the business implications and issues associated with critical technology projects. Technology issues are not addressed in the panel review, only business issues. These can involve agency priorities, vendor relations, inter-agency dependencies, and budget and schedule challenges. The panel provides a forum for agency heads to ensure they have the commitments and resources needed to deliver on their initiative successfully. GTA facilitates this forum and discussion.

A critical technology project is a key initiative that transforms through automation the business of state government. A critical project must meet one of the following criteria:

- Technology product and/or services that significantly impact the State of Georgia;
- Project budget is greater than \$5 million;
- Critical to meeting agency business objectives; or
- Duration is one year or more.

Every month, GTA conducts a preliminary review of all critical projects and highlights issues or concerns for the panel to consider. These are presented to the panel monthly in a summary report with key project measures, issues and risks identified, and any recommendations. If follow-up is needed, the panel interviews, the project team on the relevant business issues, and recommend actions or decisions on behalf of the agency.

The Critical Project Review Panel provides a business context for large, critical technology investments. It also evaluates and addresses risks before they become issues, creates fact-based decisions rather than speculation, creates escalation to appropriate points in the state business, leverages enterprise influence to support agency outcomes, and allows learning across agency domains on best practices

## Enterprise Performance Life Cycle

Enterprise Performance Life Cycle (EPLC) provides a guide to agencies in Georgia state government to manage their technology investments in order to achieve consistently successful outcomes that maximize alignment with enterprise-wide and agency specific goals and objectives.

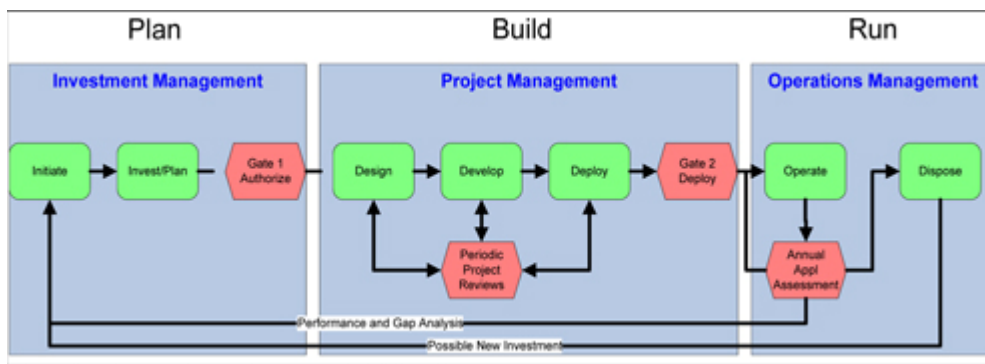
Successful IT investments need reasonable baselines established, sound management practices engaged, stakeholders involved and outcomes evaluated, measured and controlled.

GTA approaches the management of IT initiatives with an enterprise perspective. By managing and governing its investments from an enterprise perspective, Georgia will be in a better position to take advantage of economies of scale, common needs, data sharing and alignment to overall business strategies. State agencies manage and govern their IT investments using common practices and methods which support integration, accountability and transparency. The enterprise perspective also improves compliance with legislative and regulatory requirements.

EPLC is focused on the life cycle of IT investments. The state of Georgia uses IT investments to support multiple policies and programs across agencies. The EPLC framework applies to all state agency technology investments and initiatives, including but not limited to new projects, major enhancements to existing applications, steady state systems, new Commercial Off-the-Shelf (COTS) product acquisitions, 'Hosted' or Software-as-a-Service (SaaS) solutions and infrastructure projects. IT investments include desktop and laptop computers, application software and computer systems interconnected through statewide networks.

EPLC includes three processes and seven stages with associated responsibilities, exit criteria, deliverables and reviews for each process and stage. The EPLC framework supports the GTA standards, Performance Lifecycle Framework, SM-10-006 and Performance Lifecycle Management, SM-10-007.

With so many systems spread across the state enterprise, the state needs a comprehensive way to view these investments and to ensure they are being planned, built and run in a manner that best utilizes the scarce resources of the state on behalf of Georgia's citizens.



In order to provide guidance for enterprise wide investments in technology, it is necessary to organize the investments at the key points of decision making. We start by segmenting investments into three key processes in their life cycle:

- **Plan - Are we investing in the right things?**  
In this process, we organize to determine whether to make the investment. The outcome of this phase is a determination of whether this initiative has the pre-requisites and the potential to make the investment of time, resources and funds worth the benefits that will be realized once it is complete.
- **Build - Are we doing them the right way and doing them well?**  
In this process, we organize to determine whether the investment is adequately tracking to a successful deployment and



whether it will generate the benefits defined in the Plan Process. The outcome of this process is a determination on whether this initiative has the pre-requisites and the ability to run and operate based on the services defined.

- **Run - Are we getting the benefits expected?**

In this process, we organize to determine whether the benefits are worth the on-going investment or cost in the time, resources and funds. The outcome of this process is a determination on whether this on-going investment has a justifiable benefit for the costs of operation.

## **Independent Verification & Validation**

The primary objective of Independent Verification and Validation (IV&V) is to provide an objective assessment of products and processes throughout the lifecycle of a technology project. IV&V is used on only the most critical and complex initiatives to ensure the business receive the benefits of the investment.

IV&V facilitates early detection and correction of problems, enhance management insight into risks and ensure compliance with project's objectives, especially in terms of performance, schedule, and budget.

An IV&V engagement is accomplished in two major ways; first, by educating the project management team on industry best practices for specific undertakings, and secondly, by providing an escalation path for issues and inhibitors of project success. While most of the focus and attention occurs with the first item (issues), the underlying value occurs by reducing the second item (inhibitors or risks).

Industry practice dictates that IV&V services be provided, by organizations that are technically, managerially and financially independent of the development project.

### **GTA is a 'value-add' service provider**

A key difference in how GTA performs the IV&V service is in its ability to qualify and procure outside vendor services for the performance of IV&V. GTA also establishes a process to ensure that there is recognized value in the detailed, structured reports or findings. Periodic reviews of the IV&V service provider monitor results from the vendor to the state agencies for their technology projects. Where there are highly mature project practices, the IV&V vendor services can be cut back or eliminated.

**Associated Document(s): See attachments located end of report  
GTA EPMO IV&V White Paper – Final 10.27.2009 (Attachment C)**

## **Collaboration**

The private sector continues to offer an increasing number of innovative, online services to its customers. These services benefit customers by providing greater convenience and speed of service delivery, and it's less expensive for businesses when customers take advantage of these self-service options.

That citizens increasingly expect this same level of customer service from state government is no surprise. Meanwhile, the historic pressures on agency budgets are leading to greater pressures on technology to support more cost-effective ways of doing business.

Unfortunately, barriers in the state's IT enterprise must be overcome before these expectations can be met.

One of the first barriers – an out-of-date, insecure and unreliable IT infrastructure – is being addressed by the Georgia Enterprise Technology Services (GETS) Program. GETS is transforming state government's IT infrastructure through a partnership with IBM and AT&T, two of the world's leading providers of technology services.

Redundant IT systems are being consolidated and upgraded with new, more reliable equipment. For example, separate e-mail systems in 12 participating agencies are being combined into a single system that's more reliable and cost-effective to operate. Recent upgrades to the state's data network have resulted in a 100 percent increase in capacity; agencies that previously could not watch webcasts of legislative sessions are now able to do so from their desktop computers, increasing employee productivity.



Consolidation is leading to "IT as a utility" in state government. Freeing agency IT staffs from "keeping the lights on" will enable them to focus on greater integration and data sharing among state agencies – a second barrier to innovative service delivery.

Examples already exist, but far more remains to be done. For instance, whenever someone applies for a fishing or hunting license from the Department of Natural Resources, the database at the Office of Child Support is accessed to determine if the applicant pays child support. If the applicant is behind on payments, the hunting or fishing license is denied.

Getting agency heads and agency IT staffs to work together as strategic partners is a third barrier to innovative service delivery.

GTA launched an initiative in 2010 to improve the integration of agency business planning with agency technology planning. Two councils were formed – one for agency chief information officers and another for agency business leaders. GTA worked with the councils to identify gaps in how technology and business work together within their respective agencies. GTA also sponsored an information session that brought the two councils together to learn about private-sector best practices for integrating business and technology planning.

For 2011, business and technology leaders are following a set of activities to improve their collaboration while GTA is monitoring their progress and providing assistance as needed.

Our goal is to make sure business and technology leaders are at the table together when making decisions about strategic directions for service delivery. This level of integration and collaboration will go a long way toward providing Georgians with the fast, reliable and convenient services they expect and deserve while constraining the cost of delivering those services.

## **Application Portfolio Management**

Most agency functions are supported by business applications designed to increase the agency's effectiveness and efficiency in delivering state services. Many of these applications are specialized, meaning they support unique agency requirements and cannot be used by other agencies. Examples of these business applications include:

- Determining eligibility for public assistance
- Maintaining criminal justice records
- Processing tax collections
- Issuing driver's licenses

While these applications are not enterprise applications, many perform critical functions for their agencies. With so many competing interests, these applications need to be managed as a portfolio. **Application portfolio management** allows strategic IT investment decisions to be made on the group of applications as a whole rather than individually. Some of the decision criteria are changing laws and regulations, application reliability and effectiveness, state priorities and changes in internal agency processes.

When an IT investment decision is made to upgrade or replace an existing system, the state's IT standards need to be part of the procurement process. This ensures the new system supports the state's business requirements and the state is able to operate and support the system in an efficient, effective and secure manner.

One important example is that all new systems should operate in the consolidated server environment. This will allow the new system to share in the benefits of this environment and all of the features it provides.

**Associated Document(s): See attachments located at end of report  
Integrated IT Portfolio Management (ITPM) White Paper (Attachment D)**

## **Reducing Risk**

While information technology represents about \$1 billion of the state's \$17 billion budget, these systems often provide vital functions and support critical services within state agencies for our constituents.

At one extreme, when these systems fail, they can cost people their lives, their livelihood or impact their lives in other significant ways. But many small failures can have cumulative effects leading to significant service and performance issues:

- Redundant systems waste precious funds.

- Archaic systems require expensive resources to maintain.
- Viruses disrupt work.
- Lost data can generate onerous fines.
- Non-integrated systems cost people's time.
- Badly managed projects hemorrhage budgets and workloads.
- Improper procurements can leave a legacy of contractual issues for years.

And yet, **these are all risks that we know how to manage and control.**

The state's decision to centrally manage the state's technology infrastructure through a partnership with private-sector service providers is leading to significant risk reduction in our IT enterprise. There have also been parallel efforts to mitigate key risks to the state in four critical areas:

- **Security.** We have created, deployed, educated and trained agency security officers on a framework to secure state data and systems.
- **Business Continuity.** We have conducted business continuity and disaster recovery exercises to test our capabilities and to understand the gaps.
- **Planning.** We have conducted technology strategic planning for all agencies in concert with the Office of Planning and Budget (OPB).
- While there has been progress in assuring basic and essential services to Georgians, we still have significant risks and gaps:
  - Most agencies have not properly identified their critical systems and many have an incomplete list of sites they support.
  - Less than half of the critical systems in the state have security plans, and a little more than half of the business owners have conducted formal risk reviews.
  - Technology procurements still have problems with timeliness and use of consistent processes.
  - Many significant issues surfaced during the last year around licensing agreements and their associated costs.
  - With the increased amounts of federally funded initiatives within agencies, their program management practices are not robust enough to support their newfound responsibilities and accountability.

GTA provides risk management for Georgia's data and information systems to ensure security, privacy, reliability and protection of the state's investments. The gap in agency preparedness is a primary concern. Agency management must put a higher priority on planning, assuring and protecting the systems and data used to provide Georgia's citizens with critically needed services. GTA continues to assess, measure and report on state agencies' performance in providing programs to effectively reduce information technology risk.

#### Business Continuity

#### Strategic Planning

#### Information Security

## **Business Continuity**

Services provided to Georgia citizens are growing more dependent on technology. As they grow more dependent on technology they become more susceptible to interruptions of support utilities such as electricity, water or network access. It is likely that the lives of Georgia citizens will be impacted by a failure of some key state service, but with the cooperation from all state agencies, GTA can help minimize the threat of disasters.

Organizations both public and private use business continuity planning to identify which functions are essential, and how soon each essential function must be available to avoid unacceptable loss due to a service interruption. Once business continuity planning is complete, planning for reestablishing infrastructure as outlined in disaster recovery planning may proceed. GTA is charged with providing guidance for Business Continuity Planning (BCP) for the state. Today, Georgia agencies are active in business continuity planning, but many have not identified and prioritized recovery of their key functions. Moving forward additional emphasis will be directed towards ensuring readiness of critical state business in preparation of prolonged service interruptions.

BCP activities within agencies need to increase. These activities will ensure each agency in Georgia can survive and continue to conduct business through service interruptions. Minimizing the interruptions and data loss will save the state money and minimize the impact on Georgia citizens and businesses.

GTA continues to assist agencies in their planning and coordination efforts in building solid and viable Business Continuity plans. By providing a single resource SME to assist agencies through the entire BC planning process, the state has been

successful in developing a Business Continuity management framework that all enterprise agencies can easily follow. GTA has and will:

- Continue to fund a standard set of hosted BCP tools that are available for use and free of charge to all enterprise agencies 24/7/365
- Assisted eight agencies with the creation of their crisis communication plans
- Led, guided and directed a successful test of eight agency crisis communication plans using the Emergency Notification System tool
- Provided and conducted BCP software tool training free of charge to 26 agencies
- Partnered with FEMA to conduct a Pandemic Determined Accord tabletop exercise
- Provided free Business Continuity and Disaster Recovery Awareness training for 18 agencies held and sponsored by the Georgia World Congress Center
- Hosts a monthly Business Continuity and Disaster Recovery workgroup meeting made up of State of Georgia Business Continuity Planners / Coordinators
- Provides a subject matter expert to speak at Industry Conferences and User Groups
- Hosts the annual FEMA Continuity of Operations Conference at the Georgia World Congress Center March 15 - 17

Without proper preparation, agencies will not be able to ensure continuity of business to support Georgia citizens in the event of an emergency. Georgia needs to devote more attention to assuring that key services can be sustained if a prolonged outage or service interruption occurs. GTA will continue to promote business continuity planning processes, frameworks and methodologies that help ensure the continuity of business operations within the state.

## **Strategic Planning**

The goal of IT strategic planning in Georgia is to identify opportunities and needs, and to provide a path for change in the way agencies provide services to citizens. The state does this by facilitating a better understanding of the role of IT in supporting change, and assuring that decision makers at all levels have the information necessary to make strategic decisions.

Knowledge of agency business is critical to understanding how IT investments link to business results, such as productivity gains, reduced costs, job performance and citizen services. IT strategic planning is essential for Georgia to become the best managed state, and it is even more important to sustain gains realized with previous investments.

### **Challenges within the State today**

In 2010, GTA continued to assess the state's ability to enable business through the effective use of technology. One challenge states face is the ability to plan across the enterprise. Even at the agency level it is difficult to clearly describe and communicate technology alignment with business. Today's environment is even more complex, with shifts in policies, mandates, revenues and costs. It requires us to anticipate impacts on resources and budgets.

Strategic planning is not an optional activity; it is essential to maximize investments and lower expenses. Enterprise strategic planning for IT is necessary to achieve the most effective use of IT across the various agencies. GTA will continue to promote planning processes, frameworks and methodologies that help ensure that every dollar spent on IT will deliver the business value intended.

### **Helping to solve some of the challenges**

GTA is addressing the planning challenges that exist within the enterprise, and placed additional focus and attention on them in fiscal year 2010. GTA is also working with agencies to understand their business needs as a partner in the OPB strategic planning process.

Currently, there is not a clear line of sight between IT investments in applications and systems, agency business processes and benefits to the citizen. We will develop that alignment through the IT strategic planning process, which focuses on three main steps:

1. Understanding the agency business need
2. Understanding IT capability and direction
3. Joining the business need with IT capability

During FY 2010, GTA held a conference to discuss Georgia's approach to strategic planning for IT. The half-day session focused on the importance of CIOs and CEOs working together to develop quality strategic plans. GTA also met with IT representatives from each of the GETS agencies to share its results from the FY 2010 strategic planning process.

### **Strategic Planning Results for FY 2010**

At the end of the FY 2010 planning cycle (planning for FY11-13), GTA reviewed 50 agency strategic plans and identified 172 IT-dependent projects. It mapped agency goals to Georgia imperatives (Healthy, Safe, Growing, Educated, Best Managed). Most agency objectives supported by IT were mapped by agencies to making Georgia the Best Managed state. While it is clear that agencies use IT to achieve their core missions, often this is not clearly mapped in their strategic plans.

Agency breakdown of strategic IT-dependent projects from the FY2010 strategic plan received from OPB:

### **Next Steps 2011 and Beyond**

Over the next three years, GTA will continue to work toward improved strategic planning by working closely with agency planners and OPB. We will use the Business and CIO councils to reinforce the need for better communication both at the agency and enterprise levels. The results of these focused efforts will be:

- Agency decision makers have a clearer understanding of how IT supports their business plans.
- The Governor's office, legislature and other statewide leaders have a clearer understanding of the need for investments in technology to drive business results.
- Redundant systems and services across the state are being eliminated wherever possible.
- The enterprise is using economies of scale to reduce spending on systems and services that span agencies.

## **Information Security**

Doing business with the state over the Internet can save citizens time and money, but security becomes an important part of the process. According to Javelin Strategy and Research, identity fraud caused \$54 billion worth of damage nationwide during 2009. While it's rarely possible to track identity fraud back to a particular security incident, the state needs to upgrade its overall information security program to ensure Georgians that reasonable steps are being taken to protect them from being the victim of identity fraud.

Georgia's information security won't improve by accident or through neglect. It requires planning, and more importantly, it requires action. To start the required planning, in 2007 Georgia adopted the information security framework created by the Federal Information Security Management Act (FISMA) of 2002. Many state agencies already follow this framework, which is required under federal law for all systems using federally regulated information.

FISMA calls for each system's owner to plan for its security before it is put into operations, and to adjust the plan over time based on new threats, vulnerabilities and risk aversion. Unfortunately, this is not happening. Fully two-thirds (60) of the state's 90 high impact systems (meaning a security incident could lead to loss of life or catastrophic financial damage) do not yet have an information security plan. Of the 245 moderate impact systems, 161 lack plans.

### **Good Information Security is Never Easy to Achieve**

Security plans are just the foundational steps towards securing the state's systems. The plans need to be implemented and assessed for effectiveness. The financial industry uses independent audit companies to assess their security implementations, and this is a state requirement for high-impact systems. **Only 56 of the state's 415 systems have independent information security assessments**, including only 13 of the 90 high impact systems.

There are many challenges to information security, but the major challenge is developing the proper mindset. Agencies must build appropriate security considerations into their daily practices. This means understanding that security involves everyone, from the agency head to the front line staff. Good security is not just an IT function. It requires support from the entire staff.

*Not all information has the same security requirements. Some information must remain confidential while some is posted for public use. Therefore, not all systems require the same security measures. It is up to the owner of the system to follow the FISMA framework to determine the appropriate security measures, and to insure they are properly deployed and monitored.*

*Before the selection of the FISMA framework, Georgia's agencies selected different information security models. Many also had to follow federal rules. By adopting the federal model, it was hoped that state agencies would be able to focus their scarce resources on actual protections rather than reinventing security and reporting on multiple requirements. This has not occurred.*

### **Citizens' Trust Is Earned**

*Government must adapt over time to new technology and its use*

- *58% of Americans including 75% of Generation Y prefer online or mobile banking to branch banking.*
- *The Ponemon Institute reports that just 38% of Americans are confident in the government's protection of their privacy data, down from 50% last year.*

*Citizen-centric design is one that meets the expectations of the citizen. Citizens rightfully expect that their government will make services available to them in a convenient manner, while properly handling the issues of security. Yet, study after study shows that the public lacks confidence in government's ability to do the job. Each agency must take the necessary steps to gain citizens' trust while performing its role in state government.*

## **E-Government**

*Although most citizens visit government websites to get information, more and more are expecting to perform transactions with government online. Online applications save citizens time, since access is available 24x7. And moving services online saves government money; in fact, some states estimate that online transactions save 90% of the cost of an in-person transaction.*

*Agencies are slowly moving toward a more robust online presence; however, having a website with online functionality is simply not enough anymore. The mobile web is booming, and agencies must design their sites to make them readable on mobile phones. Most successful companies now have mobile versions of their applications, but government has not followed suit yet. The state is just beginning to look at this capability - developing apps for citizens to download so they can access services anywhere as well as any time.*

### **Social Media**

*The emergence of social media sites such as Facebook and Twitter gives the state an enormous opportunity to inform and interact with its citizens. Many state agencies have already implemented Twitter and Facebook pages, but most consist only as another way to push information to people, such as a news release.*

*However, these social networks can potentially give citizens a new way to talk with government. The state must work toward a social media policy that encourages two-way communication and allow more citizens the opportunity to ask questions and provide input to their government.*

*Attachments A-D*



# Attachment A

## Tracking IT Agency Reporting

*These agencies are required to report by law*

	AGENCY_NAME	REPORTED2009	REPORTED2010
1	Cancer Advisory Committee/Cancer Coalition	X	X
2	Criminal Justice Coordinating Council	X	X
3	Department of Administrative Services	X	X
4	Department of Banking and Finance	X	X
5	Department of Community Affairs	X	X
6	Department of Community Health	X	X
7	Department of Corrections	X	X
8	Department of Defense	X	X
9	Department of Driver Services	X	X
10	Department of Early Care and Learning	X	X
11	Department of Economic Development	X	X
12	Department of Human Services	X	X
13	Department of Juvenile Justice	X	X
14	Department of Natural Resources	X	X
15	Department of Public Safety	X	X
16	Department of Revenue	X	X
17	Department of Transportation	X	X
18	Employees' Retirement System	X	X
19	Georgia Building Authority	X	X
20	Georgia Bureau of Investigation	X	X
21	Georgia Emergency Management Agency	X	X
22	Georgia Firefighter Standards and Training Council	X	X
23	Georgia Military College	X	X
24	Georgia Ports Authority	X	X
25	Georgia Public Safety Training Center	X	X
26	Georgia Regional Transportation Authority	X	X
27	Georgia Student Finance Commission	X	X
28	Georgia Technology Authority	X	X
29	Georgia World Congress Center Authority	X	X
30	Governor's Office of Consumer Affairs	X	X
31	Governor's Office of Highway Safety	X	X
32	Herty Advanced Materials Development Center	X	X

33	Lake Lanier Islands Development Authority	X	X
34	Office of Planning and Budget	X	X
35	Office of State Administrative Hearings	X	X
36	State Accounting Office	X	X
37	State Board of Pardons and Paroles	X	X
38	State Board of Workers' Compensation	X	X
39	State Personnel Administration	X	X
40	State Road and Tollway Authority	X	X
41	State Soil and Water Conservation Commission	X	X
42	Subsequent Injury Trust Fund	X	X
43	Teachers' Retirement System	X	X
44	Technical College System of Georgia	X	X
45	Department of Behavioral Health and Developmental Disabilities	(New in 2010)	X
46	Commission on Equal Opportunity	X	
47	Department of Veterans Services	X	
48	Georgia Development Authority	X	
49	Georgia Environmental Facilities Authority	X	
50	Georgia Forestry Commission	X	
51	Georgia Police Officer Standards and Training Council	X	
52	Georgia Public Telecommunications Commission	X	
53	Georgia Sports Hall of Fame Authority	X	
54	Jekyll Island State Park Authority	X	
55	Stone Mountain Memorial Association	X	
56	Georgia Aviation Authority	(New in 2010)	
57	Georgia Firefighters Pension Fund	(New in 2010)	
58	Civil War Commission		
59	Council on American Indian Concerns		
60	Division of Public Health		
61	Georgia Agricultural Exposition Authority		
62	Georgia Agrirama Development Authority		
63	Georgia Environmental Training and Education Authority		
64	Georgia Golf Hall of Fame Authority		
65	Georgia Lottery Corporation		
66	Georgia Medical Center Authority		
67	Georgia Professional Standards Commission		
68	Georgia Public Defender Standards Council		
69	Georgia Rail Passenger Authority		

70 Georgia Real Estate Commission & Appraisers Board

71 Georgia State Games Commission

72 Health Planning Review Board

73 Military Affairs Coordinating Committee

74 State Ethics Commission

These agencies are not required to report but may have voluntarily reported.

	AGENCY_NAME	REPORTED2009	REPORTED2010
1	Department of Law	X	X
2	Department of Labor	X	X
3	Department of Insurance	X	X
4	Department of Education	X	X
5	Administrative Office of Georgia Courts	X	X
6	Secretary of State	X	
7	Prosecuting Attorneys' Council	X	
8	Department of Audits and Accounts	X	
9	Department of Agriculture	X	
10	Court of Appeals	X	
11	Council of Juvenile Court Judges	X	
12	Superior Court		
13	Public Service Commission		
14	Legislative Branch		
15	Board of Regents of the University System of Georgia		

These agencies received IT services from another agency.

	AGENCY_NAME
1	Aviation Hall of Fame Authority
2	Brain & Spinal Injury Trust Fund Authority
3	Composite State Board of Medical Examiners
4	Georgia Board for Physician Workforce
5	Georgia Commission on the Holocaust
6	Georgia Council for the Arts
7	Georgia Drugs and Narcotics Agency
8	Georgia Fire Academy
9	Georgia Housing and Finance Authority

<b>10</b>	<b>Georgia Music Hall of Fame Authority</b>
<b>11</b>	<b>Georgia Office of Homeland Security</b>
<b>12</b>	<b>Georgia Police Academy</b>
<b>13</b>	<b>Georgia Seed Development Commission</b>
<b>14</b>	<b>Georgia State Financing and Investment Commission</b>
<b>15</b>	<b>Governor's Development Disabilities Council</b>
<b>16</b>	<b>Governor's Office for Children and Families</b>
<b>17</b>	<b>Governor's Office of Student Achievement</b>
<b>18</b>	<b>Nonpublic Postsecondary Education Commission</b>
<b>19</b>	<b>North Georgia Mountains Authority</b>
<b>20</b>	<b>Oconee River Greenway Authority</b>
<b>21</b>	<b>Office of Inspector General</b>
<b>22</b>	<b>Office of the Child Advocate</b>
<b>23</b>	<b>Office of the Governor</b>
<b>24</b>	<b>Office of Treasury and Fiscal Services</b>
<b>25</b>	<b>OneGeorgia Authority</b>
<b>26</b>	<b>Southwest Georgia Railroad Excursion Authority</b>
<b>27</b>	<b>State Housing Trust Fund for the Homeless Commission</b>
<b>28</b>	<b>State Medical Education Board</b>
<b>29</b>	<b>State Properties Commission</b>
<b>30</b>	<b>Supreme Court</b>

# ***Attachment B***

## **Technology Authority**

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# Consolidated Enterprise IT Fiscal Oversight *Assessment*

*April 7, 2010*

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Table 1. Contents

1.	<i>Executive Summary</i> .....	27
1.1.	<i>Practical Capabilities and Leadership-Enabled Capabilities</i> .....	28
1.2.	<i>Limiting Assumptions</i> .....	29
1.3.	<i>Leadership Action</i> .....	30
2.	<i>Course of Action</i> .....	32
2.1.	<i>Phased Action Plan</i> .....	32
2.2.	<i>Desired State</i> .....	32
2.3.	<i>Practical Capabilities</i> .....	33
2.4.	<i>Practical in the Near-Term (by December 31, 2010)</i> .....	33
2.5.	<i>Practical in the Mid-Term (by December 31, 2011)</i> .....	34
2.6.	<i>Practical in the Long-Term (by December 31, 2013 or later)</i> .....	35
2.7.	<i>Leadership-Enabled Capabilities</i> .....	35
2.8.	<i>Leadership Actions Needed</i> .....	36
3.	<i>Team Methodology and Findings</i> .....	38
3.3.	<i>Current State</i> .....	39
4.	<i>Measuring Results</i> .....	42
5.	<i>Appendix – Project Tracking</i> .....	43
6.	<i>Appendix – Budget Activities Timeline and Action</i> .....	44
7.	<i>References</i> .....	47



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## 1. Executive Summary

GTA has embarked on a long-term transformation that will align Georgia's information technology (IT) with the Governor's vision and the needs of Georgia agencies and other government entities. The transition began with infrastructure and managed network services – the areas that presented the greatest risk to Georgia and its citizenry. This phase of the transformation is underway and is known as Georgia Enterprise Technology Services (GETS).

This paper assesses the fiscal oversight needed for future transformation phases that will focus on governing (not managing) agency-owned IT applications, and later on identifying and enabling statewide business processes. GTA will need better access to agency IT financial information to better understand how resources are used and to provide recommendations for IT investments to Georgia leadership. One immediate use of statewide IT fiscal information is supporting an Application Portfolio Management capability that is under development. This paper describes current access to agency IT fiscal information and outlines a desired state that will allow better decision making with a consolidated enterprise view of IT finances.

Realizing enterprise IT fiscal oversight will not be easy. New governance processes will be needed from Georgia's Office of Planning and Budget (OPB) and the State Accounting Office (SAO); agencies will need to modify the way they report budget and spending information; and there are significant cultural barriers to full information sharing from agencies. There are issues with tracking spending today. According to the State Auditor in the Budgetary Compliance Report for 2009, "Based on our testing it does not appear that all budget units completely and accurately maintained their accounting records at the legal level of budgetary control. As a result, reliance upon the 'actual' and 'variance' amounts in the budgetary comparison schedules for decision making purposes is not advised."<sup>1</sup> There are also issues with program budgeting in Georgia as described by Georgia Senate Budget and Evaluation Office Director Carolyn Bourdeaux in her 2007 report on Program Budgeting in Georgia.<sup>2</sup>

There is value in understanding the cost of implementing and using IT at agencies. According to the Pew Center for the States, better means of evaluating performance, including better spending information, is crucial in

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<sup>1</sup>: Independent Accountant's Report on Applying Agreed-Upon Procedures, Russell W. Hinton, State Auditor. (Contained in: State of Georgia Budgetary Compliance Report for the Fiscal Year Ended June 30, 2009, Prepared by the State Accounting Office.)

<sup>2</sup> *An Analysis of the Implementation of Program Budgeting in Georgia*, Carolyn Bourdeaux. This report discusses the challenges faced by the State of Georgia in the transition to program budgeting. FRC 147 (March 2007), <http://aysps.gsu.edu/frc/files/report147.pdf>.

evaluating the effectiveness of government spending.<sup>3</sup> ·<sup>4</sup> Also, consolidating fiscal oversight for IT lessens redundant spending across agencies. According to a Computerworld Honors Case Study in 2009:

“When each agency supported all of their own IT efforts, IT expenditures and contracts were widely distributed. Thus, most expenditures were relatively invisible. By way of example, imagine that 20 agencies each paid \$25,000 for a specific IT service or component. Even though the total is \$5 million, chances are that a series of \$25,000 expenditures across different agencies, probably at different times, might well be viewed as routine in the day-to-day purchasing volume of state government. And, frankly, prior to the ERP system, there were myriad ways such purchases could be appropriately coded.

“In a shared services environment, OA/OIT might be able to procure the same services for \$4 million. The paradox is that funding silos appear cheaper because it is nearly impossible to forensically trace back similar expenditures to show the \$1 million savings. Thus it is easy to perceive that IT expenses actually grew by an eye-popping \$4 million.”<sup>5</sup>

Georgia has the ERP systems to track spending, but will require better IT fiscal governance to realize their full advantage.

## 1.1. Practical Capabilities and Leadership-Enabled Capabilities

To establish an Enterprise IT Budget Framework, we will need new capabilities. We’ve identified two classes of capabilities. “Practical Capabilities” encompass what we can do under current constraints. We believe we can provide Practical Capabilities with limited function using currently available data.<sup>6</sup> The second class, “Leadership-Enabled Capabilities,” require significant leadership action outside of GTA. In the “Recommended Actions” section of this paper, we present a three-phased action plan that covers both Practical and Leadership-Enabled capabilities.

Practical Capabilities are listed below. A description of how they will be provided is given later in this paper. While possible under current constraints, even Practical Capabilities will require additional resources and time to achieve.

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<sup>3</sup> The Pew Center on the States, “Trade-off Time: How Four States Continue to Deliver,” February, 2009, p. 28.

<sup>4</sup> The Pew Charitable Trusts, “Policy Framework to Strengthen State Government Planning, Budgeting and Accountability,” March 2010, p. 4

<sup>5</sup> *The Computerworld Honors Program: Honoring those who use Information Technology to benefit society, Commonwealth of Pennsylvania - Office of Administration, Office for Information Technology, 2009.*  
(<http://www.cwhonors.org/CaseStudy/viewCaseStudy2009.asp?NominationID=124&Username=PeNNC>)

<sup>6</sup> Currently available data is mainly self-reported by agencies with little or no governance over how it is reported.

Practical Capability <sup>7</sup>	Delivery Timeframe
<ul style="list-style-type: none"> <li>Track and Report GETS Agency IT Spending Across Fiscal Years, for Enterprise IT Contracts and for IT Personnel Services</li> </ul>	Near-Term
<ul style="list-style-type: none"> <li>Understand and Report IT Project Spend by Project</li> </ul>	Near-Term
<ul style="list-style-type: none"> <li>Identify and Report IT Personnel Services<sup>8</sup></li> </ul>	Mid-Term
<ul style="list-style-type: none"> <li>Perform Analytics on Spending Data</li> </ul>	Mid-Term
<ul style="list-style-type: none"> <li>Do what-if modeling for project financials/impact of decisions</li> </ul>	Long-Term

Table 2. Practical Capabilities

Some capabilities necessary for a robust consolidated view of enterprise IT finances will require significant process and governance change. These Leadership-Enabled capabilities will require change in agencies where GTA has little or no authority. These are listed below and discussed later in this paper.<sup>9</sup>

Leadership-Enabled Capability	Delivery Timeframe
<ul style="list-style-type: none"> <li>Report IT budget and spending by application, infrastructure, and projects with a breakdown of maintenance vs. development.</li> </ul>	Mid-Term
<ul style="list-style-type: none"> <li>Compare actuals to budget by category (account or sub account).</li> </ul>	Long-Term
<ul style="list-style-type: none"> <li>Provide a budget for IT funding sources (federal grants, legislation, etc).</li> </ul>	Long-Term
<ul style="list-style-type: none"> <li>Establish time tracking and report related IT expenses for all executive agencies.</li> </ul>	Long-Term

Table 3. Leadership-Enabled Capabilities

## 1.2. Limiting Assumptions

To differentiate what is possible without significant external effort, we made some key assumptions about what we could not change without reaching outside GTA. Additionally, we have the expertise to provide these capabilities, but we do not have the resources to do so while remaining proficient in providing existing financial services. To overcome our limiting assumptions, we will need to facilitate change and across agencies whose business goals we hope to facilitate through more effective use of technology.

<sup>7</sup> Although we will be able to improve the information GTA provides to Georgia State leadership with the data and processes we have today, our ability to provide this information will be limited by the quality of the data available. Also, even these “Practical Capabilities” will require additional resources.

<sup>8</sup> Spending for “Shadow IT” roles will be difficult to capture under limiting assumptions.

<sup>9</sup> See section 2.7 in this paper for more detail on leadership-enabled capabilities.

High-level state leadership will need to change the way enterprise service agencies track information, fundamentally change the way state employees track their activities, and in some cases change agency culture. Our limiting assumptions are provided below:

1.	We will consider only executive branch agencies that currently use PeopleSoft Financials.
2.	OPB will continue to manage budget at a high level (funds allocated by program according to the current appropriations bill). Although OPB requires more detailed budget information as part of the annual budget submission, they do not verify account level detail. <sup>10</sup>
3.	SAO will continue to track spending on chart of accounts. <sup>11</sup>
4.	Agencies will continue to prefer reporting spending "rolled-up" and will be reluctant to provide detailed budget plans. <sup>12</sup>

Table 4. Limiting Assumptions

### 1.3. Leadership Action

While we can add some significant capabilities under our limiting assumptions, leadership action at the enterprise level will be needed to achieve the full vision of data-driven decision making around enterprise IT spending. The actions we've identified for leadership are listed in the table below and discussed in more detail in the next section.

• Convince state leadership of benefits
• Convince OPB to change budget information collection practices (Hyperion module would help link budget to spending).
• Modify PeopleSoft to capture the necessary data.
• Convince SAO to require more standard IT details in agency spending reports.
• Convince executive agencies to track time spent on IT activities.
• Establish a trust account for IT budget and expenditures that is controlled by

<sup>10</sup> OPB will need to change the way it manages IT budget to get the full functionality we recommend for Enterprise IT Budget and Spending.

<sup>11</sup> SAO will need to assert more control in governing how agencies report IT spending at the object class and account level to get the full functionality we recommend for Enterprise IT Budget and Spending.

<sup>12</sup> Agencies will need to embrace a more open and transparent culture of sharing IT plans and data to get the full functionality we recommend for Enterprise IT Budget and Spending.

Table 5. Leadership Actions Needed<sup>13</sup>

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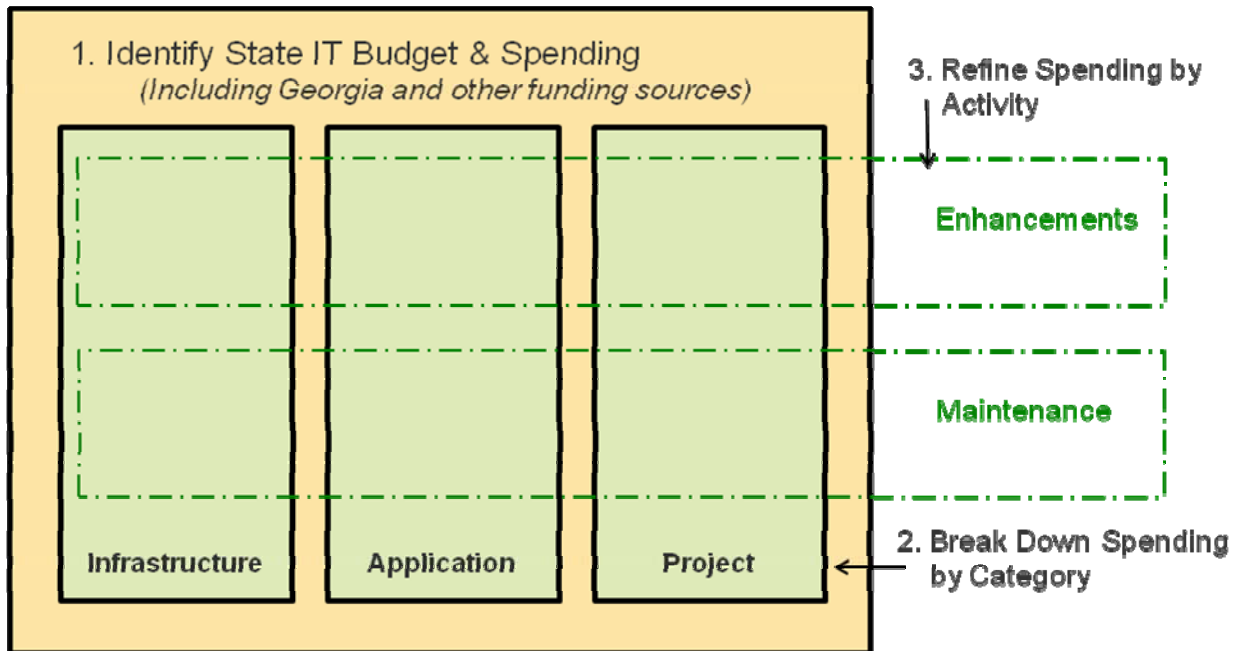
<sup>13</sup> See more detailed actions in section 2.8 - Leadership Actions Needed.

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## 2. Course of Action

### 2.1. Phased Action Plan

We've provided a high-level phased action plan for delivering the Practical and Leadership-Enabled Capabilities identified above. The diagram below depicts the three phases of action for Enterprise IT Budget and Spending. The quality of the results will depend on the degree of enterprise-wide changes in how agencies report budget and spending to OPB and SAO.



### 2.2. Desired State

Ultimately this Enterprise IT Budget exercise supports making Georgia the best managed state. To that end we seek to identify the capabilities needed to provide data to support good management decisions when it comes to IT spending across the State of Georgia. However, given the limiting assumptions above, we recognize the difficulty of meeting some of the vision set forward by our Executive Director. We have analyzed the capabilities we need and put them into two action scenarios for the future of Georgia. Both scenarios have activities that may be accomplished sooner and some that will take longer to accomplish. The difference between the two scenarios is that one is possible without significant changes in the way Georgia handles IT budget information and the other requires leadership intervention.

For both scenarios we have divided capabilities into three categories: gathering data, analyzing data, and presenting intelligence. For capabilities that are possible today, the determining factor for when we will be able to deliver facts to leadership for decision making is access to GTA resources and continued cooperation from OPB



and SAO. Under the Leadership-enabled scenarios, gathering necessary data for good decisions is more of a problem than analyzing the data or presenting the results.

### 2.3. Practical Capabilities

This effort takes an enterprise view of how key agencies in Georgia track IT spending. In doing so we identified a number of capabilities achievable without changing the way agencies report budgets or track spending. Some of what we identify here will require additional resources, new technology or new processes requiring internal GTA change, but none should require intervention in other agencies by leadership outside of GTA.

### 2.4. Practical in the Near-Term (by December 31, 2010)

The following capabilities rely on data we are reliably gathering today and that are easily accessible. The new effort to use this will require additional resources possibly to include additional staff, new software, consultants, or new services.

#### Track and Report GETS Agency IT Spending Across Fiscal Years, for Enterprise IT Contracts and for IT Personnel Services

Tracking IT expenditures on a monthly basis, understanding IT contractor spend, and tracking IT expenditures across years are all near-term goals that can be attained given some limiting factors. The means by which the information is gathered in order to meet each goal is essentially the same. Some limitations to keep in mind are that when gathering the data independently of agencies one is limited to assessing the data from the perspective of the state chart of accounts, within a given agency's program and subprogram structure. Also, if an IT expense takes place outside the proper account it will be difficult, if not impossible, to account for the expense as being IT-related.

Given these limitations, with proper access, GTA could gather the required data through the use of PeopleSoft HCM and Financial queries and reports. The HCM system would be used to assess spend related to Personal Services (see discussion on personnel services in the "Identify and Report IT Personnel Services" section below). Financials would be used to run Budget Comparison Reports and General Ledger Combined Detail Reports, supplemented with budget and accounting queries, which would enable one to see what has been budgeted and expensed by account. In order to gather the IT-related data one would only need to focus on the specific IT accounts within the Computer Charges subclass, the Telecommunications subclass, and the Contractor subclass. This process would enable GTA to assess and track the majority of IT expenditures within the PeopleSoft framework.

## 2.5. Practical in the Mid-Term (by December 31, 2011)

### Understand and Report IT Project Spend (by Project for Tier1 and Tier 2 Projects)

IT Project Spend is captured and used at various points in the life cycle. The first point of capture occurs during the concept or initiation stage in the life cycle when the business is planning for the investment in an IT project. GTA captures this information as part of the Agency Project Request (APR). In order to be funded by the Office of Planning & Budget executive branch agencies whose leadership is not elected require an APR for IT projects estimated to cost \$100,000 or more. IT Project financial information which is captured within the APR is Total Cost of Ownership (TCO) over a five-year period for the project/investment, a more detailed break-down of the costs by account code and by fiscal year for the first and second year of funding, and a break-out of state funding expected verses federal funding verses other fund sources.

Once a project has been approved with funding, it is evaluated based on criticality, complexity and cost to determine its overall level of importance to the enterprise. IT projects which are deemed Tier 1, the highest level, which generally includes projects over \$5 million and/or considered critical to the enterprise, will be monitored and tracked monthly until successfully delivered or cancelled. The monthly tracking of IT project spend is based on the monthly financial spend planned versus the actual spend that has occurred. This information is also used to determine overall earned value, which is a measure of progress and used to determine whether the project is on track to deliver successfully. These monthly reviews occur with a GTA panel and with a Governor's Office panel, to ensure there is appropriate attention and focus for the project to successfully achieve its objectives within the budget and schedule defined.

### Identify and Report IT Personnel Services

When it comes to Personal Services, salaries and benefits for state employees, assessing IT-related expenditures may only be attained by gathering the spend related to positions classified as IT-related. Those doing IT-related work but not in a position classified as IT will not be accounted for independently. The PeopleSoft HCM system would be used to assess spending related to Personal Services.

### Perform Analytics on Spending Data

*We'll need the capability to perform analytics on the data: to be able to run queries to test for relationships among the data, to look for trends, and to do what-if modeling. In order to do that, we'll need a system to act as a data warehouse. This would mean a database system designed specifically to store data, store relationships among data, and keep the data over a long period of time. A data warehouse*

system receives transactional data from many operational databases. The process of extracting data from those operational databases and moving it into a data warehouse is usually called ETL for short:

E – Extract the data from the operational database

T – Transform the data

L – Load the data into the warehouse

ETL is performed on regular basis, perhaps nightly or weekly. In our case, we have general ledger data residing in PeopleSoft Financials, budget data residing in BudgetNet (and PeopleSoft), personnel data residing in PeopleSoft HCM, planning data in HORIZON, and possibly some other systems. Also, these systems are designed to be primarily transactional, so we may be losing some information over time about what was intended as the data gets edited. To analyze what is going on, we'll need to pull all of that data out of those systems (the “extract” phase), relate the data to each other to make it meaningful (the “transform” phase), and load it all in one place in order to analyze.

## 2.6. Practical in the Long-Term (by December 31, 2013 or later)

Ability to do what-if modeling for project financials/impact of decisions

The ability to do what-if modeling requires all of the data manipulation capabilities described above under “Perform Analytics on Spending Data,” and also requires more sophisticated analytical capabilities that will likely take additional time to acquire. What-if modeling allows the analyst to describe a desired outcome and receive a fact-based description of other likely consequences that might be overlooked with a more linear analysis approach. Most likely a specialized financial analytic tool will be needed for what-if modeling.

## 2.7. Leadership-Enabled Capabilities

While we can add some significant capabilities under our limiting assumptions, leadership action at the enterprise level will be needed to achieve the full vision of data-driven decision making around enterprise IT spending. The following capabilities will be possible with the right leadership action. The actions taken will need to change budgeting and spend-tracking processes used by key enterprise service agencies (Primarily OPB and SAO). The cultural changes needed for success may be difficult without top-level leadership resolve. The U.S. Department of Health used the following principles to ensure the cultural and philosophic shift to a new financial system:

- Vesting participants for success
- Employing an inclusive governance model
- Spreading the budget across multiple operating divisions

- Leveraging a schedule-driven approach<sup>14</sup>

The following capabilities, needed to achieve higher levels of fiscal insight across the enterprise, will require significant leadership support:

- Report IT budget and spending by application, infrastructure, and projects with a breakdown of maintenance vs. development.

At the current time, budget and spending for applications is not well reported. While we can instill voluntary agency reporting of this information, for assured insight we will need more reliable information from agencies.

- Compare actuals to budget by category (account or sub account).

Success comparing actuals to budget with the desired detail will require more governance over how agencies report fiscal information, both to OPB and to SAO. This will require a cultural shift similar to the one described by the U.S. Department of Health.<sup>9</sup> Such change will require active support from the highest level in state government.

- Provide a budget for IT funding sources (federal grants, legislation, etc).

Tracking budget for IT funding sources outside the state is difficult to do in advance because often agencies don't know how much federal funding they will receive within the state budget cycle. This is something that will be difficult to overcome regardless of any leadership action.

- Establish time tracking and report related IT expenses for all executive agencies.

Tracking time spent by state employees on work done is outside of current Georgia culture. Significant leadership effort, both at the top levels of Georgia government and within affected agencies will be needed. (Again, we will need actions similar to those described by the U.S. Department of Health.<sup>9</sup>)

Table 6. Leadership-Enabled Capabilities - Detail

## 2.8. Leadership Actions Needed

While we can begin to offer some enterprise IT fiscal oversight functions without significant leadership intervention, to achieve the full vision of the State CIO, we will need actions from the highest levels of Georgia leadership. The following leadership actions will enable the capabilities described in this section of the report.

### 1. Convince state leadership of benefits.

The first action for GTA will be to convince State leadership that a better understanding of consolidated IT fiscal matters will be worth the significant effort needed to make it happen. The effort necessary to get the desired fiscal IT oversight will be great enough that it will make sense to reform all fiscal oversight.

<sup>14</sup> *The Computerworld Honors Program: Honoring those who use Information Technology to benefit society, Dept of Health and Human Services, 2008. (<http://www.cwhonors.org/viewCaseStudy2008.asp?NominationID=700>)*

2. Convince OPB to change budget information collection practices (Hyperion module would help link budget to spending).

Currently OPB uses its own tools to collect budget information and doesn't validate budget information at the same level of detail as SAO tracks spending. OPB may need to consider new, off-the-shelf tools or services that integrate better with Georgia's ERP system (currently PeopleSoft Financials).

3. Modify PeopleSoft to capture the necessary data.

4. Convince SAO to require more standard IT detail in agency spending reports.

SAO currently has the ability to capture the detail needed for fiscal IT oversight, but does not have the rules, standards and guidelines in place to assure that all agencies use the ERP tool capabilities uniformly.

5. Convince executive agencies to track time spent on IT activities.

To understand the true cost associated with IT, agencies will need to track employee time spent developing and using applications to achieve agency results.

6. Establish a trust account for IT budget and expenditures that is controlled by Georgia leadership.

Table 7. Leadership Actions Needed - Detail

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### 3. Team Methodology and Findings

This report focuses on the Enterprise IT Budget Framework and describes what we have today and what we can do in the future without significant State of Georgia leadership, and what we could do with some specific intervention from key Georgia leaders.

The starting point for this activity was to establish a three-year action plan to achieve the following high-level target:

- Identify State IT Budget & Spending (Including Georgia and other funding sources)
- Break Down Spending by Category (infrastructure, applications, projects)
- Refine Spending by Activity (maintenance, enhancements)

Table 8. High-Level Target

GTA's Executive Director established a team with expertise in finance, budget, PeopleSoft, spend tracking, portfolio management, state use of technology, and strategic planning. The team took the following actions over the course of about 10 weeks:

- Identified salient aspects of the current state at a working level.
- Reviewed the desired state as defined through the vision of GTA's Executive Director and State CIO.
- Established the capabilities needed.
- Identified assumptions about the current situation in Georgia that will limit the results of this effort.
- Defined two target end states: A practical solution that can be achieved without significant action on the part of GTA and state leadership, and a leadership-enabled solution that would be more beneficial, but will need significant leadership action to achieve full results.

Table 9. Enterprise IT Fiscal Oversight Team Results

### 3.3. Current State

We began by examining how agencies formulate their budgets for IT activities and how they track spending to budget. In Georgia, executive agencies submit annual budgets to OPB by May 31 each year. To submit their annual budgets to OPB, agencies use a Web-based application called BudgetNet that was designed and implemented by OPB. OPB is responsible for approving the agency budget by June 30. Georgia law requires that agencies only spend money that has been budgeted and approved by OPB.

Georgia law also requires that agencies submit budgets by program, object class and account. Programs are defined by each agency and are fairly high-level. For example, GTA has three programs to describe budget of about \$240M. Agencies may submit budget at a lower “sub-program” level, also defined by individual agencies. Agencies are also required to identify object classes and account codes, well-defined accounting categories. How budgets are broken down into object classes and account codes is not specified by OPB, so it is nearly impossible to understand how agencies anticipate spending funds on IT – understanding the breakdown of IT spending – in advance. For a visual reference, the following shows how agency budgets are submitted to OPB:

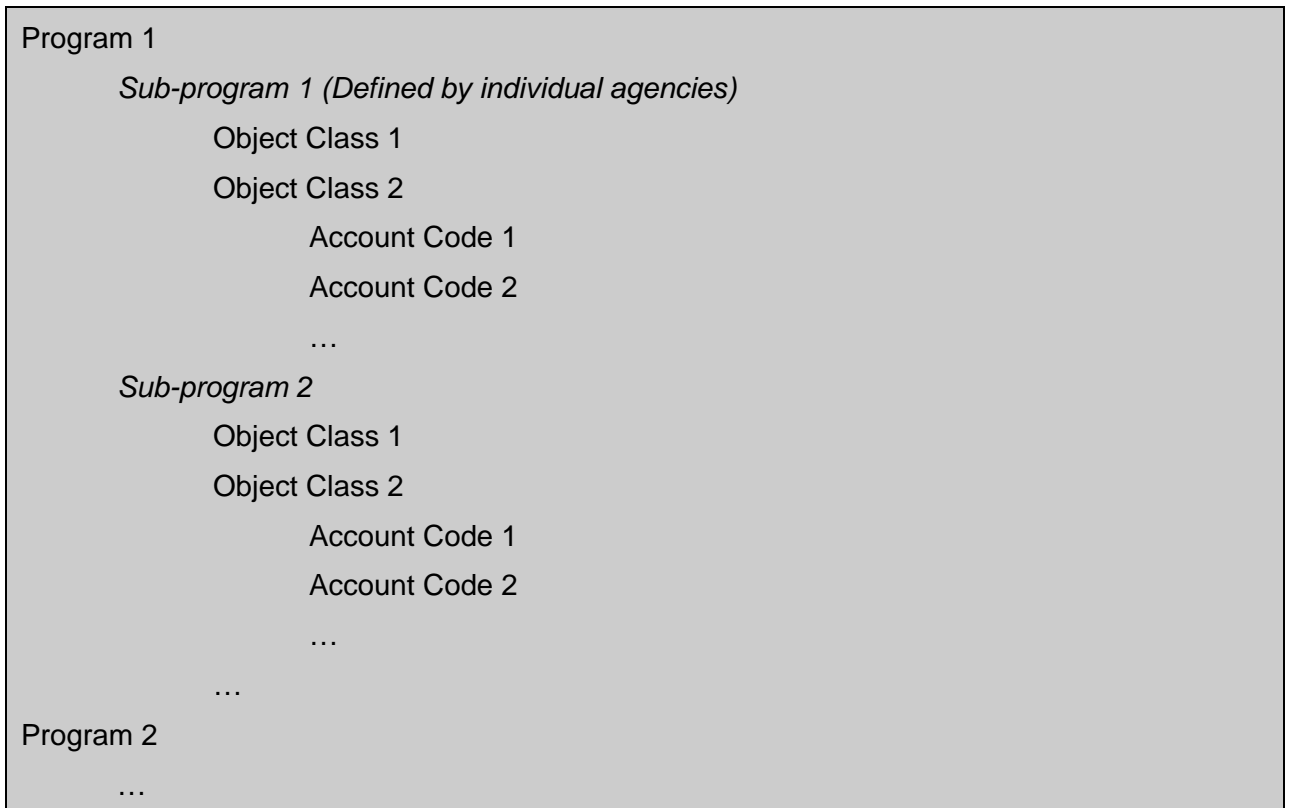


Figure 1. Levels of Budget submitted to OPB (italicized levels are optional)

In order to spend funds most executive agencies must enter their budgets into the PeopleSoft Financials (accounting software). This must be done by the beginning of the state fiscal year (July 1) in order to begin

spending funds. The budget entered into PeopleSoft by July 1 should match the budget submitted to OPB by May 31, but they are entered separately and so are prone to clerical mistakes.

Agency budgets are entered into PeopleSoft using generally accepted accounting principles. For spending, budgets information is not only entered by program as in OPB’s BudgetNet, but also at the “sub-program” level (defined by agencies), the “department” level (defined by agencies), the “object class” level (well-defined accounting categories), and the “account” level (well-defined accounting categories). Although the fine-grained account level spending is based on well-defined accounting categories, there is no governance on how agencies use the categories. The result is that there are significant inconsistencies in the way agencies report spending on IT.

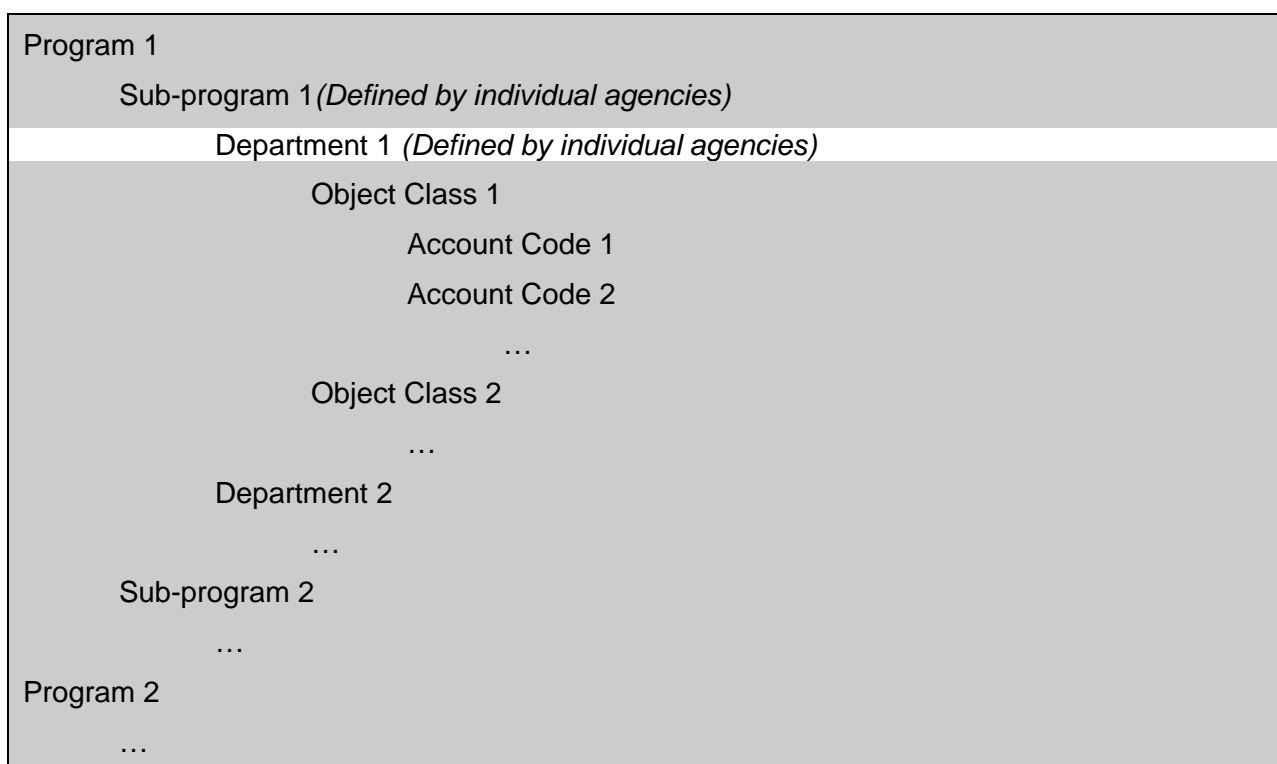


Figure 2. Levels of Budget tracked using PeopleSoft financials

As a concrete example of the type of issue with making decisions using currently available information, according to the Budgetary Compliance Report for 2009, “Based on our testing it does not appear that all budget units completely and accurately maintained their accounting records at the legal level of budgetary control. As a result, reliance upon the ‘actual’ and ‘variance’ amounts in the budgetary comparison schedules for decision making purposes is not advised.”<sup>15</sup>

<sup>15</sup>: Independent Accountant’s Report on Applying Agreed-Upon Procedures, Russell W. Hinton, State Auditor. (Contained in: State of Georgia Budgetary Compliance Report for the Fiscal Year Ended June 30, 2009, Prepared by the State Accounting Office.).



To characterize the current state, we looked at whether aspects of the current state were driven by people, processes or technology. Then we listed the most important aspects based on the desired vision of our Executive Director. The following shows the key elements of the current state.

## People

- Time tracking is not part of state culture

## Processes

- Responsibility for tracking budget and spending are outside of GTA.
- The state does not govern detailed quality of budget/spending tracking.
- Not all non-state (including federal) funds are included in the annual budget.
- State agencies do not track time spent on IT activities.
- OPB and SAO have separate, manually entered versions of budgets.
- Agencies do not identify application spending in annual budgets.
- For GTA-managed services at GETS agencies we have:
  - IT budget requirements for GTA-managed services at agency level and service level (i.e. mainframe, server, and voice) based on consumption and demand.
  - Agency-level IT expenditures detail (service tower level of detail).

## Technology

- PeopleSoft has one uniquely identified account for IT budget of GETS services and 14 accounts for non-GETS IT services.
- PeopleSoft has two accounts for IT expenditure of GETS services (Infrastructure & Managed Network Services) and 78 accounts for non-GETS IT services.
- OPB has its own tool (BudgetNet) for capturing budget that must be synchronized with PeopleSoft in a semi-manual process.
- COTS tools or online services that could enhance PeopleSoft planning functions are now available.

## 4. Measuring Results

As this effort moves forward, the execution team will need to establish clear measures for progress from our current state to our desired state. To allow GTA leadership to compare the results of the execution phases to other similar activities and to report results using a standard approach, the planning team has identified the Hackett IT Taxonomy as a starting point for tracking high-level IT budget and spending.<sup>16</sup>

Each of the columns in the table below identifies a general spending area, with more detailed spending categories under the column. One of the early activities of the delivery team would be to identify which of the Hackett spending categories are pertinent and have associated data that is accessible within the limiting assumptions appropriate for the action.

<i>Technology Infrastructure</i>	<i>Application Management</i>	<i>Planning and Strategy</i> <sup>17</sup>	<i>Management and Administration</i>
<i>Infrastructure Management</i>	<i>Application Maintenance</i>	<i>IT Business Planning</i>	<i>Function Management</i>
<ul style="list-style-type: none"> <li>▪ <i>Operations Management</i></li> <li>▪ <i>Security Management</i></li> <li>▪ <i>Disaster Recovery Planning</i></li> </ul>	<ul style="list-style-type: none"> <li>▪ <i>Application Support</i></li> <li>▪ <i>Enhancement Delivery</i></li> <li>▪ <i>Upgrade Execution</i></li> </ul>	<ul style="list-style-type: none"> <li>▪ <i>Alignment</i></li> <li>▪ <i>Project Prioritization</i></li> <li>▪ <i>Communication</i></li> </ul>	<ul style="list-style-type: none"> <li>▪ <i>Function Oversight</i></li> <li>▪ <i>Personnel Management</i></li> <li>▪ <i>Policies and Procedures Oversight</i></li> </ul>
<i>End User Support</i>	<i>Application Development and Implementation</i>	<i>Enterprise Architecture Planning</i>	
<ul style="list-style-type: none"> <li>▪ <i>Application Maintenance</i></li> <li>▪ <i>Help Desk</i></li> <li>▪ <i>End User Training</i></li> </ul>	<ul style="list-style-type: none"> <li>▪ <i>Planning</i></li> <li>▪ <i>Constructing</i></li> <li>▪ <i>Implementing</i></li> </ul>	<ul style="list-style-type: none"> <li>▪ <i>Governance</i></li> <li>▪ <i>Standards Management</i></li> </ul>	

<sup>16</sup> Hackett Group report, presented to The State of Georgia on August 23, 2007, page 9, (Hackett's IT Taxonomy of 11 Processes).

<sup>17</sup> For comparison purposes, Control & Risk Management will be included in the Planning & Strategy Process Group

<i>Infrastructure Development</i>		<i>Emerging Technologies</i>	
<ul style="list-style-type: none"> <li>▪ <i>Application Maintenance</i></li> <li>▪ <i>Planning</i></li> <li>▪ <i>Construct</i></li> <li>▪ <i>Implement</i></li> </ul>		<ul style="list-style-type: none"> <li>▪ <i>Technology Evaluation</i></li> <li>▪ <i>Quality Assurance*</i></li> <li>▪ <i>Change Management</i></li> <li>▪ <i>Risk Management*</i></li> <li>▪ <i>Audit and Compliance</i></li> </ul>	

Table 10. Hackett’s IT Taxonomy of 11 Processes

Table 11. Appendix – Project Tracking

This appendix contains a brief description of how GTA tracks IT projects of interest to state leadership.

Project tracking begins with the submittal of an Agency Project Request (APR). The information captured in the APR includes the project budget for 2 fiscal years, along with an estimate of the Total Cost of Ownership over a 5-year period. The project budget information is requested to be detailed by account as captured in the budget and accounting systems (see example in email below).

Once the project is approved and funded, the project financial tracking occurs monthly and is reported as follows:

<i>FINANCIALS: Previous Actuals to Date</i>						<i>FINANCIALS: Previous Projected</i>			
<i>Total Budget (State)</i> (a)	<i>Total Budget (Other Funds)</i> (b)	<i>Total Project Budget</i> (c) (a + b)	<i>Total Planned Expenditures (Project to Date)</i> (d)	<i>Total Actual Expenditures (Project to Date)</i> (e)	<i>Expenditure Variance</i> (+' = Overbudget, '- = Underbudget) (f) (e - d)	<i>Available Funds to Complete Project</i> (g) (c - e)	<i>Estimate Funds Needed to Complete Project</i> (h)	<i>Budget Variance</i> (i) (g - h)	
\$18,455,810.00	\$18,455,810.00	\$36,911,620	\$15,704,570.00	\$15,704,570.00	\$0	\$21,207,050	\$21,207,050.00	\$0	
<i>FINANCIALS: Current Actuals to Date</i>						<i>FINANCIALS: Projected</i>			
\$18,455,810	\$18,455,810	\$36,911,620	\$25,568,198	\$25,568,198	\$0	\$11,343,422	\$11,343,422	\$0	

The following depicts an example of the Project Budget scheme used by GTA to collect financial plan data for projects:

<b>Project Costs - State Costs</b>	<b>FY1</b>	<b>FY2</b>	<b>Total</b>
	2010	2011	
<b>Personal Services for Additional Staff (300)</b>	\$0	\$0	\$0
<b>Regular Operating and Travel (301)</b>	\$150,000	\$0	\$150,000
<b>IT Equipment &gt; \$5,000 (304)</b>	\$0	\$0	\$0
<b>IT Expenditures - Computer Charges (305)</b>	\$0	\$0	\$0
<b>IT Expenditures - GTA Billable Charges (305)</b> <i>(includes IV&amp;V, Unique Security Controls, Security Assessment, Backup, Disaster Recovery, Business Continuity)</i>	\$0	\$0	\$0
<b>Rent - IT Real Estate Rentals (306)</b>	\$0	\$0	\$0
<b>Voice/Data Communications (307)</b>	\$0	\$0	\$0
<b>Capital Outlay (309)</b>	\$0	\$0	\$0
<b>Contractual Services (312)</b>	\$0	\$0	\$0
<b>Total State Project Costs</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>

The total cost of ownership over a 5-year period is also requested.

Table 12. Appendix – Budget Activities Timeline and Action

There are two state agencies committed to ensuring that all Georgia executive agencies’ annual operating budgets have the correct funding and that funding is spent according to the Appropriations Bill as signed by the Governor. These are The Governor’s Office of Planning and Budget (OPB), and the State Accounting Office (SAO).

According to the OPB Web site on Georgia.gov:

“The Office of Planning and Budget (OPB) was formally enacted to serve the Office of the Governor as a budget and planning unit through the Executive Reorganization Act of 1972. OPB provides valuable, accurate, and timely information to the Governor and other decision-makers as part of a continuing effort to improve the operation of state government.

“Each year, the Governor, as the state’s budget director, is required to present to the General Assembly a recommended state budget for the upcoming and amended fiscal year. Prior to submitting the proposed budget, OPB analyzes agency budget requests and policy issues, and develops comprehensive budget recommendations for the Governor’s review, from which the final recommendations are brought to the legislature for consideration. OPB submits this budget recommendation in a prioritized budgeting format, a programmatically and results-oriented presentation of funding requirements.

“Each agency in the executive branch must submit an annual operating budget to OPB prior to the beginning of the fiscal year (July 1 – June 30). OPB reviews these spending plans for compliance with the approved appropriation acts, and continually monitors the expenditures of these agencies as part of ensuring sound policies for fiscal stewardship.”<sup>18</sup>

In practice, agency budgets follow this timeline:

<b>Date</b>	<b>Action</b>
August	OPB communicates budget instructions to executive agencies
September 1	Agency submits budget plan to OPB
January	Governor submits budget recommendation based on agency budget plans and upcoming fiscal year revenue estimate
January	Governor submits budget recommendation based on agency budget plans and upcoming fiscal year revenue estimate
April	Legislature approves budget (Generally this happens in April, but could happen anytime during the legislative session.)
May	Governor signs appropriations bill (Generally this happens in May, but Governor must sign within 30 days of the passage of the legislature).
May 31	Agency submits Annual Operating Budget (AOB) to OPB using

<sup>18</sup> Provided in “Agency Overview” section of the Governor’s Office of Planning and Budget public web site (<http://www.opb.state.ga.us/home.aspx>).

<b>Date</b>	<b>Action</b>
	programs, object classes and account codes
June 30 (or sooner)	OPB reviews agency AOB to ensure conformity with the signed appropriations bill
July 1 (or sooner)	Agency enters AOB into PeopleSoft at the program, department, object class, and account level (required to begin spending toward budget in the new fiscal year)
As needed	Agency submits budget amendments to OPB to move spending within programs

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## 1. References

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# Attachment C

## Purpose of IV&V

*Industry practice shows that a disciplined approach to project, program and portfolio management increases benefits realized by businesses from their investment in information technology assets and resources. The State of Georgia portfolio of information technology projects was estimated at \$367 million (as of September 2007), which had an effective return<sup>1</sup> of 55%. This return which is low even by industry standards reflects a loss of workforce productivity, financial resources and benefits to constituencies.*

*Independent Verification and Validation (IV&V) provides assurance of project success in an enterprise. This is accomplished in two major ways; first, by communicating and educating the project management team on industry best practices for specific undertakings, and secondly, by providing an escalation path for issues and inhibitors of project success. While most of the focus and attention occurs with the first item (issues), the underlying value occurs by reducing the second item (inhibitors).*

*The primary objective of an IV&V engagement is to provide an objective assessment of products and processes throughout the project lifecycle. In addition, IV&V will facilitate early detection and correction of errors, enhance management insight into risks and ensure compliance with project performance, schedule, and budget requirements.*

### Industry Basis for IV&V

*Verification and Validation (V&V) is a systems engineering discipline which helps a development organization build quality into the software during the software life cycle. Validation is concerned with checking that the software meets the user's needs, and Verification is concerned with checking that the system is well engineered.*

*Independent Verification and Validation (IV&V) is a set of Verification and Validation activities performed by an agency that is not under the control of the organization that is developing the software. IV&V services must be provided, managed and financed by organizations that are technically, managerially and financially independent of the development project. Technical independence requires that the IV&V does not use personnel who are involved in the development effort. Managerial independence requires that the IV&V effort be vested in an organization separate from the development and program management organizations. The IV&V must be able to submit to State and Federal management, the IV&V results and findings without any restrictions (e.g. without any prior review or approval from the development group). Financial independence requires that control of the IV&V budget be vested in an organization independent of the development organization.*

### Industry Standard on IV&V

*The definition of activities included under IV&V is quite broad, including both technical and management activities. The most authoritative source for IV&V can be found in the Institute of Electrical and Electronic Engineers Standard for Software Verification and Validation (IEEE Std. 1012-1998). The IEEE Standard describes software IV&V processes as generally determining if development products of a given activity conform to the requirements of that activity, and if the software satisfies the intended use and user needs. As defined in the IEEE standards, IV&V processes include activities such as assessment, analysis, evaluation, review, inspection, and testing of software products and processes. These IV&V processes further include assessing software in the context of the system, including the operational environment, hardware, interfacing software, operators and users. The IEEE standard seeks*



to assure that software IV&V is performed in parallel with software development, not at the conclusion of the software development.

#### *Federal Perspective on IV&V*

The Federal approach to IV&V differs considerably from standard IV&V, such as that described in the IEEE Std. 1012-1998. Federal requirements for IV&V on State automation projects are limited in their scope from the industry standard IEEE definition for IV&V in two key regards:

1. Federal IV&V does not require a continuous on-site presence. Instead, it requires periodic site visits to get a "snapshot" of a project's management and technical processes at pre-determined intervals. Further, in some respects, the IV&V Service Provider can be viewed as performing a "Technology Audit."
2. The Federal requirements for IV&V are, in fact, a subset of the full IV&V standard as defined by the IEEE Standard 1012-1098, specifically excluding the activity of extensive testing.

#### GTA Perspective on IV&V

The Georgia Technology Authority's overall mission was established by the Georgia Legislature.

The legislative authority is provided by the following sections of the Official Code of Georgia Annotated (O.C.G.A.):

- O.C.G.A. Section 45-12-70 et seq.
- O.C.G.A. Section 50-5-51 (1), (2) and (11).
- O.C.G.A. Section 50-25-1(b) (14).
- O.C.G.A. Section 50-25-1(c).
- O.C.G.A. Sections 50-25-4(a) (10).
- O.C.G.A. Section 50-25-5.1(b) (3).

The authority for IV&V is provided from House Resolution 1263 and Senate Resolution 754.

A key difference in how GTA performs the IV&V Services is in its ability to qualify and procure outside vendor services for the performance of IV&V. GTA also established a process to ensure there is recognized value in the detailed, structured reports of findings of deficiencies and recommendations to the project sponsor and to GTA. This reporting process, in accordance with GTA regulatory requirements, includes not only final report issuance, but all draft report submissions as well. Again, the intent of the GTA and State in acquiring an IV&V Service Provider, unlike that which might be defined under the IEEE 1012-1098 standards for IV&V, is not to continually work with various project components to actively participate in the remediation of deficiencies and risks. Rather, the requirement for the IV&V Service Provider is to provide periodic, independent analyses of the areas of responsibility as presented within the scope of services of the project in order to identify, inform and educate project management as well as the cognizant state Office of any areas of weakness and risk to the project, as well to provide proposed and recommended solutions for their remediation and/or mitigation.

#### *Outcomes of Case Studies*

During 2008, IV&V has made the following tangible, positive impacts worth an estimated \$29.6 million on an investment of approximately \$2.1 million:

- TRS/DIS - \$2.6m at risk and saved; recovery plan and recommendations saved expenditures that would have been wasted.
- DCH/HITT - \$8.2m at risk and saved; early escalation and recommendations saved expenditures that would have been wasted.

- *DCH/MEMS - \$1.5m at risk and saved; early adoption of recommendations saved delivery schedule and expenditures.*
- *DOAS/TGM - \$10.9m at risk and savings of \$2.5m; early adoption of recommendations saved delivery schedule and wasted expenditures.*
- *DCH/MMIS - \$34.9m at risk with savings of \$3.5m; early adoption of recommendations saved procurement and contracting, and efforts on requirements and risk management.*
- *DDS/DLS/EDIS Program - \$20.0m at risk with savings of \$4.5m; recommendations and changes averted potentially fatal problems during procurement and execution.*
- *DHR/SHINES - \$16.0m at risk with savings of \$3.8m; recommendations in final phases of delivery and transition averted costly testing and roll-out problems.*
- *DCH/Data Broker - \$5.0m at risk with savings of \$2.4m; recommendations created project recovery and averted significant issues and risks.*
- *DOR/IT/DW Program - \$63.3m at risk creating savings of \$0.6m; recommendations and changes in early assessment discussions improved overall performance/success.*

*IV&V is considered within the technology industry a "best practice", which has been validated by independent research. Its primary value is in identifying high-risk areas early in the project effort which allows the business to either mitigate or prepare contingencies. It also provides business leaders an objective analysis in order to deal with system development issues and it provides IT management with improved visibility into the progress and quality of the development effort.*

*Ultimately, it provides visibility, accountability and fact-based decision making for technology initiatives which is rewarded by technology systems that provide value and support to the business of the State of Georgia.*

*For more information on the specific processes or how to conduct IV&V, see the following link:*

[http://gta.georgia.gov/00/channel\\_modifieddate/0,2096,1070969\\_144323748,00.html](http://gta.georgia.gov/00/channel_modifieddate/0,2096,1070969_144323748,00.html)

<sup>1</sup> Effective Return is calculated by looking at the success rate of projects and the total expenditures to achieve the objectives and returns. Success rates are divided into three (3) categories, Failed, Challenged and Successful, as described in the Standish Chaos report. It has also been shown that Challenged projects deliver at a higher cost than planned which decreases the benefits achieved. Effective Rate = Delivered Project \$ Value / (Cancelled Projects \$ Cost + Completed Projects Total \$ Cost).

# Attachment D

## Integrated IT Portfolio Management (ITPM) White Paper

*The state of Georgia is under continued pressure to reduce expenses and redeploy money to high priority programs. One of the challenges large organizations have in these efforts is the lack of transparency in the deployment of dollars within high cost environments.*

*A practice emerged in the mid 1990's of managing technology as a portfolio. Applying lessons learned from financial portfolio management to a large technology cost environment allowed organizations to measure the financial benefits of each component (infrastructure, applications and projects) of the technology business.*

*Taking a portfolio approach allows IT organizations to categorize, evaluate and manage IT resources directly against critical aspects of the business. Within this new "transparent" portfolio environment, evidence based decisions are possible as to both current and future technology investments.*

*As technology organizations move to directly support business objectives they are being asked to operate under the same guidelines as the businesses themselves. With this, executives are expecting to know how decisions are made inside IT, what the "real-world" valuations of these decisions are and what the return on the investment will be. They are expecting "transparency" to the IT decision making process and to be presented with sound justifications for all expenditures.*

*IT organizations for their part are being expected to effectively manage more risk factors within their projects and business applications. Expectations are that they will, in the face of increasingly stringent regulatory guidelines, satisfy compliance issues while implementing programs to reduce operating costs. Business expectations are that these savings will be passed on directly to them to improve their operating cost model or to invest in new strategic initiatives.*

*Business and IT organizations are being linked through a program know as Integrated IT Portfolio Management (ITPM.) ITPM is a disciplined and structured approach which enables IT organizations to categorize, evaluate and manage IT resources (people, processes and technology.) This approach enables IT organizations to align their spending with both operational and strategic business priorities.*

*ITPM has three components. They are:*

- *Project Portfolio Management (PPM)*
- *Infrastructure Portfolio Management (IPM) and*
- *Application Portfolio Management (APM)*

### Project Portfolio Management (PPM)

*PPM creates a consolidated view of all projects with ongoing evaluation of both value and risks. PPM focuses only on "funded" projects. Its goal is successful project delivery; to optimize current project resources across the portfolio and proactively manage project risks within an environment where requirements are always in flux.*

*PPM processes serve as a continuous “gating” mechanism. The goal is alignment of ongoing projects with their “strategic intent” and original business case. Its objective is that decisions made during the life of a project are made with timely and accurate data.*

#### *Infrastructure Portfolio Management (IPM)*

*IPM focuses on aligning three key operational elements. These are cost; technology and architecture. Its goal is to strike the right balance between today’s business requirements while maintaining flexibility for future business needs.*

*The IPM accomplishes this through the careful alignment of short term technology decisions with a flexible long term strategy. This is accomplished through a “Reference Architecture.” The Reference Architecture establishes the overall technology direction and is used as an alignment mechanism when infrastructure technology investments are being considered. Technology movement is coordinated through but not driven by the Reference Architecture.*

#### *Application Portfolio Management (APM)*

*APM is a “business-centric” activity” that prioritizes business software development activities based on business goals. It is employed within a context that it is important to manage your application portfolio in a framework that matters to your business*

*APM is not about optimizing application roadmaps. It is about synchronizing IT priorities with business priorities. It is typically viewed as an extension of the organizations strategic planning process. By understanding that your applications “automate” core business operations, this activity helps you invest to support the operations that matter “most” to your organizations.*

*The state of Georgia spends an estimated \$1 Billion on technology each year as summarized below:*

- \$274.8 million on IT infrastructure*
- \$383.6 million on business applications*
- \$284.3 million on Information Technology projects*

*Georgia, through the Georgia Technology Authority (GTA), has successfully deployed two of the three components of Information Technology Portfolio Management (ITPM). Today, effectively managing over \$500 million of technology investment.*

*The first, portfolio program was Project Portfolio Management (PPM). This effort coincided with the establishment of the state of Georgia Technology Program Management Office (PMO).*

*The second program was Infrastructure Program Management (IPM). This effort was facilitated successfully through the GAIT 2010 Infrastructure Outsourcing Project. This effort was completed at the end of 2009. This includes both technology infrastructure and managed network services. These technology services are delivered today to over 1,400 customers across the state of Georgia.*

*The third and final program to complete the triad is Application Portfolio Management (APM). It is, by itself, the most complicated of the three to implement. With organizations typically spending more than two-thirds or more of their technology operating budget on ongoing support and maintenance of business applications (Forrester Research), it is also*

*the program that will return the most to the business. It directly compliments PPM by providing “current state” Information on business applications.*

*Taking ideas from investment portfolio managers, practitioners of APM gather information about each of the applications in use within a business or organization. These often include the cost to build and maintain the application, the business value produced, the quality of the application and the expected lifespan. The portfolio manager can then provide detailed reporting on the performance of the business application in relation to the cost to own and the business value delivered. Future investments in and decisions to replace systems can be made then with confidence that dollars are being deployed both effectively and efficiently.*

*APM is implemented in organizations in one of two ways. The one most organizations start with is the “top-down” or inventory approach. This is usually a phase one effort that focuses on an accurate inventory with a philosophy that we first need to understand what business applications we have and what are their main characteristics (age, cost, flexibility, and owner). The second approach, “bottom-up” gains an understanding of the business applications in the portfolio by parsing application source-code and its related components into a repository and then utilizes data mining tools to look at economic synergies across the enterprise. This is usually a phase two effort and is used by organizations that have developed proficiency in*

*Phase one data collection and analysis. Phase one implementation typically takes from 12 to 18 months. Phase two implementation typically requires an additional 24 to 36 months of work.*

*The Georgia Technology Authority is in the early planning stages for bringing Application Program Management (APM) on line. The goal is to have a comprehensive inventory of all business applications catalogued by critical decision criteria.*