

2016 BIENNIAL PERFORMANCE REPORT

TECHNOLOGY IN TEXAS

Balancing Tradition  
*with* **Innovation**



Letter from the Executive Director	3
Introduction	4
Legislative Recommendations	5
Strategic Goal 1: Reliable and Secure Services	6
Strategic Goal 2: Mature IT Resources Management	8
Strategic Goal 3: Cost-Effective and Collaborative Solutions	10
Strategic Goal 4: Data Utility	12
Strategic Goal 5: Mobile and Digital Services	14
Report on State Technology Expenditures	16

#### **About the 2016 Biennial Performance Report**

The Information Resources Management Act requires the Texas Department of Information Resources to prepare and submit to the Governor and to the Legislature a biennial performance report on the use of information resources technologies by state government (Texas Government Code §2054.055).

Note: For the purposes of this report, the term “state agency” is generally used to indicate a state agency or a state institution of higher education; and the term “technology” is used to indicate “information and communications technologies.”

**Letter from Stacey Napier**  
**Executive Director**  
**Texas Department of Information Resources**

**T**exas is not just one of the biggest states in the nation, it is also one of the fastest growing. From July 2014 to July 2015, five of the fastest-growing cities in America were in Texas. This growth drives the Texas Department of Information Resources (DIR) to ensure that state agencies and institutions of higher education are constantly expanding their ability to deliver services to the increasing number of citizens. Assessing and enabling government information technology (IT) platforms regularly will better prepare Texas to serve its constituents. The next generation of citizens expect government to deliver services in the same manner that they receive information in their personal lives: anywhere, any time, on any device.

The 84th Texas Legislature authorized DIR to establish the Office of the Statewide Data Coordinator. This new function works collaboratively with agencies to find new data solutions that enable agencies to provide the public with instant access to data, and more importantly, to ensure that frameworks make data current, secure and accessible.

The Legislature also recognized the positive impact of collaboration on procurement by ensuring agencies have the ability to bulk purchase select IT hardware and software products. State leadership also directed DIR to implement legacy modernization strategies, which will be published in the fall of 2016. This will guide agencies in a standardized approach to reducing technical debt associated with legacy systems.

As the need to serve Texas citizens evolves, so does the importance of the mission of DIR and the numerous and varied Texas state agencies. DIR continues to regularly assess the needs of our customers through the implementation of surveys and agency assessments to ensure they remain committed to statewide IT goals. This 2016 Biennial Performance Report assesses the reported progress of all agencies relative to the five strategic goals established in the 2016-2020 State Strategic Plan.

Although there is always more to be done, this report illustrates that Texas agencies have made significant strides in the areas of legacy modernization, data governance, and securing the state's resources. Their commitment to maintaining technical currency is one of many examples that will be showcased in this Biennial Performance Report. DIR views our customers as full partners as we seek to provide technology solutions, programs and services to enable the missions of our customer agencies that benefit all Texans.

Sincerely,



Executive Director  
Texas Department of Information Resources

# Introduction

**The role of IT continues to grow in importance as Texas delivers quality digital services to citizens. The challenge to do more with less has become a business principle for government. In Texas, innovation means doing things better, optimizing existing processes and services, and enabling new capabilities. Managing IT within state government requires balancing innovation with traditional ways of delivering services in an evolving technology environment set against security risks and budget constraints.**

The 2016–2020 State Strategic Plan for Information Resources Management helps government leaders evaluate and prioritize the technology innovations that enable them to achieve their business and service delivery objectives.

The Biennial Performance Report (BPR) details progress made toward those goals, highlights accomplishments, notes concerns, and makes recommendations to the state legislature for improving the effectiveness and cost efficiency of the state's use of information resources. The BPR includes a report on statewide technology expenditures that provides in-depth information on statewide IT activities. Highlights of the BPR include:

- **Security** - 100 percent of the 80 agencies surveyed for this report say they have technology initiatives aligned with the goal of Security.
- **Cloud** - no longer a niche technology, 87 percent of agencies are using Software-as-a-Service for business solutions, including email and office productivity tools; however, the percentage of compute that each agency has migrated to cloud is still relatively low.

- **Innovative Technologies** - nearly half of surveyed agencies are investigating innovative technology solutions such as data analytics and Internet of Things.

- **IT Expenditures** - As a percentage of the overall state budget, statewide IT expenditures remains relatively constant at approximately 2.2 percent, below national averages for public sector organizations of 3.6 percent.

In collaboration with agency customers, DIR has identified recommendations for legislative changes intended to help state agencies improve data protection, increase transparency and accountability, minimize risk and to overall make IT more efficient. Because agencies have made significant progress in their technology environments, these recommendations identify specific issues that require legislative action to improve the effectiveness of statewide IT.

DIR acknowledges the recommendations made in reports to the 85th Legislature that support improving statewide IT:

- **Interagency Data Transparency Commission Report** - Interagency Data Transparency Commission, September 1, 2016
- **Identity Access Management Feasibility Study** - Texas Department Information Resources, November 2016
- **Geographic Information Officer's Report** - Texas Water Development Board, December 1, 2016

# Legislative Recommendations

## **Recommendation 1:**

Amend Government Code, Sec. 2054.133, to require each state agency to include in the agency's information security plan a written acknowledgment that the executive director or other head of the state agency has been made aware of the risks revealed during the preparation of the agency's information security plan.

## **Recommendation 2:**

Require DIR to assess the resources that would be available to address operational and financial impacts should a statewide cyber event occur. Those include reviewing all applicable statutory provisions and recommending changes, evaluating the possible benefits of cybersecurity insurance, consideration of tertiary disaster recovery options, and requesting and receiving emergency funding.

## **Recommendation 3:**

Exempt DIR from Government Code, Sec. 2157.068, Purchase of Information Technology Commodity Items, for the purposes of executing a bulk purchase on behalf of two or more customers designated in Government Code, Chapter 2157. This will allow DIR to use the most efficient procurement method to execute the bulk purchase requirement.

## **Recommendation 4:**

Amend Government Code, Sec. 2054.384, Cost and Requirements Analysis, to direct DIR to continue to conduct cost, risk and requirements analyses for participation in a statewide technology center. The analysis should include a benefits analysis and migration plan based on information required to be submitted from state agencies.

## **Recommendation 5:**

Require DIR to study current state agency data storage and records management practices and associated costs to the state, and recommend improvements using agency feedback.

## **Recommendation 6:**

Require DIR to study current print and mail efforts and opportunities to reduce the volume of paper transaction in government to automate transactions and achieve operational efficiencies which will better meet citizens' needs.

# Reliable & Secure Services

## Overview

Innovations in government IT such as cloud computing, mobile solutions and data management depend on a reliable and secure network infrastructure. Sophisticated IT programs built on state-of-the-art infrastructure require effective security tools, continuity of service and seamless connectivity to meet their full potential. Citizens trust government with sensitive personal information, with the expectation that it will remain secure and private. In times of disaster, citizens also look to government for assistance and expect digital operations to be restored quickly.

Planning, testing and readiness for security and continuity of services remain the cornerstones that enable reliable and innovative technologies.

Seamless connectivity provides data, voice and video, the foundation of telecommunications within organizations, between agencies, with business partners and with citizens throughout the state.



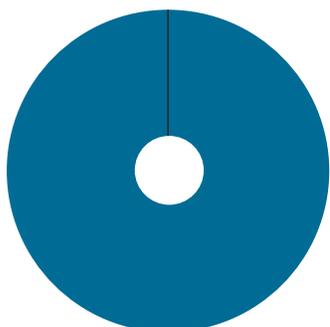
## Assessment

- State agencies understand the importance of cybersecurity with 100 percent reporting initiatives in alignment with state security goals.
- 78 percent of agencies have implemented a written IT disaster recovery plan, yet only 46 percent have tested that plan in the last two years.
- Agencies acknowledge that teleworking during disaster recovery is an important component in business continuity plans with 90 percent of the plans including alternative workplace options.
- Approximately 40 percent of state agencies expect bandwidth and storage capacity needs to increase over the next two years, placing greater demand on connectivity and network infrastructure.

## Progress Toward Statewide Goals

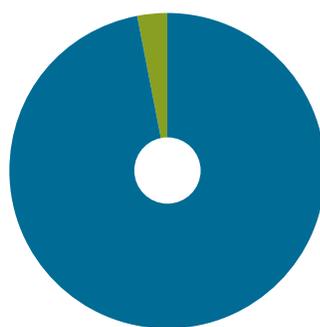
Agencies were asked how their technology initiatives align to statewide goals set in the State Strategic Plan.

### Security



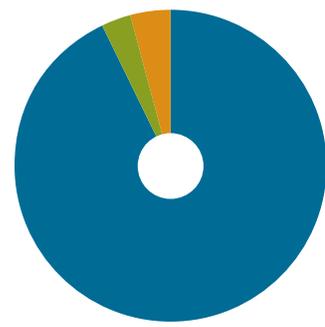
**100%**  
In Progress  
**0%**  
In Planning  
**0%**  
Not Planned

### Continuity of Operations



**97%**  
In Progress  
**3%**  
In Planning  
**0%**  
Not Planned

### Connectivity



**93%**  
In Progress  
**3%**  
In Planning  
**4%**  
Not Planned

## Concerns

- The vast amount of citizen information that state government collects is an attractive target for cybersecurity attacks. Agencies continue to be challenged by the increasing sophistication of these threats and the limited funding for security activities.
- Agencies will need additional support to develop IT disaster recovery plans that exceed minimum standards and build long-term preparedness.
- Citizens and employees expect continuous connectivity, at higher quality and faster speeds, to conduct state business. Older networks are overtaxed with the vast amount of data being transmitted over the state's IT infrastructure, but necessary upgrades are expensive.

## Accomplishments

DIR has responsibility for securing the statewide network and developing security policies, standards, and practices for use by state agencies. Recent activities include:

### **The Office of Chief Information Security Officer**

updated the Texas Administrative Code (TAC), Chapter 202 in 2015, to align more closely with Federal Information Security Management Act (FISMA) and National Institute of Standards of Technology (NIST) Special Publication 800-53: Security and Privacy Controls for Federal Information Systems and Organizations. The revised TAC covers agency responsibilities and includes a Security Control Standards Catalog. This DIR initiated catalog specifies the minimum information security requirements that state organizations must employ to provide the appropriate level of security relevant to the level of risk.

### **DIR has implemented the Statewide Portal for Enterprise Cybersecurity Threat, Risk and Incident Management (SPECTRIM)**

a governance, risk and compliance platform available to all state agencies and institutions of higher education. SPECTRIM provides incident management and analysis as well as risk assessment analysis. Through SPECTRIM, agencies have a single hub where they have visibility into threats, attacks, risks and responses. Agencies assess the significance of a security incident within their organization and report on the business impact of the incident. Agencies can also track all their incidents and generate reports through SPECTRIM. It also helps the OCISO correlate statewide threats and incidents. This results in improved identification of statewide risk. SPECTRIM received a 2016 National Association of State Chief Information Officers State IT Recognition Award as a finalist in the Category of Cybersecurity.

## Recommendations

**Recommendation 1: Amend Government Code, Sec. 2054.133, Information Security Plan, to require each state agency to include in the agency's information security plan a written acknowledgment that the executive director or other head of the state agency has been made aware of the risks revealed during the preparation of the agency's information security plan.**

Agencies must have a strategy to deal with cyberattacks and to address cyber risks. Government Code Section 2054.133 requires state agencies to develop and update an information security plan for protecting the security of the agency's information. Most agencies designate their Information Security Officer to prepare and submit a biennial cybersecurity plan to DIR, but the agency's leadership is not currently required to acknowledge these cybersecurity plans and accept associated security and privacy risks. Executive sponsorship of cybersecurity is essential as IT and business goals become more aligned.

**Recommendation 2. Require DIR to assess the resources that would be available to address operational and financial impacts should a statewide cyber event occur. Those include reviewing all applicable statutory provisions and recommending changes, evaluating the possible benefits of cybersecurity insurance, consideration of tertiary disaster recovery options, and requesting and receiving emergency funding.**

State agencies are not immune from cyber-attacks and data breaches can lead to significant costs. Taking the necessary steps to protect assets and prevent a breach is essential as the number of networked devices increases and the nature of attacks become more sophisticated. Agencies are required to have a strategy to deal with cyberattacks and to address cyber risks and DIR has implemented security policies based on recognized frameworks to help prevent such attacks. Recommendation 2 would help identify additional preventative and remediation efforts the state can undertake to increase its security posture.

# Mature IT Resources Management

## Overview

In the past, IT departments functioned as stand-alone divisions focused on hardware and software operations. Today, IT is an agency asset supporting mission critical goals. Most program initiatives include an IT component and require organizational governance and executive sponsorship to be effective. Business improvements rely on IT as a method of service delivery, data collection and analysis, and collaboration between program areas.

While agencies embrace these changes, the pace of IT funding has not always kept up with rapid changes in today's technology environment, including the changing makeup of today's IT workforce. Often asked to do more with the same resources, agencies operate under traditional funding models and regulatory frameworks that often act as impediments to the best value IT solutions. Going forward, budget and planning must ensure IT capabilities are embedded into the agency's strategies and objectives and IT staff have the necessary knowledge and skill to effectively sustain and extend technology as a government asset.

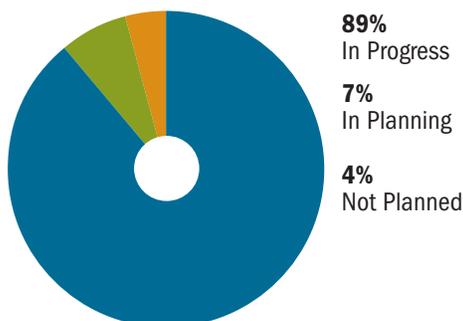
## Assessment

- Recent legislation changed the state's IT procurement environment resulting in behavioral changes in agency IT decision-making, funding and staffing.
- Senate Bill 20, 84th Legislature (2015), required state agencies to submit a statement of work (SOW) to DIR for services costing more than \$50,000 and less than \$1 million. DIR reviews these statements and approves as appropriate. In FY 2016, agencies submitted 88 SOWs for services between \$50,000 and \$1 million, well below anticipated volume.
- When surveyed, more than 50 percent of state agencies intend to keep staffing levels constant and allocate current resources to any new initiatives; 21 percent plan to increase IT staff.
- Half of the state's IT workforce is over the age of 50 and approximately 14 percent are over 60. As employees become eligible to retire, agencies expect additional need for staff experienced in business intelligence and data analytics, application development, integration and modernization, cybersecurity and shared IT services.
- Approximately one-third of state agencies say they evaluate the maturity of IT strategic planning and project management levels, and one-fourth of agencies evaluate the maturity of governance structures internally. This indicates that while agencies are evaluating IT planning processes, they could increase the focus on functions that reduce risk and improve strategic technology planning.

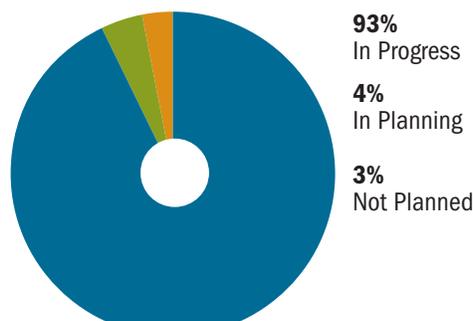
## Progress Toward Statewide Goals

Agencies were asked how their technology initiatives align to statewide goals set in the State Strategic Plan.

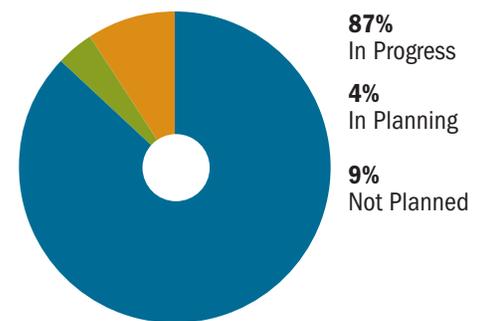
### IT Funding



### IT Planning & Governance



### IT Workforce



## Concerns

- More than 77 percent of IT budgets and staff in the public sector is dedicated to maintaining current infrastructure, limiting the opportunity to grow or transform technology.
- The skills and knowledge available in IT divisions is dwindling as staff retire and as agencies compete with the private sector. Workforce replenishment, planning and training strategies are necessary for the continued success of state IT divisions.
- IT expenditure data is maintained in a variety of disparate systems and lacks sufficient detail to completely describe IT spending throughout the state. This limits the state's ability to have a complete understanding of IT contributions to improved business performance.

## Accomplishments

### State Office of Risk Management-IT Project Governance Committee

The State Office of Risk Management developed a prioritization committee for IT changes and larger IT projects. This committee is led by business stakeholders and includes input from IT resources.

### Comptroller of Public Accounts-Management Development Program and Leadership Academy

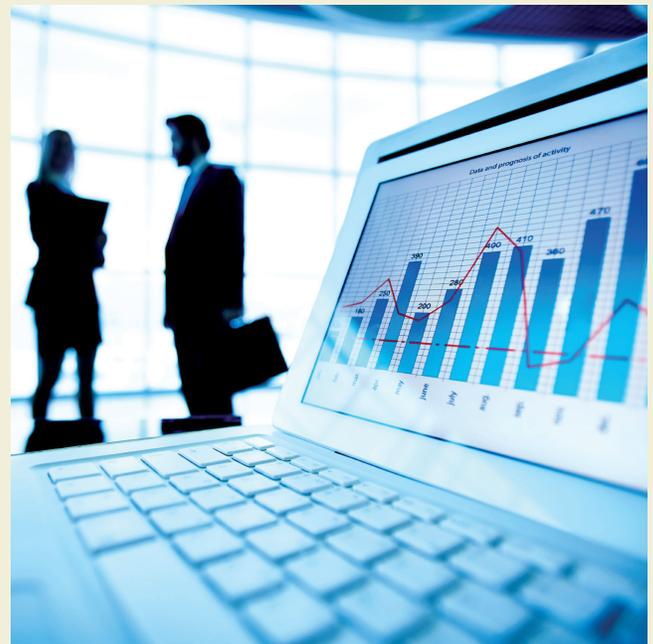
The Comptroller of Public Accounts has created an eight-month Leadership Academy program to further develop the skills and enhance the growth of high-potential managers. As part of this program, members are assigned to action-learning project teams to address current agency challenges. These projects culminate in presentations, recommendations and potential solutions such as mentoring opportunities and non-monetary rewards.

## Recommendation

**Recommendation 3: Exempt DIR from Government Code, Sec. 2157.068, Purchase of Information Technology Commodity Items, for the purposes of executing a bulk purchase on behalf of 2 or more customers designated in Government Code, Chapter 2157. This will allow DIR to use the most efficient procurement method to execute the bulk purchase requirement.**

In 2013, DIR was directed to conduct bulk purchases in the General Appropriations Act to maximize cost savings by leveraging computer replacement volume to achieve reduced equipment costs. The bulk purchase effort was executed using DIRs Cooperative Contracts program and saved participating agencies \$4.5 million.

In 2015, Government Code 2157.068 was amended to prohibit a state agency from purchasing a commodity item exceeding \$1 million through the DIR Cooperative Contract program. The change prevents DIR from using the most efficient procurement method for bulk purchases. As a result, agencies are purchasing IT goods and services without participating in the bulk purchase program that could otherwise reduce costs, particularly for smaller agencies. The 2016 bulk purchase saved customer approximately \$885,000.



# Cost-Effective & Collaborative Solutions

## Overview

Agencies are transitioning from old hardware and infrastructure to more innovative solutions such as the scalable services of cloud solutions and the efficiencies of shared services. Legacy modernization remains a challenge for state agencies that are trying to move away from obsolete hardware and software that is costly to maintain and poses a high security risk. Coupled with the IT limitations of legacy systems is the organizational effect siloed IT programs have by hindering agency collaborative solutions.

New technologies based on shared services and delivered through cloud computing can optimize service delivery to the citizens of Texas and should be included in legacy system modernization. Cloud services shift the focus from hardware and software to a pay-as-you-go computing model that is flexible, efficient and cost effective. When properly implemented in appropriate circumstances, these services provide rapid deployment and immediate scaling based on demand. Shared services allow for a consolidation of business operations that are used by multiple parts of the same organization, centralizing operations and eliminating redundancy.

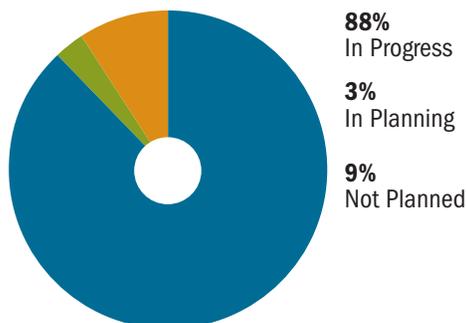
## Assessment

- In accordance with legislation passed by the 84th Legislature, DIR submitted a prioritization of agency cybersecurity projects and projects that modernize or replace legacy systems to the Legislative Budget Board to be considered by the 85th Legislature for funding. For this purpose, 29 agencies provided information to DIR regarding 82 IT projects that addressed cybersecurity and legacy modernization.
- 28 percent of agencies are currently operating on desktops and laptops that are 4 years or older. Additionally, 30 agencies reported the average age of the servers they currently managed were 4 years or greater.
- With the increased demand of cloud services, agencies are using cloud for a variety of purposes including email (73%), office collaboration solutions (55%), storage (45%) and disaster recovery (36%).
- When surveyed, smaller agencies (100 or fewer employees), who could benefit from the use of shared services, stated shared services are not a priority currently due to small staff size and no funding for these services.

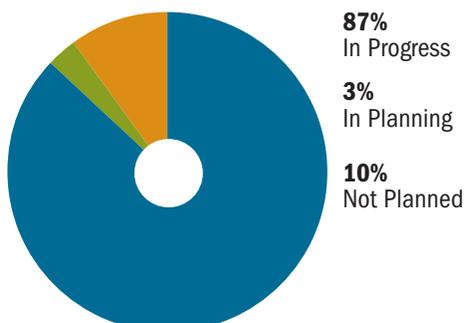
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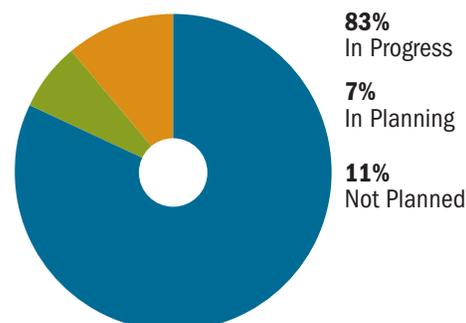
### Legacy Modernization



### Cloud Services



### Shared Services



## Concerns

- Legacy systems carry security risks, particularly as software and hardware reach end of life and vendor support is no longer available. While cloud computing has security considerations that must be addressed in planning and implementation, modern cloud computing solutions can offer a cost-effective alternative to legacy systems.
- Complex legacy systems require a variety of technology solutions to successfully transition to shared services. Understanding the technology needed and how to optimize it across multiple business units is an essential part of transition planning.

## Accomplishments

### Texas Department of Information Services – Data Center Services (DCS)

DCS now encompasses over 75 percent of the state’s server compute within the state’s two consolidated data centers, successfully marking a major milestone. This effort has cut the number of servers hosted in agency legacy data centers and remote sites. Both mainframe and print/mail services are 100 percent consolidated. Consolidation improves security, disaster recovery and resiliency of the state’s infrastructure. DCS has also introduced cloud services through hybrid cloud capabilities as well as disaster recovery-as-a-service to all state government entities. DCS began with 28 mandatory customers and has grown to 47 customers, resulting in lower costs to all program customers.

### Texas Office of the Attorney General - The Legal Case Management System

This project is a web-based case management system that provides administrative and legal case management tools and removes obstacles created by segregated data and aging architecture. In addition, it improves data quality and reliability, automates manual processes, allows for enterprise reporting, and implements role-based security.

### Texas Women’s University - Cloud Based Solutions

Texas Women’s University is using cloud services for its service catalog, a knowledge-based system, and institutional development system for the university. This fall the university will roll out a new Learning Management Based System that is cloud-based.

## Recommendation

**Recommendation 4: Amend Government Code, Sec. 2054.384, Cost and Requirements Analysis, to direct DIR to continue to conduct cost and requirements analyses for participation in a statewide technology center. The analysis should include a benefits analysis and migration plan based on information required to be submitted from state agencies.**

The Statewide Technology Center’s Data Center Services program (DCS) successfully consolidated customer servers and is providing managed services, however, participation in shared infrastructure has not grown significantly, which is a big cost driver of the consolidated data centers. While some agencies voluntarily participate in DCS, additional agencies could save money if they migrated to the DCS program. The DCS program would become even more cost-effective for Texas if more agencies and institutions of higher education joined the program and statewide computing was further consolidated.

In a decentralized technology environment, such as Texas’, agencies are selecting a variety of technology solutions with varying standards for maintenance and management. There are opportunities for increased cost savings and effectiveness by authorizing DIR to consolidate information technology services shared by state entities; providing additional volume purchasing of those services; and standardizing hardware products across agencies in similar functional areas.

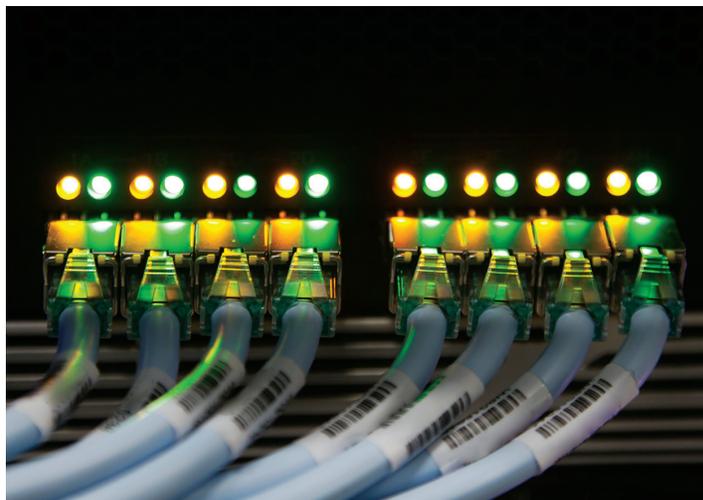


# Data Utility

## Overview

The ever-increasing amount of data collected by state agencies can become a valuable, transformative asset when properly managed, shared and analyzed. New analytical capabilities have the power to identify efficiencies, improve service delivery and show new paths to attain mission critical goals. Open and transparent data can engage the public, spur innovative business, promote cross-agency collaboration and increase government accountability.

To realize these benefits, data collection must rest on a solid foundation of data management and governance that follows data from creation to disposal. Agencies are seeing data as a valuable resource in their decision-making processes but data-driven decisions are only as good as the data that supports them. Whether the goal is to reduce waste, improve efficiency, or enable collaboration, a comprehensive data management and governance strategy is key to success.



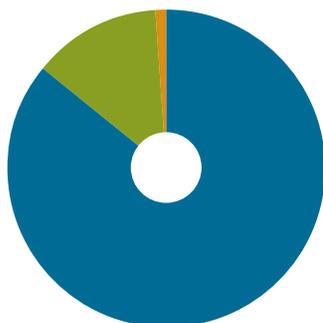
## Assessment

- Approximately 75 percent of agencies share data with another governmental organization to improve services.
- 13 agencies have an employee whose chief responsibility is to oversee agency data management.
- 37 percent of agencies have a master data management plan governing data from creation to disposal, and an additional 25 percent have a data management plan in development.
- 46 percent of agencies have some analytics capabilities and 9 percent reported to be highly invested and with substantial capabilities in the deployment of data analytics.

## Progress Toward Statewide Goals

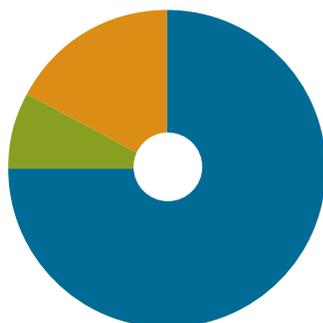
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### Data Management & Governance



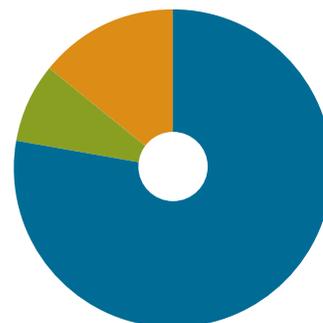
**86%**  
In Progress  
**13%**  
In Planning  
**1%**  
Not Planned

### Open Data



**75%**  
In Progress  
**8%**  
In Planning  
**17%**  
Not Planned

### Data Analytics



**78%**  
In Progress  
**8%**  
In Planning  
**14%**  
Not Planned

## Concerns

- Using analytics on incomplete or inaccurate data can be just as risky as ignoring data completely in the decision-making process. Until agencies can ensure their data is trustworthy, more advanced analytic capabilities will not reach its fullest potential.
- It is the state's responsibility to keep citizen data secure and private. Data sharing without strong management and governance can compromise security and privacy in multiple agencies.

## Accomplishments

### **Texas Department of Information Resources Statewide Data Coordination Program and Interagency Data Transparency Commission (ITDC)**

The Statewide Data Coordinator was established by the Texas Legislature in 2015 to increase collaboration and improve data practices in state government. The resulting program brings IT leaders and practitioners together to discuss data-related issues and share insight and solutions. ITDC was charged with the study and review of current public data structure, classification, sharing, and reporting protocols in state agencies. On September 1, 2016, ITDC submitted its report highlighting recommendations to assist the Statewide Data Program and agencies in furthering data governance, open data sharing, interagency data sharing and transparency efforts across state government.

### **Texas Workforce Commission-Improve Fraud Discovery Project**

Using a new business intelligence tool to uncover potential unemployment insurance fraud, has reduced the time required to detect and document suspicious activity by 50 percent and has prevented more than \$5 million in fraudulent claims.

### **Texas Natural Resources Information System - Statewide Texas Orthoimagery Project**

Spearheaded by the Texas Natural Resources Information System, Texas Department of Transportation, Texas Commission on Environmental Quality, Railroad Commission of Texas, and the Texas General Land Office, cost-shared a statewide Orthoimagery acquisition to use as a base map resource for transportation planning, environmental air quality analysis, abandoned mine site reclamation, and coastal land studies. This imagery will also assist state emergency responders with crisis planning and 9-1-1 call response as well as countless other mapping needs at state, regional, and local governments.

## Recommendation

### **Recommendation 5: Require DIR to study current data storage and records management practices and associated costs to the state and recommend improvements using agency feedback.**

Currently, Texas stores terabytes of data costing millions of dollars each year. Records management and data classification policies have been established through legislation and administrative code but agencies are not always judicious about deleting records that are no longer needed. Recommendation 5 would authorize DIR to study current storage practices and associated cost to the state and make recommendations to reduce the cost of data storage. Feedback from agencies and the reporting of possible solutions will improve awareness.

# Mobile & Digital Services

## Overview

Today more than 90 percent of Americans own a mobile device, and the time and purposes for which they are using these devices increases every year.

This dependency on mobile services changes the expectations citizens have of government interaction. Automating internal processes creates opportunities for agencies to provide digital services – from e-commerce functions to online forms – and enables speed and convenience of citizen interactions with the public sector. Citizens are also increasingly looking for mobile-specific applications to access government services. These applications should be user friendly, easily navigable, and available to download with the tap of a finger. Each agency must evaluate the cost and benefit of mobile applications and set a strong development strategy to implement customer-centric services in a mobile environment.

Some (mostly local) government organizations, are finding uses for the Internet of Things (IoT), a term used to describe a collection of devices that are interconnected via the internet. These organizations are using IoT to link building thermometers, traffic signals, security cameras, and other internet based devices to provide valuable insight into citizen habits to inform the services they provide.



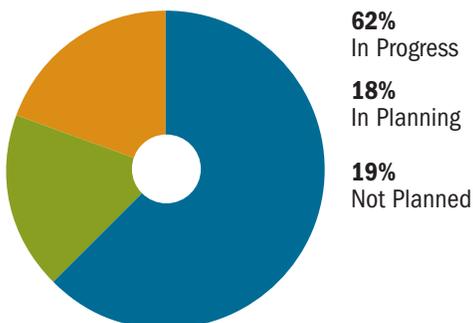
## Assessment

- 22 state agencies have developed or are in the process of implementing a mobile application. 50 percent of these applications were developed by contractors.
- Half of agencies surveyed in 2015 indicated they have technology initiatives aligned with IoT but have also indicated that few benefits can be realized from IoT at this time.

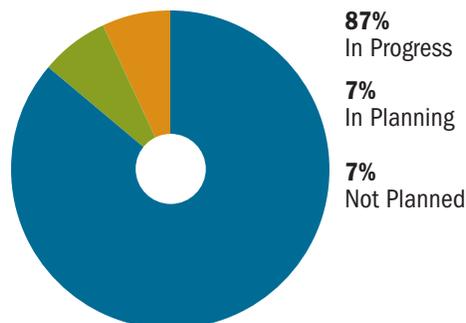
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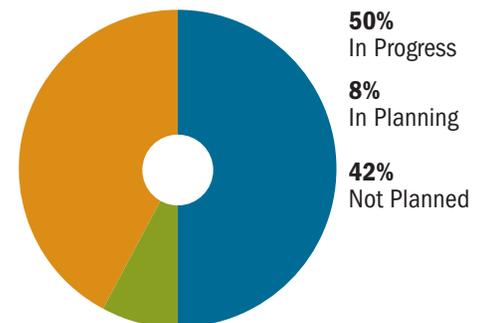
### Mobile Applications



### Digital Services



### Internet of Things



## Concerns

- Security is the biggest concern in the development of digital and mobile applications, and sophisticated cybersecurity controls are essential to protect users.
- State employees use mobile and digital applications to work anywhere and at any time, often on personal mobile devices. Ensuring state networks, personal information and valuable state programs are not compromised in the process of this productivity enhancing practice requires strong protocols, governance and employee training.
- The financial and resource cost of digitizing records and forms for mobile applications and securing these applications can be high.
- It is the state's responsibility to ensure applications are designed to be accessible to all Texans regardless of limitation.

## Accomplishments

### **Austin Police Department (APD) – AustinPD Mobile Application**

In early 2016, APD launched its mobile application - AustinPD. It allows residents to stay informed and engaged through direct access to important APD services. Features include station locations, crime prevention information, news updates and the ability to file certain reports directly from the application. Citizens can send tips to the police department, text, send a photo and have a secure conversation with officers with the option to remain anonymous.

### **Texas Alcoholic Beverage Commission - TABC Mobile**

This new mobile application allows the public to report disturbing the peace and other incidents that occur inside businesses licensed by the Texas Alcoholic Beverage Commission. The application allows the public to file a complaint for alleged violations like serving alcohol to minors, intoxicated customers and employees, illegal gambling, etc. Licensed retailers can also report disturbances.

### **Texas Water Development Board (TWDB) - Stream Gauges**

TWDB has developed a high-tech network of stream gauges which provide additional technical assistance and outreach for floodplain management and planning. TWDB has installed or hardened flood gauges in the Hill Country's flash flood alley, which are already reporting data to TexasFlood.org. They will continue to identify other areas in need of gauges and install them throughout the year. TexasFlood.org also features weather information that will help the national weather service in its flood forecasting. In addition, TWDB made enhancements to the Water Data for Texas website by adding river or stream flood stage information to the lake levels page.

## Recommendation

**Recommendation 6: Require DIR to study current print and mail efforts and opportunities to reduce the volume of paper transaction in government to automate transactions and achieve operational efficiencies which will better meet citizens' needs.**

Texas government produces over 250 million documents. \$16 million is spent annually on print mail through DIR Print Services. Voluntary electronic notification could reduce the cost as well as improve citizen awareness. Feedback from agencies and the reporting of possible solutions will provide an enterprise awareness of the costs and align direction to agencies. This effort would make recommendations for agencies to balance print mail with more digitized services and engagement with Texas citizens.

# Report on State Technology Expenditures

**This report addresses Government Code, Sec. 2054.055(b)(4), which requires DIR to provide a summary of the total expenditures for information resources technologies by the state. Although DIR uses the best available data to estimate the state's total technology expenditures, limitations in reporting and data make it difficult to precisely separate IT from non-IT expenditures in some cases. All figures presented in this report should be considered estimates.**

## **Summary**

DIR estimates that Texas state government (including agencies and institutions of higher education) spent approximately \$3.14 billion on IT in FY 15 and \$3.40 billion in FY 16. State-funded IT expenditures represented 2.17 percent of the state's total net expenditures in FY 15 and 2.22 percent of the state's total net expenditures in FY 16. These percentages are lower than the average of 2.46 percent from 2010 to 2016.

As a percentage of total expenses, Texas spends less on technology than other comparable entities. Gartner, Inc., estimates that other states and local governments spent an average of 3.6 percent of their net expenditures on IT in 2015. This disparity indicates that there may be a potential to boost productivity and efficiency of Texas government programs through additional, carefully managed, IT investment.

State agencies and institutions of higher education are addressed separately in this report because their IT expenditure estimates were derived from different data sources. A combined estimate of the state's total technology expenditures, using only state data sources, is included in the final section of the report.

## **State Agencies**

### ***Data Sources***

Technology expenditures fall into two broad categories: staff compensation and goods and services. For state agencies, the data for staff compensation comes from the Comptroller's Uniform Statewide Payroll/Personnel System (USPS) and the Standardized Payroll/Personnel Reporting System (SPRS). Texas has 1034 job classifications, of which 78 are categorized as IT. Because some state technology workers have non-technology job classifications, the figures from the payroll systems may understate the actual agency information technology staff expenditures.

The data for state agency expenditures on technology-related goods and services comes from the Comptroller's Uniform Statewide Accounting System (USAS). Technology expenditure estimates based on USAS are also approximate because some of the categories do not precisely differentiate between IT and non-IT expenditures.

### ***State Agency Technology Expenditures***

Table 1 shows state agency expenditures for total IT staff compensation and goods and services, by category for the last seven fiscal years. While both categories have fluctuated over time, generally overall IT spending has increased. Currently, state employee staff compensation makes up approximately 15 percent of agency technology expenditures, while about 85 percent of funds are spent on goods and services.

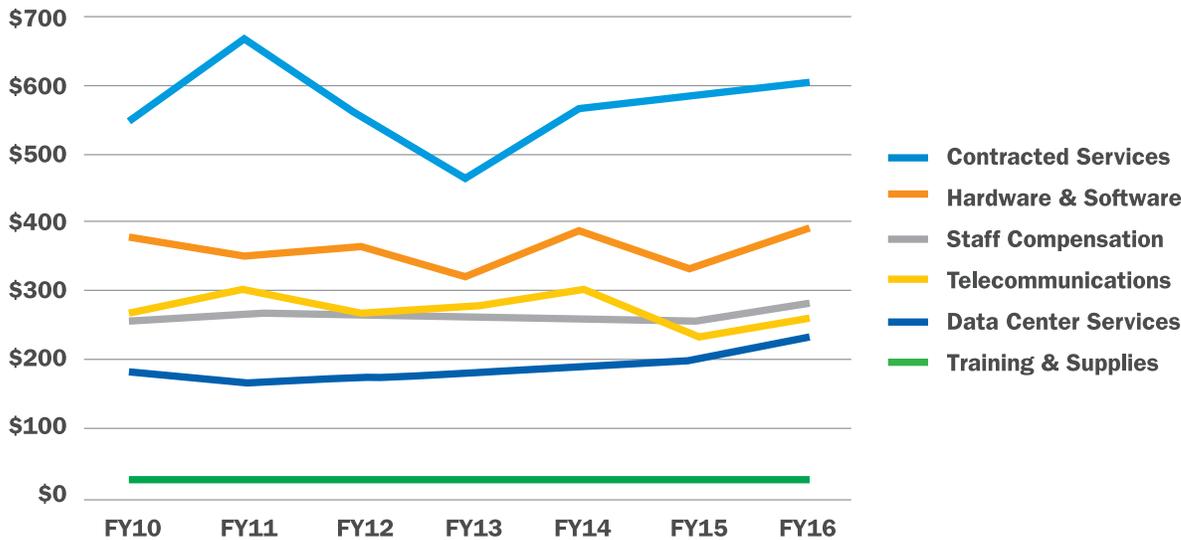
**Table 1. Estimated State Agency Technology Expenditures**

(Dollars rounded in millions)

STATE AGENCIES	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16
<b>Total, Staff Compensation</b>	<b>\$261.1</b>	<b>\$270.8</b>	<b>\$261.6</b>	<b>\$259.9</b>	<b>\$258.3</b>	<b>\$248.6</b>	<b>\$285.8</b>
<b>Goods and Services</b>							
Computer Hardware	\$209.4	\$219.3	\$217.1	\$160.9	\$208.2	\$161.1	\$176.5
Computer Software	\$171.2	\$131.9	\$139.8	\$158.9	\$179.5	\$174.3	\$212.7
Contract Services	\$553.2	\$663.9	\$553.2	\$461.8	\$569.0	\$585.6	\$600.8
Data Center Services	\$190.9	\$169.2	\$174.3	\$185.4	\$193.1	\$200.5	\$229.7
Telecom Hardware	\$53.3	\$139.6	\$111.8	\$110.8	\$122.2	\$99.7	\$114.7
Telecom Services	\$218.4	\$163.6	\$158.8	\$167.4	\$179.1	\$136.3	\$144.7
Supplies	\$19.3	\$19.2	\$17.8	\$18.0	\$19.1	\$19.5	\$18.8
Training	\$14.3	\$11.4	\$11.0	\$10.2	\$10.1	\$10.8	\$12.7
<b>Total, Goods and Services</b>	<b>\$1,430.0</b>	<b>\$1,518.1</b>	<b>\$1,383.8</b>	<b>\$1,273.4</b>	<b>\$1,480.5</b>	<b>\$1,387.8</b>	<b>\$1,510.6</b>
<b>GRAND TOTAL STATE AGENCIES</b>	<b>\$1,691.1</b>	<b>\$1,788.9</b>	<b>\$1,645.4</b>	<b>\$1,533.3</b>	<b>\$1,738.8</b>	<b>\$1,636.4</b>	<b>\$1,796.4</b>

**Figure 1. Estimated State Agency Expenditures by Technology Category**

(Dollars rounded in millions)



**Institutions of Higher Education**

**Data Sources**

Institutions of higher education technology expenditure data – for both staff compensation and goods and services – comes from the annual Core Data Service (CDS) survey conducted by EDUCAUSE, Inc.

However, some institutions do not participate in the CDS. Expenditures for non-participating institutions were estimated by extrapolation based on institution size. This methodology intro-

duces some uncertainty in the higher education technology expenditure estimates.

**Higher Education Technology Expenditures**

Table 2 shows estimated technology expenditures for institutions for both staff compensation and goods and services from FY 10 through FY 16. Note that the apparent increase in higher education spend may be attributed to decreased participation of the CDS Survey.

**Table 2. Estimated Higher Education Technology Expenditures***(Dollars rounded in millions)*

HIGHER EDUCATION	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16
Total, Staff Compensation	\$522.5	\$551.5	\$580.5	\$568.3	\$533.9	\$551.0	\$617.9
Total, Goods and Services	\$622.0	\$592.2	\$562.5	\$638.1	\$744.1	\$955.3	\$983.7
<b>GRAND TOTAL</b>	<b>\$1,144.4</b>	<b>\$1,143.7</b>	<b>\$1,143.1</b>	<b>\$1,206.4</b>	<b>\$1,278.0</b>	<b>\$1,506.3</b>	<b>\$1,601.6</b>

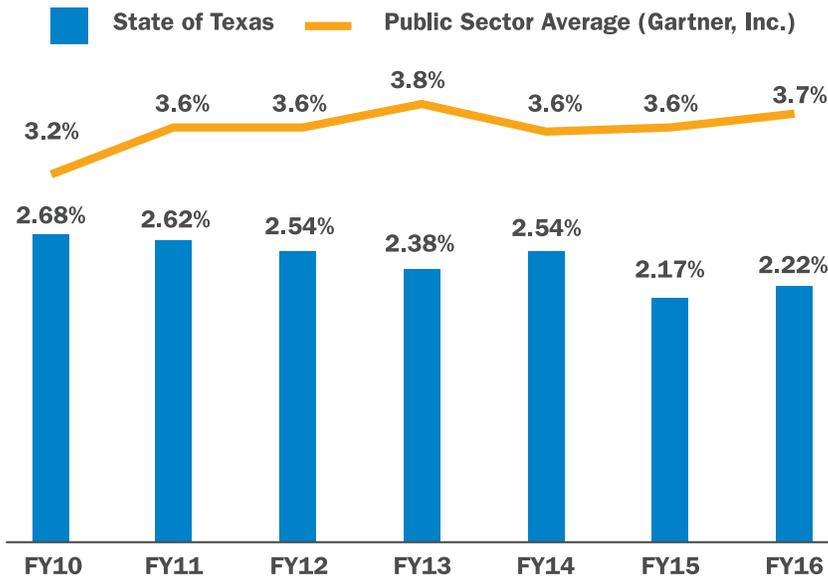
**Combined Technology Expenditures**

A key metric in assessing public sector technology expenditures is the percent of technology expenditures to total expenditures. The Comptroller's Texas Annual Cash Report identifies total state-funded expenditures by fiscal year. Note that only state-funded IT

expenditures are included in the calculation of technology expenditures as a percentage of total state expenditures. Table 3 and Figure 2 show the estimate of technology expenditures as a percentage of total state expenditures for the past seven fiscal years.

**Table 3. Estimated State Technology Expenditures as a Percentage of Total State Expenditures***(Dollars rounded in millions)*

STATE EXPENDITURES	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16
IT Expenditures	\$2,481	\$2,501	\$2,394	\$2,227	\$2,527	\$2,305	\$2,546
All Expenditures	\$90,434	\$95,459	\$94,257	\$93,567	\$99,655	\$106,365	\$114,570
<b>IT PERCENTAGE</b>	<b>2.68%</b>	<b>2.62%</b>	<b>2.54%</b>	<b>2.38%</b>	<b>2.54%</b>	<b>2.17%</b>	<b>2.22%</b>

**Figure 2. Estimated State Technology Expenditures as a Percentage of Total State Expenditures.**

Source of public sector average data: "IT Key Metrics Data 2016: Key Industry Measures: Government: State and Local Analysis: Multiyear." Gartner Inc. Note: FY 16 Public Sector Average is a projection due to timing of this publication.

While IT spending in the state has increased over the past six years, it has remained relatively constant as a percentage of total state expenditures. At approximately 2.22 percent, Texas remains under the state and local government average of 3.6 percent of net expenses for information resources technology.





Texas Department of Information Resources

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