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The Office of Information Technology was formed by the Alabama Legislature in 2013 (see Act 2013-68, now appearing in Section 41-28-1 et seq. of the Code of Alabama). OIT is headed by the Secretary of Information Technology, who serves as the State’s Chief Information Officer (CIO), the principal advisor to the Governor on IT policy, and a member of the Governor’s Cabinet.

The Legislature moved the Information Services Division (ISD) of the Department of Finance into OIT in 2017 (see Act 2017-282). Following this consolidation, OIT now operates the State’s voice and data networks and data centers. OIT has approval authority over most IT procurement in the Executive Branch (see Section 41-4-285 of the Code of Alabama) and provides cybersecurity, IT project management and governance, IT application development, and user support services. OIT receives no legislative appropriations and operates as a 100% fee-for-service agency.

State government continues to struggle with the very real attempts by bad actors to affect the IT operations of the agencies. Training employees, hiring and retaining talented people, and monitoring threats are our priorities to combat the problem before it negatively impacts the state.

Investment in best practices for project management, systems architecture, and connectivity will result in the best possible use of state funds. IT allows the government to operate more efficiently to serve more citizens and provide better services.

Jim Purcell
Acting Secretary of Information Technology
Cybersecurity is on the top of everyone's minds these days, and the Office of Information Technology was at the forefront of cybersecurity in 2018. Through various new resources and partnerships that were formed over the past year, OIT worked around the clock to protect the confidentiality, integrity, and availability of the State's digital resources and defend against threat actors targeting critical information systems.

PROTECTION

The state's new Security Operations Center (SOC) was completed in March and officially opened on October 1st. October was also designated by Governor Kay Ivey as Cybersecurity Awareness Month. Governor Ivey, the adjutant general of the Alabama National Guard, Major General Sharon Gordon, as well as numerous other state officials and media from across the state attended the grand opening. The SOC is Alabama's first ever centralized security operation and is staffed with cybersecurity engineers that monitor and react to the staggering 50 million threats the state encounters daily. The SOC utilizes state of the art technology to keep an eye on the use of electronic resources in all 67 Alabama counties, including what is being attacked and where the attacks are coming from across the globe.

The consolidation of security operations has reduced financial risks for the state by mitigating cyber threats, which can cost an average of $3.86 million per breach. Thanks to the centralized efforts, OIT can respond to incidents faster which leads to less damage and financial devastation. Being a centralized location also helps people have an easier work flow, which helps them save production costs and become more efficient.

AWARENESS

With cyber threats on the rise - not only on the state’s infrastructure but also for private citizens - OIT launched an online presence (cybersecurity.alabama.gov) for Alabama residents to receive up-to-date, credible information and tips to protect themselves from online threats. Citizens can also ask questions of cybersecurity experts and browse resources including articles, blog posts, videos, and tools that individuals can adopt for learning and application in their own environments. It is updated frequently to deliver current and relevant information, for instance, what threats may occur during a specific season or the latest happenings in the government sector and how bad actors could take advantage of the situation.

In addition, Chief Information Security Officer Ryan Allen traveled across Alabama throughout Cybersecurity Awareness Month, conducting speaking engagements across the state to educate Alabama’s citizens on the importance of cybersecurity.

EDUCATION

OIT implemented the delivery of mandatory cybersecurity awareness training in 2018 to more than 25,000 Executive branch employees. Providing the ThreatAdvice training enhances state employees’ cybersecurity knowledge to keep people from making costly mistakes which can be exploited by cyber criminals and educates them on the threats that exist to our computer systems and information data networks. Through this online based training, OIT can provide a tailored training experience to user’s based on their employment role within the state. This is a centrally managed program that is routinely monitored, whereas before the agencies decided what training they accomplished with no higher-level oversight of their training program for completion rates or effectiveness. OIT can query audit reports to determine who has accomplished training modules and who has not completed it yet. This is a significant value to the state as user awareness education gives you the best return on investment for overall cybersecurity.

GOVERNANCE & COMPLIANCE

In 2018, OIT conducted and completed two federal compliance audits – an IRS 1075 audit and Social Security Administration audit. OIT was proud to successfully meet the requirements outlined by the federal government for those two programs.

In addition, OIT began a complete refresh of all state policies. The policies are now reviewed by the Governor's office and signed by the Governor. This is important because policies must keep pace with changes in technology and the federal requirements that drive them.

PARTNERSHIPS

In 2018, OIT began a strategic cyber partnership with the Alabama National Guard. OIT partnered with them for expertise, incident response, assessments, and training, as OIT works to build a strong relationship with as many good security minds as possible to benefit the whole state. OIT knows the best defense against cybercrime is to create partnerships focused on intelligence gathering and knowledge sharing. By working together, we increase our ability to quickly identify and respond to cyber-attacks. The partnership includes top levels of leadership for both organizations, including OIT Secretary Jim Purcell, Chief Information Security Officer Ryan Allen, Major General Sheryl Gordon, Colonel Brian McManus, and security staff from both OIT and the National Guard.

OIT and the AL National Guard have performed three joint tabletop exercises to make sure the state is prepared for various types of cyber-attacks. That training includes election security, cybersecurity incident response, and the importance of the National Guard in the event it is activated in a cyber related incident.

In addition, OIT was able to partner with colleges across the state to bring interns to work with OIT’s group of dedicated cybersecurity professionals. Unfortunately, there are not enough people to fill all open cyber jobs across the country. By educating young people, OIT can try to recruit tomorrow’s leaders early, and interns can gain the experience they need to build successful cybersecurity careers in the future.

BY THE NUMBERS

50,000,000 Daily threats monitored and acted on by the OIT Security Operations Center

25K Executive branch employees participated in mandatory cybersecurity awareness training in 2018
The upgrade to a new, modern, unified communication system for the State of Alabama revved up in 2018, after officially launching the year before. While advances in information technology have changed nearly every aspect of our lives, thousands of state workers continue to use 1980’s voice technology to serve the state’s citizens. The Voice over Internet Protocol (VoIP) project replaces legacy systems with a fully integrated suite of Unified Communications tools, and it was a great start to 2018, as 1,000 phones were deployed by the end of the fiscal year.

A key milestone was the completion of the Local Area Network (LAN) Conversion Project in late 2018. This important project gave OIT the chance to bring our clients up to date with leading edge technology, as each site was upgraded to speeds eight times faster - from 10GB to 80GB - to each building. According to officials with Cisco, OIT is one of the largest, most forward-thinking public sector customers in the nation with the deployment of their Software Defined Networking Technology.

OIT believes that Alabama state agencies need modern tools to serve a modern Alabama. The new advanced unified communications system answers this need with a design that can both scale to serve the entire state and yet also be flexible enough to customize to the unique needs of each of our state agencies. The heart of this is a new Cisco VoIP phone system, the largest, most forward-thinking public sector customers in the nation with the deployment of their Software Defined Networking Technology.

OIT has also designed this system to be compliant to current FBI security standards. For the first time, state voice traffic is encrypted end-to-end, an essential for government agencies in today’s world of cyber threats. This allows OIT to provide CJIS compliant phone systems for Alabama law enforcement agencies, as well as the confidence that confidential information on calls is protected to the highest federal standards for all agencies who deal with citizens’ sensitive data.

In summary, OIT is giving our state employees more powerful tools that allow them to make better on-the-spot decisions, guaranteeing that we have a stronger, more efficient, state workforce that is more connected to the needs of the people of Alabama than ever before.

phones integrate into state email accounts, bringing desktop capacities to mobile devices. By adding WebEx licenses to every user, employees can create both scheduled and ad hoc video conference sessions so that workers can collaborate with live video meetings, saving travel time and significant costs to the state, therefore making better use of taxpayer money.

While the system does allow a new level of mobility, it is also full of features that speed up the daily work flow from the desk or office. An employee can now look up and dial any other user on the system all from their computer, without even having to touch the phone on the desk. There are now thousands of people who are just a few keystrokes or mouse clicks away.

OIT has at least 4 OIT managed circuits.
MAINFRAME
OUTSOURCING PROJECT

The Mainframe Outsourcing Project was initiated by the Office of Information Technology in 2018 to address three goals: the cost avoidance of about $5 million in hardware refresh, to help plug the holes in our skills gap, and to increase the quality of service to customers.

Initially, OIT was only going to outsource the hardware and keep the software support. It is getting more and more difficult to find people who specialize in this kind of hardware because it is an older and niche system, and there are fewer and fewer people who know how to manage some of the applications and programs. However, through the proposals, we realized that it was more advantageous to outsource the software suite along with the hardware.

After a competitive bid process, where OIT, along with five other agencies (Department of Labor (DOL), Department of Human Resources (DHR), Department of Finance (FIN), the Alabama Medicaid Agency, the Alabama Law Enforcement Agency (ALEA), and the state Personnel Department) reviewed five proposals with various levels of service, we chose to outsource our mainframe to IBM. IBM was the most attractive based on our review. We reviewed five proposals with various levels of service, and after reviewing the proposals, we realized that it was more advantageous to outsource the software suite along with the hardware.

This outsourcing virtualizes OIT’s mainframe to IBM operations at two diverse facilities within the continental United States, taking liabilities away from the state and placing the onus of support on IBM. Our OIT mainframe contractors will be re-badged as IBM contractors to assist in knowledge transfer and continuity of service standards. An ancillary benefit in virtualizing our mainframe with IBM is our ability to reduce datacenter facility costs. Once our mainframe data has transferred to an IBM datacenter, we will vacate the space in our co-lo hosted datacenters for a significant cost savings.

This project will also allow the State of Alabama to now have predictable pricing, allowing us to know future cost for long-term budgeting. We will have considerable cost savings from this project and can reduce both operational and capital investment expenses, eliminating the need for hardware, maintenance and upgrades, physical space and related overhead costs, as well as labor associated with in-house mainframe support.

Outsourcing the mainframe also allows OIT to have full compliance and security functions - everything will be encrypted and fully compliant with both the IRS and Social Security Administration. It also allows the State of Alabama to have a fully functional Disaster Recovery Backup in the event of a disaster. Because of this, OIT will perform two DR tests per year will all agencies, something we have not been able to do in the past. This project will also allow the State of Alabama access to over 6,500 mainframe skills for future improvement of our current operations.

Governor Ivey created the SAFE Council on March 6, 2018, and the group held its first meeting 10 days later. The Council then created recommendations for Governor Ivey, addressing physical security, mental health and threat assessments, and coordinated training and planning. In addition, OIT’s Director of Training, Matt Holmes, created a training program for school systems and parents to create awareness of cybersecurity and online safety.

Governor Ivey’s Securing Alabama Facilities of Education (SAFE) Council. The purpose of the Council is to provide a comprehensive, commonsense plan to achieve school safety and security in the state. Acting Secretary of Information Technology Jim Purcell was chosen to sit on the panel due to the role technology plays in cyberbullying, as well as preventing and mitigating school violence through such technical solutions as security cameras and cyber training.

We want them to have the right tools to know how to fight back and put an end to the situation”

- Ryan Allen, CISO

At the start of the school year, Secretary Purcell and Allen visited Fort Dale Academy in Greenville, speaking with nearly 200 students in fifth through twelfth grades. They taught the students ways to spot cyberbullying and how students can combat cyberbullying among their peers.

Secretary Purcell and Allen also led a discussion with a dozen students at Hoover High School concerning cyberbullying in September. The students, ranging from freshmen to seniors, held an open and honest dialogue concerning their personal experiences with cyberbullying.

While some of the students spoke out about being victims of bullying themselves, all of the students say they have witnessed it happening to other people. The students also gave their input into what actions may help cyberbullying cease, including limiting social media at school or anonymous ways to report a case. The students also weighed in on a good balance of parents being aware of their activities and allowing them to have their freedom.

Secretary Purcell and Allen say it is important to get the opinions of the students, as they are the ones affected the most by cyberbullying.

“Cyberbullying is something nearly every student of every age has been a witness to,” says Allen. “We want them to have the right tools to know how to fight back and put an end to the situation.”
BY THE NUMBERS

17 states showed improvement, including Alabama

B- is Alabama’s 2018 Digital States Survey overall grade. That’s up from C+ in 2016.

98% Bandwidth usage saved while shielding the Secretary of State’s website from cyber threats

150+ State organizations are utilizing OIT’s information technology services
The Office of Information Technology partnered with Government Technology (“GovTech”) to plan and host a statewide summit to bring information technology participants awareness of best practices and inciting innovation. The 2018 Alabama Digital Government Summit, hosted in the capital city at the Renaissance Montgomery Hotel Convention Center on May 24th, was a great success. The event boasted of max capacity attendance with over 300 participants, multiple vendors, and 100% positive responses on the summit survey.

The Alabama Digital Government Summit was made possible by the collaboration of the Summit Advisory Board, comprised of public and private sector leaders who focused on creating an event agenda that would inspire, teach, and engage the summit attendees. The summit included a keynote speaker, leadership discussions, networking opportunities, and buzz topics covered in the breakout sessions.

The 2018 Summit’s Best Rated Sessions

1. Collateral Change: Finding Balance in Our Digital Evolving World” (Keynote: Michael Hakkarinen)
2. Accessibility and Assistive Technologies
3. #Workfromhome
4. Cybersecurity Incident Response

Scan the QR code to join us for the 2019 Summit or go to the following website address:
http://events.govtech.com/Alabama-Digital-Government-Summit.html

“This is one of my favorite conferences of the year.”
- Survey Feedback

BY THE NUMBERS

300 Participants attended the 2018 Alabama Digital Government Summit
The Office of Information Technology (OIT) was proud to honor all of our wonderful employees during the week of May 7-11 as part of Employee Appreciation Week, as declared by Governor Kay Ivey. The goal was to build morale, promote team building, and show OIT's gratitude of the hard work our employees do every day.

Over 70% of OIT's employees took part in the festivities, which increased collaboration and served as an ice breaker for cross communication within the agency.

The events included:
- Monday - Breakfast from Chick-Fil-A
- Tuesday - Pizza Party
- Wednesday - Hotdog Cook-out
- Thursday - Ice Cream Social
- Friday - Donuts for Casual Friday

Secretary Jim Purcell was present at all the events, and the Leadership team helped grill and serve the employees. A great time was had by all, and we look forward to continuing the tradition!

BY THE NUMBERS

<table>
<thead>
<tr>
<th>OIT Employees</th>
<th>188</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hotdogs cooked during Hotdog Cook-out Wednesday</td>
<td>200+</td>
</tr>
</tbody>
</table>

The EPMO proudly boasts that 88% of its Project Managers have received the Project Management Professional (PMP) certification. The PMP certification is an internationally recognized professional designation that sets its recipients apart as having the knowledge and ability to complete more projects on time and on budget while meeting project goals. The EPMO's goal is to be 100% PMP certified. By employing PMP certified Project Managers, the EPMO raises the standard of the project management (PM) profession and provides a higher level of PM services to State agencies.

The EPMO best serves state agencies when involved at the onset of project initiatives to promote project success and policy compliance.

Since the Office of Information Technology’s Enterprise Project Management Office (EPMO) was created in January 2017, 45 IT projects totaling over an estimated $198 million in costs have been managed by the EPMO’s Project Managers, with a total estimated benefit value of more than $223 million expected to be realized in future years.

The EPMO is a service-oriented organization created for the specific purpose of providing governance, oversight, and management services for IT projects for all state organizations. The EPMO establishes and enforces IT Project Governance policy and applies project management best practices in all projects to ensure the greatest probability of success. In actively carrying out these responsibilities, the EPMO aims to minimize risks and maximize the state’s return on investment for IT projects and ensure interoperability and strategic alignment in and among state agencies.

The EPMO best serves state agencies when involved at the onset of project initiatives to promote project success and policy compliance. As an example, EPMO Project Managers provide valuable service during the RFP and RFB process, ensuring that PM best practices are applied, and all business requirements are discovered and documented to lay the foundation for project success.

OIT’s EPMO successfully achieves the following primary objectives:
- Deliver successful IT projects by providing Project Management best practices.
- Build Project Management professionalism among the Office of Information Technology’s staff by mentoring, training, and guiding the organization’s project teams as they learn and then adopt PM best practices in their projects.
- Define the relationship between all internal and external groups involved in an IT project and describe the proper flow of information regarding the project to all stakeholders.
- Serve as the Office of Information Technology’s authority and resident advocate for IT Project Management by providing the tools, templates, professional guidance, and the model for creating and maintaining an effective Project Management practice.
- Serve as the State’s authority on IT Project Governance policy by promulgating rules, regulations, and policies and establishing procedures and standards for the management and operation of information technology projects by state agencies.

The EPMO best serves state agencies when involved at the onset of project initiatives to promote project success and policy compliance.
OIT’s Application Development Division (App Dev) designs, builds, hosts and maintains custom websites, software applications, and SQL Server databases both for OIT and customer agencies. Many of the smaller agencies have little or no IT staff to provide these services.

2018 SOLUTIONS:

- **10** New agency websites designed and launched
- **106** Agency websites currently hosted and maintained
- **1000’s** Dollars saved in DBA staffing and software licensing costs
- **19** Total Application Development employees
- **31** Total projects completed for customer agencies
- **55** Agency databases hosted for 26 distinct agencies
- **50+** Customer agency applications hosted and maintained

**FACTS & FIGURES**
CURRENT STATE IT SPEND

These statistics are based on information self-reported by state agencies in FY2018 through STAARS, Personnel, and open.ala-bama.gov. Depending on how agencies report interagency transfers, these statistics may not include IT expenditure with other entities such as higher education organizations.

$30 Billion
State Budget

STATE BUDGET VS. STATE IT SPEND

Only 1.34% of the state budget spent on IT

OIT accounts for 16% of the state IT Spend
Every dollar has to be recovered by billing other state agencies for provided IT services.

73% of IT Spend comes from 10 Agencies leaving the remaining 27% divided among 140 smaller agencies, boards, and commissions.

Alabama spends <1.5% on IT

Over 33% of the State’s IT Spend is on IT Staff

<1% spent on IT Training
As of September 2018, due to misalignment of merit classifications, over 16% of all state IT employees were IT Contractors.

Over 200 IT Contractor employees hired statewide in 2018.

Over 25% of State IT Staff Spend on IT Contractors.

Over 34% of OIT’s IT Employees are IT Contractors.

September 2018 State of Alabama IT Merit Staffing and Projected Annual Cost (in Millions $)

<table>
<thead>
<tr>
<th>Agency</th>
<th>Annual Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Other Agencies</td>
<td>$34.53</td>
</tr>
<tr>
<td>Transportation</td>
<td>$14.24</td>
</tr>
<tr>
<td>Public Health</td>
<td>$12.77</td>
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<tr>
<td>Medicaid Agency</td>
<td>$14.62</td>
</tr>
<tr>
<td>Human Resources</td>
<td>$9.73</td>
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<tr>
<td>OIT</td>
<td>$9.26</td>
</tr>
<tr>
<td>Revenue</td>
<td>$7.07</td>
</tr>
<tr>
<td>ALEA</td>
<td>$5.47</td>
</tr>
<tr>
<td>Labor</td>
<td>$4.07</td>
</tr>
<tr>
<td>Retirement Systems</td>
<td>$4.55</td>
</tr>
<tr>
<td>Finance</td>
<td>$11.92</td>
</tr>
<tr>
<td>Corrections</td>
<td>$3.78</td>
</tr>
</tbody>
</table>

Over 20% of the state’s IT staff could retire today. This poses a serious issue for succession planning. Information Technology is constantly changing, and new advancement in technology often requires different levels of education, experience, and skills. A process and IT Merit classifications for succession planning will need to be implemented to avoid the risk of losing institutional knowledge and productivity due to the IT workforce leaving.

Over 200 IT Staff eligible for retirement today.

Over 30% of OIT IT Staff eligible for retirement today.

Over 25% of Top Ten Agencies IT Staff eligible for retirement today.

Who will fill their shoes?

Only 95 IT Merit employees hired statewide in 2018.

Over 29% of IT Merit employees did not receive a promotion or merit raise.

Over 80 IT Merit employees left state employment in 2018.

Over 50% of IT Managers statewide could retire today.
THEN & NOW

CYBERSECURITY

• Lack of resources and capabilities to respond appropriately to threats, leaving the state vulnerable to malicious attacks
• Little awareness to the total number of ongoing threats to the state
• Lack of training available for state workforce to recognize threats

• Championed cybersecurity efforts by creating the state’s first Security Operations Center (SOC) with 24/7 monitoring
• To date, the SOC has prevented 800 million intrusion attempts on the state’s firewall, protecting us from malicious attacks from around the world
• Implemented consistent, ongoing security awareness training for all state agencies

MODERNIZATION

• Antiquated IT equipment over 10 years old, some supporting business critical systems
• Approximately $300K spent annually on overhead and maintenance for aged IT infrastructure
• Lack of leadership prioritization for disaster recovery with no prior testing attempts
• Inefficient paper-based information gathering systems causing inaccuracy, rework, and unnecessary expenses

• Avoided over $500K in maintenance and setup costs by moving to a cloud environment and prevented wasteful spending by only paying for the resources we use
• Consolidated 25% of OIT data centers, eliminating an estimated $70K of redundant expense annually
• Conducted first successful test of a disaster recovery procedure
• Implemented modern technology, providing state workers the ability to be, on average, up to 35% more productive and efficient

NETWORK UPGRADE

• Inadequate network speeds that hindered agencies’ ability to perform work and had numerous complaints from state agencies
• Monthly cost of $150K to maintain an archaic state phone system with refurbished parts, as they are no longer produced
• Network infrastructure incapable of supporting modern VoIP technology

• Increased high-speed access by 400%, leading to productivity and efficiency gains
• Avoided over $500K annually due to reduction of rework
• Established a network infrastructure that can support future growth, enabling the state to capitalize on the benefits of cloud-based technologies
• Installation of modern phone system expected to be complete in 2019