

MAINE STATE LEGISLATURE

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ANNUAL REPORT
2017
Information
Technology in Maine
State Government



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Overview

In January 2005, the Office of Information Technology (OIT) was created by Executive Order, consolidating functions, staff, and equipment from the Bureau of Information Services (BIS) and all Executive Branch Agencies.

In January 2005, the Office of Information Technology (OIT) was created by Executive Order, consolidating functions, staff, and equipment from the Bureau of Information Services (BIS) and all Executive Branch Agencies. The consolidation was done to promote state-wide information technology solutions and use of information efficiently across government. Since the consolidation, OIT has been delivering the full range of technology services to the Executive Branch, and selected services (such as e-mail and network support) to non-Executive Branch agencies.



**12,000
Executive Branch
Employees**



**14 Cabinet-level
Departments**

OIT provides essential technology support and strategic leadership for 12,000 Executive Branch employees, 14 Cabinet-level departments, and all the smaller Executive Branch Agencies. It also provides network support for the Judicial Branch, Secretary of State, and Attorney General. It supports Maine Citizens through the Maine.gov web portal, the MSCommNet public safety radio communications network, ConnectME broadband access expansion, etc.

The Chief Information Officer (CIO) directs, coordinates, and oversees information technology (I.T.) policymaking, planning, architecture, and standardization throughout state government. The CIO has continued to expand collaboration with Agencies to build a cohesive I.T. strategy that leverages technology architecture (build once, use many) and optimizes the return from technology investment across the Enterprise. This has resulted in the formation of an I.T. Steering Committee and the implementation of a technology roadmap effort.

The Office of Information Technology:

- ▶ Provides central leadership and vision in the use of information and telecommunications technology on a statewide basis
- ▶ Sets policies and standards for the implementation and use of information and telecommunications
- ▶ Develops and supports I.T.-related legislation
- ▶ Identifies and implements I.T. business and project management best practices
- ▶ Completes research and development to establish effective I.T. service delivery



OIT continues to adopt and utilize best practices including:

In-practice:

- The Project Management Office, to provide professional level expertise for project management
 - “Agile” project management approach is used to improve project delivery and outcomes
 - Expanded I.T. workforce recruiting and retention efforts, since 25% of OIT resources are eligible to retire in the next two years
 - Adopted and implemented a cloud-first strategy (consistent with the federal government) to take advantage of industry offered infrastructure
 - Partner with all Agencies regarding cyber security best practices, review protecting critical assets, and to increase security awareness
-

In-planning:

- Working with the Procurement Division in DAFS to revamp I.T. procurement (risk, delivery)
- Review and create plans to upgrade, replace, or retire our legacy systems (some are over 25 years old)



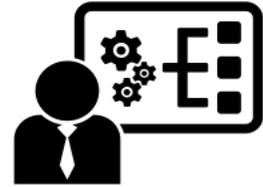
OIT Divisions



**APPLICATIONS
SYSTEMS**



**CORE TECHNOLOGY
SERVICES
(INFRASTRUCTURE)**



**PROJECT
MANAGEMENT
OFFICE**



**WORKFORCE
INNOVATIONS**



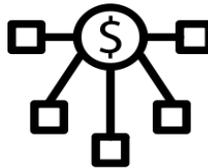
**CYBER
SECURITY**



**VENDOR
MANAGEMENT/
CONTRACTS**



**I.T.
ARCHITECTURE
& POLICY**



FINANCE



**RADIO
SERVICES**



**TECHNOLOGY
BUSINESS
CONSULTANTS**



**BUSINESS
CONTINUITY &
DISASTER RECOVERY**



**BUSINESS
PROCESS
MANAGEMENT**

OIT Organization

OIT's two largest organizational units are Application Systems and Core Technology Services. The Applications Systems unit oversees systems development and maintenance for approximately 600 application systems, spanning across Executive Branch Agencies. Core Technology Services include network and voice services, radio operations, data centers, servers, desktop/laptop computers, and I.T. customer support for all 12,000 State employees in the Executive Branch.

	64,172 Help Desk contacts per year, with a 95% rating of satisfied or highly satisfied		50+ Projects in support of all Executive Branch agencies and enterprise systems
	12,000+ Desktop/laptop computers and e-mail accounts		800+ Servers supporting 600+ agency application systems and databases
	3,500+ Users with smart phones and access from other mobile devices		647,918 Gigabytes or 648 terabytes of data storage
	13,000+ Phone lines and a state-wide radio network with 43 towers and 2,625 radios		400+ Locations with wireless access, network support is state-wide

OIT Strategic Direction

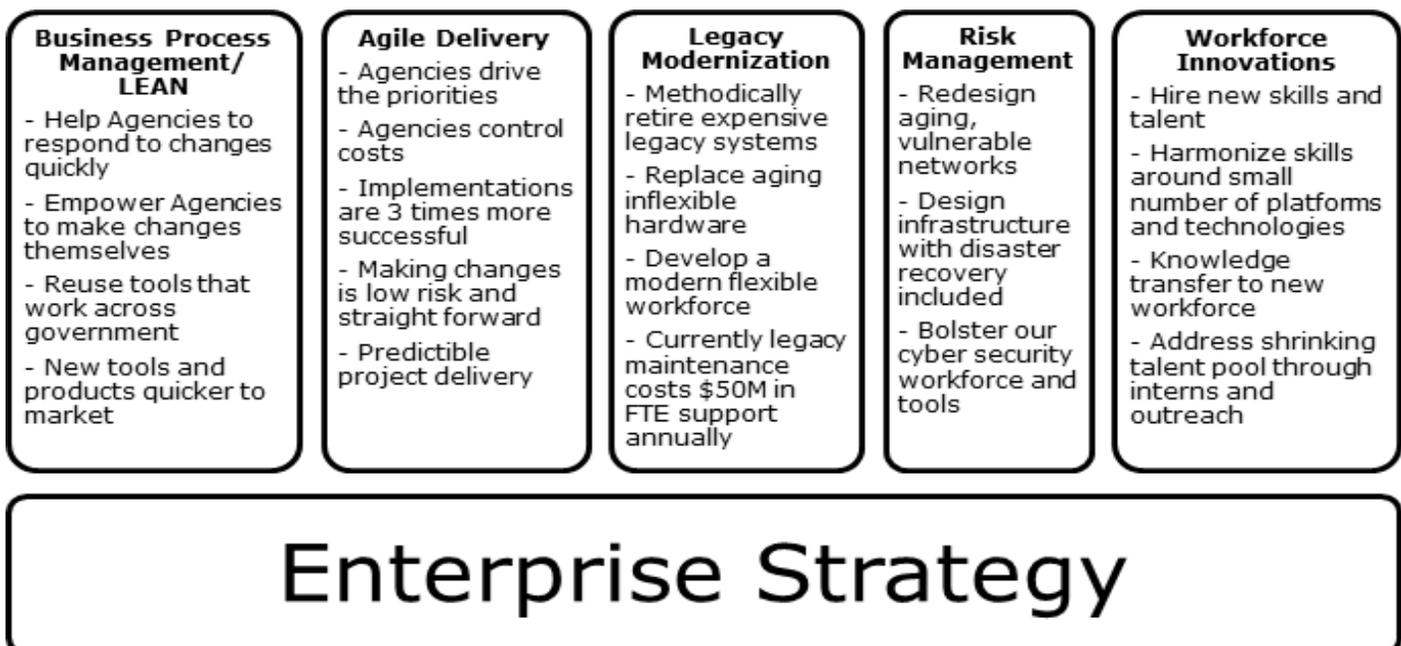
OIT's Strategic Technology Plan encompasses project delivery, building a resilient, redundant, and flexible infrastructure, risk management, cyber security and disaster recovery.

The foundation will be:

- Business Process Management (BPM) for process efficiency
- Agile Methodology for predictable project delivery
- Enterprise Strategy
- Risk Management (cyber security and business continuity/disaster recovery planning)
- Workforce Innovations (find, train, retain)

The Evolved Approach: Enterprise Modernization

Investment in these five areas will result in reduced development costs, reusability of assets, predictable delivery, and flexibility.



Application Services

With 350 staff members and contractors, OIT Application Services develops and maintains 600 agency and enterprise application systems, which support a myriad of agency and enterprise programs for all agencies of the Executive Branch.

Challenges

- Workforce Recruiting and Retention
- Legacy Application Issues

Recruiting and Retention

Staff recruitment and retention remains a significant challenge. The Applications divisions continually operate with 15% vacancies. As the economy has improved, this situation has worsened.

Legacy Applications Issues

The Applications Support has responsibility for some 600 different application systems. About 85% of our efforts are dedicated to operating and maintaining the State's legacy applications "keeping the lights on." The balance of our activity is applied to new initiatives which include modernization of old applications and to a lesser degree, new functionality. The state has applications as old as 40 years of age with the average being around 15 years of age. The older an application the higher the maintenance cost and more expensive it is to adapt to changing agency needs.

Going Forward

OIT is consolidating support teams along technical disciplines to provide a better focus on technology and shared services. Like the technology industry in general, OIT is evolving to more shared services support. This creates better economies of scale, it creates opportunities to standardize the application of technology, and it creates enterprise technical model – 'build once, use many times'.

Application Services

Notable Accomplishments

- Maine's Dept. of Labor started a Consortium based model, called **ReEmployME**. This is a collaborative business solutions approach with the states of Maine, Mississippi and Rhode Island. Benefits went live in December of 2017 and Tax is slated to go live in August of 2018.
- The Dept. of Administrative and Financial Services **Data warehouse modernization phase I** was completed in 2017 resulting in a move of the State Financial Data warehouse to a cloud hosting environment. Phase II, scheduled for 2018, will create an updated data model and modern advancements in research and reporting to better communicate across the State government.
- **Shared Services** model implemented with a team dedicated to **Managed Services**. The realignment will centralize expertise in managing vendors, contracts and RFPs. This will deliver standardization across all vendor relationships, improve consistency of deliverables to increase efficiency and cost-effectiveness with shared labor resources. The unit will provide the technical support required to facilitate close to \$50M in vendor services.
- **Application Testing and Security**. This year has seen a significant focus on security, infrastructure and environmental improvements to enhance security along with compensating controls to temporarily remediate concerns has required the Applications unit to test more often and more broadly, placing unique challenges on our resources to operationally support as well as routinely test after environmental changes and upgrades.
- **Deployment Certification Service** is a new internal process to ensure technology changes will be compatible with no impact on applications or business processes. Deployment Certification has been a requirement for 8 years but has largely been a tedious manual process. This effort automates the process freeing the capacity of staff members who can be reassigned to other priorities.
- Centralized **Program Initiation Process** that offers an Enterprise view of new initiatives. In the first 6 months of the current fiscal year we have identified 93 new initiatives with 25 large enough to require reprioritization of resources. The oversight and management of new I.T. initiatives have resulted in a single work flow for all state agencies. New initiatives follow a defined transparent path towards approval.
- Oracle database licensing and hardware have required a new approach for migrating the 130 applications hosted in the environment. Originally estimated at \$10M in cost we believe the effort will cost \$5M with this coordinated approach. The project began in July 2017 and will continue through December 2018. Coordination between Applications, Core Technology and vendors has brought focus a myriad legacy and security issues embedded within these aging systems. This approach has increased our ability to resolve problems that arise with enterprise rather one of solutions.

Core Technology Services

Core Technology Services is responsible for the delivery of safe, secure, and high-performing networks and information systems infrastructure to the State Agencies for daily performance of their missions for the citizens of Maine

Program Improvements

- Formed the Information Technology Roadmap Governance Committee (ITRGC). The committee is a review body of individuals (business and OIT) who provide initial oversight on reviewing and evaluating strategies/plans for enterprise I.T. investments. The purpose of the ITRGC is to assist the IT Steering Committee in setting enterprise priorities and determining a direction for the advancement of the State of Maine information technology initiatives.
- Created the Enterprise Road Map for FY 18/19 which is a communication tool for all parties (business and OIT) to heighten awareness of the enterprise initiatives and enhanced the planning process.
- Formed the Audit and Compliance Committee to bring mandated regulations into an enterprise view to develop enterprise recommendations to the I.T. Steering Committee.
- Collocated application printing with the State of Maine Postal Operations at 85 Leighton Road to achieve monetary savings and improve efficiencies.

Notable Accomplishments

- Completed audit review of the technical, procedural, and administrative controls conducted by Social Security Administration (SSA) to verify that appropriate security safeguards protect the confidentiality of information supplied by SSA.
 - Results: updated the Information Exchange Agreement (IEA) between our agencies.
- Migrated State of Maine users to Office 365 with a bundle services offering designed to increase business functionality. The Office 365 solution improved disaster recovery capability for certain business continuity operations.
- Implemented new Oracle hardware to replace legacy on premise in the Oracle hosting environment. This new hardware is a more modernized infrastructure. The environment has shown notable performance enhancements with the use of Exadata:
 - Batch job process times gaining results - 30% improvement in performance times.
 - Reduction in batch job process times from 24 minutes to only 4 minutes
 - Other examples of batch job process reductions are evident. One job went from 20 hours to only 2 hours to complete, and another from 28 hours to approximately 3 hours to complete.
- Migrated the Department of Transportation (DOT) users to the State of Maine domain. This continued effort will simplify the administration of DOT equipment and allow the benefits of shared services.

Core Technology Services

Going Forward – Enterprise View

File & Folder Protection - Increased auditing and user behavior analytics to keep up with cyber security threats. This entails buying a product and implementing it within the State of Maine infrastructure. The product will deliver the capability to manage, audit, monitor, and provide forensic analysis on accessing data.

Network Modernization – is a key initiative to refresh legacy equipment at the distribution layer for replacing switching and routing fabric for both wired and wireless network spanning the entire State. This project is slated to be completed over the next 12 to 18-month timeframe. **The main goals of this initiative are as follows:**

- Increase bandwidth performance for improved service
- Provide a new foundation to allow for modern technologies to be utilized by the State
- Increase the security posture of the State of Maine

Telephone Moderation Project - The State of Maine supports a multi-vendor architecture using three (Centrex, Nortel, Avaya VoIP) diverse types of phones systems. This project entails moving 5000+ Nortel and Centrex phones systems to Avaya VoIP phones to streamline operations and achieve an annual costing savings of \$763,000. This project is projected to be completed by Summer 2019.

Hyper Converged Infrastructure – The State of Maine relies on legacy physical servers and a hybrid Virtual Machine environment for Windows application hosting. The cost of dedicated hardware, licenses, and infrastructure for servers is significant. We are moving towards a Hyper Converged Infrastructure, to combine storage and compute components for a comprehensive solution that increases performance and reduces cost on I.T. capital equipment expense for the State of Maine.

Windows 10 Migration – Upgrade all Executive Branch laptops and desktops to Windows 10 to keep up with vendor supported systems to maintain performance and reduce opportunities for cyber security attacks by ensuring the State stays current with security patches. The current fleet of laptops and desktops are scheduled for end-of-life/support in October 2020.

Oracle Migration Project – In July 2017, the Oracle Migration project started to move 130 applications to Oracle 12cR2 on the new Exadata/Exalogic platform. This project brings agency applications in line with a vendor support system and allows the State of Maine to decommission legacy environment to prevent unnecessary and expensive Oracle fees. The targeted critical date of completion of this project is December 2018.

Core Technology Services

Risk Management - Enterprise Security

The team proactively protects the information and State-owned I.T. equipment for the State of Maine by:

- Conducting *vulnerability testing* to ensure hardware and web applications meet Federal guidelines for security
- Providing *security awareness training* to increase security awareness among users of State-owned I.T. equipment and programs
- Conducting *risk assessments* to determine what the risks are to systems
- *Incident response* to constantly check state equipment for security breaches, malware etc., and to respond to the issues immediately
- *Managing security tools*



Program Partnership

OIT and certain agencies have partnered together to institute Agency Cyber Security Managers. The Agency Cyber Security Manager is positioned within the agency to bridge the understanding of both cyber security threats/protections and business operations. The position will work with OIT to develop and implement standards to be incorporated into the agency operations to strengthen security without disrupting business processes.

Notable Accomplishments

- Mitigated the risk of the cyber security threat of *WannaCry* ransomware. OIT prevented the State of Maine from falling victim to this malware by immediately responding to the threat by applying emergency patches and system counter measures. The State of Maine avoided the global attack of this ransomware.
- A member of the OIT Enterprise Security passed the Certified Information System Security Professional (CISSP) certification, which brings OIT to a total of 4 individuals who hold this independent security certification granted by International Information System Security Certification Consortium (ISC)². The CISSP is the leading and most difficult certification program where individuals must demonstrate competence in and with various information security topics. According to (ISC)², there are only 75,312 individuals in the United States with this certification.
- Provided the 2017 cyber security awareness training to all State of Maine staff and contractors.
- Conducted many aggressive Phish training simulations to increase cyber security awareness to prevent users from falling victim to cyber threats. These exercises have resulted in the average phishing susceptibility being reduced to below 10% for the first time.
- Updated key infrastructure perimeter security protections to provide enhanced capability to keep up with cyber security threats.
- Implemented updated cyber security protections on desktops and laptops to prevent Ransomware infections.

Radio Operations

Responsible for all State of Maine public safety and public service agencies' two-way communication needs ensuring 24x7x365 availability for the State-wide radio network with 40 sites and approximately 3,876 radios.



2000 mobile radios
(car, trucks, boats)



1679 portable radios (hand held)



154 controls stations



43 Dispatch consoles

MS CommNet handled **12,932,092** conversations in 2017, averaging **35,430** conversations per day. Total talk time for the year was **25,793** hours.



This was the first year assisting Maine State Police in building their vehicles. In 2017 out of the **160** plus vehicles, over **105** of them were new State Police Vehicles.

Radio Operations technicians completed over **160** Public Safety vehicle “up-fits” (installs) for all non-radio equipment including lights, sirens, cell phones, cell boosters, laptops, weapon mounts, decals, consoles, camera systems, etc. for Inland, Fisheries and Wildlife, Department of Marine Resources, Maine State Police, Bureau of Motor Vehicles, Office of the Attorney General, Department of Agriculture, Conservation and Forestry, Fire Marshal’s Office, Maine Drug Enforcement Agency and others.

Project Management Office

The OIT Project Management Office (PMO) is responsible for implementing project management practices for the State's I.T. projects that can:



Free executives to think strategically.



Drive business success.



Improve decision making.

The services provided by the OIT PMO are comprised of four core pillars:

Project Standards /Practices

- ▶ Reporting
- ▶ Project Toolkit
- ▶ Budget to Actual Tracking
- ▶ Agile Implementation

Project Staffing

- ▶ On-boarding
- ▶ Placement
- ▶ Mentoring
- ▶ Administrative Oversight

Portfolio Management

- ▶ Strategic Planning
- ▶ Project Initiation
- ▶ Governance
- ▶ Project Health Checks/Audits

Business Process Improvement

- ▶ Process Re-Design
- ▶ Lean Practices
- ▶ Bus. Process Management

Major Projects

Spillman Record Management System & Mobile - backbone for law enforcement investigations, intelligence, reporting, record maintenance, and processing activities. Enhanced data sharing among 6 state agencies and 41 sheriff's offices and local police departments.

ReEmployME - Maine became the second state to deploy its Unemployment Insurance Benefits system using a modernized, multi-tenant, cloud-based solution developed by the ReEmployUSA consortium. ReEmployMe serves 15 thousand active claimants and 42 thousand employers in the state of Maine.

Office 365 Implementation - deployed to the Executive Branch, Secretary of State and Attorney General.

- 8600+ workstations updated and all onsite emails accounts moved online
- Microsoft Office is continually updated; no future deployments required
- Project completed on time on budget

Workforce Innovations

I.T. Workforce Challenges and Solutions

Per the U.S Department of Labor, information technology occupations are projected to grow twelve percent from 2014 to 2024, faster than the average for all occupations. Research, both nationally and statewide, indicates that there are not enough technology and computer science resources graduating from college to replace the retiring workforce, or to keep up with the growing need of I.T. resources.

We will be losing expertise to retirement. Twenty five percent of OIT employees will be eligible to retire in the next two to three years; that equals almost 1,700 years of State of Maine I.T. experience. OIT is attempting to overcome this “Silver Tsunami” effect by proactive efforts to hire interns, minorities, and veterans.

The next generation of I.T. professionals is well established in cyberspace including LinkedIn and Facebook. To reach out workforce we try multi-approaches:

- ▶ Use social media and online resources as a major communication channel for branding, recruitment, and retention.
- ▶ We offer an onboarding program with assigning mentors to welcome our workforce and ensure consistency for our newly hired interns and candidates.
- ▶ We meet candidates where they hang out, which is in “virtual” and “digital” spaces.
- ▶ We offer a paperless experience for our applicants.
- ▶ We are expanding our outreach to attract some of the best and brightest students to establish their I.T. careers here in Maine and at OIT. Our Internship Program is one avenue of proven success, with over seventy percent retention of our interns into State jobs.

Workforce gets I.T. done. In 2017 we...



Reached over **1,000** LinkedIn connections and over **150** Facebook followers



Hosted **TechNight** for high school students



Attended **13** career fairs



Had **20** new hires, **22** promotions, and **469** applicants

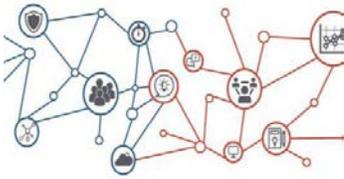


Coordinated the **Girls Go CyberStart** program for high school girls in Maine



Provided **4644** hours of technical training

National Technology Activity



State IT Procurement Negotiations:
Working Together to Reform and Transform

Jim Smith Co-chair

Chief Information Officer Jim Smith co-chaired a national committee to recommend improvements in technology procurement. The committee, a joint effort by NASCIO and NASCPO, recommend five activities for more successful software and services acquisitions.



5th in the nation for Girls Go Cyber Registration

Maine ranked 5th in the nation for registering high school girls for the SANS Institute Girls Go Cyber initiative. This initiative promotes young women in Cyber Careers. This was a national effort and a State of Maine I.T. and DOE partnership. www.girlsgocyberstart.com



Presentation at National ISM Conference

Kelly Samson-Rickert presented about Generations in the Workplace at the National ISM conference for the Federal Health and Human Services division, partnership with Arkansas DHHS leaders. The ISM Conference is dedicated to bringing together state and local I.T. leaders, federal partners, private sector industry experts and thought leaders to promote solutions that support the mission and vision of H/HS

programs. The conference promotes best practices in information technology by sharing innovative solutions, connecting I.T. professionals and collaborating with private sector partners.

STOP. THINK. CONNECT.™ Partner Spotlight

OIT received the STOP. THINK. CONNECT.™ Campaign Partner Spotlight for their work during National Cyber Security Awareness Month (NCSAM) 2017 and their year-round, continued dedication to the future of cyber security.

During NCSAM 2017, the Maine Office of Information Technology organized/participated in 10+ cyber security related events, including webinars and panel discussions.



OIT Metrics/Facts

647,918	gigabytes of data storage
25 million	emails per year (inbound)
14 million	spam emails blocked per year
1.4 million	intrusion attempts foiled (daily)
64,172	help desk contracts, 95% satisfied or highly satisfied rating
49,001	resolved information technology tickets
35,984	network connections
13,000	phone lines
12,000+	email accounts
7,000	SecurID (remote access) accounts
3,500+	users with smart-phones and access
2,000+	mobile and portable radios
945	Oracle and SQL databases
800+	servers (physical and virtual)
600+	applications systems (all Executive Branch agencies)
600	facilities supported statewide with network access
500	invoices processed (monthly)
388	contracts managed
400+	wireless access locations
50+	projects in support of all agencies and enterprise systems
43	mountain-top radio tower sites
24/7/365	network monitoring

For more information please email CIO Jim Smith at:
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