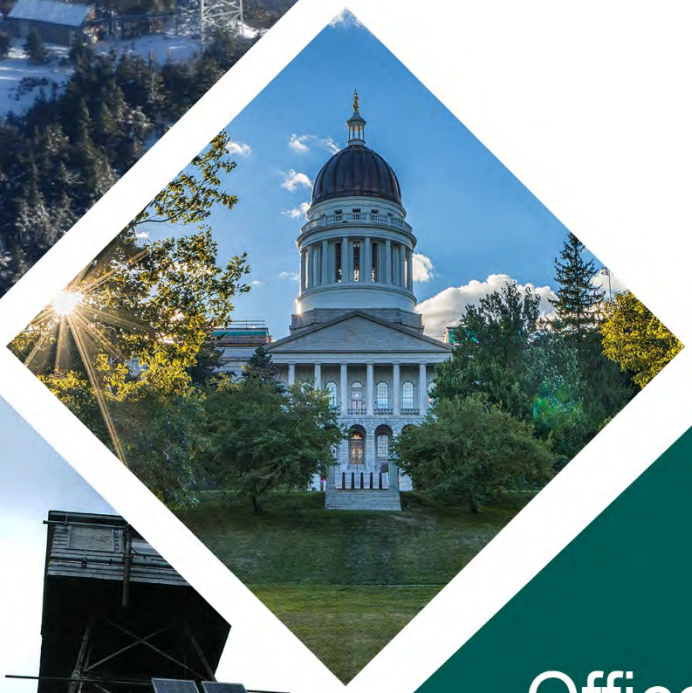
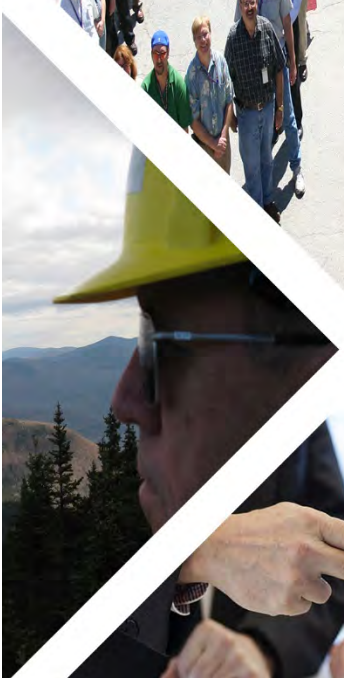


State of Maine

Office of Information Technology

ANNUAL REPORT

2018

Contents

Letter from the CIO

This 2018 Annual Report provides background on the Office of Information Technology (OIT), with a focus on the mission, vision, and strategies that will guide the organization of approximately 436 State employees and 91 contractors serving the Information Technology (IT) need of the Executive Branch and the Maine citizens.

I am proud to report the great strides made in 2018 by the OIT team. As we transform OIT to be a more customer-centric organization, I believe we will deliver on the promise of a shared services enterprise and be the organization that agency partners and the citizens of the State expect.

The Office of Information Technology (OIT) delivers reliable, cost effective, and secure IT services to the State and for the citizens of Maine.

Executive Summary

The Office of Information Technology (OIT) delivers reliable, cost effective, and secure IT services to the State. Representative activities include developing and maintaining software applications, delivering network and computing platforms, provisioning and supporting computers and phones to State employees, operating a help desk, and managing information security. OIT is a centralized, shared-services organization that directly serves all Executive Branch employees. It also provides some IT services to other Constitutional offices that are not under the direction of the Governor, including the Judicial Branch, Office of the Attorney General, Secretary of State and State Treasurer. OIT is also responsible for the operation and maintenance of the State's public safety radio network.

We will be a customer-centric focused organization delivering excellence in technology services for the state of Maine and its citizens.

Our vision and strategic approach is to make OIT one of the best places to work in the State, be the preferred provider for our agency partners, and ensure that our leaders and staff remain the experts in their fields.

IT Professionals, John Hawkes, Richard McGovern, and Jeff Jordan attended high-level training from Oracle in 2018. They presented at this nationwide event, and engaged with Oracle engineers, implementation partners, and their peers in hands-on learning to build skills.

Core Technology Portfolio

As reflected in this document, the following areas comprise of the critical capabilities of the State's existing technology portfolio and critical services:

Microsoft Office 365. The State relies upon this cloud-based email, communication, and productivity suite of products. While tools such as Word and PowerPoint are installed locally, this approach provides superior resiliency as all email and documents are available at any time and are protected against disruptions or destruction to local IT infrastructure.

Microsoft Server and SQL Database Environment. Much of the State's hosted software relies on server and SQL databases running on Microsoft operating systems. The State generally supports these in virtualized environments using VMWare products. In 2019, these environments will be collapsed from physical servers running VMWare and separate network storage devices to the SimpliVity converged environment. This migration is critical as the State's licensing and hardware retirement strategy hinges on the deployment to this new infrastructure.

Oracle EXA Environment. The State also deploys Oracle database and associated programming platforms to support large-scale, enterprise applications, including many supporting the Department of Health and Human Services, and Maine Revenue Services. These Oracle tools were migrated to the EXA converged storage and processing platform to provide for better performance. While performance increases have been obtained, work continues to better operationalize the EXA platform and make use of its full range of capabilities.

Cisco Software-Defined Network. The State recently replaced its core network with a state-of-the-art Cisco network, which relies heavily on virtualization in lieu of physical devices. This network modernization project is in the final phase, with upgrades of fiber in and to State offices, upgraded networking gear at facilities, and improved wireless access capabilities. This work is planned for completion in late 2019.

Help Desk and Client Technology Support. The State delivers end-user support for all State users. This includes on-site technicians and a professionally managed help desk. On-site technicians service every Executive Branch office and facility across the State. This team also builds and refurbishes computing equipment, provisions phones and computers, manages the State's print shop, installs radios in public safety vehicles, and maintains the State's land-mobile radio network. The performance of these groups is supported by a service management platform, which is expected to be upgraded in 2019 and 2020. This upgrade is expected to enhance customer satisfaction with and access to needed support.

Application Development and Support Capabilities. The State maintains the capability to self-develop and maintain a range of applications in support of State agencies using a wide range of programming languages and platforms. While an increasing number of platforms have migrated to managed services or Software-as-a-Service solutions, the preponderance of the State's application portfolio remains on customized platforms supported by OIT. OIT continues its movement to embracing Agile-based programming methodologies to more quickly deliver cost effective solutions to its agency partners.

Organization

OIT is led by the Chief Information Officer (CIO), who is supported by a Deputy CIO, a Chief of Staff (COS), a Chief Operating Officer (COO), and a Chief Information Security Officer (CISO). OIT is organized into 9 functional directorates:

INFORMATION SECURITY OFFICE

APPLICATION & DEVELOPMENT – TEAM 1

SERVICE SUPPORT & ADMINISTRATION

CLIENT TECHNOLOGIES

APPLICATION & DEVELOPMENT – TEAM 2

COMPUTING INFRASTRUCTURE & SERVICES

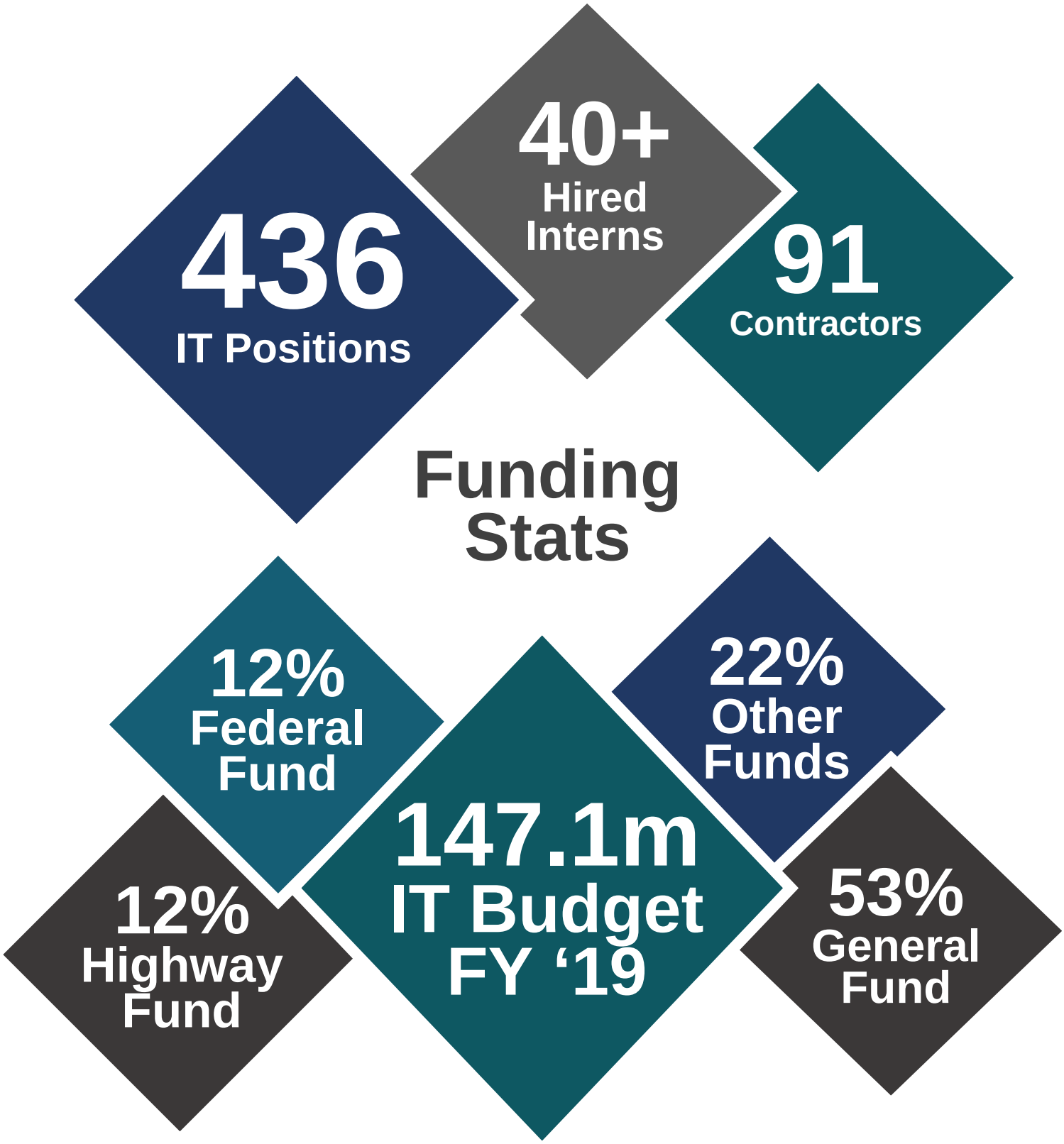
ENTERPRISE DATA SERVICES

APPLICATION & DEVELOPMENT - TEAM 3

NETWORK & DATA CENTER

About the Divisional Areas

- The three Application and Development groups are aligned to support specific Agencies and their approximately six hundred applications.
- Computing Infrastructure and Services oversees a range of technologies, including servers, mass storage, and related services.
- Enterprise Data Services manages data warehousing, data analytics, and related infrastructure.
- Network and Data Center delivers connectivity to all State agencies through a fiber-rich network, manages the phone system and maintains the State's two data centers.
- Client Technologies provides for the wide range of IT needs of workers, through activities such as providing computers, operating a helpdesk, performing office equipment installations, and managing the public safety radio network.
- Information Security Office oversees information security and associated governance and compliance activities.
- Service Support and Administration generally provides internal support functions that enable the operation of OIT, including project resources, financial planning and management, IT vendor management, business continuity planning, workforce, and communications.



OIT is authorized to employ 436 full-time staff. As of the end of October 2018, it directly utilized 91 contractors in support of its mission. The overall State-wide IT budget for the fiscal year 2019 is $147.1 million. Of this, approximately 53% is from the General funds, 12% from the Federal funds, 12% from the Highway Funds, and 22% is from various other sources.

Accomplishments of 2018

- In October 2018, the State of Maine was recognized as a 2nd place winner of the 2018 Digital States Survey award. Maine has achieved an overall grade of B+ in the 2018 Digital States Survey, up from B in 2016.
- The Oracle Migration team, along with the Application Development, Oracle Middleware, Oracle Database, Unix and Load Balancer teams, have continued to successfully migrate 55% of the 116 applications to the new ORACLE 12cR2 Exa environment.
- The State of Maine's legacy data network has been upgraded. Three non-redundant legacy switch/routers were replaced by 14 more specialized, redundant network devices. Five goals were established to assist with the outcomes and these goals are identified on the following chart:

Reliability:	99.999% (less than six minutes/year) reliability with no single points of failure at the core.
Availability:	100% availability – no maintenance activities should render the network unavailable to any part of state government or OIT at any time.
Security:	The new core must provide a foundation for state-of-the-art security mechanism such as encryption and network segregation that the State needed to implement in the future.
Scalability:	The new core could accommodate all increases in utilization generated by existing applications and new uses including video, cloud and Internet of Things (IoT).
Manageability:	Through network components, monitoring tools and the test lab, the OIT network team can identify nascent problems and remediate them before they became service-affecting, allowing the team to make the shift from being reactive (break/fix) to proactive/predictive in its approach to network management.

Wes is fourth from left in the photo

Wesley ("Wes") Savage
Senior Information Systems Specialist – Radio Operations
Customer Service Award
Wes' efforts on behalf of the Department of Public Safety (DPS) earned him praise from taskforce stakeholders, including the Maine State Police, and the federal Bureau of Alcohol, Tobacco, Firearms and Explosives. His work reflected positively on the importance of customer service and adding value to our client agencies. Wes was a member of the Incident Management Assistance Team led by DPS, during the massive manhunt for the killer of Cpl. Eugene Cole, a Somerset Deputy Sheriff. Wes assisted with the unified communications plan, and provided numerous hours of IT radio and other technical support.

Our Leadership Strategies

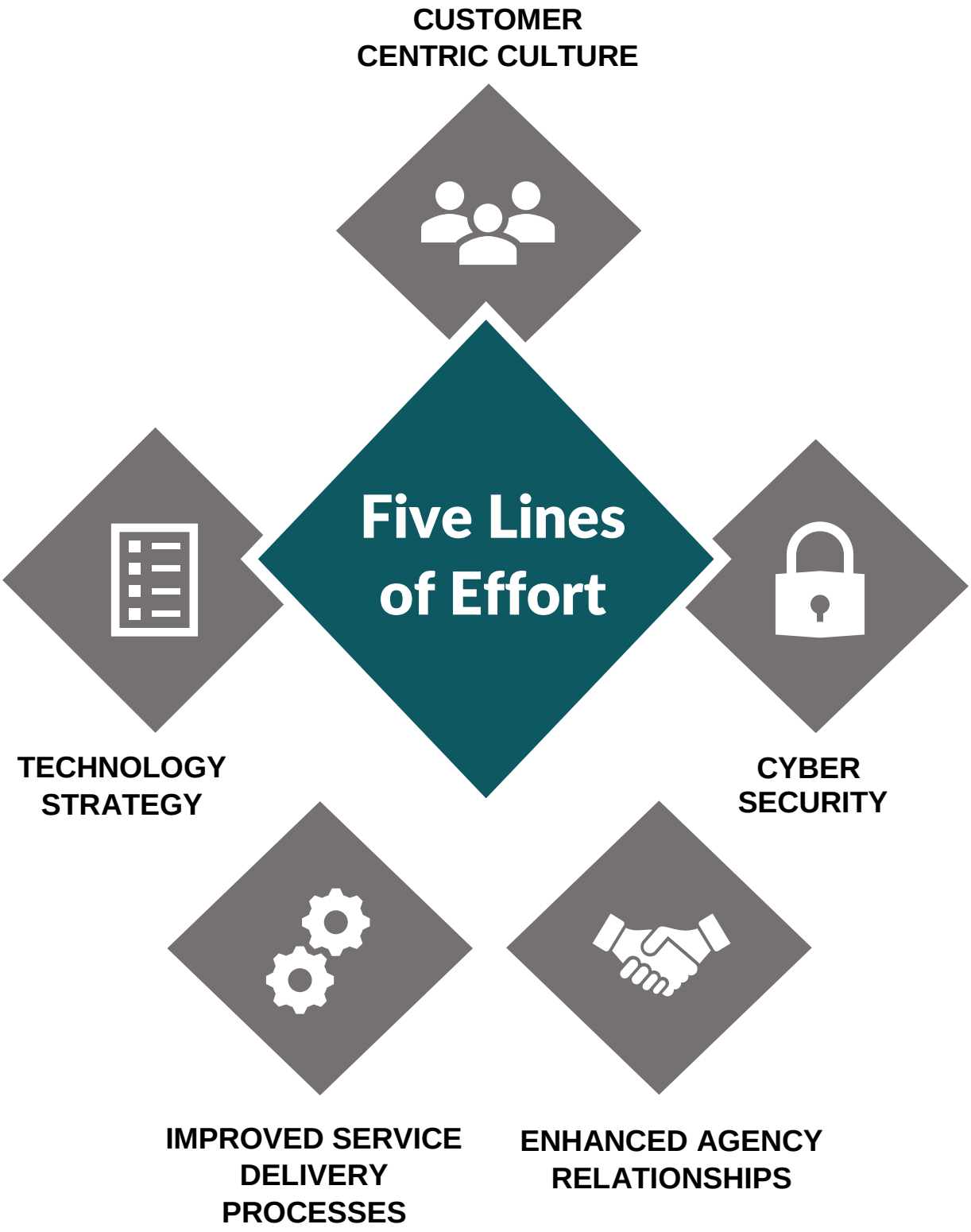
3 GOALS LEAD TO SUCCESS IN 2019 & BEYOND

Make OIT the preferred provider of IT services to all Executive Branch agencies. This means that state agencies first look to OIT for all their IT needs as part of a shared technology strategy. We will accomplish this by maintaining great relationships with our partner agencies, understanding and anticipating their business needs, being transparent in our standards and processes, and deliver value to meet their budgets and expectations.

Make OIT one of the best places to work in Maine. This means employees are supported and empowered to achieve results, experience open communications, and positively embrace a culture of delivering superior value and service.

Ensure every employee is - and is viewed as - excellent in their field. This means that employees are given the tools and training necessary to deliver value and be their best professionally, as well as providing appropriate and timely professional development to grow in their career.

To achieve our goals, OIT will focus on 5 lines of effort during 2019



Customer-Centric Culture

OIT is changing to a more customer-centric organization with emphasis on its people and culture. Addressing and nurturing this cultural focus is the underlying foundation to the success of OIT.

Key Initiatives:

Execution of a Communications Strategy for Staff. A common theme in excellent service is effective communications. A regular regime of internal communications has been established to support cultural transformation. These involve frequent direct engagement by the CIO and senior leaders in the organization, effective use of social media and other tools for creating transparency to all staff, and feedback in support of empowerment. These structured processes will help cement key behaviors and identify roadblocks and barriers to service delivery.

Enhanced Training Investment. With the rapid pace of technology change, continued and enhanced emphasis on training is important. In addition to focusing on technical skills, OIT will invest in training that leads to appropriate technical certifications that support our current and future technology base. In cooperation with the Bureau of Human Resources, OIT has begun a front-line manager development program to not only provide management skill training, but buttress it through on-going feedback, mentoring, and reinforcement.

Rework of OIT Performance Review and Recruiting Systems. With the creation of behavior expectations as part of the cultural transformation, the inclusion of those behaviors in performance reviews is required to reinforce the needed changes in the organization. OIT will work to ensure that performance appraisals establish desired behaviors and cultural competencies, and that interviewing includes assessment of cultural fit.

Position Classification and Staffing Review. With rapid change in technology, OIT's position classification schema must be updated and include the industry standards of relevant technical and professional skills. For example, a significant number of positions are for "computer programmers," which reflects skills related to mainframes and early network platforms. This challenges recruitment and mismatches employee expectations for growth and the skills they need.

Cyber Security

The risk to the State and its IT infrastructure has never been higher. Beginning in July 2018, the information security staff and job functions were reorganized into an Information Security Office (ISO). This change was supported by the creation of a comprehensive cyber-security road map and placement of key resources in the right position for building skills and growth opportunities.

Key Initiatives:

Complete the Hiring of a Seasoned Security Professional as CISO. OIT has been served for the 2nd half of 2018 by a contracted CISO with state experience. While this engagement has served the State well, the development and sustainment of a leader is necessary to ensure not only proper selection of security tools and control technologies, but also sustainability and execution over the long-haul.

Enhance Patch and Configuration Management Processes. Patching and configuration management are critical disciplines to ensure that the State's infrastructure is continuously hardened against threats and newly discovered vulnerabilities. The State will enhance its investments in vulnerability management through improvements in its patching processes, labor investments, and deployment of improved tools for identifying and remediating vulnerabilities. In addition, the State will enhance its configuration management disciplines to better secure newly deployed systems.

Disaster Recovery Strategy Development. To buttress its significant recent investment in infrastructure, the State is engaged in an RFP for consulting services to provide an assessment of the State's current capability for disaster recovery and to provide general recommendations for remediating any shortfalls. This report will complement the recent creation of a disaster recovery position in OIT to help modernize the State's capability to respond to significant disruptions to its IT infrastructure.

Enhanced Agency Relationships

To meet its over-arching goal of being the preferred provider of services to our agency partners, OIT will reassess its methods of communications and engagement to remove impediments to better service delivery. To be successful, OIT must be able to convey (and receive) critical information linked to the right audiences, with the right level of detail, at the right time.

Key Initiatives:

Reinvigorate Governance of IT. OIT will reinvigorate key governance structures to provide senior and mid-level engagement with agency leaders to communicate priorities to OIT and better understand OIT's capabilities and constraints. The current governance structures, including the IT Steering Committee, IT Executive Committee, CIO Council, and IT Roadmap Committees will be reorganized and rechartered to better align OIT and its mission to the needs of the agency partners it serves.

Enhanced Communications. OIT will implement a thoughtfully planned communications strategy using new and rebuilt channels to better convey information to and from the agencies. These will include a redesigned intranet presence, targeted use of web and SharePoint resources, the use of social media to convey such information as outages and restoration status, the use of blogs and other outreach tools to provide insights on upcoming user features or security-related changes. Taken together, agency partners, at all levels of their organization, will receive more useful and more timely information.

Refocused Account Management. OIT's team of account managers are at the front line of its engagement with its agency partners. To be successful, these account managers must not only be fully engaged with agencies, but also have effective means of shaping and driving action within OIT in response to agency requirements and needs. The Account Management team in OIT will develop new business processes internally to ensure that agency needs are given the appropriate priority for action and to ensure that OIT functions as a single entity in response to those needs.

Improved Service Delivery Processes

As with communications, business process modernization is critical to OIT meeting its over-arching goal of being a preferred provider of services to our agency partners. Technology and business processes that are relied upon by agencies to gain access to OIT services and expertise must be not only rigorous, but understandable, timely, friendly to agencies with limited resources, and scalable to deliver on their important missions. A focused effort on business process improvements will streamline service delivery and establish quicker resolution to agency problems.

Key Initiatives:

Streamlined Billing. The current cost recovery strategy that funds OIT employs exceptionally detailed "bills" that consume considerable time, both in the preparation and in agency adjudication. OIT will work with agency partners to simplify billing detail and creating transparency on costs. Pilot projects around license management and billing already show promise in avoiding dysfunction. OIT's work will be guided by the tenants of Technology Business Management, adopted by the federal Office of Policy Management, which provides a standardized methodology for benchmarking expenses across public and private sector organizations.

Change Management. Ongoing, routine technology work must be vetted and deconflicted to prevent unintended disruptions to services. OIT will update its change management discipline to both streamline its processes and generate associated productivity savings, while also better aligning its process to manage and mitigate risk.

IT Vendor Management. As industry and the State place increasing reliance on third party software solutions, including hosted software arrangements and Software-as-a-Service (SaaS), the nature of OIT support shifts from application management to technology and risk advisors. OIT has established an IT Vendor Management group to address these challenges, with focus on performance and risk management. This group, working in concert with the State Procurement Office, will streamline contracting and vendor assessment processes, and support models to assist agency partners.

Technology Strategy

OIT's current strategy was last refreshed in 2015, and even then, was only a modest update to an earlier draft. With a focus on a customer-centric culture, we will include all levels of stakeholders to help us better define the technologies and direction to best meet our agency partners' needs.

The current strategy emphasizes a "cloud-first" approach. It recognizes that reliance on Software-as-a-Service ("SaaS") and similar hosted products can offer numerous advantages over self-developed software. Similarly, other cloud offerings can replace infrastructure and platforms hosted locally by OIT. But, several other priorities in the existing strategy have waned or require renewed definition, considering technological advancement and significant investments by the State.

In parallel with OIT's earlier "cloud-first" strategy, the State has invested heavily in infrastructure and computing platforms. OIT is in the final stages of implementing a state-of-the-art software-defined network core, has invested in Oracle's EXA platform, and begun the implementation of the SimpliVity hyper-converged platform for its Microsoft-based computing needs.

These investments emphasize virtualization – the replacement of hardware with software that performs the same function. In doing so, the State has positioned itself to take advantage of more opportunities than SaaS alone. Evolving concepts of a "hybrid-cloud" which blend cloud computing with local infrastructure, create new opportunities for resiliency and efficiency. An updated strategy should reflect the benefits of SaaS and other cloud-offerings, while also providing for utilization of the State's modernized infrastructure and its skilled workforce.

Partnerships & Community

INTERNSHIP PROGRAM | Partnerships with the University of Maine at Augusta, Thomas College, KVCC, and other local educators has been a measurable success of a pipeline of talent for OIT and the state of Maine. Over forty interns have been hired into full time positions and many have promoted to the new level. The benefits include mentoring opportunities for existing staff and leaders to develop their skills.

SANS INSTITUTE CYBERSTART PROGRAM | This partnership with the Department of Education and the Office of Information Technology is founded on the national program supported by the SANS Institute to promote IT Cyber Careers to young women in grades 9-12. In the first year, over 125 teams across schools in the state of Maine participated. Maine was 5th in the nation in participation.

VETERANS | As a founding member with the Hire-A-Vet Campaign and our partnership with the Department of Labor, we have been instrumental in hiring veterans for our positions. We partner with Military trainings 101 & 202.

TECHNIGHT 2018 | Over 100 students attended our annual TechNight. TechNight is a fun and interactive event for students to learn about technology.

FOCUS ON HIPAA TRAINING | Over 170 employees attended HIPAA training in 2018 to ensure awareness around the use of personal health data.

Stats/Metrics

647,918	gigabytes of data storage
25M	emails per year (inbound)
14M	spam emails blocked per year
1.4M	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 (Executive Branch agencies)
600	statewide facilities with network access
500	invoices processed (monthly)
388	contracts managed
24/7/365	network monitoring
43	mountain-top radio tower sites
400+	wireless access locations
50+	projects in support of all agencies and systems