OREGON | Office of the State Chief Information Officer

JOINT COMMITTEE ON WAYS AND MEANS

GENERAL GOVERNMENT SUBCOMMITTEE – FEBRUARY 4, 2019

2019 LEGISLATIVE SESSION

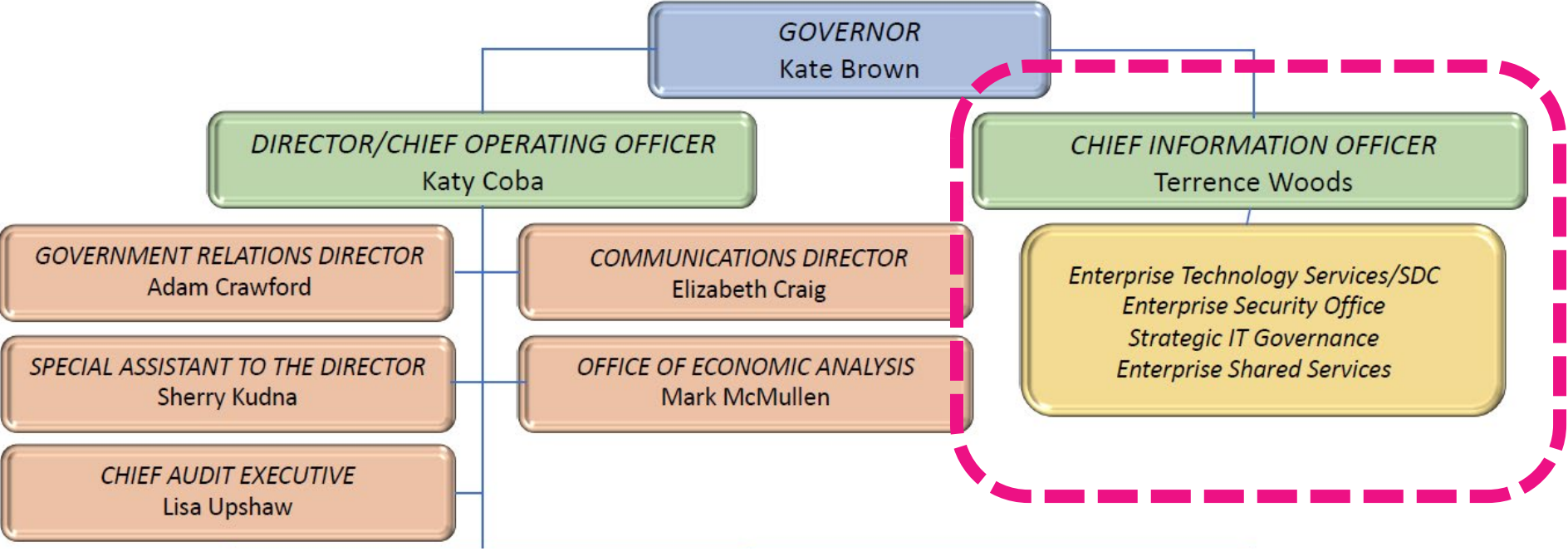# Presentation Schedule

February 4, 2019

- OSCIO Overview – Mission, Vision, Strategy
- Program Highlights

February 5, 2019

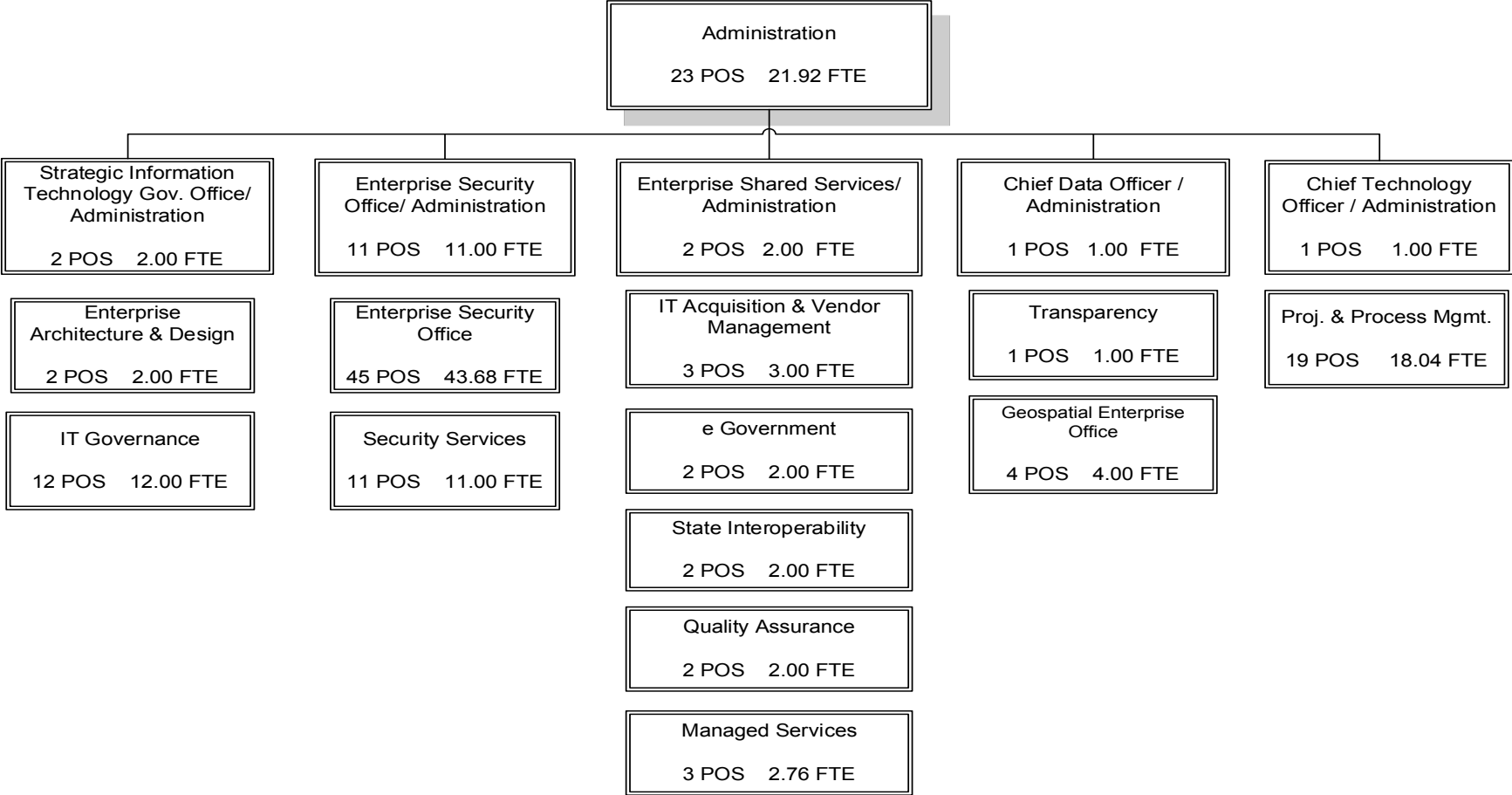- Enterprise Security Office (ESO)
- Enterprise Technology Services (ETS)
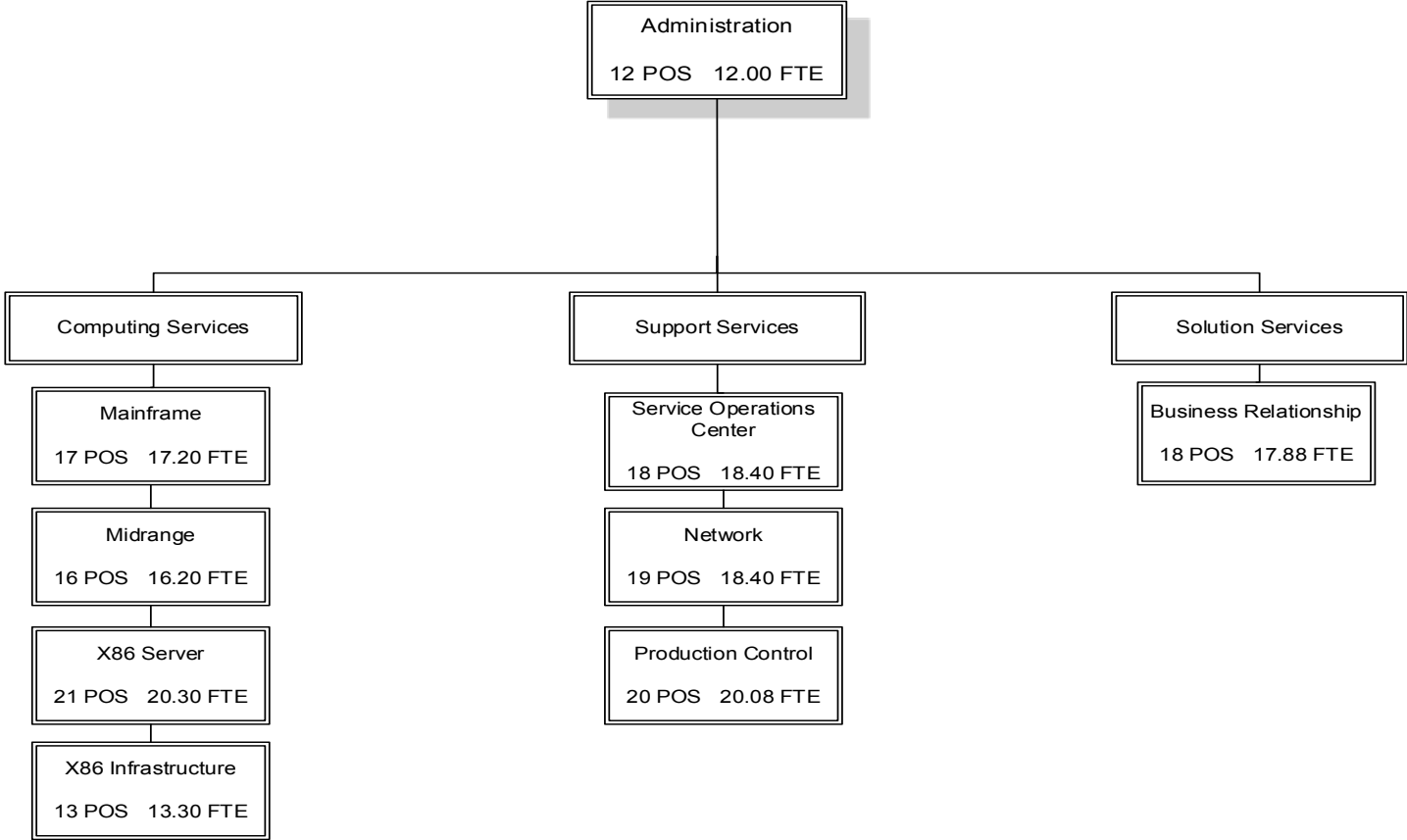
Organization Chart relation to DAS

OSCIO Organization Chart

2019-21
146 POS   142.40 FTE

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                              ┌─────────────────────┐
                              │   Administration    │
                              │                     │
                              │ 23 POS    21.92 FTE │
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Strategic Information Technology Gov. Office/ Administration	Enterprise Security Office/ Administration	Enterprise Shared Services/ Administration	Chief Data Officer / Administration	Chief Technology Officer / Administration
2 POS 2.00 FTE	11 POS 11.00 FTE	2 POS 2.00 FTE	1 POS 1.00 FTE	1 POS 1.00 FTE

Enterprise Architecture & Design	Enterprise Security Office	IT Acquisition & Vendor Management	Transparency	Proj. & Process Mgmt.
2 POS 2.00 FTE	45 POS 43.68 FTE	3 POS 3.00 FTE	1 POS 1.00 FTE	19 POS 18.04 FTE

IT Governance	Security Services	e Government	Geospatial Enterprise Office
12 POS 12.00 FTE	11 POS 11.00 FTE	2 POS 2.00 FTE	4 POS 4.00 FTE

State Interoperability

2 POS   2.00 FTE

Quality Assurance

2 POS   2.00 FTE

Managed Services

3 POS   2.76 FTE

OSCIO Organization Chart (ETS)

Office of the State Chief Information Officer
State Data Center
Organization Chart
2019-21
154 POS   153.76 FTE

Administration

12 POS   12.00 FTE

Computing Services

Support Services

Solution Services

Mainframe

17 POS   17.20 FTE

Service Operations Center

18 POS   18.40 FTE

Business Relationship

18 POS   17.88 FTE

Midrange

16 POS   16.20 FTE

Network

19 POS   18.40 FTE

X86 Server

21 POS   20.30 FTE

Production Control

20 POS   20.08 FTE

X86 Infrastructure

13 POS   13.30 FTE

OSCIO Budget

OSCIO	2017-19 LAB (millions)	2019-21 GRB (millions)
Administration	$4.8	$9.7
Enterprise IT Governance (EITG)	$5.0	$6.1
Enterprise Security Office (ESO)	$27.2	$43.9
Enterprise Shared Services (ESS)	$24.8	$12.0
ETS/SDC	$113.8	$128.3
Chief Data Office (CDO)	$2.0	$2.9
Chief Technology Office (CTO)	-	$12.1
OSCIO – *Pass Through*	$1.0	$2.6
ETS/SDC - *Pass Through*	$35.0	$21.6
Total OSCIO	*$213.6*	*$239.2*

OUR VISION

Ensuring user-friendly, reliable and secure state technology systems that serve Oregonians.

OUR MISSION

Mature enterprise technology governance, optimize investments, ensure transparency, provide oversight, and deliver secure and innovative solutions.

VALUES

Accountability. *We are responsible for quality outcomes and share information openly and honestly*

Customer-centered. *We listen and seek too understand our customer's needs*

Collaborative. *We build trust and establish mutual purpose to forge effective partnerships across the enterprise*

Innovation. *We simplify complexity, challenge conventional wisdom, and seek creative and useful solutions*

GOALS

IT Resource Management	IT Supply Management	Data Utility	Information Security	Capacity Management
Mature enterprise and ensure agency internal IT governance to enable project prioritization and stewardship of IT resources based on business alignment, cost, ROI and risk	*Build trusted partnerships through collaboration to identify, procure and pilot new Enterprise services, and establish agency Centers of Excellence*	*Utilize data as a strategic asset to improve service delivery, facilitate cross-agency collaboration, identify cost savings and enhance transparency.*	*Unify cybersecurity to improve customer service for Oregonians while ensuring those systems are secure and resilient.*	*Engage Enterprise Leadership to develop a roadmap for capacity management to help position the enterprise for the future.*

OSCIO Key Accomplishments: 17-19

- Enterprise Technology Services delivered 483 servers for the ONE project

- Portfolio Managers worked with state agencies, the Enterprise IT Governance Committee and the Chief Financial Office to complete the first enterprise prioritization of the IT Project portfolio in support of the Governor's Recommended Budget

- E-Government processed $2.4 billion in revenue reliably and securely over the internet

- Basecamp implemented an IT catalog to help state agencies, local governments, and School Districts acquire IT products and services by increasing statewide price agreements

- Joined the Oregon Fiber Partnership – Core, high-speed, network for higher education and state government in order to upgrade our network

- Enterprise Security Office completed risk assessments on 13 agencies

OSCIO Strategy 19-21:
Think Globally, Act Locally

- Optimize service delivery internally and to the public through modernization and standardization of enterprise, cross-agency and agency-specific information systems

- Create a statewide cloud strategy

- Improve overall software system development transparency by posting project health status summaries online

- Create and manage a statewide data strategy to improve data analysis, data quality, information sharing and overall decision making

- Increase IT security by adding enhancements to the Enterprise Security Office, including improvements to intrusion and detection

OSCIO Key Initiatives 19-21: User-Friendly, Reliable and Secure

- **Maturing IT Resource Management:** IT Governance, IT Financial Management and Quality Assurance

- **IT Supply Chain Management:** Oregon Fiber Partnership, Vendor Management and Strategic Sourcing

- **Data Utility:** Open Data, Geospatial Framework, Data Analytics

- **Information Security:** Unifying Enterprise Security Operations

- **Capacity Management:** Increase power to the State Data Center, Cloud Services Enablement, Legacy System Risk Management

OSCIO Programs

Enterprise IT Governance (EITG) Overview

This program provides IT Governance Framework, which includes oversight and portfolio management of all major IT investments.

- Make recommendations for agency alignment with enterprise strategies and architecture

- Oversee project management and IT governance maturity, industry best practices and agency business goals

- Looks for solutions and cost-sharing opportunities across multiple agencies and offer alternate solutions to business problems

- Ensure policy and statutory adherence

Stage Gate Oversight

Simplified reference model with Enterprise Fit/Gap
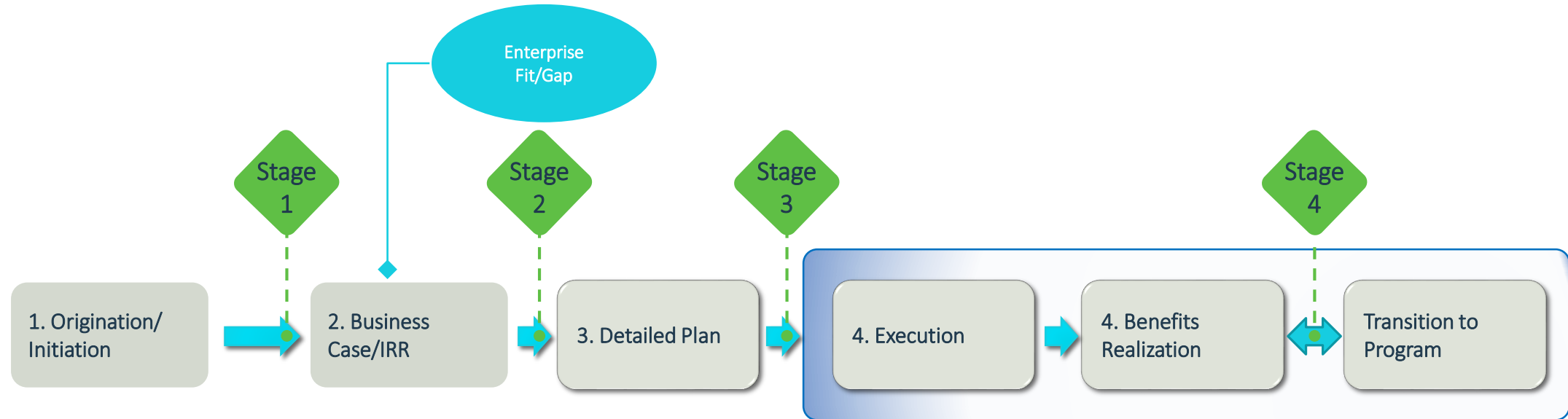
Determination Of Business Need

Detailed Business Case: Scoping Requirements & Alternatives Analysis

Detailed Project Planning: Obtain Project Resources, Detailed Plan & Solution Design

Provisioning, Development, Quality Management, Testing & Implementation

Project Closeout, Transition To Maintenance & Operations

Enterprise IT Governance (EITG) 17-19 Accomplishments

- Established the framework for IT Project Prioritization – a critical component of Enterprise IT governance that was used to inform the Governor's Recommended Budget for 19-21

- The Project Portfolio Management Change Control Board was established. This group helps manage the State's system of record for Information Technology Projects

- Policy area information resource management strategies

Enterprise IT Governance (EITG) 19-21 Initiatives

- Revise criteria and guidance regarding required elements for stage gate deliverables, including templates and examples

- Establish criteria for how projects of different sizes and complexity will be evaluated to commiserate with project risk

- Define key performance indicators for the oversight process

- Provide agency leaders with information to improve their strategy, governance and project management capabilities
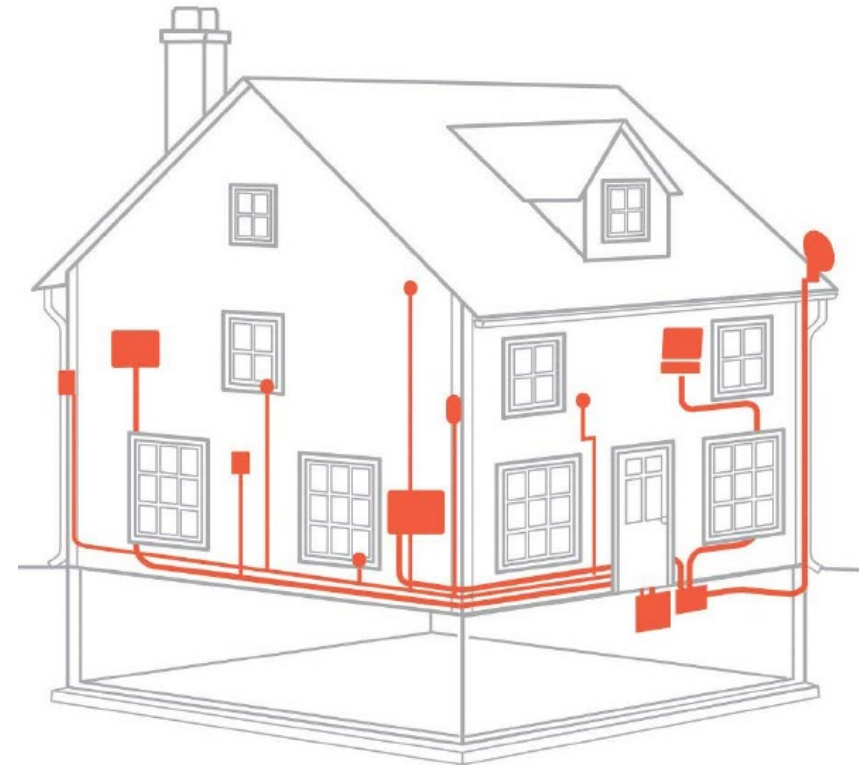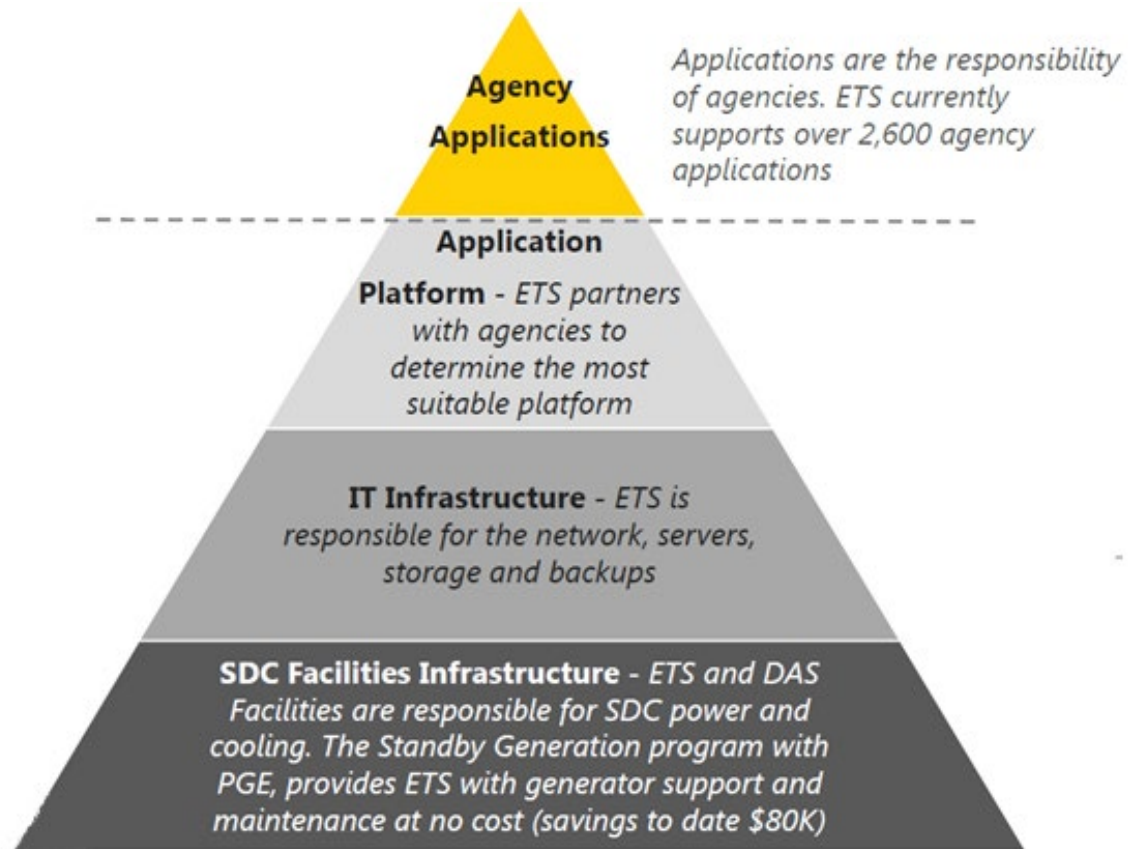
Enterprise Technology Services (ETS) Overview

Enterprise Technology Service is the utility services provider for computing and network infrastructure, relied on by State agencies and some local government entities.

Enterprise Technology Services

ETS Provides IT infrastructure and platforms

Agency Applications

Applications are the responsibility of agencies. ETS currently supports over 2,600 agency applications

Application Platform - ETS partners with agencies to determine the most suitable platform

IT Infrastructure - ETS is responsible for the network, servers, storage and backups

SDC Facilities Infrastructure - ETS and DAS Facilities are responsible for SDC power and cooling. The Standby Generation program with PGE, provides ETS with generator support and maintenance at no cost (savings to date $80K)

Enterprise Technology Services (ETS) 17-19 Accomplishments

- Revised ETS Strategic Plan

- Agency migrations completed: DCBS, State Library, OSP LEDS, Public Health Labs and OYA-Network

- Enterprise Technology Services delivered 483 servers for the ONE project

- Design and Delivery of DMV Modernization and Service Transformation Project Infrastructure

- In partnership with DOGAMI ETS created new technology offering shared GIS Data for natural resource agencies

Enterprise Technology Services (ETS) 19-21 Initiatives

- Transform the network holistically, increasing security, resiliency and performance

- Provide co-location services

- Complete the power buildout for the Data Center

Enterprise Security Office (ESO) Overview

The Enterprise Security Office brings together governance, policy, procedure, and operations under one organization.

- Policy and Controls – compliance

- Solutions - driving enterprise security architecture

- Services - deliver on day-to-day enterprise security operations in the State Data Center

- Security Operations Center – providing dedicated, real-time security monitoring and response for enterprise operations

Enterprise Security Office (ESO) 17-19 Accomplishments

- Conducted Risk Assessments of 13 Agencies

- Established Enterprise Security Operations Center

- Matured Vulnerability Management Program—decreased critical vulnerabilities by 80%

- Developed Cybersecurity Risk Management Program

- Published Enterprise Information Security Plan

- Updated Enterprise Information Security standards

Enterprise Security Office (ESO) 19-21 Initiatives

- Address Risk Assessment Findings

- Address Federal audit findings

- Improve Enterprise Cybersecurity Governance

- Mature Enterprise Security Operations Center

Enterprise Shared Services (ESS) Overview

Enterprise Shared Services focuses on the development of shared service models and management of long-term vendor relationships.

- E-Government

- Quality Assurance

- Basecamp

- Managed Services

Enterprise Shared Services (ESS) 17-19 Accomplishments

- Basecamp grew from 30 to 61 IT Price agreements

- E-Government processed $2.4 billion in revenue reliably and securely over the internet

- Upgrade of the Oregon Spatial Data Library to be more secure and reliable

- Completed phone system migration in 2018 with 28,000+ users

- Basecamp implemented an IT catalog to help state agencies, local governments, and School Districts acquire IT products and services by increasing statewide price agreements

Enterprise Shared Services (ESS) 19-21 Initiatives

- Define key performance indicators for Shared Services

- Continue to improve administration and management of independent quality assurance contracts

- Implementation of the GEOhub to enable secure sharing of geospatial framework data between public bodies

- Participate in the development of an enterprise eProcurement system to ensure it provides the capability for the identification of opportunities for strategic sourcing and potential cost savings

- Expand the Basecamp IT catalog based on agency needs

Chief Technology Office (CTO) Overview

The Chief Technology Office works to align business strategy with the strategic technology investments.

- Project Management for the Office of the State CIO

- Internal analytics and reporting support for the OSCIO

Chief Technology Office (CTO) 17-19 Accomplishments

- Joined the Oregon Fiber Partnership – Core, high-speed, network for higher education and state government in order to upgrade our network

- Creation of the Technology Reference Model (Lead, Core, Legacy)

- Developed concept for enterprise-wide digital workplace using Office 365

- Created a roadmap for updated the States network

Chief Technology Office (CTO) 19-21 Initiatives

- Transition State locations to the new network

- Implement Office 365 enterprise-wide

- Create a statewide cloud strategy

Chief Data Office
(CDO)

With the passage of HB 3361 (2017), the Chief Data Office will be tasked with the establishment of Open Data standards, providing technical guidance on the proactive release of publishable data, development of an enterprise data and information strategy, maintaining the data.oregon.gov web portal for the release of publishable data, and managing the Oregon Transparency and Geospatial programs.

2019-21 Governor's Recommended Budget
Policy Option Packages

New Co-Location Services 19-21 ($930,000)	ETS Lifecycle Replacement 19-21 ($15.3 million)	IT Security Compliance 19-21 ($15.8 million)
• Establishes a new Co-location Service in ETS that will enable existing agency facilities to increase their recovery resiliency and utilize services not currently available in their own data center.	• This initiative includes lifecycle replacement of core systems, network and storage equipment supporting shared IT infrastructure services at the SDC as well as several major projects to implement enterprise-class software.	• Addresses federal security compliance findings, aging firewalls and major weaknesses in the state IT security posture.

2019-21 Governor's Recommended Budget
Policy Option Packages

Broadband (OregonFiber) 19-21 ($1.8 million)	Enterprise Office 365 19-21 ($6.6 million)	Business Technology Officers 19-21 ($1.8 million)
• Transition the state's current core network to a higher-capacity core network (Oregon Fiber Partnership) which will provide connectivity to more than 600 State of Oregon sites.	• Establish and implement enterprise Microsoft 365 (cloud-based solutions) for secure, reliable, effective information access, sharing, collaboration and communication.	• The 2019-21 Office of the State CIO (OSCIO) budget includes establishing six (6) full-time positions as Chief Business Technology Officers (BTOs) to provide multi-agency IT strategic coordination.

2019-21 Governor's Recommended Budget
Reductions

Reduce IT Professional Services
- ◦ 0 positions, 0 FTE
- ◦ $924,793

State Data Center – Reduce off-site colocation
- ◦ 0 positions, 0 FTE
- ◦ $526,310

State Data Center – Eliminate capital outlay expenditures
- ◦ 0 positions, 0 FTE
- ◦ $394,823

Questions?

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Chief Information Officer

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2019 LEGISLATIVE SESSION

Enterprise Security Office

Enterprise Security Office (ESO) Overview

- Monitor, Detect, Respond to Cybersecurity threats

- Develop Enterprise Cybersecurity Policies and Standards

- Manage Enterprise Cybersecurity Risk Management Program

- Manage Enterprise Cybersecurity Awareness Training Program

- Manage and operate State Cybersecurity Boundary

- Manage Enterprise Vulnerability Management Program

- Develop Enterprise Cybersecurity Solutions

Unified Strategy

MISSION	*Lead Oregon in safeguarding the State's information resources*

VISION	*A unified approach to cybersecurity that improves customer service for Oregonians while ensuring systems and data are secure, resilient and ready for the future*

STRATEGIC PILLARS	**Open, Empowered Culture of Security**	**Proactive, Holistic Risk Management**	**Resilient IT Infrastructure**	**Rapid Detection, Response & Recovery**
IMPERATIVES	• Raise employee awareness • Increase security expertise • Build in the basics	• Know our IT ecosystem • Understand weaknesses • Govern by risk	• Harden & maintain security architecture • Foster enterprise standards • Protect the user & perimeter	• Consistent logging & monitoring • Unified expert-level security response • Reduce & shorten events

Strategic Objectives

Open, Empowered Culture of Security	**Unify IT security**
	• Unified security team & program that enables state business
Proactive, Holistic Risk Management	**Establish security risk management & governance**
Resilient IT Infrastructure	• Security risk program & IT lifecycle aligned with business leadership & enterprise IT governance
Rapid Detection, Response & Recovery	**Implement security basics at all agencies**
	• Drive highest priority security controls at all agencies

Roadmap and Execution

2017	2018		2019
Form new ESO, Ops review, Start on governance	**Establish shared services, publish enterprise plan, staff team**	**Rule & Policy updates, metrics & reporting, 5-year planning**	**Evaluate, course correct as needed, 2019-21 planning**

2017
- ✓ Positions (35) moved by HR to DAS/ESO
- ✓ All existing staff (15) moved to new roles in ESO
- ✓ Vacancies prepared for recruitment
- ✓ Deputy CISO hired
- ✓ Security risk governance foundation defined

2018 — Establish shared services, publish enterprise plan, staff team
- ✓ ESO shared security services catalog
- ✓ Published plan for unified execution
- ✓ Agency minimum security requirements
- ✓ Comprehensive unified enterprise security plan
- ✓ System security requirements for IT governance/stage gate

2018 — Rule & Policy updates, metrics & reporting, 5-year planning
- Refresh security policy
- IT security rule making (update of OAR 125-800)
- Publish quarterly report cards
- Initiate 5-year planning
- Establish enterprise security board under ELT/EITG

2019
- Independent review of enterprise security program against best practice
- Independent technical security assessment of State network
- Survey agency leaders on program quality & effectiveness
- Establish 2019-21 objectives
- Publish 5-year security plan

SB – 90 Progress
OSCIO and agencies partnering to implement SB-90

- Unify IT security
  - Transferred agency staff and fill key vacancies at ESO
  - Expanded services and maturing ESO toward a service delivery organization
  - Comprehensive unified Enterprise Security Plan
- State Agency Coordination
  - Agency top security priorities published
  - Annual enterprise security training deployed and completed
  - Initiated agency security assessments
- Oregon Cyber Advisory Council
  - Workgroups focusing on education, workforce development, technology, information sharing and public outreach
- Cybersecurity Center of Excellence
  - Delivered establishment plan to Legislature

Unified Cybersecurity Enterprise

Open, Empowered Culture of Security	
Proactive, Holistic Risk Management	
Resilient IT Infrastructure	
Rapid Detection, Response & Recovery	

- Enterprise security plans, policies, and standards

- Cybersecurity advisors providing security strategy, strategic planning, and subject matter expertise

- Enterprise risk management tools, assessments, and advising

- Baseline vulnerability scanning and standard tools

- Enterprise standards and audits for security solutions

- Enhanced SOC providing consistent monitoring, information sharing, and incident response coordination

Shared Responsibility
ESO and agencies are partnering to improve state cybersecurity

- ESO operating as a service delivery organization providing solutions and expertise
- Shift from agency to enterprise solutions – with ESO providing centralized services
  - 18 or 54 identified security activities will move from agency to ESO led

	Agency	ESO
SOC & IR	Incident Reporting	**Event logging, monitoring & detection**
	Agency incident coordination	**Enterprise Incident Response and Coordination**
VM	Vulnerability Remediation (Patching, Config., etc)	**Baseline vulnerability scanning and standard tools**
GRC	Agency Security Policy & Standards (as needed)	Enterprise security plans, policies, and standards
		Systems Security Plans Consulting & Evaluation
		Annual Security Training
NetSec & Solutions		**Web Application Firewall**
		Web Content Filtering & Monitoring
	Agency solution implementation	**Security solutions (PKI, MFA) standards and audit**
Risk	Agency Risk Register	Enterprise Risk Governance & Register
	System Security Risk Assessment	**Agency Security Risk Assessment**

17-19 Accomplishments

Open, Empowered Culture of Security

Proactive, Holistic Risk Management

Resilient IT Infrastructure

Rapid Detection, Response & Recovery

- Unified security services defined & published (June 2018)
- Malicious Helpdesk for all agencies established (June 2018)
- Agency top security priorities published (June 2018)
- Annual enterprise security training deployed (July 2018)
- Breach protocol for all agencies established (July 2018)
- Quarterly security scorecard established (September 2018)
- Unified Enterprise Security Plan published (August 2018)
- Unified agency security planning initiated (August 2018)
- Initiated agency security assessments (October 2018)

Security Assessment: State Risk Landscape

Function	Average
Identify	1.7
Protect	1.9
Detect	1.3
Respond	1.4
Recovery	1.7

#	Rating
0	Not Started
1	Not Achieved
2	Partially Achieved
3	Largely Achieved
4	Fully Achieved

19-21 Initiatives

Open, Empowered Culture of Security

Proactive, Holistic Risk Management

Resilient IT Infrastructure

Rapid Detection, Response & Recovery

- Developing five-year strategic plan

- Revising program policies and standards

- Risk management program implementation: risk management policy; agency assessments; governance, risk, & compliance tool

- Security Operations Center 2.0 planning

- Evolving vulnerability management program to build on success

Questions?

Enterprise Technology Services

Enterprise Technology Services(ETS) Overview

- Managed Computing Services

- Data Storage Services

- Data Network Services

- IT Professional Services
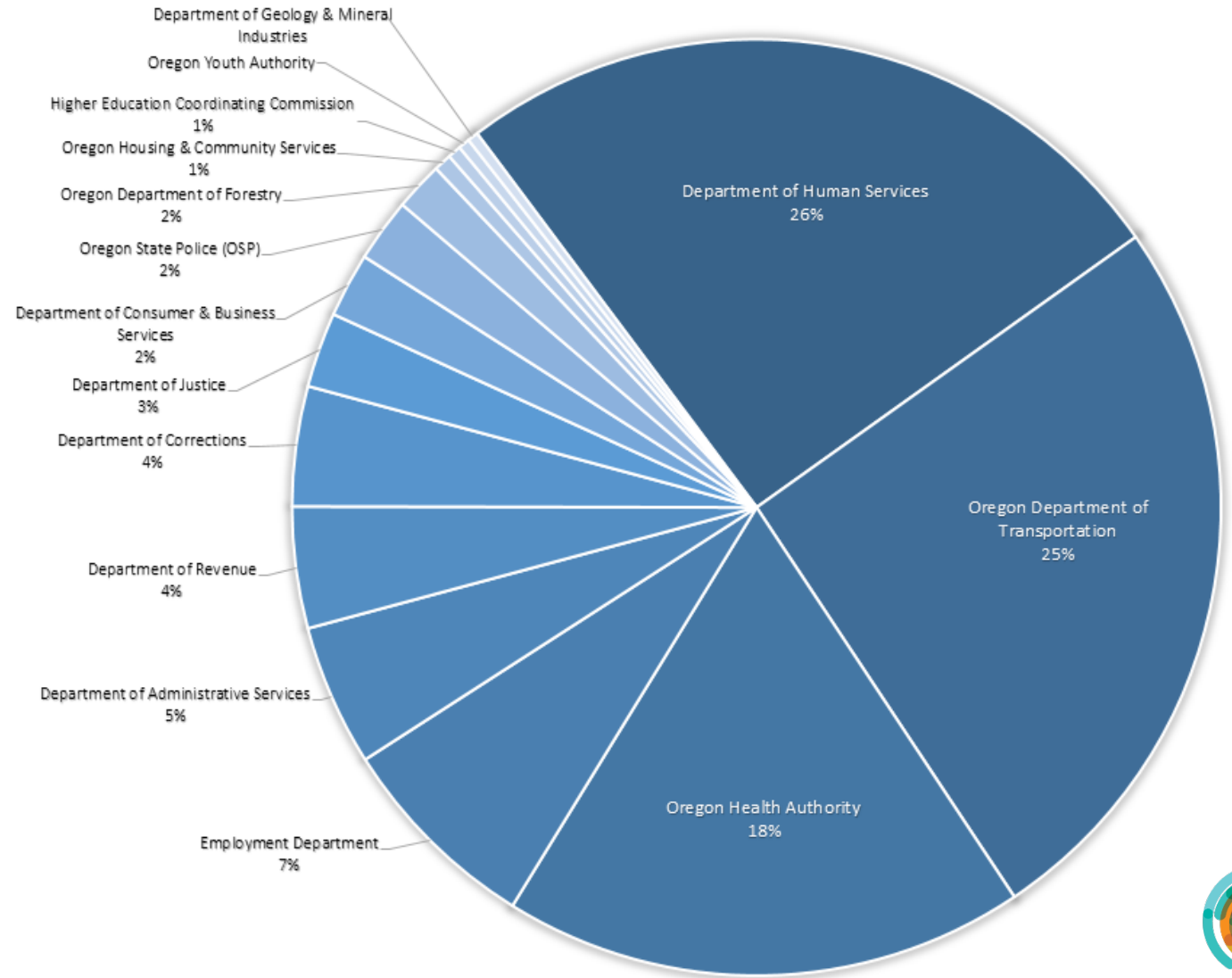
- Enterprise Email Services

Our People

- 154 Skilled Professionals

  - Account Management

  - Solutions Architects

  - Production Control

  - Service Desk

  - System Administration
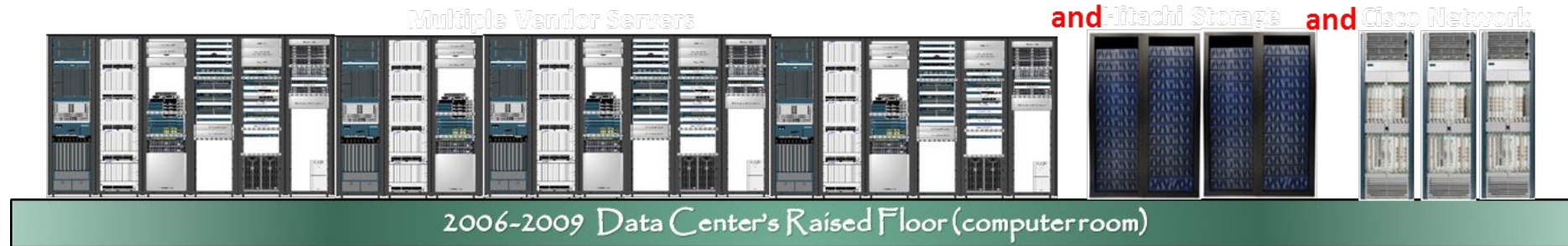
  - Network Technicians

ETS Customers

- Agencies - 38
- Boards and Commissions - 50
- Cities and Counties - 10
- Educational Service Districts - 7

Department of Geology & Mineral Industries
Oregon Youth Authority
Higher Education Coordinating Commission 1%
Oregon Housing & Community Services 1%
Oregon Department of Forestry 2%
Oregon State Police (OSP) 2%
Department of Consumer & Business Services 2%
Department of Justice 3%
Department of Corrections 4%
Department of Revenue 4%
Department of Administrative Services 5%
Employment Department 7%
Department of Human Services 26%
Oregon Department of Transportation 25%
Oregon Health Authority 18%

State of Oregon Data Center Technological Evolution

Multiple Vendor Servers **and** Hitachi Storage **and** Cisco Network

2006-2009 Data Center's Raised Floor (computer room)

HP VM Servers **and** Hitachi Storage **and** Cisco Network

2009-2014 Data Center's Raised Floor (computer room)

Unified Computing Platform (UCP)

Consolidated servers
+ **Consolidated storage**
+ **Consolidated network**
Unified Computing Platform

2015-2020 Data Center's Raised Floor (computer room)

ETS Performance Metrics

Measure #	Performance Measure	Target	4 Previous Quarters				Current Quarter
			Q3 2017 (Jul-Sep)	Q4 2017 (Oct-Dec)	Q1 2018 (Jan-Mar)	Q2 2018 (Apr-Jun)	Q3 2018 (Jul-Sep)
1	% of times the server is available for use by the customers(ETS Sites)	≥99.9%	99.94%	99.94%	99.92%	99.60%	99.93%
2	% of times a router is available for use by the customers	≥99.7%	99.79%	99.81%	99.76%	99.55%	99.75%
3	% of server instance requests delivered on time	≥90%	92.1%	97.8%	99.0%	99.4%	99.8%
4	% of Severity 1 incidents that are responded to within 15 min	≥90%	50.0%	75.0%	100.0%	40.0%	100.0%
	% of Severity 2 incidents responded to within 1 hour	≥90%	92.3%	91.1%	98.2%	94.7%	95.4%
	% of Severity 3 incidents that are responded to within 1 day	≥95%	98.9%	96.8%	98.2%	99.0%	97.0%
	% of Severity 4 incidents that are responded to within 2 days	≥95%	98.4%	94.2%	95.7%	97.8%	100.0%
5a	% of Severity 1 incidents restored within 6 hours	≥70%	80.0%	75.0%	76.9%	88.2%	91.3%
5b	% of Severity 2 incidents restored within 6 hours	≥75%	78.4%	78.5%	76.5%	76.0%	75.3%
5c	% of Severity 3 incidents restored within 1 business day	≥ 75%	78.7%	77.4%	78.0%	81.6%	79.7%
5d	% of Severity 4 incidents restored within 3 business days	≥ 85%	82.5%	81.1%	90.4%	88.8%	92.3%

ETS Strategies
Building for the Future

Data Center
- Power Project
- Hosting Strategy
  - Co-Location
  - Cloud

Network Services
- Core network
- Edge network
- Cloud Interoperability

Data Center Services
- Data Protection
- Technology Recovery
- Disaster Recovery

IT Operations
- Operation Instrumentation
  - Monitoring & Transparency
  - Automation
- IT Service Management
- Best value review
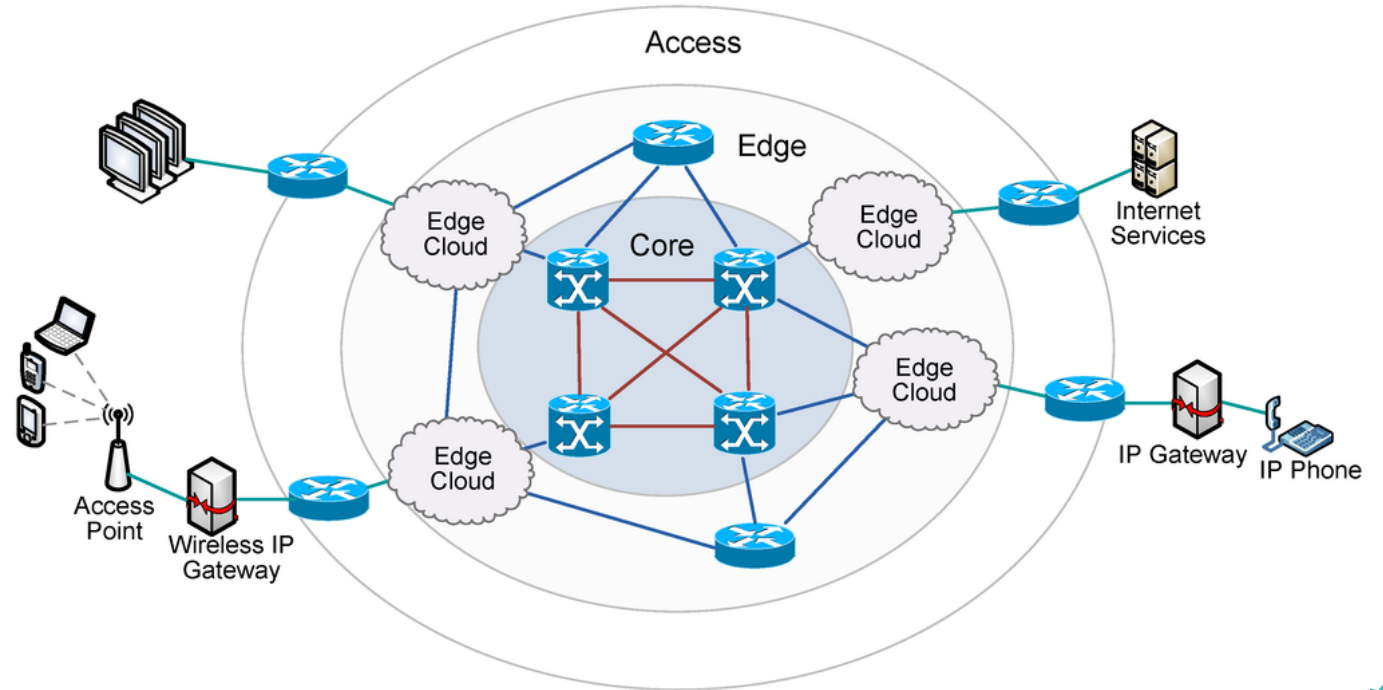
Co-location Services

Utilization of a State asset and the only purpose built data center in State Government.

- Space

- Power

- Cooling

- Fire Protection

- Networking

- Physical Security

Network Services

- Core and Edge Network

  - Higher Bandwidth

  - Increased Resiliency
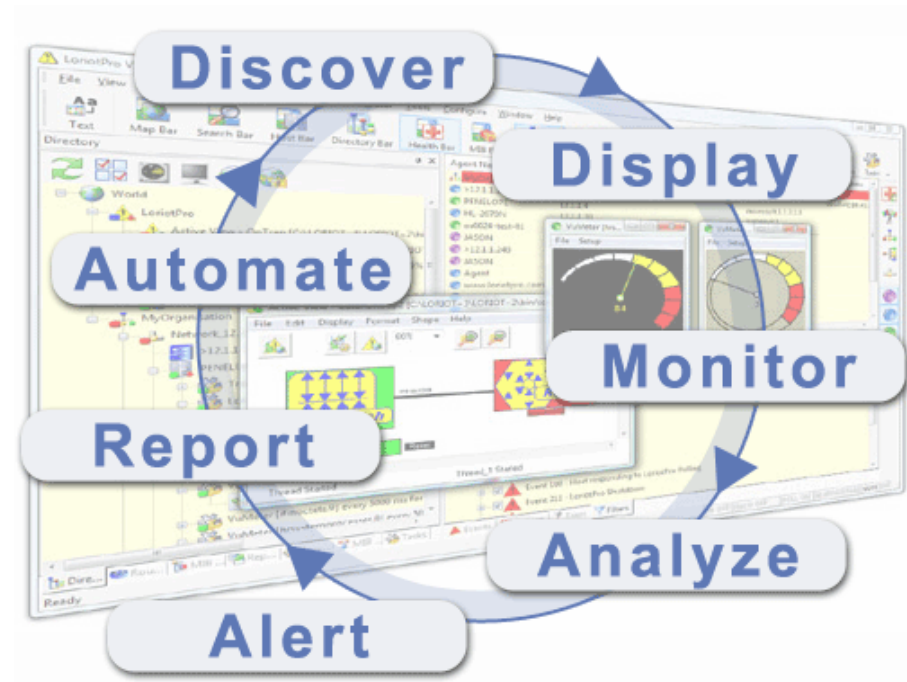
- Cloud Interoperability

Data Center Services

- Disaster Recovery

- Data Protection

- Technology Recovery

IT Operations

- Operation Instrumentation
  - Monitoring & Transparency
  - Automation
- IT Service Management
- Best Value Review

Questions?