

Agency Operations Plan 2015-17

Agency:

Information Technology Department

Line of Business: (optional)

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Technology Strategy:

The Information Technology Department's mission statement is:
"To provide leadership and knowledge to assist our customers in achieving their mission through the innovative use of information technology."

Division Roles and Activities

The following narrative identifies and explains the roles of each ITD division in supporting the department mission.

The Enterprise Services Division hosts the Customer Service section which serves as ITD's Single Point of Contact and assists customers in resolving issues, connects customers with subject matter experts and works to simplify customer's business interactions with ITD. This division also coordinates the IT Planning and Enterprise Architecture process in state government along with several other enterprise services.

The primary IT Architecture used in this division is centered around five systems:

1. ITSM (IT Service Management) from FrontRange - ITD uses the incident management module of this product to provide an enterprise solution to manage problems and incidents.
2. WMS (Work Management System) - This is an in-house system utilizing Websphere and Oracle. ITD uses this system to allow customers to request services from ITD and assign work requests to appropriate staff.
3. SharePoint - ITD uses SharePoint for its Intranet and as the collaboration work space within ITD and for ITD related initiatives.
4. FileNet Content Manager and Cardiff Teleform- This is the enterprise document repository and enterprise document imaging infrastructure coordinated out of the Enterprise Services division.
5. ESRI ArcGIS and Oracle are the main software components used to host the state's GIS hub.

The Software Development Services Division develops and maintains computerized applications and provides related consulting services. Its responsibilities include design, development, and support of

customized software applications that operate on a variety of computer platforms and database management systems. The staff is on-call to support production applications 24 hours per day. This division also has a staff of project managers available for assisting agencies on large IT projects.

The primary IT Architecture used in this division includes the following software languages and products:

1. ITD development platforms support a wide variety of applications and include .Net (Microsoft Visual Studio), Java (IBM Web Developers Studio), Cobol, Cool:Gen, NATURAL, PowerBuilder, Crystal Reports, and ESRI ArcIMS (GIS applications). These applications can run on the following back-end databases - Oracle and SQL Server with legacy applications running on DB2, Adabas and VSAM files.
2. ITD develops web sites using HTML, PHP, Javascript and uses Drupal for content management of web sites.
3. WMS (Work Management System) - This is an in-house system based on Websphere and Oracle. In addition to the uses noted earlier the Software Development Division uses this tool for project management purposes, to track time spent on projects and track progress on project issues.
4. This division is currently migrating away from ClearCase to Git for its version control solution coupled with Microsoft's Team Foundation Studio to help with requirements tracking.

The Computer Services Division is responsible for central computer systems and their operations. The staff in this division administers all architecture and system hardware to serve applications and web based systems to state government agencies, political subdivisions and educational entities. Operations staff provides round-the-clock job processing and routine system procedures required during the non-business hours. The computer room is environmentally controlled and protected by an uninterrupted power supply. ITD also operates a second data center to provide system redundancy for critical systems in disaster scenarios. All sections employ an on-call routine to provide twenty-four hour support for system availability.

The IT Architecture hosted by this division includes the following platforms and products:

1. Operating environments for IBM S/390, IBM AS/400 and IBM AIX servers.
2. IBM disk and tape storage are managed with Tivoli Storage Manager for the storage area network.
3. HP Intel platforms running Linux and Windows operating systems under a VMWare virtualization umbrella.
4. Supported databases include Oracle, SQL Server, DB/2 and ADABAS with best effort support for MySQL.
5. E-mail services are provided using Microsoft Exchange and SMTP mail servers. The e-mail platform hosts ten-thousand e-mail accounts.
6. Zenoss and SiteScope are two of the major tools used by this division to monitor system uptime and performance.
7. This division provides desktop support using SCCM as the primary tool to provision and support desktops and laptops.

The Network Services Division maintains telephone systems and services, video services, network infrastructure, and help desk support. The division designs and maintains the state's wide area network for all government and education entities in the state.

The IT Architecture deployed by this division includes the following platforms and products:

1. Core networking equipment is provided by Palo Alto and Juniper.
2. Edge point networking equipment is provided by Extreme Technologies.
3. Wireless deployments are based on technology from Aruba.
4. Dakota Carrier Network has the current contract for the STAGEnet backbone and Internet access.
5. Metro area networks are provided in selected cities from various vendors.
6. Voice technologies are provided by Avaya utilizing VOIP.
7. This division uses the NRC (Network Resource Center) an in-house system based on Websphere and Oracle. ITD uses this system to monitor network resources around the state.

The Administrative Services Division handles fiscal administration, records management and micrographics services.

The primary IT Architecture used in this division includes the following products:

1. Legacy billing systems (DP, TC, MG) are in house developed systems (NATURAL and Adabas) used to bill ITD customers for services. These systems are currently being rewritten to a Websphere/Oracle platform with an estimated implementation date of July 2015.
2. PeopleSoft - ITD uses PeopleSoft modules for our accounts payable, accounts receivable and general ledger systems.
3. CIS is used for fixed assets with plans to convert to PeopleSoft
4. ITD uses EmpCenter from WorkForce Software for its timekeeping system. This system interfaces with WMS and PeopleSoft payroll.
5. ITD's rate worksheets, cash flow projections and cost center projections are based on Microsoft Excel templates.

Human Resources handles agency personnel recruitment and retention support to provide the right talent for the right job at the right time.

The primary IT Architecture used in this division includes the following products:

1. PeopleSoft - ITD uses PeopleSoft modules for our payroll and human resource management systems.
2. ITD also uses the Talent Management and E-Performance modules within the PeopleSoft suite of tools.

The Security Section reports directly to the Director of Operations and is responsible for enterprise security and contingency planning.

The primary IT Architecture used in this section includes the following products:

1. ITD uses Symantec as the enterprise Anti-Virus tool managed out of the Security Section. Endpoint encryption has migrated from Symantec EndPoint Encryption to a product from WAVE Technologies.
2. Security scanning and monitoring tools are provided by multiple vendors including IBM, NESSUS and Enterasys.
3. ITD uses LDRPS from Strohl Systems to maintain its formal contingency plans with significant documentation stored in our wiki which runs on Confluence.

Technology Infrastructure:

Here is an overview of the hardware and operating systems used to provide ITD services:

Servers:

- IBM z/OS Enterprise Server
- IBM AS/400 Server
- IBM AIX Servers
- HP Intel Servers (using VMWare virtualization) running Microsoft Windows and RedHat Linux operating systems

Desktops/Laptops:

- 149 HP Desktops running predominantly Windows 7 with a planned migration to Windows 8 with some Linux in specialized areas
- 245 HP Laptops running predominantly Windows 7 with a planned migration to Windows 8 with some Linux in specialized areas
- 65 Apple Laptops with the majority in our EduTech division

Mobile Devices/Smartphones

- ITD provides iPhones as the standard issue device. Android and Windows devices will be deployed on a limited basis as part of research and development.
- 64 Apple iPads and 24 Microsoft Surface tablets
- ITD uses Xenprise as our Mobile Device Management solution.

Planned Activities:

In addition to the normal process of developing, implementing and hosting applications, servers and the state wide network there are some significant changes that we expect to take place over the remainder of the 2013-2015 biennium and into the 2015-2017 biennium. An overview of these activities is listed below.

1. We are continue to have licensing challenges with Microsoft integrating our Avaya VOIP infrastructure with Microsoft Lync and are piloting and Avaya add-in to the Microsoft Lync client.
2. ITD continues to make investments both within the data center and at key choke points in the network to enhance the security posture of the state with security enclaves and enhanced intrusion detection/prevention capabilities. Continued focus in this area is extremely important as the attack vectors in this area are increasing both in the number and sophistication.
3. ITD has virtualized most of its server and storage infrastructure. This provides our system administration staff the ability to respond to customer capacity demands in a timely manner and to provide more affordable options to our customers who want to improve their disaster recovery posture. We plan to continue to leverage the administration advantages of the virtualized infrastructure.

These are some of the major issues we are considering in the biennium ahead. As always our customers changing business needs and projects will continue to help us determine future direction and influence our infrastructure decisions.

Technologies being considered or investigated:

We continue to pilot desktop virtualization infrastructure (VDI) within ITD. While this technology may provide some advantages to customers in the security and mobility experience in their current computing environment, the current cost model does not come in at an attractive price point for mass adoption by our customer base.

While many states are moving to cloud services ITD has run a private cloud for government and education since 2000. One of ITD's first implementations was PowerSchool, a student information system used by North Dakota K-12 schools. The evolution of cloud services, in particular Software as a Service (SaaS), is a focus area for ITD for the remainder of this biennium and into the 15-17 biennium. Many of our customers are looking to move or being forced to move to SaaS solutions. This has a significant impact on our network infrastructure, our security infrastructure and the economies of scale within the data center. It is a transformational time for ITD. ITD has adopted a hybrid cloud strategy with selectively embraces cloud services while maintaining an on premise private cloud for state government. This strategy will necessitate changes to our underlying network and security infrastructure and impact the skill sets needed for ITD to move into a "cloud broker" role for cloud services in state government.