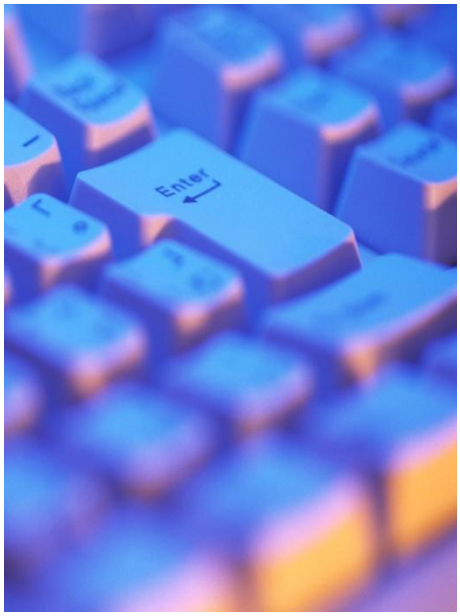
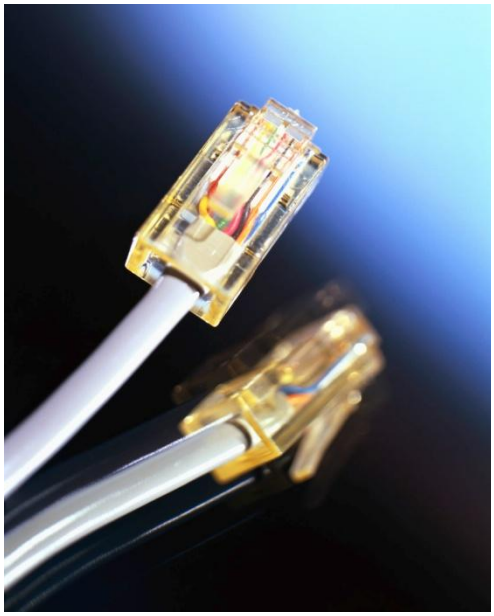
STATE OF NORTH DAKOTA
Information Technology Department

Information Technology Department Outsourcing Report

Sixty-first Legislative Assembly of North Dakota, Senate Bill No. 2021, Section 9

Final Report





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Introduction

The Sixty-first Legislative Assembly of North Dakota passed Senate Bill No. 2021. Section 9 of that bill called for the following:

> **SECTION 9 INFORMATION TECHNOLOGY DEPARTMENT OUTSOURCING - REPORT TO INFORMATION TECHNOLOGY COMMITTEE.** The information technology department shall report to the information technology committee on:
>
> 1. The department's current level of outsourcing of its information technology services.
> 2. Nonessential information technology services that could be considered for outsourcing.
> 3. The number of the department's employees who have resigned from the department to provide information technology consulting services in the private sector and the number of which have been rehired by the department.
> 4. The department's efforts to assist in the creation of North Dakota technology-related companies.
>
> The information technology committee shall incorporate the information received in its report to the legislative council.

This report is to fulfill the Information Technology Department's role on this section of the bill.

Department's Current Level of Outsourcing

There are 8 distinct areas in ITD's budget. ITD offers a number of services within each of these areas. In April 2009, the House Appropriations Government Operations Division asked ITD to estimate the amount of service the department was already outsourcing. ITD created three categories of expenses for reporting:

The Salaries, Professional Development, and Rent (Internal Expenditures) category included those dollar expenditures that ITD considered not to be outsourced;
The Software, Hardware, and other Supplies (Vendor Payments) category;
The Professional Services (Currently Outsourced) category included those expenditures ITD considered outsourced.

ITD <u>estimated</u> of the $139,599,433 budget request (in April 2009), $82,742,984 or 59% would be spent on vendor payments and outsourced services.

For this report, ITD will attempt to break down the main categories into the various ITD services. They are sorted by services considered essential for ITD to maintain security and cost effectiveness and by services offered due to demand or other requirements. In addition, this report will use the 2009-11 final budget authorized by the Legislature (includes approved emergency commission request) which totaled $243,064,557.

Information Technology Department
2009-11 Budget

Core Services:

Computer Hosting	46 Employees	$ 37,097,761 Budget	
	Internal Expenditures:		$ 9,152,804
	Vendor Payments:		$ 24,039,214
	Currently Outsourced:		$ 3,905,743
ConnectND Hosting and Bond Repayment	4 Employees	$ 8,179,606 Budget	
	Internal Expenditures:		$ 723,435
	Vendor Payments:		$ 7,456,171
	Currently Outsourced:		$ 0
Data Storage	4 Employees	$ 2,674,541 Budget	
	Internal Expenditures:		$ 674,541
	Vendor Payments:		$ 2,000,000
	Currently Outsourced:		$ 0
Database Support	6 Employees	$ 1,176,573 Budget	
	Internal Expenditures:		$ 1,176,573
	Vendor Payments:		$ 0
	Currently Outsourced:		$ 0
Email/Exchange Services	3 Employees	$ 703,743 Budget	
	Internal Expenditures:		$ 523,743
	Vendor Payments:		$ 180,000
	Currently Outsourced:		$ 0
Enterprise Applications	8 Employees	$ 2,212,282 Budget	
	Internal Expenditures:		$ 1,610,634
	Vendor Payments:		$ 601,648
	Currently Outsourced:		$ 0

Enterprise Program Support	7 Employees	$ 1,646,562 Budget
	Internal Expenditures:	$ 1,408,703
	Vendor Payments:	$ 237,859
	Currently Outsourced:	$ 0
Enterprise Service Desk	7 Employees	$ 1,428,667 Budget
	Internal Expenditures:	$ 1,333,667
	Vendor Payments:	$ 95,000
	Currently Outsourced:	$ 0
Network Services	22 Employees	$ 22,155,866 Budget
	Internal Expenditures:	$ 3,114,959
	Vendor Payments:	$ 10,577,255
	Currently Outsourced:	$ 8,463,652
Voice Services	9 Employees	$ 10,642,638 Budget
	Internal Expenditures:	$ 1,261,053
	Vendor Payments:	$ 9,261,585
	Currently Outsourced:	$ 120,000
Security	5 Employees	$ 988,108 Budget
	Internal Expenditures:	$ 988,108
	Vendor Payments:	$ 0
	Currently Outsourced:	$ 0
Administration / Other Related Costs	12 Employees	$ 2,767,792 Budget
	Internal Expenditures:	$ 2,207,732
	Vendor Payments:	$ 560,060
	Currently Outsourced:	$ 0
Records Management	2 Employees	$ 436,122 Budget
	Internal Expenditures:	$ 306,652
	Vendor Payments:	$ 129,470
	Currently Outsourced:	$ 0

Demand driven or other requirements:

Application Development	107 Employees	$ 23,965,922 Budget	
	Internal Expenditures:		$ 20,679,281
	Vendor Payments:		$ 310,065
	Currently Outsourced:		$ 2,976,576
Business Analysis	4 Employees	$ 862,094 Budget	
	Internal Expenditures:		$ 862,094
	Vendor Payments:		$ 0
	Currently Outsourced:		$ 0
Micrographics	1 Employee	$ 229,139 Budget	
	Internal Expenditures:		$ 113,834
	Vendor Payments:		$ 0
	Currently Outsourced:		$ 115,305
Project Management	11 Employees	$ 1,921,472 Budget	
	Internal Expenditures:		$ 1,921,472
	Vendor Payments:		$ 0
	Currently Outsourced:		$ 0
Quality Assurance	2 Employees	$ 342,621 Budget	
	Internal Expenditures:		$ 342,621
	Vendor Payments:		$ 0
	Currently Outsourced:		$ 0
North Dakota Relay Services	0 Employees	$ 732,959 Budget	
	Internal Expenditures:		$ 11,971
	Vendor Payments:		$ 0
	Currently Outsourced:		$ 720,988
Overall:	**260 Employees**	**$ 120,164,468 Budget**	
	Internal Expenditures:	**$ 48,413,877**	**40%**
	Vendor Payments:	**$ 55,448,327**	**46%**
	Currently Outsourced:	**$ 16,302,264**	**14%**

Center for Distance Education (CDE)	35.7 Employees	$ 6,685,785 Budget
Criminal Justice Information Sharing (CJIS)	3 Employees	$ 4,106,957 Budget
EduTech	25 Employees	$ 5,027,153 Budget
Educational Technology Council (ETC)	1.5 Employees	$ 999,986 Budget
Health Information Technology Office (HIT)	1 Employee	$ 88,350,000 Budget
Longitudinal Data Systems (LDS)	2 Employees	$ 4,730,208 Budget
Emergency Commission Stimulus	9.5 Employees	$ 13,000,000 Budget
Total Information Technology Department	**337.7 Employees**	**$ 243,064,557 Budget**

Non-essential IT Services to Consider for Outsourcing

The Information Technology Department views it services in a number of ways. Two key identifiers are core services and demand driven services.

Core services are those items that ITD considers important to maintain in-house because of the risks to the state. For example, ITD considers the hosting of critical agency applications as a core service. An external business could close its doors with little or no notice. If they were hosting critical applications, the agency may have to take legal action to gain access to the agency's data or system. The time it takes to do that could be months. Another risk ITD considers is data security. The State Auditor's Office performs an intensive security test on the state infrastructure each biennium. For sensitive data like tax or health information, ITD feels it can offer one of the most secure solutions within a reasonable cost point.

Demand driven services are those services that agencies can find externally but either customer demand or some other requirement drives ITD to provide this service. For example, other businesses, both in state and out, offer project management services similar to ITD's Software Development Division. In fact, in 2009, the state outsourced more than $328,000 worth of project management services via the state IT vendor pool. Since 2006, the state has outsourced over $1.8 million via the vendor pool for project management services. Yet the demand for ITD project managers continues to be high. Even though these services are available from the private sector, state agencies have continued to request ITD provide these services for the following reasons: cost, continuity and reliability.

Core Services

Computer Hosting

ITD provides the computer hardware, software and technical resources necessary to run customer software applications. Various computer platforms are required due to the unique specifications of the customer applications. This service also includes the hosting of ConnectND (the state finance and human resource applications). When ITD implemented this service for

state government and Higher Education, the initial purchase was funded by bonding the hardware, software and implementation. The dollar amounts referenced in this category include the bond repayment, which amounts to over five million dollars this biennium.

AS/400 Computer

Description: Provide pharmaceutical, banking and voting application services for the IBM iSeries platform.

Benefits within house:

- All risk issues noted below will remain within the control of the agency and within the power of State Government administration for data management.

Benefits if outsourced:

- Process Disciplines: An outsourcing company may already be in a better position for COBIT, ITIL or other maturity and best practice models. This would elevate our efforts for IT management more quickly.

Risks if outsourced:

- There is a risk to the quality of service (QoS). Employee turnover, institutional knowledge of application, institutional knowledge of business/ agency processes all have a role in QoS. ITD has a low turnover rate allowing us to offer a higher level QoS.
- Because outsourcing would likely go out of the state, IT technical job skills in Bismarck would be diminished.
- Vendors may take advantage of poorly worded contracts. Contract management will still require technical knowledge in-house for management.
- Outsourcing may include hidden costs for travel expenses, maybe even international travel. It may still require infrastructure in-house for monitoring and support for off-site operations, reducing any cost savings gained in the service.
- The state could see an increased exposure to intellectual property theft and data security. Many government officials rank this concern higher than even terrorism and cost overruns.
- Agencies may need to account for interstate or even international law.
- An outsourced system will operate under various degrees of government oversight from other states or nations.
- If the outsourcing company does not deliver, agencies need to ensure a contingency plan is in place for the service.
- Even a fixed price contract will require changes to the application or service, resulting in unforeseen costs. Scope management will be important and contingency funds need to be available.
- Cultural training for English pronunciation and accents introduce minor barriers that affect performance. Often time changes or different holidays require staggered work shifts.
- In order to ensure knowledge transfer agencies may require the increase usage of video conferencing to train outsourced staff turnover on business processes.

- There is a risk to response time. The ITD data center connects to most agencies' main offices via fiber optics. If outsourced, traffic to the system source will be mixed with all other Internet traffic and could be significantly impacted by high volume Internet traffic as often seen during major news events.
- Secure data connections would need to be established between various entities resulting in higher network costs.

FTEs: 2

Mainframe Hosting

Description: Provide mainframe computer application services for the Department of Human Services, Bank of North Dakota, the Legislative Council and the Department of Transportation. ITD is currently outsourcing some technical support staff in this area.

Benefits within house:

- ITD provides a known data center solution with appropriate power, backup, and emergency procedures. The state has control over upgrades, sizing, and response time versus cost.

Benefits if outsourced:

- Outsourcing would position the staff and mainframe services for a quick exit path when the system is ready to be removed. It would allow the state to readily sunset the mainframe service when the time is right and remove the contract labor. ITD has investigated outsourcing the hardware in the past, but found the costs to be extremely higher than can be provided internally.

Risks if outsourced:

- There is a perception that internal staff can be held more accountable or loyal to the system. However, ITD has found the contract services to be very positive.
- We lose subject matter expertise on agency specific applications.
- There is a risk to response time. The ITD data center connects to most agencies' main offices via fiber optics. If outsourced, traffic to the system source will be mixed with all other Internet traffic and could be significantly impacted by high volume Internet traffic as often seen during major news events.

FTEs: 12

Server Hosting

Description: ITD hosts a number of applications on its Linux and Windows Server environments. This includes things from small web applications to enterprise applications like ConnectND and Interactive Voice Response (IVR) systems.

Benefits within house:

- ITD provides a known data center solution with appropriate power, backup, and emergency procedures. The state has control over upgrades and maintenance. The state controls the application of updates and patches to

balance between security and testing the impact of the update on the resident applications.
- ITD periodically monitors the cost of having external providers host applications. Currently it is more cost effective to do this in house.

Benefits if outsourced:
- Large service providers, all out of state companies, would be able to provide more depth (back-up staff) in the various skills sets required to perform the technical requirements of hosting services.

Risks if outsourced:
- There is a risk to response time. The ITD data center connects to most agencies' main offices via fiber optics. If outsourced, traffic to the system source will be mixed with all other Internet traffic and could be significantly impacted by high volume Internet traffic as often seen during major news events.
- The Bismarck area would see a reduction of Linux and Windows skill sets.

FTEs: 34

PowerSchool Hosting

Description: With PowerSchool, ITD is the outsourcer for the K-12 entities. This is another application that is a complete end-to-end service offering. Turnkey applications like this tend to be good candidates for external support. We can define and limit the scope of the support to specific technologies.

Benefits within house:
- ITD offers reliable service and subject matter expertise. It is easier to escalate any issues, and they are more likely to be resolved timely.

Benefits if outsourced:
- Remove hardware, software and technicians. Technical risk is minimal as WebSphere and SQL Server database skill sets exist with 3rd party providers. These two applications have more of a complete end-to-end defined service offering.

Risks if outsourced:
- Internal subject matter expertise is lost.
- If schools hosted their own copies, there would be duplication of software, database and/or hardware.
- One downside of being a smaller state is when we get absorbed into the mix with larger states or even cities and counties with larger budgets, the state's needs tend to fall to the bottom of the priority list.

FTEs: 2

Data Storage

Description: ITD provides large data volumes for agency and application usage. This service has a growth rate of 60% annually.

Benefits within house:
- ITD provides a known data center solution with appropriate power, backup, and emergency procedures. Much of the data the state hosts is sensitive. By

maintaining the data within the state's internal network infrastructure, ITD offers a level of security that would not exist in an outsourced solution.

- The desire of most state agency officials is to keep their data in the state and under their control (through ITD).

Benefits if outsourced:

- Just as ITD leverages the state's volume to deliver data storage at a lower aggregate cost, cloud storage providers leverage all of their customer's volumes to offer even better rates.
- Storing data in the cloud strategically distributes resources; thereby enhancing our business continuity posture.

Risks if outsourced:

- There is a risk to response time. The ITD data center connects to most agencies' main offices via fiber optics. If outsourced, traffic to the system source will be mixed with all other Internet traffic and could be significantly impacted by high volume Internet traffic as often seen during major news events.
- Anytime you transmit data over the Internet, there is a chance of interception. Most secure transmission solutions carry an "overhead" that affects transmission speed.
- Should a provider be unable to service the contract, agencies could lose access to all of their data for some time.

FTEs: 4

Database Support

Description: The ITD database team helps agencies design, create, and maintain databases. Those duties include scheduling backups, performing file/database recovery, monitoring performance/statistics, reviewing program code and informing programmers and customers of inefficiencies and resolving database/software problems reported by customers.

Benefits within house:

- ITD analysts understand the enterprise database environment hosted by the department. They also understand the priorities of the customer. The analysts are in a better position to prioritize issues and resolve them in a timely manner.

Benefits if outsourced:

- In addition to reducing FTE counts in ITD, agencies might be able to find staff that is more experienced on their particular product, e.g. specialists at tuning PeopleSoft databases.

Risks if outsourced:

- Databases are the underpinnings of almost all applications. If they do not function, the applications cannot provide value. It is critical to have a trusted group of people available to support the database. A poorly written query can bring even the best hardware to perform poorly. Some vendors are very good, most are OK and some are very bad. Being able to choose the right one during the procurement phase is difficult. If the vendor has other state clients, you face the challenge of priorities. If California and North Dakota both have an issue, you can guess which issue will probably get a higher priority from the vendor.

FTEs: 6

Email/Exchange Services

Description: ITD currently manages and maintains the state email infrastructure.

Benefits within house:

- ITD offers a customized solution to meet agency needs. By keeping the system in-house, there is a reduced chance of someone intercepting unencrypted mail.

Benefits if outsourced:

- Reduce internal infrastructure, reduce technical staff as Web based Exchange services take advantage of the cloud. Email is the most mature service on the internet. Exchange web services are also one of the most mature cloud offerings in the market. Another alternative would be to eliminate Exchange altogether and utilize enterprise Gmail services or other email type of service.

Risks if outsourced:

- Removal of antivirus, spam filtering, etc., and would introduce the management of security of data in the cloud.
- It would introduce new SLA contract maintenance processes.
- It would affect how the state would apply unified communications.
- All email would require encryption. That will add additional steps to process e-mail and will cause additional costs to all agencies.

FTEs: 3

Enterprise Applications

ITD also manages and supports a number of enterprise applications such as Master Client Indexing (MCI), Microsoft SharePoint, and Interactive Voice Response (IVR) systems. In most cases, application development is outsourced. Listed below are some of the larger applications/systems supported by ITD.

Business Intelligence (BI)

Description: Business Intelligence refers to the skills, processes, technologies, applications, and practices used to support decision making. The service includes assisting customers in developing systems/methods used in analyzing business data. BI uses technologies, processes, and applications to analyze data. This may include warehouses, reports or analytical tools to provide easy access to the customers' information. ITD continues to build a BI Competency Center for ND state government. Vendors provide professional services and support for various products and projects, and ITD provides the vision and continuity necessary for success. Ultimately, BI is about the knowledge of data and an understanding of how it is used.

Benefits within house:

- The BI Competency Center should remain within ITD to ensure efficient and effective data stewardship processes and data quality practices.

Benefits if outsourced:

- Fewer ITD employees

Risks if outsourced:

- Potentially higher project costs.
- Outsourced consultants may not achieve a long-term understanding of government processes, data elements, and desired business outcomes.

- Outsourced efforts may result in a fragmented approach to information management in ND state government.

FTEs: 3

Electronic Document Management Systems (EDMS)

Description: EDMS is a collection of technologies that work together to provide a comprehensive solution for managing the creation, capture, indexing, storage, retrieval, and disposition of records and information assets of the organization. Major components of an EDMS include imaging, document management, forms processing, electronic forms, enterprise report management, and workflow. This service includes assisting customers in defining and establishing systems to assist in scanning, workflow, automated record storage, and automated document retention cycles. This includes evaluating the current business processes and recommending improvements. Software development and project management associated with EDMS initiatives could potentially be outsourced. However, hosting and program management of EDMS should remain within ITD.

Benefits within house:

- ITD would retain the current business knowledge of our customers' applications and partnerships with the customers.

Benefits if outsourced:

- Fewer FTEs within ITD

Risks if outsourced:

- Potentially higher project costs.
- Other line-of-business applications connect very tightly with EDMS. Therefore, outsourced development could cause significant integration challenges.
- EDMS contains highly sensitive information.
- Long-term retention of knowledge and expertise could become problematic.

FTEs: 4

Geographical Information Systems (GIS)

Description: The State of North Dakota's GIS Hub provides the essential infrastructure to share core geographic datasets among stakeholders. The majority of software development associated with GIS is currently outsourced using the State's vendor pool contract. The program management of GIS should remain within ITD.

Benefits within house:

- Long-term strategic planning helps to ensure that GIS resources are effectively leveraged throughout ND state government.

Benefits if outsourced:

- Because GIS involves large quantities of publically available data, it makes a good candidate for piloting cloud storage gaining the benefits identified in the data storage service listing above.
- Because of the public nature of GIS data, it would also make a good pilot candidate for outsourcing the hosting of operating systems and/or

databases gaining the benefits of outsourced hosted listed above. There are vendors that currently offer Software-as-a-Service (SaaS) solutions for GIS application suites.

- Outsourcing research-and-development could provide independent and credible assessments while freeing internal resources to work on other strategic initiatives, if additional funding is available.

Risks if outsourced:

- ITD has not identified the performance and costs associated with outsourced resources for GIS.
- Outsourcing the resources associated with one service may not inherently lower the cost of providing enterprise resources. Therefore, while the cost of one service could go down, the overall impact on the cost of shared IT resources could go up.
- Depending on the type of disaster event, an outsourced vendor may not be in business to provide the service contracted.

FTEs: 1

Enterprise Program Support

ITD provides support for a number of enterprise programs such as Enterprise Architecture (EA), Enterprise IT Planning and Enterprise IT Procurement.

Description: Enterprise Architecture (EA) develops standards and guidelines for technology with the goals of creating a common statewide architecture and of setting future direction for technology in the state. EA is a process that drives continuous business/technology alignment and provides an overall plan for designing, implementing, and maintaining the underlying infrastructure to support information sharing and resource optimization.

ITD is responsible for reviewing and approving the acquisition of technology by state agencies. Acquisitions must meet state standards and be consistent with the agency's technology plan.

Most state agencies are legislatively required to file an IT plan. Each biennium, ITD refines the planning process, guidelines, and systems. ITD also works with agencies in preparing their IT plan and in publishing a State IT Plan.

Benefits within house:

- Long-term relationships between program managers and stakeholders help to build trust and drive continuous improvement.
- ITD resources have a clear understanding of the ND CIO's vision and strategies

Benefits if outsourced:

- Fewer FTEs within ITD
- Some perceive an outside consultant's input and assessment as more credible and less biased.

Risks if outsourced:

- The overall cost of outsourcing IT planning is unknown.
- ITD would need to develop an alternative method of discussing rate adjustments and technology trends.

FTEs: 7

Enterprise Service Desk

Description: The Enterprise Service Desk blends people, process, and technology in a way that efficiently and effectively supports customers. Even though government agencies provide unique services, they often share commonalities when it comes to supporting customers. The Enterprise Service Desk provides best-in-class "Tier I" support for a variety of government functions. Over the past several years, ITD's Service Desk has evolved to provide "Tier I" support for DHS, BND, JSND, ConnectND, CJIS, and State Capitol information calls.

Benefits within house:

- ITD's Service Desk Analysts work closely with technical resources in other ITD divisions.
- ITD is positioned to provide further consolidation of help desks within ND state government.

Benefits if outsourced:

- Fewer FTEs within ITD
- ITD's Operations staff currently assists in covering the Service Desk after-hours. Outsourced Service Desk resources would allow the Operations Staff to work on other projects.
- When problems occur on weekends, customers must leave a message for the on-call Service Desk Analyst. The volume of these calls is slowly increasing, so outsourced resources could help ITD in achieving "live" 24/7 coverage.

Risks if outsourced:

- Costs for providing help desk support could increase.
- ITD's Service Desk manages the majority of password unlocks/resets within ND State Government. The staff inherently has high-level access to systems and challenge/response questions.
- General knowledge of a large number of systems unique to ND state government is required. Most of ITD's Service Desk Analysts are long-term employees that have gained proficiency through years of experience. A documented knowledge base exists, but ITD would need to enhance it significantly before outsourcing of resources would be feasible.
- ITD's Service Desk Analysts have established close, personal relationships with customers; they receive outstanding reviews via customer satisfaction surveys. ITD has put forth significant effort to build a customer-centric culture at the Service Desk. That is a difficult quality to commoditize.

FTEs: 7

Network Services:

Local Area Network (LAN) Services:

Description: ITD provides LAN services to state government.

Benefits within house:

- ITD technicians develop a relationship with the customer community and provide customized solutions. Technicians are knowledgeable of all services offered by ITD. They know how the customer uses the service allowing them to provide a holistic solution.

Benefits if outsourced:

- ITD currently outsources facilities and wiring services.

Risks if outsourced:

- ITD technicians have extensive knowledge of network utilization patterns and application requirements of the customer. ITD would have to develop different level of documentation to ensure an outsourcing entity would have the knowledge to support the infrastructure adequately.
- The state utilizes the LAN to integrate a number of communication technologies such as voice, video and security. An outsourcing provider would need extensive knowledge of a broad set of technologies to achieve the same level of integration.

FTEs: 1

Video Bridging Services

Description: ITD provides video bridging to state government education and political subdivisions.

Benefits within house:

- ITD technicians develop a relationship with the customer community and provide customized solutions.
- Technicians are knowledgeable of all services offered by ITD and can provide a holistic and complete solution.
- By providing this service in-house, ITD is able to position the bridging infrastructure as close as possible to the end user, which improves the customer experience and reduces network requirements.
- Allows for better integration with desktop video and voice solutions

Benefits if outsourced:

- The state could eliminate the need to own and maintain the capital assets.
- An outsourced bridging solution could potentially improve the ability to scale resources more easily to meet the demands of very large events.

Risks if outsourced:

- A significant risk is being less responsive to customer needs particularly for educational events that require immediate response to incidents.
- If bridging resources did not reside on STAGEnet, The state would need a more robust internet infrastructure to access the outsourcer. By consuming outsourced bridging resources, additional STAGEnet WAN resources would be required as the present design keeps significant traffic local.
- By outsourcing bridging services, the integration with other communication technologies such as desktop video, web conferencing, and audio conferencing will be more complex or not available.

FTEs: 2

Wide Area Network (WAN) Services:

Description: ITD provides WAN management services to state government, education and political subdivisions. ITD has already outsourced a significant portion of this service by procuring all circuits from various providers. ITD provides the management of the network and the infrastructure needed to connect the LANs to the WAN.

Benefits within house:

- By keeping the management of the WAN in-house, ITD is able to provide a very customized and integrated solution with a variety of communication technologies.

Benefits if outsourced:

- The state procures all circuits from providers. The state would achieve few benefits be achieved by outsourcing the management of the network other than reducing FTEs.

Risks if outsourced:

- A vendor would need to manage risk and security protocols with various compliance areas.
- Tight integration of voice and video services would be more complicated or not possible.

FTEs: 19

Voice Services

Description: ITD provides voice services to state government.

Benefits within house:

- ITD provides a very customized and integrated solution with a variety of communication technologies.
- Allows for tight integration to applications
- The tight integration with WAN and LAN services ensures responsiveness to agency needs. During the flooding that occurred in the spring of 2009, ITD was able to provide voice services to any location on STAGEnet within a moment's notice to assist agencies in providing service at temporary locations.

Benefits if outsourced:

- Eliminate the responsibility of maintaining a capital asset.

Risks if outsourced:

- Based on recent analysis there would likely be increased costs. The state would also see an increase of complexity if the vendor was not also responsible for LAN and WAN services as modern voice services require a tight integration at that level. The state would see an increased reliance on Internet services potentially requiring a more robust solution as well as significantly more capacity.
- By outsourcing voice services, the integration with other communication technologies such as desktop video, video conferencing, audio conferencing and call center technologies will potentially be more complex or not available.

FTEs: 9

Security

Description: ITD offers enterprise level information security to protect information and information systems from unauthorized access, use, disclosure, disruption, modification or destruction.

Benefits within house:

- Security requires multiple steps in multiple layers to be effective. You only get this by having knowledgeable staff in-house with a thorough understanding of the infrastructure.
- The cost to purchase enterprise security services is very expensive. It would cost the State substantially more than we are spending today.

Benefits if outsourced:

- External security companies have multiple people with a wide array of specialty expertise. It is very difficult for a small IT security team to be fully versed in the wide array of security issues and resolutions. A large security agency is likely to staff its operations 24x7x365.

Risks if outsourced:

- Response time is crucial in a security event. Even if staffed full-time, without intimate knowledge of the environment you are less likely to be able to resolve the breach in a timely manner. In addition, in the event of a breach, it is not in the security company's best interest to be fully honest about the extent of the breach.

FTEs: 5

Administration / Other Related Costs

Description: Administrative staff is required to run the operations of the department. ITD is an internal service agency that acquires its funding through billing agencies for the IT services provided. The accounting, internal desktop support staff, executive management and administrative staff are included in this group.

FTEs: 12

Internal Desktop Support

Description: Desktop support is providing technical support for desktop devices such as PCs, laptops, and printers.

Benefits within house:

- The ITD staff is familiar with existing government applications such as PeopleSoft. ITD has direct contacts for in-house developed applications that improve the time to resolution.
- ITD understands the impact of new technologies and processes, like virtualization, better across the whole department because ITD staff is involved in implementing them.

Benefits if outsourced:

- Reduction of state staff portrays a "smaller government".

Risks if outsourced:

- The cost of providing this service would be higher than what the state currently spends today.

FTEs: 2

Records and Forms Management

Description: ITD has the responsibility to establish and administer for the executive branch of state government a records management program. This program applies efficient and economical management methods to the creation, utilization, maintenance, retention, and final disposition of state records. Another responsibility is to establish and maintain an active, continuing program for the economical and efficient management of forms.

FTEs: 2

Demand Driven Services

Application Development:

Description: Application development is the art and science of building software programs. ITD offers technical support for applications developed by ITD. ITD provides developers using the following tools: PowerDesigner, PowerBuilder, Master Client Index (development), RPG (AIMS-AS400), Uscript (Roap), Python/Django (LEGEND), SharePoint (development), C/C++, Teleform (development), CA Gen, Fair Isaac (rules engine), Lotus Notes (development), Cobol, MicroFocus Cobol, Natural, Rexx, File Net Workflow, Drupal (content management), PeopleSoft, Crystal Reports, DataStage (ETL language), SSIS (ETL language), Informatica (ETL language), Cognos Reports, WebSphere (java), WebSphere ESB/WID, WebSphere Message Queues, .Net.

There are a number of aspects to the software development process.

Analysis is the gathering of service request/project requirements by meeting with the customers and reviewing current application procedures; determining / documenting "What's" needed to meet the requested scope.

Design is using the requirements gathered through an analysis process, architecting and designing a solution to meet the needs of the request/project; describing "How" the developers will create the solution.

Development is the process of writing and maintaining the source code to meet the requirements set forth through the design process.

Benefits within house:

- Retaining the development in house allows staff to maintain the current business knowledge and continue partnerships with the business. It also provides the customer with staff who has an understanding of the infrastructure along with the knowledge of how to integrate the tools that are currently available for application design. The ITD development staff is required to follow internal development standards and all EA standards, which makes it easier to share maintenance across available staff.

Benefits if outsourced:

- Outsourcing could provide an abundance of backup/support staff for unforeseen staffing issues. Outsourcing application development services, either the entire project or one of the major aspects of the process, may allow agencies to hire resources more readily and on shorter notice. The agency may also be able to provide larger numbers of resources for a project, which could provide a shortened development cycle, whereas ITD is limited to the FTEs allotted. Dependant on the number of agencies willing to use outside staffing, ITD may be able to reduce staff numbers.

Risks if outsourced:

- It may take vendors a longer time to gain the business knowledge of the customers ITD is currently supporting. Vendors may not be in tune or may not take the time to understand the vast amount of tools available for use within the state.
- The state may see reduced sharing of process, procedure and data across agencies because the vendors may not have a full understanding of what is already available through a different agency.
- Multiple vendors will provide inconsistent coding techniques, making it more difficult to debug and perform maintenance.
- Vendors may not have the resources at hand to cover a project in the event of an unforeseen staffing issue.

FTEs: 97

ConnectND

In addition to hosting ConnectND, ITD also provides the application support for the product.

Description: ConnectND is a program to organize, coordinate, and manage the PeopleSoft financial, human resources, and campus solutions software implementation in a partnership between North Dakota state government and North Dakota University Systems. This application has more of a complete end-to-end defined service offering. The state can define and limit the scope of the support to specific technologies. ITD provides program management, project management, software development, and hosting for ConnectND. PeopleSoft implementation partners (Maximus) have historically played a significant part, yet ITD resources help in containing costs and retaining knowledge.

Benefits within house:

- ITD staff has developed a wealth of knowledge in regards to the business knowledge of the agencies using the program and the integrations with each of them.

Benefits if outsourced:

- ITD could remove hardware, software and technicians. The technical risk is minimal as WebSphere and SQL Server database skill sets exist with 3rd party providers. PeopleSoft administrators are a defined skill set in the industry.

Risks if outsourced:

- Internal subject matter expertise would be lost. Duplication of software, database and/or hardware would likely exist.
- Costs to provide this service would be higher.

FTEs: 7

Software Development Architect

Description: The software development architects set the strategic direction and vision regarding the software development tools and techniques necessary for developing software applications for the State of North Dakota. They provide overall recommendations for software development solutions statewide.

Researching, evaluating and setting up best practices for using new tools and techniques are some of what they do.

Benefits within house:

- ITD architects have a broader view and understanding of what is happening at the state level. They have enterprise level knowledge of products agencies are using and applications the state runs. They also have the ability to identify where it is possible to consolidate/share products/services.

Benefits if outsourced:

- Outsourcing architecting services may allow agencies to hire resources more readily and on shorter notice. The vision and experience with different technologies may be wider than what we have within the state.

Risks if outsourced:

- You can lose the enterprise level view of applications and products for the state. North Dakota has a robust Enterprise Architecture process in which the ITD architects play a vital role. By outsourcing, you lose that intimate view of how North Dakota does things and where the state wants to go in the future. Moreover, while the vision and experience could be broader as noted above, it may also be narrower than what we have within the state or their vision may not be up-to-date.

FTEs: 3

Business Analysis

Description: Business Analysts (BAs) translate business vision and direction to IT solutions, which ensure operational effectiveness and excellence. BAs help design new IT solutions and document workflow in order to make appropriate recommendations that positively affect business efficiency and productivity. This role becomes the functional expert on the specified application(s) working closely with ITD personnel and business partners to identify and maximize opportunities to utilize information and technology to improve product, service, and/or program business processes.

Benefits within house:

- Retention of the customers' business knowledge is the primary benefit. Internal staff would provide easy access to business knowledge across customer boundaries, which could lead to shared information and application reuse. ITD's intent is to share these resources across agencies, allowing the customer to purchase varying amounts of this service, and retain the business knowledge within ITD.

Benefits if outsourced:

- Agencies can purchase business analysis services from other providers. The benefit to outsourcing this service may be that agencies could hire resources more readily and perhaps on shorter notice. ITD has just recently started offering this service and has a limited number of staff trained to perform at this level.

Risks if outsourced:

- The need for this service may be sporadic, and as a result, the customer may lose stability in the vendor resources providing the service, which would make it difficult

for the business analyst to gain a thorough understanding of the customer's business.

FTEs: 4

Micrographics

Description: Micrographics is a service that converts paper documents into small film images. As demand had decreased over the years, ITD has slowly outsourced portions of this service. In May of 2010, ITD decided to outsource the whole service. The primary reason for this decision was the equipment used to perform this service was old and outdated and the large investment necessary to upgrade it could not be justified because of the decreasing workload.

Benefits within house:

- The State has total control over the creation of the final product and can guarantee quality.

Benefits if outsourced:

- The outsourced service provides a cost-effective way to offer the service to those agencies still requiring it.

Risks if outsourced:

- Data loss/theft is the largest concern. Paper documents, possibly containing sensitive information leaves state control.

FTEs: 1

Project Management

Description: Planning, organizing and managing resources to bring about the successful completion of specific project goals and objectives. Law mandates large Project Oversight (LPO). ITD gave the responsibility for LPO to the project management team.

Benefits within house:

- Consistency and success rates are the key benefits of using this ITD service. The ITD project managers are familiar with the mandated project oversight process.

Benefits if outsourced:

- Agencies can and do purchase project management services from other providers. The benefit of outsourcing may be that agencies will be able to hire resources more readily and perhaps on shorter notice if the ITD resources are already booked. ITD has limited staff and therefore does not always have staff available. While the team providing this service has grown, the demand for project management seems to be growing at a faster pace.

Risks if outsourced:

- The biggest risk could be a decrease in project success rates. ITD has a significant rate of success. ITD also provides consistency in reporting for its customers that may not occur with other vendors.

FTEs: 11

Project Management

Description: Quality Assurance provides a structured method for the evaluation of the customer deliverables throughout a project. This could be assuring requirements are properly documented, designs are complete and approved by the necessary entities, testing applications, and so forth. ITD also offers a number of tools to agencies via the QA service structure. They include Segue Silk Test (regression and functional), Mercury Loadrunner (performance testing), Morea (usability testing), and AppScan (vulnerability).

Benefits within house:

- ITD customizes the QA process to meet ND's need for quality control. ITD provides consistency throughout the enterprise. Today, ITD is providing quality services though each software development staff member. ITD has not totally developed this service at this time; therefore, the formal expertise is not widely spread.

Benefits if outsourced:

- Outsourcing quality assurance services may allow agencies to hire resources for the project more readily and on shorter notice. This service is very new to ITD, and our focus today is on process and procedure. There may be vendors with more formal experience in this area.

Risks if outsourced:

- Data used for testing may contain production information. If outsourced, citizens' personal information may be at risk due to the inability to control who may be performing the tests and having access to the data. Each vendor will have his or her own process and procedure introducing an inconsistent application of QA across the state and possibly even within an agency.

FTEs: 2

North Dakota Relay Services:

Description: Relay North Dakota is a free service to the user that provides full telephone accessibility to people who are deaf, hard-of-hearing, deaf-blind, and speech -disabled. This a federally required service that allows hearing callers to communicate with text-telephone (TTY) users and vice versa through specially trained Communication Assistants (CAs). This service is outsourced. ITD only performs contract administration for this service.

Employees Moving to Private Sector and Returning to Department

SB2021 requires ITD to determine the number of the department's employees who have resigned from the department to provide information technology consulting services in the private sector and the number of which ITD rehired.

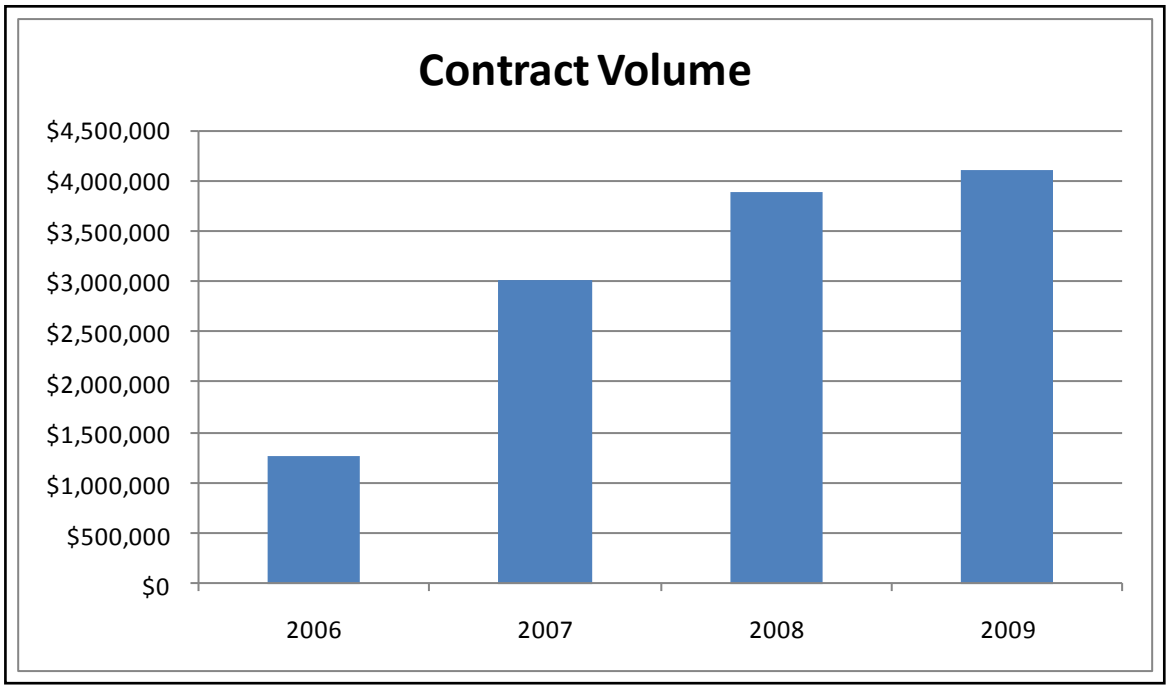
From 1/1/2004 to 6/30/2010, the following three employees left to start their own business:

Name	Start Date	Term Date	Reason
Darrin Lee	4/27/2001	1/5/2007	Left to start his own consulting business
Joshua Ternes	10/1/2001	7/22/2008	Left to start his own business
Rehired	7/6/2009	3/31/2010	Went to Attorney General's Office (CJIS)
Troy J. Jezeski	8/14/2006	2/15/2008	Left to start his own business
Rehired	10/13/2008	6/30/2009	Will work at home

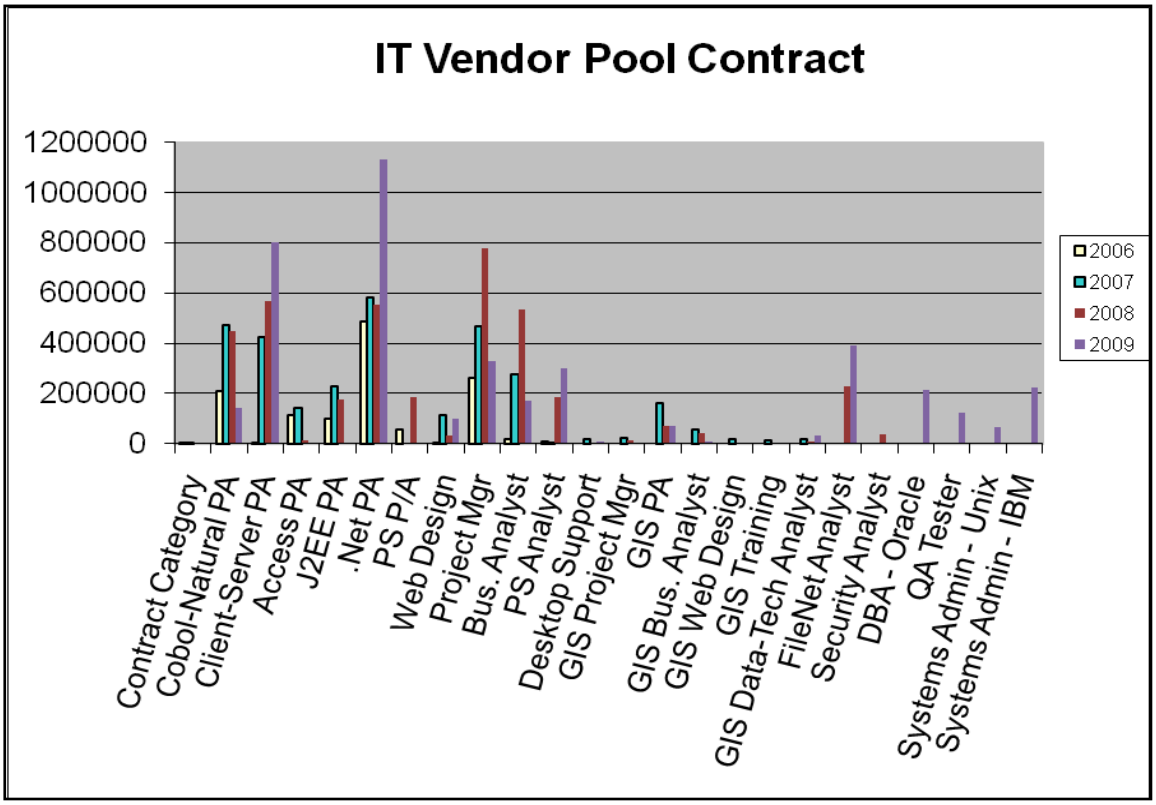
Department's Effort to Assist in Creation of ND Technology Related Companies

ITD has been involved in a number of initiatives to assist North Dakota technology companies.

- Vendor Pool – Working in conjunction with OMB's Procurement Office, ITD initiated an effort to make it easier for vendors (including ND vendors) to do IT business with the state. ITD released a Request for Proposal in July of 2005 with 11 categories for vendors to bid on. The state issued Intent to Award notices in September of 2005. Out of the 21 companies awarded in at least one category, 11 were ND based companies. In 2006, the state awarded over $1.2 million to those in the vendor pool. In 2007, the state added web design as a category in the vendor pool. The volume for 2007 jumped to just over $3 million. The 2008-updated RFP included just over 30 categories vendors could bid on. The state awarded to over 38 companies in at least one category. The volume for 2008 climbed to over $3.8 million. Our latest statistics for 2009 had the volume over $4.1 million dollars. Over $1.2 million went to a Bismarck company alone.



2006 Contract Volume =	**$1,266,107**
2007 Contract Volume =	**$3,018,763**
2008 Contract Volume =	**$3,878,552**
2009 Contract Volume =	**$4,112,898**



- Standards – Working alongside many other agency representatives, ITD has assisted our Enterprise Architecture effort in creating IT standards that allow all vendors to compete on an equal basis. These standards help ensure agencies receive a minimum quality product or service and help ensure there is not an investment in unproven or obsolete technology. By knowing the standards, vendors are able to provide bids that are more accurate.
- Commerce Meetings – The Department of Commerce has asked ITD to attend meetings with potential companies looking to locate in North Dakota. ITD has always been willing to participate in these meetings and provide support to Commerce and these companies. An example where this effort was successful was with a software development company called Boden, Inc. who opened a branch office in Mandan.
- ITD is a member of the Information Technology Council of North Dakota (ITCND). The ITCND represents nearly 100 IT-related software developers, telecommunications companies, Internet providers and content developers, systems integrators, educational institutions, state agencies and manufacturers across North Dakota. One of the programs sponsored by this organization is to recognize the outstanding efforts of individuals and entities that have played a vital role in IT development in North Dakota and that are an inspiration to others in the industry. The program acknowledges the state's IT leaders, improves public awareness of North Dakota's many effective IT companies, and applauds innovative companies and business ideas.
- Additionally, ITD Computer Systems has been working with Fargo Based Packet Digital LLC to pilot their technology into a test platform with North Dakota ITD test systems. This pilot project will help Packet Digital LLC demonstrate their product with real world data and support backing from a state government entity. The project is currently under review by the ND Department of Commerce for project funding.

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