Introduction

The Texas A&M University System has a long and successful history of shared Information Technology (IT) services going back more than 30 years. The Budget/Payroll/Personnel (BPP) system first went online in 1979, followed by both the Financial Accounting Management Information System (FAMIS) and the TTVN Wide Area data and video network in the late 1980’s. Today, the total budget for major shared IT services is $35.2 million per year (see table below), and $12.7 million (36%) is paid by System Members other than Texas A&M University.

<table>
<thead>
<tr>
<th>Shared Service</th>
<th>Total Annual Budget</th>
<th>Non-TAMU Percent Budget</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAMUS Business Computing Services</td>
<td>$3.8 million</td>
<td>60%</td>
<td>BPP, HRConnect, SSO, TrainTraq, LeaveTraq, Data Warehouse - All System Members; FAMIS -16 System Members</td>
</tr>
<tr>
<td>TAMUS TTVN Wide Area Network</td>
<td>$3.8 million</td>
<td>69%</td>
<td>All System Members</td>
</tr>
<tr>
<td>TAMU Telecom</td>
<td>$14.4 million</td>
<td>25%</td>
<td>B/CS Voice Services - TAMU, SO, TAMHSC, Agriculture Agencies, Engineering Agencies; Data Circuits – All System Members; Telecom billing – TAMU, TAMIU, TSU</td>
</tr>
<tr>
<td>TAMU CIS IBM Mainframe Operations</td>
<td>$3.6 million</td>
<td>44%</td>
<td>Supports BPP, FAMIS, and TAMU SIMS (SIMS to be retired during FY10)</td>
</tr>
<tr>
<td>TAMU Networking &amp; Information Security</td>
<td>$6.5 million</td>
<td>10%</td>
<td>Networking and information security – TAMU, SO, TAMHSC, Agriculture Agencies, Engineering Agencies; IT Security Policy Support - All System Members</td>
</tr>
<tr>
<td>TAMUS MAESTRO Integrated Research Information</td>
<td>$1.0 million</td>
<td>100%</td>
<td>TAMU, TAMHSC, TTI, TEES, AgriLife Research, Research Foundation; first two years funded by TAMUS with later years by assessment</td>
</tr>
<tr>
<td>TAMU CIS SELL Software Licensing</td>
<td>$2.1 million</td>
<td>45%</td>
<td>Software licenses</td>
</tr>
</tbody>
</table>
While significant shared IT services are operating today, there are always opportunities to expand on existing services or embark on new shared services initiatives. We propose a set of near-term shared IT services that are primarily extensions of existing shared IT services. We expect to save more than $650,000 per year with these near-term initiatives.

Several “big ideas” might prove to save substantial money in the long term, but these initiatives will require a significant up-front capital investment, and further study is necessary before we can make a recommendation. For example, the proposal to develop a new data center might save significant energy costs if servers in rooms without separate cooling could be replaced with virtual servers in a new data center. We estimate that 30,000 square feet of server space is scattered across the Texas A&M campus. Such a move would allow energy management to set back thermostats in many of these buildings, resulting in substantial savings in energy costs, and it would make additional space available on campus. We also would want to have space available in the new data center for high-performance research computing clusters. The debt service and operations costs for such a data center are estimated to be $1 million per year, with an additional $0.75 to $1 million per year in energy costs for the new facility. Before embarking on such a project, we need to have a better estimate for energy savings and a business plan for funding the new data center.

The Shared IT Services Team solicited feedback from many groups on campus and across the A&M System. A draft document of ideas (see Appendix) was distributed via email. The following groups were included, and many of them provided feedback (see Appendix): TAMU Department Head Steering Committee, TAMU Information Technology Advisory Committee (one representative from each TAMU College and Vice President), TAMU Faculty Senate, Council of Principal Investigators, TAMUS Member Chief Information Officers, and the Chancellor’s IT Governance Council.

**Recommended Shared IT Services**

Included below are shared IT services recommended for implementation over the course of FY10:

1. **Long Distance Telephone Service RFP** – We recommend issuing a Request for Proposal (RFP) for long distance telephone service, which will allow System Members to place long distance calls at a reduced rate per minute. The long distance RFP will be written with the intention of splitting the long distance traffic across a traditional long distance carrier and a Voice-over-IP (VoIP) provider. We anticipate significant cost savings and enhanced business continuity from having two long distance carriers.

2. **Expand Use of Standard Staff and Student Lab Desktop Computer Contract** – We recommend requiring Texas A&M University administrative units, System Offices staff, and TAMU general purpose student computer labs to use the standard desktop computer contract unless they can obtain the same or a better price. This requirement would not apply to academic departments or colleges as it is recognized that diversity in
platforms may be desired. There will be some academic units that choose to participate, and we will provide information on the program for their consideration. There will also need to be exceptions for special requirements. The opportunity for further expansion of this program in future years is likely.

3. **Expand Use of System-wide Software Licensing** – The cost savings associated with software distributed by the TAMU Software Evaluation and Licensing Library (SELL) varies from 3% to over 90%. Whenever possible, TAMU negotiates software licenses that can be used System-wide. In FY08, income to the SELL from other System members was $661,000, and in FY09 (through June) this income was $979,000. We will work to make all System Members aware of the scope and savings of existing site licenses. In addition, we continue to work with major vendors to obtain the best possible value. A longer term project is to assign all A&M System students UIN’s (currently only TAMU students and all System employees have UIN’s), which will, in conjunction with Federated Identity Management, allow these students to purchase discounted personal software from the SELL web-store.

4. **Replace IBM Mainframe with Smaller System** – We recommend purchasing a smaller IBM mainframe, which will reduce software license costs. The legacy student information system at TAMU, SIMS, will be replaced on September 1, 2009 with the new Compass student information system that runs on Unix hardware. SIMS previously accounted for 40% of the IBM mainframe load. While some use of SIMS will continue in FY10, the mainframe can be replaced at any time over the next year.

5. **Document Management System Consolidation** – A Campus Document Management Committee was tasked earlier this year to recommend a campus-wide strategy for basic content management that addresses document workflow, management, and imaging. The committee has three shared service recommendations that address both short- and long-term strategies.

6. **Cell Phone Plans** – Several years have passed since we set cellular telephone stipend rates, and personal cell phones are now ubiquitous. We recommend considering cellular telephone stipend reductions, setting a maximum stipend, not including sales tax in the stipend, and providing one-time stipends for device purchase only once every four years. System-wide cellular stipends have risen from $725,000 in FY05 to an estimated $3.3 million in FY09. Also, the 1,300 university-owned cell phones being billed though Telecommunications have more favorable per minute rates than individual plans. If the federal tax law regarding incidental personal use of company-owned cell phones is revised so as not to require the University to report this use as taxable income, we may want to factor this in to any future plans.

7. **Expand Video-conferencing, Web-conferencing, and Video Streaming for more System-wide Meetings** – While the A&M System has a long history of using videoconferencing, and more recently webconferencing and streaming video, for System meetings, we can probably do more. In FY08, the Texas A&M University System conducted 1,043 meetings (does not include telecourses) via videoconference, 3,076 Centra webconferences (includes meetings and courses), and 797 streaming video sessions (includes meetings and courses). We may want to consider piloting a
“Virtual Board of Regents Meeting,” where System Member representatives participate via videoconference and streaming rather than attending in person.

8. **Enhance Administrative Applications** – We recommend continuing to enhance and upgrade the administrative applications with new functionality designed to improve and streamline business processes. Among those currently planned are an enhancement to the current TrainTraq training application, which will allow members to more easily develop online training that can be shared System-wide, and implementation of a Travel and Entertainment software application to replace our paper processes.

**Preliminary Cost Savings from Recommended Shared IT Services**

Included below are the estimated cost savings for the FY10 recommended shared IT services:

1. **Long Distance Telephone Service RFP ($243,000/year)** – We anticipate a decrease in the cost for long distance telephone service from $0.08 to $0.055 per minute by issuing a RFP rather than purchasing long distance off the State TexAN contract. Based upon available call detail from Texas A&M International, Tarleton State University, Texas A&M University and all A&M System Agencies located in College Station, and assuming traffic patterns of the other universities are comparable to these System Members, we anticipate savings of $243,000 System-wide in FY10 if all universities opt to buy into the new contract.

2. **Expand Use of Standard Staff and Student Lab Desktop Computer Contract ($227,000/year)** – For several years, TAMU has solicited bids on a standard desktop computer (PVAMU has a similar program). In FY08, TAMU purchased 1,362 computers with a significant additional discount over our standard single-unit discount, saving $354,000. In FY09, there were 1,500 systems purchased with a total savings of $681,000. This contract has been available System-wide for the previous two years (the PVAMU contract is also available System-wide). For FY10, we propose increasing the number of computers purchased using this contract to 2,000 by requiring Texas A&M University administrative units, System Offices staff, and TAMU general purpose student computer labs to use the standard desktop computer contract unless they can obtain the same or a better price. This requirement would not apply to academic departments or colleges as it is recognized that diversity in platforms may be desired. Based on the FY09 contract, we estimate a total savings of $908,000, and an increase in savings over FY09 of $227,000.

3. **Expand Use of System-wide Software Licensing ($100,000/year)** – We conservatively estimate that additional savings during FY10 will result from increased participation in System-wide software licensing through the SELL.

4. **Replace IBM Mainframe with Smaller System ($67,000/year)** – The legacy student information system at TAMU, SIMS, will be replaced on September 1, 2009 with the new Compass student information system that runs on Unix hardware. SIMS previously accounted for 40% of the IBM mainframe load. Purchasing a smaller mainframe will result in reduced license costs. While we will have to purchase the new mainframe, we can document a cumulative savings of $200,000 at the end of three years.
5. **Document Management Consolidation ($25,000/year)** – The Campus Document Management Committee recommends establishing three central support centers, one for each of the three dominant vendor systems found in College Station. Centralizing support for each system will remove the need for each department to have its own hardware and software. TAMU’s Department of Student Financial Aid is going to partner with the Division of Finance’s *FileNet* operation this fall rather than continue to operate a separate system.

6. **Cell Phone Plans** – The Shared Business Services team has taken this recommendation for action, and their report may include an estimate of cost savings.

7. **Expand Video-conferencing, Web-conferencing, and Video Streaming for More System-wide Meetings** – We have not formulated an estimate for cost savings, which would result from the reduction in travel costs. If the decision is made to pilot a Virtual Board of Regents Meeting, we can calculate the cost savings.

**Other Cost Savings Recommendations Requiring Further Study**

1. **New Data Center** – Offer virtualized servers in a new, green data center, and eventually disallow use of server rooms without separate cooling. An energy savings of $2 million/year or more is estimated if buildings on campus could use set-back cooling on nights and weekends. We recommend further study to obtain a good model for the cost savings and the pricing of a virtual server service. An estimated cost of $10 million would be required to build the data center, with another $0.75 to $1 million/year required for operations. Consideration should be given to the University centrally funding the $10 million capital cost and the electrical power portion of the annual operational costs. CIS would fund the remainder of the annual costs from operational overhead included in a competitive virtual server rate charged to customers. The University might save $2-$7.5 million/year in energy costs by enabling energy management controls within buildings currently having server rooms without separate cooling (estimated at 2-10% of the annual electricity bill).

2. **Email Consolidation** – Study consolidating MS Exchange Email, Active Directory, and Blackberry Enterprise servers for the System Offices, TAMU President and Provost, CIS, and other administrative areas. In 2005, when we last studied the opportunities for email consolidation, more than 40 separate MS Exchange servers were in operation in College Station. We did not move forward in 2005 because of the significant start-up costs in operating a large, high-availability Exchange service and because managing the individual email servers was a modest fraction of a unit’s IT professional’s time. There have been changes in the MS Exchange architecture in the intervening years, however, that warrants a reexamination. CIS can also offer a lower cost option through the large TAMU Email system (70,000 accounts) currently supporting students, faculty and staff, which is based on the Zimbra email software.

3. **File System and Sharepoint** – Look at consolidated file systems and MS Sharepoint for System Offices, TAMU President and Provost, CIS, and other administrative units.

4. **Printers** – Study eliminating individual staff printers in favor of outsourced or University-owned, shared printer/copier/scanners with two to three black and white printers and one
color printer per floor. UT-Austin and the UT System have been using this approach since 2003.

5. **Help Desk support** – Use TAMU Help Desk Central, which operates 24 x 7, for after-hours and weekend support to System Members. Other specialized help desks (e.g., BPP and FAMIS) cannot be replaced by Help Desk Central.

6. **Document Management Consolidation** – Multiple Laserfiche implementations in B/CS should also consider consolidating into a central support center as the two organizations using *FileNet* have agreed to do. Other recommendations of the Campus Document Committee are as follows: (1) establish a preferred vendor selection committee, which will use and build upon the requirements identified by the current committee to select a preferred software package to be used by all new document management implementations at TAMU, and (2) encourage those who do not use the preferred vendor to consider transitioning to the preferred vendor when making a major upgrade to their existing systems.

7. **Web Content Management System Consolidation** – Build a campus web Content Management System (CMS) partnership minimizing investments in CMS’ for units and colleges. Further study and planning will need to be conducted to decide on how organizations will be allowed to invest/participate in using the system. Adoption of this CMS offering will offset costs incurred by individual investments being made by the colleges, and it would reduce costs associated with future content sharing and distribution needs. While the university has some implementations of open source CMS’ such as Plone (Library and VPR), WordPress (Engineering) and Drupal (Student Affairs), the decentralized nature of the university, and the number of potential customers, necessitates a commercial solution that offers a "decoupled" architecture. The decoupled architecture allows for true content management since the CMS, database and web server are all separate. With such a system, departments can continue using their preferred application and hosting environments and allow the CMS to provide functionality for managing content. In 2008 the TAMU Department of Marketing and Communications licensed the Percussion Web Content Management System for the university (as well as negotiated a master purchase agreement for the entire System) as part of a lengthy review/purchase process that involved members of the System Offices, AgriLife, Engineering, Galveston, A&M CIS and the Division of Marketing & Communications. Texas A&M AgriLife has purchased their own license in order to serve its agencies and the College of Agriculture and Life Sciences, and AgriLife has a goal of publishing 500 web sites through the CMS within the next two years in addition to consolidating marketing and communications web design and centralized web hosting.

8. **Energy Saving PC Settings** – Most PC’s on-campus use energy savings features such as powering off the monitor and spinning down hard disks. Using standby mode or powering down machines that do not need to operate after work hours is also an option. Study whether or not a University Standard Administrative Procedure should be developed to require the activation of energy saving features where practical.
9. **Workstation Replacement Cycle** – Consider moving staff and student Open Access Lab workstations from the current three-year replacement cycle to a four-year cycle. As far as we can determine, only CIS and the student Open Access Labs follow a three-year replacement cycle for staff and student lab computers. We do not recommend taking this action in FY10, but we will consider moving to a four-year cycle in FY11 or FY12 if the budget necessitates.

10. **Longer Term Ideas**
   a. Centralized hardware platform to run Banner - One system in College Station and another in Dallas or Austin. Each university would have its own instance of Banner.
   b. Hosting Banner instances for Texas A&M – Central Texas and Texas A&M - San Antonio on one of the existing A&M System Member Banner hardware platforms.
   c. Centralized Learning Management System – We considered this several years ago, and the Provosts eventually decided to continue to run their own systems.
   d. System-wide Oracle site license
   e. Enhancements to Microsoft campus license
   f. System-wide student evaluation system – HB 2504 requires all student evaluations to be put online for the public to view and search.
   g. VoIP Trunking – Expansion of VoIP trunking between campuses
   h. IPTV – Campus cable television over IP. There is a pilot underway.

**Cost Avoidance Recommendations and Associated Amount**

1. **Shared Infrastructure for Communications Assistance for Law Enforcement (CALEA) ($8,825/year)** – The UT and A&M Systems along with the Texas Department of Information Resources made the decision to partner on a CALEA implementation to share costs. We were recently able to add LEARN and Baylor University as partners, which will save an additional $8,825/year. The total cost avoidance over five years for the A&M System is $280,000 from this five-member consortium.

2. **Document Management Consolidation ($50,000 one-time and $20,000/year)** – Texas A&M University at Galveston will be partnering with the TAMU Division of Finance to provide Document Management services. This will save TAMUG $50,000 in one-time start-up costs and $20,000/year in operational costs.

3. **Enhance Administrative Applications ($100,000 one-time and $50,000/year)** – Enhancements to the current Training application are anticipated this fall. Based on this schedule, several A&M System members have opted to defer purchase of a third-party Learning Management System (LMS) for employee training. While the planned upgrades will not provide the full functionality of an LMS, the most critical functionality will be available. Continued phases are planned to eventually provide a robust LMS solution. An estimated cost to develop this phase is $150,000. The estimated purchase price for a LMS is approximately $250,000, with an ongoing annual maintenance fee of between 20-30% of the purchase price.

4. **VoIP System** – The University has recently purchased enterprise VoIP switches and other VoIP equipment totaling $1 million. The new system is able to support up to
100,000 lines. All new buildings will be using VoIP in the future, but the transition from Centrex to VoIP will take up to eight years. Some System Members in Brazos County are considering purchasing their own VoIP switches, and we believe they should carefully analyze the total cost of ownership.

Shared Information Technology Services Considered But Not Recommended

Included below are shared information technology services that were considered but not recommended for implementation or further study:

1. **Desktop and Server support** – See if any savings can be realized in merging the System Offices BCS Microcomputer and Network Support group with the CIS Office Computing Support Services (OCSS) group. *Not recommended as the current number of desktop support staff in the System Offices is comparable to the level of effort on the main campus. It might be possible to save 0.5 FTE.*

2. **Partner with UT-Austin for IBM Mainframe Backup** – Rather than replacing the IBM mainframe with a smaller system, consideration was given to having TAMU and UT-Austin back up each other’s mainframes. *UT-Austin decided that they could not handle the additional load from the A&M System, so this idea was discarded reluctantly. The A&M System does not have a backup mainframe system or a contract for disaster recovery services.*

3. **Telephone Switch** – Review costs associated with the separate telephone switch purchased by the A&M System to see if it should be shut down. *Not recommend as the existing System Offices switch is paid for and is on self-maintenance. When this switch reaches its end-of-life, members in these buildings should transition to the VoIP infrastructure.*

Team Members

- Mr. Andy Bland, Executive Director of IT for the Division of Finance, TAMU, anbland@tamu.edu
- Dr. Pierce Cantrell, Vice President and Associate Provost for IT TAMU and Associate Vice Chancellor for IT TAMUS, p-cantrell@tamu.edu
- Mr. Scott Honea, Director Network Services/Information Security Officer, Texas A&M Health Science Center, shonea@tamhsc.edu
- Mr. Alan Kurk, Director of AgriLife Information Technology, akurk@tamu.edu
- Dr. Pete Marchbanks, Executive Director of Computing and Information Services and Deputy CIO, Pete-Marchbanks@cis-gw.tamu.edu
- Mr. Carl McKneely, Director of Business Computing Services, TAMUS, mckneely@sagomail.tamu.edu
- Dr. Jorge Seminario, Professor of Chemical Engineering TAMU and Faculty Senate representative, seminario@tamu.edu
- Dr. Valerie Taylor, Professor and Head Department of Computer Science and Engineering TAMU, taylor@cse.tamu.edu
Summary of Existing IT Shared Services

As noted in the introduction, shared IT services have a successful 30-year history within the A&M System. In this section, we provide a summary of these shared services including: (1) TAMUS Business Computing Services (BCS) BPP, FAMIS, Data Warehouse, and HR applications (HRConnect, LeaveTraq, TrainTraq, TimeTraq, etc.), (2) TAMUS TTVN statewide data network, videoconferencing, and web conferencing, (3) Telecommunications, (4) Computing and Information Services, (4) Bryan/College Station Networking and IT Security through TAMU NIS, (5) MAESTRO integrated research information system, (6) TAMU Instructional Technology Services (ITS).

TAMUS Business Computing Services (BCS)

The following provides a short description of the major applications currently in use across the A&M System and gives a brief analysis of the use and adaption among System members.

Budget/Payroll/Personnel System: The Budget/Payroll/Personnel (BPP) System replaced a batch process payroll system with a more comprehensive on-line application in 1979. All A&M System members have been required to use the BPP System. The BPP System is used to prepare salary budgets, monitor and control budgeted positions, calculate payrolls, perform insurance benefit billing for retirees, survivors, COBRA participants, etc., and perform basic human resource demographic reporting. Interfaces exist with numerous regulatory (governmental agencies) and third party entities with which the A&M System maintains a business relationship. The BPP System processes over one million (1,000,000) payroll transactions annually, resulting in the generation in excess of 59,000 Form W-2s at the end of a given calendar year. At the end of this section is a review of Payroll Office processing metrics and benchmark analysis.

Financial Accounting Management Information System: The Financial Accounting Management Information System (FAMIS) was implemented during the late 1980’s and early 1990’s. A third party product that most closely fit the system requirements was purchased and modifications were made to the software to meet the required business processes. Prior to the implementation of this system, almost every member of the A&M System operated its own separate financial accounting system. Although the Board of Regents directed that a unified solution (application) be implemented across the A&M System, exceptions were granted for TEES, TEEX and West Texas A&M University (WTAMU), permitting these A&M System members to operate independent financial accounting systems. This application processes approximately one million (1,000,000) accounting transactions on a monthly basis.

HRConnect: This application was the first centralized A&M System web-based solution providing basic human resource and benefits information to the employees of the A&M System. It was first implemented in the late 1990’s and has been upgraded on several occasions since that time. HRConnect currently provides employees with many self-service features, including,
but not limited to access to historical and current payroll information (earnings statements and W-2s), current insurance benefit coverage information, updates Form W-4 information (Federal Income Tax withholding status definition), direct deposit set up and maintenance, general demographic information, maintenance of home residence and telephone information, and emergency contact information.

**Canopy:** Canopy is the application that provides a web interface to the base BPP and FAMIS applications. The functionality provided has grown as additional processes have been incorporated into this application. Visibility exists into the Employee and Active Budget files of the BPP System for all members of the A&M System. Extensive interfaces have been developed for several FAMIS modules, providing visibility and update capability in such areas as Fixed Assets, Invoices, Purchasing, Receiving, Vouchers and basic Account balance inquiry.

**Employee Payroll Action (EPA):** Implemented in 2003 as the first portion of Canopy, the Employee Payroll Action module (EPA) provides search and inquiry access to the BPP Employees and Active Budget databases, as well the ability to create and process EPA documents. EPA documents update the Active Budget file in the BPP System, which is the initial source of position control and payroll activity in the BPP System. While the inquiry and search functionality is available to all A&M System members, five A&M System members have not implemented the EPA for processing updates to their Active Budget.

**LeaveTraq:** Implemented in 2002, this application supports the leave processing and reporting requirements for most employees of the Texas A&M System. It is used by all members of the A&M System. A few of the large departments of Texas A&M University have alternative leave systems that interface with internal departmental business processes. Built upon the BPP System infrastructure, this application provides leave information to an excess of 22,000 benefit eligible employees throughout the state, allowing for electronic leave documents and electronic approvals of these records. To date, almost two million (2,000,000) leave transactions have been recorded.

**Single Sign On (SSO):** This application provides for a single authentication point for many of the Business Computing Services (BCS) web applications, simplifying the logon process for employees who interact with these processes. Interfaces also exist with non-BCS applications to provide this authentication service for these service applications as well. The application provides for a single point for defining the employee/supervisor (manager) relationship to be used within BCS applications. All current employees, former employees, and retirees use SSO to gain access to many A&M System self-service applications.

**TimeTraq:** TimeTraq is a robust self-service application designed to allow employees to electronically record hours worked and to submit an electronic time sheet to their managers. This application is closely coupled to the LeaveTraq application, allowing TimeTraq to “pull” hours from leave documents onto the timesheet to be processed. For biweekly paid employees, the time sheets are submitted to a supervisor for approval and ultimately reported to the BPP System for payroll processing. A similar weekly approval process exists for monthly paid employees; however, no direct impact is made for monthly payroll processing. For these
monthly paid employees, TimeTraq calculates and records compensatory time transactions in LeaveTraq. All A&M System members except one are currently using TimeTraq in some manner.

**TrainTraq:** Initially developed as part of HRConnect, TrainTraq currently functions mainly as a repository for recording completed training courses. As demands for more accurate and timely training continues to increase, current projects are underway to make this a standalone application and strengthen the functionality provided. This application is used throughout the A&M System, especially for the System required training courses.

**iBenefits:** Originally called the New Employee Enrollment System (NEES), this second generation web application has been developed to provide a comprehensive interface between employees and their insurance benefits. This application provides for the insurance benefit enrollment of new employees, the annual enrollment process for all benefit participants (employees, retirees and COBRA participants) and will incorporate the processing of insurance benefit modification allowable under law for specific changes in family status situations. It is used by all A&M System members, providing an interface for both active employees and retirees into the insurance benefit programs offered by the A&M System.

**Time & Effort:** Research and research administration continue to be a high priority and of a high profile for the A&M System. As a consequence, the Time & Effort system has been developed to provide and meet the certification requirements for the federal contracts and grants awarded to the members of the A&M System for research conducted at the many various campuses. This system, just being implemented, will allow “principle investigators” (PIs) to certify to the effort (work hours) charged to the various projects which have been awarded to them. Employees will generally make these certifications as they submit their timesheets as the work is being performed. The basis for the effort being certified would be the payroll and accounting records in the base BPP and FAMIS applications. Once fully operational, it is anticipated that this application will be used by all A&M System members.

**Data Warehouse:** The A&M System data warehouse has continued to grow and develop into a facility which is now intertwined into many daily business operations. At the same time, it continues to be a repository for historical information which can be queried for trend analysis reporting and management information. Information available in the warehouse is divided into the following basic categories: academic, financial, and human resources. Members using FAMIS and BPP have information automatically imported into the data warehouse on a daily basis. Academic information is loaded as it becomes available from the Texas Coordinating Board, although processes to receive this academic information directly from the A&M System members are being studied. Employees from all of the members of the A&M System have access to the warehouse for summary and management reporting, although not all members have detailed financial accounting information available for “drill down” through this tool.

**SciQuest Purchasing (AggieBuy):** The Texas A&M University and several agencies in the College Station area have purchased a third party web based purchasing application to be used to standardize and control this business activity. It is anticipated that by directing the
purchasing efforts, they will be able to receive larger discounts for goods and products. This product is to have a tight interface with FAMIS, so that the information will flow immediately from one system to the other as purchases are made, invoices are produced and goods are received. Currently, TAMU and four other A&M System members are participating in this project. Other A&M System members can choose to participate in this software solution.

**Travel and Entertainment:** The A&M System is in the process of initiating a project to purchase a Travel and Entertainment (T&E) System and develop a tight interface between this system and FAMIS. To this point, there have been a few demonstrations of commercial T&E applications. A formal RFP is being developed. It is anticipated that this application would have participation from most, if not all, A&M System members.

**Payroll Office Processing Metrics and Benchmark Analysis**

It is difficult to find processing benchmarks for financial processes, as there is considerable variance associated with processing environments and business procedures among various types of organizations. Indeed, there is considerable variance between the two largest university systems in the state of Texas. The University of Texas System has very few centralized processes. Most of the institutions in the UT System operate independent payroll and financial operations, and report standardized reports to the UT System Offices where required. The A&M System has strong centralized payroll (since 1979) and financial applications (since 1991). All institutions and agencies of the A&M System utilize a standardized payroll application and all but three use a centrally supported financial accounting application.

Standardized business application or business practices metrics among some of the largest institution of higher education in the state of Texas do not exist. Institutions were contacted to see if they had any measures that might be used for comparative purposes and the institutions responded that no metrics existed. The institutions contacted were the University of Texas, Texas Tech University and Baylor University.

Two benchmark studies were found that provide some metrics and descriptions of industry best practices. The most recent report found was **The 2008 Payroll Best Practices Benchmarking/Performance Study** conducted by The Hackett Group identified several metrics for comparative purposes. This report can be found quoted in many other sources on the Internet. The second study is **Payroll Benchmarks and Analysis Report 2007**, conducted by the Institute of Management and Administration Inc. The data used in this report was collected in 2005, but the results appear remarkably consistent between the two studies.

Some general observations about both reports require brief mentions. As one would expect, there is considerable variance in organizations and environments that require payroll operations. The smaller the organization, the greater the cost required to generate a payroll transaction on a per transaction basis. Likewise, the more complex the payroll basis and structure, the more costly it is to process a payroll transaction. There is no one solution that can be applied to one size or one segment of an industry. Only one institution of higher education
was included in the 2007 study, and based on the number of W-2s reported for this institution, it would have been about half of the size of The Texas A&M University in College Station. It is not known if any universities were included in the 2008 report.

From the 2007 report, the larger the organization, the more likely the organization was to provide payroll and human resource services in-house, while smaller organizations are more likely to use an outsourcing strategy to meet this business need. The report indicated that 16.8% of the respondents completely outsourced their payroll operations. Based on the information in the report, the majority of participants in the study appear to be smaller entities. The report classified organization as being large if they produced more than 2000 W-2s during the year. For comparative purposes, eleven (11) of the eighteen (18) agencies and institutions within the A&M System would be classified as having large payroll processing requirements, with The Texas A&M University being the largest with 22,745 W-2s being produced in 2008. TAMU-Texarkana holds the distinction as being the smallest, with 388 W-2s being produced.

As variety exists within the A&M System as to where the payroll office functions report administratively, so is there variety within industry at large. According to the 2007 report, 66.7% of the payroll offices reported to an accounting/financial organization, while 26.6% report to human resources, with the remaining 6.7% reporting to a shared services center. Most payroll offices within the A&M System likewise report to the financial officers within their organization, with the remainder reporting to HR.

Based on some of the metrics identified in these reports, we have calculated many of the reports metrics for the A&M System and have included comparative information where possible. This has been done without the benefit of detailed definition as to the exact parameters associated with the metrics used by these studies. Therefore, caution should be used when applying the metrics and they are presented for general comparative purposes only.

In addition, now that we have these metrics, should there be a need to perform a detailed comparison, payroll operations throughout the A&M System would need to track many of these measures over time to be able to make a fair comparison or to be able to even participate in a survey of this nature. Many of the metrics would require additional effort to track, as they do not result from the normal course of conducting business.

Both reports gave strong endorsements to using newer electronic information technologies as means to reduce costs and improve efficiencies. Paperless pay initiatives, such as direct deposit and electronic distribution of payroll earning statements, reduce production and labor costs associated with payroll distribution. Higher performing or more efficient payroll operations have higher participation rates in these technologies. The utilization rates for top performing payroll organizations in the study was 81%, compared to 67% for non-top performers. Top performers tend to have a one-to-one correlation between direct deposit and electronic earning statements.

The following chart illustrates the direct deposit participation levels among the various payroll offices throughout the A&M System. One can see there is some variation among the
participation levels among the various members. The overall A&M System participation rate of 92% compares very favorably with the benchmark measure of 81% for top performers (2008 report) and 82.6% (2007 report). Within the A&M System, there are only five (5) institutions (campuses) with a direct deposit participation rate below 90%. Many institutions within the A&M System have made the utilization of direct deposit a priority and this is reflected in the utilization rates. In addition, because of the geographic challenges for many of the research and service agencies with employees working throughout the state, direct deposit has been embraced from the early days of its development as a means to insure timely delivery of payroll regardless of location. Student employees are not always directed toward direct deposit at all campuses, but these employees are easy adaptors. Budgeted employees are generally targeted by all A&M System members to enroll in direct deposit programs.

Paid in last 30 days as of July 27, 2009

<table>
<thead>
<tr>
<th>WrkStn</th>
<th>DD</th>
<th>TotalSSN</th>
<th>% DD</th>
</tr>
</thead>
<tbody>
<tr>
<td>AgriLife Research</td>
<td>3203</td>
<td>3339</td>
<td>95.93</td>
</tr>
<tr>
<td>Transportation Institute</td>
<td>549</td>
<td>589</td>
<td>93.21</td>
</tr>
<tr>
<td>Engineering Extension</td>
<td>880</td>
<td>914</td>
<td>96.28</td>
</tr>
<tr>
<td>Engineering Experiment</td>
<td>2600</td>
<td>2644</td>
<td>98.34</td>
</tr>
<tr>
<td>Forest Service</td>
<td>417</td>
<td>461</td>
<td>90.46</td>
</tr>
<tr>
<td>TAMU Galveston</td>
<td>523</td>
<td>557</td>
<td>93.90</td>
</tr>
<tr>
<td>Health Science Center</td>
<td>1790</td>
<td>1908</td>
<td>93.82</td>
</tr>
<tr>
<td>TAMU Corpus Christi</td>
<td>1786</td>
<td>1982</td>
<td>90.11</td>
</tr>
<tr>
<td>TAMU Kingsville</td>
<td>1486</td>
<td>1798</td>
<td>82.65</td>
</tr>
<tr>
<td>TAMU</td>
<td>870</td>
<td>905</td>
<td>96.13</td>
</tr>
<tr>
<td>TAMU Texarkana</td>
<td>12815</td>
<td>13371</td>
<td>95.84</td>
</tr>
<tr>
<td>Prairie View A&amp;M</td>
<td>1356</td>
<td>1581</td>
<td>85.77</td>
</tr>
<tr>
<td>TAMU Commerce</td>
<td>1225</td>
<td>1492</td>
<td>82.10</td>
</tr>
<tr>
<td>System Offices</td>
<td>344</td>
<td>347</td>
<td>99.14</td>
</tr>
<tr>
<td>Tarleton State Univ</td>
<td>1362</td>
<td>1625</td>
<td>83.82</td>
</tr>
<tr>
<td>TVMDL</td>
<td>171</td>
<td>180</td>
<td>95.00</td>
</tr>
<tr>
<td>West Texas A&amp;M</td>
<td>1153</td>
<td>1391</td>
<td>82.89</td>
</tr>
<tr>
<td>AgriLife Extension</td>
<td>1777</td>
<td>1832</td>
<td>97.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>34543</strong></td>
<td><strong>37168</strong></td>
<td><strong>92.94</strong></td>
</tr>
</tbody>
</table>

There has been a steady trend to reduce the number of centrally produced earning statements for employees as well. Only 25% of all A&M System employees participating in direct deposit receive a centrally generated earning statement. Six (6) members of the A&M System have
already eliminated this earning statement by practice for their employees participating in direct deposit. Several other members are considering this policy as well, with one member planning to implement this practice with the start of the new fiscal year. Both studies show that most of the earning statements (pay advice forms) for the entities responding to the respective surveys were produced on paper and distributed to employees. In the 2007 report, this value was 66.7%, almost double the electronic distribution value.

The 2007 report presented metrics measuring several time periods specific to payroll processing. A measure of the number of days between the end of a payroll period and pay day was presented. As expected, the larger organizations tended to have longer periods, with an average for all respondents being 5.1 days. For large employers, this average was 6.4 days. The A&M System has a standard of 7 days for biweekly paid employees and zero (0) days for monthly paid employees (mandated by state law). As one would expect, this metric for monthly paid employees does increase the number of payroll correction entries that require processing.

Two other metrics from this report was a measure of the time between an employee’s hire date and the entry into the payroll system and number of days between an employee’s termination and the removal from the payroll system. Again, the average time period to hire was 3.7 days while the average to remove was 6 days. The payroll offices of the members of the A&M System do not have hard metrics of these values, but they do tend to be reasonable expectations of what is experienced within the various payroll offices.

Reporting of W-2 information to employees is a major challenge each year for almost all employers. Again, best practices tend to point to an electronic distribution methodology to reduce costs and improve efficiencies. The 2007 report indicated that only 16% of respondents made W-2s available electronically. This is a service that the A&M System has had in place since 2004.

Closely associated with the timeliness of the distribution of W-2s to employees is the accuracy of this reporting to the Social Security Administration (SSA). To assist employers in this area, the SSA developed and made available a software package called AccuWage. The A&M System has used this package since it was introduced several years ago. By comparison, only about one fourth (23.9%) of the respondents to the 2007 report indicated they used this software, with an average error rate of about .4%. The A&M System error rate has been consistently less than .1%. Transmissions of W-2 information to the SSA are not performed until all corrections have been made and no errors detected through the AccuWage software.

As another indication in the differences in the survey respondents and the A&M System, only 37% of the respondents filed their final W-2 submissions electronically with the SSA. This is another evidence that a larger number of respondents that must be relative small in size. Almost all of the payroll offices in the A&M System are required by the SSA to submit the final file electronically because of the number of records and the size of the overall payroll being processed.
In the 2008 Study, the administrative processing cost per employee paid was computed as well. The median cost per employee was $85.12, with a maximum cost of $89.90 for non-top performing operations. Again, there was a lack of definition as to what was included in the administrative operating costs. Performing an unverified calculation based on what could be derived from the FY 2008 Budget and the FTE assumed to be assigned to “payroll processing and distribution,” the cost per W-2 is comparable to the costs in the survey. There was considerable variance in the cost per W-2 by the individual payroll offices within the A&M System. Before this value would be determined and used for comparative purposes, a firm definition should be developed and applied to all system members.

Many of the metrics developed by these two studies could not be used for comparison because they would have involved developing process to measure the business activities within the various payroll offices themselves. This would include such metrics as the number of errors made per total records processed, number of payroll related inquiries and the time required to resolve payroll-related inquiries. At this point in time, there has not been sufficient time to develop the methodology to capture the metrics, much less to actually perform the measures.

The 2008 Payroll Best Practices Benchmarking/Performance Study also highlighted many practices of top performing payroll organizations. Among the services or practices observed for top performing organizations were the following items:

- Promotion of self-service applications for employees
- Organized shared services
- Less human intervention in the overall business processes
- Increased rates of professional certification of payroll office staff
- Ongoing training and continuing education requirements for payroll office staff

The Payroll Benchmarks and Analysis Report 2007 listed the self identified most successful cost reduction or cost control strategies for payroll departments. Those mentioned by at least 25% of the respondents are the following, from most mentioned to least:

- Streamlined payroll processes and procedures
- Implementation of new or upgraded payroll system/software
- Asked staff to take on more responsibilities
- Enhanced staff training to improve productivity
- Automated time collection

Based on the items mentioned in both of these studies, the strategic direction underway for the agencies and institutions of the A&M System is consistent with the industry best practices and measures reported in these studies.
TTVN Wide Area Data and Video Network for the Texas A&M University System

Overview:

TTVN is the Wide Area Network (WAN) for the Texas A&M University System. It is managed and operated by Educational Broadcast Services through the Associate Vice Chancellor for Information Technology in College Station. TTVN provides Internet, Internet2, Texas A&M University System-wide intranet, intranet connections to the University of Texas System THEnet (TXBB), intranet connection to the Lone Star Education and Research Network (LEARN), and National LambdaRail (NLR) research and education network connectivity to TAMUS Members. TTVN also operates a central videoconferencing application that enables large multipoint video calls between all System Members. These video calls consist of classes, administrative meetings, and training sessions among system parts. Thousands of conferences are facilitated yearly. Voice over IP (VOIP) is also carried on the network. TTVN also provides Saba Centra web conferencing facilities which enable Members to teach classes and have meetings via web browsers.

TTVN is a clear example of sharing services among System Members. TTVN provides a number of IT services that are utilized by the System faculty and staff:

- **10 Gbps Network Backbone** - A statewide 10 Gbps (shared with UT) data network backbone. This delivers commodity Internet, Internet2, and National LambdaRail services to Points of Presence (POPs) at or near Member facilities. The network is designed as a ring to provide redundancy if part of the network fails, and also provides two points of connection for Internet service to increase reliability. Virtually all Internet traffic between campuses and traffic to the outside world runs over this network. TTVN participates in a 20 year lease on the fiber optic cables that support the network. This contains a significant part of the network operating costs for the long term.

- **Centralized Videoconferencing** - Centralized videoconferencing is an IT application managed and operated by TTVN. It provides facilities for System Members to connect multiple videoconference units together for the purposes of classes, administrative meetings, and a variety of other video based activities. Sharing the expensive centralized Multi-point Control Units (MCUs) saves Members money in both capital and annual maintenance costs. The centralized scheduling and help desk facilities help all Members make connections reliably.

- **Centralized Web conferencing** - TTVN provides a centralized web conferencing service, Saba Centra, to System Members. This application allows faculty to teach students via webcast (computer screen to multiple end points along with audio and video if desired). Central servers save the System money in terms of capital and annual maintenance, and the scheduling and helpdesk are efficiently shared with existing TTVN scheduling and helpdesk resources for reliable connections.

History:

TTVN was created in 1988 by the Chief Financial Officers of the TAMU system. The idea was to connect terminals at Member sites to mainframe computing facilities in College Station. As
an added benefit, videoconferencing was provided to enable the sharing of classes across the system and to enable administrators to meet more efficiently. The first network was limited to 1.5 Mbps with about half of this allocated to video. Over the years, the demand for connectivity has grown, especially since the debut of the Internet. To meet the demands of both efficiency and reliability, TTVN has partnered with the University of Texas, sharing circuits where possible. While several iterations of technology and associated network capacity have occurred since 1988, the sharing relationship with UT has continued. Most recently, TTVN and UT led the way to create the Lonestar Education and Research Network (LEARN). By creating a consortium of over 30 Texas colleges and universities, $7.5 million was awarded by the State. This money was used to secure 20 year leases on dark fiber at a time when fiber cost was at an all time low. The money was also used to buy optronic equipment to light the fiber. What began as a 1 Gbps backbone has now grown to a 10 Gbps redundant ring that serves the entire A&M System along with a number of other affiliate universities, community colleges, and Independent school districts within Texas. The sharing relationship results in a lower cost to individual intuitions.

Budget:

TTVN’s budget for FY2010 is projected at $3.8 million. Funds are collected through an annual assessment process which includes participation from Chief Information Officers (CIOs) of each System Member institution. TTVN plans an initial budget and reviews and revises this with input from the System CIOs. Elements of the assessment include a “postal” model for delivering the backbone to all members without regard to geography, and an individual cost model for the amount of bandwidth a Member chooses to utilize from the backbone. Fees are also collected for services such as videoconferencing and web conferencing. Members pay for their own access circuits to POPs on the backbone. Approximately $200,000 per year is collected for capital equipment. This may be placed in reserve to insure significant funds are available when re-capitalization is necessary.

An overriding philosophy of the assessment is that System Members deal with these costs at an institution level during the System Assessment Period, and do not to pass them on individually to faculty, staff, or other departmental entities during the fiscal year. This is to encourage network use and efficiency. Thus, no faculty, staff, or individual department will need to find funds to utilize the network during the year.

Governance:

TTVN is governed by the TAMUS Telecommunications Council, which was established in 1989. This group consists of a representative appointed by the CEO of each System Member. A majority of the members of the council are Chief Information Officers. The council has met since its inception on the first Wednesday of each month by videoconference. The council is chaired by the Executive Director of Educational Broadcast Services.

Annual Conference:

TTVN conducts a major 3-day training conference each year. The purpose of this conference is to bring together IT staff and network users from across the System in a face to face
environment to learn about the latest technologies and to network with each other. The conference features technical tracks and management tracks, and provides keynote sessions focusing on the state of the network as well as timely state or national topics germane to System IT. Conference evaluations continue to show the event is a positive aspect of TTVN membership and a worthwhile, as well as inexpensive, training venue for System IT staff.

**Interactive Communication Utilization:**
(From TTVN Annual Report, 2007-2008)

**TTVN Interactive Communications Utilization Patterns – Ten-Year History**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Videoconference Sites</td>
<td>339</td>
<td>259</td>
<td>334</td>
<td>277</td>
<td>239</td>
<td>171</td>
<td>145</td>
<td>135</td>
<td>116</td>
<td>111</td>
</tr>
<tr>
<td>Videoconferences</td>
<td>4,264</td>
<td>4,607</td>
<td>5,343</td>
<td>5,722</td>
<td>5,737</td>
<td>5,558</td>
<td>5,042</td>
<td>4,659</td>
<td>5,030</td>
<td>5,777</td>
</tr>
<tr>
<td>Telecourses</td>
<td>127</td>
<td>134</td>
<td>120</td>
<td>164</td>
<td>197</td>
<td>202</td>
<td>186</td>
<td>164</td>
<td>175</td>
<td>161</td>
</tr>
<tr>
<td>Classes</td>
<td>2,735</td>
<td>2,392</td>
<td>2,741</td>
<td>3,116</td>
<td>3,517</td>
<td>3,215</td>
<td>3,059</td>
<td>2,952</td>
<td>3,121</td>
<td>3,576</td>
</tr>
<tr>
<td>Meetings</td>
<td>1,043</td>
<td>1,082</td>
<td>1,244</td>
<td>1,180</td>
<td>1,182</td>
<td>1,325</td>
<td>1,398</td>
<td>1,411</td>
<td>1,366</td>
<td>1,544</td>
</tr>
<tr>
<td>Streaming Video</td>
<td>797</td>
<td>796</td>
<td>1,018</td>
<td>887</td>
<td>362</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Test/Misc</td>
<td>311</td>
<td>334</td>
<td>340</td>
<td>537</td>
<td>696</td>
<td>1,018</td>
<td>595</td>
<td>296</td>
<td>270</td>
<td>264</td>
</tr>
<tr>
<td>Confer Webconferences</td>
<td>3,076</td>
<td>2,591</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Videoconference Estimated Savings:**

A quick Google search for video conferencing bridging services found rates to be as low as $45 per hour per site. Glowpoint, in the following example under a DIR contract, charges $45 per endpoint. In 2008 TTVN did 4264 videoconferences. Assuming an average conference to last 1 hour plus .5 hrs. setup and buffer time) with an average of 3 sites, users generated approximately 19,188 conference site hours. At $45 per hour, this would cost $863,460 with Glowpoint. In comparison, TTVN's video portion of the $3.8M FY 10 budget is projected to be $501,212. This results in a savings of **$362,248**. In reality, many conferences include more than 3 sites, and last longer than an hour. Additionally, since there is no per-use charge with TTVN, the more conferences that occur, the lower the cost per conference becomes.

While it is harder to estimate dollar amounts, videoconferencing saves time and travel money as well. In FY 2008, TTVN facilitated 1,043 meetings. A conservative estimate might assume each meeting included two sites with 1 person at each site. That would mean approximately 522 individuals saved time and travel. Again conservatively assume each trip would include 1 overnight stay ($89) meals ($100), and transportation ($150) for a total of $339 per trip. At 522 trips, the savings amounts to **$176,958**.

**Bandwidth Utilization History as of July 1 2009:**
(From Telecommunications Council Report July 1, 2009)
Network Estimated Savings:

*Data Affiliations* – The backbone network typically has excess capacity. TTVN has been able to lease portions of the network to Data Affiliates (independent school districts, community colleges, and other universities) to provide these entities with Internet, intranet, and Internet2 services. Fees collected from these affiliations go to offset the cost of the network and result in a direct cost savings to Members. In FY 2010, the amount of money data affiliates will provide to offset network costs to members is projected to be $450,000.

*Backbone Circuit Costs* - Because TTVN has invested in, and uses, LEARN, the cost of high bandwidth fiber connectivity across the backbone is much less than that of circuits that might be leased from commercial carriers. As an example, In FY 2009, TTVN will pay LEARN $199,584 for two 10 Gbps backbone city fiber pairs around the primary network ring. The cost is $8,316 per month each for city pair from HOU-CLL and DAL-CLL (UT buys two additional city pairs to complete the ring). If commercial circuits of similar bandwidth were utilized, the cost to TTVN is
estimated at $25,000 per month for each city pair. This results in an annual savings of $400,414.
Telecommunications

The cost of Telecommunications services is very volume sensitive. Whether it be cost per minute for long distance and cellular, cost per circuit for telephone trunks or cost per megabit for data services, the more that you purchase, the lower the per unit cost is that you are able to negotiate. This has enabled the Telecommunications Office of Texas A&M University (Telecommunications) to provide several critical services for all components of the Texas A&M University System for the past 30 years. Each month the Telecommunications Office bills approximately $1.2 million. Of this approximately $300,000 or 25% is for other System components.

Examples of services provided include:

- All local telephone services state-wide for the System agencies are provided by Telecommunications
- Cellular services for the agencies and Texas A&M International are provided by Telecommunications
- The 800 MHz radio system in College Station is used not only by Texas A&M University but by TEEX as well.
- The keyless entry card system used by Texas A&M University is used by all agency locations in College Station.
- The Telecommunications billing system used in College Station is also used by Texas A&M International University and Tarleton State University. We anticipate that the savings to these two Universities is at least $100,000 per year each in hardware, software and staffing costs.
- All of the data circuits for every System Member (Agency and University) are purchased through the Telecommunications’ Office. Most of this is in support of the TTVN network.

The best example of cost savings through sharing is in the data circuits. Since each backbone circuit supports all TAMU components, the total savings would be difficult to measure. One attempt to measure the savings was completed in 2007. According to their conservative estimates, the Texas A&M Health Science Center saved over $240,000 per year by using shared services over buying their own network.

Telecommunications also partners with the University of Texas System and LEARN to achieve additional savings. Examples include:

- A 10 billion bit per second ring purchased from the LEARN network that includes Dallas, Austin, Houston, San Antonio and College Station is shared with the University of Texas System. This backbone ring provides connectivity for every A&M System Member statewide.
A Rio Grand Valley ring is shared with the University of Texas System. This is a 10 billion bit per second ring that connects Houston to Corpus Christi to McAllen to Laredo and then to San Antonio. This ring provides the connectivity for TAMU-Corpus Christi, TAMU-Kingsville, Texas A&M International, UT-Pan American, UT-Brownsville and the UT Health Science Center. In addition to supporting the two flagship Systems, we also share the bandwidth with the University of Houston, DelMar University, and Regional Service Centers 2 and 3.

A ten billion bit per second link to West Texas is shared with the University of Texas System. This link supports AgriLife and TEES.

A ten billion bit per second circuit to East Texas shared with the University of Texas System supports TAMU Commerce, TAMU Texarkana, TFS, AgriLife, TEES and several other educational entities.

A 155 Million bit per second link to Amarillo supports West Texas A&M University, AgriLife and the TVMDL. This link is also shared with the Regional Service Center in Amarillo.

There are several other examples of cost sharing that are either in place at this time or are in the planning process.

While the exact size of these savings would be difficult to determine, the extent of them can be seen if you just consider the major backbone circuits. Sharing of the backbone services with the University of Texas alone saves the A&M System $23,142 per month or $277,704 per year. These savings do not include the locations where we provide access to each others circuits at no cost in an effort in to increase reliability. These include the Internet access circuit, Galveston and East Texas. The impact of these savings has been recognized in two awards given to TAMU and the University of Texas. One award is the Institutional Excellence Award from the Association of Information Communications Technology Professionals in Higher Education (ACUTA) and the other is the Best of Texas Award from the Government Technology Conference, which is sponsored by the United States General Services Administration. Both awards were given for collaboration.
One other example of cost savings, not only with the System but across State and local government, can be seen in the recent implementation of a shared CALEA (Communications Assistance to Law Enforcement Act) system. In 2006 the United States Justice Department asked the Federal Communications Commission to require certain private networks to be able to support a CALEA warrant. After looking at the FCC Docket, several entities in Texas decided that they needed to meet these requirements. These entities included the Texas A&M University System (through TTVN), the University of Texas System, the DIR for all State Agencies, Baylor University and the LEARN network. These entities all got together to purchase a shared system through the Telecommunications Office at TAMU. Had each of us done this alone, the cost would have been about $300,000 each. The shared cost of $400,000 was split among the five sharing entities.

The Telecommunications Department has evaluated additional shared services opportunities for the Texas A&M University System. The assessment reveals two significant opportunities for cost savings. The first area is a System-wide RFP for long distance services. The second is centralizing the Voice over IP (VoIP) transition for offices located in College Station.

Universities within the A&M System, including Texas A&M University and the System Agencies, receive their long distance services from AT&T via the State of Texas TexAN network. While this contract was competitive at the time of initiation, competition has pushed the per minute cost downward. Currently, the gross domestic long distance call is 5.5 cents per minute with the net cost to the end-user being approximately 8 cents.

The Telecommunications Department is in the process of releasing an RFP that would allow all Texas A&M University System components to receive long distance calls at a gross cost of 2.5 cents per minute (anticipated bid price) with the cost to the end user estimated at 5.5 cents per minute. The long distance RFP is written with the intention of splitting the long distance traffic across a traditional long distance provider and a VoIP provider. This will provide significant cost savings and, for the first time ever, offer carrier redundancy resulting in an
enhanced business continuity scenario. Based upon available call detail from Texas A&M International, Tarleton State University, Texas A&M University and all agencies located in College Station and assuming traffic patterns of the other universities are comparable to the aforementioned, we anticipate savings of $243,000 System-wide in FY10, if all universities opt to buy into the new contract.

The second opportunity is more cost avoidance than cost reduction. Texas A&M University invested nearly $1 million in 2009 to purchase infrastructure that would support a VoIP transition over the next eight years. This investment was made to allow TAMU to migrate off of aged, failing copper infrastructure and equipment that is no longer supported by manufacturers (some telephone instruments on campus are up to 30 years old). The new VoIP infrastructure will support up to 100,000 lines, has been designed with 100% redundancy, and installed with geographic separation in two of Texas A&M’s most hardened facilities. At the same time that Texas A&M University has reinforced the centralized infrastructure, several University departments and Members are considering purchasing their own VoIP systems, which has the potential to negatively impact all participating Members.

Telecommunications services are volume sensitive. The more lines supported, the lower the cost per line. As an example, the Health Science Center is currently evaluating a separate VoIP system. Our analysis shows that the five year cost of a separate system would be $843,202. The same services purchased from Telecommunications would cost $615,401. Of the $615,401, roughly $150,000 is for services that are provided by the Telecommunications Department. In other words, the dollars stay within the System. Dollars spent internally have a multiplier effect. With separate systems on campus, if one department calls another department, the department placing the call has to support an external trunk to the telephone network, and the department receiving the call has to support another external trunk. Each department only sees one-half of the cost, and the net result to the System is a doubling of trunking expenditures. With one system, the calls are only additional traffic on the existing, robust TAMU data network.

The economic justification for separate systems does not exist. Even when it appears to be justified, the departments are only considering their direct costs, not the total cost to the entire A&M System. The Telecommunications Office has also received positive responses to our service quality. Most of our new installations are completed with three working days.

In summary, the Telecommunications’ Office at Texas A&M University has been a leader in supporting shared services for the past three decades, and we welcome and will support any future opportunities to improve our offerings.
TAMU Computing and Information Services (CIS)

Computing and Information Services (CIS) provides computing resources, services, and support to Texas A&M University students, faculty, and staff, as well as members of The Texas A&M University System. CIS operates nineteen service centers, ten of which could be major standalone service departments. As service centers must recover costs, CIS follows rules outlined in the Federal Office of Management and Budget's Circular A-21. According to System Regulation 21.01.05, all TAMU System users must be charged the same rate. CIS offers its services based on three models: Library model, where services are available as long as another customer is not using them; Service model, where customers are charged based on percent use of a facility; and Usage model, where the customer is charged by the item.

Our most important services are those that are shared by university divisions. CIS coordinates these resources between multiple customers and provides them on an ongoing basis with an assurance of continued availability in the future.

The campus data centers are vital resources, which house hundreds of servers that connect computers to the Internet and stores files and information vital to the university. CIS hosts the only mainframe in the System which runs the Financial and Management Information System (FAMIS) and Budget Payroll Personnel (BPP) systems run by the System Offices. CIS provides the centralized administrative printing facility giving a central source of high speed printing to the University and System components. The numbers are limited by the function which must be an enterprise service, span multiple departments or be an application CIS supports. Many more applications are turned away than want to be allowed in CIS' machine rooms. Customers of these data centers receive services such as redundant power, sufficient cooling, security, and 24/7 technical support.

Help Desk Central and the Operations Center are staffed 24x7x365, and they handle everything from routine computing questions to after hour help with the System FAMIS and BPP applications, problems with card entry systems for buildings, and other critical systems needing 24 hour help. The call center handles contacting on-call personnel when equipment outages needing immediate repair are detected.

Another important CIS service is provided by the Software Evaluation and Licensing Library (SELL), which administers software licensing agreements that allow students, faculty, staff, and departments to make purchases at greatly reduced prices. The SELL saved the A&M System over $9.7 million last year with additional savings to employees of over $1.4 million in work-at-home rights.

CIS provides identity, authentication, and authorization tools used to securely access applications. The A&M System is beginning to incorporate Shibboleth, a next generation technology that provides access to shared resources across institutional boundaries. We expect
an increase in site-licensed software sales, as the A&M System community can more easily log in to Texas A&M resources such as the SELL.

CIS replaced the campus email system with TAMU Email, which is the Zimbra email system, http://www.zimbra.com, a Yahoo company. Originally, 65,000 mailboxes were obtained to provide a direct replacement for our previous system. Due to high customer satisfaction with the increased functionality of TAMU Email, an additional 15,000 mailboxes were obtained to meet added demand.

Customer Applications (CA) within CIS provides for contract programming support for various System Parts and departments within TAMU. This saves personnel programming support for the departments that require less than one FTE support and/or sporadic requirements. It also saves by pulling support from a central pool and provides backup support for critical applications where a department has less than 2 FTE requirements for IT support.

CIS also operates the Open Access Labs (OAL) for the students on campus. In addition to providing over 1,500 computers in 10 campus locations, the OAL group is contracted to support the computers in the 135 rooms that Instructional Media Services supports for the Registrar controlled classrooms and the 300 computers in the various Library locations.
TAMU Networking and Information Security (NIS)

Networking and IT Security demonstrate a significant amount of cooperation and consolidation. The Networking and Information Security (NIS) group of Computing and Information Services (CIS) at Texas A&M University is responsible for providing these services. NIS is the networking and IT security provider for the System Offices and System Agencies located in Bryan/College Station. NIS is heavily involved in architecture and operation of LEARN, the Texas optical network. NIS provides expertise, advice, and assistance to System schools.

Networking

NIS provides IP (Internet) data networking to all organizations on the College Station campus and University and System Member offices located off-campus in Bryan/College Station, including the System Offices, A&M Agencies, 501(c)3’s (e.g., Research Foundation; Association of Former Students; 12th Man) and other tenants (e.g., Office of the State Chemist; Bush Library). With a few exceptions, NIS network service includes the network electronics and cabling down to the wall outlet. TAMHSC is inside the campus border firewall, but now maintains the infrastructure within its buildings.

NIS administers the name and address space, providing applications and the central servers, and NIS supports problem resolution. The Field Services team provides debugging support and problem isolation for distributed systems issues.

NIS is the first point of contact for complaints about misuse of electronic information systems, and it provides the Digital Millennium Copyright Act (DMCA) Agent for copyright complaints for System Members in Bryan/College Station

IT Security

The mission of NIS’ Network Security team is to enable the secure operation of its customer’s business while protecting the community from network threats. The Network Security team operates the border firewall, in place for all organizations, as well as point solution security devices for organizations requesting the service. NIS supports University FMO and the System Office of the Treasurer in credit card compliance for all merchants in Bryan/College Station. The Network Security team supports System Internal Audit as requested for vulnerability assessment during audits.
MAESTRO Integrated Research Information System

The working committee for The Texas A&M University System Integrated Research Administration project suggested to the Chancellor and CEO’s of A&M System College Station-based research institutions the development and implementation of integrated research administration system (IRIS) by using the TEES Epik system as a prototype.

Epik is the Texas Engineering Experiment Station’s (TEES) in-house developed research administrative system. Epik improvements requested by TEES research administrative units and the Epik – Maestro (Modular Application for the Electronic Submission and Tracking of Research Operations) partners (TAMU, TAMHSC, TEES, TTI, and AgriLife Research) are currently being analyzed, designed, and implemented. A portion of Phase I of the project will go live in September 2009.

Phase I – Research Portals

Components of the existing Researcher Portal will be used to retrieve data from the common Research Data Warehouse (RDW) that needs to be built using the feeds from the research administrative systems of all members. The reporting tool will be integrated with the portal to support ad hoc report inquiries from RDW.

Research proposal, award, and expenditure activity will be summarized (where possible) for each member into a Member Portal similar to the TEES agency executive portal components. The TAMU Portal will need to be developed that will be a combination of TAMU and four of the Member Portals with some modification for research counted for TAMU in academic institutional reports.

An Executive Portal will be created based on the System requirements and availability of information within RDW. Other levels of portals will also be available and will include multiple levels of information such as departmental, college, PI, etc.

Phase II – Pre-Award and Post-Award

The improvement of the Epik Pre-award module will add to Maestro the ability for principal investigators to start developing proposals on-line and have the option to share components with colleagues and research administrators. Electronic creation and routing of all proposals will expedite the process. Members’ research administration offices will be able to verify and validate proposal package and submit it electronically to funding agencies, improve compliance tracking and minimize data entry duplication.

Epik post-award enrichments based on the specified requirements will give Maestro ability to expedite award acceptance, minimized budget and cost sharing data entry, improved project compliance and simplify project close-out process.


Phase III – Research Financials

Research financials consist of systems such as research accounts payable, sponsor research billing, receivable reconciliation, indirect cost calculation and distribution, payroll certification and internal/external reporting. The components need to be enhanced to establish real-time interface with FAMIS financial information system.

MAESTRO Project Timeline and Budget

The timeline for the MAESTRO project is given below. August 2009 is the end of the first year of the project. The Researcher Portal will be going live in August 2009.

The budget for the project is approximately $1 million/year. The first two years of the project are being funded by the A&M System. Beginning in Year 3, the partners have agreed upon an assessment algorithm to pay for future years. Beginning in Year 3, we will also be expanding the Researcher, Member, and Executive Portals to all of the remaining universities of the Texas A&M University System.

<table>
<thead>
<tr>
<th>Phase</th>
<th>Module</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase I</td>
<td>Researcher Portal</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Member and Executive Portal</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phase II</td>
<td>Pre-award</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post-award</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phase III</td>
<td>Research Finance</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>
Instructional Technology Services (ITS)

Overview:

Instructional Technology Services provides professional development opportunities, administers eLearning resources, and empowers instructors to use best practices in higher education to enhance student learning through the use of technology at Texas A&M University.

ITS provides opportunities for faculty members, teaching assistants, and staff to learn how to use instructional technology in their courses, in their research, and in their departments. All of our services are provided at no cost to Texas A&M instructors and staff.

ITS is responsible for maintaining, administering, and developing university-wide systems and services to support the eLearning infrastructure at Texas A&M. These responsibilities range from supporting Blackboard Vista—the university’s enterprise-level learning management system—to distributing software resources, such as Impatica and Respondus.

ITS conducts a full range of training and support that complement various learning styles and fosters effective course design. Training topics include: Blackboard Vista, Audacity, Calibrated Peer Review (CPR), Camtasia/SnagIt, Centra, eInstruction Classroom Performance Systems (“clickers”), Impatica, Respondus, StudyMate, LockDown Browser, SMART Technologies, TurnItIn, and other instructional design and multimedia development software and technology concepts.

ITS has a state-of-the-art classroom—complete with 18 workstations, wireless access, and audio/visual devices for videoconferencing—available for workshops and group training sessions. A 10-seat conference room can be reserved for meetings and teleconferences. Individual workrooms are also available with video editing, audio recording, and scanning capabilities. And to better serve clients on west campus, ITS has expanded consulting and support services by opening an additional satellite office and training classroom in the Medical Sciences Library.

We also provide information about other types of technology resources available on campus and serve the Texas A&M teaching community as a campus facilitator and advocate of eLearning initiatives. We conduct our annual Instructional Technology Showcase during the fall semester; coordinate our annual Teaching with Technology Conference during the spring semester; host frequent user group meetings and listserv groups; and publish our Teaching & Technology newsletter three times a year.

Shared Services:

Instructional Technology Services provides direct support for faculty and instructors at the College Station campus that use technology in their teaching. However, the Blackboard Vista learning management system provides on-line course hosting for classes at TAMU Galveston, TAMU Qatar, TAMHSC College of Medicine (CoM) and the School of Rural Public Health (SRPH). The branch campuses and TAMHSC CoM and SRPH were part of the original Vista
license negotiated in 2002. TAMHSC students in College Station pay the TAMU Computer Access/Instructional Technology Fee of which $1.50 per semester credit hour supports ITS. The total paid by TAMHSC students for these services is approximately $22,000/year.

ITS hosts the annual Teaching with Technology Conference (TWTC) each spring. The TWTC was expanded three years ago to include A&M System Members. System participation has grown each year, and this past year the System Distance Education Council meeting was coordinated with the TWTC to encourage additional system school participation.

ITS also hosts the fall Instructional Technology Showcase. The Instructional Technology Showcase provides the option of attending Showcase sessions in person or viewing presentations via streaming video. Educators at A&M System schools are welcome to attend in person or participate via the streaming video. Staff from ITS have conducted special informational sessions on instructional technology use to the TAMHSC College of Medicine at Temple and the HSC School of Dentistry in Dallas.

Budget:

Instructional Technology Services budget for FY2010 is projected at $1.9 million. ITS is totally funded through student computer access fees (CAF). The ITS budgets supports 14 full-time equivalent staff and a graduate assistant salaries plus fringe benefits. Approximately $225,000 per year is set aside for capital equipment refresh to replace aging servers and storage devices.

Approximately $550,000 per year is spent to support office operations, university-wide applications and CIS technical support. The Blackboard Vista enterprise learning management system costs account for approximately $250,000 in annual maintenance fees, oracle database license fees and CIS technical support fees. Approximately $217,000 in ITS salaries and fringe benefits are spent for system administrators and programmers in support of Bb Vista. The cost of the learning management system services account for approximately 25% of the total ITS budget.
APPENDIX – Feedback on Shared IT Services

Included in this Appendix is the document containing ideas for shared IT services and the feedback received from the various stakeholders, including the TAMU Department Head Steering Committee, TAMU Information Technology Advisory Committee, TAMU Faculty Senate, and TAMUS CIO’s.

DRAFT Document Shared with Stakeholders – The following document was shared with all of the Shared IT Services stakeholders, and they were asked for comments.

Shared Information Technology Services Tactical Planning Team

July 16, 2009

Team Members:

- Mr. Andy Bland, Executive Director of IT for the Division of Finance, TAMU, anbland@tamu.edu
- Dr. Pierce Cantrell, Vice President & Assoc. Provost for IT TAMU and Assoc. Vice Chancellor for IT TAMUS, p-cantrell@tamu.edu
- Mr. Scott Honea, Director Network Services/Information Security Officer, Texas A&M Health Science Center, shonea@tamhsc.edu
- Mr. Alan Kurk, Director AgriLife Information Technology, akurk@tamu.edu
- Dr. Pete Marchbanks, Executive Director of Computing and Information Services and Deputy CIO, Pete-Marchbanks@cis-gw.tamu.edu
- Mr. Carl McKneely, Director of Business Computing Services, TAMUS, mckneely@sagomail.tamu.edu
- Dr. Jorge Seminario, Professor of Chemical Engineering TAMU and Faculty Senate representative, seminario@tamu.edu
- Dr. Valerie Taylor, Professor and Head Department of Computer Science and Engineering TAMU, taylor@cse.tamu.edu

Instructions to Teams from Frank Ashley and Greg Anderson:

- Need to define who are the stakeholders – faculty (Faculty Senate), staff (Staff Council), students (SGA, Grad Student Council), Deans, Department Head Council, Vice Presidents, Information Technology Advisory Committee (ITAC), System CIO’s.
- The team must receive input from the stakeholders
Goal is to increase efficiency: (1) Not sacrifice quality, (2) Should be transparent (i.e., not be visible) to faculty and staff, (3) Keep in mind unintended consequences, (4) Cannot return saying there are no savings

August 14th is the deadline for our report

Ideas for Shared Services and Cost Savings

1. New Data Center – Offer virtualized servers in a new, green data center and eventually disallow the use of server rooms without separate cooling. An energy savings of $2 million/year or more is estimated if all buildings on campus could set-back cooling on nights and weekends.

2. Standard Staff Desktop Computer – For several years, TAMU has gotten bids on a standard desktop system. In FY08, we purchased 1,362 systems with a significant additional discount over our standard single-unit discount. The last two years this contract has been available System-wide. It has been suggested that having two vendors rather than just one might be an improvement. The contract this year was more favorable than in the past in that not all the computers had to be purchased at the same time. Consider requiring University and System Offices staff and TAMU student computer lab desktop computer purchases to obtain approval to purchase machines other than the standard. There will need to be exceptions for special requirements.

3. Email – Consider consolidated email system for System Offices, TAMU President & Provost, CIS, and others. Offer MS Exchange and TAMU Email Zimbra systems


5. Printers – Study eliminating individual staff printers in favor of outsourced, shared printer/copier/scanners with two to three black and white printers and one color printer per floor. UT-Austin and the UT System have been doing this since 2003.

6. Helpdesk support – Use TAMU Helpdesk Central, which operates 24 x 7, for after hours and weekend support to System Members. There are other specialized Helpdesks, e.g., BPP & FAMIS, which cannot be replaced by Helpdesk Central.

7. Desktop and Server support – See if there is any savings in merging the System Offices BCS Microcomputer and Network Support group with the CIS Office Computing Support Services (OCSS) group.

8. Replace IBM Mainframe or Partner with UT-Austin for Backup – The legacy student information system at TAMU, SIMS, will be replaced with the new Compass system that runs on Unix hardware on Sept. 1, 2009. SIMS accounted for 40% of the mainframe load. One alternative is to purchase a smaller machine. Another options to investigate is TAMU and UT-Austin backing up each other’s mainframes.

11. Long Distance Telephone Charges – Go out for bid on long distance service rather than use the TX-AN network.

12. Telephone Switch – Review costs associated with the separate telephone switch purchased by the A&M System. Those not in the two System buildings already use the shared A&M switch.
13. VoIP System - The University has recently purchased enterprise VoIP switches, and all new buildings will be using VoIP in the future. The transition from Centrex to VoIP will take more than five years. Some System Members in Brazos County are considering purchasing their own VoIP switches.

14. Document Imaging and Workflow – A committee is meeting this summer to make recommendations on document imaging for Brazos County. There are at least three different imaging systems in use in Brazos County. There would appear to be an opportunity to consolidate some of the systems using the same software, e.g., TAMU Student Financial Aid and the Division of Finance and discussion merging their FileNet operations. The committee will give us a recommendation.

15. Cell Phone Plans – Consider reducing cell phone stipends, have a maximum stipend, and discourage university-owned cell phones. Cell phone stipends System-wide have risen from $725,000 in FY05 to an estimated $3.3 million in FY09.

16. Energy Saving PC Settings – Most PC's on-campus are using energy savings features such as powering off the monitor and spinning down hard disks. Use of standby mode or powering down machines that do not need to operate after work hours is also an option.

17. Workstation Replacement Cycle – Consider moving staff and student Open Access Lab workstations that are on a three-year replacement cycle to a four-year cycle.

18. Longer-term ideas
   a. Centralized hardware platform to run Banner - One system in College Station and another in Dallas or Austin. Each university would have its own instance of Banner.
   b. Hosting Banner instances for Texas A&M - Central Texas and Texas A&M - San Antonio on one of the existing A&M System Member Banner hardware platforms.
   c. Centralized Learning Management System – We considered this several years ago, and the Provosts eventually decided to continue to run their own systems.
   d. System-wide Oracle site license
   e. Enhancements to Microsoft campus license
   f. System-wide student evaluation system – HB 2504 requires all student evaluations to be put online for the public to view and search.
   g. VoIP Trunking – Expansion of VoIP trunking between campuses
   h. IPTV – Campus cable television over IP. There is a pilot underway.

**Final Report Needs to Summarize Existing Shared Services** – I believe we should highlight those areas where we already do an excellent job of shared services, e.g., TTVN (statewide network, videoconferencing, and web conferencing), BPP, FAMIS, Data Warehouse, HR applications (HRConnect, Traintraq, etc.), Telecommunications, mainframe operations, MAESTRO integrated research information system, IT Security for Bryan/College Station (B/CS) through TAMU NIS, HelpDesk Central for B/CS, and Master Contracts for IT hardware, software, and services.
COMMENTS from the TAMU DEPARTMENT HEAD STEERING COMMITTEE:

Ideas for Shared Services and Cost Savings

1. New Data Center – Offer virtualized servers in a new, green data center and eventually disallow the use of server rooms without separate cooling. An energy savings of $2 million/year or more is estimated if all buildings on campus could use set-back cooling on nights and weekends.
   a. A bit scary…if the system crashes, what redundancies will there be?
   b. Ultimately, we will incur some $$$ cost for maintaining the environment of our server room. The terms of "disallow the use of server rooms without separate cooling" would force the question, “do we need our own chillers or are we fine using campus chilled water”. The virtual infrastructure sounds interesting. One question: how much would this be charged back to the departments? The thinking is that it’s unlikely to be offered to the univ. community for free.
   c. This is good. We are already in the process of moving our CommLab servers to Coke into the College of Liberal Arts server room and this should be completed by end of August. There are likely quite a number of smaller ops like us that have a server closet which is small and the cost of dedicated cooling was too costly for us to afford so we have been using the air cooling of the first floor. Inefficient, costly and results in calls to me from the sensor phone system in the server closet when the floor or building cooling goes down which results in me calling Physical Plant for after hours service to fix it. But this was the only resource we had until the College built its server room.
   d. Careful on which nights and weekends you set back cooling... as you know there are high user times for students on nights and weekends, particularly at the end of the semester.
   e. This does not affect us because we already have this in place. We are currently looking at ways to try to improve loss/gain of heat/cooling to make the room more efficient. We do have virtualized servers already setup, but only use it for not critical applications. While virtualization is nice tool for consolidation and energy conservation, it also provides for a single point of failure. Since all services run on a single hardware set if a server goes down you lose a significant part of your infrastructure.
   f. Most servers in the College of Science are located in rooms where the temperature can be controlled separately from the rest of the building. The computing needs for mathematics, statistics and science departments are very specialized and virtualized servers would be inadequate. The stated savings of $2 million is most likely inflated since many buildings in science must be cooled continuously - examples, the Cyclotron, which is a 24-7 operation; biology and chemistry labs, which run after hours experiments; mathematics computer teaching labs have evening and weekend hours.
   g. Great idea, however consideration should be given to off-site backups and off-site running of systems. When all the computing on campus is consolidated, it offers a great place for terrorism to be exercised. Distributed but connected systems, like the internet itself, are much less susceptible to total outage.
h. The suggestion about requiring separate cooling for server rooms does not seem to recognize the difference between new and existing buildings. New buildings are under the control of TAMUS Facilities Planning and Construction. A requirement for new construction can be achieved by a directive to that unit. Retrofitting of existing server rooms without spending money may not be possible.

i. The difference between new and existing buildings is particularly important for the College of Liberal Arts. Liberal Arts is given buildings vacated by other colleges. In the history of the university, Liberal Arts has been the first occupant of a new building only once (the Allen Building).

j. The west campus is more vulnerable than the main campus because it has single points of failure. Although it will not cost less money, the same redundancies to prevent failure on the main campus should be provided on the west campus.

k. Reduce costs by replacing Microsoft server software with open source Unix software. Unix typically runs faster on older/slower hardware. Microsoft usually requires a hardware upgrade with each new server version released. Microsoft's business model is fueled by new releases, support and training.

l. Careful on which nights and weekends you set back cooling... as you know there are high user times for students on nights and weekends, particularly at the end of the semester.

m. What becomes of the investment in servers and cooling now in place and financed by the departments?

n. All of this will be fine if the costs are not pushed out to the units – we are doing much of this now and have invested in the necessary equipment to meet our needs.

o. If this can happen without any significant change in cost or quality of service then it is OK – help line now takes 2-3 days to address a problem. In-house we get it taken care of in a matter of minutes-hours.

p. New data center is great, but we need to better understand the connection to the data center. Our connection to the services offered by the data center makes or breaks this offer. Saving energy costs is great and lends credibility to our bid for a "green" department, thus being more competitive nationally, however, will the desktops around the building be affected by this lack of cooling? The new building should be a better place to implement this strategy (with smarter cooling system).
2. Standard Staff Desktop Computer – For several years, TAMU has gotten bids on a standard desktop system. In FY08, we purchased 1,362 systems with a significant additional discount over our standard single-unit discount. The last two years this contract has been available System-wide. It has been suggested that having two vendors rather than just one might be an improvement. The contract this year was more favorable than in the past in that not all the computers had to be purchased at the same time. Consider requiring University and System Offices staff and TAMU student computer lab desktop computer purchases to obtain approval to purchase machines other than the standard. There will need to be exceptions for special requirements.

a. We have extreme diversity in our platforms...obviously there are Mac users, as well as some labs that HAVE to run Win 98 OS due to legacy software used to run custom built hardware. We just don’t adhere to a "standard configuration".

b. Concerns about the bulk bid process on the standard desktop systems mentioned in this item. Two major concerns:
   i. Obtain approval from whom to purchase systems other than the standard designed in the bulk bid process; what would be the process for approval; how many levels/signatures, etc. and thus delays in making purchases.
   ii. who determines the "standard" configuration design that is used for the bulk bid process; will input from dept student computing classroom managers be sought; will input from dept IT support be sought
   iii. Will purchasing off the bulk bid process but from a contract vendor still be possible or will the contract vendors availability go away?
   iv. Will the special requirements be defined?

c. If the intent is cost savings, I am not sure going to two vendors would help... may be consider bidding it out each year... either way you need to be careful with quality and that you are really comparing equivalent machines (i.e. not all subcompact cars are equal even though they are all roughly the same size)

d. We already use this contracting process, and any time we order 10+ machines at a time we talk to our reps about better pricing. In addition, very few departments are able to afford the machines we tend to spec out for use.

e. No standardization is possible in view of the specialized needs of faculty and staff. There are numerous desktop paradigms and operating systems that include Linux, Macs, and windows. The choice of desktop needs to be made at the departmental level.

f. Consideration should be given to local servicing of systems by local IT administrators. Does the company require their reps to service?

f. Multiple vendors would at least provide departments with somewhat of a choice between equipment manufacturers. I prefer Dell equipment, and would really be disappointed if the standard system turned out to be a HP/Compaq. Also, having just one configuration risks a fair number of workstations having to be different than standard. I would prefer to see three standard configurations, but congruent across the board. Such as, a base PC for student labs and positions that don’t
require a lot of horsepower, like staff that only uses Office and Internet Explorer. Mid tier can be something for the users that require more CPU or graphics, but not high end workstation, like me. And a bad boy system for CAD or graphics. If we went this way, then it would be a pick from these tiers or go through a huge process to get special equipment. I could also see this going over like a lead balloon.

h. As long as this is for staff only this may be valuable. When you incorporate faculty and research, the flexibility to purchase specialized hardware becomes important. This line item may make more sense to be stated such that we can purchase from a standardized system if it meets your needs or specify our own choices.

3. Email – Consider consolidated email system for System Offices, TAMU President & Provost, CIS, and others. Offer MS Exchange and TAMU Email Zimbra systems

a. The TAMU email system is underwhelming at best. My IT friends say our email system & policies are expensive and the policies are frustrating and not geared to making things simpler and more effective for faculty, staff, and students.

b. There may be some merit to this, but it depends on how it is handled. This would affect faculty and staff the most because we would be bound by the standards CIS imposes. We would not have control over the policies of the system any longer.

c. It is not clear who this idea pertains to (who are "others"). It is clear that that Science heads are against the concept of standard e-mail system for use by departmental faculty and staff. Basically, there is little trust in a centralized system, and there would be strong disagreements as to which system to use.

d. In the consideration of consolidating e mail systems the concept should be considered that a truly fail safe system should be developed, possibly with Fiber Town and to offer mail backup/recovery (end user controlled as to length of time) and mail box size should be adjustable by dept IT administrators as needed.

e. The west campus is more vulnerable than the main campus because it has single points of failure. Although it will not cost less money, the same redundancies to prevent failure on the main campus should be provided on the west campus.

f. Reduce costs by replacing Microsoft server software with open source Unix software. Unix typically runs faster on older/slower hardware. Microsoft usually requires a hardware upgrade with each new server version released. Microsoft's business model is fueled by new releases, support and training.

g. There has been discussion across the TAMU Admin listserv about the consolidation of email from time to time; normally it gets to the point that departments would have to be charged for CIS taking care of it. It's a huge deal to consolidate all the different systems in place currently, not to mention the lack of control and timeliness from an administration standpoint.

h. I would say consolidation of email systems should be done all the way to the department level and across agencies. TAMUS should consider contracting with a 3rd party like Google to handle email. Eliminate department, college, agency email servers and accompanying positions.
i. Consolidating email may make my job easier...aka: this may give me more time to accomplish other tasks for the department. I would be interested to know the costs associated with this. Also, connectivity to the email server is of paramount importance. Further, this probably will mean consolidating Active Directory. We may lose some control over our organization in that event. I'm not sure this benefits us as much. The current cost of managing our own server is low. Where is the savings and benefit to our department?

   a. For the students this makes little sense since they only use computer labs in this building and have little reason to use other labs. If they do they have access to their data via the network. For faculty and staff this may make a little more sense because then CIS would have to deal with security for confidential files. The description is very vague, so further information is needed to accurately determine if this is good or bad.
   b. There is significant opposition to this idea for the same reasons as in 1, and 3 above.
   c. The west campus is more vulnerable than the main campus because it has single points of failure. Although it will not cost less money, the same redundancies to prevent failure on the main campus should be provided on the west campus.
   d. Reduce costs by replacing Microsoft server software with open source UNIX software. UNIX typically runs faster on older/slower hardware. Microsoft usually requires a hardware upgrade with each new server version released. Microsoft's business model is fueled by new releases, support and training.
   e. Sharepoint is a great tool. Again, what would the cost be? How is the connectivity going to work? We need more info about this hosting solution.

5. Printers – Study eliminating individual staff printers in favor of outsourced, shared printer/copier/scanners with two to three black and white printers and one color printer per floor. UT-Austin and the UT System have been doing this since 2003.
   a. Having centralized printing would save money (it has in HLKN) but faculty like the ability to have their own printer. Many pay for it with their grants. If they want to go this route, it should be a university/system decision rather than it appear that Department Heads are taking things away from faculty members.
   b. Careful with shared printers... if there is more than one unit or department per floor in a building who picks up the tab?
   c. We already have this in place. There are copiers in the staff and faculty areas that are print capable. There is also a shared color printer in each area. However, in addition majority of the faculty and staff have a printer in their individual offices. Usually the printer cartridges are paid for by the faculty
member. This was in place before I arrived here and decide it was best not to rock the boat on this issue.

d. No mention is made of where shared printers would be housed or how widely they would be distributed. Central printing in CIS labs would be far too sparse a distribution. Many former department printing rooms have been converted to other academic uses (e.g. lab space, or grad student cubicles) to accommodate space needs associated with Reinvestment hiring. Devoting space to centralized printing (with runners paid to retrieve copies) could add substantial hidden costs.

e. With the advent of electronic document management, the need for printing is going down rapidly. However it should also be considered that the constant getting up to go to a printer not only uses a lot of personnel time but also “breaks the line of concentration” for the end user making it slower for them to get back to the task at hand.

f. It is not clear that the distinction between staff and faculty is made throughout the document. Confidential documents should not be sent to shared printers/copiers/scanners. Individual printers and other equipment help make faculty more productive.

g. Costs for securing network shared printers in public areas would require additional outside funding. Addressing how to handle FERPA and confidential print out would be a primary concern.

h. One wonders whether the cost saving practice of one shared printer per floor has been implemented at TAMUS headquarters. Before this idea is implemented at Texas A&M University, a pilot study should be conducted. TAMUS headquarters would be an excellent location for such a pilot study.

i. Good point about accounting on a per floor basis, but there is software that can keep track on a per user basis. If that were in effect, even more granular accountability to printing resources could be tracked. Some people think they have to print everything, and some think that they shouldn’t have to walk 15 steps, even if it saves $0.25 per page, or that everything needs to be in color. Printing is probably the best area so far to save money in. We could do it here, pretty easily, but it would mean changing some attitudes first.

j. Printers sounds awesome, until you consider the accounting. From a pure printing perspective, it’s efficient. Considering the bureaucracy, local printers are cheap and pretty secure. Managing the use and purchase of paper is simple and delegated. Consolidating this may create more work and hassle.

6. Helpdesk support – Use TAMU Helpdesk Central, which operates 24 x 7, for after hours and weekend support to System Members. There are other specialized Helpdesks, e.g., BPP & FAMIS, which cannot be replaced by Helpdesk Central.

a. Not really sure how this could help us. It is not as if Helpdesk Central is going to employ Schlumberger or CMG software experts. The services that the students need from CIS would be provided whether the merger takes place or not.

b. Sounds almost like I’m going to be losing my job...or I’ll be working for CIS?? Fine by me, but the department may lose the ability to demand my services quickly.
7. **Desktop and Server support** – See if there is any savings in merging the TAMU System BCS Microcomputer and Network Support group with the CIS Office Computing Support Services (OCSS) group.
   a. What does this mean for departmental support and departmental computer classroom support?
   b. Is the thought to consolidate all TAMU IT support under Help Desk Central?
   c. I don't want to assume that these two items are not suggesting such a consolidation so:
      i. I'm sure someone must realize how much the support traffic load to Help Desk Central would increase if our dept members were required to contact Help Desk Central for each computing/printing problem they have.
      ii. I know the Comm-IT staff response time has been less than stellar recently due to both the physical growth in dept numbers and the growth of the use of technology by dept members. However, I can't imagine the load on the Help Desk Central if the Comm-IT staff wasn't answering those dept particular problems and the basic technology needs and such a load had to be fielded by HDC?
   d. I am not sure how this affects us (Petroleum Engr) because we really don't use these services.
   e. Sounds almost like I'm going to be losing my job...or I'll be working for CIS?? Fine by me, but the department may lose the ability to demand my services quickly.

8. **Replace IBM Mainframe or Partner with UT-Austin for Backup** – The legacy student information system at TAMU, SIMS, will be replaced with the new Compass system that runs on Unix hardware on Sept. 1, 2009. SIMS accounted for 40% of the mainframe load. One alternative is to purchase a smaller machine. Another option to investigate is TAMU and UT-Austin backing up each other's mainframes.
   a. I am not sure how this affects us because we really don't use these services.

9. **Long Distance Telephone Charges** – Go out for bid on long distance service rather than use the TX-AN network.
   a. I am not familiar with the cost associated with long distance. However, there are no long distance charges associated with cell phones.
10. Telephone Switch – Review costs associated with the separate telephone switch purchased by the A&M System. Those not in the two System buildings already use the shared A&M switch.
   a. I am not familiar with the cost associated with this.

11. VoIP System - The University has recently purchased enterprise VoIP switches, and all new buildings will be using VoIP in the future. The transition from Centrex to VoIP will take more than five years. Some System Members in Brazos County are considering purchasing their own VoIP switches.
   a. The problem with this is if you lose power or the Internet connection your phones don’t work. This should be a Systems level decision.
   b. Switch to VoIP should be accelerated.
   c. I love VOIP. If something like an open source system such as Asterisk can be used, the university could become flexible and useful with regards to communications. The cynic in me argues that the implementation at TAMU will not be as flexible as the dream of VOIP offers; however this implementation would most likely be better than what we have now. At my last job, the opportunity to switch to VOIP was passed and I truly feel the company lost more than it saved in the process.

12. Document Imaging and Workflow – A committee is meeting this summer to make recommendations on document imaging for Brazos County. There are at least three different imaging systems in use in Brazos County. There would appear to be an opportunity to consolidate some of the systems using the same software, e.g., TAMU Student Financial Aid and the Division of Finance and discussion merging their FileNet operations. The committee will give us a recommendation.
   a. I am not sure how this affects us because we really don’t use these services. It appears that admission and financial aid would be the greatest affected by this.
   b. The AgriLife program is currently running Laser fiche as a document imaging system. The Laser fiche system is standing up to the use of the AgriLife system Statewide. It should be considered if a consolidation of imaging is sought system wide.
   c. FileNet does not offer the level of service and reliability, cost effectiveness and functionality as what we now use.
   d. Document imaging is great and useful and I would support this, but I don't think it makes any difference to our department.

13. Cell Phone Plans – Consider reducing cell phone stipends, have a maximum stipend, and discourage university-owned cell phones. Cell phone stipends System-wide have risen from $725,000 in FY05 to an estimated $3.3 million in FY09.
   a. Again – a Department Head decision. I take a supplement through my endowment but it allows me to have 24/7 access to email, phone and internet (with a stick). This is important for me to keep on top of budget requests,
communicate with faculty, etc. This is a much more affordable than paying $15 a
day while at a hotel traveling.
b. I am not sure about upper administration but all of our cell phone stipends for
faculty and the DH at the department level come from indirect return accounts
and so I am not sure the need for reducing this at the faculty/DH level.
c. It is my understanding that there are only a couple of people in the department
with cell phones that are paid for by the department. This is not a major issue.
d. The system should consider using only one or two cell providers, in doing so
plans should be able to be negotiated with much lower cost for either University
owned phones and/or for personal plans for employees.
e. Cell phones have benefits as well as costs. One benefit is 24/7 communications
with key personnel. Such key personnel might include department heads,
building proctors, information technology personnel, and faculty leading groups of
students in programs located off campus.
f. The premise of this point should be rejected. In the 1970s, the total expenditure
at Texas A&M University for desktop information technology equipment such as
computers, printers, and scanners was $0.
g. Two or three top cell providers should be identified to leverage quantity discount.
Obviously there will be exceptions in some cases.
h. I am not sure about upper administration but all of our cell phone stipends for
faculty and the DH at the department level come from indirect return accounts
and so I am not sure the need for reducing this at the faculty/DH level.
i. My only comment is we need to look at the ramifications of the cell phone
language. Maybe it is time to get rid of land lines.
j. The cell phone plan TAMU uses now seems useful and perhaps expensive. But
are these dollars providing a value to the organization? I'm half of the opinion
that the decentralized management of cell phones is good. Maybe it can be
made better, but this line item almost sounds like it's going to cut the expense to
the detriment of the benefit.

14. Energy Saving PC Settings – Most PC’s on-campus are using energy savings
features such as powering off the monitor and spinning down hard disks. Use of
standby mode or powering down machines that do not need to operate after work
hours is also an option.
a. There are processes that can be used to "automate" the suspending nature of
even unix machines...however, until all vendors' wake on LAN features (remote
wake up) work as advertised, Viz won't be implementing this. Some job-queuing
systems and virtual machine infrastructure can also automatically migrate jobs to
a few hosts and suspend others during times of lulls. We can do better here, but
will need some support from vendors as well. Ex: the Dell machines in the main
room of the Viz Lab right now refuse to WoL, while the previous generation ones
work fine.
b. Our monitors are already set for power save mode. If they have additional
settings they recommend this can be easily adjusted for additional cost savings.
To change these settings IT services do not need to be merged.
c. Most monitor have been switched to flat screen and most do go into a suspend
state when not used for a period of time. Use of suspend or hibernate modes on
desktops is a good option as long as they can be awakened remotely for after hours administration.

d. Energy Savings attempts need to have TAMU System backing since not all users want their PC's going into sleep mode.

e. I'll start implementing strategies to accomplish this line item next month. It's a great idea and should be done.

15. Workstation Replacement Cycle – Consider moving staff and student Open Access Lab workstations that are on a three-year replacement cycle to a four-year cycle.

   a. May not keep pace with software advances. Computers really need to be replaced every 2 years to stay current (IMO). Would the money saved by offset by faculty, staff, and students spending more time having to work on lower computers?

   b. We are not on an official "cycle" although we do tend to already replace things on a ~3-4 year cycle. Our students are the primary drivers as they are constantly requesting the latest and fastest.

   c. The 4-year rotation on computers is something we just moved away from and for good reason.

   d. Support staff:

      i. From my observations over the years, most if not all support staff today spend at least 80% of their time working at a computer workstation; almost all University business is now conducted via online systems whether it be purchasing, payroll, student records, and so forth. I believe the "support" part of the support staff indicates that support staff make up the backbone of the business/administration work horse for the University. If anything the University should institute a Support Staff workstation program and the workstation replacement cycle should be two years. Having support staff working at older, slower, out of warranty computers reduces the overall performance the University's business/administration. Like having the support staff work by candlelight in an age of electricity. Also, there are morale aspects that affect performance when employees are required to use out-of-date equipment.

   e. Students:

      i. Okay, our students are our customers. That's probably enough said, but you know "wordy" me...

      ii. Fifteen years ago, maybe a 4 year replacement cycle was good enough, but in our constantly evolving technology today it is not. If we want to provide our students with the best tools to do their class work and the best tools to meet the challenges of this speed demon technology race, we need at least to update the computers every 3 years. Two years would be better, but I believe the cost would be prohibitive. Three years is a good compromise.
iii. Four years and the machines are too old for the new software packages such as Adobe Creative Suite which requires increasing amounts of RAM and processor speed to perform adequately. Older machines are more prone to failures limiting the number of computers available to our students as we struggle to fix ailing equipment. And slower computers affect individual student performance through frustration with the equipment and angst against the dept and University for not providing better resources.

f. Currently there is no staff workstation replacement cycle that we participate in. Staff are given machines on a per need basis. A lot times these maybe machines that are older machines. This is not a major expense for the department.

g. Currently we are on a three rotation for the computer labs, but that is only because we were received funds from BP this year. Since we have four computer labs I was already set for a four year rotation. Our labs are not considered Open Access Labs by University definition because they are not open to all students. They are only open to students that are registered for Petroleum Engineering classes.

h. It is not clear whether staff includes faculty; there is no established workstation replacement program for staff, and many staff receive hand-me-down workstations from faculty when they get upgrades. So most staff are probably already on a 4-year replacement cycle (or longer).

i. Serious consideration should be given to wear out on machines during the 4th year. Many parts and most warranties on computers are for 3 years, after that period of time more components start wearing out due to age. How much time and money would be used in repair of aging machines?

j. The idea of replacing Open Access Lab computers less frequently would change when funds are spent but may not reduce spending. The individuals who suggested this idea may not be aware that open access labs are funded by student fees linked to credit hours.

k. Consider providing students with netbook laptops i.e. ASUS EEE PC 1000HE. There could easily be a discount to the already common $380 price for a large order. It would facilitate electronic textbook distribution, test taking, and interface with our Learning Management System. Also would permit students to take part in online video conferencing and IPTV reception. Open Access labs could be reduced in size to higher powered PC's required for data analysis, graphical works and Audio/Video editing.

l. A large number of students use the Open Access labs to log in and print something out, and thus a large number of computers are taken in between class changes for just this purpose. If the SCC (or other open access printers) were made available to personal laptop computers within the A&M firewall, though through some kind of authentication, it could reduce the number of PC's needed in the open access labs.

m. I think this will increase our replacement timeframe (we are probably on a six year cycle now). The expense may be moved to a different budget. All of this sounds great, but we lose control over the budget and may not be receiving the
actual four year replacement. Plus, we may not be able to decide what to purchase. Control on this issue is valuable.

16. Longer-term ideas
a. Centralized hardware platform to run Banner - One system in College Station and another in Dallas or Austin. Each university would have its own instance of Banner.
   i. Reduce and eliminate script use on compass. This will reduce cost and time for future upgrades to compass (aka banner)
b. Hosting Banner instances for Texas A&M - Central Texas and Texas A&M - San Antonio on one of the existing A&M System Member Banner hardware platforms.
   i. Reduce and eliminate script use on compass. This will reduce cost and time for future upgrades to compass (aka banner)
c. Centralized Learning Management System – We considered this several years ago, and the Provosts eventually decided to continue to run their own systems.
   i. Investigate how and what products other top universities use for Learning Management Systems. i.e. Caltech, MIT, etc.
   ii. Think this runs along the lines of Moodle. I don't know much about it, but our department seems to be in a great position to help understand what can and should be done to use this kind of technology.
d. System-wide Oracle site license
   i. The system-wide oracle site license would be great. Don't lose licensing benefits from Microsoft, but add Oracle. It's better for the education of the students to have the flexibility
e. Enhancements to Microsoft campus license
   i. Thought should be given to the Adobe campus licensing also. Acrobat has become almost a necessity in today's world.
   ii. Great. Enhance Microsoft licensing as much as possible.
f. System-wide student evaluation system – HB 2504 requires all student evaluations to be put online for the public to view and search.
g. VoIP Trunking – Expansion of VoIP trunking between campuses
   i. Sounds really cool. We have high speed data lines between universities due to the design of the internet in general. Let's take advantage of that!
h. IPTV – Campus cable television over IP. There is a pilot underway.
   i. IPTV is a leading edge tool and has direct impact to our department. Let's get behind this one and incorporate it into the tool set available to faculty.
   ii. This might be a great change. We have so much trouble now with keeping our satellite programming up and running and then have separate equipment/technology to "stream" the channeling to our lab computers. Would be great if we could subscribe to an IP cable service and our professors could select material to show in class on the fly; such as an ongoing event like the earthquake in China? Wouldn't it be great if a JOUR professor could show in class the coverage as it is happening? Or show the State of the Union address in progress during an evening
graduate class? I’m sure our Telecomm and Media Studies professors could think of hundreds of other uses.

17. GENERAL COMMENTS:

a. Our system of purchasing (and building systems) is much better than the standard prices we are quoted for a computer system on bids. This has allowed us to roll out more machines than budgeted.

b. We like the ability to manage its own network. It has been developed based on the unique needs of our department. It’s well-run, meets our needs, and more efficient than other models.

c. Overall, this document appears to be meant to address large installations such as the open access labs, campus infrastructure. But we will want to keep abreast of what is discussed as some things may end up branching out into areas that will affect us.

d. I support cutting costs but this is a lot of micro-management. Department Heads need to be able to make decisions about many of these issues.

e. I was surprised to see that software was listed as an area where things already are excellent. Maybe I am off base, but it seems to me we are shy of being excellent in that area. We should be able to get better software prices for a wider range of products and more convenient distribution arrangements. My impression is that we do OK on the standard office/business software and pay top dollar for more specialized software.

f. My biggest concern of all doesn't seem to be even on the list. Over the years IT functions at the central level have been funded poorly. With the steady shift to local computing, central IT has not been able to provide support and service analogous to what it once did when computing was on mainframes. Instead, departments and colleges have had to fend for themselves and have not received funds need to do it adequately. Doesn't seem to be a very well thought out approach to meeting basic computing needs.

g. This committee seems heavily high admin intensive with a dept. head the lowest level stakeholder in terms of end users. No faculty, staff, or students. Again, this seems typical of a top down system initiative where cost is much more important than service.

h. First off, I don't see a dept level IT person on the "Team". I see some rather high level "Directors" of Colleges/Centers (AgriLife and Health Science Center), but not a trench person? Also no support staff or student rep although there appear to be a faculty rep.

i. Lastly, the report does not mention much in the way of back-up and security at the department level. This is fairly highly regulated and there might be cost savings if some of these University/TEES/TAES/System rules and regulations are scrutinized for real need.

j. There are economies to be found. Something that has not been mentioned, but which should be explored, is the reintegration of the campus-wide IT services. Why Networking and Information Security is no longer part of Computing and
Information Services has neither been adequately explained nor justified in a cost-effective manner. To an outsider, it appears that a new bureaucracy has been created, with plenty of redundancies and inefficiencies to be considered. In addition, it appears that HelpDesk Central has lost some of its integration with CIS. This should be explored for efficiency.

k. When exploring the shared services that exist, it might be important to consider that some of the services that are advertised as shared are not truly shared. For example, university faculty and staff are required to deal with at least two standard logins that are supposed to be all-encompassing (NetID and SSO). It appears that SSO is a system log-in, while NetID is a university one. A lot of users would hail and applaud this sort of integration.

l. Division of labor
   i. To the extent possible, the report should suggest which information technology services are most effectively and efficiently (two different concepts) provided by the system, university, colleges and departments.

m. Additional Issues
   i. Electrical power reliability is a significant problem. Typically, any part of campus that is isolated due to a failure of power or network can utilize their own email server to communicate the issue/emergencies.
   
   ii. Intentional Network resource redundancies are important for preserving information and should not be eliminated to reduce spending. Data losses and service interruptions from Instructional Technology Services are examples of why colleges and departments must also preserve mission critical information. Just as TAMU has show initiative in redundancies for Code Maroon the same approach needs consideration for any steps taken to reduce spending.

n. Instructions to Teams
   i. Recall that many people do not have extensive direct substantive experience in information technology services. The report from the Information Technology Services Tactical Planning Team should be able to be understood by readers with only basic knowledge of information technology services.
   
   ii. The instructions say the goal is to increase efficiency and then define increased efficiency as savings—reduced spending. This definition of efficiency implicitly assumes that the quantity and quality of information technology services is unchanging. Increased efficiency may be reflected by increased quality at the same price, or even increased quality at a higher price, if gains in quality increase faster than increases in price. “Efficiency” should be understood as multidimensional.
   
   iii. The instructions define transparency as “not visible” to faculty. This does not seem to be a necessary or important goal.

o. I and my IT staff have examined the Shared Information Technology Services Tactical Planning Team document that you sent, and we saw a range of issues. I
don't know how useful it is to detail every last item, but in general, the ideas for consolidating email systems, shared printers and scanners, and so forth all seem like they would be produce more problems than they would solve, thus costing more money. The creation of a new data center would cost more in the short term, and may not be cheaper in the long run. Also there seem to be some contradictions in this document, as it states that this would be "Should be transparent (i.e., not be visible) to faculty and staff," but many of the ideas here (shared hardware, longer rotations on desktop machines clearly, etc.) clearly would not be. One wonders how the views of stakeholders are to be assessed; this essential for transparency, and unless this is done rigorously, these major changes could have an effect on the productivity of administration, faculty, and staff.

p. I did have one other thought that may not be popular or feasible but let me throw it out there. What if we consider consolidation of IT from the departments to the College level? I am not sure about other Colleges across campus but I know in the COE we probably have 15 or more individual IT people across the 12 departments and 12 or more different servers, 12 or more server rooms, and 12 or more student access rooms in addition to whatever the College has and TEES. They are all run slightly differently. It seems we could have a great centralized COE facility with all the software and hardware we need with probably 6 excellent IT people that could run it, which would cut the hardware and personnel costs at least in half. We could further centralize the student computer rooms to may be 6 across the different COE buildings.

q. They did this, probably a decade ago, with purchasing. It used to be that every department did their own thing using everything from excel spreadsheets to using a typewriter. Then they centralized it at the COE level with standardized forms, etc. and it now appears to be a much more efficient process.

r. Back up and security rules and regulations are actually scrutinized every year by everyone that has to fill out ISAAC and Tees security audits. They do meet and throw out things that seemed like a good idea, but weren't. However, there are generally very few of those. Unfortunately, we're unlikely to see the amount of IT regulations decline, it's simply too risky in this day and age.

s. Final Report Needs to Summarize Existing Share Services

t. I agree, let's outline where we are good. This will help marketing and may identify useful resources we already have. I'm not sure, but it almost sounds like this mentions incorporating B/CS in the Information System of TAMU. That is a great way to involve the community. I like community involvement.

u. There are many opportunities for shared services providing there is broad access and backup to host services. Policies and applications must focus on user needs rather than a hierarchical administrative office. The organizational structure should be reasonably flat.

v. As a department, we could work from a shared server farm that uses energy-efficient technology. The server can be located in an efficient environment almost
anywhere. Many of our computers are underutilized on nights and weekends. A shared server would provide access for large-scale computing for others during off-hours.

w. As a department, we would benefit from a competitive system-wide contract that recognizes several levels of computing power. Departmental replacement schedules could move to a four-year rotation, with one-fourth of the computers replaced each year. There will need to be exceptions for special requirements.

x. MS Exchange has worked well to meet departmental needs with fast connection, easy use, and dependable delivery. Some systems currently used in COALS have a slow delivery time and frequent interruptions. For significant savings, we could explore use of Open Office and Moodle rather than licensed Microsoft products. However, we would need system-level technical support for open software. Robust server farms can support several System Offices on one server farm; everyone does not need their own.

y. Consolidation of file systems, back-up, and SharePoint would likely be an advantage for the department.

z. Consolidation of printers, with two laser printers and one high-speed color printer per floor would be more cost effective—but not as convenient. A print default could be set for small number of copies (>10) to be printed on the floor while large numbers of copies (<10) could be routed to a high-speed biz-center with 2-hour deliver service. IMS has a very different set of printing needs

aa. We need a procedure sheet for better access and services to Helpdesk support--and library support.

bb. VoIP telephone service would not affect the department service and likely reduce system expense that is passed through to departments. Telephone systems must be user-friendly allowing for office use and follow-along capability. We need a consistent cell phone policy. Rather than reducing cell phone stipends, credit the substitution of desk phone expense that allows cell phones with a data plan to replace desk phones. This would provide better access for faculty and many staff.

cc. Perhaps the greatest savings could come from lighting and cooling controls. A simple lighting controller could shut off--or set back--lights in a classroom after one hour—or some pre-determined interval. Almost all classrooms have continuous lighting, including after normal business hours.

dd. A departmental policy could recommend setting PC’s on stand-by mode or hibernate. Our machines take too long to come to operating mode if shut down overnight.

e. As a department and university, we need a much better centralized learning management system that includes synchronous and asynchronous learners-at-a-distance as well as learners-in-classrooms. We need to move from traditional lecture with PPT to a more engaged learning environment that includes computer-assisted simulations, problem-solving, case analysis, and access to information for real-time decisions. Most students have laptops but they are not
used as an active learning tool. We need one or more classrooms with an interactive whiteboard or better yet, a digital wall display with picture-in-picture technology to allow remote participants to view the presentation while collaborating real-time with other faculty members between campuses or business partners from almost anywhere in the world. These systems must have faculty training and solid Helpdesk support.

ff. Take a look at what our “peer” top 20 universities are doing with centralized learning management and follow if we cannot lead. Michigan State offers a 16-month garden & landscape certificate for Lowe’s Home Improvement stores. They are improving practice. Several universities, including the University of Maryland, offer bachelor and master degrees at a distance for military personnel as well as federal agencies employees like USDA. National Pork Board is offering multiple certifications for swine workers. They are helping producers cope with a changing global marketplace. Organic farming is an open market with few standards or certifications.

gg. Shared IT Services Plan is indeed an ambitious undertaking where some ideas perhaps are more rewarding than others to various departments. I would like to express our agreement to ideas that can easily cut costs and should be adopted soon; on the other hand I would point out our concerns about ideas that require further examination.

hh. Ideas Encouraged for Cost Savings:
   i. Cell phone costs could easily be capped. Cell phones requiring paid proprietary software for email services could be discouraged.
   ii. Unless there is a breakthrough in IP standards and the way we use internet, VoIP System’s cost savings are obvious.
   iii. Enforcing department wide policy to turn off computer labs during afterhours should be adopted.
   iv. If departments can agree on a more user friendly Email System then Email consolidation for better reliability and redundancy would be a major plus.

ii. What will this new plan cost in the long and short run?

jj. I think it is a good starting point. I guess I am a bit concerned about the cell phone concern. It seems that we should be leaders in technology adaptation and clearly cell phones have become computers have become essential for rapid and efficient conversation among research teams and colleagues around the world.

kk. I am not sure that the value returned from enhanced communication can be readily measured, but the increased cost is not without some consideration that cell phones are a very cost effective way to expedite communication in a timely fashion. Perhaps even the regents could use one to stay in touch with the faculty. I do not believe that A&M expenditures have increased at an exorbitant rate compared with other institutions of higher education and research units with widely dispersed faculty.
II. I am just now looking this over and I am a little confused. They certainly have some items listed here that could save costs; however, I am wondering to whom this would apply. If I use designated funds to purchase a computer, what business is it of these guys what I buy and how I use it? Who can tell my faculty that they cannot buy a laser printer on designated funds? Most of our faculty and staff computers and peripherals are purchased this way. Are they proposing limits and standards on those types of purchases or are these rules strictly limited to State funds?

These recommendations are impressive. Implementing them would seem to yield substantial savings, with minimal impact on operations. I applaud the work of the committee and do not object to any of the recommendations.
Comments from TAMU Information Technology Advisory Committee

In a meeting of the Information Technology Advisory Council, here are some of the items that came out of the discussion on July 16, 2009 ‘Shared Information Technology Services Tactical Planning Team’ document that was released for comments.

1. Additional item for consideration - Recommend that there be a governance group or authority on campus to implement the recommendations of the Shared Technology Services plan.

2. Additional item for consideration – Statement about the RFP and selected vendor for computer training (St. Edwards), and this could be a shared service item.

3. Additional item for consideration – Consider looking at ‘Open Source’ computing technologies and any savings that can be associated with moving to this type of platform.

4. Additional item for consideration – Consider creating a forum to notify the campus community of IT initiatives taking place on campus or being considered so that other departments/entities could be included in the initiatives for cost sharing/avoidance.

5. In reference to item #1 ‘New Data center’ – Concern of High Performance Computing needs on campus (primarily for researchers) and that these computing needs may not fit the new data center/virtualization center model. This type of computing would still need to be stand alone or outside of this model.

6. In reference to item #1 ‘New Data center’ – Concern over the method of ‘disallowing the use of server rooms with separate cooling’ and would like CIS to be competitive in the cost structure for a new data center and virtualization technology.

7. In reference to item #2 ‘Standard Staff Desktop Computer’ – Considering adding Apple desktop computers to a standard/bulk purchase agreement for cost savings.

8. In reference to item #13 ‘Cell Phone Plans’ – Also considering including reducing the amount of the ‘cell phone purchase stipends’. (Reimbursement for the purchase of the actual cell phone.)

9. In reference to item #16 ‘Longer-Term Ideas’ – Consider adding an item for ‘negotiating a virtualization license campus wide’.
Comments and Questions from the TAMU Faculty Senate

1) We need to be careful on what we do; the major problem of these shared services is that they affect the most productive faculty and students. We do not want to risk losing millions of research dollars for saving a few thousands in each department. We need to keep in mind that the rank of the university is because our research; our graduates are hired (with good salaries) because the university ranks well in research. We need to have a comfortable environment so our faculty and students can come at any time to contribute to the greatness of our institution.

2) As you know, TAMUQ is a branch campus of TAMU and is located in the Middle East. Thus, I doubt that there will be much in the arena of shared services that I or TAMUQ can provide from our side. However, as your team meets and considers various opportunities, please do not forget about us and, if there are ways that we can contribute, please let me know.

3) As you can anticipate, our existence here in the Middle East creates interesting opportunities and we depend greatly on TAMU for much of our operational support, e.g. purchasing, HR, payroll, IT, student information systems, etc. Thus, if we can be of assistance in providing our perspectives re shared services and how they may impact operations here, we would be pleased to do so at your request.

4) Virtualized servers implies that rather than running their own server, a department/group would pay CIS for a share of a virtualized server. This would only be attractive to departments if the cost does not increase and service (primarily support) does not decrease. We regularly looked at outsourcing some support computing activities, such as networking, but found it was cheaper to do it ourselves. Now CSE has large economies of scale, but this will surely be the #1 issue in making consolidation a success. #2 will be quality of service. I am sure the ChemE faculty still remember the huge screwup in networking the Brown building.

5) Standard staff PCs depends greatly on what "standard" and "staff" mean. If this means secretarial/administrative staff, it isn't too difficult. Most departments do something like this internally. If "staff" includes faculty, then this could be a problem. Even with staff, "standard" would have to accommodate different display sizes, memory requirements, etc., depending on the applications used. This has been our own experience. There is also the whole PC vs. Mac issue.

6) Some of our faculty have suggested outsourcing email, or at least student email, to Google Apps, the way Univ. Arizona has done. The students all use Gmail anyway. We are experimenting with Google Apps in CSE. The primary barriers are legal (e.g. FERPA, governance under Texas law, etc).

7) I am not sure why printers are an issue for the team. Departments pay for this themselves and make their own decisions on consolidation. The #1 reason we have staff with individual printers is the use of printed letterhead. Color printers permit printing the full official letterhead, but that would cost more than separate B&W laser printers with printed letterhead. This doesn't take into account the issue of regular or bond paper for documents. The #2 reason for separate printers is privacy. This is also the main reason for separate FAX machines. I don't see how this can be optimized in any way other than a local fashion. Same for just printing less. Within our department we have drastically reduced our printing, with more use of Web sites for class (I never hand out a syllabus), and electronic submission of student assignments.

8) I assume document imaging includes the new ImageNow system used by Admissions. Admissions is probably far and away the #1 user of document imaging. In my opinion, looking
at imaging consolidation is the wrong focus. We should instead try to shrink document imaging needs to the point of irrelevance. 90% of our own document imaging is scanning documents that were prepared electronically, printed, and then signed. I know the same is true in the dean's office. Apparently A&M hasn't heard that digital signatures have been legal in Texas for a long time. The other 10% are PDF templates (e.g. OGS petitions) that permit typing in fields, but not saving the document, only printing it out. This does not take a huge effort. For example, our department does not accept any paper documents for grad admissions (with the exception of transcripts and degree statements that Admissions scans). We tell students that if they send us paper documents, we will ignore them (and we do). And we still get 1200 grad applications. OGS can readily put petitions online using the same primitive mechanism they use for degree plans. As someone who has to deal with a lot of bureaucratic paperwork every day, this issue is high on my list of Texas A&M money-wasters. As with printing, some of this issue is internal department choice and budget. I recommend the team focus on simple external items (forbid paper letters of recommendation) and target internal paper generators like OGS and ISS for conversion to Web-based forms.

9) The presence of the so called “Department Security Officer” is practically an insult to the faculty, at least in my department. The security officer is actually the person that should be providing support to the faculty; however, their support is very sloppy and in most cases the security actions are detrimental to the research of the faculty. The security officer for instance spent an average of three days to enter a new computer into the inventory, holding its use from the faculty. There is an excessive amount of control activities that in no way get close to the safety measures performed when chemical or biological substances are involved, which are certainly much more dangerous. It looks like the security officer is creating an exaggerated clime of danger just to justify his position, however, making it so difficult to perform any research using computers. This committee should evaluate and minimize the amount resources spent in useless “security”

10) There was a comment regarding the direct use of a connector to external laptops in the classrooms rather than having to login just to use the projector. I am not sure but I guess this was already implemented and if not, it could be a way to save a few bucks. I have seen professors taking their own projector to class rather than having to go through the login process. At some point some professors were asked to register in advance to be able to use the LCD projector in the classroom; this was really ridiculous.
TAMUS CIO Responses

Pierce - Just a few unsolicited comments from me on this process and these suggestions --

1. In my previous life in the government, driven by congressional mandates, we focused on outsourcing at any cost. Ultimately most of the activities either failed, provided lower service levels or cost more. I'm fearful that this shared services push could suffer the same fate. I think it is really important to focus on these risks and avoid them. Unfortunately this is often seen by the people pushing these simplistic and well intentioned programs that we are just dragging our feet, avoiding acting or whining. Good luck with balancing and managing this process, it's critical that we don't throw the baby out with the bath.

2. Standard Staff Desktop Computer - Sounds like a great idea BUT! If it's a bad choice EVERYBODY suffers because we have all our eggs in one basket. For example this year TAMU CIS picked an HP desktop. I've had horrible problems in the past with HP desktops and just couldn't in good conscious purchase the standard PC. On the other hand I purchased some small form factor Dells for our general student computer lab and they've had horrible problems with mother boards failing (over 1/3 have failed in less than four years). Clearly a design flaw, some of them failed under warranty but more right after the 3 year warranty expired. If I had purchased those campus wide or we had purchased them system wide we would have had riots and major costs. Diversity may cost slightly more BUT it breeds resilience. I think that this is an example of one of the "unintended" consequences you mentioned avoiding.

3. Helpdesk support - I use the main campus help desk for 7-24 hour support (eased by the fact that we use many common systems) BUT I still find that I have to run a walk in help desk during normal business hours. There is no way I can provide adequate service without a local walk in help desk during normal hours in my professional opinion. Even if I didn't man it they would line up and my and my staff's doors until we provided the same type of service. Now I do it cheaper with students. On the other hand I see lots of potential for one after hours help desk, I just don't know if other campuses currently provide this service or not, i.e. would it provide savings. Caution-there is often confusion when our students call the central help desk even though almost all of the systems that our students use are the same as the ones your students use. I see very little evidence of staff or faculty calls after hours does your help desk?
4. LD Telephone - If a contract allowed me to hand off my VoIP traffic to a gateway versus use a dedicated T1 we can generate some savings. I think this is a good idea and doable. I don't know if the Texan 2000 replacement contract will offer this service or if it will be cheaper, they should be able to.

5. Cell phone plans. First honestly I see them as a benefit. Cutting benefits always has a negative cost and in this case is penny wise and pound foolish in my opinion. Second we have a really well done, if somewhat generous, program. It really meets our needs and we've gotten rid of all of our campus owned cell phones, during the evacuation no one whined about having to use their personal cell phone for business in my shop because I pay them all the allowance. This was a valid issue in the past, pre allowance. If we're going to make them use their personal cell phones for work, and I have to, then we should compensate them.

6. Workstation Replacement Cycle - I use a four year cycle and only have been burned once (the Dell purchase mentioned above). HOWEVER the few times I tried to push it to five years I had serious service interruptions due to failures. Four years is really the upper limit in my experience.

7. Some of the other ideas are good but VERY difficult (technically and/or politically) to do (and save money at the same time) in my experience:
   - New Data center (technically and politically)
   - Email (politically)
   - File system (politically)
   - Printer (politically)
   - Desktop support for system (probably no real savings, desktop support is a variable cost item)
   - Replace IBM (hard to really save money)
   - Telephone switch - No brainer
   - VoIP - No brainer and really does save money and provide better service. I've been totally VoIP for five years
   - Document imaging - No brainer BUT politically--only real option is to limit future new systems and consolidate at Future points of major re-investment.
   - Energy savings - hard to do better than we do now
   - Longer term all require more study of course.

The biggest real issue I seen to system wide consolidation in my 12 years at a A&M System University is the following: Some large campuses need a "semi-trailer" to do their IT work. Some smaller campuses only need a "pickup" to do their IT work. Pickups are cheaper per mile/MIP. If you
consolidate it has to be able to meet all requirements (a semi) and
everyone has to pay that higher rate. I think this is what happened
when we did the WebCT consolidation study. TAMU needed Vista (at a much
higher per seat cost) and the smaller campuses could get by with the
campus version (at a lower cost). Consolidation of either all Vista OR
all Campus additions would be cheaper than running them independently
BUT the cost savings of consolidation of everyone on Vista were LESS
than the cost savings of approximately 1/2 of the students using a much
lower cost per seat campus version.

Good luck with completing the IT study. I think you are correct that we
have a lot of successes with shared IT services but the other follow
point is that using shared services isn't a new thing to A&M IT staffs.
We've been doing it already when it made sense and saved cost. Most of
the problem with doing more IT shared services is that we've already
done the ones with significant savings that are reasonably easy to do.
The remaining candidates are largely not going to save money, will
result in reductions in service, are a bad idea for some other reason,
OR VERY difficult to do politically and will create a lot of additional
ill which has a real cost.

From: Khalid Sarwar Warraich <khalid.warraich@qatar.tamu.edu>
To: Pierce Cantrell <p-cantrell@tamu.edu>
Subject: Re: Shared IT Services Team
Date: Wed, 29 Jul 2009 20:46:44 +0300

Dear Pierce,

I wanted to provide some feedback on the shared services proposal that you sent earlier.

Before I comment on the shared services proposal, I wanted to note that we use several shared
services from the University and/or System as part of our regular business operations in Doha. In
fact, without access to these essential IT systems, we would not be able to operate as a branch
campus of A&M. We use FAMIS, SIMS, Compass, Blackboard Vista, TTVN, Centra, volume
license for Microsoft software, Vovici survey tool, the teacher evaluation system (I forget the
name), MediaMatrix, HR Connect, TAMU Mail (as a backup to ours), CAS authentication,
volume pricing on computers (i.e., Master agreements), etc. We are also supported by CIS by
software development (our HR information system) and are planning to use the data center in
College Station to house our backup storage system and servers.

The shared services proposal circulated earlier contains some additional items that we are likely
to find attractive (e.g, enhancements to Microsoft campus license, adopting longer workstation
replacement cycles, etc.). Much of these services are either already operational at the Qatar
campus (Share Point, imaging system, workflow--coming soon) of have to be replicated due to
our location on the other side of the world (telephone system, cell phone plans, etc.). Much of the energy saving ideas are also not applicable since our building in Doha contains a data center and the operational costs are paid for by Qatar Foundation.

There is one area where either the System or main campus can greatly assist us. And that is in the area of expanding software license for scientific and engineering software. Examples include MATLAB, Mathematica, LabView, Fluent, Gambit, Ansys, Abaqus, Aspen, Solid Works, and many others. The vendors of these software packages are based (mostly) in the US and give attractive pricing as well as licensing options to US universities. In the Middle East we deal with their resellers who are not used selling to educational institutions and viewing it as a strategic investment for their product in the student learning. They want to get the highest price for the product and usually charge close to commercial price for the software. For example, we paid $25,000 for MATLAB last year for just our campus while (according to the MATLAB sales rep) the main campus paid about $75,000. I am not aware of the cost of ANSYS or Fluent for main campus but it cost us close to $35,000 for 5 paid-up licenses for both products (all licenses are always checked out on our campus). Further, several vendors are not ready to make the changes to license terms that let us comply with State law (mostly dealing with limits in liability and governing law). We are unable to purchase Abaqus and software from Petroleum Experts Group due to the impasse between Contracts office and the vendor.

If we can use the size and influence of the System or main campus to obtain better pricing or licensing terms for the Qatar campus, it will be of great help to us. As is currently the practice, the Qatar campus will fully fund its portion of the license so as to ensure no financial burden on the System or main campus.

Thanks for the opportunity to provide input. I'll bring some of these matters up in the ITAC meeting tomorrow morning. Please let me know if you have any questions.

Khalid Sarwar Warraich
Chief Information Officer
Texas A&M University at Qatar