

Annual Goals for Computer & Telecom Services

2010-2011

Title:	Software Interfaces
Description:	Maintain a Unified Digital Campus (UDC) by supporting installed enterprise software products such as Banner and products interfacing with Banner. Specifically, the UC4 Document Management System is offering a new Agent for Banner, an add-on integration product which will be added to our current UC4 Banner interface. The Agent for Banner supports many new functional enhancements that make UC4 setup, administration, and maintenance easier than the previous solution, further extending the return on our UC4 investment.
Budget:	20000.00
University Goals:	1,2
Strategic Goals:	250,251
Responsibility:	Director, CTS
Participation:	System Architect
Results:	As of 2011, 19 separate applications were interfaced to the Banner system and two more to the UNA Portal system. In the UNA portal system a single sign-on has the potential of giving a user access to 19 different systems, which, in the past, would have required 19 different passwords. The Unified Digital Campus includes Banner, ODS (Operational Data Store), EDW (Enterprise Data Warehouse), BDMS (Banner Document Management System), UC4 (Banner job scheduling), ePrint (electronic printing versus paper printing), RMS (Residence Management System), Judicial (student affairs judicial actions), CBORD (manecard, door locks, video surveillance systems), Post Office, TMS (Physical Plant work order system), EMAS (recruiting), fsaAtlas (SEVIS enrollment and tracking), Workflow (electronic business processes), TouchNet (creditcard payment gateway), Angel (Blackboard Learning Management System), Luminis (UNAPortal), Argos (Banner, ODS, and EDW reporting software), FormFusion (electronic forms development), Intellecheck (electronic check generation), email and calendar. In 2011 CTS applied 42 Banner upgrades and 101 Banner patches to match the latest Sungard software releases. Several steps have to be completed before the upgrade or patch is

actually applied to the UNA system. CTS began the process by researching the known upgrade issues, documenting necessary patches and finally creating an application outline. In 2011, the Self-Service Banner WebTailor system was upgraded to version 8.3. This upgrade provided “breadcrumb trails”, back buttons, dynamic menus and home page modifications. It changed the entire look and feel of the Self-Service pages. The Workflow system for Banner was designed to make business processes transparent to all users by sending email notifications automatically to individuals at each step in a process. A successful workflow virtually eliminated the possibility of an action being forgotten or confusion over who needed to take the next action in a series. The UNA Functional Users, CTS staff, and 3rd party consultants worked as teams on each workflow design. During the 2010-11 academic year four new workflows were created. These included Course Substitution, Academic Standing, FERPA approval and EPAF approval. The general consensus was that these Workflows made a significant and positive difference to the University. As of June 2011 UNA was one of the leaders among Alabama Universities in this area of development. In 2011, nine areas on campus were set up to use BDMS: Academic Affairs, Accounts Payable, Admissions, Finance, Financial Aid, Human Resources, Office of International Affairs, Registrar's Office, and Teacher Certification. Document scanning volume has increased during the last year, and is expected to continue to increase. The fsaAtlas system allows automated record tracking of foreign students and synchs with the Office of Immigration SEVIS system.

Actions: New workflow suggestions are being discussed for the coming academic year. Twice in 2011 exceptions to patch procedures were authorized by the Operations Committee when time constraints would not allow the standard amount of time between steps in the process. While these exceptions went well, CTS should continue to diligently adhere to patch and upgrade procedures.

Improvements:

Title:	Microsoft Active Directory
Description:	Continue to manually reconfigure every server and computer on UNA Main and East campuses so they are connected to the UNA LAN's Active Directory structure. This project will connect all active Banner accounts to AD through the UNA Portal.
Budget:	6750.00
University Goals:	1
Strategic Goals:	250,252

Responsibility: Randall Horn

Participation: Director

Results: The Active Directory (AD) project was divided into two major phases. The first phase consisted of creating the UNA Active Directory and Domain architecture. Starting in Fall 2009 CTS moved the University Local Area Network (LAN) from Microsoft Workgroup architecture to Microsoft Active Directory architecture. This phase was completed in May 2010. The second phase consisted of manually reconfiguring every server and computer on UNA Main and East campuses so they were connected to the Active Directory structure. All users were brought into AD from Banner through the UNA Portal. As of April 2011, Active Directory Domain Services (AD) was implemented on 90% of the servers that could be converted and 60% (1000 out of 1500) of user computers (employees & labs). The biggest user benefit was single sign on to all computers on campus and more reliable access to server shares and server-based applications. AD gave UNA a consistent computer policy across groups of computers (desktops, laptops, servers, lab computers). AD also gave a campus-wide method to image computers without any special hardware or extra equipment. It allowed for consistent updates for the operating system and antivirus software and allowed all updates to be managed centrally. AD allowed antivirus software to be pushed to all machines that were joined to the domain without user intervention. Finally, AD allowed for the implementation of other projects that required a single directory source for user and/or computer information. As part of the AD project Microsoft Forefront Client Security was chosen as UNA's only campus antivirus program. Forefront Client Security was placed on every AD connected computer. Microsoft Forefront Client Security allowed for better management of antivirus/antimalware software, better reaction time in case of infections, better visibility of threats and trends. UNA will be migrating to Forefront Endpoint Protection sometime in 2011 for a more advanced detection engine and less resource intensive scanning and threat monitoring.

Actions: CTS will ensure all future computers and servers are connected to Active Directory if at all possible. The computer lab in Continuing Education's East Campus location is an exception to the CTS Active Directory project. Those computers are routinely used by non-UNA individuals.

Improvements:

Title: Firewall replacement

Description: Our current Cisco ASA firewall is not able to perform many of the functions necessary to run the network more efficiently over the next five years. This year we hope to research, bid and procure a new firewall solution that allows Graphical visibility tools, Application browser, Integration with enterprise directory services (Active Directory, LDAP, eDirectory), Detects

and blocks application vulnerabilities, viruses, spyware, and worms; controls web activity; all in real-time, in-depth application inspection that reduces the risk associated with unauthorized file and data transfer, Support for dynamic routing (OSPF, RIP, BGP), virtual wire mode and layer 2/layer 3 modes, Create multiple virtual "firewalls" within a single device as a means of supporting specific departments or customers, VPN support while remote user access is delivered via SSL VPN connectivity, Deploy traffic shaping policies (guaranteed, maximum and priority) to enable positive policy controls over bandwidth intensive, non-work related applications, View real-time bandwidth and session consumption for applications and users within a selected QoS class.

Budget:	\$40,000.00
University Goals:	1,2
Strategic Goals:	250,252
Responsibility:	Director, CTS
Participation:	System Architect
Results:	Purchased two Palo Alto PA-4020 firewalls for \$82,083. Palo Alto Networks, on April 2011, announced that NSS Labs awarded Palo Alto Networks the "Recommended" rating for passing all tests, including the TCP split-handshake spoof test, within its Network Firewall 2011 Comparative Test. NSS Labs noted that Palo Alto Networks price/performance is \$10 per protected Mbps, by far the most cost-effective product among the participating vendors -- Check Point, Cisco, Juniper, Fortinet, and SonicWALL. Palo Alto PA-4020 does something no other firewall can do: control based on application rather than on port number. For traffic coming into an enterprise, that's not very interesting, because the Systems Architect knows which applications need holes in the firewall. However, when it comes to outbound traffic, CTS hasn't had that vital visibility. The Palo Alto PA-4020 allowed CTS to write firewall rules based on the applications.
Actions:	CTS is now able to limit bandwidth specific applications of a suspicious (non-educational) nature rather than a "class" of applications which inevitably excluded some desired applications. This has resulted in more bandwidth available on a day-to-day basis for educational activity. CTS increases the bandwidth allocated to certain gaming applications late at night and reduces the bandwidth to those application during normal work and study hours. With the help of the Active Directory system, the Palo Alto PA-4020 CTS can pin point the specific machine and date/time of suspicious (viral) activity on the UNA LAN. This has resulted in faster reaction time to halt viral activity within the UNA LAN.

Improvements:

Title:	Live@edu email
Description:	After transferring all student, employee and alumni email accounts to Microsoft's Live@edu our goal is to maintain our presence and increase use of the Collaborative space known as the Skydrive.
Budget:	0.00
University Goals:	1,2
Strategic Goals:	250,253
Responsibility:	Director, CTS
Participation:	System Architect
Results:	In May 2010 the President and the Executive Council approved a migration from the UNA SunOne email system to the "free" remotely hosted Microsoft Live@edu email system. The Student Government Association was a prominent stakeholder in this project. The SGA approved the plan in late April 2010. This transition will help resolve the long-standing issue of restricted email box size for employees. By moving student email boxes to a remotely hosted service CTS will be able to greatly increase the size of employee email boxes without purchasing more, very expensive, mass storage.
Actions:	There are many improvements as a result of the move: -Employees have 125 times more email space and students have 500 times more email space than they had in 2010. -Live@edu provided protection from malware such as viruses, spam, and phishing attacks -Email can be automatically sent as text messages to phones. -UNA email for life: Alumni can continue to use the UNA branded email account after leaving UNA. -The 25GB document storage space is accessible online from anywhere there is internet access. - Within the 25GB storage space, users can create private, shared or public folders. -Within the 25GB storage space, users can edit Word, Excel, PowerPoint, and OneNote documents without the software installed on a computer. -Social networking is offered as collaboration option. -Calendars can be shared without additional software. -Instant Messaging, voice and video chat. -Mobile access to Email, Instant Messaging, text, calendar, and campus directory. -UNA pays no yearly maintenance costs for product enhancements or system updates. -Live@edu has an Enterprise-grade infrastructure with disaster recovery and off-site backups. -Live@edu fully integrates with existing UNA Microsoft investments and programs. -Students are provided access to free Microsoft development tools and discounts on

other Microsoft products.

Improvements:

Title:	Disaster Recovery vulnerability progress
Description:	UNA is vulnerable to any disaster that causes major damage to the CTS building and needs to develop a disaster recovery capability using available resources. UNA business continuity depends on the continuity of our information technology (IT) infrastructure. An uncontrolled degradation of IT services will cause the University to stop functioning as an organization until services can be restored. A new IT Disaster Recovery space in the basement of the New East Campus Maintenance Building will give us an opportunity to better protect Banner Data and some of the 90+ servers at the main campus location. This year only the most basic infrastructure can be installed. It will take several years to complete this project.
Budget:	\$30,000.00
University Goals:	1,2
Strategic Goals:	252,253
Responsibility:	Director, CTS
Participation:	System Architect
Results:	UNA is vulnerable to several types of disasters and it would be very difficult to continue business operations if something happened to make the Computer Center uninhabitable. Most Universities are in the same situation or worse. The good news is that UNA made several key decisions this year significantly improving the overall IT Disaster Recovery profile. The decision to move essential systems such as Email and the Angel Learning Management System to remote hosts provided Enterprise level disaster recovery for those systems. The capability to use Live@edu as a collaborative document storage and editing area provides tremendous disaster recovery and business continuity potential. However, until the Banner system is fully redundant and the backup is geographically separated from the Main Campus, UNA's business continuity will be at risk. The CTS Virtualization project has also improved the UNA disaster recovery profile. Because 55 of UNA's servers are now virtual; they can be electronically moved to an alternate location many times faster than when the servers were physical. The project to create a Disaster Recovery site on UNA's East campus is moving ahead slowly. The building was opened for occupancy in May 2011. The CTS room is unfinished, unheated or air conditioned and without a backup UPS or a backup diesel generator. Despite these obvious short comings CTS has already installed one

equipment rack with network switches connecting the entire East Campus. The East Campus Voice over IP Telephone equipment is also located in the CTS East Campus Disaster Recovery room. The total investment so far is approximately \$6,800. Moving ahead in the next 12 months will require a considerable investment in HVAC and electrical systems.

Actions: CTS has already installed one equipment rack with network switches connecting the entire East Campus. The East Campus Voice over IP Telephone equipment is also located in the CTS East Campus Disaster Recovery room. East Campus now has protected site housing a stand-alone VoIP telephone system directly connected to the Main Campus telephone system via a digital MetroE link and some of the LAN switches and wireless systems for the East Campus.

Improvements:

Title:	Technology Maintenance and Replacement
Description:	To maintain and replace UNA technology as it ages and to introduce new technology to the campus to keep pace with the ever changing IT environment. With 1800+ computers on campus and 20+ hardware appliances we are not able to maintain an equipment replacement cycle in any reasonable way. We can replace less than 200 computers this next year with our current budget. Moving the Banner system to a Linux-based Operating System will require an expansion of the current virtual server environment. The current telephone system must either be expanded or replaced to meet the needs of several new buildings planned for the East Campus and Main Campus.
Budget:	\$400,000.00
University Goals:	1,2
Strategic Goals:	251,252,25
Responsibility:	Director, CTS
Participation:	System Architect
Results:	During the last 12 months CTS purchased the following hardware and software. This does not include yearly software or hardware maintenance fees. \$154,650 for 165 HP AIO desktop computers \$ 50,423 for 20 iMacs, one Mac Server, one Mac storage unit \$ 13,961 for Smart classroom equipment \$ 35,382 for Brocade network equipment \$ 21,142 for 16 HP laptop computers \$ 24,312 for various software applications \$ 8,673 for MacBook Air and iMacs \$ 115 for Scanner \$ 6,490 for Network storage \$ 4,289 for computer memory \$ 2,665 for Network servers \$ 18,275 for Migration of UNA web

pages to remote hosting \$ 8,942 for three MacBook Pros \$ 52,650 for 25 eClassroom projectors \$ 2,800 for Network cable \$ 17,435 for 10 Fujitsu tablets \$ 5,690 for 3 HP printers and 200 sticks of computer memory \$ 9,048 for two HP 8740 work stations \$ 82,068 for two Palo Alto firewalls \$ 14,782 for one Mac ZOM4 work station For a total of \$533,792.00

Actions: The security of the UNA LAN increased dramatically with the purchase of the Palo Alto firewalls as did bandwidth management. Both the Palo Alto firewall and the Active Directory system greatly improved CTS's ability to control viruses within the UNA LAN. The Active Directory system greatly improved CTS's ability to manage standard application updates across campus for the first time ever. In an austere fiscal environment CTS was able to replace equipment in six existing computer labs and create two new computer labs. CTS lengthened the "life" of older computers all over campus by increasing RAM to at least 2GB in every machine. CTS increased its "green" foot print by increasing the number of servers utilizing virtual server technology while decreasing the number of physical servers. CTS made great strides to increase UNA's Disaster Recovery by remotely hosting UNA's email services and its Web page services.

Improvements:

Title:	Technical training and conferences
Description:	Keep the CTS departmental knowledge base current and prepare personnel for this year's technology initiatives. Bring CTS closer to the goal of having trained back-ups for every critical position.
Budget:	0.00
University Goals:	1
Strategic Goals:	250,251
Responsibility:	Director, CTS
Participation:	System Architect
Results:	CTS personnel traveled to several technology conferences and participated in several software training classes this year. \$13,795 for Accelebrate web application training \$ 4,800 for Red Hat Linux Administrator training \$ 245 for IT Symposium conference \$ 200 for TN Banner Summit \$ 424 for TN IT Training \$ 4,200 for Palo Alto firewall training \$ 5,940 for Cisco UCS training Total cost of training and conferences was \$29,604 \$ 5,240 for Banner Summit conference
Actions:	These conferences and training classes directly improve CTS's on-going

support for ERP applications such as Banner and enable CTS to properly implement new projects such as the Palo Alto firewalls.

Improvements: