

Assessment of Non-Academic Outcomes (Fall 2003 and Spring 2004)

Please provide the information below about how your unit assesses the extent to which it meets its expected outcomes. If you need assistance, please contact Dr. Virginia Wheelless at 565-2085 or on Groupwise email. This information is due in the Planning Office no later than February 2, 2004 and will be updated annually.

Unit: Computing and Information Technology Center (CITC) Date February 2, 2004

Person Completing the Information Maurice Leatherbury Email leatherb@unt.edu

Head of the Unit: Richard Harris Email harris@unt.edu

- I. **Mission:** Provide the mission of the unit and a statement about how it relates to the university's mission.

The mission of the UNT Computing and Information Technology Center is to provide effective shared computing and information technology services in support of the mission of the university.

Functional Mission: The Computing and Information Technology Center's unique role in accomplishing the University's mission is to provide the primary *university-wide, shared* resources of computing hardware, software, data and voice communications, and professional personnel on campus. The Computing and Information Technology Center is called upon to provide computing and electronic communications resources when it can do so more effectively or more efficiently than separate units.

In addition to the traditional provision of host computer services and development of the data communications infrastructure, the center has a mission to provide high level technical services to support and improve the effectiveness of distributed support personnel.

The Computing and Information Technology Center's mission is accomplished in open cooperation and partnership with its customers and other service providers. The primary mechanism for facilitating communications between its constituencies and the Computing and Information Technology Center is the University Information Resources Council and its associated advisory groups including the Distributed Computing Support Management Team. The Information Resources Steering Committee and the University Planning Council supply strategic direction to computing services on campus.

To meet its mission, the CITC:

- Supplies effective information technology in support of administrative functions of the University in partnership with administrative information owners and providers;
- Supports research and instruction by supplying shared host computing services, including shared high-performance computer systems as well as a student general access computer lab;
- Provides data and voice communications to the campus;
- Provides expert statistical consulting to students and faculty;

- Operates the primary help desk on campus for computing and communications assistance;
- Supports the University's central Web site and several associated Web servers and the campus' course management system (WebCT);
- Supports the distributed delivery of networked computing services in colleges, schools, and administrative departments;
- Provides the faculty and staff e-mail system as well as the student e-mail system;
- Provides information technology security services and support to the campus.

II. Previous Evaluations of the Unit: Provide a description of the evaluations/assessments conducted in your unit over the last 5 years and changes that have been made based on the results of these assessments.

See the attached chart for the various evaluations that the CITC has conducted over the last five years and the changes that have been made based on the results of those assessments (the number and responses to the assessments are too lengthy and too interrelated to be listed here.)

III. Statement of Expected Outcomes: Provide a brief list of the expected outcomes for your unit for 2002-03 or 2003-04 as of this date. Each outcome listed must be capable of being measured by the means noted in IV below. Please number the outcomes (1 to x). After each outcome, describe how the outcome supports student learning and student development.

See attached chart

IV. Measuring Expected Outcomes: Describe how the unit measures how the outcomes have been achieved and provide a list of methods and/or tools with the following information:

1. Name of assessment method or tool
2. If the method/tool is copyrighted, provide the name of the company who "owns" the tool.
3. Frequency of use - how often is this tool/method used, e.g., every spring semester students, staff, and faculty are surveyed about parking at UNT; customers are asked to complete evaluation forms when services are rendered; or each fall, the Enrollment Management Committee reviews the results of the Graduating Student Survey produced by the IR&A Office.

See attached chart

V. Use of Assessment Results: Describe how the results of the assessments described in IV above are shared with staff in the unit? How are the results used to improve the unit? Help improve student learning? Enhance student development? Meet the university's vision?

See attached chart

VI. Changes Made Based on Assessment Results: Describe how the unit has changed (or why it has not changed) based on the results of the assessment of outcomes. Indicate the year the change was implemented. Please indicate how the expected outcomes have changed if applicable.

See attached chart

Signature of Person Completing the Form:

_____ Date _____

Signature of Unit Head after Reviewing the Form:

_____ Date _____

**Assessment Report Matrix
University of North Texas**

**Computing and Information Technology Center
February 2, 2004**

Dept/ Division	Expected Outcomes	Assessment Tools/ Measurement	Assessment Results	Changes based on Results Taken	How do changes help UNT meet its Vision and support student learning?
Communications Services	Internet1 bandwidth utilization doesn't exceed 80% of the available bandwidth for more than 10% of a 24 hour period.	5 minute average shown on MRTG graphs	In the past five years, the available bandwidth has fallen short of the goal twice. Currently, we are performing well within the standard.	The CITC increased bandwidth capacity from 9Mbps to 45Mbps in 1998 and from 45 to 90 Mbps in 2003	High-speed bandwidth is important both to students on campus who try to obtain information from the Internet as well as to students from off campus who use WebCT for their coursework
	WAN bandwidth utilization between the main campus and Richardson doesn't exceed 80% of the available bandwidth for more than 10% of a 24 hour period.	5 minute average shown on MRTG graphs	Currently, we are performing well within the standard.	If goal is exceeded, evaluate the cause and use bandwidth shaping to return to normal, or if required add bandwidth to the service.	High-speed bandwidth is important both to students on campus who try to obtain information from the Internet as well as to students from off campus who use WebCT for their coursework
	WAN connection to Richardson, including routers and circuits, is available 99.8% of the time	5 minute average shown on MRTG graphs	Currently, we are performing well within the standard.	If goal is exceeded, evaluate the cause and take appropriate action to remedy the failure	Reliable Internet bandwidth is important both to students on campus who try to obtain information from the Internet as well as to students from off campus who use WebCT for their coursework
	The core router on the main campus is available 99.8% of the time	a combination of Nagios and MRTG graphs or the new network monitoring system	Currently, we are performing well within the standard.	If goal is exceeded, evaluate the cause and reconfigure the core network and install a redundant router to maintain the desired level of service	Reliable data communications service is important for any computing need on campus.
ACS/CITC	The CITC Helpdesk	Phone and E-	Statistics and feedback	Helpdesk FAQs are	Helpdesk Services provide a starting

Helpdesk	provides information regarding computing and information technology services and problems at UNT and successfully resolves or refers over 90% of incoming inquiries.	mail and web statistics; Remedy trouble ticket statistics; follow-up resolved incidents with email or phone contact.	indicate the relay of information from the Helpdesk. Checks of the FAQs and online documentation have indicated the need to continually update and revise information in areas where service elements are changing on a regular basis.	revised as new information is given. By linking directly to the area responsible for information, we make sure we are using the latest information from the responsible department. When sites are found to not have questions adequately answered, we go to the source to let them know customers have additional needs not met by the current information.	place to find information about student computing with the availability of up-to-the-minute information. Providing information on the tools available to do their work enhances student learning.
ACS Student Computing Services	Maintenance of a general access lab supporting students' work, research, and learning through provision of useful hardware and software tools and effective consultation in their use.	Lab usage statistics from Checkin 4; survey of customer satisfaction with the ACS lab; records of hardware and software acquisitions.	Statistics indicate that the ACS lab is heavily used with particular demand for Windows-based systems.	As hardware acquisition cycles have allowed, Macintosh systems have been replaced by Windows-based PCs.	Meeting the on-campus computing needs of students supports their learning by providing an effective environment to access online instructional materials or to efficiently complete class assignments.
	Coordination and support of technology and digital services for students with disabilities on campus through the maintenance of an "adaptive lab" in close cooperation with the Office of Disability Accommodation.	Statistics on use of Adaptive stations and/or equipment by lab patrons available through Checkin 4 software; survey of customer satisfaction with ODA and the ACS GAL; records of	Feedback from patrons and ODA staff indicate that lab resources are useful to patrons requiring adaptive hardware or software.	In response to anticipated needs additional hardware has been acquired to provide computer output for the visually impaired and other adaptive software has been upgraded to the latest versions.	Providing access to adaptive technologies ensures that all students have access to the same learning resources.

		hardware and software acquisitions.			
ACS Research and Statistical Support	Provide access to current research tools and statistical methodologies to the research, instructional, and administrative communities at UNT.	Contact hours with clients; web survey of clientele twice a year to evaluate customer satisfaction; e-mail or other feedback from RSS clients.	Customer feedback indicates that effective information regarding statistical research is being provided.	The number and diversity of software tools has been expanded as new analytical requirements are discovered in relation to University research activities.	Effective statistical research support improves the instructional environment by assisting in the planning, evaluation, and provision of instructional services as well as enhancing research activities on campus.
ACS research and instructional computing	A high capacity computational cluster supports scientific research computing.	Usage statistics and user feedback.	Statistics show usage equivalent to as much as 500 compute days per month and indications from researchers are that the cluster has been useful for supporting their grant acquisition and research publication.	Compute nodes are added on a regular basis to ensure that the latest technology is available to support research requirements.	By maintaining an effective research environment, the University can provide its students with the latest information gleaned from high-level research and scholarship.
	Multiuser systems support access to research resources and for specialized instruction needs.	Usage statistics and user feedback.	Statistics and feedback indicate that the multiuser environments continue to meet the needs of researchers and instructors.	Technology has been upgraded as needed to provide the most effective research or learning environment.	Effective multiuser systems enhance the learning experience by providing efficient access to research and teaching materials and environments.
ACS Documentation and Training Services	A new publication of the Benchmarks Online news journal is produced each month.	Timestamp on Benchmarks Online issues; number of hits on the Benchmarks website; number of subscriptions.	Benchmarks Online continues to be published on a monthly basis; increased usage of site is evidenced by Web User Account statistics; 373 people currently belong to the Listserv that notifies people when a new	An online format was adopted to reach the widest possible audience and provide easy access to archived information. Documentation has been redesigned to utilize the most effective format for conveying computing information on campus.	Access to the latest information about the campus computing environment enhances a students learning experience and enables faculty to use computing resources efficiently for the delivery of instruction.

			issue of Benchmarks Online becomes available.		
	UNT students, faculty, and staff receive effective training on the topics offered by Academic Computing Services.	Short Course enrollment records and course evaluations.	Short course enrollment continues to show interest in the course topics. Short Course Evaluations continue to be positive.	As new computing topics become of interest, short courses are added to address the training need.	Effective use of computing tools on campus via training enhances the learning and instructional delivery processes.
ACS Remedy Call Tracking Support	Remedy Action Request System applications are available at least 99.5% of the time (during production hours - not during scheduled maintenance).	Manually track downtime since an outage implies that the tracking system itself is down.	In the past five years Remedy Applications were unavailable during production hours for a total of 8 hours in 1998, and 20 hours in 1999 on original MMS server. Downtime 6 hours in 2001 on second server.	Backup software was changed to product that did not hang database server on failure. Log file maintenance was changed to prevent log overflow (caused by new backup software that cannot maintain log files).	Remedy Action Request System applications are required to facilitate tracking all other campus information systems and resolving downtime as quickly as possible. Having Remedy up close to 100% of the time makes this possible by being available for immediate response to problems in any campus computer service.
	Remedy Action Request System application client response times (on the UNT WAN) do not exceed five seconds more than 5% of the time.	Administrators time application response times for various clients on a regular basis while testing application changes.	Application response times for loading the most complicated forms have remained in the 3-4 second range for the past five years. ARSPerl web pages were slower until 5.x.	Locally written ARSPerl web pages were pointed to smaller forms with better indexes to improve response times to match native Remedy and Remedy web clients.	Rapid application response encourages use of the tracking system, which improves computer support work timeliness and completion rates, and facilitates the achievement of much higher customer satisfaction with computer services on campus.
Web support	The central web site, www.unt.edu is available at least 99.5% of the time.	Nagios monitoring software monitors and notifies about cluster nodes being down. Remedy call tracking is also used to track any downtime.	With the Exception of variables out of the control of Central Support (i.e. Network/ power outages,) the Central Web Server has been unavailable for less than 24 hours (99.99% available) over the past year. During that time, the server has been unresponsive for less than 12 hours.	The bulk of downtime was associated with hardware failure of the attached disk storage. We are in the process of moving towards a redundant and reliable storage medium. We are already using a load-balanced web-server environment to provide high availability.	The central website serves as both a communication tool to the UNT community and marketing and recruitment tool for prospective students. The high availability of this site is critical in the daily communication on campus and the continued growth of the University.

			During the remaining 12 hours, we had a page available explaining the lack of availability.		
	WebCT is available at least 99.5% of the time during academic sessions	Nagios monitoring system and custom perl script to check server health. Remedy call tracking is also used to track any downtime.	Last years outages: Scheduled downtime: 7hr 15 minutes (6.5 for hardware migration) all overnight. Unscheduled downtime: 30 hours due to hardware failure in Spring of 2003. Most of this occurred during the night at non-peak times Total: 37.5 hours (99.99% available)	Although we achieved the goal, it was by a very slim margin. We have taken steps with the latest version of WebCT to reduce the downtime considerably. We have purchased new hardware to provide failover support and are setting up load-balancing support to increase productivity.	Online course delivery has become as essential business method for the University when considering the cost-benefits of virtual classroom space and the ability to reach students from great distances. Thus WebCT is now a mission-critical application for the University.
	WebCT initial response time doesn't exceed five seconds more than 10% of the time	Nagios monitoring system and custom perl script to check server health	With the exception of aforementioned downtime, the response time for WebCT has never exceeded this standard, although some functions that are inherently related to the software may take longer.	Although standards were being met, we have still chosen to upgrade our aging server to proactively handle the ever-increasing load of WebCT activity. Since the upgrade, WebCT response time has improved considerably.	Providing an online course service must not only be reliable, but must also be efficient to promote buy-in by the faculty and students.
Administrative Computing	EIS is available at least 99.5% of the scheduled uptime	A monitoring system that is yet to be selected and installed	The EIS system hasn't been operational long enough (only five months) to provide meaningful statistics	Various measures can and will be taken to improve uptime if necessary, including adding additional clustered computers, connecting the computers to redundant storage area networks, etc.	Since the EIS will provide almost all administrative services on campus in the near future (HR, finance, portal, student information system, and contributor relations,) it is essential that the various constituencies using that system have reliable access to its services.
UNIX Services	Eaglemail IMAP service is available at least 99.5% of the	Nagios monitoring system and	During 2003 Nagios reports 360d 20h 54m 5s which yields	If needed, we can increase our uptime by installing additional servers.	Electronic mail has become an essential form of communication for the University considering the cost

	time	MRTG graphs.	99.974% uptime.		savings and ease of use versus paper-based communications.
	Eaglemail Web client response times (on UNT LAN) do not exceed 5 seconds more that 5% of the time.	Periodic performance tests by EagleMail system manager		If needed, we can decrease response time by adding additional servers.	Eaglemail is intended to be the primary method of communicating with students for the EIS as well as other administrative and academic functions. If it is slow compared to commercial and/or free alternatives, students won't use it, so quick response times are essential.