

# INFORMATION TECHNOLOGY SERVICES

## VISION PLAN

### 2004-2005

#### Executive Summary

Information Technology Services (ITS) provides mission-critical information technology infrastructure and services to University of Texas at Austin students, faculty, and staff. A significant part of the ITS mission is to support the University's academic programs by providing a ubiquitous and robust information-technology-based environment, technological capabilities, and able staff who can assist students, faculty, and staff in their learning, teaching, research, and outreach activities

#### **Pre-allocated, Ongoing and One-Time Capital Funding for Fiscal Year 2004-2005**

#### Pre-allocated to ITS

**\$ 3,244,857**

This pre-allocation represents a 4.8 % increase over the allocation for 2003-2004 in order to fund salary and fringe benefit increases per the University's policies for fiscal year 2004-2005. See "ITS Infrastructure and Services Supported or Supplemented by Funds Other than ITAC" (page 4) for details.

#### Ongoing Operations

**\$3,015,484**

This ongoing operations total represents a 11.4% overall increase to pay for salary and benefit increases and the increase for the Microsoft License. The payroll increases are per the University's budget policy for the fiscal year 2004-2005.

<i>Student Microcomputer Facility (SMF) Operations Help Desk and Training Services</i>	\$1,407,556
<i>Life Cycle Funding for SMF</i>	\$ 360,000
<i>Student Computer Use Survey</i>	\$ 20,000
<i>Microsoft Student License</i>	\$ 600,000
<i>Student Software Bundle</i>	\$273,000
<i>Network Web/File Storage</i>	\$354,928

#### **Summary Discussion of Projects Proposed for ITAC Funding for 2004-2005**

All of the amounts for Pre-allocated and Ongoing categories have been updated to reflect what is required for the 04-05 Fiscal Year per the budget submitted and required salary pools and benefit cost increases per the Budget Office's directions. The requests for one-time projects have been updated to reflect projects that are in alignment with current technology requirements and requests.

#### **Ongoing Operations**

**\$3,015,484**

#### ***Student Microcomputer Facility (SMF) Operations***

**\$576,454**

Salaries of our professional full-time classified staff have increased by an average of 3% per year and benefit costs have increased by an average of 11% per year. The third floor of the Undergraduate Library has been equipped to provide multi-media computers and printers in addition to the 2<sup>nd</sup> floor SMF. Additional recurring funding to support the SMF is required to accommodate the budget policy increases in salaries and the cost of benefits.

#### ***Life Cycle Funding for SMF***

**\$360,000**

The Student Microcomputer Facility is on a three-year replacement cycle. This funding is aggregated to upgrade the equipment and software in the SMF. It is standard procedure to obtain a loan for the three year refurbish and repay the loan from this funding.

#### ***Help Desk and Training Services***

**\$831,102**

The goal of the ITS Help Desk is to answer questions and help solve problems for all computer users in the University community. The recognized strain of call center work and the transient nature of student employees make it difficult to hire and retain Help Desk staff (approximately 25 students and 13 full-time employees) with the knowledge and skills necessary to support the UT community. The Help Desk also works closely with the ITS Training group to make sure short courses are offered to students on topics of interest and to help design and deliver a Freshman orientation program that communicates with more than

7,000 students at the beginning of each year. The requested amount is 75% of the total costs based on an allocation between services to students and services to faculty and staff. The allocation is based on activity logs maintained by the Help Desk.

***Student Computer Use Survey*** **\$20,000**

Beginning in spring 2002, ITS began an annual information technology survey with the intent of monitoring the utility and perception of the services offered by ITS and other campus IT providers. The initial survey was sent to a random sample of 2,000 users and the information reaped has been used to enhance the services where appropriate and to phase out services that are no longer in great demand. The survey data has also helped identify areas where new services are desired. The effectiveness of the survey depends on its being conducted at least once a year for comparison and analysis.

***Microsoft Student License*** **\$600,000**

The UT System Chancellor's office funded the Microsoft software license from September 1998 through August 2002. Beginning in Fall 2002 the amount of UT System support decreases each year until UT Austin assumes the entire cost of its portion of the license. Starting in the Fall Semester of 2004 the full cost of the student licenses must be paid without any subsidy from UT System. This amount of ITAC funding enables ITS to offer to all students a suite of Microsoft software that most find essential: the Office suite (Word, Excel, PowerPoint, Outlook, et al.) plus Windows upgrades, plus Visual Studio.

***Student Software Bundle*** **\$273,000**

The student software bundle refers to licensing and support for student-owned systems of additional software that delivers substantial large-volume economies while increasing information and network security, including anti-virus, firewall, other security tools, Eudora, MacOS upgrades.

***Network Web/File Storage*** **\$354,928**

Growth in demand for online disk storage is driven by need to support personal Web pages, collaborative projects, roaming e-mail access, and backup for personal devices (especially mobile and wireless devices). This requires a server and storage investment which is being amortized over three years for allocation of 75MB per student. The total amount includes an increase of \$4,928 to pay for annual salary and fringe benefit expense increases for one full time equivalent employee supporting this service.

**Proposed New Ongoing Funding for Enhanced Operations** **\$ 80,000**

**Unsolicited E-mail (SPAM) Filtering** **\$80,000**

SPAM is more than a nuisance to the university. SPAM directly impacts university faculty, student, and staff productivity when they waste valuable time sorting through unwanted emails, or when SPAM fills a user mail box and they cannot receive legitimate email. SPAM directly impacts university operations due to increased mail server traffic loads, requirements for additional expenditures for email storage and backup solutions, and increased bandwidth utilization. Many faculty and staff use the University Mail Box System (UMBS), which has over 70,000 users and handles upwards of 500,000 e-mail messages each day. Others use departmental email services to support academic operations, thus the number of emails received on campus is much higher. Industry figures put SPAM volume at 40% of all e-mail. This means each day perhaps 200,000+ SPAM messages could be received on campus, were it not for the efforts of university technical staff to use manual or basic automated means to filter SPAM messages and reduce the impact. This approach is somewhat effective, but can be burdensome as each email server administrator must individually place filters on each university email server. We propose to use automated means to reduce SPAM impact on campus and increase administrator and individual productivity, specifically by implementing an enterprise Mail Processing server with an enterprise anti-spam service subscription, and adding an additional technical staff member to provide support for institutional e-mail filter management services. This total amount requested is based on one full time equivalent employee plus benefits, one time procurement costs, maintenance and support for an enterprise level Mail Processing server capability and an enterprise subscription for an anti-spam service amortized over a three year useful life. The \$80,000 per year would be required for three consecutive years. Funding requirements would decrease at the beginning of the fourth year once the initial purchase costs have been fully paid and the service is in a maintenance mode of operation.

**Proposed One-Time Capital Expense Projects for 2004-2005** **\$320 000**

ITS has identified the following list of one-time capital projects requiring ITAC funding. The remainder of the unfunded projects or portions of projects will be shifted into later years unless alternative sources of funding can be identified.

**Blackboard Course Management System****\$140,000**

Blackboard is a course management system to help faculty make better use of the Web in their classes. Instructors create and manage course Web sites without having to know HTML. Faculty and students use Blackboard to communicate and collaborate through real-time chats, threaded discussions, class e-mail, and online file exchanges. From a pilot project in Fall 2000, Blackboard has grown into a system of 1,600 classes with 2,000 instructors and was used in Fall 2003 by 43,000 people. Recurring costs include the salaries of support staff, the licensing of software and the life cycle replacement of servers and database storage.

**Student Community Area in UTDirect****\$ 80,000**

Student Government has proposed improved electronic community support services on the Web. To support that effort ITS would provide a server and backup to host the software and four professionally managed student developers to provide and integrate services into the existing student portal, UT Direct.

**New Enterprise Directory Service****\$100,000**

The vision of the Abra Project is to provide the University community with enterprise-wide identity management, authentication, and directory information management services that are flexible, accessible, reliable, and secure. To do this we need new hardware and software to run and support a new LDAP enterprise directory which can support software applications around campus in academic units.

## **ITS Infrastructure and Services Supported or Supplemented by Funds other than ITAC**

Many services and activities for students, faculty, and staff in the ITS portfolio are funded in whole or in part from sources other than ITAC. The services below receive some or all of their financial support from non-ITAC funds.

<i>Communications</i>	<i>Custom Contract Support Services</i>
<i>Data Center Operations</i>	<i>Departmental Contract Services</i>
<i>Help Desk</i>	<i>Internal Facilities Management</i>
<i>IT Security Office</i>	<i>Management and Administrative Services</i>
<i>Printing Services</i>	<i>Research and Statistical Consulting</i>
<i>Resnet</i>	<i>Software Distribution Program</i>
<i>Student Microcomputer Facility (SMF)</i>	<i>Telesys</i>
<i>Training</i>	<i>UMBS</i>
<i>Unix Timesharing Services</i>	<i>UTNet and Internet Bandwidth Services</i>
<i>Video</i>	<i>Web Office</i>
<i>WNT/Exchange Enterprise</i>	<i>Telecommunications</i>
<b>Total Non-ITAC Infrastructure and Service Funding</b>	<b>\$22,422,056</b>

## **Appendix A**

### **Network Status**

Established in 1987, the Networking Services group of UT Austin's Information Technology Services (ITS) maintains UTNet. UTNet is a campus-wide high-speed digital data network available to all computer users on the UT Austin Campus. UTNet also comprises a core set of network-based services, which are made available to all of its users.

UTNet has grown over the last 15 years to become what it is today: an information resource that is essential to the academic, research, and business operations of the University. Recently, the UTNet backbone network has been re-engineered, which has resulted in a large increase in network performance. The new Ethernet switching core is the current backbone system to which all new and renovated building networks are attached. The complete UTNet system is actually several systems linked together. While some technologies have been replaced, much of the equipment that has been installed over the years is still in use. As such, the UTNet system includes several generations of equipment reflecting the rapid evolution of networking technology.

UT Austin is the largest university in the United States, and consequently the campus network serves a community of approximately 70,000 people (50,000 students and another 20,000 or so faculty and staff) in over 139 buildings, organizations and remote sites. Ten years ago, UTNet served a mere 400 computer located at about 20 sites. By 1992 the number of connected computers had increased to 4,000. From 1994 on, the combination of the World Wide Web and the widespread adoption of low cost, high performance desktop computers led to an explosion in network access and utilization. Currently there are approximately 35,000 computers on UTNet, a number that is roughly twice as large as the number of telephones on campus. The current population includes some 5,700 computers on the ResNet system, a 6,500 port dormitory network for students who live on campus. More than 8,000 dial-in user accounts are supported by the 2,500 lines of the Telesys dial-in system, and over 80,000 users have e-mail accounts on the mail.utexas.edu system.

There are nearly 500 Web servers on campus, with approximately 300,000 pages of information being indexed on a regular basis. Currently, 75 percent of UTNet traffic is Web-related, with hundreds of Web traffic flows per second (each flow is the result of a "Web-click") being delivered by the backbone routers during the busy part of the day. There has been an 8,663 percent increase in the number of assigned IP addresses ("hosts") from November 1988 to May 1998. Traffic moved across the UTNet backbone by routers was measured at 68Mbps during the busiest time of the day in 1993 to 177Mbps during the busiest time of the day in 2003. 2003 Internet traffic has increased 100% over 2002. The increase in traffic has not abated during the last 10 years.

Wireless network services were implemented in 2002 and the early part of 2003 to provide 316 wireless access points and 768 dynamic wireless device addresses for a total of 1,084 total wireless addresses. A new authentication system supporting 3,000 wireless users was completed in the first quarter of 2003.

While everyone depends upon the UTNet system to get their work done, few people ever think about the network and fewer still know how the network functions. Instead, everyone simply assumes that the network will be there when they need it. This level of confidence is an appropriate response, since no one using e-mail or the Web should have to know how the underlying network system operates. This level of confidence is also a powerful indicator of how successful the UTNet system has been in delivering reliable, production-quality services 24 hours a day, seven days a week. From the outside, the network appears to most users as something so reliable that they can take it for granted. The UTNet capabilities to handle the new evolving network based video conferencing technologies and the increased reliance upon data backup and storage across the network are significant as areas where the transparency of the network has been demonstrated. However, a look "under the hood" at UTNet reveals a complex and dynamic system in a constant state of change.

#### **Telecommunications Infrastructure**

ITS maintains extensive communications networks for user access to the University's computers from desktop computers and workstations and for data communications between computers and with the Internet. The campus computer network, UTNet, is not a single entity, but a system of networks, equipment, and software that enable information to be sent between campus computers and computer sites all over the world. The network employs optical fiber media for inter-building computer communication.

UT Austin is a member of the Greater Austin Area Telecommunication Network (GAATN), which has completed installation of 250 miles of optical fiber to connect educational and government facilities. The Pickle Research Campus and the main campus are connected by optical fiber. UT Austin utilizes a connection to the Internet through a common carrier by a 155Mbps circuit.

Within individual buildings, local-area networks (LANs) connect to UTNet by means of switches and routers. These switches and routers perform address filtering to reduce message traffic on the backbone and the individual LANs. The result of this network configuration is that a workstation connected to an Ethernet, Token Ring, or LocalTalk LAN in a particular building has access to the campus-wide network and thence to regional, national, and worldwide networks.

Telesys Dialup System (<http://www.utexas.edu/its/telesys/>)

ITS provides telephone dial-in services on a monthly fee basis (\$12 per month) to faculty, staff and students who have a desktop computer and a modem. Telesys supports multiple communications protocols and includes features for data compression and error detection. Over 2,500 modems are currently in use serving 13,000 subscribers. Most services require a user ID and password for authentication.

### **Access to National Academic Networks**

UT Austin participates in several national networks (e.g., Internet 2) through which its users can exchange mail and files with colleagues at other sites, get access to databases and servers, and remotely log in to other machines. Most of UT Austin's systems are connected to the Internet. Access to the Internet is provided through the Texas Higher Education Network (THEnet). THEnet connects the UT System component institutions, as well as approximately 300 other educational, governmental, and industrial research organizations and to all major Internet backbones operated by commercial Internet providers such as Sprint, ANS, UUNet Technologies, and Performance Systems International.

### **The University of Texas System Network (UTSN)**

The UTSN is a part of the Texas Backbone Network, which is a cooperative endeavor with State of Texas Department of Information Resources, Texas A&M University, and the University of Texas. The UTSN is an inter-institutional network for carriage, coordination, and integration of voice, video, and computer communications managed and administered from the network operation center (NOC) located in the Service Building at UT Austin. The UTSN is managed by OTS, on behalf of UT System Office of Technology and Information Services. Management and operational policies for UTSN are established by the OTIT. Policy development is done in collaboration with the UT Clients through the UT System Strategic Leadership Council (SLC) and the UT System Information Technology Management Council (ITMC). Consultation concerning operational procedures, service levels, and technical issues is provided to OTS by the UT System Telecommunications Advisory Council (TAC).

## **Appendix B**

### **Computer Lab Status**

The Student Microcomputer Facility (SMF) has been providing on-campus computer access to students since January 1994. With half a million check-ins every year, the 193 computer workstations and on-site assistance in the SMF are available more than 102 hours during a normal long semester week, with extended hours during finals.

Equipment was reallocated to the third floor of the Flawn Academic Center in early 2003 to allow for greater use of multimedia resources in the Undergraduate Library.

**Appendix C**  
**Classroom Technology Status**

ITS has two technology classrooms. The classrooms are located in the Computation Center building, room 8 and the Flawn Academic Center (the Undergraduate Library) in room 227.

## **Appendix D**

### **Curricular Innovations**

ITS provides servers, technical, and customer support for Blackboard and WebCT course management systems. Also provided is access to Usenet news and to locally created mailing lists and newsgroups.

## **Appendix E**

### **Help Desk**

The goal of the ITS Help Desk is to answer questions and help solve problems for all computer users in the University community. The operation includes a rapid response telephone, e-mail, and walk-in consulting service, with escalations to experts in many disciplines, including Resnet support, Blackboard, applications assistance, new technologies, alternative operating systems, as well as statistical and mathematical analysis. A carry-in service is available to students who may need help configuring their own computers and for those who are dealing with a virus attack or other security concern. The Help Desk also works with ITS Training Services in identifying areas of particular interest to students and then offers classes, both hands-on and lecture, that are then made available at no additional charge through the ITS short course program. The ITS Help Desk responds quickly to many hundreds of contacts every day, with spikes of more than 1,000 contacts on busy days.

## **Appendix F**

### **Information Security Office**

The ITS Information Security Office (ISO) strives to educate, enlighten and empower the UT community to maintain a safe and secure computing environment for University teaching, research, and public service. Their charge is to protect the security, availability, confidentiality, and integrity of the University's information technology (IT) infrastructure and resources. They manage IT security risk, direct university security policy and standards creation, monitor and test IT security, lead incident response and security investigations, and assist technology managers with security management.