The University of Texas Libraries

Information Technology Vision Plan

2007-2008

A. Summary of Requests

We request funding for further expansion of the PCL information technology infrastructure and for expansion of infrastructure for wireless networking in the Perry-Castañeda Library (PCL), including wireless routers, transmitters, and wiring.

Network Upgrades	$102,078
Wireless Networking Equipment	$98,327
Total Requested Amount	$180,405

B. Overview of Current IT Programs, Budget, and Infrastructure

The programs provided by the Libraries in support of students and faculty are best characterized as information services. The Libraries provides a broad array of electronic information services that directly support student learning. All of these services require ongoing resources from many different funding sources, as shown below.

1. University of Texas Libraries Vision, Mission, and Goals

Vision

We will provide a community of learners with unfettered access to a universe of information, helping to enrich their lives and transform their worlds.

Mission

We advance the academic mission of the university and enrich the intellectual life of the people of Texas by fostering information discovery, facilitating teaching and research, nurturing creativity, partnering in the development and dissemination of new knowledge, and contributing to the intellectual growth and fulfillment of the individual.

Goals

ITAC funding has been critical to the Libraries success in achieving goals for the use of information technology in support of UT's mission. Those information technology related goals are:

Ensure intellectual and physical access to all collections in campus libraries.

Advance current information literacy program to develop user competencies in information seeking and critical inquiry, emphasizing point-of-need instruction in online environments as appropriate to various academic disciplines and departmental cultures.

Select and implement an integrated library system that is compatible with other campus systems.

Develop and maintain a robust digital infrastructure capable of providing multi-channel access to our electronic information at the point of need, supported by adequate staff and resources.

Implement a new suite of digital services that addresses evolving user behavior, improves users' access and control of their digital environments, leverages the Libraries investment in content and existing infrastructure, provides compatibility with campus systems and can adapt to new and evolving digital environments.

2. Current IT Programs

Commercial Web-based Resources

Our licensed electronic information includes approximately 230 online databases and 30,000 electronic journals. We subscribe to these resources remotely and our students access them over the web on the computers in our libraries and on their own computers through wired and wireless networks. Users off-campus use our proxy servers so that they can access these information resources in their apartments and homes—in truth, wherever they can connect to the web with their laptops—just as if they were in a library.

In addition, we serve, host, or link to many other electronic resources including electronic books, electronic theses and dissertations, and several others. Indeed, one of our goals is to purchase information in electronic format in preference to paper and other traditional formats. It is necessary to have usable web pages, servers, networks, and other pieces of infrastructure so that students can best avail themselves of these resources. Spending millions of dollars on electronic resources but not providing adequate infrastructure to the UT community to use those resources would be a vast waste of resources. ITAC funds help support this effort for students.

Desktop Computer Hardware/Software

The Libraries provides over 1,000 devices in support of student research and instruction through its thirteen branches including Electronic Information Centers in the Perry-Castañeda Library

and the science libraries. Through these computers and networks the Libraries provides access to its owned and licensed electronic resources as well as to the open web so students can review their finances at UT, register for classes, handle other administrative chores, or just check email, read the news, or surf the web.

Laptop Checkout

With a valid UT ID students may check out laptops from Perry-Castañeda Library and the Fine Arts Library.

Ethernet Connections

Ethernet laptop connections are available in the Perry-Castañeda Library and the Engineering Library.

Wireless Access

UTNet wireless access is available to students, faculty, and staff throughout the Chemistry Library, Classics Library, Engineering Library, Fine Arts Library, Flawn Academic Center, Physics Mathematics Astronomy Library, Public Affairs Library and the Tarlton Law Library; and in selected areas of the Architecture and Planning Library, Collections Deposit Library, Fine Arts Library, Geology Library, Life Science Library, Perry-Castañeda Library, and the Harry Ransom Center.

Ask a Librarian

Online help is provided through the Libraries website and provides a virtual help desk for students doing research. “Ask a Librarian” not only provides a way for students to connect with librarians through email, chat, or telephone, but also offers an FAQ and a way to make an appointment with a subject specialist for more advanced, face-to-face research assistance.

Electronic Reserves

Our electronic reserves program provides students with materials faculty members place on reserve for their classes. Again, providing reserves electronically enables students to use the materials when and where they wish without having to wait in line, without having to check them out, and without having to return them in two hours or face fines. And, unlike traditional reserves, multiple students can use one resource simultaneously. The program handles rights management issues, interacts with Blackboard, and enables faculty to basically make their course packets available online over the web with its attendant benefits for students.

Training and Instruction

The Libraries provides 149 computers in seven training rooms for hands-on instruction in the use of online resources. Classes taught are most often offered in conjunction with students' assignments in their academic classes. Online tutorials are available as well so that students can take advantage of instruction sessions at the time and place of need. And UT Libraries works with faculty and TAs to integrate learning modules and information resources (including electronic reserves) into Blackboard portals for classes, securely password protected for members of the class.

3. Infrastructure

The human and technology resources required to support the digital library have grown with the increase in the use of electronic, web-based resources and services by our students and faculty. We have found that while there is still demand for our printed materials there is an ever-increasing demand for information that can be delivered to the student or faculty member anytime, anywhere.

The technology platform outlined below is redundant and failsafe and can recover from hardware failure without downtime or reduced availability of systems. Following is an outline of the resources required to deliver digital library services:

Production Web Servers
-16 Sun Microsystems CPUs running Solaris w/ 64 GB of memory
-Apache web server
-EZ Proxy server (for remote access to licensed resources; EID required)
-Helix streaming media server (for audio and video delivered over the web)
-Sun One application server
- SFX open url server
- Metalib federated search server

Production Library Management Servers
- 16 Sun CPUs running Solaris w/ 64 GB of memory
- 2 TB of online storage

Production Database Servers
-4 Sun Microsystems CPUs running Solaris w/ 8 GB memory
-12 Windows servers for application hosting
-MySQL DB server
-Z39.50 DB server
-LDAP Directory Server

Production Search Servers
-2 Sun Microsystems CPUs running Solaris
-Verity K2 Enterprise Server search engine

Network Attached Storage
-20 Terabytes of online storage; backed up, secure, highly available

Tape Backup/Archiving Library
-Backup system located in main campus data center
-This system enables us to move very large files to tape for long-term archival preservation
-Tapes are tested and the content migrated to new tape at regular intervals
-Independent of proprietary software

Development Servers
These servers are the staging area for work that is copied into production
-6 Sun Microsystems CPUs running Solaris w/ 3 GB memory
-Apache web server
-Helix streaming media server
-Sun One application server

Digitization Center
We produce digital image/text/audio/video from original files. We scan rare and fragile materials (such as the Gutenburg Bible).

-I2S Digibook bound-book scanner
-Epson 1640XL large format flatbed scanner
-Xerox Digipath duplexing document scanner
-Contex Chroma TX wide format scanner
-Nikon coolscan 4/5/9000 slide/transparencies scanner
-Kodak DCS Pro 14N digital camera

4. Current and Proposed Funding Sources for IT Programs and Infrastructure

Primary sources of funding for library information technology initiatives are the UT Libraries budget, UT System funds (LERR and UT System Digital Library programs), and other funds (UTOPIA funds, grants and contracts, and other miscellaneous funds). The UT Libraries regular budget, the student library fee, and various revolving funds (including library fines, lost book charges, and printer revenue) fund electronic information resources.

Virtually all equipment (desktop, servers, and connectivity) is funded by one-time capital funds that are requested annually. The Libraries are in the process of building a sustainable funding mechanism to provide consistent life cycle funding for information technology infrastructure, at least at the desktop level. There is no sustainable budget for replacement of servers and other high-cost equipment and networking. Following is a summary of local expenditures in support of Libraries IT infrastructure (excluding the millions of dollars the Libraries pays for the electronic information itself).

Budgeted Funding for Digital Initiatives, 2006-2007

Funding Sources	Salaries	Fringe[1]	MO&E	Total
UT Libraries Budgets	$2,324,860	$0	$474,481	$2,799,341
ITAC Funds	$101,871			$101,871
UT System Funds			$300,000	$300,000
UTOPIA Funds	$586,502	$146,625		$733,127
Other Funds[2]			$375,153	$375,153
Total[3]	$3,013,233	$146,625	$1,149,634	$4,309,492

[1]No fringe expense for flat rate tuition and AUF accounts which include Student Library Fee, 20 AUF, and ITAC.

[2]One time funds

[3]Reduction from last year because of one-time ILS funding and reduction of UTOPIA.

C. Use of 2006-2007 Academic Year ITAC Allocations

Web Development Program: $101,871

In 2006-2007, we received continuation funding for staff who were paid with 2005-2006 ITAC funds in order to continue their work in maintaining a secure computing platform for digital library services and producing underlying structures that facilitate navigation through our web by our students, faculty, and other end-users.

The Systems Analyst supported through this allocation worked with our Desktop Support Unit to write scripts that aid in the conversion of desktop machines to Active Directory; provide enhancements to our systems management software such as a waitlist application; and assist in troubleshooting various problems related to routine use of this equipment. The Information Analyst played a key role planning and design processes for several new pieces of content and the deployment of those projects as they were completed.

All of the ITAC funds were spent to support information services for students.

D. Needs and Proposed Use of Funds, 2007-2008

Thanks in part to past ITAC funding, our efforts to develop and maintain a robust infrastructure for delivering digital information to students via web-based resources has reached a sufficient level of maturity for the Libraries to move those costs to base funding.

Our current needs are directly related to successfully leveraging this investment to meet the changing needs of our students as they adopt and adapt to emerging technologies. As online resources increase and expand (both content and services such as email and instant messaging based reference assistance), the supporting infrastructure must be enhanced adequately to meet the growth and to support new services. In addition to sustained growth in the use of web-based resources, we observe that students are increasingly using portable technology, especially laptop computers, to access these resources and to collaborate with each other. Students working individually and in groups throughout the library expect to access web-based resources without leaving their work space or breaking away from their study group. Similarly, if they need to communicate with librarians, through such services as Ask A Librarian, with faculty, or with fellow students in another location, students expect to be able to do these things from any location within PCL.

Consequently, our first priority for ITAC funding is enhancing the network infrastructure in PCL and extending wireless networking throughout PCL. One of the Libraries overall goals (see above) is to "develop and maintain a robust digital infrastructure capable of providing multi-channel access to our electronic information at the point of need" for students, and ubiquitous wireless networking enables those planned channels, whether the students use laptops, PDAs, cell phones, or the next generation of wireless information appliances. As described above, several libraries in the system are fully wireless, while others are partially wireless. PCL falls into the partially-wireless category. Since PCL is the most heavily used library building on campus, and has emerged as one of the primary research and study spaces on campus, it essential that we upgrade this facility to meet student expectations for modern technology.

The total request for 2007-2008 is $180,405. Of this, approximately $82,078 will be used to upgrade and expand the core PCL network in order to maintain our current infrastructure capability at a level commensurate with the growing load on the system. Approximately $98,327 will be used to upgrade and expand the PCL wireless network to provide greatly increased wireless coverage and capacity for students and other individuals using PCL.