

College of Communication Technology Vision Plan  
Academic Year 2009-10

PRIORITIZED SUMMARY OF REQUESTS

<i>Student Lobby and Classroom Maintenance (H, P)</i>	\$50,000
<i>Student Software Maintenance (S)</i>	\$50,000
<i>Network Infrastructure (N)</i>	\$10,000
<i>Collaboration Tools Pilot (S)</i>	\$30,000
<i>4<sup>th</sup> Generation Teaching Console Pilot (H)</i>	\$100,000
<i>Performance and Subject Observation Recording/Analysis Pilot (H)</i>	\$50,000
<i>Virtual Desktop Infrastructure on Thin Clients Pilot (H, S)</i>	\$34,000
<i>High Definition Video Archiving</i>	\$57,000
<i>3<sup>rd</sup> Generation Television/Photo/Animation Studio (H, R)</i>	\$175,000
<i>4<sup>th</sup> Generation Network Upgrade (N)</i>	\$200,000
<b>Total</b>	<b>\$756,000</b>

NEEDS AND PROPOSED USE OF FUNDS

Infrastructure

*Student Lobby and Classroom Maintenance (\$50,000)*

We seek ongoing funding to maintain over 30 classrooms (both General Purpose and Departmental), plus the CMA Lobby activities described below in the section reporting this year's expenditures. This will purchase projector bulbs, supplies and provide student workers to assist students, faculty and staff in their use of our facilities. It will also support routine costs for telephones and repairs in these spaces.

*Student Software Maintenance (\$50,000)*

We request ongoing funds to purchase software used in student computer labs, such as Adobe Creative Suite, Final Cut Pro Studio, SPSS, etc.

*Network Infrastructure (\$10,000)*

There are recurring charges to maintain our connections to the campus network. We seek funding to continue this very reliable, high performance service. There is a low priority proposal to replace our networking equipment this year.

One-time Projects

*4<sup>th</sup> Generation Teaching Console Pilot (\$100,000)*

Our classroom teaching consoles have been updated routinely through the years. Today, we find that the classroom infrastructure does not adequately support the high definition, wide screen display formats our users have come to expect from home and professional theatrical systems. We will upgrade teaching console equipment in ten CMA classrooms, in order to support wide screen HD projection. In addition, we will begin our transition away from moribund videotape formats, instead preferring digital presentation using console-provided computing gear. As real world testing of this design completes, we

will deploy it throughout the new Communication building and in remaining classrooms in CMA and CMB. A group of faculty members from each department will take part in this testing and feedback process.

#### *Virtual Desktop Infrastructure on Thin Clients Pilot (\$75,000)*

The Cockrell School of Engineering is leading a joint proposal to develop a Virtual Desktop Infrastructure through which student, faculty and staff desktops are provided as virtual machines, able to be made available on a moment's notice anywhere on campus. Communication will participate in that project by exploring the use of low cost thin client systems to access the VDI services. These devices eliminate the need to replace desktop computers every 3 or 4 years. As these clients have no moving parts and do little more than provide a keyboard, mouse and display, they are expected to last 10 years or more. In addition, we will provide remote access to virtual desktops via web browsers, for users who are traveling but require secure access to University data and systems. This will reduce the total cost of providing information systems to campus users, while at the same time improving their availability and security.

#### *High Definition Video Archiving (\$75,000)*

As we transition from Standard Definition to High Definition production, in Journalism, Film Transfers and Video production, there is also a transition away from tape-based storage. Most of the affordable, high quality video cameras record to removable flash memory, not to tape. The advantages of this are numerous. Instant access to footage for editors, variable frame rates and data rates, reduced purchase cost and improved reliability because of almost no moving parts to wear out.

However, the instant archive of tape is lost. The past workflow was to shoot on tape, ingest the footage into the edit system, then the tape would go back on a shelf for use in the future for final online or recapturing the footage if the edit system crashed. Without tape, most students are keeping their footage on personal drives, hopefully multiple Firewire drives, which are often unstable. We will develop a solution for students to archive the footage data, perhaps to Blu-Ray Disc or LTO. A handful of workstations would have these devices attached to them. Students would access their footage from the SAN or Firewire drive, select the folders to archive and an automated script would transfer the data to the archive storage medium. They would then take possession of and archive in storage of their own control.

#### *3<sup>rd</sup> Generation Television/Photo/Animation Studio (\$175,000)*

This project proposes to upgrade the School of Journalism Television News Studio to allow for High Definition TV production and to create a multi-purpose production space that can be used by a larger audience within the College of Communication. Except for minor "patches" made over the years, the current infrastructure is 35 years old and will not support HD signals. These changes will allow the space to be utilized for traditional TV news production as well as a variety of shooting situations for the College of Communication including studio photography, video interviews, video inserts & bumpers, green-screen chroma-key shooting, and possibly motion capture for gaming and special effects.

#### *4<sup>th</sup> Generation Network Upgrade (\$200,000)*

While our current network infrastructure has served well over the years, we are once again faced with maintaining critical equipment that has been replaced by newer, more capable designs. We propose to

replace all networking gear within CMA and CMB. This is a low priority project because we still have spare inventory available on campus, and the equipment is still supported by Cisco and ITS Networking. However, if this is not funded for FY2000-10, it will return as a higher priority project in future years, as urgency rises.

### Innovative Support of Student Learning

#### *Collaboration Tools Pilot (\$50,000)*

Our faculty and administration seek to explore the various aspects of real-time online collaboration. Such collaboration includes 1-to-1, 1-to-many and many-to-many forms. Examples of online collaboration tools include Adobe Connect Pro, Facilitate.com, OpenFire, and WebEx, but could also include “home-grown” modifications to existing Course Management Systems (e.g. Moodle, Sakai, Blackboard). We will work with ITS and other campus units to investigate, test and deploy various collaboration tools. These will be used by a number of Communication classes in a pilot study. A report establishing the tools’ effectiveness and ease of use will be generated, providing the campus with a roadmap for future large-scale projects. If successful, there will be a future Joint Proposal aimed at providing that campus infrastructure.

#### *Performance and Subject Observation Recording/Analysis Pilot (\$50,000)*

There exists a need to record and analyze student activities, including speeches, interpersonal dialog, interviews and clinical subject studies. In addition, our faculty participates in a number of research studies that utilize such recording and analysis. We propose to prototype a unified, modular digital recording system to accommodate this. The system can be deployed long-term in dedicated spaces or brought into a classroom as necessary. Applications include talkback functionality, audio and/or recording to private or public blogs, and standardized hardware that is more easily supported by IT staff.

## OVERVIEW OF CURRENT IT PROGRAMS AND INFRASTRUCTURE

The mission of the College of Communication, according to Dean Roderick Hart, is four-fold:

As the most comprehensive academic unit of its kind in the United States, the College of Communication is too large and too complicated to have but one mission. Instead, its mission is four-fold:

An intellectual mission: (1) to ensure that the traditional arts and sciences remain central to the study of human communication, (2) to collaborate with faculty members in the arts, humanities, and social sciences across campus to address the most pressing issues of the day, and (3) to make communication training central to the educations of all University of Texas undergraduates regardless of major.

An entrepreneurial mission: The world is being made smaller by the Communication Revolution and the College must work to understand what that means by (1) building close ties to the communication professions, (2) vigorously pursuing interdisciplinary activities, (3) staying current with new interactive and aesthetic technologies, and (4) pursuing an increasingly international agenda.

A pedagogical mission: Here is our future: We live in an era of media convergence where once-separate industries - radio, television, advertising, newspapers - are being folded into vast media conglomerates. The College must prepare its students in multiple ways as a result, helping them reach across the various communication disciplines for new insights, new skills, new forms of expression, and new kinds of employment.

A social mission: The mass media are implicated in all that happens today. Political campaigns are heavily determined by media perquisites; enlightened health care depends on savvy information campaigns; the nation's youth are being

inundated with popular culture; the world has become unknowable without a discerning press. This collection of facts makes communication training both a practical matter and a moral one as well.

The University of Texas is devoted to generating intellectual excitement in its students, transforming their lives, and turning them into leaders. That is the College of Communication's business as well.

## IT Programs

The Dean's Office operates Business and Technology Services (BATS). The Technology Services group represents the bulk of technology support available in the College. We support every department, research unit and program in the College. Our web site is <http://communication.utexas.edu/technology/>. Along with other Dean's Office units, we receive administrative support from Business Services. Currently, Technology Services consists of twenty-one full-time employees and typically around half that many part-time student workers. Skills and duties revolve around three primary areas: Customer Support, Engineering and Instructional Design/Web Development. We also have a dedicated datacenter/network administrator.

Customer Support provides direct patron support. Our Help Desk solves technology problems for College owned computers, audiovisual systems in classrooms, and provides limited support for personally owned student or faculty systems (liability limits the extent to which we can help). Media Services manages the Media Center and related facilities to provide checkout equipment, media duplication, a media library and playback facilities. Finally, Lab Operations maintains College and departmental computer labs and provides assistance for faculty, staff and students using our labs.

The Instructional Design and Web Group helps faculty and staff to develop and implement instructional technologies, and supports the development of both our academic and administrative web presence.

The Engineering team is responsible for long-term projects, large-scale "roll-outs" of technology equipment, providing purchasing specifications, and maintaining our inventory of computers for rapid deployment. Engineering's primary focus is to free up time-consuming and complex logistical tasks from the other units, so that they may provide more efficient and effective service to our patrons.

## Technology Infrastructure

We maintain technology equipment in five buildings (CMA, CMB, LAC, UA9 and WWH). We have over 1000 College-owned computer systems, 300 printers and over 60 servers. All of these are connected by one of the more advanced networks on campus. We employ multiple Gigabit and 10-Gigabit connections to the campus network, and now provide Gigabit connections to every student computer lab desktop.

Our Help Desk maintains the standard security practices on campus, ranging from the deployment of anti-virus and firewall software provided by University site license, to advanced software deployment and desktop management systems (see Best Practices below). In addition to email or voicemail methods of contact, we have a direct phone line and two physical help desk locations in close proximity to our patrons and facilities.

Today, 31 classrooms (College, departmental and General Purpose) and a few conference rooms are outfitted with instructional media systems. These consist of a digital projector, an audio system, audio and video sources (VCRs, DVDs, etc.) and laptop connections. Most of these rooms include built-in computers and high quality document cameras. These rooms largely conform to the standard classroom

control system deployed throughout the campus, through a cooperative effort with many colleges, under the guidance of the Technology Classrooms Committee (TCC), wherein the College is represented. We have deployed over sixty wireless access points throughout our buildings to provide Internet access for our increasingly mobile, “always connected” population.

Individual departments within the College also maintain technology support infrastructures. Journalism employs technical support staff to maintain their photography and broadcast television equipment. Radio-TV-Film staff work closely with students during the various production and postproduction phases, and are called upon to match hardware and software capabilities to aesthetic vision. Advertising and Communication Studies employ Graduate Assistants to support their labs. Departments are primarily responsible for determining the nature and scope of activities within their facilities. Technology Services works with the departmental staff to help facilitate their needs.

Because many Communication courses are not taught within the Jesse H. Jones Communication Complex, our faculty cannot always depend upon their classes being scheduled in University classrooms that meet their technological requirements. It is critical that the colleges continue to improve the University’s classroom technology capabilities, through the combined efforts of the Tech Deans & Directors Group and TCC.

### Technology Funding

For FY2008-09, the College of Communication received \$441,473 from the University-wide Information Technology Advisory Committee fund. We also generate \$1,525,362 from the College’s Information Technology Fee (ITF) allocation. Other instruction-related projects, many of which involve a great deal of IT resources, are funded through a \$838,980 Communication Learning Equipment Fee (CLEF).

A portion of the ITAC Fee allocation goes towards supporting the CMA Lobby, a facility open to all University students. It follows an open plan akin to those of the Flawn Academic Center and the Fine Arts Library, to facilitate student collaboration, study and interaction. The space supports individuals and groups, providing power and data circuits for laptop computers. As in FAC and FAL, laptop computers are available for 24-hour checkout. However, technical infrastructure is not the main focus of the space.

The principal use of the ITF is to support professional and temporary staff, as outlined above. Additional projects are funded to support Technology Services initiatives, as described in the next section.

CLEF provides for much of our instructional equipment, software and services. The process of allocating these funds represents department-specific needs and is distributed based on project proposals submitted after discussions with department chairs. Technology Services uses these proposals to anticipate and plan infrastructure upgrades. Note that only a portion of this fee represents IT expenditures, as many other learning needs are served by this funding source.

Other sources of funds for technology equipment include a Special Equipment Fund allocation to each department, and various state and federal grants. Some of this goes to support research activities, or are used to support other maintenance needs, such as "refreshing" computers for non-faculty appointments (instructors, clinical staff, etc.). Finally, Computer Life Cycle and Faculty Computing Initiative funds provide for initial or refresh computing purchases for faculty, augmented with funds from endowed

professorships, chairs and the like. In each case, Technology Services provides purchasing support in the form of quote generation and specification.

### Best Practices

The College has invested heavily in support of technology. Investments include help request tracking software, desktop and security management systems, server and storage virtualization infrastructure, resource management and scheduling software and advanced video recording and playback systems. We also maintain classroom media control systems common with much of the campus. We are leveraging the University's purchase of the Web Content Management system to improve our overall web capabilities. At every opportunity, we seek a balance between innovation and the benefits obtained through standardized solutions and practices.

We use the Web Help Desk (<http://www.webhelpdesk.com/>) request tracking system to keep track of patron requests for support, and to provide a two-way communication link to keep all parties abreast of any activity related to their request. Similarly, we use an online system (<http://www.onshored.com/>) to keep track of equipment checkout and media library requests. Our Help Desk is located in the CMA building, improving our providing fast and easy patron access. These practices improve efficiency and improve patron experiences.

We deploy a suite of software solutions to help protect University computing resources. Among these are antivirus suites, firewall management systems and Virtual Private Network (VPN) solutions provided through University site licenses (<http://www.utexas.edu/its/sds/products/antivirus.html>). We also utilize systems to improve the deployment of new, repaired or repurposed computers (Ghost, NetInstall, etc.). We have also led the charge to deploy the LANDesk desktop management solution (<http://landesk.com/Products/LDMS/>), which provides us with the ability to remotely deploy complete operating systems, individual software packages and security patches. It also provides excellent asset reporting capabilities, so we can determine just exactly what is out there and target the oldest or least capable systems for replacement. Finally, it provides remote control capabilities that let us provide over-the-phone support for our users, saving valuable time and effort. As an example, we can now deploy a lab of twenty computers in under fifteen minutes, down from 3 hours using the previous method.

We continue to use our always-ready video recording and streaming systems in classrooms. We have eight rooms with a video camera trained on the instructor or student presenter, microphones covering the entire room and audio and video connections to the media presentation system in the room. With this, we can record both the interactions of presenters and audiences and whatever they are presenting via the projector and audio system in the room. This is meant to facilitate both the regular and ad hoc capture of classroom activities, from lectures to guest presentations to student presentations. An innovative extension of this project is the increasing use of digital video capturing for the Speech and Hearing Clinic. Hundreds of hours of clinical sessions are recorded, while new ideas for using the system in our research labs are being explored.

We use the University's Web Content Management System (<https://webcms.utexas.edu/cms/>). This system allows us to implement modern web design and development practices, but keep content providers in control of their content. The WebCMS allows those who care most about what is found on our web sites to contribute, edit and update content, without the need for technical staff involvement. This vastly improves the time-to-publish, which results in more timely and professional updates to web content.

We have incorporated touch-screen control systems in every College and General Purpose classroom, as well as a number of departmental and College conference rooms (<http://communication.utexas.edu/technology/facilities/classrooms/consoles/>). This brings them into very close alignment with the standard classroom consoles found throughout the campus, as they were co-developed with the College of Liberal Arts staff and their contract designers. Several rooms also have furniture with built-in network and power connections, to further improve the mobile computing experience.

We continue our collaborative effort with the College of Fine Arts (COFA) to share information system infrastructure. Over the last two years, we have deployed a VMware server virtualization and storage system in order to rationalize our increasing server deployments. While we used to maintain over thirty physical servers, we now maintain fewer than ten, but these provide many dozen distinct "virtual" servers, deployed to meet the various needs of the College. COFA needed to build a similar subset of capabilities, but rather than building their own solution, they partnered with us to increase the combined capacity. Our system administrator provides support for the infrastructure, while COFA staff manage their own virtual resources. By collaborating, we save the considerable initial expense of deploying multiple base infrastructures. COFA's needs are met by merely adding to the existing system, at a much reduced capital and maintenance cost.

This virtual server and storage solution supports classroom activities primarily. However, this system allows us to use excess capacity to provide secure, highly available storage to College instructors, researchers and administrators. This is largely an effort to meet the increasing demands to secure data and meet University and System's information security policies (<http://www.utexas.edu/its/policies/>). We encourage patrons to store sensitive data on our system, rather than on their own desktop or laptop computers. This allows us to keep a closer watch on such data, as well as provide data replication capability for disaster recovery purposes. We collaborated with the College of Engineering by sharing space within our respective datacenters in order to locate redundant storage and server systems. Data is therefore redundant across facilities. In this way, any loss of utility within either facility can be recovered quickly and reliably.

Finally, we have a regular system for maintaining the state of IT infrastructure within the College. This includes the funding model described above, as well as a disciplined approach to targeting those areas in greatest need of refresh. For example, we license standard software packages that support activities across our departments at a cost substantially less than if the departments were to purchase them separately. Working with the departments, we are able to appropriately fund IT while maintaining a largely static budget.

## USE OF PREVIOUS ACADEMIC YEAR ALLOCATIONS

ITAC allocations for FY2008-09 were \$154,119 for recurring infrastructure and \$287,274 for one-time projects. There was an additional \$150,000 allocated towards a blogging and podcasting Group Project.

### Infrastructure

#### *Student Lobby Support*

The CMA lobby is now a wonderfully popular destination for students, supporting both individual and group study. We maintain a checkout desk in the space where many wireless equipped laptops are

available to any UT patron. Student workers are stationed here 80 hours per week. These students also act as primary help for students with technology issues, directing them to our Help Desk, the ITS Help Desk and other support personnel as necessary. We used ITAC funding to hire, train and supply these students as well as maintain equipment used in this space.

### *Classroom Maintenance*

We maintain over 30 classrooms (both General Purpose and Departmental) in CMA and CMB, and as there is little to no funding available for maintenance of the facilities, we must fund repairs, replacement equipment and supplies (projector bulbs, office supplies, etc.) internally. Additionally, we must pay annual costs for providing security systems and telephones in classrooms. We seek ongoing funding to attend to these needs.

### *Student Software Maintenance*

Each year, we renew software license agreements for packages ranging from Adobe Create Suite to SPSS. We make such software available at as many lab seats as possible, to achieve a best possible return on investment.

### *Network Infrastructure*

Each year, ITS Networking charges for the fiber-optic and wired connections between buildings. In addition, there are routine purchases of networking switching gear, cables and accessories.

### One-time Projects

#### *Digital Audio and Video Acquisition*

In the last 18 months, we have been investigating solutions for recording audio and video direct to digital, thus avoiding tape-based recording. As described in last year's Vision Plan, this allows much broader and more economical use of student and institutional media. We are providing dozens of digital audio and video recording devices for student use. These will be maintained by our checkout facilities. Additionally, we are adding direct-to-digital recording capability to a handful of production spaces within CMA and CMB to support on-demand student podcasting.

#### *Classroom AV Upgrades*

Teaching spaces throughout CMA and CMB have been upgraded with additional media capabilities required of our changing curricula. In particular, multi-channel audio reproduction (i.e. "5.1 surround") and HDV playback are now possible in several rooms (versus just three in the past). We are adding computers to our smallest seminar rooms and every room has auxiliary inputs capable of handling High Definition signals produced by newer media players, as well as gaming consoles.

#### *Student Computer Lab and Classroom Computer Upgrades*

We purchased a number of systems to replace four-year-old Dell systems. A particular innovation this year was the use of Intel-based Apple desktops. Because we can deploy both Macintosh and Windows operating systems, we gain flexibility as to which rooms to schedule particular classes. Chances are, the platform and its associated software will be available no matter which room is chosen.

### *Student Checkout Laptops*

We purchased a number of new laptops to replace out-of-warranty units. We make these available for checkout by students, faculty and staff. Because “study abroad” and “Maymester” program enrollment has increased tremendously over the years, we are reserving the replaced units for these activities, rather than sending them to Surplus Property for disposal. We will get one or two more years of use this way.

### *Snapstream Video Recording & Playback*

We installed the Snapstream Enterprise TV system in our Instructional Media Center in order to provide our faculty with a means to record off-the-air programs for later playback in the classroom using teaching console computers. This eliminates the need for IMC staff to initiate the recording or manage a physical tape, and it allows instructors to show “time-shifted” content in the classroom without first making a trip to the IMC. The content is instantly available to anyone accessing the system on our network. Additionally, if one faculty member schedules a particular program another might find useful, it’s available to both simultaneously. This would be impossible using traditional videotaping methods.

### *Video Teleconferencing System Upgrade*

We are upgrading our six-year-old video teleconferencing system to a High Definition version that provides both better quality and improved compatibility with other systems, increasing its utility.

### *Datacenter Improvements*

We are currently evaluating a new server backup solution and additional network switching capacity for our small datacenter. We have outgrown the old solutions.