



The California State University Annual Campus Technology Survey Fiscal Year 1999/2000

Survey Clarifications

Integrated Technology Strategy - Technology Infrastructure Initiative (About this Survey)

The Integrated Technology Strategy or ITS is a comprehensive technology planning framework and process of the California State University. Approved by the Executive Council and endorsed by the Board of Trustees in 1996, the ITS is systemwide in scope, encompassing all 23 campuses. It is centered around a series of programmatic initiatives designed to improve student learning and the quality of the student experience generally, and to increase levels of personal and administrative productivity. A detailed overview of the Integrated Technology Strategy is available as a downloadable file on the ITS Web site. Point your browser to <http://its.calstate.edu> and click on "ITS Planning and Implementation Process."

The Technology Infrastructure Initiative addresses the baseline utilities, hardware, software and user training and support systems, which are prerequisites for full implementation of the Integrated Technology Strategy. Accordingly, the ITS-TII has the highest priority among the ITS initiatives. It is the technical foundation on which all programmatic initiatives depend. A detailed description of the target environment is available on the ITS Web site <http://its.calstate.edu> by downloading the document entitled *TII Status and Directions*.

Support faculty involvement (#1)

Information about faculty *use* of technology-mediated resources in connection with their teaching is collected in the biennial faculty survey. This survey seeks information about redirection of campus resources (or acquisition of new resources) for the purpose of enabling faculty to engage in the *creation* (including field testing) of such materials. Creation or production of materials in the intended sense will normally require faculty access to some combination of technical assistance, specialized facilities, equipment and application development tools, specialized training, and/or redirection of a portion of the instructional assignment for a specified period. Requiring students to use email or to access Web pages to complete course assignments, for example, does not qualify as "faculty involvement" for purposes of this survey. Personnel years is the principal indicator of campus support. In calculating dollar mounts for this survey **do not include imputed costs** for administrative or infrastructure services that are necessary, but indirectly related to carrying out relevant activities.

Technology-mediated instructional or learning materials (#1)

For purposes of this survey, "technology-mediated instructional or learning materials" means any instance of the use of computer- or network-based technology to communicate, or to facilitate the acquisition or demonstration of, knowledge or skills associated with an academic

program. Examples range from computer-based presentations designed for the classroom to individual student involvement in research employing sophisticated computer-based simulations, or participation in instruction via the Internet, satellite or other telecommunications medium.

Automated means (#3)

This refers to the ability for regular patrons (e.g., enrolled students, university faculty or staff) to request library resources from other libraries without the assistance of a desk clerk or other personnel.

PHAROS (#3)

PHAROS is the name of the web-based, unified information access system developed by epixtech, inc. (formerly Ameritech Library Services) and the CSU. Among other features, PHAROS enables automated processing of end-user submitted requests for materials available from sources outside the local library using the Resource Sharing System (RSS). When fully implemented PHAROS is expected to reduce significantly the turn-around time for delivering requested materials. Detailed information about PHAROS is available at <http://uias.calstate.edu/UIAS.html>.

CMS PeopleSoft functionality (#4)

Since CMS implementation is scheduled to begin in academic year 2000/2001, a response of "no" is expected for all campuses in the current survey year. As used in the survey, "CMS PeopleSoft functionality" means the capability to support specific business processes-e.g., "Time & Labor" in the Human Resources Information System or "Accounts Payable" in the Financial Information System-using CMS-developed PeopleSoft software applications. The purpose of this item is to track in broad outline the progress of CMS implementation across the system through the year 2008. Adoption of any functionality is interpreted as an indicator of eventual conversion from the legacy environment to the Common Management System.

University-provided computer (#6.1)

Only computer workstations (desktop and laptop computers) purchased and supported by the institution should be counted in responding to question 6.

ITS-TII baseline hardware standards (#6.1)

The following *minimum* standards to guide future computer hardware purchases were recommended by the Systemwide Internal Partnership in fall 1998 and incorporated into the Master Enabling Agreement with Inacom Corporation (1/21/1999). The principle behind the recommendations is that newly purchased computer hardware will be usable for *three years* from the date of purchase. These standards are therefore operative for the CSU Annual Campus Technology Survey for fiscal years 1999/2000 through 2000/01. Criteria for the survey covering FY 2001/02 will be based on revised recommendations made by the Commission on Technology Infrastructure in September 1999. For each survey period thereafter through the end of the reporting period, applicable standards will be those approved three years prior.

Minimum Hardware Standards for Windows Platforms

Recommended *Minimum Desktop* Hardware Standards (Effective FY 1998/99)

Processor	Pentium® II processor 350 MHz with Intel 440 BX chipset
Cache	512KB L2 cache integrated into the processor cartridge
Memory	64 MB of 100MHz SDRAM
Flash BIOS	2MB Flash memory
Graphics	8MB of 100MHz SGRAM, Advanced Multimedia Channel [AMC] video prot. Diamond, Matrox, or ATI 64/128 bit ABP board.
Audio	Integrated full duplex audio [Sound Blaster Pro and Windows Sound System compatible]. External connectors for microphone, stereo input and stereo input and stereo-amplified output for speakers or headphones.
Hard Drive	6.4GB
EIDE	EIDE Controller Integrated PCI
Floppy Disk	Integrated floppy diskette drive support 3.5" 1.44MB diskette drive standard
CD-ROM	20 x CD-ROM
Data Backup	Internal
NIC	10/100Mb Fast Ethernet with ACPI and Wakup On LAN support, 10/100Base-TX, RJ45 twisted pair connector
I/O Connectors	2 USB, 2 serial, 1 high speed ECP/EPP parallel port, 1 PS/2 mouse, 1 PS/2 keyboard
Expansion Bus	PCI, ISA, ACP and USB
Standards	(ISO) 9002/ANSI/ASQC Q9002
Monitor	17inch FST with (0.27 dot pitch. Power consumption under 100W, 1024 x 768 resolution at 90 Hz
Sound	Built-in stereo amplifier with 5 watt speakers. Bulit-in directional microphne. Low emissions, strict safety standard compliance
Operating Sys.	Windows 98 or Windows NT 4.0

Recommended *Minimum Laptop* Hardware Standards

Processor	233 Mhz Pentium® II processor with Intel 440BX chipset
Memory	64 MB of 100MHz SDRAM
Hard Drive	4.0 GB hard drive
Display	12.1" TFT XGA display
Graphics	4MB of 100MHz SGRAM
Sound	16-bit SoundBlaster® Pro compatible voice and music functions
Operating Sys.	Microsoft Windows 98, NT Workstation 4.0 (CD-ROM)
Modem	56Kbps, V.90 Upgradeable
CD-ROM	20 x CD-ROM
External Ports	Parallel, serial, VGA, PS/2, IRDA 1.1, USB, and docking port
Weight	Maximum 8.0 pounds

Minimum Hardware Standards for Macintosh Platforms

Recommended *Minimum Desktop* Hardware Standards

Processor	233 Mhz G3 (266 also available)
Memory	64 MB RAM (32 MB extra memory optional)
Video RAM	4 MB
Ethernet	10/100BASE-T
Modem	56 KB
Hard Drive	4 GB (5.4 GB also available)
CD-ROM	24 X
Monitor	15" monitor, 800 x 600 resolution, built-in speakers, microphone (17", 1024 x 768 also available)
Keyboard	standard
Mouse	standard
Data Backup	Internal ZIP Drive (optional)

Recommended *Minimum PowerBook* Hardware Standards

Processor	250 Mhz G3
Memory	32 MB RAM
Ethernet	10BASE-T
Modem	33.6 KB
Hard Drive	5 GB
Floppy Drive	1.44 MB
CD-ROM	24x CD-ROM (DVD encouraged - only in 400Mhz)
Display	12.1", 800 x 600 resolution

ITS-TII baseline software standards (#6.1)

Recommended Software Standards for the Windows and Macintosh Platforms*

(Installed on all desktop and notebook personal computers)

OS/Application	Software
Intel Operating Systems Desktop (campus-based) Desktop (home-based) Notebook	MS Windows NT Workstation 4.0 MS Windows 95 MS Windows 95
Macintosh OS (Desktop/Notebook)	Mac OS 8.1
Word Processing	MS Word (latest Office)
Spreadsheet	MS Excel (latest Office)
Presentation Graphics	MS PowerPoint (latest Office)
Electronic Messaging (email)	MS Outlook/Express/Web Express (latest) Netscape Messenger (latest)
World Wide Web Access and Support Discussion Groups Scheduling/Calendar	MS Internet Explorer (latest) Netscape Communicator (latest) Acrobat - portable document format (latest) QuickTime - video player (latest) Real Player - streaming video (latest) Other common plug-ins
Virus Detection	Best available deal for a quality product
Management Software	Desktop Management Interface (DMI) compliant tools (hardware vendor specific)

* *ITS-TII Status & Directions*, October 1998, Section IIIA, p. 7.

Generally accessible to students (#6.2)

Include all computer workstations to which students have general access, regardless of organizational ownership; e.g., workstations in university or college/school general purpose computer labs, dual-use classrooms or labs, dormitories or other public spaces. Exclude for purposes of this survey dedicated computer labs intended to support specific instructional, search or research activities; e.g., foreign language or mathematics labs, library information system, etc.

classrooms are permanently equipped (#6.2)

The intent of this item is to track the number of available "smart classrooms;" i.e., those that are equipped with screen/monitor(s), projector, network connections for voice, video and data, and a computer workstation or provision for attaching a laptop. Network connectivity to classrooms is covered in question 13.

centrally or distributively (#8.1)

This survey seeks information about the level of support services available to all or most university employees. The question does not solicit data about whether these services are provided centrally by a single IT department, distributively by more than one campus division, or a combination of both.

Service level standards/metrics (#8.1, #10, #11)

Service level standards/metrics are performance measures defined in formal agreements (e.g., contracts) between a service provider and service recipients.

Level 1 technical assistance (#8.1-.3)

Level 1 technical assistants are normally the primary interface with end users and are responsible for providing general user assistance, basic trouble shooting, priority assignment, tracking and status reporting. When required, Level 1 assistants refer problems or requests to level-two support. (*ITS-TII Status & Directions*, Section IV, p. 8)

Level 2 technical support (#8.4)

Level 2 support typically takes place at local campus help desks, repair depots or other appropriate on-site locations and might be provided through campus IT professional staff or contractors. This support includes workstation trouble shooting and coordination with level-three service providers. (*ITS-TII Status & Directions*, Section IV, p. 9)

Level 3 technical support (#8.5)

Level 3 support requires a very high level of expertise as might be provided by professional technicians or personnel from the vendors of the relevant products or technologies. (*ITS-TII Status & Directions*, Section IV, p. 9)

high speed (#9)

For the campus survey, "high speed" means connection to a 100-155 megabit campus backbone. (See the criteria for data under CSU Technology Infrastructure Planning (TIP) Guidelines). Information about 4CNet performance is obtained through a separate system survey.

Baseline workstation hardware (#10)

"Baseline" workstation hardware includes computers and peripherals (printers, ZIP drives, scanners, etc.) provided to faculty, staff and administrators to enable them to perform the work assigned to them. It also includes computers and peripherals made [generally accessible to students](#).

Baseline workstation software (#11)

"Baseline" software includes operating system and commonly used personal productivity application software installed on workstations for faculty, staff and administrators and on computers [generally accessible to students](#).

campuswide coordinated process (#12)

"Coordinated process" means that consultation, decision making and implementation are centrally managed for the entire campus.

CSU Minimum Baseline Infrastructure Standards for Network Connectivity (#14)

Following are key features of the original Minimum Baseline document related to technical and provisioning elements of the CSU Technology Infrastructure Planning (TIP) Guidelines. Italicized entries reflect clarifying or amending language recently integrated with the original text.

- Technical Criteria and Service Functionality:

Voice	Either an analog or a digital single line resource; <i>the medium is Category 5e cabling.</i>
Data	Inter-building capability of 100 to 155 MBS; intra-building capability 10BaseT (<i>now 100BaseT</i>), with Category 5e cabling as a minimum.
Video	Broadband applying forward direction RF modulation from DC to 750 MHz; baseband (using frequency, time and wave division multiplexing) and/or narrowband (often with compression as well as multiplexing). <i>Coaxial and single-mode and multi-mode fiber optics cables are the media to be employed, depending upon the function.</i>

- Station cabling and Outlet Box Provisioning:

Station cabling for voice and data will normally be category 5e, four pair.

At least one station jack or outlet per room will be equipped with three Category 5e, four pair cables; but the campus has the option of substituting one coaxial or multi-mode line for a Category 5e. Rooms designated as Information Technology Areas will be equipped to meet more complex needs as specially justified.

A room being supplied with a station outlet may require wall boxes at several locations to meet the requirements of the several media being supported.

- Space Provisioning:

- a. Instructional and academic spaces in common use (e.g., classroom, laboratory or preparation environment) will all have a voice, data and video assignment. A minimum of 15 percent of such areas may be designated by the campus as Information Technology Areas to be uniquely equipped to meet additional technology requirements justified by campus academic programs.
2. Each full-time faculty member will have a voice and data service assignment; each part-time faculty will have access to such an assignment. All full or part-time staff members whose duties require frequent use of such resources will have individual voice and data assignments; all others will be provided access to such services.
3. No more than 10 percent of all faculty offices and no more than 5 percent of all administrative areas will be built out with video services.
4. Public area service provisions in any building shall not exceed the following additional proportions of the service totals stated above: voice, 10 percent, data, 5 percent; *and video, 5 percent.*

centralized, decentralized or shared (C2)

"Centralized" means that decisions are made by a central IT department.

"Decentralized" means that decisions are made by organizational units other than the central IT department (e.g., division, college/school, department).

"Shared" means that local decisions are subject to coordination with, and/or concurrence of the central IT department.

components of the baseline technology infrastructure (C2)

"Baseline" technology infrastructure capabilities and resources include the following components:

Hardware Access

- General student computer lab equipment
- Student computer leasing program
- Classroom presentation equipment
- Electronic/studio classrooms
- Hardware for academic support staff
- Training labs
- Faculty workstations
- Kiosks
- Video/graphics production equipment

Software Access

- Software for direct academic support
- Campuswide software library, including maintenance and upgrades
- Interactive training software
- Networking software
- Campuswide Email system
- Basic electronic library and information resources
- Campuswide users' software tools

Network Access

- Local area networking and Internet connectivity
- Servers (email, web, news, information resources)
- Remote access (modems, dial-in, wireless, special direct line(s))
- Hubs and routers and network electronics for local area networks

Training End-user training (#7)

- Basic information competency training for students, faculty, staff
- Faculty/staff training in common software and networking tools
- Student training in basic applications required by academic disciplines
- Student training in common software and networking tools
- Student training in uses of generic campuswide applications
- Advanced training for campus trainers and support personnel

Support

- Campuswide help desk support services
- Training specialists
- Instructional support consultants
- Technicians (equipment, lab, classroom, networking, maintenance)
- Computing lab monitors
- Instructional development specialists
- Curriculum applications development specialists

Source: Integrated Technology Strategy: Baseline Hardware/Software Access, Training and User Support: Final Plan and Guidelines, November 1, 1996.

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