

JEFFERSON COMMUNITY COLLEGE
TECHNOLOGY PLAN

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Jefferson Community College Technology Plan

Introduction

The purpose of the Jefferson Community College Technology Plan is to specify the management, use, and ongoing integration of technology at Jefferson Community College (JCC). In recent years, technology growth, specifically computer and network technologies, at Jefferson Community College has accelerated at an exponential pace. This document will provide the framework for the acquisition, distribution, and maintenance of the technological resources at JCC.

The major focus of this document will be computer and network technologies. Expanding this document in the future to include other technologies will assist the College in maximizing its capabilities.

This document is organized in sections and appendices. Global recommendations are contained in the introduction with specific recommendations included in each section. Appendix A contains terms and definitions. Each term is underlined in the document the first time it is used. Furthermore, the web version of this document will be hyper-linked to provide for quick reference of terms. Additional appendices are provided at the end of the document.

Global Recommendations

- Provide adequate budgeting for computer and network technologies at the college level.
- Manage computing resources from a single point for acquisition, distribution, and maintenance.
- Classify computer usage into a multi-tiered structure for replacement and upgrading of technology.
- Provide high quality training for current standard software for the administration, faculty and staff on a continuing basis.
- Increase Computer Services' staffing and resources to match current and future expectations and needs of the College.
- Review and update this plan annually.

Academic Computing Technology

Academic Computing Technology refers to Student and Instructional Computers.

Computer Distribution Plan

Current Assessment:

Currently no acquisition, upgrade or re-distribution plan exists at the college level.

Direct student use computing is available in computer labs, selected classrooms, and the libraries. Instructional computers are located in selected classrooms and laboratories.

Recommendation:

- Adopt a computer distribution plan utilizing “Trickle-Down Replacement” in a multi-tiered structure.

Budgetary concerns will prevent every computer laboratory from being equipped with the highest performance machines. Therefore, student and instructional computing should be categorized into tiers. Tier 1 machines will be replaced annually with new, current high-end machines, and the replaced machines will now become Tier 2 machines and so on. This upgrade path provides a newer machine to every user every year. The useful life of a Student or Instructional Computer will be three years. Retired computers will be distributed primarily for academic use and will be administered by Computer Services.

Student and instructional computing is defined by three tiers:

Tier 1 – Highest possible computing performance required. These machines are used for Computer Aided Design (CAD) operations, advanced programming, desktop publishing and other high-end applications.

Tier 2 – Moderate performance required. These machines are used for advanced word processing, moderate to heavy spreadsheet applications, introductory programming and network administration.

Tier 3 – Minimal performance required. These machines are used as general-purpose machines. Execution of the Standardized Software Configuration is required.

Appendix B describes the replacement methodology for computer hardware.

General/Open Computing Facility

Current Assessment:

Currently, the libraries function as a general/open computing facility on the Downtown and Southwest campuses. At Carrollton, the General Computer Laboratory is available for open student usage.

Recommendation:

- Provide a general/open computing facility on each campus. These general/open computing facilities should be equipped with a broad range of the software offered by the college. Although limitations due to licensing and peripheral requirements may be inhibitory, the college should strive to have all software available at each facility. To accommodate students’ access to all available software, general/open computing facilities should contain a

percentage of the highest tiered machines. The general/open computing facility should provide user support for the Standardized Software Configuration.

Classrooms/Non-computer Laboratories

Current Assessment:

Approximately 25% of the classrooms/non-computer laboratories have at least one network connection.

Recommendation:

- Install at least one network connection (wall plate) in all classrooms/non-computer laboratories.

Student Email

Current Assessment:

Student email is being addressed by free email services available on the Internet such as Hotmail.

Recommendation:

- Students continue to use the free or other email services for the immediate future. The staff in the general/open computing facilities should assist students in accessing the free web-based accounts.

Web-based Distance Education

Current Assessment:

Jefferson Community College currently offers several classes that are completely Internet based. Students must provide their own Internet access or access the class materials through a computer located in a public access area such as a library.

Recommendations:

- Provide students with toll-free telephone access to the college. This will offer distance learning students the same access as those taking the classes in Jefferson County.
- Create access to student services on-line to provide the same level of access to distance learning students as those enrolling in on-campus classes.

Interactive Television (ITV)

Current Assessment:

Jefferson Community College has at least one ITV facility located at each of the College's campuses.

Recommendations:

- Make available a person at each facility to provide training and assist in the usage of the ITV equipment.
- Upgrade these facilities as the technology changes.

Other Technologies

Other technologies include but are not limited to computers specifically designed or configured for laboratory assessment and data collection, and computers used to control other machinery, such as Computer Numerically Controlled equipment (CNC).

Current Assessment:

Other technologies are not currently addressed by this document.

Recommendation:

- Expand this plan in the future to address other technologies used at Jefferson Community College.

Assistive Technology

Current Assessment:

The Disability Resource Coordinator evaluates the assistive technology needs for the College.

Recommendations:

- Establish a collaborative method for acquisition of assistive technology for students with disabilities. Need and appropriateness for assistive technology should be evaluated or determined by the Disability Resource Coordinator (DRC) with input from Computer Services, coordinators of the writing centers, computer labs, and math labs as well as directors of the libraries when appropriate.
- Purchasing of computer-related assistive technology should be done by Computer Services.

Faculty/Staff Computing Technology

Faculty/Staff Computing Technology refers to Faculty/Staff Computers.

Computer Resources

Current Assessment:

Approximately 95% of faculty and staff have access to a computer in their work area.

Recommendation:

- Provide all faculty and staff access to a computer in their work area within the next calendar year.

Computer Distribution Plan

Current Assessment:

Currently no acquisition, upgrade or re-distribution plan exists at the college level.

Recommendation:

- Adopt a computer distribution plan utilizing Trickle-Down Replacement in a two-tiered structure.

Budgetary concerns will prevent every faculty/staff computer from being replaced with the highest performance machines. Tier 1 machines will be replaced annually with new, current high-end machines. The replaced machines will now become Tier 2 machines. The useful life of a faculty/staff computer will be three years.

Faculty/Staff Computing is defined by two tiers:

Tier 1 – Highest possible computing performance required. These machines are used by faculty and staff who either teach and/or use CAD or engineering and science applications, do advanced programming, manage the fiscal systems, student records, or library system, or use other high-end applications

Tier 2 – Moderate performance required. These machines are used for word processing, moderate spreadsheet applications, Internet searches, email etc.

Appendix B describes the replacement methodology for computer hardware.

Printing

Current Assessment:

In general most faculty/staff members have a printer directly attached to their office computer. Some office areas utilize network printing. Computer Services is currently responsible for providing support services for networked and individual printers.

Recommendations:

- Provide high capacity/quality printers for office suites to provide for a higher level of support, higher quality of printing, and cost effectiveness. In addition, a high quality color printer should be available in every building. Computer Services will continue to support directly attached printers until the networked printers are available in office suites.
- Purchasing of network printers and network printer supplies should be done by Computer Services.

Intranet

Current Assessment:

An Intranet exists but is currently under-utilized. A committee is being formed to assess the College's web site for modifications. As a result of this assessment, the Intranet site will be updated or eliminated.

Recommendations:

This document provides no recommendations at this time, pending the committee's assessment.

Web Development/Internet

Current Assessment:

The College maintains a set of web pages for general use. There is no facility for faculty and staff web development at this time. The College has no full-time Web Master on staff. A committee has been formed to assess the College's web site for modifications.

The majority of the faculty and staff have Internet access from their work area.

Recommendations:

- Provide a facility for faculty and staff web development.
- Create a full-time Web Master position.
- Provide all faculty and staff with Internet access from their work area.

Email/Calendars

Current Assessment:

Currently the college maintains a pop mail system, which is independent of the University of Kentucky. A few room schedules/calendars are maintained via a free Internet Source.

New KCTCS e-mail accounts will be provided for all faculty and staff during the next 12 months.

Recommendations:

- Explore full capability of the KCTCS exchange servers in maintaining calendars. Maintenance of individual calendars and room schedules on the exchange server will facilitate the scheduling of meetings and reserving of campus facilities.

Software

Current Assessment:

There is no standardized software for faculty and staff computers. Software for faculty and staff is purchased at the division/unit level.

Recommendations:

- Use a standardized software configuration as the base software load on Faculty/Staff Computers. The current standard software is described in Appendix D.
- Installation, licensing and operational maintenance of all standard software should be performed by Computer Services. Computer Services should assist in the installation of software outside of the standardized software configurations when the software is required for job functionality. The responsibility for licensing will rest with the end user.

Repair and Maintenance

Current Assessment:

Repair of existing hardware is now handled by Computer Services with the hardware being purchased by the division or unit.

Recommendation:

- Repair and maintenance of all network-attached devices including desktop PCs, laptops, printers and other should be performed by Computer Services.

Backup of Critical Data

Current Assessment:

There are no existing standard operating procedures for end user mission-critical data.

Recommendation:

- Create a centralized, network-resident repository for user data that is backed up on a daily basis.

Operational Support

Current Assessment:

Currently, an email address exists, PCFIX@pop.jcc.uky.edu, which can be used to report problems with equipment college-wide. Members of the user community may also telephone the technicians directly to report problems. A computer help desk is being created to act as a single point of contact to report problems of an operational nature college-wide. The help desk will track reported problems to insure resolution. This help desk is not intended to provide instructional support of software applications.

Recommendations:

- Complete the functional analysis of the Computer Services unit begun by the Jefferson Community College Computer Services Task Force to determine the most efficient organization and staffing for the department. This task force, which was facilitated by an external consultant, included faculty and staff representatives from across the College as well as all members of the Computer Services unit. It was charged to analyze the mission, organization, and function of Computer Services, and make recommendations that, if implemented, would result in increased effectiveness and improved service to the College.

- Provide for continuous staffing of the help desk during the time in which the College's offices or facilities are open for student use.

Training/Application Support

Current Assessment:

A survey has been compiled by the **Director of Training**, which indicates the training and level of computer proficiency required by the faculty and staff. This document is available from the **Director of Training**.

Computer Services has been providing limited application support.

Recommendations:

- Coordinate computer-related training for College staff and faculty through the Center for Community & Economic Development (CE) and the Professional Development Committee, respectively. These two entities will work together to assess current and future training needs of College personnel, and will develop a college-wide technology training plan determined by broad-based input from the College community.
- Establish an Application Support Help desk charged with trouble-shooting software issues encountered by College personnel.

Assistive Technology

Current Assessment:

The Americans with Disabilities Act (ADA) Compliance Officer and the Disability Resource Coordinator evaluate the assistive technology needs for the College.

Recommendations:

- Establish a collaborative method for acquisition of assistive technology for employees with disabilities. Need and appropriateness for assistive technology should be evaluated or determined by the ADA Compliance Officer and the Disability Resource Coordinator with input from Computer Services when appropriate.
- Purchasing of computer-related assistive technology should be done by Computer Services.

Administrative Computing Technology

Administrative Computing Technology refers to Administrative Computers.

Computer Resources

Current Assessment:

100% of administrators and administrative staff have access to a computer in their work area.

Recommendation:

- Provide all administrators and administrative staff with an up-to-date computer in their work area within the next calendar year.

Computer Distribution Plan

Current Assessment:

Currently no acquisition, upgrade or re-distribution plan exists at the college level.

Recommendation:

- Adopt a computer distribution plan utilizing Trickle-Down Replacement in a two-tiered structure.

Budgetary concerns will prevent every administrator/administrative staff computer from being replaced with the highest performance machines. Tier 1 machines will be replaced annually with new, current high-end machines. The replaced machines will now become Tier 2 machines. The useful life of an administrator/administrative staff computer will be three years.

Administrator/Administrative Staff Computing is defined by two tiers:

Tier 1 – Highest possible computing performance required. These machines are used by administrators and administrative staff who manage the fiscal systems, manage student records, access PeopleSoft on a regular basis, or use other high-end applications

Tier 2 – Moderate performance required. These machines are used for word processing, moderate spreadsheet applications, Internet searches, email etc.

Appendix B describes the replacement methodology for computer hardware.

Printing

Current Assessment:

In general, most administrators and administrative staff have a printer directly attached to their office computer. Some office areas utilize network printing via Xerox copiers. Computer Services is currently responsible for providing support services for networked and individual printers.

Recommendations:

- Provide high capacity/quality printers for office suites to provide for a higher level of support, higher quality of printing, and cost effectiveness. Computer Services will continue to support directly attached printers until the networked printers are available in office suites.

Repair and Maintenance

Current Assessment:

Repair of existing hardware is now handled by Computer Services with the hardware being purchased by the administrative unit.

Recommendation:

- Repair and maintenance of all network-attached devices including desktop PCs, laptops, printers and other should be performed by Computer Services.

Backup of Critical Data

Current Assessment:

There are no existing standard operating procedures for end user mission-critical data.

Recommendation:

- Create a centralized, network-resident repository for user data that is backed up on a daily basis.

Infrastructure

Current Assessment:

The College has purchased new infrastructure equipment (hubs, routers and switches) to upgrade the College's backbone (the devices that connect all campus buildings). This will increase the capacity of computer accessibility for all sectors of the college community and also allow for convergence of the data and voice networks. The upgrades scheduled will only serve to bring us to a level of technology acceptable for today. Metropolitan College, in conjunction with Jefferson Community College and the University of Louisville, has agreed to install a fiber optical ring around Jefferson County. The fiber ring will allow increased capacity of communication for computer data, video and voice.

Recommendations:

- Adopt strategic planning for network utilization. A memorandum of agreement between all parties involved in the fiber ring project is required.
- Lease computer servers. Since these computers have the highest levels of usage and need to be replaced before mechanical failures can occur, leasing is the best option. The servers will be rotated to allow for the most recently leased server to be used as the primary and for the older servers to be dedicated to less demanding tasks.

Voice Communications

Current Assessment:

The College currently operates an internal PBX type voice mail system. Each campus has separate trunk lines with separate telephone numbers. The voice mail system will be modified to work with the new e-mail system being established by KCTCS.

Recommendation:

- Upgrade the phone system to provide Direct Inward Dial (DID) capabilities and voice over IP capacity. All new office space and renovations should include voice over IP telephone connections. Outside telephone numbers should be implemented first in those offices having extensive external contact, and in the remaining sectors of the College, as funds are available. The convergence of the telephone system with the network will allow for better quality of service for the telephone system as well as transparent management of voice, data, and video by Computer Services.

Remote Access

Current Assessment:

The College does not support remote access to the computer network by faculty, staff or students.

Recommendation:

- Provide remote access to the computer network for all students, faculty and staff thereby enhancing access to facilities, information, and class materials.

Funding - Operational and Acquisitions

Current Assessment:

Computer Services has a departmental operating budget for office supplies and mini-computer maintenance, but not for handling computer repair needs of the College. The mini-computer costs are the major expense charged to the departmental budget. The individual units and departments bear computer repair costs. Generally, purchase of new computer equipment is handled at the campus level and financed through non-recurring budgets or student fees.

Recommendations:

- Create a current expense budget for the repair and upkeep of existing hardware (desktop, servers, etc.), wiring, connectors, new peripherals, cards, etc.
- Establish Computer Services as the central ordering and purchasing agent for computer related products. Academic Computing equipment purchases should be managed by the Computers, Communications, and Technology (CCT) Committee in consultation with Computer Services. Central purchases for Faculty/Staff Computing should be made by Computer Services. Purchase requests of individual units of the college should be done by Computer Services in consultation with the unit.

- Purchase, rather than lease, computers for academic or faculty/staff use. Leased machines become out dated over the length of the lease and tie up resources, diminishing flexibility in the College's management of financial resources.

Technology Fee

Current Assessment:

In order to establish and maintain high quality academic computing standards, the Technology Fee is used exclusively to defray expenses directly related to Academic Computing, including personnel.

Recommendations:

- Use the Technology Fee exclusively for academic computing.
- Fund full-time Computer Services personnel through the College operational budget rather than Technology Fee monies.

Appendices

Appendix A – Definitions

Appendix B – Replacement methodology for computer hardware

Appendix C – Current Standard Hardware with proposals for future standards

Appendix D – Current Standard Software with proposals for future standards

Appendix E – Physical Devices (internal or external) beyond the Standard Computer Package

Appendix A – Definitions

The following definitions apply throughout this document:

Administrator/Administrative Staff Computer – a Standard Computer Package intended for administrative or individual employee use. This computer may include additional peripherals and/or software as required to meet specific usage requirements.

Faculty/Staff Computer – a Standard Computer Package intended for departmental or individual employee use. This computer may include additional peripherals and/or software as required to meet specific usage requirements.

Instructional Computer – a Standard Computer Package intended for use in a classroom setting. This computer may include a variety of peripherals (i.e. projector or smartboard) which allow instructors greater flexibility and effectiveness in teaching.

Intranet – a web site that is private to the institution.

Network – the infrastructure that exists between the network connection of a computer and the outside world. The infrastructure consists of the following: network servers and associated software, network hubs/routers/switches and associated software, the wiring (copper wire and optical fiber) and patch cords connecting all of the network hardware and the client computers. The College Network does not include the Interactive Television (ITV) equipment.

Peripheral – any device, not described in the Standard Computer Package, which is externally connected to the computer.

Standard Computer Package – a complete computer owned by Jefferson Community College. The hardware component consists of the CPU enclosure along with all related internal components (hard disk, floppy, motherboard, expansion cards, power supply, CD ROM drives), monitor, keyboard, mouse, and speakers. The software component consists of the Standardized Software Configuration defined in this document.

Standardized Software Configuration – core software package consisting of an operating system and standard application packages. Please refer to the Current Standard Software specifications found in Appendix D.

Student Computer – a Standard Computer Package intended for direct student use. This computer may include additional peripherals and/or software as required to meet specific usage requirements.

Appendix B – Replacement methodology for computer hardware

Academic Computing

The CCT committee will analyze Academic Computing on an ongoing basis. Each computer facility supervisor/manager will be informed of the tier in which his/her facility has been placed and may appeal this determination to the CCT committee.

Not all Academic Computing Facilities will receive new machines. Many of the computers will be machines that were previously used by other facilities. Computer Services will check and re-install software to assure maximum functionality.

Administrative Computing

Based on data provided by each user concerning job function, software usage and need, and other pertinent information, the heads of administrative units will analyze Administrative Computing facilities on an annual basis. According to the analysis, each user/station will be assigned to a tier.

Based on the tier system, not all employees who have computers replaced will receive new machines. The heads of administrative units will direct Computer Services to check and re-install software to assure maximum functionality. The goal of this plan is to insure that every employee has the computer and software necessary for their job.

Faculty/Staff Computing

Based on data provided by each user concerning job function, software usage and needs, and other pertinent information, Computer Services will analyze Faculty/Staff Computing facilities on an annual basis. According to the analysis, each user/station will be assigned to a tier. The faculty/staff member will be informed of the tier assignment. Any appeals of the tier assignment will be handled by a cross-representational committee to be established.

Based on the tier system, not all employees who have computers replaced will receive new machines. Computer Services will check and re-install software to assure maximum functionality. The goal of this plan is to insure that every employee has the computer and software necessary for their job.

Appendix C – Current Standard Hardware

The minimum computer standards will be reviewed at least annually to assure that they meet the computer and software needs of the college.

Desktop PCs

Current Procurement:

Purchase the best machine for the money as long as it meets the minimum standard, rather than picking a platform. \$1500 dollars will buy the most viable machine from the normal vendors. Otherwise a machine should contain the following:

Multimedia (CD-ROM and Sound card)
17" Monitor or larger
10/100 Ethernet card (3Com)
1-year onsite, 3-year parts
A machine considered serviceable by Computer Services (Dell preferred)

The same rules for buying new PC's should be applied to Mac's in the basic hardware needs.

Minimum Standards

P100 or better
32mb of RAM
1.5gb or larger HDD
Win95

Mac Platform

PowerMac 90Mhz or faster
32mb RAM
1.5gb HDD or larger

Any machine below the minimum standards **must** be replaced within the next 18 months.

Miscellaneous Hardware

LCD Projectors

Must be available in every building. If the projector is mounted in the room, the scheduling of the room must be flexible and priority should be given to those who will require use of the projector. At least one portable projector should also be available on each campus.

Network Cards

Any card purchased must be a 10/100 MBPS card with a lifetime warranty.
3com is recommended for Academic and Faculty/Staff Computers; exceptions will be made for network training.

Sound Cards

Creative Labs products

Servers

Dell server-class machines with 3-year onsite warranty and 3-year lease on servers

Hubs and Network Connectivity Hardware

All hubs need to be switched and support 100 MBPS on all media. Cisco is the current brand in service.

Laptops

In general laptops are very poor investments (high cost and expensive to maintain) and should not be purchased in large quantities. The College should have a few laptops available through the libraries for checkout by faculty and staff. Laptops **must** be purchased from the normal PC sources (Dell or IBM only). In general laptops should not be purchased for student use.

PDA – Personal Digital Assistant

Personal Digital Assistants **must** be compatible with Microsoft Outlook. 3COM Palm III or newer is recommended.

Palmtop devices, running Windows CE, **must** be able to integrate with the college network and be compatible with Microsoft Outlook.

Appendix D – Current Standard Software

The minimum computer standards will be reviewed at least annually to assure that they meet the computer and software needs of the college.

All computers will contain one or more application from each of the following categories:

Operating Systems

Windows 2000 (when available)
Windows 98 or Windows 95 (not for new installations)
Windows NT 4.0
Mac OS 8.6 or 9.0

Productivity Software

Microsoft Office

Network Connectivity

Microsoft client

Email Clients

Faculty and staff - Microsoft Outlook

Students - free email services available on the Internet, such as Hotmail

Virus Protection

McAfee

WWW Browsers

Internet Explorer 4.0x (preferred)
Netscape 4.0x

Other

Adobe Acrobat
Adobe Acrobat Reader

The following software will be retired and no longer supported by Computer Services:

- Windows 3.1x
- Eudora Light/Pro versions
- Mac OS below 7.6
- All versions of Netscape/Internet Explorer below current versions
- Microsoft Works (faculty and staff usage)

Appendix E – Physical Devices (internal or external) beyond the Standard Computer Package

Physical devices should be purchased in consultation with and installed by Computer Services.

Peripherals shall not be attached to a student computer without consultation with Computer Services (Note: Headphones are not considered a peripheral device.)

Computer Services will install, to minimum operational specifications, items that may be the personal property of faculty or staff members. The integrity of the computer should not be compromised by the installation. The user should not open the case under any circumstances.

Examples:

- A staff member buys his/her own sound card.
Computer Services is contacted regarding brand/model to be purchased. Computer Services schedules the installation as a low priority task.
- A faculty member purchases a scanner.
Computer Services is contacted regarding brand/model to be purchased. Computer Services schedules the installation of the scanner as a low priority task.
- User wants to remove personal property from the workstation.
Computer Services is contacted and schedules the removal of the hardware as a low priority task.