

APPENDIX R



Request *for* **IT Management Flexibility**

Submitted by

North Carolina Central University (NCCU)

August 2003

Revision 4.0

IT Management Flexibility Plans

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Section 1: Introduction

Introduction

North Carolina Central University requests authorization to exercise management flexibility in the planning, acquisition, implementation and delivery of information technology under G.S. 116.30.1. This report demonstrates that North Carolina Central University meets the requirements for management flexibility as set forth in Senate Bill 1005, Section 116.40.22.

This document provides a summary of NCCU's ITS planning, implementation, and oversight processes that adhere to industry standard practices. This document also shows how NCCU's campus ITS strategies are linked to the Board of Governor's Long Range Plan and the UNC IT Strategy to ensure consistency with overall UNC goals. The current University IT policies that govern the use and implementation of IT on campus and a description of the major elements of the campus IT infrastructure can be found on the NCCU website.

The information provided in this document demonstrates that NCCU observes industry standard IT practices in its' ITS management processes with appropriate campus input and oversight.

This document is organized into six (6) sections each containing details of each specific area and function. Section 1 is the Introduction. Section 2 sets out the ITS structure with the basic organization chart and descriptions of each division within ITS. It also describes IT policy committees and how the IT decision process is accomplished.

The next section, section 3, describes in detail the responsibilities of each part of ITS and the standards that are used in the decision making process. Section 4, is the management process as related to IT audit performance and how acquisition for IT goods and services is structured. This is also the section where the major implementation project process is detailed as well as IT Life Cycling process is described.

Assessment and Accountability is the next section, Section 5. This section documents how ITS measures its' performance relative to customer satisfaction, management reporting and state audits. The ITS goals are part of the assessment and accountability process.

The last section, section 6, describes funding sources that enable ITS to support the technology environment on campus.

Campus Information Technology Plan

Vision

North Carolina Central Information Technology Services (ITS) employees are focused on delivering high-quality, cost-effective, and innovative solutions for the University. Serving as a single point of contact, ITS provides leadership to customers in meeting their business objectives. North Carolina Central University envisions a 21st Century learning community supported by the best available technology and contributing in turn to the new technology directions. "Best available technology," means not only best available hardware and software (e.g., high performance supercomputer, high speed network), but also best practice (e.g., truly integrated information environment, commitment to digital libraries). The technology infrastructure must support use, sharing, and integration of all kinds of information: text, data, image, video, and voice. The information environment provides seamless access to information and services for faculty, staff, students, and other constituencies, to support all university activities: teaching, learning, research, administration, economic development, and outreach.

Today's disparate networks will evolve into a digital, multimedia network infrastructure capable of transmitting different kinds of data and providing bandwidth and quality of service for the campus of the future. Classrooms will be online, outfitted to use both electronic and audiovisual media easily and effectively, to capture live class sessions for distribution outside the bounds of the physical university utilizing cable, satellite, microwave, ITFS and video streaming. Laboratories will offer students state-of-the-art computing facilities and provide access to both local and global resources. The library will become a model center for electronic and print resources, accessible and searchable through the integrated information system. Technology-rich teaching and learning methods will be enabled, and new, experimental practices will be supported. Secure, reliable communications and rich resources for coordination and collaboration will be ubiquitous.

Central and essential to this vision is the physical campus and the geographically clustered academic community. New and emerging technologies will be adopted first within such settings. The campus provides a site for innovation through research; the research community is expected to promote diffusion of innovation for the benefit of all society. We envision a diverse community of experts exploring freely the possibilities and constraints of new technology and sharing the results of these explorations within disciplinary networks and with the broader public. From this strong intellectual hub we envision benefit flowing out at great distance in support of such social goods as increased access to higher education and increased capacity for economic development.

Mission Statement

IT will be a key component in providing a dynamic support infrastructure that serves all stakeholders fairly and equitably and enables the University to realize its vision for the 21st century. The technology will support the seamless integration of academic, developmental, service and administrative roles in the University to provide a cohesive and efficient teaching, learning, research and working environment.

The necessary connectivity among all stakeholders will be provided to ensure that synergism and a collegial culture of ownership flourishes at the University. Greatly expanded access to information will stimulate the growth of new and diverse teaching, learning and research environments and opportunities, both on campus and beyond. IT will facilitate a better understanding of the world and provide the type of global access that will encourage real innovation and creativity in the University community.

IT will provide our students with more value and quality in the teaching, learning and service environments and afford them a competitive advantage as graduates. The technology will strengthen the research culture at the university and enable researchers to compete effectively in the global environment. IT will be used to deliver training, contribute to the professional development of faculty and staff, and increase public awareness by helping to publicize and celebrate the strengths and attractions of the University, thereby serving to attract and retain outstanding students and faculty.

The IT needs of the University will be reviewed and upgraded in an ongoing responsive process that involves stakeholder participation. Stakeholders will be informed of the IT resources available and the regulations and policies governing the use of the University's IT resources that can be used to access the global networking infrastructure. The IT acquired by the University will be cost-effective and implemented in a secure manner.

The IT will provide leadership to North Carolina Central University, the UNC system, and the state of North Carolina in the design and deployment of current and emerging information technologies for learning, teaching, and productivity; advance the pursuit of excellence in instruction, research and service through leadership in the application of information technologies and supporting expertise; work in concert with campus units to develop and communicate a vision for the broad computing environment and provide leadership for charting the direction of this vision; develop and maintain state-of-the-art infrastructure and services that empower faculty, students, and staff with the technological tools and resources for achieving excellence.

Summary of Stakeholder Benefits

Implementation of the IT strategic plan will benefit all University stakeholders: students, faculty, staff and administrators.

Benefits in general:

- Enhanced teaching, learning and research environments;
- Common set of productivity tools through a Campus Area Network;
- Improved information management;
- Improved access to the web and increased web functionality;
- Responsive, distributed decision making forum;
- Timely online help;
- Improved support for hardware and software;
- Improved access to training and professional development;
- More cohesive institutional environment through internal connectivity;
- Enhanced access to information through global connectivity;
- Effective use of IT on campus as a result of the IT strategic plan; and
- Competitive advantages and new opportunities.

Students

Students attending North Carolina Central University will enjoy improved access to computing resources, which aid in learning, including high-speed web access and alternative ways of offering courses, and as computer literate graduates they will be positioned to benefit from this competitive advantage. A variety of computing services will improve the quality of student life, including:

- Opportunities for learning and acquiring skills through web-based modules;
- Improved access to research material for graduate students;
- Increased training capabilities;
- Timely online help;
- Multimedia-equipped classrooms;
- Extended hours of operation for computer labs during peak times in the academic year;
- Improved computer access in libraries, residences and computer labs;
- Online student services such as registration for courses and training sessions, requests for degree audits, and payment of fees by credit card; and
- Quick, easy, self-directed installation of connectivity software for access to the University networks from home.

Faculty - Teaching Enhancements

- Access to a set of standard productivity tools, which enable novel and innovative teaching and efficient responses to administrative requests for information;
- Standardization of CV and other forms which are electronically submitted;
- Availability of appropriate web and authoring tools to develop, edit, improve and supplement web-based information and appropriate training and support for them;
- An ongoing program to provide multimedia-equipped classrooms;
- Appropriate time to develop computer-based courses and formal recognition for the innovative activity; and
- Online services such as training sessions, room or equipment reservations, requests for electronic class lists and submission of grades.

Faculty -Enhancements For Research

- Standard productivity tools for presenting and sharing data and information;
- High-performance access to global research networks from labs;
- Access to current information and electronic forms for submitting research grants;
- A Research Coordinator to assist in organizing IT requirements;
- Enhanced research support from the major IT Providers on campus; and
- Financial support for new research computing and networking initiatives.

Staff

- An improved working environment resulting from a standard set of productivity tools accompanied by support and training;
- Streamlined access to computing resources;
- Easier access to data and information and the availability of electronic forms;
- Improved support through the Help Desk; and
- Increased opportunities for computer training.

Administrative Units

- A transparent IT planning process;
- Access to standard levels of academic and financial data, through a common desktop application, to assist in making informed decisions;
- Access to a central database of current electronic administrative forms and a procedure for routing them through their approval cycles;
- Access to information which will enable managers to allocate fair and equitable workloads;
- Trained IT Leaders to provide front-level service in their units;
- Timely online help; and
- Appropriate security for all IT functions.

Alignment with the UNC IT Strategy

North Carolina Central University is a member of the UNC Shared Services Alliance and participates fully in all related activities. To assure alignment with the UNC IT strategy, NCCU has centered our University goals around ITS' five focus areas adapted to develop ITS strategies and projects that will help NCCU reach its goals.

IT Technology Goal and Initiatives

- *Goal 1: Integrate Technology into Instruction*
- *Goal 2: Improve Access to Information via Systems Integration*
- *Goal 3: Improve IT Resource Management*
- *Goal 4: Enhance Internal and External Network Connectivity*

See *IT Technology Goals and Initiatives can be found in Appendix A (page 20)*
IT Technology Accomplishments can be found in Appendix B (page 25)

UNC Strategic Initiatives

- *Campus Teaching and Learning with Technology (CTLT)* includes the support, equipment, and facilities needed to use information technology to enhance the educational process from course planning and content development through the pedagogical process and assessment.
- *Distance Education (DE)* is the educational process in which the majority of the instruction occurs when student and instructor are not in the same place. Instruction may be synchronous or asynchronous and may employ correspondence study, audio, video, or computer technologies.
- *Services for Students (SS)* encompass the administrative process that students experience throughout their educational lifestyle from pre-enrollment through graduation and alumni relations.
- *Administrative Systems (AS)* includes the processes of system procurement, implementation, operations, and maintenance, user support and training, and data sharing for financial, human resource, student information, and alumni/development systems.
- *Logistical Needs (LN)* is defined as the infrastructure, support services, processes, training and other factors needed to achieve the objectives of the other four issue areas.

Alignment with the Board of Governors Long Range Plan

The Strategic Planning matrix below summarizes the campus IT strategies and activities that support NCCU's strategic plan, the UNC IT roadmap, and the Board of Governors 2002 - 2007 long-range plan. The campus IT strategies were developed as a part of the IT strategic planning process with the express purpose of providing direct support to the goals of the NCCU strategic plan. The abbreviated designations for the different strategies are keyed to the descriptions in the preceding sections.

NCCU's Table

	BOG Long Range Plan	UNC IT Strategy	NCCU Strategic Plan
Integrate Technology into Instruction	4a, 4b, 5d, 5h, 6a, 6b, 6d	CTLT, DE	#1
Improve Access to Information via Systems Integration	2e, 4a, 6d	AS, SS, LN	#2
Improve IT Resource Management	2e, 4a, 4d, 4b, 6b, 6d	SS, AS, LN	#3
Enhance Internal and External Network Connectivity	5d, 5h, 6a, 6b, 6d	CTLT, DE, LN	#4

The complete ITS Strategic plan can be viewed in its entirety on the web at:

http://web.nccu.edu/its/ITS_Plan.pdf

Section 2: Organization

North Carolina Central's ITS Organization

Information Technology Services (ITS) is the University's primary information technology support organization. ITS is headed by the Chief Information Officer (CIO), and is comprised of three operating divisions. Academic Computing and Information Systems is the support organization for academic computing. Administrative Technology Services is responsible for development and management of the University's administrative computing services. Telecommunications Service is responsible for the campus network, telephone operations and the video and CATV networks called NCCUNET. The Chief Information Officer reports directly to the Chancellor and is a member of the Chancellor's Executive Cabinet. This position is responsible for developing campus ITS priorities, setting ITS directions, and working with the Chancellor, other Vice Chancellors, the Provost, and the Board of Trustees to ensure that the University has the appropriate ITS resources to fulfill its mission in outreach, instruction, and research.

(Organization Chart- Appendix D)

The ITS home page is available on the web at <http://web.nccu.edu/its/support.htm>

Academic Computing and Information Systems

The mission of Academic Computing and Information Systems (ACIS) is to support and strengthen the University's instructional and upcoming research programs by providing central services for information resources and technologies. Faculty, students and academic units are the primary clients of ACIS, which are designed to augment unit and individual investments and to enable personalized access to information resources and technologies. Faculty and Students have ready access to the following software applications, listed in *Appendix G (Supported Applications)*, to enhance their academic performance.

ITS provides the latest in software, hardware & consultation to assist faculty, students and staff in the pursuit of their learning and teaching endeavors.

Computer simulation labs are available for students; faculty, staff and labs are outfitted with the latest technology. The labs are located in the Shepherd Library, Academic Buildings and Students' Dorms. The Shepard Library, Law Library and School of Library and Information Science provide the students, faculty and alumni an extensive source for support to academics and research.

In addition, academic computing and support services are also provided by the following units; Faculty Den, School of Library & Information Science, Distance Learning, Teaching & Learning Center, School of Business, School of Law, Math & Computer Science, School of Education, College of Arts and Sciences and the Biomedical/Biotechnology Research Institute (BBRI). Services include faculty development, course content development, software development and computer assimilation for Chemistry, Biology and Bioinformatics. These services enrich the student learning process at the University. Each academic unit provides staffing to assist in the delivery of the aforementioned services. ACIS and Math & Computer Science have also collaborated in establishing a Cisco Academy. Students, faculty and staff are able to obtain Cisco certification by attending training classes taught by certified Cisco instructors.

ACIS supports Operating Systems and Server Support, Desktop and Software Applications Support, Helpdesk Support and special projects.

This department provides online and on-call assistance to faculty, staff and students who are experiencing difficulties in accessing or using the University's IT resources. ITS has implemented the Track-IT Management Software product to track trouble tickets assigned to individual consultants. Consultants have the ability to respond to trouble tickets online from their office or in the field via handheld wireless devices.

Administrative Technology Services and Application Development

The Administrative Technology and Development has responsibility for computer operations, Financial Records System (FRS), Student Information System (SIS), Web development, Web for: faculty, students and Alumni systems, Systems and Operations Support and the Human Resources System (HRS). The department is responsible for administrative software development including related emerging new technologies for NCCU. The primary purpose of this service unit is to form and maintain a solid base of technically oriented computer related support to the university. The Computer Center's mission includes serving as the internal data processing agency for the university, managing efficiently the computer resources of the University, and supporting the development of the management information system for the University.

ATS is organized into three units - Administrative Applications, Web Development, and Operations.

Telecommunications Services

Telecommunications Services supports a system that connects all of North Carolina Central University's buildings known as NCCUNET. NCCUNET, the campus wide voice, data and video network consists of a structure of campus wide Optical Fiber used for networking of all campus building as well as support for CATV connections to dorms, classrooms and administration buildings. In addition, Telecommunications Services manages the Campus wide Telephone system service provider, NC State Government ITS, Telecommunications Services.

Telecommunications Services also manages the vendor relationship with external organizations and systems, such as the North Carolina Research and Educational Network (NCREN), and the North Carolina Super Computer Center (NCSC) both located at MCNC. NCREN is the service provider that supplies NCCU with University System access as well as Internet service. The North Carolina Central University Network utilizes state-of-the-art technology.

IT Policy Committees

Information Technology Advisory Committee

This committee, made up of chairs of the various IT committees on campus as well as the senior administration of the University and substantial faculty, staff and student representation, is responsible for strategic planning for information and communication technology covering policy, infrastructure, application, adoption, and fund-raising priorities associated with information technology. This committee reports to the Chief Information Officer.

Information Technology Technological Sub Committee

This committee is a combination of university department head, chairpersons, and vice chancellors. The purpose of this committee is to focus on the future technology that impacts the campus. This committee reports to the Chancellor.

Functional Workgroups

This committee includes representatives from administration departments that periodically access system and application that assist in enabling the functional areas to fulfill their service delivery goals.

IT Decision Making Process

Routine IT operational decisions are made among the middle managers within ITS after reaching a consensus among them in terms of cost/benefit outcome of a particular decision. Strategic issues that impact other units and/or the University are presented to the CIO. The issues may come from within ITS, from other functional units on campus or sources external to the campus. The CIO then discusses these issues with the Chancellor's Cabinet, the Deans and the Directors for input and seeks a collective decision at the executive level.

Section 3: ITS Standards and Policies

Policies and Procedures

North Carolina Central University has established a set of policies for the use of Information Technology throughout the campus. The policies include but are not limited to the following;

Software Copyright Policy
Computer Use policy for University Employees
Computer Use Policy for University Students
Access to University Systems – Employees
Electronic Use Policy
E-Mail Retention Policy
Data Backup Policy
Security Policy
Network Policy

The policies outlined above pending campus approval and are available on the web at:

<http://web.nccu.edu/its/policies.pdf>

Policy Approval Process

University IT policies may originate from any number of sources, but must take a designated path for university approval. The draft policy must be circulated for review and comment among the discussion committees that are appropriate for the specific policy. The revised policy must then be presented for comment or approval to the IT Advisory Committee, the Chancellor cabinet, the Chancellor and if needed, the University Planning Committee and/or Board of Trustees. Each of the approval committees and offices may make suggestions for improvement in the draft policy, which may then be approved pending the change or tabled until a later meeting to review for approval. Once a draft policy receives approval from each of these committees and offices, it becomes a standing university policy.

Computer Standards and Recommendations

ITS supports a number of technology standards, which include: desktop computers (minimum standards), laptop computers (minimum standards), Macintosh (minimum standards), standard non-network printers, network printers and servers (minimum standards).

See Appendix F for Computer Standards, it is also available on the web at

<http://web.nccu.edu/its/standards.htm>

Section 4: Management Processes

IT Audit Performance

In addition to annual State financial audits, NCCU, like other State agencies, is subject to periodic intensive EDP audits. The most recent of these was completed in January 2002. All findings from that audit have been remedied. In addition, we continue our intensive efforts to ensure a secure, reliable, high performance IT environment. The results of these audits are available from the Office of the State Auditor. We continue to respond to any concerns and findings that may be brought to our attention from the State Auditor Office or the Internal Auditor Office. In addition, IT has established a Security Officer position to ensure compliance and coordinate all the activities relative to access security to the student and financial systems which include DRP, FRS, SIS, HRS, and assists with systems training, audit (internally), system development methodology and change control.

Acquisitions for IT Goods and Services

All major acquisitions for IT goods and services are done in accordance with State mandated procedures. Major initiatives, such as the information technology purchases, are reviewed and approved by the management of the requesting entity. Additionally, the request is reviewed and a secondary approval is required by the Chief Information Officer or his designate, to ensure that appropriate information technology equipment and systems are being deployed on campus and is in compliance with the overall IT strategic architecture blueprint.

Major IT Implementation Project Processes

All major implementations of new software and services are done using sound academic business practices. The Systems Development Life Cycle (SDLC) is an organized, structured, methodology for developing, implementing, and installing a new or revised Computer Information Systems, application, firmware, or servers. Standard phases include investigation, analysis and general design, detailed design and implementation, installation, and review. Each phase is made up of activities and each activity is made up of tasks. An activity is a group of logically related tasks that lead to, and are defined by the accomplishment of a specific objective. A task is the smallest unit of work that can be assigned and controlled through normal project management techniques; normally performed by an individual person, usually in a matter of days. Change control process provides direction on the application of change management for server and infrastructure devices supporting NCCU internal and perimeter networks. For the purposes of this process, a change is defined as any alteration to software, hardware, or other aspect of the data processing environment and its attached networks.
(Project Planning - Appendix C)

IT Life Cycling

A life cycle plan for all technology, which includes administrative systems, telecommunications, student labs, faculty and staff desktops is determined by the specific type of hardware or software and by releases of new versions by the vendor. There will be a minimum turnover time of eighteen months for software and four years for hardware.

Section 5: Assessment and Accountability

Campus Measures of ITS Performance

On a large complex campus, there can be no single metric that determines the success or failure of any project or activity, and this is true of information technology efforts. There are a number of ways we evaluate and monitor our progress:

- Customer Satisfaction
- Management Reports
- State EDP Audit

Customer Satisfaction

Information Technology Services conducts random customer surveys to measure operational quality. In addition, Research, Evaluation and Planning issue students, faculty and staff surveys to assess customer satisfaction. Beginning with the 2003 – 2004 academic year, ITS will conduct an annual survey to measure the overall effectiveness in service delivery, technology implementation, telephone services, and network performances.

Management Reports

The IT Managers are required to submit bi-weekly reports to management staff, meet bi-weekly to discuss the project status reports to determine the progress of each project. Decisions are then made concerning timelines, resources and other areas that may affect the successful completion of each outstanding project.

State EDP Audit

The Office of the State Auditor audits the IT resources and processes as they so determine, but not less frequently than a four-year cycle. As part of the financial audit IT resources and processes are audited in areas that may affect business finance annually.

Section 6: Funding

Funding Elements and Uses

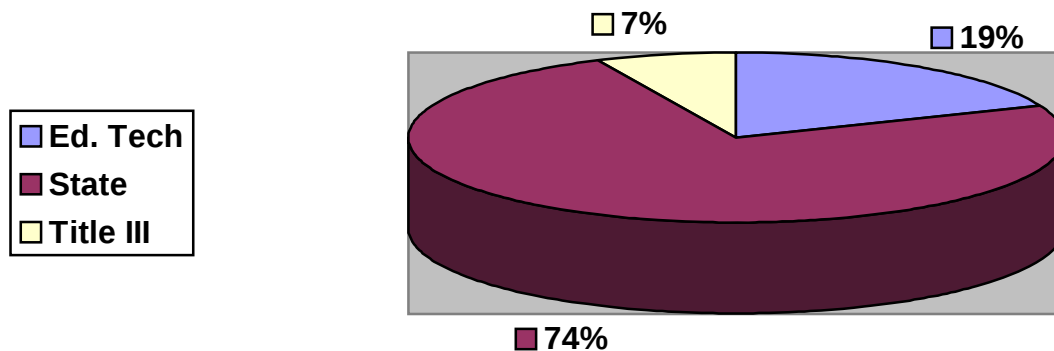
Funding for the 2002– 2003 ITS operation and capital budget comes from three sources:

1. All IT activities that support the administrative mission of the university are funded by the State. The State funding for the IT's budget is 74%.
2. IT activities that are related to student computing on campus are funded through Education and Technology fee revenue from students. This revenue contributes 19% of the IT budget.
3. Most of the capital outlays that are both administrative and academic are funded through Title III grants. This approximately amounts to 7% of the IT budget.

Though that is generally the scenario, when special situations arise such as IT initiatives championed by Office of the President, additional funding is sought either through special bond issue or through budget expansion requests.

Funding from all three resources total approximately \$1.7 million, which is approximately 3% of the total annual budget of NCCU.

2002 – 2003 ITS Funding Source Allocation



Section 7: Conclusion

North Carolina Central University has made a major commitment in the area of information technology as it applies to the teaching, research and public service missions. This is reflected in its organization, with the presence of a Chief Information Officer, reporting directly to the Chancellor and responsible for all campus central information technology services. It is demonstrated in the classroom technology support, technology training programs for faculty, campus network infrastructure and the dedication of resources to quality response center management. It is also demonstrated by the commitment to security, reliability and accountability of services, and the provision of state-of-the-art administrative applications. ITS strives to be a top-rated service-oriented organization. For that reason, the policies and procedures in place are designed to promote standardization, to minimize system and service interruptions, to increase productivity, and to protect the integrity of the information in ITS' custody. As this report details, North Carolina Central University is a leader in the comprehensive management of information technology resources and has demonstrated a very high level of professionalism and success in implementation. Within the constraints of resource availability, North Carolina Central University has clearly demonstrated its qualification for IT Management Flexibility by every reasonable measure.

Appendix A

IT Technology Goals and Initiatives

Goal 1: Integrate Technology into Instruction

Provide robust and differentiated support for use of technology to improve on-campus instruction to broaden off-campus access to higher education, and to enable significant innovation in supporting teaching, professional development, learning and research.

Distance Education

Distance education is expected to develop rapidly in the next few years. As curricular and logistical issues are resolved, the technological resources required to support interactive videoconferencing, electronic communications, "black board" applications, online curricular materials and high-bandwidth image transfer will be implemented. The IT Strategy Committee saw four possible goals of a NCCU distance education strategy:

- Meet the state's education and training needs by expanding access to underserved populations.
- Alleviate capacity constraints: Accommodate the expected 31% increase in enrollment over the next 10 years by teaching a large number of students online.
- Pursue new markets for education, such as "corporate learners" and professional enhancement learners," in order to meet individual needs, generate revenue and contribute to regional economic growth.
- Position NCCU to capitalize on new opportunities, to be responsive to students' needs for flexible learning options, and to increase student choice.

"Given the rise in "e-business," the increasing competition among colleges and universities, and the demand for greater educational accountability, it is likely that distance education will be a major driver of change within higher education."

High Tech Classroom/Multimedia Development

IT will develop programs to provide Web-enabled services and integrated services for all students:

- Provide technology-rich physical and virtual classrooms.
- Provide and support a diverse selection of "virtual classroom" environments.
- Conduct study of what resources faculty need to support course preparation
- Satisfy faculty demand for technology-rich classrooms.
- Secure technology resources and personnel for the Integrated Learning Center.
- Secure permanent budget commitments for technology refresh and staffing for existing instructional facilities.

Goal 2: Improve Access to Information via Systems Integration

Provide adaptable administrative and support services which are integrated, student-friendly, and responsive to changing conditions and users' needs. (Provide secure and logically integrated information systems in support of student services and business operations.)

Administrative Systems

Replace legacy administrative systems with contemporary and integrated solutions.

- Continue implementation of the new student system.
- Analyze and move towards replacing the human resources system with a contemporary integrated solution.
- Analyze and move towards replacing the financial records system with a contemporary integrated solution.
- Identify and evaluate potential partnering agreements with software vendors and other external entities to assist in the above actions.
- Provide employees with efficient and secure access to integrated University data as required to achieve their work objectives.
- Define and support data dictionary standards.
- Identify, provide and support the tools required to provide access to information.
- Training in the use of the tools, data and related privacy regulations.
- Develop Employee Link.
- Implement web tuition payment.
- Implement electronic data interchange (EDI) enterprise-to-enterprise supply chain business activities.
- Implement electronic document workflow.

Service for Students

Students attending North Carolina Central University will enjoy improved access to computing resources, which aid in learning, including high-speed web access and alternative ways of offering courses, and as computer literate graduates they will be positioned to benefit from this competitive advantage. A variety of computing services will improve the quality of student life, including:

- Opportunities for learning and acquiring skills through web-based modules;
- Improved access to research material for graduate students;
- Increased training capabilities;
- Timely online help;
- Multimedia-equipped classrooms;
- Extended hours of operation for computer labs during peak times in the academic year;
- Improved computer access in libraries, residences and computer labs;
- Online student services such as registration for courses and training sessions, requests for degree audits, and payment of fees by credit card; and
- Quick, easy, self-directed installation of connectivity software for access to the University networks from home.

Services for Faculty/Staff

- An improved working environment resulting from a standard set of productivity tools accompanied by support and training;
- Streamlined access to computing resources;
- Easier access to data and information and the availability of electronic forms;
- Improved support through the Help Desk; and
- Increased opportunities for computer training.

Goal 3: Improve IT Resource Management

Provide continuous training and development for NCCU leadership, faculty, staff, and students in how to use technology as a tool to enhance a student's success and employee productivity and job satisfaction. Provide effective campus coordination and utilization of information technology resources.

Management effectiveness and technology best practices

- Plan and coordinate acquisition and maintenance of large capital hardware expenditures.
- Plan and budget for hardware replacement.
- Plan and budget for upgrade to the research supercomputer.
- Plan and budget for maintenance and upgrade of storage, memory and operating systems.
- Analyze long-term costs and return on investment.
- Determine the long-term cost and benefits and coordinate the acquisition of software throughout the campus.
- Capture the opportunity and savings of site licensing when possible.
- Implement information technology best practices for the division (internal & external focus).

Retain and recruit the best information technology personnel

- Compare salary levels to market and attempt to keep in sync.
- Encourage and procure training for incumbent personnel.

Develop plan to effectively utilize all IT personnel

- Leverage cross-departmental IT supports personnel.
- Develop project management methodology.
- System development methodology

Develop effective Disaster Recovery Policies and Procedures

- Perform risk analysis and use as basis to acquire funding to develop effective disaster recovery.
- Analyze benefits of outsourcing and “secured site” backup and processing.
- Prioritize systems requiring disaster recovery.
- Develop disaster recovery procedures and triage plan.
- Performance Measures
- Number of systems with adequate disaster recovery policies and plans.

Provide user training and support

- Determine and articulate training needs of students, faculty and staff.
- Ensure user support is appropriately staffed and trained.
- Develop or acquire training programs for users and support personnel.
- Provide adequate number of and support for computers in labs.

Goal 4: Enhance Internal and External Network Connectivity

Refresh and enhance the campus data network infrastructure to ensure efficient, “anytime/anywhere” access on campus and to the Internet.

IT Infrastructure Initiative

This involves telecommunication upgrades to Campus buildings.

Network Baseline Initiative

- Implementation of Firewall for the Administrative Network
- Update Telecommunications portion of ITS Policy and Procedures manual
- Develop Disaster Recovery Plan for Telecommunications

Network Upgrade Initiative

- Addition of Voicemail for Residential Halls
- Installation of Caller ID on incoming trunk lines
- Installation of Symposium Auto Call Distribution (ACD) system
- Upgrading of the Telephone systems voice mail system
- Moving of Alpha Servers from Old Health building to Server room in new SOE
- Moving of dial-in modems from RTP to campus

System Development Methodology & Change Control

The Systems Development Life Cycle (SDLC) is an organized, structured, methodology for developing, implementing, and installing a new or revised Computer Information Systems, application, firmware, or servers. Standard phases include investigation, analysis and general design, detailed design and implementation, installation, and review. Each phase is made up of activities and each activity is made up of tasks. An activity is a group of logically related tasks that lead to, and are defined by the accomplishment of a specific objective. A task is the smallest unit of work that can be assigned and controlled through normal project management techniques; normally performed by an individual person, usually in a matter of days. Change control process provides direction on the application of change management for server and infrastructure devices supporting NCCU internal and perimeter networks. For the purposes of this process, a change is defined as any alteration to software, hardware, or other aspect of the data processing environment and its attached networks. The complete System Development Life Cycles process is available on the web at <http://web.nccu.edu/its/SDLC.pdf>. The complete system development methodology and change control process is available on the web at http://web.nccu.edu/its/Change_Management.pdf

***Appendix B
(Accomplishments)***

Accomplishments – Information Technology Strategic plan

Integrate Technology into Instruction

Accomplishments in this area include:

- Wireless communication
- Activated ports in all classrooms
- Video on Demand services
- Distance Education
- Acquiring of over \$600,000 in grants to support work on new learning environments.
- IBM e-business software grant
- Acquiring of Red Hat, Linux grant
- Approved to become Cisco certified site (grant)

Improve Access to Information via Systems Integration

Accomplishments in this area include:

- Campus functional workgroups have selected Banner products which will enhance service and access for administrators, faculty and students
- Significant upgrade to the computer hardware supporting the University's campus-wide database of administrative data, providing faster access to data and improved system reliability. Access authorization processes have been enhanced to safeguard the privacy of data.
- Implemented credit card payments (payment gateway)
- Implemented Web for faculty and students
- Implemented online Financial –Aid application
- Implemented pathways online admissions
- Implemented telephone registration
- Enhanced web site communication functionality

Improve IT Resource Management

Accomplishments in this area include:

- Implementation of a computer-based training program for students and employees.
- Implemented revised departmental policy and procedures
- Secured Cisco contract to implement IT best practices
- Phase I of IT staffing realignment completed
- Implemented Track-It Help Desk software
- Acquisition and distribution of campus site license for virus protection software.
- Disaster recovery policies and procedures analyzed and recommendations made.
- Secured Red Hat grant for improvement of back end infrastructure processes
- Secured IBM grant for technology incentive program and research initiatives (Bio-grid project)

Enhance Internal and External Network Connectivity

Accomplishments in this area include:

- Doubled the number of telephone lines in residence halls.
- Campus backbone upgraded to each campus building.
- Provide internet to the entire campus
- Implemented network compliance technology (shared file system technology)
- Addition of networking, internet, ports to students in every Residential Hall
- Upgraded internet connectivity speed

***Appendix C
(Project Planning)***

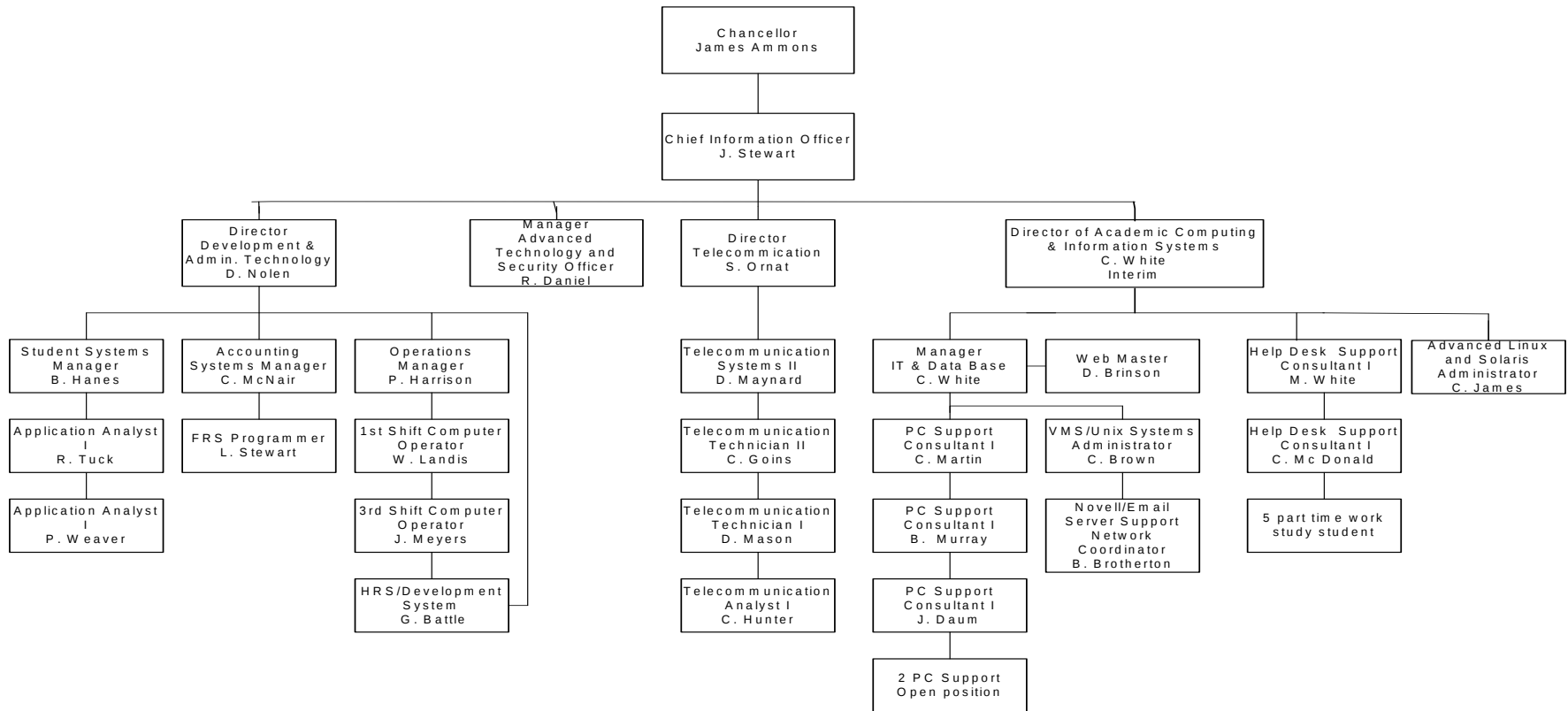
**INFORMATION TECHNOLOGY SERVICES
PROJECT PLANNING
2002/2003**

See NCCU Strategic Plan for Identified Projects available on the web at

http://web.nccu.edu/its/ITS_Plan.pdf

Appendix D
(Organizational Chart)

Information Technology Services Division



APPENDIX R

Appendix E (Web Site Links)

NCCU ITS Homepage

<http://web.nccu.edu/its>

NCCU Procedures

<http://web.nccu.edu/its/support.htm>

NCCU Policies

<http://web.nccu.edu/its/policies.pdf>

NCCU ITS Strategic Plan

http://web.nccu.edu/its/ITS_Plan.pdf

NCCU Change Management Standard

http://web.nccu.edu/its/Change_Management.pdf

NCCU Computer Standards

<http://web.nccu.edu/its/standards.htm>

Appendix F ***(Computing Standards)***

Desktop Computer (minimum standards)

Windows Version: XP Professional

Processor: Pentium or IV with 2 GHz

Cache: 512 KB

Memory: 512 MB

Monitor: 15 in

Video RAM: 64 MB

Hard Drive: 40 GB

Zip Drive: 250 Size (optional - This drive may be either internal or external)

Multimedia or Sound Card (Please verify selection of speakers)

CD ROM: 28x - 48x Speed

The following items maybe either a card or intergrated/embedded.

Network Interface Card (NIC): Ethernet card (Recommend - Intel, 3Com, or equivalent)

Advance Work Stations (minimum standards)

(for scientific research and data modeling purposes).

Windows Version: XP Professional

Processor: Intel Xeon with 2.00 GHz

Cache: 512 KB

Memory: 1GB

Monitor: 15 in or 17 in

Video RAM: 128 MB

Hard Drive: 80 GB

Multimedia or Sound Card (Please verify selection of speakers)

CD-Rom/ DVD AND Read-Write Drivers: 16x DVD and CDRW 40x Speed with Decode Solution

Laptop Computer (minimum standards)

Windows Version: XP Professional

Processor Speed: Pentium III or 3 GHz is recommended

Cache: 512 KB (optional)

Memory: 512MB

Screen Size: 14 in

Video Memory: 16 MB

CD-ROM: 28x – 48x Speed

Hard Drive: 20 GB

Zip Drive: 250 Size (optional - This drive is normally internal)

NIC or Fax/Modem: PC/MCIA 10/100 Base-T Ethernet card or combination Ethernet/Fax card with 56K

CISCO Wireless Card(optional)

Power Macintosh (minimum standards)

Mac/Apple Web Site:

Windows Ver: XP Professional

Processor: G4 Series 3GHZ Desktop

Memory: 256 MB

Video Memory: 2 MB SGRAM
Cache memory: 512 K Level 2 cache + 256 Level 1 cache
Hard Drive: 40 GB
Standard Items: CD-Rom and NIC 10/100 Ethernet card

Additional Storage Options:

If you require additional storage and faster access try the following:
Zip or Jaz drives, (either external or internal)
(Diskettes storage capacity for these drives can store as much as the equivalent of 83 regular 1.44 MB- 3½" diskettes.)
Zip Macintosh computer systems

Printers (minimum standards)

Printers selection may either be color or black and white.
Hewlett Packard (HP) Web Site

Non-Network Printers

Hewlett Packard (HP)1000 series or equivalent laser printer
DeskJet or Inkjet Printers (for non Laser)

Network Printers

HP 4100 series or equivalent network printer
Jet Direct network card
Memory: 32MB

Scanners:

Please search the HP web page and enter **scanner** in the search window.

Servers (minimum standards)

Novell OS 5.x
Mac OS 8
Unix Solaris OS 8.x
Red Hat Linux 7.3
40GB RAID 5
Tape Backup
CD-ROM 24X
UPS (power protection)
1Gig upgradeable to 2Gigs

Statistics:

of Campus users: 1758 (does not include students)
of PC's on campus: 1750 (does not include personally owned student computers)
of Servers: 50
of Network Printers: 141
of Students: 6,800

Appendix G

Supported Applications

General Use

- Microsoft Office 2000 Professional (Licensed under out Microsoft Campus Agreement) which includes: Word 2000, Excel 2000, PowerPoint 2000, Access 2000, Outlook 2000, Publisher 2000
- Microsoft Project
- Visio
- Corel Suite (WordPerfect, Quattro Pro, Paradox)
- Groupwise (Email client, Web client)
- Novell NetWare
- Sophos Viruscan and Spam Protection (Licensed under Site Agreement)
- Adobe Suite (Acrobat Reader, Photoshop, Illustrator)
- Lan Workplace Pro
- WinZip Archive Utility
- Adaptec Easy CD Creator (For systems with CD/RWs)
- Cisco IP/TV Solution
- Macromedia
- Frontpage
- Perl
- Linux
- Oracle 9i
- Microsoft NT
- Microsoft Server
- Java
- SAS
- Sun Solaris
- Internet Explorer
- UNIX Apache
- ArcServe2000
- Dashboard
- Focus
- Cobol
- TrackIt
- MainSaver
- EMAS
- Razor's Edge
- RMS
- MediCat
- Premiere
- Banner (Implementation Phase)

Academic Use Software

- Linux sendmail (for students)
- SAS
- SPSS
- Java
- Macromedia
- SciFinder
- Netscape Navigator
- Blackboard
- MySQL
- Library DRA System
- WEB CT
- GIS
- PLATO
- Perl
- Oracle 8i
- DMC Software