IT MANAGEMENT FLEXIBILITY

An IT Planning Process for UNC

April 2002

The University of North Carolina

I. IT Management Flexibility Legislation

Senate Bill 1005:

Section 116-40.21. Board of governors may authorize management flexibility.

The Board of Governors of The University of North Carolina may authorize management flexibility for any special responsibility constituent institution as provided by the Part. The procedure for that authorization is the same as that to designate a constituent institution a special responsibility constituent institution under G.S.116-30.1.

Section 116-40.22. Management flexibility.

(a) Definition. – For purposes of this section, the term 'institution' means a special responsibility constituent institution that is granted management flexibility by the Board of Governors in compliance with this Part.

Senate Bill 1005 (cont'd.)

Section 116-40.22.

(d) Information Technology. – Notwithstanding any other provision of law, *the* Board of Trustees of an institution shall establish policies and rules governing the planning, acquisition, implementation, and delivery of information technology and telecommunications at the institution. These policies and rules shall provide for security and encryption standards; software standards; hardware standards' acquisition of information technology consulting and contract services; disaster recovery standards; and standards for desktop and server computing, telecommunications, networking, video services, personal digital assistants, and other wireless technologies; and other information technology matters that are necessary and appropriate to fulfill the teaching, educational, research, extension, and service missions of the institution. The Board of Trustees shall submit all initial policies and rules adopted pursuant to this subsection to the Office of Information Technology Services for review upon adoption by the Board of Trustees. Any subsequent changes to these policies and rules adopted by the Board of Trustees shall be submitted to the Office of Information Technology Services for review. Any comments by the Office of Information Technology Services shall be submitted to the Chancellor of that institution.

Senate Bill 1005 (cont'd.)

"Section 116-40-23. Reporting requirement; effective date of reported policies, procedures, and rules.

The Board of Trustees of a special responsibility constituent institution authorized to have management flexibility under this Part shall report to the Board of Governors and to the Joint Legislative Education Oversight Committee any policies, procedures, and rules adopted pursuant to G.S. 116-40-22 prior to implementation. The report shall be submitted to both at least 30 days before the next regularly scheduled meeting of the Board of Governors and shall become effective immediately following that same meeting unless otherwise provided for by the Board of Trustees. Any subsequent changes to the policies, procedures, or rules adopted by the Board of trustees pursuant to G.S. 116-40.22 shall be reported to the Board of Governors and to the Joint Legislative Education Oversight Committee in the same manner. Failure of the Board of governors to accept, review or otherwise consider the report submitted by the Board of Trustees shall not affect in any manner the effective date of the policies, procedures, and rules contained in the report."

II. IT Management Flexibility Objectives

- To retain the highest level of flexibility for UNC campuses in managing affairs associated with information technology
- To be consistent with statutes authorizing the Board of Governors to grant special responsibility constituent institutions
- To establish information technology as a tool to support the campus mission
- To provide support for achieving the Board of Governors strategic directions for UNC
- To be consistent with the focus on common needs as defined within the UNC IT Strategy

III. IT Management Flexibility Criteria

- **Organization** – structure and functions to support IT
- **Standards and Policies** – IT decisions based on standards and actions based on policies
- **Management Processes** – processes and procedures to determine, acquire, implement, maintain and enhance IT solutions
- **Assessment** – methods to evaluate the efficiency and effectiveness of IT systems and services
- **Funding** – availability of operating and capital funding to build and sustain IT environment

IV. IT Management Flexibility Plans for UNC Constituent Institutions

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Request

for

IT Management Flexibility

Submitted by

The University of North Carolina at Chapel Hill

Revised: 5 April 2002

FF-5

Section 1: Introduction

Campus Information Technology Plan

The Chapel Hill campus IT strategy is a combination of a creative plan for the availability of high quality technology to all faculty, staff, and students called the Carolina Computing Initiative and an alignment of services to meet the University's priorities. The strategic plan for technology delivery, the Carolina Computing Initiative (CCI), was initiated four years ago. It is arguably the most progressive and successful program for technology delivery on any university campus in the nation. Indeed, the CCI embodies one of the major thrusts of the Board of Governors' plan for Transformation and Change in that it employs a sound business plan that combines negotiated pricing, financing, service, and support. Phase I of the CCI, which includes financial aid support for the undergraduate laptop requirement (the first year of which commenced with this year's entering class), also provides a desktop life cycling plan for faculty, staff, and teaching graduate students in the College of Arts and Sciences. The CCI is the first plan of its kind on any research campus to equip the undergraduate student body and to provide a continuous technology plan for faculty and staff. It is also uniquely suited to a public university setting. The implementation of Phase I was accomplished through a process of aggressive priority setting and campus reallocation in 1998. Today, the success of the initiative (delivered on budget and on time) is clear – all undergraduates in the freshman and sophomore classes have appropriate technology and all College faculty, staff, and teaching graduate students are being supported by a technology life cycling plan. In two years, the entire undergraduate student body will be carrying laptops. The most notable aspect of the plan is the University's commitment to the need-based student. Chapel Hill is the *first* public university in the country to offer a pre-approved loan to all entering students to purchase laptops and need-based grants to fund the purchase of laptops for up to 40% of the student body. This past year, over 1,000 need-based students were granted ownership of a laptop.

Aligning Technology with the University's Priorities

In the spring of 1998, then Chancellor Michael Hooker approved the University Priorities and Budget Committee's "Priorities for The University of North Carolina at Chapel Hill". This document was based on the recommendations in the University's Intellectual Climate Task Force Report, submitted to the Chancellor the previous year. Information Technology Services adopted section E (*Enhance the use of innovative information technologies to strengthen core University activities.*) of the priorities document as its mandate to:

1. Improve access and availability of up-to-date information technologies to meet the needs of all campus constituencies – faculty, staff, and students. These technologies include both the local and wide area network, personal and central computers, and educational and applications software. Provide the resources to renew and support these.

2. Provide campus-wide support (e.g., training, consultation, evaluation, etc.) to both faculty and students for an online distributed learning environment.

3. Provide integrated access to knowledge resources in support of teaching, research, and service (e.g., digital library resources available from the desktop).

4. Standardize, automate, and redesign core processes (administrative, student service, and other) to take advantage of the efficiencies of automation.

5. Develop and implement policies and procedures that permit central support of critical University-wide networks and large-scale computing systems with decentralized and distributed support for the desktop environment.

The following table describes the alignment of the services of the University's Information Technology Services (the central IT organization at Chapel Hill) with the University priorities.

Activities In Support of UPBC Priorities

University Priority	Supporting Activity
A. Intensify the intellectual climate	
1. Mechanisms to engage students in teaching and learning	CCI: provides computers to faculty and students to support instructional technology; CIT: support faculty use of instructional technology; Web: create web-based tools for teaching and learning.
2. Improve financial support for grad students	CCI: computers provided for graduate student use offsets need for personal purchases.
3. Foster undergraduate research	CCI: provides technology to all undergraduates, enhancing research effectiveness; DCI: makes research data more freely available to students.
4. Improve physical settings for teaching, research, learning	CCI: classroom networking and wireless networking in non-traditional locations (Lenoir Dining Hall, Starbucks) encourages learning.
5. Improve academic advising & mentoring	Web: Online Advising System is now a powerful tool for both students and advisors.
6. Sustain quality of libraries	CCI: with technology provided to faculty and students, use of digital libraries and computers in libraries is enhanced. Web: Single Sign-on will improve access to digital libraries.
7. Improve communication of University's intellectual life	CCI: provides electronic communication to entire University community; Web: www.unc.edu becomes a more effective communicator to external community and through web-based student applications and web-based administrative applications, a more effective tool to internal community.

* CIT – Center for Instructional Technology; DCI – Distributed Computing Initiative

B. Improve the University's capacity to recruit, develop, and retain a high quality and diverse faculty, student body, and staff.

1. Provide salary and benefits and administrative flexibility to attract an outstanding and diverse faculty and staff	CCI: Provides a technology benefit to faculty and staff.
2. Provide career development opportunities for faculty, staff, and graduate students	CCI: Provides technology and training for faculty, staff, and graduate students; CBTs: offer career development as self-paced training; CIT: provides instructional technology training and course design assistance to faculty and graduate students.
3. Improve merit and need-based scholarships, together with TA & RA tuition relief	CCI: Provides financial assistance for laptop purchase for need-based students.
4. Provide appropriate spaces	CIT: *Should* provide appropriate spaces for faculty and graduate students to use and create instructional technology tools.
5. Provide an effective administrative infrastructure	Web: Provides flexible and easy to use web-based and client/server administrative applications (e.g., Departmental Accounting System, HRIS, Grant Management System, etc.); the data warehouse initiative consolidates and enhances administrative data base applications.
6. Increase the number & diversity of outstanding students who choose to enroll at Carolina	CCI: Excellent students will recognize the University's commitment to providing technology.
7. Enhance/promote pluralism	CCI: The financial assistance for laptop purchases makes technology available to all students.

C. Identify and build on selected areas of concurrent and potential excellence.

1. Strengthen commitment to excellence in undergraduate liberal-arts education, service to NC citizens, and comprehensive health-care education and research in this, the "University of the people"	CCI: Recognizes the need to provide the best technology for teaching and learning. DW: The Public Service Data Base is an effective resource for the State.
2. Build on research strengths in a region rich in inter-institutional opportunities for collaboration	NCNI: Continued collaborations with the triangle's research campuses lead the nation in next generation technologies. TR: Technology research efforts in DWDM, video over IP, and local wireless offer research opportunities as well as new models for technology delivery.
3. Develop criteria for and identify areas of current and emerging excellence that should be chosen for excellence, develop strategies for implementation, and identify programs to de-emphasize	CCI: Through IBM grants, faculty will be identified to lead assessment and instructional technology development.

D. Foster excellent interdisciplinary programs.

1. Encourage entrepreneurial faculty efforts to identify and develop interdisciplinary research and teaching	CIT: Works with faculty to develop new forms of instruction. NCNI: Networking grants offer support for graduate students to work with faculty in creating the next generation Internet.
2. Develop systematic review process to assure quality of existing and future interdisciplinary programs	
3. Enhance access to and majors in interdisciplinary programs	CCI: Pervasive availability of information assets offers opportunities for enhanced interdisciplinary communication.

E. Enhance the use of innovative information technologies to strengthen core University activities.

1. Improve access and availability of up-to-date information technologies to meet the needs of all campus constituencies	CCI; software acquisition; ITRC; network software delivery; web-based, integrated administrative applications.
2. Provide campus-wide support to both faculty and students for an online distributed learning environment	CCI; CIT; CBT's.
3. Provide integrated access to knowledge resources	DCI; Single Sign-on; TR; Digital Library; pervasive high-speed internet access.
4. Standardize, automate, and redesign core processes to take advantage of the efficiencies of automation	Administrative web and client/server applications; web-based student services; DW.
5. Develop and implement policies and procedures that permit central support of University-wide networks and computing systems with decentralized support for the desktop environment	All of the above.

* CBTs – Computer Based Training; DW – Data Warehousing

Alignment with the UNC System IT Strategy

UNC Chapel Hill is a national leader in the delivery of information technology in a research university setting. We are also committed to the system information technology strategy adopted by the Board of Governors in 1999.

Services for Students:
We were one of the first universities to move to an online course registration system and our students have been using this system in record numbers since the initial rollout. Today, students at Chapel Hill can: get their grades online, register for classes, plan their time, apply for financial aid, check progress toward their degree, get their bills, and much more. All of these services are available through a single web interface.

Campus Teaching and Learning with Technology:
Chapel Hill is a leader in the development of campus learning technology. Through our Center for Instructional Technology we deliver faculty: training, consulting, and course development tools. The tools developed at Chapel Hill have been freely given to all campuses in the system. We also actively participate in the TLT Collaborative.

Distance Education:
A number of professional schools at Chapel Hill have a long history of serving their constituents using distance education tools for delivery. Nursing, Public Health, Business, and Government, for example, recognized early that to serve the people of North Carolina they would need to provide education to those who could not come to Chapel Hill. Our campus is coordinating these programs through the Distance Education Steering Committee to best offer course content.

Administrative Systems:
UNC Chapel Hill is an associate member of the Information Technology Alliance and participates fully in all related activities. Every effort is made to meet and exceed standards established by the Alliance for campus information technology.

Logistical Needs:
UNC Chapel Hill baseline networking standards are higher than those adopted by the system to meet the demands of a research campus. To accomplish this in a cost effective manner has necessitated many creative approaches to networking and the delivery of campus IT services. For example, the CCI allows us to employ wireless networking and close computer classrooms and labs – both highly cost effective. Software site licensing (such as Microsoft Campus Agreement) helps control software costs. Using wise, multi-year, single-vendor contracting controls hardware costs. Computer Based Training (CBTs) has allowed us to supplement our Training Center course offerings at a greatly reduced price. State funding has helped us in accomplishing these objectives.

Alignment with the Board of Governors Strategic Plan

On 11 January 2002, the Board of Governors adopted a long-range plan that included the goals of the University of North Carolina IT Strategy Project. The following best sums up this IT strategy:

V. Strategic Directions

    6. Transformation and Change

    "Use the power of information technology guided by IT strategy and more effective educational, administrative, and business practices to enable the University to respond to the competitive global environment of the 21st century."[1]

Clearly, the information technology goals of the University of North Carolina at Chapel Hill are aligned with the Board of Governors' long-range plans.

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[1] The University of North Carolina Board of Governors (2002). *Long Range Plan 2002-2007.*

Section 2: Organization

Central IT Organization

Information Technology Services (ITS) is the University's primary information technology support organization. ITS is headed by Marian Moore, Vice Chancellor for Information Technology, and is comprised of three operating divisions and two centers employing over 300 professionals and 250 to 300 students engaged in all manner of service delivery. Academic Technology and Networks (ATN) is the central support organization for academic computing, the campus network, and University telecommunications. Administrative Information Services (AIS) is responsible for development and management of the University's core business and operational information systems. Systems and Procedures provides management consulting services to University departments. The Vice Chancellor for Information Technology reports directly to the Chancellor and is a member of the Chancellor's Executive Cabinet. This position is responsible for developing campus IT priorities; setting IT directions; and working with the Chancellor, other Vice Chancellors, the Provost, and the Board of Trustees to ensure that the University has the appropriate IT resources to fulfill its mission in outreach, instruction, and research.

Academic Technology and Networks (ATN):
The mission of ATN is to support and strengthen the University's instructional and research programs by providing central services and infrastructure for University-wide access to information resources and technologies. Faculty, students and academic units are the primary clients for ATN services, which are designed to augment unit and individual investments and to enable personalized access to information resources and technologies. ATN is led by John Oberlin, Executive Director, and has approximately 190 professional support positions organized into six primary operating units - Academic Systems, Computer Policy, Distributed Support, Response Services (operating a 24x7 help desk for systems and network monitoring and customer support), Networking and Telecommunications.

Administrative Information Services (AIS):
AIS develops and manages the core business and operational computer systems for the University. Its primary mission is to help ensure, through the appropriate exploitation of information technologies, that the University's business functions are as effective and efficient as they can be. To that end, AIS partners with numerous constituencies throughout the campus to design and develop the scores of information systems required to manage such a complex enterprise. AIS, led by Steve Jarrell, Executive Director, is composed of approximately 200 professional staff and is organized into four divisions - Administrative Applications, Systems and Communications, Data Management, and Operations.

Systems and Procedures:
Systems and Procedures, directed by Candy Davies, provides analysis and review of existing operational processes and systems, with particular emphasis on process improvement and automation. The objective is to provide management consulting services that facilitate, streamline, and unify the tasks of operating and managing the University.

Metalab:
The Metalab is a joint entrepreneurial effort of ITS, the School of Information and Library Science, and the School of Journalism and Mass Communication. The Director of the Metalab is Paul Jones

who holds joint appointments in SILS and SJMC. Metalab is a collaborative project in electronic publishing and digital library research with an applied focus.

knowledgeWorks@Carolina:
knowledgeWorks is an experimental initiative created to investigate the development of technology enhancements in support of the educational and research missions of the University. knowledgeWorks is currently involved in the pilot development of a set of mediabooks. The Director of knowledgeWorks is Prof. Skip Bollenbacher, a faculty member in Biology.

IT Policy Committees

Information Technology Strategic Planning Council:
This council, made up of chairs of the various IT committees on campus as well as the senior administration of the University and substantial faculty 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 Vice Chancellor for Information Technology.

Faculty Information Technology Advisory Committee:
The Faculty Information Technology Advisory Committee (FITAC) is a standing committee of the Faculty Council. Its charge is to consider issues pertaining to the use of technology in teaching and other professional activities at the University. The chair of this committee sits on the strategic planning council and works closely with the Vice Chancellor for Information Technology on resource allocation for faculty needs.

Information Technology Directors Committee:
The ITD is made up of the heads of information technology support in the College and the professional schools. The group is responsible for offering direction to the co-chairs: the Executive Director of Administrative Information Services and the Executive Director of Academic Technology and Networks.

Computational Resources Coordinating Committee for Genomics and Bioinformatics:
This committee is charged with the task of identifying the computational needs of our researchers in genomics and bioinformatics and offering creative solutions to those needs. The committee is co-chaired by the Vice Chancellor for Information Technology and the Vice Chancellor for Research. Both are members of the strategic planning council.

IT Decision Making Process

The IT decision-making process is based on sound management practices and the policies of the State of North Carolina and The University of North Carolina System. Major initiatives, such as the CCI, are initiated by the Strategic Planning Council, received by the Vice Chancellor for Information Technology, approved by the Chancellor's Cabinet, and, where appropriate, taken for a vote to the Board of Trustees.

Campus IT Infrastructure

Chapel Hill has an extensive campus information technology infrastructure. The central IT organization (ITS) is responsible for the delivery of the campus network "to the wall plate". And, in fact, the campus networking standard exceeds the system wiring standard (as it must to support the scholarship and research needs of our customers). ITS offers free electronic mail and web space to all faculty, staff, and students. Online network disk storage is available for backups and auxiliary space. Scientific computer systems are available for faculty and student use. ITS also runs a 24x7 help desk for all. Free technology training is available through the Training Center. Campus computer labs are available across the campus for student use. Many coordinating activities are offered through ITS including: a site licensing office that aggregates software purchases for low pricing, Carolina Technology Consultants offering a forum for departmental and school IT professionals, a shareware web site is supported for easy access on the campus network for software downloads and upgrades, etc. These are only a small number of the infrastructure activities offered to all faculty, staff, and students at Carolina.

Policies

The University has established a set of comprehensive guidelines relating to the use of electronic resources by faculty, staff, and students. They are:

- Acceptable use
- Electronic mail privacy policy and record retention policy
- Data network policies
- Data storage policy
- List server policy
- Product support policy
- Security policy
- Copyright policy
- Web page policy

These policies can be found at www.unc.edu/policy. They are reviewed on a regular basis for technology changes as well as any state or federal legislative changes. The Office of Computer Policy in the Academic Technology and Networks Division is responsible for their creation and revision.

Networking Standards

ITS publishes and supports a number of technology standards. Most notable are our campus networking technical standards, our support software, and our laptop and desktop standards. All campus networking standards (which meet all of the specifications of the Board of Governors' guidelines) can be found at www.unc.edu/atn/network.

Software Support Standards

ITS runs a 24x7 help desk called the Response Center. The Response Center operates in a tiered manner to efficiently process any campus technology question. Software standards supported by the Response Center can be found at www.unc.edu/atn/techsupp/supapps.html.

Computer Standards and Recommendations

In academic year 2000-2001 the University began requiring all entering Freshmen to purchase a laptop meeting the specifications set forth by ITS. Each subsequent entering class will be required to purchase (or have access to) a laptop meeting that year's specifications. Brochures are sent to all perspective first year students in March of each year providing information on the specifications, the pre-approved loan program, the laptop grant program, and ordering instructions for the University preferred models. This information is also available online at www.unc.edu/cci.

Besides all undergraduates, laptop requirements are also set for students entering the following professional schools: Medicine, Dentistry, Business, Public Health, and Information and Library Science. Decisions regarding laptop requirements rest with the administration and faculty of the individual professional school.

Standards also exist for University owned laptops and desktops. Though these standards are not mandated, the University has been able to creatively standardize. Four years ago the University initiated a life cycling desktop program in the College of Arts and Sciences for all faculty, staff, and teaching graduate students. The program has been extremely popular and cost effective for the University. A follow on life cycling plan for the professional schools is also planned. Information about the University laptop and desktop standards can be found at www.unc.edu/cci.

Application Development and Production Operations Standards

ITS adheres to carefully developed standards in the development of administrative applications and associated production operations. These standards are regularly reviewed and revised to maintain currency with evolving technology platforms. Responsibility for standards development rests with a cross functional committee whose membership may be seen at: www.ais.unc.edu/stds2/committee.html. These standards are subject to periodic review by State EDP auditors. The complete standards may be seen at www.ais.unc.edu/stds2.

IT Audit Performance

In addition to annual State financial audits, UNC Chapel Hill, like other State agencies, is subject to periodic intensive EDP audits. The most recent of these was completed in November 1998. 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.

Acquisitions for IT Goods and Services

All major acquisitions for IT goods and services are done in accordance with State mandated procedures (http://www.northcarolina.edu/ir/). A good example of such a process was the selection of the preferred campus vendor for laptop and desktop computers. This was done under State RFP guidelines and resulted in a multi-year contract for campus purchases.

Major IT Implementation Project Processes

All major implementations of new software and services are done using sound academic business practices. A committee is formed consisting of the major project stakeholders and members of the appropriate IT support group. This committee is charged with evaluating, selecting, and planning the implementation of the particular package (in the case of software). Depending upon the project, interoperability with existing applications is given a high priority. The committee reports to a committee of senior administrators who act as sponsors and provide project oversight. Examples of this process in action are implementation of: the new grant management system – Coeus; the new Human Resources system – InPower; the new space management system – InSite; and the new departmental accounting system – InDEPTh.

IT Life Cycling

IT life cycling is accomplished through the Carolina Computing Initiative which, in Phase 1, provides a desktop to all faculty, staff, and teaching graduate students in the College of Arts and Sciences. This plan has been in operation for four years. The desktop life cycle is three years. Future phases of the CCI will include the professional schools and a laptop option for faculty.

ITS Professional Development Program

ITS recognizes the importance of professional development and is committed to hiring, developing, and retaining professional IT staff. As a result of this commitment, ITS has developed a professional development program as a means of further enhancing the professional competencies of professionals on our staff through a comprehensive learning experience. The program's goals include: (1) increasing awareness of individual professional strengths and developmental needs through assessment and coaching; (2) expanding the knowledge, skills, and abilities critical to those in the rapidly changing field of information technology through a range of experiential and classroom sessions; and (3) networking with others in ITS to strengthen the organization's capabilities and sense of collegiality. The program spans ten days and is typically run once each fiscal year with fifteen participants. The curriculum includes modules on team building,

communication and presentation skills, facilitation and conflict resolution, change management, customer service, and project management. The program has been very well received by ITS participants and has clearly contributed to the overall effectiveness and efficiency of the campus IT support organizations.

Campus-Wide Technology Training Programs

ITS recognizes the importance of developing and maintaining a high level of technical competence among the IT support professionals campus-wide. To promote technical competency ITS provides training opportunities in three ways. First, ITS runs a campus IT training center that provides technical courses to the campus community. ATN's Computer Training Center (http://www.unc.edu/atn/training) offers a variety of hands-on computer workshops for University faculty, staff and students. These classes are offered throughout the year and subject matter runs a wide gamut including productivity applications (MS Office suite), multimedia/web tools, and statistical and research computing applications (e.g., SAS and ArcGIS). During the past academic year the Training Center offered 944 classes that were attended by 8,947 participants. In addition to hands-on classes the Training Center offers "just in time training" through a large selection of computer-based training courses. The courses, created by SmartForce, cover topics ranging from Java programming to Microsoft End-User applications.

ITS also funds matching grants for IT professionals in campus departments to facilitate their training in more advanced and specialized areas. This advanced training typically requires the participant to travel to external vendor locations. The IT training grants also provide for bringing special training opportunities to campus that would otherwise be prohibitively expensive.

Finally, ITS operating budgets provide for ongoing technical training opportunities for IT professionals on staff. These training opportunities are highly tailored to individual needs and organizational priorities. All managers work with their respective staff to develop, maintain, and update twice annually a technical training schedule as part of the "development plan worksheet" (HR-46) which is part of the annual work planning and performance review (WPPR) process.

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. We then use those data to drive change back into our processes. For example, our lifecycling program in the College of Arts and Sciences is coupled with a set of faculty seminars on the use of technology in research and teaching. As each department in the College is lifecycled, we run focus groups and conduct surveys of customer satisfaction and ways we can improve our services. We also run focus groups and conduct surveys after each freshman class receives their laptops to gauge the effectiveness of our laptop orientation program. We even survey parents on the effectiveness of our communications about our laptop program.

Of course, we also keep many sets of statistics on other services provided. For example, we closely monitor customer use and satisfaction of our Response Center. In December 2001, 85% of the telephone calls to the Response Center were answered in 60 seconds and 54% were resolved on initial contact. From July 1 to Dec 31, 2001 the Response Center received 44,762 calls - 85% of which were resolved by Tier 1 personnel. In FY2000-01 the total count was 76,711. So we are well ahead of last year's numbers. This close monitoring has alerted us to the need for alternative forms of service such as self-help on the web. This service has grown three fold over last year – helping us to continue providing excellent service during a time when we have had to reduce staffing.

We also keep very detailed metrics on our campus network. This allows us to, among other things, predict future bandwidth needs before our customers are adversely affected. This information can be found at www.unc.edu/cricket.

Campus Measures of Use of IT

The use of technology by our customers is also measured in many ways. For example, we know from the yearly faculty survey in the College of Arts and Sciences that 47 faculty had students bring laptops into their classroom at least once during Spring Semester 2001. (At the time, only first year students were carrying laptops.) We expect that number to grow substantially as laptops become pervasive in the undergraduate population.

Faculty use of technology in teaching is also measured by the use of our course delivery package – Blackboard. The following shows the growth of technology assisted instruction at Chapel Hill:

Semester	Fall 1999	Spring 2000	Fall 2000	Spring 2001	Fall 2001	Spring 2002
Courses	24	62	369	474	740	820

Of course, we also track use of technology by our students. In our student residence halls we monitor use of network connections. This year 100% of our entire residence hall ports were activated which translates to 100% of all students in our residence halls had computers and were connected to our campus network.

Accountability

It goes without saying that the IT services delivered on our campus are highly visible and highly scrutinized. All standing IT committees take part in evaluating services and offering recommendations. ITS is responsible to the Vice Chancellor for Information Technology and ultimately responsible to the Chancellor (who is also a customer).

Section 6: Funding

Funding Elements and Uses

The budget for Information Technology Services is constructed each year during the normal budget process of the University. A description of funding uses and new initiatives is presented to the University Budget Committee. The Budget Committee, consisting of the Provost and the Vice Chancellor for Finance and Administration, then makes funding recommendations to the Chancellor. Traditionally, the ITS budget consists of State funding and is supplemented with overhead. ITS also administers a portion of the Technology Fees collected from students. A close accounting is made of all these resources and reports are presented annually on how these funds are spent to the associated groups. For example, the Chancellor's Committee on Student Fees gets a detailed accounting of uses of Technology Fees. All earmarked funding, whether central or otherwise, is strictly accounted for.

Section 7: Conclusion

The University of North Carolina at Chapel Hill 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 Vice Chancellor level CIO, reporting directly to the Chancellor and responsible for all campus central information technology services. It is further reflected in the financial and functional commitment to the Carolina Computing Initiative, a groundbreaking program to ensure that our students are prepared for the 21st century workplace. It is demonstrated in the quality of the campus network infrastructure; classroom technology support; technology training programs for faculty; the dedication of resources to quality response center management; the commitment to security, reliability and accountability; and the provision of state-of-the-art administrative applications. As this report details, UNC Chapel Hill 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, UNC Chapel Hill has clearly demonstrated its qualification for IT Management Flexibility by every reasonable measure.

GREENSBORO

Information
Technology
and Planning

April 24, 2002

MEMORANDUM

To: Robyn Render

From: Jim Clotfelter

Attached is UNCG's "Request for Information Technology Management Flexibility." Please contact me if you have any questions. Our understanding is that you will bring this to the Board of Governors in May for approval.

c: Chancellor Sullivan

THE UNIVERSITY OF NORTH CAROLINA

GREENSBORO

ITP

Information
Technology
and Planning

Request for
Information Technology
Management Flexibility

April 2002

Prepared by Denise Cowardin and the ITP management

Questions can be directed to

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Section 1: Introduction

This Request for Information Technology Management Flexibility document describes the purposes and resources of information technology at The University of North Carolina at Greensboro. Information technology is used to advance the strategic goals of UNCG and the University of North Carolina system. This section summarizes how that occurs.

Alignment with the UNCG Strategic Plan

UNCG is operating under a 5-year strategic plan approved in 1998. The UNCG Plan for 1998-2003 has Technology as one of the four Cornerstones on which are built the University's Strategic Directions (instruction, research, campus community, outreach, and enrollment growth). The University has begun work on The UNCG Plan for 2003-2008, and that too will have Technology as a Cornerstone.

The Chancellor's Executive Staff in October 2000 set goals in "The UNCG 2008 Profile" to be included in the next plan for 2003-2008. UNCG aims to "be the Triad's leading public Research University," with continuing increases in external funding. This will depend heavily on UNCG's IT capabilities. The "Profile" says that, in 2008, UNCG will "be a university engaged in major initiatives in the life sciences and information technology" and will "be at the forefront of instructional technology."

The UNCG Information Technology Plan 2000-2003 can be found online at http://www.uncg.edu/apl/IT_Plan_2000-03_files/v3_document.htm. The 2001 Supplement to the UNCG IT Plan can be found online at http://www.uncg.edu/apl/IT_Plan_supple_00-03.pdf. Both of these grew out of formal, campus-wide planning processes initiated by the Vice Chancellor for Information Technology and Planning. The next UNCG IT planning process will be carried out in 2003, once the directions of the overall 2003-2008 plan are known.

The UNCG Information Technology Plan is based on financial assumptions that can be found at http://www.uncg.edu/apl/fin_assum_ITPlan.html. The assumptions include full 5-year funding of the UNC ITS Phase 2 plan. That plan, based on a study conducted by PricewaterhouseCoopers, identified IT funding needs for UNCG and other UNC campuses. The State so far has been able to provide only one year of UNC ITS Phase 2 funding. Permanent budget cuts absorbed by UNCG and all UNC campuses in 2001 and 2002 also will slow the fulfillment of UNCG's IT goals.

UNCG Strategic Directions	IT Supporting Activities Include
UNCG will provide exemplary learning environments	• Provide instructional multimedia resources in classrooms, lecture halls and seminar rooms, including connections to the campus network • Provide training and support for faculty using the multimedia facilities and IRCS computing labs • Continue to meet the needs of students for open access to public computing resources

UNCG Strategic Directions	IT Supporting Activities Include
	• Develop additional networked classrooms for student laptop computers • Develop video streaming technology for distance learning • Provide instruction in the UNCG TeleLearning Center • Continue to support faculty and students in Web development for instruction and research
UNCG will expand its research and infuse the excitement of scholarship into its teaching and learning	• Provide the most up-to-date computational capabilities for the campus research community • Integrate IT support for faculty and staff to simplify the process of seeking assistance and identifying problems • Support the supercomputing needs of UNCG faculty • Provide research computing consulting for faculty and students • Provide appropriate network and software support for research offices on campus
UNCG will build a strong sense of community as a student-centered university.	• Build student community through provision of student computing equipment and staff support • Support residence hall computing • Continue to upgrade the campus network to facilitate video and Web-based services
UNCG will expand its outreach in the Piedmont Triad, the state of North Carolina, and beyond.	• Expand required Web infrastructure for the development, delivery and support of distance education • Provide network access to needed learning resources for off-campus learners • Continue to support University centers and institutes

Enrollment

UNCG will increase its enrollment by actively recruiting and retaining students with the academic preparedness and potential to succeed in a rigorous academic environment.	• Manage the Student Information and Financial Aid Systems to support the enrollment effort • Guide the integration of Continuing Education into the University's enterprise systems, to promote growth in continuing education enrollment

Enrollment

	• Provide technology support for satellite campuses being developed

Cornerstones	IT Supporting Activities Include
UNCG will strengthen its technology resources and use them effectively in academic programs and administrative services.	• Complete the planned campus network upgrades • Provide streaming video and audio services • Implement email-based shared calendar for faculty, staff & students • Provide the best telephone services possible to faculty and staff • Provide technology training for faculty, staff, and students • Provide support for both central technology units and for distributed support in academic and administrative units • Develop and maintain online systems and application documentation • Review and implement appropriate wireless networking technologies
UNCG will use effective processes to deliver services to the University community	• Continue the implementation and support of Banner and Banner Web for Student and Alumni systems • Provide telephone and Web-based interfaces for various aspects of student interaction with the University's business offices • Support a campus Web portal to give all members of the UNCG community a personalized Web interface • Provide Web-based access to appropriate elements of the Financial Records, Human Resources, Purchasing, and other strategic administrative systems

Alignment with the UNC IT Strategy
In 1998-99, UNCG participated with the UNC System to develop a strategic plan to guide the system in prioritizing IT needs, allocating IT resources, and developing or expanding IT-based services. UNCG has participated fully in the development of the UNC ITS Phase 2 vision and strategic directions, the UNC Shared Services Alliance, the Teaching and Learning with Technology Collaborative, and other UNC System IT committees.

There are five components of the UNC IT strategy: Services for Students, Teaching and Learning with Technology, Administrative Systems, Campus Network and Beyond, and Distance Education. ITP developed its UNCG IT Plan to correspond closely with these components in the UNC ITS Phase 2 strategy.

Alignment with the BOG Strategic Plan

In the fall of 1999, the Board of Governors selected six strategic directions to help fulfill the mission of the UNC System, including the goals of the IT Strategy Project. UNCG's IT goals are fully aligned with the BOG IT goals.

BOG Strategy	UNCG IT Supporting Activities Include
Access: Ensure affordability and access to higher education for all who qualify, and embrace a vision of lifelong learning.	- Develop video streaming technology for distance learning - Provide instruction in the UNCG TeleLearning Center - Expand required Web infrastructure for the development, delivery and support of distance education - Provide network access to needed learning resources for off-campus learners - Continue to upgrade the campus network to facilitate video and Web-based services
Intellectual Capital Formation: Through high quality and relevant graduate, professional, and undergraduate programs, develop an educated citizenry that will enable North Carolina to flourish.	- Continue to meet the needs of students for open access to public computing resources - Provide training and support for students using UNCG's computing environment - Continue to provide research computing consulting for faculty and students - Provide the most up-to-date computational capabilities for campus research community - Provide Internet 2 connectivity that will act as a vehicle for high-speed collaborative research
K-16 Education: Continue to propose and support initiatives to serve the needs of the State's public schools	UNCG's School of Education is one of the best in the South, and its faculty and students are supported by UNCG's IT resources
Creation and Transfer of knowledge: Expand the frontiers of knowledge through scholarship and research and stimulate economic development in NC through basic and applied research, technology transfer, and public service activities	- Provide the most up-to-date computational capabilities for the campus research community - Support the supercomputing needs of UNCG faculty - Provide research computing consulting for faculty and students

BOG Strategy	UNCG IT Supporting Activities Include
	- Provide appropriate network and software support for research offices on campus - Expand required Web infrastructure for the development, delivery and support of distance education - Provide network access to needed learning resources for off-campus learners - Continue to support University centers and institutes - Provide access to information and research databases for UNCG scholarship, teaching and learning
Internationalization: Promote an international perspective throughout the University community to prepare citizens to become leaders in a multi-ethnic and global society	- Develop video streaming technology for distance learning - Continue to support faculty in Web development for instruction to make academic programs available across national boundaries - Expand required Web infrastructure for the development, delivery and support of distance education - Provide network access to needed learning resources for off-campus learners - Continue offering specialized computer training workshops for on-campus international students
Transformation and Change: Use the power of information technology guided by IT strategy and more effective educational, administrative and business practices to enable the University to respond to the competitive global environment of the 21st century.	- Provide instructional multimedia resources in classrooms, lecture halls and seminar rooms, including connections to the campus network - Provide training and support for faculty using the multimedia facilities and Instructional, Research, and Client Services (IRCS) computing labs - Develop additional networked classrooms for student laptop computers - Continue to support faculty and students in Web development for instruction and research - Continue to provide research computing consulting to faculty and students - Continue to upgrade the campus network to facilitate video and Web-based services - Complete the planned campus network upgrades

BOG Strategy	UNCG IT Supporting Activities Include
	• Continue the implementation and support of Banner and Banner Web for Student and Alumni systems • Implement and support the campus Web portal to give all members of the UNCG community a personalized Web interface • Provide technology training to faculty, staff and students • Support the supercomputing needs of UNCG faculty • Provide the most up-to-date computational capabilities for the campus research community

Section 2: Organization

ITP Organization

The Division of Information Technology and Planning is an integrated information organization. It is UNCG's primary IT service organization, with 106 professionals in the IT and telecommunications departments, plus over 100 student employees. ITP's staff are professionals with technical expertise in the processing, communication, and analysis of information. The Division is headed by Dr. James Clotfelter, Vice Chancellor for Information Technology and Planning, who reports directly to the Chancellor and is a member of the Chancellor's Executive Staff. UNCG was the first UNC campus to have a Vice Chancellor whose primary responsibility was information technology. Areas within ITP are Information Technology, Telecommunications, Institutional Research, and University Planning. The Division supports the Chancellor, the faculty, the students, and the other four Divisions.

The Information Technology area of ITP provides all central computing services. IT is headed by Dr. Kenneth McCollum, Associate Vice Chancellor for Information Technology and Chief Technology Officer. IT is responsible for University-wide administrative and academic computing as well as campus networking for data and video. It has three departments:

Management Information Systems (MIS)

> MIS has responsibility for acquiring; developing and maintaining integrated enterprise systems that support critical administrative and academic functions of the University. Activities supported by MIS include: acquisition and maintenance of software and hardware systems; in-depth systems analysis; systems and applications design; database administration; application and network integration; software and systems programming; testing and implementation; documentation; production services; and network operations.

Instructional, Research, and Client Services (IRCS)

> IRCS provides computing services to faculty, staff, and students. Its responsibilities include telephone support for desktop computing, research computing consulting for faculty and graduate students, Web development for instruction and research, student computing (labs and help desk), IT-related training, and PC repair and maintenance. It consists of four units: Student Computing, Research and Application Support, the IT Help Desk, and Field Services. The TeleLearning Center provides networked video services to a classroom and conference room.

Networks

> Networks consists of two units: Network Administration and Network Services. Networks is charged with coordinating, monitoring, and managing the UNCG campus network traffic and activities. It also operates all systems controlling the allocation of network resources, including access to the network, bandwidth available to users and applications, and latency performance.

> Networks is responsible for UNCG's Wide Area Network connections, including the NCREN3 connection through the new Greensboro Regional Point of Presence (RPOP).

The Director of Networks also serves as ITP Chief Engineer, reporting to the Vice Chancellor.

Telecommunications

The Director of Telecommunications reports directly to the Vice Chancellor and is responsible for Telephone Services, an auxiliary organization with no direct state funding. Services provided by the department include: operator services, voice services help desk (trouble calls), detailed service billing, support and maintenance of voice services and hardware (phone moves/add/changes, building wiring, voice mail administration, training, automatic call distribution systems) as well as voice system design and project management to support new construction. The Director of Telecommunications and the Director of Networks/Chief Engineer work together closely to coordinate and take appropriate steps toward integrating the voice and data networks. Over the next year, Telecommunications and IT will integrate their Help Desk and trouble-ticket processes.

Distributed IT Personnel and Other Central Services

The Division of Information Technology and Planning provides support for distributed information technology personnel throughout the schools and administrative offices. These include
- Field Services Consultants: Joint employees of IRCS and the individual schools are assigned for computer consulting and repair. Currently, six schools participate in this program.
- Instructional Technology Consultants (ITC): Employees of Academic Affairs' Teaching and Learning Center (TLC) are assigned to the schools to consult with faculty on the instructional use of technology. ITP provides support for the TLC and the ITCs.
- Administrative Liaison Program: Personnel in the administrative offices act as the main contact between IRCS and the offices. Administrative liaisons receive priority support and services from the IT Help Desk.

The Teaching and Learning Center provides central support for classroom multimedia resources. The Library provides central support for online informational resources for on-campus and distance learning students.

Standing IT Committees

Administrative Systems Committee

The Administrative Systems Committee provides the principal oversight for administrative systems across all divisions, and is comprised primarily of Associate Provosts and Associate Vice Chancellors. Cross-divisional project teams work under the guidance of this committee, which reports as needed to the Provost/Vice Chancellors. Working in conjunction with their Provost/Vice Chancellors, the committee recommends major new initiatives in administrative systems.

Twice each year, in June and December, the Administrative Systems Committee submits a list of recommended priorities for MIS to the Chancellor's Executive Staff. The approved University Priorities for Management Information Systems, available online at http://www.uncg.edu/mis/UniversityPriorities.pdf, determines the guidelines for MIS activities during the year.

Computing Lab Advisory Committee

The Computing Lab Advisory Committee provides direction for staff practice and the introduction of technology in the IRCS student computing labs. It approves additions and changes to the hardware and software to help maintain a stable environment for students and faculty teaching in the labs.

Web Oversight and Policy Committees

The Web Oversight Committee provides guidance for the day-to-day management of the Web, including the design, development, and integration of all aspects of UNCG's public Web presence. It includes representatives from each area of the university.

The Web Policy Committee approves major policies related to UNCG's Web presence. It is co-chaired by the Vice Chancellors for University Advancement and Information Technology and Planning. Members include the Provost, Vice Chancellors for Student Affairs and Business Affairs, and the Director of Intercollegiate Athletics.

Committee on Academic Computing

The Committee on Academic Computing is a Faculty Senate committee concerned with academic computing. The committee acts in an advisory capacity to the Faculty Senate and ITP.

UNC System committees and MCNC/NCREN

UNCG is an associate member of the Shared Services Alliance of the UNC System and participates in a range of UNC and MCNC/NCREN committees.

The IT decision making process

The IT decision-making process is based on sound management practices and policies of the State of North Carolina and the University of North Carolina system. Information Technology & Planning operates under plans and guidance from the Chancellor's Executive Staff (Chancellor, Provost, Vice Chancellors). The Executive Staff reviews and approves overall ITP policies and directions.

Initiatives may come from within ITP or from clients. Alternative approaches will be reviewed by ITP staff and committees, in terms of costs and benefits to clients. Funding decisions will be made at various levels, depending on the scope of initiatives.

Section 3: Standards & Policies

IT Policies

The University has established a set of policies regarding the use of information technology by faculty, staff, and students. They include:

Computer Copyright Adherence
http://www.uncg.edu/apl/POLICIES/iip009.html

Computer Use by Employees
http://www.uncg.edu/apl/POLICIES/iip018.htm

Computer Use by Students
http://www.uncg.edu/apl/POLICIES/iip017.htm

E-Mail Retention
http://www.uncg.edu/apl/POLICIES/iip019.htm

Supported Products
http://www.uncg.edu/apl/POLICIES/iip008.htm

Wireless Communications
http://www.uncg.edu/apl/POLICIES/wireless.htm

World Wide Web Policy
http://www.uncg.edu/apl/POLICIES/iic015.html

Technical Standards

Security and Encryption

UNCG's policy-based networks ensure reliable, fair, and consistent network services to the campus. The Networks department maintains node registrations for nodes connecting to the campus network. Open-use machines are required to have the users identified and the usage period noted. ITP monitors system management access privileges to all routers on campus as well as the authority to either power-off, re-boot, physically disconnect, or disable packet delivery from any individual system that may be causing problems.

ITP must ensure that our campus facilities do not disrupt campus, statewide, or national networks and that we maintain good connectivity to the network for all campus users. The division is neither an investigative nor a disciplinary entity in its primary responsibilities. However, in cases where University resources and privileges are abused or otherwise threatened, the division will take appropriate steps.

Hardware, Software, Desktop & Server Computing

The University maintains a list of Standards for Computer and Related Technology, available online at http://www.uncg.edu/apl/POLICIES/iip008.htm, which includes a list of supported operating systems, software, and hardware. (Personal digital assistants will be included on the Supported Products List in the future.) Departments are not prevented from purchasing products other than those on the list; however, support of any product not on the list is the responsibility of the purchasing party.

Software used specifically for instruction is not covered under the Standards for Computer and Related Technology policy. The acquisition or use of such software is reviewed by the Computer Lab Advisory Committee.

Acquisition of information technology consulting and contract services

ITP hires information technology contract services and consultants to perform services for which ITP does not have on-staff expertise. Services are purchased in accordance with purchasing guidelines set by the UNC system and the State of North Carolina.

Disaster Recovery

UNCG has both a University-wide Emergency Operations Plan and a Crisis Communication Policy. Information Technology and Telephone Services are members of the Emergency Planning and Response Team, and, when necessary (i.e., emergency involving a telephone outage, information systems sabotage, or computer network outage), ITP will operate as Incident Commander for UNCG.

In the event of an emergency, IT and Telephone Services are responsible for:
- Providing personnel to ensure the integrity of the telecommunications system infrastructure
- Maintaining a list of temporary communications resources, pending permanent repair
- Providing for repair or maintenance of communications for the Emergency Operation Center
- Recovering core administrative systems' functionality
- Restoring required information services, including the World Wide Web.

According to the Crisis Communications Policy, available online at http://www.uncg.edu/apl/POLICIES/iid004.html, ITP is responsible for all electronic communications in crises, such as e-mail, network alerts, and the University's home page on the World Wide Web.

ITP has its own Disaster Recovery Plan, with a primary objective of helping to ensure the continued operation of the university by providing the ability to successfully recover computer services in the event of a disaster. As part of the IT Disaster Recovery Plan, ITP provides for

routine back up of critical data and software systems. ITP has established a second, parallel computing environment, which will have sufficient capacity for the University to operate at reduced service levels in the case of a disaster.

Telecommunications

UNCG does not own a private phone system (PBX). To take advantage of the state's volume buying power, the University purchases local and long distance services through the N.C. Office of Information Technology Services state master contract (ITS-00048). Local service is provided by BellSouth (Centrex). Long distance service is provided by AT&T (faculty/staff phones) and BTI (student phones). The UNCG/ITS contract provides for UNCG to have direct technical and billing relationships to service providers, rather than going through ITS.

Networking

Ethernet protocols are used for building and campus networks. Office and instructional laboratory networks are connected to Ethernet building networks and the campus network as appropriate. IT provides full support for TCP/IP and NetWare IPX software protocols and limited support of AppleTalk and DECNet protocols. Core network switching is performed by Cisco's very high speed Ethernet switches augmented by a mixture of 100Mb/second and Gigabit Ethernet. All campus switching hardware and switch software must operate under the Cisco Catalyst environment.

The design of a new building requires new fiber optic cables to be installed from one of the campus main hub buildings in concrete-encased duct banks, and terminate in a main telecommunications closet in the building, and then be distributed to remote closets located throughout the building. Likewise, Bell South, utilizing concrete-encased duct banks provided by the new building project, brings telephone service to the building main distribution closet. Cabling specifications meet or exceed the current UNC System standards. *Design and Construction Guidelines*, which includes a section on telecommunications systems, is included with all design, development, and bid document materials distributed to contractors by Facilities Design and Construction.

During Phase 1 of the UNC System Information Technology Study, the Network Connectivity Assessment Task Force (NetStudy Team) defined network connectivity specifications for all campus facilities, and determined the cost of moving all campuses to these standards. At the completion of the UNCG campus-wide telecom project in fall 2002, 100% of buildings on campus will be wired to these specifications, available online at http://www.ga.unc.edu/its/netstudy/netspec.html.

Video services:

UNCG's TeleLearning Center provides video teleconferencing connections to other UNC System campuses from our wired facilities in the McNutt center over the NCREN network. NCREN can, in turn, provide connections to other institutions throughout North Carolina, e.g., such as research centers, medical schools, government agencies, community colleges, and high schools.

To reduce the amount of needed bandwidth while maintaining high video quality, UNCG's connection to the NCREN network is made using codecs (coders/decoders) by Litton Electronics

that utilize MPEG2 compression. This compression allows us to utilize only 5.1 Mbps., while delivering a broadcast quality video signal at 30 frames per second (the same as broadcast television). UNCG's TeleLearning Center can send two simultaneous sets of signals to different locations, utilizing a bandwidth of only 10.2mbps.

When the Telecom Network Project is finished (scheduled for July 2002), ITP will be able to support both point-to-point and multicast streaming video to any campus desktop. We currently support RealServer as part of a cooperative test/development project and we are working with Internet Service Providers to improve connectivity so that campus streaming services will be usable off campus. Once the network project is completed, IT will deploy video streaming in the production environment.

Other wireless technology
Wireless equipment being recommended and installed by ITP uses either the FCC unlicensed 2.4 GHz Industrial/Scientific/Medical (ISM) band or the FCC 5.0 GHz Unlicensed National Information Infrastructure (U-NII) band. Wireless equipment transmissions within the 2.4 GHz band conform to the IEEE 802.11b DSSS (Direct Sequence Spread Spectrum) wireless LAN specification. Wireless equipment transmissions within the 5.0 GHz band conform to the IEEE 802.11a OFDM (Orthogonal Frequency Division Multiplexing) wireless LAN specification. Additional information on wireless communications (data and voice) can be found online at http://www.uncg.edu/apl/POLICIES/wireless.htm.

Section 4: Management Processes

IS/IT Audit performance

The Office of the State Auditor performed an information systems general controls audit from June 14, 2000 through August 11, 2000 of the administrative computer operations at UNCG. The audit identified two major and fourteen minor findings. The UNCG Office of the Internal Auditor stated in an Audit Report Transmittal dated April 20, 2001, that an audit review had been conducted and the major audit findings have been resolved.

The Office of the Internal Auditor performed an audit review of the minor findings during the spring of 2001. The Internal Auditor issued a report of the review findings on June 18, 2001, stating that all of the minor findings except three had been resolved. Two of the three minor findings have since been resolved. Resolution of the third minor finding is scheduled for completion by June 2002.

UNCG's Enterprise Systems Policy seeks-to ensure that all enterprise systems will be managed in ways compatible with the state's IS audit standards and good management practices.

Acquisitions of IT Goods & Services

All IT goods and services are acquired in accordance with state purchasing regulations, state laws, UNC system, and UNCG purchasing recommendations.

Under G.S. 143B-472.66 as amended in Session Law 1999-434, the University of North Carolina (UNC) system is exempt from the authority of the North Carolina Office of Information Technology Services (ITS) to manage information technology procurement for state government. However, given the possible benefits of cooperation between the two organizations, representatives of ITS and UNC met and discussed opportunities for working together in the area of IT procurement. A Memorandum of Understanding (MOU) was signed in 2000 and re-affirmed in 2001 between the UNC Vice President for Information Resources and Chief Information Officer and the state's Chief Information Officer. Through the MOU, UNC and ITS expressed their common understanding of the agreement and the process by which UNC IT procurement contracts will be managed. See Appendix A for the provisions of the agreement.

IT goods and services for university-wide purposes are purchased by the Information Technology and Planning division. IT goods and services for desktop computing and other distributed support are purchased by the units needing these goods and services.

Process for major IT implementation projects

IT projects are implemented using sound business practices. The University offices/sponsors involved in a project provide a descriptive title for the project and a document describing the desired functions of the application. A project leader is designated to oversee the project implementation. A project team, consisting of departmental and IT staff, are assigned to work with the project leader. Appropriate project management techniques are used to ensure the timely completion of the project. An oversight committee monitors the progress and approves changes to the project.

An example of the implementation process is the Banner project. The decision was made by the Chancellor's Executive Staff in 1995-96 to implement an integrated SCT Banner Student Information System, Accounts Receivable, and Financial Aid software package on an Oracle database. The Vice Chancellors for Information Technology & Planning and Business Affairs and the Provost acted as the sponsors of the project. A Banner Oversight Committee supervised the implementation of the system. A Banner Project Team, composed of managers from each area affected by the Banner implementation and MIS staff, was responsible for defining policies and procedures and developing detailed user task assignments and timelines for project implementation. From the project team, approximately 20 working committees were formed. After a successful implementation, UNCG was the first UNC System campus to complete online registration in November 1997.

Recently, the IT departments have been formalizing project management. All IT staff members will receive formal project management training and all IT-originated projects will be carried out according to rules and procedures developed by an internal project management review board. IT intends to create a Project Management Office to assist project managers and to help track project progress and resource use.

IT life cycle management efforts
Most file and application servers are subject to a three-year refresh program, with leasing used to leverage available resources. Desktops are purchased on an as-needed basis by the individual IT departments, which are encouraged to shorten the lifecycle of equipment and to consider leasing to move from a capital to continuation model for desktop computing costs.

Training and Professional Development
ITP strongly supports staff training and development. The changing nature of technology requires diligence about maintaining an up-to-date knowledge base. Where appropriate, IT employs outside trainers, but also utilizes a "train the trainer" approach whereby some ITP staff may attend off-campus training and then train other ITP staff.

ITP also trains the faculty, staff and student body at UNCG. The Department of IRCS offers hands-on computer workshops covering basic and intermediate training on productivity applications, web development tools, and statistical and research applications. It also offers computer-based training courses created by SmartForce, accessible to all UNCG employees and students, both on-campus and off.

Section 5: Assessment & Accountability

UNCG and ITP are committed to institutional effectiveness and the use of assessment measures to improve services. Since no single metric measures the success of IT support and services, ITP uses several means of assessment and accountability. Monthly, each ITP department submits Key Success Indicator data to the Vice Chancellor for ITP. For each indicator, a performance standard has been set. These quantitative data assist the Vice Chancellor and other managers to track departmental performance, and to identify areas that may need attention. Examples of Key Success Indicators tracked by ITP include measurement of:

- Percentage of help desk calls resolved within the same business day
- Number of network system shutdowns affecting the client community
- Percentage of classes using the TeleLearning Center experiencing error-free communication
- Percentage of time production applications/databases are available during normal operating hours

In addition, ITP departments regularly use customer surveys and portions of faculty and student surveys that relate to IT, to determine both client satisfaction and customer needs. Some of these surveys, such as Client Satisfaction, Quality and Performance, and Computing Lab surveys, are conducted quarterly and analyzed in the Key Success Indicator data submitted to the Vice Chancellor. The questionnaires ask customers who have used IT services during the quarter to rate the knowledge of the consultant, the quality of the lab, and the overall experience with the IT departments. Others, such as the UNCG Spartan Experience Questionnaire and the UNC Sophomore and Graduating Senior Surveys, are conducted and reviewed every two years. ITP also develops focused surveys to assess customer needs, such as one on web development software needs and another on desired features in an email and collaborative system.

In February 2001, Vice Chancellor Clotfelter conducted a series of meetings in which administrative clients were invited to discuss ITP services and communication. Fifty-four clients attended an initial 5-hour meeting, and then participated in task groups over succeeding months that addressed issues such as "how does ITP communicate with clients about system downtime?" The IT Administrative User Group continues to meet and provide feedback to ITP.

Section 6: Funding

Budgets for ITP and other divisions are set by the Chancellor after discussions within the Chancellor's Executive Staff. The primary uses of IT funds are to purchase equipment (hardware and software) and to pay staff. Other important uses are to pay annual charges for hardware and software maintenance, and to purchase services, e.g., Internet gateway services from NCREN.

Information Technology and Planning relies primarily on the following types of funds to support information technology (excluding telephone services):

- budgeted state funds;
- budgeted distance learning funds;
- student fees (Educational and Technology Fee – treated as state budgets per state standards);
- state funds allocated by the Chancellor or the General Assembly for one-time purchases.

Telephone Services is a fully self-supporting auxiliary operation. Telephone customers pay for whatever level of service they choose to purchase. No state funds are allocated directly to Telephone Services, and no telephone receipts are used to support non-telephone operations.

Small amounts of private and grant funds may be used occasionally to support ITP operations. Private funds sometimes go to distributed IT projects in academic units.

Capital funds occasionally are used for IT purposes, e.g., the campus-wide Telecommunications Network Project. This multi-phase project was jointly managed by the Business Affairs/Facilities area and ITP.

UNCG units outside ITP also purchase equipment and pay staff. Because desktop computing is a distributed expense at UNCG, each department purchases its own computers.

Section 7: Conclusion

UNCG has effective policies, standards, and management control for all areas of information technology and telecommunications. The ITP division has an appropriate management structure, committee structure, and decision-making process. ITP seeks to be responsive to clients across the campus, and uses assessment measures to improve its performance. UNCG works cooperatively with other UNC campuses, ITS, and MCNC/NCREN to provide services in an economical and effective manner. UNCG has responsibly managed information technology in the past and will continue to do so.

Appendix A: Provisions of the Memorandum of Understanding for IT Procurement

- Relative to the University and its constituent institutions, all ITS contracts will be convenience contracts, not term contracts. UNC and its constituent institutions will have access to the state IT contracts administered by ITS on a convenience rider basis--they will not be required to procure IT goods and services through ITS contracts, but may purchase off the contracts as needed. This will enable ITS to utilize UNC purchasing volume in leveraging discounts and other benefits from IT companies.
- Because of the potential to realize greater value for the state and its universities through educational discounts and related strategic alliances, UNC retains the right to establish system-wide contracts for IT goods and services.
- UNC and its constituent institutions will not be responsible for the costs associated with the ITS procurement activities beyond those UNC and its constituent institutions directly incur in completing their administrative functions. UNC institutions will not pay any fees that were not in place as of January 1, 2000.
- UNC and its constituent institutions will receive "best value" procurement training as a joint venture between UNC, the Division of Purchase and Contract, and ITS.
- In determining the recommended IT procurement benchmarks for its institutions, UNC will consult with ITS in assessing an institution's capacity for managing its proposed delegation relative to IT.