Youngstown State University
Information Technology
Master Plan

January 2004

TABLE OF CONTENTS

Executive Summary ..... *iii*
Introduction ..... *v*
Information Technology Services Vision Statement *1*
Information Technology Services Mission Statement *1*
Information Technology Doctrine *2*
Principle A - Organizational Framework *3*
Principle B - System Compatibility *5*
Principle C - Classroom Technology *8*
Principle D - Distance Learning *10*
Principle E - Financial Structure *11*
Principle F - Access to Technology *14*
Principle G - Training Opportunities *15*
Principle H - Data, Voice, and Video *16*
Principle I - Security and Networking *17*
Principle J - Academic, Administrative and Business Support *18*
Principle K - University Website *20*
Appendix A – Implementation Priorities and Projected Timelines *A-1*
Appendix B – Information Technology Plan Development *B-1*
Appendix C – Glossary of Terms *C-1*

Executive Summary

The Information Technology Master Plan is an outgrowth of the Centennial Strategic Plan to provide a blueprint for the future information technology at Youngstown State University. It utilizes an integrated approach for the use of technology to meet the academic, research, student-services, and administrative goals of the University. The Plan establishes a vision for Information Technology Services that will keep pace with an evolving, interactive, student-centered and collaborative electronic learning environment, providing seamless access to data, information, and knowledge in an effort to meet the needs of the University community.

The Plan is guided by the Information Technology Services Vision and Mission Statements to provide the infrastructure and support necessary to enable the University community to use information technology effectively to facilitate the institutional mission of providing "open access to high-quality education through a broad range of affordable certificate, associate, baccalaureate, and graduate programs." Information Technology Services will be dedicated to providing responsible leadership, delivering quality services, maintaining a high level of satisfaction in the delivery of these services, strengthening communication, and developing productive partnerships to further enhance the technological environment.

A comprehensive *Information Technology Doctrine* was developed within the Plan to establish overriding principles that provide the foundation for an ongoing University-wide information technology planning and implementation process. The eleven principles of this doctrine are:

A. An effective organizational structure is essential for campus leadership and management of a rapidly evolving technological environment;

B. The efficiency and effectiveness of academic and business support services requires compatibility and integration between technology systems and applications;

C. The successful use of technology in teaching and learning requires technology enhanced classrooms and instructional support services;

D. Distance learning and student support at-a-distance are an essential component of the current and future mission of the university;

E. Adequate financial structures are essential for the implementation of new technologies and the maintenance of existing technologies;

F. Excellence in teaching and learning requires access to technology by all constituents;

G. Training of faculty, staff, and students is essential to take advantage of technology investments;

H. The deployment of advanced technologies requires fully integrated voice, video, and data networks;

I. Academic, administrative, and business operations require a current, reliable and secure computing and network environment;

J. Academic, administrative, and business operations require effective and responsive support systems;

K. A well designed website with current and accurate information is vital to the image, operation, and growth of the university.

The plan provides specific recommendations to promote and enhance each of these doctrine principles. An implementation program and timeline are presented in Appendix A to facilitate action regarding these recommendations.

Youngstown State University

Information Technology Master Plan

Introduction

The Information Technology Master Plan Advisory Committee was appointed in July, 2002, to develop a comprehensive information technology plan, building on the foundation created within the University's strategic plan, and incorporating the recommendations from the State Auditor's Operations Improvement Report. A subset of the Advisory Committee was asked to serve on a Steering Committee to provide guidance, direction, and support.

Following a review of information technology plans from a variety of institutions, extensive research and debate by six subcommittees, and input from internal and external constituents, the Information Technology Master Plan presented was guided by members of the Steering Committee. Recommendations and action items are assimilated into the eleven principles of an *Information Technology Doctrine* that was developed to establish overriding principles that provide the foundation for an ongoing University-wide information technology planning and implementation process. Details on the development process are presented in Appendix B.

The following individuals are members of the Information Technology Advisory Committee. Their contributions are gratefully acknowledged. Members of the Steering Committee (*) worked tirelessly for 18 months to make this document possible. Their contributions are worthy of special recognition.

Mary Bodnovich, Records Office
Robert Bolla, College of Arts and Sciences
* Alice Burger, College of Health and Human Services
Joseph Calcagni, Alumni
Denise Walters-Dobson, College of Arts and Sciences
Thomas Doctor, Network Services
* Renee Eggers, Teacher Education
* **Donna Esterly, Technology**
Louis Falk, Marketing
* Eileen Greaf, Financial Affairs
John Habat, Administration
Cynthia Hirtzel, College of Engineering and Technology
Durk Hutmacher, Student Representative, YSU Foundation
Rajah James, Student Representative
* Richard Marsico, Computer Services
* Greg Moring, Art
Faramarz Mossayebi, Electrical and Computer Engineering
George McCloud, College of Fine and Performing Arts
Dan O'Connell, Athletics
* Virginia Phillips, Computer Science and Information Systems
* Sal Sanders, Health Professions
K. J. Satrum, Student Services
Joseph Scarnecchia, Support Services
James Schramer, English
Julie Sharrow, Metropolitan College
Lee Slivinske, Social Work
* Hy Sockel, Management
John Spencer, University Police
James Stanger, Financial Aid and Scholarships
Michael Theall, CATALYST
Jeff Trimble, Maag Library
Donna Wainio, Human Resources
* **William Wood, School of Technology**

* *ITMP Steering Committee Member*
* ***ITMP Committee Co-Chair***

Youngstown State University

Information Technology Master Plan

Information Technology Services Vision Statement

Information Technology Services will keep pace with an evolving, interactive, student-centered and collaborative electronic learning environment, providing seamless access to data, information, and knowledge, in an effort to meet the academic, student services, and administrative needs and goals of the University community. The framework for this vision will be administered within a global, networked environment, providing bandwidth, and quality services for the campus of the future.

Information Technology Services Mission Statement

Information Technology Services provides a broad range of services in a distinct academic environment to support teaching and learning, scholarship and research, and the administrative and business operations of the University. Its primary mission is to provide the infrastructure and support necessary to enable the University community to use information technology effectively to facilitate the institutional mission of providing "open access to high-quality education through a broad range of affordable certificate, associate, baccalaureate, and graduate programs."

Information Technology Services is dedicated to:

- **Leadership:** Providing responsible leadership to further advance the University's technological evolution and to capitalize on future innovations;
- **Commitment to Quality:** Delivering quality services throughout the campus by effectively balancing available resources and projects in support of educational technology, administrative systems, and network infrastructure;
- **Customer Service:** Maintaining a high level of customer satisfaction in the delivery of its services;
- **Communication:** Promoting an interactive electronic learning environment, strengthening communication between and among faculty, students, staff, and the university community;
- **Partnerships:** Collaborating and developing productive partnerships with external local and state constituents to share information and resources, and to further enhance the technological environment.

Information Technology Doctrine

A comprehensive *Information Technology Doctrine* was developed to establish overriding principles that provide the foundation for an ongoing University-wide information technology planning process. A doctrine approach provides the guidelines necessary to ensure the flexibility in the planning process that must be taken into consideration in an ever evolving and shifting technological base. Implications of "Enterprise" should be considered as the guiding principle for the distinction of "centralized" versus "local" administration of specific IT functions and resources. An "Enterprise" function/resource has University-wide ramifications for the entire information technology endeavor (e.g., network, servers, training and support services, etc.), as opposed to a localized need or function. If a function/resource does not have "Enterprise" implications, management resides with the department that can best implement that function/resource, working in collaboration with Information Technology Services.

The following doctrine was established. All of the specific Information Technology recommendations are detailed in the plan under one of principles of this doctrine.

A. An effective organizational structure is essential for campus leadership and management of a rapidly evolving technological environment;

B. The efficiency and effectiveness of academic and business support services requires compatibility and integration between technology systems and applications;

C. The successful use of technology in teaching and learning requires technology enhanced classrooms and instructional support services;

D. Distance learning and student support at-a-distance are an essential component of the current and future mission of the university;

E. Adequate financial structures are essential for the implementation of new technologies and the maintenance of existing technologies;

F. Excellence in teaching and learning requires access to technology by all constituents;

G. Training of faculty, staff, and students is essential to take advantage of technology investments;

H. The deployment of advanced technologies requires fully integrated voice, video, and data networks;

I. Academic, administrative, and business operations require a current, reliable and secure computing and network environment;

J. Academic, administrative, and business operations require effective and responsive support systems;

K. A well designed website with current and accurate information is vital to the image, operation, and growth of the university.

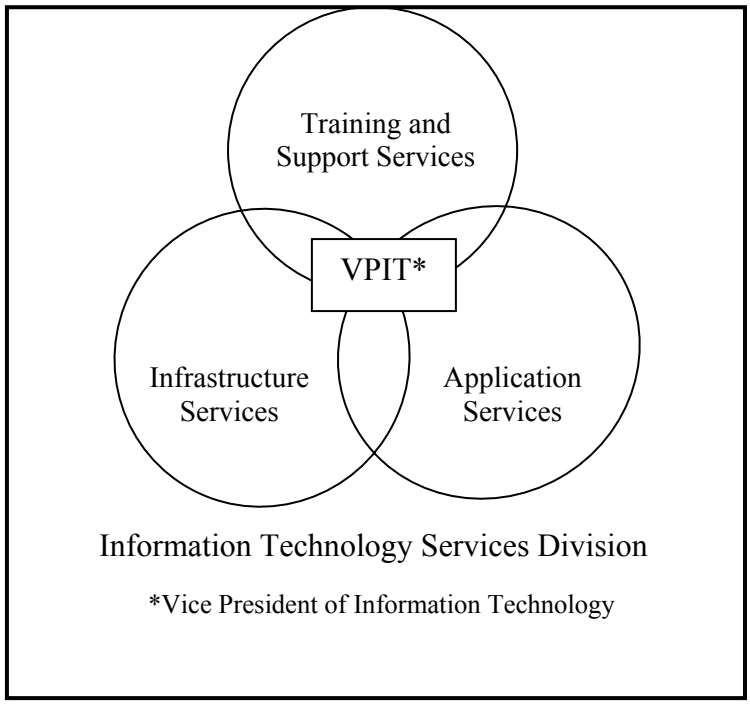
A. *An effective organizational structure is essential for campus leadership and management of a rapidly evolving technological environment.*

A-1. Establish the **"Information Technology Services"** (ITS) **Division** that reflects the interdependent and shared nature of University-wide information technology systems. This division will provide an emphasis on commitment to customer service and will focus on its "Core Functions" as it strives to fulfill its mission within the University. The division will:

- Identify and publish the "core functions" for the division. The underlying philosophy of "Core Functions" is that the division will incrementally shift its focus away from associated, but peripheral services to maximize the effectiveness of central functions;

- Realign Telephone Services into the ITS Division to realize the synergy with Network Services due to the many common components, opportunities for purchasing efficiencies, and overlap in services that can and will be provided in the future. A formal relationship between these two departments is needed to ensure that all future communication projects are based on a common vision for telecommunications services at YSU;

- Create an overlapping organizational structure that reflects the interdependent and shared nature of ITS, such as:



A-2. **Create the position of Vice President of Information Technology** (VPIT) that has administrative rank for *"Standing and Understanding"* in the University community. Hire a proven information technology professional with distinguished academic credentials as well as professional technical and managerial experience in a university setting. Preferred characteristics for the VPIT include:

- **Academic Preparation:**
  a. Graduate degree, preferably a PhD, in a field that leads to advanced knowledge of information technology (e.g., a degree in business, engineering, library science, information technology, some aspect of the sciences or visual arts).
- **Professional Experience:**
  a. Extensive experience and demonstrated proficiency with emerging information technology in the IT market, including a working knowledge of computer operations, data networking, and software applications that are typically of importance to the successful functioning of a university.
  b. Substantial experience in planning and managing information systems in a large and complex university environment.
  c. Proven ability to plan and act strategically and to serve as a senior advisor to the President, Vice Presidents, and Deans on policies related to institution-wide information systems.
  d. Proven ability to assemble, organize, and manage large and complex budgets and professional staffs.
  e. Substantial experience with the academic division of a university, including a familiarity with library operations as well as knowledge of research and instructional support functions.
  f. Substantial familiarity with management problems peculiar to universities.
- **Personal Characteristics:**
  a. Strong communication abilities, including excellent interpersonal skill.
  b. Understanding of the academic culture and an appreciation of the role played by management professionals in universities.

A-3. **Establish an "Information Technology Advisory Committee"** (ITAC) with broad representation of University information technology stakeholders to prioritize IT related projects, monitor use and allocation of resources, and review and consider policies and procedures.

- This committee will include faculty (members of the Academic Senate Integrated Technologies Committee) as well as students, academic administrators, and

representatives from Academic Affairs, Financial Affairs, Administration, Development and Community Affairs, Technology, and Student Affairs.

A-4. **Establish a "Board of Visitors on Information Technology"** (BVIT) to advise the University and VPIT on information technology issues.

- This committee will consist of fifteen members, two-thirds of whom will be information technology professionals from business and community groups such as local school districts, the regional Chamber of Commerce, and local businesses.

A-5. **Form a *"Creative Media Services"*** department that is comprised of existing IT graphic services and audio/visual units to effectively serve the University community.

- The core mission of Creative Media Services will be to concentrate on new media formats that provide state-of-the-art media support services.

- Strengthen the "*Design"* function for web page development to facilitate communication focus and rhetorical cohesion.

A-6. **Establish written policies and procedures for "enterprise" issues related to information technology** (privacy, use, copyright, etc.). Publish these in a prominent location on the University website, making them readily available to the University community.

- Levels of distinction for "Enterprise" statements of authority are:

  a. **Doctrine:** Policy statements of overriding institutional importance with a University-wide "must do" status set by the ITAC.

  b. **Regulation:** Responsibility delegated to the appropriate division level established by the Academic Dean or Vice President. (Example: paper reproduction associated with information technology will be provided on a cost recovery basis).

  c. **Practice:** Responsibility delegated to specifically engage operational departments.

B. *The efficiency and effectiveness of academic and business support services requires compatibility and integration between technology systems and applications.*

B-1. **Create hardware and software standards for personal computing and communication devices** to improve integration between internal and external constituents, and leverage existing resources (staff, training, maintenance).

- Establish core application software standards and base software (e.g., word processing, browser, e-mail, presentation, spreadsheet, database, graphic, chart, multimedia, virus protection, etc.).

- Establish core hardware configurations for workstations, laptops, etc. (e.g., memory, network connectivity, wireless, etc.).

- Exempt specialized software and hardware for individual departments from these core standards and configurations, pending a formal ITAC approval and registration process.

B-2. **Establish information technology purchasing procedures and processes** to effectively manage and monitor institutional information technology expenditures and complement the recommended hardware and software standards.

- Establish an approval and registration process with appropriate forms and procedures for all IT purchases with "Enterprise" status (e.g., the approval request process should be tied to an "objection" procedure with an automatic approval policy if no objection is made after a defined and expedient period of time).

  a. Level 1 - **Signature Purchasing Authority:** Applicable to all purchases in compliance with established hardware and software standards and procurement practices (department level authority).

  b. Level 2 - **Central Purchasing Authority:** Review of purchase requests by Materials Management to verify compliance with established hardware and software standards and procurement practices. Purchase requests not in compliance are rejected subject to appeal to Level 3.

  c. Level 3 - **Information Technology Advisory Committee (ITAC) Approval:** This highest level of approval is required for all acquisitions that have *enterprise* implications; when recommended by the VPIT; when requested by Materials Management; or as an appeal of lower level actions.

- Encourage use of minority vendors for IT purchases when pricing and services are equal to or better than the cost and quality of non-minority vendors.

- All costs for training, technical support, and upgrades for hardware and software purchased without appropriate authority will be backcharged to the purchasing department/unit.

B-3. **Promote infrastructure/architecture software application principles** to enhance interoperability and compatibility across systems.

- Refrain from modification/customization of purchased application software, using the "vanilla version" of software whenever possible. When modifications are required, use only vendor established "exits" and "portals"

- Use industry standard software whenever practical.

- Select application software based on an enterprise view (as opposed to a silo /departmental view), selecting information technology that is scalable, has a linear cost of expanding, demonstrates an established growth path, accommodates sharing/interfacing, and incorporates the use of well-defined exits.

- Consider the Total Cost of Ownership (TCO) (e.g., total purchasing price, maintenance, periodic upgrades, personnel costs, training, etc.) in the evaluation and prioritization of information technology-related projects. Consider non-functional requirements (e.g., performance, information, economics, control, efficiency, security) when selecting application software.

B-4. **Create an information technology standards subcommittee of the ITAC to establish interoperability standards for all applications**, providing highly accessible system architecture, compliant with the Open System Interconnection (OSI) standard for distributed computing, allowing systems installed independently to be integrated and moved toward web-based applications.

- These standards will not dictate the product solutions required but serve as a common set of bridges between physical hardware architecture and client software services.

- Examples of these international, non-vendor specific standards include: TCP/IP Network Protocol, SQL, XML, ODBC Data Exchange, LDAP Directory Services, HTML, JAVA Web Development, and SSL Security.

B-5. **Improve integration between administrative and academic application systems.**

- Utilize a common directory services approach (e.g., Lightweight Directory Access Protocol - LDAP), eliminating duplication of efforts, streamlining maintenance activities, and increasing consistency of data.

- Integrate the course management system (e.g., WebCT, Blackboard) with the student information system through the use of a common directory service. This integration will allow for automated management of functions (e.g., population of courses with enrolled students to produce current and accurate rosters, integrating

grade reporting between the course management system and student information system, etc.). (Refer to Section D-5)

- Improve integration between disparate platforms by continuing to "build bridges" between disparate data on existing platform(s) in an attempt to eliminate re-keying of common data (e.g., classroom utilization data) and ensure integration of newly acquired platforms through adherence to interoperability standards. (Refer to Section B-4)

C. *The successful use of technology in teaching and learning requires technology enhanced classrooms and instructional support services.*

C-1. **Implement wireless access for instructional use in each college building** at a minimum rate of two college instructional buildings each year. (Refer to Section H-1)

C-2. **Increase the number of multimedia classrooms and provide access to multimedia equipment** for faculty and student presentations.

- Increase the number of classrooms that have installed multimedia equipment from the current estimated 15-20% to 50% over the next three years.

- Provide access to those classrooms without installed multimedia (access to a computer network, ability to access and play video and audio files and project computer displays) through mobile and wireless multimedia equipment units, with the goal that 100% of all classrooms have access to multimedia capabilities.

C-3. **Coordinate computer lab accessibility and operation** throughout the institution, researching the availability of computer lab resources, the proliferation of labs on-campus, and the need for up-to-date technology for general and specialized labs.

- Perform routine and timely data analysis from computer lab survey, identifying the adequacy of computer resources within the labs (software and hardware), availability of and access to labs (open vs. closed), safety, ergonomics, costs, and replacement needs.

- Develop a process to monitor and fund computer lab needs, establishing a replacement cycle and program to ensure current technology is available to students and faculty. (Refer to Section E-4)

- Coordinate institutional lab policies (Refer to Section A-6), providing standards for specific lab policies established in each college.

- Monitor needs and use of computer resources within the labs, and acquire ITAC endorsement to update or create lab environments, addressing software, hardware, and support needs are identified to maintain and upgrade the computer lab with current technologies.

- Increase the availability of disability software in computer labs throughout the campus, and address Americans with Disabilities Act (ADA) compliance in the labs relative to physical space, applicable technology, lighting, classroom layout, design and equipment, electrical power, and networking (wired or wireless). (Refer to Section F-2)

- Provide training, funding, and resources necessary for faculty and staff to reasonably accommodate students with documented disabilities.

C-4. **Identify specialized instructional information-based equipment** currently in place, level of usage, and project anticipated needs over the next three years. Non-information based teaching and research technology (e.g., nuclear magnetic resonance, X-ray crystallography, injection molding, robotics, musical instruments, kilns, metal-working equipment, etc.) are the responsibility of the academic division and are not addressed by this plan.

C-5. **Establish** and maintain **state-of-the-art experimental laboratories** for instructional developmental purposes (e.g., robotics, artificial intelligence).

- Provide access to high-end computing and server environments to enable students and faculty to create and learn in high-speed computer environments (e.g., supercomputer cluster).

- Explore potential partnerships with businesses and vendors to create an institutional experimental laboratory with current and leading edge equipment and technologies.

C-6. **Establish procedures for the design of classrooms** that consider safety, ergonomics, accessibility, the type of technology to be used, and how it is to be used.

- Identify an ongoing committee to review plans for new classroom designs and renovations, providing guidance on issues associated with technology and identifying how technology will be utilized in teaching and learning. These classroom design features will incorporate a design that facilitates using up-to-date technology in the classroom.

- Address ADA compliance for classrooms, including issues surrounding physical space, applicable technology, lighting, classroom layout, design and equipment, electrical power, and networking (wired or wireless). (Refer to Section F-2)

C-7. **Establish "low-cost" desktop/laptop programs** (e.g., Laptop Computers, Portable Devices, etc.) **for students, faculty, and staff.**

- Negotiate with vendors to leverage discount pricing for personal low-cost PC programs to make available to students, faculty and staff through on-line sales sites (e.g., Apple, Dell & IBM have well-developed programs).

- Establish purchasing and leasing agreement programs for students, faculty, and staff to acquire affordable personal desktop/laptop equipment.

D. *Distance learning and student support at-a-distance are an essential component of the current and future mission of the university.*

D-1. **Enhance the interactive distance learning (IDL) classroom environment,** providing the capability to deliver multiple concurrent academic courses at a distance.

- Increase the number of IDL classrooms within each college as required to accommodate the increased number of academic courses taught at a distance.

- Evaluate support staff, equipment, and software needs to facilitate distance learning activities, and develop and monitor an institutional plan to accommodate the changing needs.

- Expand training for distance learning activities to accommodate the needs of faculty and staff. (Refer to Section G-1)

D-2. **Implement advisement-at-a-distance** through the use of Interactive Distance Learning tools to accommodate students and faculty in courses taught at a distance.

- Pilot a video enhanced advisement project within an individual college (e.g., Health and Human Services).

D-3. **Adopt multimedia conferencing software,** including a workgroup messaging system **(groupware),** to use with in-person traditional classes as well as hybrid classes (taught in person with distance learning used to enhance the learning experience) and courses taught completely at a distance**.**

- Examine the requirements and applicability of products providing multimedia audio conferencing features (e.g., NetTutor) and voice transmission functionality (e.g., Wimba) for Internet based courses.

- Create an information technology standards subcommittee to establish standards for multimedia conferencing software. (Refer to Section B-1)

D-4. **Strengthen technical staff support** to monitor hardware and software while delivering courses at a distance, increasing coverage during evenings and weekends to accommodate course offerings. (Refer to Section F-1)

D-5. **Improve integration between academic on-line instructional applications** (e.g., WebCT course management system) **and administrative application systems,** to provide seamless access to students, faculty, and staff and improved functionality (e.g., automated download of course rosters, electronic submission of course grades, etc.).

E. *Adequate financial structures are essential for the implementation of new technologies and the maintenance of existing technologies.*

E-1. **Establish formal IT accounting and budgeting procedures** to track, monitor and project information technology-related resources and expenditures in accordance with the Information Technology Master Plan.

- Track annual institutional IT expenses through redefined expense categories for IT expenditures (e.g., hardware, software, IT driven consumables, staff support, external maintenance/service, licensure agreements, etc.).

- Conduct cost analyses to evaluate external support (e.g., outsourcing, Application Service Providers - ASP, etc.) and provide comparative information.

- Analyze comparative cost procurement alternatives for IT hardware (e.g., leasing).

E-2. **Establish an Information Technology Initiative Advantage Fund (Initiative Fund)** that will enable the institution to develop and implement multiyear information technology fiscal plans and budgets for significant projects to enhance the campus-wide information technology architecture and promote stability and effective long-term management strategies.

- Budget and annually sustain the Initiative Fund at $2 million, capping the fund at $10 million. Start-up funding sources include modest increases to tuition and fees, augmented by capital, private, and grant funding. (Refer to Section E-4 for applicable resources)

- Use Initiative Fund to provide additional resources for special departmental/ college based IT projects, to supplement the annually allocated ITS operating budget, and to enhance institutional ITS projects. Resources from the Initiative Fund will be available in response to a Request for Proposals (RFP) issued annually by the Information Technology Services Advisory Committee (ITAC).

- The VPIT, in consultation with the ITAC, will design a fair, equitable and inclusive process for the expenditure of the Initiative Fund with regular review and defined auditing procedures.

E-3. **Establish an Information Technology Replacement Fund (Replacement Fund) and emergency equipment reserve** with identified refresh programs, replacement cycles, and recycle programs for mission-critical equipment.

- Institute a surcharge (percent of original cost) on all IT purchases to subsidize an IT equipment/software replacement fund. Distribution of replacement funds shall be determined by ITAC.

- Establish a procedure for replacement of equipment and software.

- Expand and publicize hardware recycle programs.

E-4. **Develop existing and additional IT funding sources** in support of the Initiative Fund, the Replacement Fund, and ongoing IT operations**.**

- **Develop existing funding resources** including, but not limited to:

  a. **Tuition Revenue:** Evaluate and allocate a percentage of tuition revenue to support IT as determined by need and available funding.

  b. **Student Technology Fee:** Analyze and evaluate the student technology fee and determine allocation and distribution.

     ° Review technology fee structures at other institutions and compare current technology fees to other regional institutions. Explore instituting an increase of the technology fee at the sophomore, junior, senior, and graduate levels, justifying the increased fee with more extensive use of technology at the upper division levels.

     ° Implement an annual review and adjustment of the student technology fee that reflects the increasing costs of maintaining and enhancing information technology services.

  c. **Computer Intensive Course Fees:** Establish policies and procedures for the distribution and tracking of college technology fees and expenditures.

- Increase course fees 15%, allocating the additional revenue to the Initiative Fund.

- Segregate monies spent on technology into accounts separate from material course fees.

- Maintain course fees at the department level, administering the distribution of fees at the college level, according to demonstrated needs within the college.

- Utilize college committee(s) to advise the Deans on the distribution of the course fees within each college.

- Routinely review and monitor the policies and procedures for the distribution of college course fees and annually review expenditures for each college.

- Evaluate alternatives to individual computer course fees for funding college-wide information technology expenses (i.e., apply universal technology fee with dedicated allocations to colleges/departments).

d. **Capital Biennium Funding:** Allocate a percentage of each capital funding cycle to IT projects.

- **Develop additional funding resources** including, but not limited to:

a. **Auxiliary Services:** Implement an IT levy on all auxiliary overhead charges.

b. **Private Funding Sources:** Establish financial support of the Initiative Fund as a prioritized goal of the University's capital campaign.

- Identify attractive naming opportunities with enduring character (e.g. buildings, laboratories, information technology programs) that will generate contributions for IT academic and infrastructure needs working with the Office of Development to prioritize and finalize endorsed solicitation strategies.

c. **Institutional Bonded Debt:** The University should evaluate the feasibility of institutional "long-term" borrowing strategy (e.g., bonds) to support implementation of the Information Technology Master Plan, including seed money for the Initiative Fund and the Replacement Fund.

d. **External Grants:** Promote the use of external grants as a source of IT funding.

- Include funds for information technology services in external grant budgets, when appropriate.

- Provide additional support to identify grant opportunities for information technology (e.g., hire technical grant personnel).

e. **Other Additional Resources:** Explore additional IT funding opportunities.

- Issue YSU multi-use cards that function as University ID Cards in addition to being a debit/credit card upon activation by individuals. IT receives a return on each transaction.

- Develop plans for the commercialization of appropriate information technology to generate new revenue streams (e.g. media advertisement on the website).

E-5. **Expand Cost Recovery for Information Technology Support.**

- Expand IT cost recovery (chargeback) operations for ITS to manage demand and better reflect the cost of goods and services rendered.

- Track service department operating costs to improve accountability and evaluate the feasibility of a small surcharge on activities to be placed in operating reserves.

- Establish institutional printing charges and associated costs through the implementation of a turnkey solution for management and cost recovery of the printing in the campus computer labs.

F. *Excellence in teaching and learning requires access to technology by all constituents.*

F-1. **Increase availability of, and support for, administrative and academic information technology systems.**

- Extend hours of availability to administrative and academic IT systems (e.g., registration, payment of bills, student records, degree audit, etc.), moving toward 24 hours a day, 7 days a week availability and incorporate alternative usage modes for administrative and academic IT systems during periods of routine maintenance and/or repair.

- Increase hours of support staff (e.g., Help Desk) to address faculty, staff, and student needs in relation to increased hours of availability.

F-2. **Equip targeted classrooms and labs with an ADA Compliant workstation**, appropriate furniture, and connectivity. (ADA compliance is an enterprise issue.)

- Develop specifications to identify specific accommodations and necessary funding.

- Provide specialized software (e.g., JAWS) on an enterprise server to accommodate individuals with disabilities.

F-3. **Validate all official YSU web pages for ADA compliance** (Section 508 of the Rehabilitation Act, 29 U.S.C. 794d) through use of compliance-validation software (e.g., Bobby).

F-4. **Extend networked environment,** providing access to alternative networks and increasing redundancy capabilities.

- Connect to the ACCESS fiber ring, providing access from YSU's network to secondary schools in Mahoning and Columbiana Counties.

- Provide secondary connections to affiliated offsite locations (e.g., the SMARTS program in Powers Auditorium, Youngstown Business Incubator).

F-5. **Create an informal Internet-based information sharing environment**, increasing access in the vicinity of typical student gathering areas (e.g., located near food vendors in Kilcawley Center).

- Create Computer Cafés on campus, incorporating both wired and wireless network access.

- Increase availability and use of wireless networks (e.g., Maag Library). (Refer to Section H-1)

G. *Training of faculty, staff, and students is essential to take advantage of technology investments.*

G-1. **Expand IT training** to address the needs of faculty and staff.

- Determine IT training needs (additional survey of faculty and staff).

- Publicize and expand the inventory of existing computer software training programs.

- Establish ongoing procedures to identify training needs and initiate new training opportunities.

G-2. **Implement a program to educate faculty, staff, and students about technically related federal and state regulations.**

- Americans with Disabilities Act (ADA);
- Family Educational Rights and Privacy Act (FERPA);
- Gramm-Leach-Bliley Act (GLBA);
- Health Insurance Portability and Accountability Act (HIPAA).

H. *The deployment of advanced technologies requires fully integrated voice, video, and data networks.*

H-1. **Include wireless capabilities as an integral component of the network infrastructure**.

- Complete Maag Library pilot wireless project and document results in a white paper to the University community indicating where wired and wireless network access is appropriate for a given application, the relative costs of both approaches, and the risks and exposure of choosing one over the other.
- Implement wireless access for instructional use in each college building at a projected rate of two college instructional buildings each year (Beeghly, Bliss, Cushwa, DeBartolo, Meshel, Moser, Ward Beecher, Williamson).

H-2. **Enhance digital telephone services.** Implement voice over Internet Protocol (VoIP) technology when cost justified to improve client interactions and overall efficiency of operations. Investigate the adoption of "soft phones" for desktop use.

H-3. **Participate in a sponsored membership to Internet II** and evaluate the demand/need to become a full Internet II member institution.

- Establish connectivity as a Sponsored Educational Group Participant (SEGP) of Internet II.
- Survey faculty to determine interest and research needs that would justify full membership in Internet II.

- Identify benefits to be derived from full membership and explore the feasibility of writing a grant to help fund full membership status.

I. *Academic, administrative, and business operations require a current, reliable and secure computing and network environment.*

I-1. **Develop and implement a comprehensive electronic security plan,** strengthening and securing the networking environment.

- **Document a comprehensive security plan,** incorporating a centrally controlled and managed security solution.

- **Adopt End-to-End Industry Standard-based Security Measures** with supporting education. A layered design is required with many levels of security that are transparent to the end users.

- **Require all Internet users to install and update anti-virus software on a regular basis** with periodic updates pushed to the desktop from a central server.

- **Incorporate essential administrative, technical, and physical safeguards to protect all nonpublic information and data** including financial data identified in the Gramm-Leach-Bliley Act (GLBA), and related issues contained with the Family Educational Rights and Privacy Act (FERPA), Health Insurance Portability and Accountability Act (HIPAA), and Advertising/E-Commerce as related to website security.

I-2. **Implement an institutional network identification login, using a directory service approach** (e.g., Lightweight Directory Access Protocol - LDAP).

- Assign identification logins to all University students, faculty, staff, and clients which will provide access to a variety of facilities and services managed by ITS.

I-3. **Institute backup, restore, and off-site storage strategy in support of networked servers and desktop PCs.**

- Backup all network, switch/router configurations and servers and incorporate a backup/auto recovery facility for all identified devices and applications.

- Explore an automated network backup of individual servers and desktop PCs. Currently, individual servers and PCs are the responsibility of the system administrator and end user respectively.

- Establish and publicize procedures for manual backup of local systems and PCs.

- Create storage and backup plans for public access servers used for specific applications, their files, and related software.

I-4. **Implement a Disaster Recovery Plan** for infrastructure/architecture, utilities and facilities.

- Complete a recovery plan that will return service to normal operations within a specific period of time after experiencing a major disaster.

- Identify applications that are critical to the operation of the institution and determine how to restore associated hardware, software, and data.

- Establish an instant command structure (ICS) and identify individuals and teams to direct operations for the entire campus in the event of a disaster.

- Test the overall plan and initiate annual disaster recovery drills.

J. *Academic, administrative, and business operations require effective and responsive support systems.*

J-1. **Establish an inventory management system and develop license and warranty tracking for IT hardware and software purchases**.

- Invest in integrated software that will provide a University-wide equipment/software replacement identification system.

- Develop a centralized registration process to record and track license, warranty, and upgrade information for enterprise and local hardware and software.

J-2. **Replace administrative computing systems with an integrated Enterprise Resource Planning** (ERP) **software solution,** including associated software and hardware.

- Initiate a modular implementation based on the following schedule:

  a. Financial
  b. Human Resources
  c. Student Information
  d. Alumni/Development

- Financial Aid has been identified as the most critical need within the Student Information area.

J-3. **Complete the degree audit system** (DARS) **implementation** and establish a plan to integrate with a modular ERP software solution.

J-4. **Acquire an integrated, multi-iteration software tool** to model scenarios for the effective and efficient use of classroom and laboratory space.

- Effectively integrate the multiple dissimilar data sources to synchronize the data into a single cohesive source.
- Improve or replace the existing classroom and lab scheduling process.
- Deliver space and reservation information to the web.

J-5. **Provide an enterprise-level information system to address reporting, data, and information needs** (e.g., access to data, availability, manipulation, etc.).

- Implement data management procedures to assure data accuracy, quality, integrity, interoperability, and accessibility.
- Select a web-based reporting solution that reduces the need for programming.
- Provide capabilities to create new reports, conveniently run existing reports, and preserve the ability to access static historical data.

J-6. **Acquire and implement an enterprise-wide collaboration and communication tools**, including an integrated calendaring and e-mail solution to service the administrative needs of the University.

J-7. **Invest in a high-volume document storage and indexed retrieval system** and implement an integrated report and document management solution.

- The solution should provide a web interface for the viewing, distributing, printing, archiving and retention of reports and documents as well as providing indexing and work flow.

J-8. **Provide a high-volume digital media storage and indexed retrieval system.**

- Develop a means of digitizing, indexing and storing multi-media assets (e.g., audio, video, image) to accommodate institutional needs (e.g., Maag Library, Media Services, Marketing, etc.).

J-9. **Evaluate and Pilot a "smart card"** program (plastic identification cards with imbedded chips as opposed to magnetic strip, bar codes, or nothing) in a phased

approach to provide access to systems (e.g., computer systems, buildings, parking lots, debit/credit services, library checkouts, lab use, etc.).

- Evaluate the implications of a "smart card" program to the University community.

- Develop a partnership with a financial institution to implement a revenue-generating debit/credit card program to offset associated costs. (Refer to Section E-2)

J-10. **Create a clearinghouse to share information technology-related information** (e.g., share information about the latest security releases, patches, and known problems as reported by the vendor, register software license information and related data on a central database, etc).

K. *A well designed website with current and accurate information is vital to the image, operation, and growth of the university.*

K-1. **Establish Website Design Guidelines and Standards** (e.g., design, style, content, etc.).

K-2. **Develop associated web policies and procedures** (e.g., advertisement, e-commerce, appropriate content, copyright and unauthorized use/distribution of software media, etc.).

K-3. **Develop a process to monitor content and copyright on University-owned websites** and document-related procedures.

K-4. **Provide an enterprise-level portal system,** with a customizable entry point for faculty, staff, and students to the website, combining a mixture of content and services, including personalized start pages, e-mail, chat rooms and message boards, etc.

K-5. **Invest in a web content management software system** to provide departments the ability to update and change content quickly, without the need for technical training.

- End of Plan -

Youngstown State University

Information Technology Master Plan

Appendix A

Implementation Priorities and Projected Timelines

Priorities and estimated budgets for the recommendations the Information Technology Master Plan (ITMP) were established for implementation during the next three years. Some recommendations are designated for implementation beyond the third year. Year 1 is actually 18 months long and was divided into three segments: Spring 2004; Summer/Fall 2004; and Spring 2005. Years 2 and 3 are the fiscal years FY06 (2005-06) and FY07 (2006-07), respectively. Recommendations to be implemented after Year 3 are listed as "Beyond Year 3". In addition to recommendations that require allocation of specific identifiable resources, many items involve planning and establishing policies. While these efforts are not without costs, they generally utilize existing resources and have been separated and categorized as "Ongoing with Annual Review".

All of the recommendations included in the ITMP are important; however, because of limitations of financial and personnel resources, all of the recommendations cannot be implemented immediately. This appendix provides the committee's prioritization of the recommendations utilizing input and rankings from many constituents. Each recommendation comes directly from the ITMP and is identified by its respective letter and number designation from the plan.

Four key pieces of information are provided for each recommendation:

1. *Lead Position*: the title of the person accountable for implementation of the recommendation
2. *Timeframe*: identifies time period to begin implementation of the stated outcome(s)
3. *Implementation Resources/Costs*: current budget estimate to accomplish the outcome(s)
4. *Outcome*: specific measurable result from implementation of the recommendation

Table A-1 provides a summary of the estimated budgets for the Years 1, 2 & 3. It is presented indicating "One-Time Costs" separately from "On-Going Costs". The maintenance or service costs associated with expenditures can be significant and must not be overlooked in the budgeting process. Note also that many recommendations will require several years to fully implement. These multiple phases are indicated by "one-time" costs in multiple columns of the Table. Funding for the *Information Technology Initiative Advantage Fund* and the *Information Technology Replacement Fund* begins immediately; however, use of these funds is not proposed to begin until after Year 3.

Since the integrated Enterprise Resource Planning (ERP) software is such a significant cost item, additional detail about its estimated budget is warranted. This detail is presented in Table A-2 at the end of this appendix. Additionally, Figure A-1 has been included to provide a graphical representation of the timeline for implementation of the recommendations in the Plan.

Table A-1
Information Technology Master Plan – Draft Estimated Budget

		Year 1		Year 2	Year 3	THREE
		Jan 04 - June 04	July 04 - June 05	July 05 - June 06	July 06 - June 07	YEAR TOTAL
	One-Time Costs					
C-1	Wireless - Instructional					
C-2	Multimedia Equipment					
C-6	Classroom Design					
D-1	Distance Learning Classrooms					
D-3	Conference Software/Groupware					
E-2	IT Initiative Advantage Fund					
E-3	IT Replacement Fund					
F-2	ADA compliant workstation					
I-2	Network Logins					
I-3	Backup for servers/desktops					
I-5	Information/Reporting Tools					
J-1	Inventory Management System					
J-2	ERP Software/Hardware					
J-2	ERP Vendor Implementation					
J-2	ERP Contingency					
J-4	Space Utilization Software					
J-5	Enterprise Reporting System					
K-5	Web Content Mgmt System					
	Subtotal					
	On-going Costs					
A-2	Vice President of IT					
C-1	Wireless - Instructional					
C-2	Multimedia Equipment					
D-1	Distance Learning Classrooms					
D-3	Conference Software/Groupware					
D-4	Distance Learning Staff					
E-4	Grant position					
F-1	Increase Help Desk support					
I-2	Network Logins					
I-3	Backup for servers/desktops					
I-4	Disaster Recovery Subscription					
I-5	Information/Reporting Tools					
J-1	Inventory Management System					
J-2	ERP Maintenance					
J-2	ERP Staff Travel/Training					
J-2	ERP Additional Staffing					
J-2	ERP Contingency					
J-4	Space Utilization Software					
J-5	Enterprise Reporting System					
K-5	Web Content Mgmt System					
	Subtotal					
	TOTAL					

Draft Budget Estimates have been excluded in the web-based version of the report and will become available upon request at the conclusion of the RFP process.

Appendix A

Implementation Priorities and Projected Timelines

Immediate

A-3 **Establish an "Information Technology Advisory Committee"**

Lead Position:	Interim Chief Technology Officer/President
Timeframe:	Immediate
Implementation Resources/Costs:	Existing resources
Outcome:	**Creation of Committee charge and appointed membership; Regular meetings established; Initial committee charge: VP of IT Search**

Year 1: Spring, 2004

A-2 **Create and fill the position of Vice President of Information Technology**

Lead Position:	ITAC Chair/President
Timeframe:	Spring, 2004
Implementation Resources/Costs:	$200,000 (Salary + Fringe Benefits)
Outcome:	**Hiring of VP of IT**

H-1 **Include wireless access as an integral component of the infrastructure**

Lead Position:	Director, Network Services
Timeframe:	Spring, 2004
Implementation Resources/Costs:	Existing resources
Outcome:	**Maag Library pilot wireless project completed**

J-2 **Implement an integrated Enterprise Resource Planning (ERP) software solution**

Lead Position:	Director, Computer Services
Timeframe:	Spring, 2004 (Phase I of V – Project Organization/ Planning)
Implementation Resources/Costs:	Refer to Table A-2
Outcome:	**Issued RFP for integrated software system; Vendor Selection; Project planning begins**

Appendix A

Year 1: Summer/Fall, 2004

C-1 **Implement wireless access for instructional use**

Lead Position:	Director, Network Services/Provost designee
Timeframe:	Summer/Fall, 2004 (Phase I of III)
Implementation Resources/Costs:	$250,000 + $50,000 ongoing maintenance
Outcome:	**Wireless access for instructional use in a minimum of two college instructional buildings**

C-2 **Increase multimedia classrooms (fixed and mobile)**

Lead Position:	Director, MAC/Provost designee
Timeframe:	Summer/Fall, 2004 (Phase I of III)
Implementation Resources/Costs:	$150,000 + $30,000 ongoing maintenance
Outcome:	**Increased numbers of multimedia classrooms; Increased access to multimedia equipment**

C-6 **Establish classroom design procedures**

Lead Position:	Interim Chief Technology Officer/Provost designee
Timeframe:	Summer/Fall, 2004 (Phase I of II)
Implementation Resources/Costs:	$75,000
Outcome:	**Classroom design procedures which facilitate using up-to-date technology in the classroom; Design features incorporated in classroom renovation project**

D-1 **Enhance distance learning classrooms and training**

Lead Position:	Director, MAC/Director, Distance Learning
Timeframe:	Summer/Fall, 2004 (Phase I of III)
Implementation Resources/Costs:	$50,000 + $10,000 ongoing maintenance
Outcome:	**Additional IDL classrooms; Expanded Training for DL activities**

F-2 **Equip classroom/labs with ADA compliant workstation/software**

Lead Position:	Coordinator, Disability Services/Provost designee
Timeframe:	Summer/Fall, 2004 (Phase I of III)
Implementation Resources/Costs:	$50,000
Outcome:	**Additional ADA compliant workstations; Enterprise access to specialized software**

I-2 **Implement enterprise network identification logins**

Lead Position:	Director, Network Services/Director, Computer Services
Timeframe:	Summer/Fall, 2004
Implementation Resources/Costs:	$75,000 + $15,000 ongoing maintenance
Outcome:	**Network identification logins for students, faculty, and staff, using a directory service approach (e.g., LDAP)**

J-2 **Implement an integrated Enterprise Resource Planning (ERP) software solution**

Lead Position:	Director, Computer Services
Timeframe:	Summer, 2004 (Phase II of V – Begin Financial System Implementation)
Implementation Resources/Costs:	Refer to Table A-2
Outcome:	**Financial System Implementation**

J-3 **Complete the degree audit system (DARS) and integrate with enterprise administrative system**

Lead Position:	Director, Degree Audit
Timeframe:	Summer/Fall, 2004
Implementation Resources/Costs:	Existing Resources
Outcome:	**Complete majority of program encoding and transfer articulation equates**

K-4 **Provide enterprise-level web portal system**

Lead Position:	Director, Computer Services
Timeframe:	Summer/Fall, 2004
Implementation Resources/Costs:	Included in J-2 Enterprise Software
Outcome:	**Customizable web entry point for students, faculty, and staff**

Year 1: Spring, 2005

A-1 **Establish ITS Division**

Lead Position:	VPIT
Timeframe:	Spring, 2005
Implementation Resources/Costs:	Minimal
Outcome:	**Realigned ITS organizational structure**

D-4 **Strengthen technical staff support for distance learning**

Lead Position:	Director, MAC/Director, Distance Learning
Timeframe:	Spring, 2005 (Phase I of II)
Implementation Resources/Costs:	$40,000 (Salary + Fringe Benefits)
Outcome:	**Additional technical support position to monitor hardware/software while delivering courses at a distance, increasing evening/weekend coverage**

E-2 **Establish an IT Initiative Advantage Fund**

Lead Position:	VPIT/Provost designee
Timeframe:	Spring, 2005 (Phase I of III)
Implementation Resources/Costs:	$500,000
Outcome:	**Begin to accumulate funds for Initiative Advantage Fund**

E-3 **Establish an IT Replacement Fund**

Lead Position:	VPIT/Provost designee
Timeframe:	Spring, 2005 (Phase I of III)
Implementation Resources/Costs:	$500,000
Outcome:	**Begin to accumulate funds for Replacement Fund**

F-1 **Increase IT support and system availability**

Lead Position:	Director, Computer Services/Director, MAC
Timeframe:	Spring, 2005 (Phase I of II)
Implementation Resources/Costs:	$50,000 (Salary + Fringe Benefits)
Outcome:	**Additional Help Desk support and extended evening/weekend coverage; Increased hours of system availability**

J-2 **Implement an integrated Enterprise Resource Planning (ERP) software solution**

Lead Position:	Director, Computer Services
Timeframe:	Spring, 2005 (Phase III of V – Begin Human Resource and Financial Aid System Implementation)
Implementation Resources/Costs:	Refer to Table A-2
Outcome:	**Human Resource and Financial Aid System Implementation**

Year 1: FY05 Ongoing/Annual Review

A-6 **Establish written policies and procedures for "enterprise" issues related to information technology**

Lead Position:	VPIT
Timeframe:	Ongoing
Implementation Resources/Costs:	Existing resources
Outcome:	**Established website focused on IT policy; Creation of new IT policies; annual review**

B-1 **Create hardware/software standards for personal computing and communication devices**

Lead Position:	Director, MAC/Provost designee
Timeframe:	Ongoing (update each semester)
Implementation Resources/Costs:	Existing resources
Outcome:	**Established core application standards**

B-3 **Promote infrastructure/architecture software application principles**

Lead Position:	VPIT/ITAC Chair
Timeframe:	Ongoing
Implementation Resources/Costs:	Existing resources
Outcome:	**Coordinated application software enterprise principles**

B-4 **Create an IT standards subcommittee of the ITAC to establish interoperability standards for all applications**

Lead Position:	ITAC Chair
Timeframe:	Ongoing
Implementation Resources/Costs:	Existing resources
Outcome:	**Documented enterprise interoperability standards**

B-5 **Improve integration between administrative and academic application systems**

Lead Position:	VPIT/Provost designee
Timeframe:	Ongoing
Implementation Resources/Costs:	Existing resources
Outcome:	**Applications using common directory approach; Improved enterprise system functionality**

D-5 **Improve integration between instructional and administrative application systems**

Lead Position:	VPIT/Provost designee
Timeframe:	Ongoing
Implementation Resources/Costs:	Existing resources
Outcome:	**Course Management (WebCT) System integration; Improved enterprise system functionality**

C-7 **Establish "low-cost" desktop/laptop programs for students, faculty, and staff**

Lead Position:	VPIT/Provost designee
Timeframe:	Ongoing
Implementation Resources/Costs:	Existing Resources
Outcome:	**Negotiated contracts with vendors for personal low-cost PC programs**

E-1 **Establish formal IT accounting/budgeting procedures**

Lead Position:	VP, Financial Affairs
Timeframe:	Ongoing
Implementation Resources/Costs:	Existing Resources
Outcome:	**Redefined expense categories and annual tracking of IT expenditures**

E-4 **Develop existing and additional IT funding sources**

Lead Position:	VPIT/Provost designee
Timeframe:	Ongoing (Phase I of II)
Implementation Resources/Costs:	Existing Resources
Outcome:	**Annual review of existing funding resources**

F-3 **Validate official YSU web pages for ADA compliance**

Lead Position:	Web Site Manager/Coordinator, Disability Services
Timeframe:	Ongoing
Implementation Resources/Costs:	Existing Resources
Outcome:	**ADA compliant web pages**

I-1 **Develop/implement comprehensive network security plan**

Lead Position:	VPIT
Timeframe:	Ongoing
Implementation Resources/Costs:	Existing Resources
Outcome:	**A fully documented comprehensive security plan; Anti-virus software installed on all machines, with periodic updates pushed from a central server**

K-1 **Establish website design guidelines and standards**

Lead Position:	Chair, Website Advisory Committee
Timeframe:	Ongoing
Implementation Resources/Costs:	Existing Resources
Outcome:	**Documented Design, Style, Content, Website Guidelines and Standards**

K-2 **Develop web policies and procedures**

Lead Position:	Chair, Website Advisory Committee
Timeframe:	Ongoing
Implementation Resources/Costs:	Existing Resources
Outcome:	**Established, documented, web policies and procedures**

Year 2: FY06 (July, 2005–June, 2006)

C-1 **Implement wireless access for instructional use**

Lead Position:	Director, Network Services/Provost designee
Timeframe:	FY06 (Phase II of III)
Implementation Resources/Costs:	$250,000 + $50,000 ongoing maintenance
Outcome:	**Wireless access for instructional use in a minimum of two college instructional buildings**

C-2 **Increase multimedia classrooms (fixed and mobile)**

Lead Position:	Director, MAC/Provost designee
Timeframe:	FY06 (Phase II of III)
Implementation Resources/Costs:	$150,000 + $30,000 ongoing maintenance
Outcome:	**Increased numbers of multimedia classrooms; Increased access to multimedia equipment**

C-6 **Establish classroom design procedures**

Lead Position:	Interim Chief Technology Officer/Provost designee
Timeframe:	FY06 (Phase II of II)
Implementation Resources/Costs:	$75,000
Outcome:	**Classroom design procedures incorporated in classroom renovation project**

D-1 **Enhance distance learning classrooms and training**

Lead Position:	Director, MAC/Director, Distance Learning
Timeframe:	FY06 (Phase II of III)
Implementation Resources/Costs:	$50,000 + $10,000 ongoing maintenance
Outcome:	**Additional IDL classrooms; Expanded Training for DL activities**

D-2 **Implement advisement-at-a-distance**

Lead Position:	Director, Distance Learning for Bitonte College of HHS
Timeframe:	FY06
Implementation Resources/Costs:	HHS Grant Funding
Outcome:	**College-based Video enhanced advisement pilot project completed**

D-4 **Strengthen technical staff support for distance learning**

Lead Position:	Director, MAC/Director, Distance Learning
Timeframe:	FY06 (Phase II of II)
Implementation Resources/Costs:	$40,000 (Salary + Fringe Benefits)
Outcome:	**An additional technical support position to monitor hardware/software while delivering courses at a distance, increasing evening/ weekend coverage**

E-2 **Establish an IT Initiative Advantage Fund**

Lead Position:	VPIT/Provost designee
Timeframe:	FY06 (Phase II of III)
Implementation Resources/Costs:	$500,000
Outcome:	**Accumulated funds for Initiative Advantage Fund**

E-3 **Establish an IT Replacement Fund**

Lead Position:	VPIT/Provost designee
Timeframe:	FY06 (Phase II of III)
Implementation Resources/Costs:	$500,000
Outcome:	**Accumulated funds for Replacement Fund**

F-1 **Increase IT support and system availability**

Lead Position:	Director, Computer Services/Director, MAC
Timeframe:	FY06 (Phase II of II)
Implementation Resources/Costs:	$50,000 (Salary + Fringe Benefits)
Outcome:	**Additional Help Desk support and extended evening/weekend coverage; Increased hours of system availability**

F-2 **Equip classroom/labs with ADA compliant workstation/software**

Lead Position:	Coordinator, Disability Services/Provost designee
Timeframe:	FY06
Implementation Resources/Costs:	$25,000 (Phase II of III)
Outcome:	**Additional ADA compliant workstations; Enterprise access to specialized software**

G-1 **Expand IT training**

Lead Position:	Instructional Technologist/Manager, Training & Develop
Timeframe:	FY06
Implementation Resources/Costs:	TBD
Outcome:	**Assessment of IT training needs; Expanded inventory of training programs**

I-3 **Institute backup, restore, off-site storage for servers and desktops**

Lead Position:	Director, Computer Services/Director, Network Services
Timeframe:	FY06
Implementation Resources/Costs:	$30,000 + $6,000 ongoing maintenance
Outcome:	**Purchased hardware/software to accommodate enterprise server, PC, and network backup**

I-4 **Implement and test disaster recovery plan**

Lead Position:	Disaster Recovery Officer
Timeframe:	FY06
Implementation Resources/Costs:	$75,000 ongoing subscription for hot/cold site
Outcome:	**Documented recovery plan with critical applications identified; Annual disaster recovery drills enacted to test plan**

J-2 **Implement an integrated Enterprise Resource Planning (ERP) software solution**

Lead Position:	Director, Computer Services
Timeframe:	FY06 (Phase IV of V – Begin Student Information System Implementation)
Implementation Resources/Costs:	Refer to Table A-2
Outcome:	**Student Information System Implementation**

J-4 **Acquire classroom/lab space utilization software**

Lead Position:	VPIT
Timeframe:	FY06
Implementation Resources/Costs:	$35,000 + $7,000 ongoing maintenance
Outcome:	**Modeling software tool implemented for classroom and lab space utilization**

J-5 **Provide enterprise-level information/reporting**

Lead Position:	Director, Computer Services/Provost designee
Timeframe:	FY06
Implementation Resources/Costs:	$250,000 + $50,000 ongoing maintenance
Outcome:	**Enterprise–level reporting system which provides capabilities to create new reports, conveniently run existing reports, and preserve the ability to access historical data**

K-5 **Provide web content management software system**

Lead Position:	Web Site Manager
Timeframe:	FY06
Implementation Resources/Costs:	$25,000 + $5,000 ongoing maintenance
Outcome:	**Web content management system implemented enabling departmental updates to web content**

Year 2: FY06 Ongoing/Annual Review

B-2 **Establish enterprise technology purchasing procedures/processes**

Lead Position:	VPIT/Director, Materials Management
Timeframe:	Ongoing
Implementation Resources/Costs:	Existing Resources
Outcome:	**Established IT purchasing procedures with documented approval and registration processes**

C-3 **Coordinate computer lab accessibility and operation across campus**

Lead Position:	ITAC Chair/Provost designee
Timeframe:	Ongoing
Implementation Resources/Costs:	Existing Resources
Outcome:	**Coordination of institutional lab policies and procedures; Established lab replacement cycle**

G-2 **Implement program to educate faculty, staff, and students about technically related federal and state regulations**

Lead Position:	VPIT/Manager, Training & Develop
Timeframe:	Ongoing
Implementation Resources/Costs:	Existing Resources
Outcome:	**Training for all administrators and staff; Training opportunities for faculty and students**

Year 3: FY07 (July, 2006–June, 2007)

A-4 **Establish IT Board of Visitors**

Lead Position:	VPIT
Timeframe:	FY07
Implementation Resources/Costs:	Existing resources
Outcome:	**Creation of a Board of Visitors on Information Technology**

A-5 **Form Creative Media Services and strengthen web design**

Lead Position:	VPIT
Timeframe:	FY07
Implementation Resources/Costs:	Existing Resources
Outcome:	**Newly formed department comprised of existing IT graphic services**

C-1 **Implement wireless access for instructional use**

Lead Position:	Director, Network Services/Provost designee
Timeframe:	FY07 (Phase III of III)
Implementation Resources/Costs:	$250,000 + $50,000 maintenance
Outcome:	**Wireless access for instructional use in a minimum of two college instructional buildings**

C-2 **Increase multimedia classrooms (fixed and mobile)**

Lead Position:	Director, MAC/Provost designee
Timeframe:	FY07 (Phase III of III)
Implementation Resources/Costs:	$150,000 + $30,000 ongoing maintenance
Outcome:	**Increased numbers of multimedia classrooms; Increased access to multimedia equipment**

D-1 **Enhance distance learning classrooms and training**

Lead Position:	Director, MAC/Director, Distance Learning
Timeframe:	FY07 (Phase III of III)
Implementation Resources/Costs:	$50,000 + $10,000 ongoing maintenance
Outcome:	**Additional IDL classrooms; Expanded Training for DL activities**

D-3 **Adopt multimedia conferencing software and groupware**

Lead Position:	Director, MAC/Director, Distance Learning for Bitonte College of HHS
Timeframe:	FY07
Implementation Resources/Costs:	$25,000 + $5,000 ongoing maintenance
Outcome:	**Enterprise groupware providing multimedia audio conferencing features**

E-2 **Establish an IT Initiative Advantage Fund**

Lead Position:	VPIT/Provost designee
Timeframe:	FY07 (Phase III of III)
Implementation Resources/Costs:	$500,000
Outcome:	**Accumulated funds for Initiative Advantage Fund; Established procedures for Initiative Fund expenditures**

E-3 **Establish an IT Replacement Fund**

Lead Position:	VPIT/Provost designee
Timeframe:	FY07 (Phase III of III)
Implementation Resources/Costs:	$500,000; IT surcharge on departmental purchases
Outcome:	**Accumulated funds for Replacement Fund; Instituted surcharge on all IT purchases**

E-4 **Develop existing and additional IT funding sources**

Lead Position:	VPIT/Provost designee
Timeframe:	FY07 (Phase II of II)
Implementation Resources/Costs:	$60,000 (Salary + Fringe Benefits)
Outcome:	**Dedicated technical grant position to identify IT grant opportunities**

E-5 **Expand IT cost recovery**

Lead Position:	VPIT/Provost designee
Timeframe:	FY07
Implementation Resources/Costs:	Existing Resources
Outcome:	**Expanded IT cost recovery (chargeback); Enterprise printing cost recovery turnkey system**

F-2 **Equip classroom/labs with ADA compliant workstation/software**

Lead Position:	Coordinator, Disability Services/Provost designee
Timeframe:	FY07
Implementation Resources/Costs:	$25,000 (Phase III of III)
Outcome:	**Additional ADA compliant workstations; Enterprise access to specialized software**

J-1 **Establish inventory management system to record/track IT hardware and software licenses**

Lead Position:	VPIT/Provost designee
Timeframe:	FY07
Implementation Resources/Costs:	$20,000 + $5,000 ongoing maintenance
Outcome:	**Enterprise equipment/software replacement id system with established tracking processes**

J-2 **Implement an integrated Enterprise Resource Planning (ERP) software solution**

Lead Position:	Director, Computer Services
Timeframe:	FY07 (Phase V of V – Begin Alumni/ Development System Implementation)
Implementation Resources/Costs:	Refer to Table A-2
Outcome:	**Alumni/Development System Implementation**

J-6 **Acquire collaboration/communication tools**

Lead Position:	VPIT/Provost designee
Timeframe:	FY07
Implementation Resources/Costs:	Existing Resources
Outcome:	**Institutional calendaring and e-mail solution**

Year 3: FY07 Ongoing/Annual Review

E-2 **Establish an IT Initiative Advantage Fund review process**

Lead Position:	VPIT/Provost designee
Timeframe:	Ongoing
Implementation Resources/Costs:	Annually sustain at $2,000,000
Outcome:	**Budgeted funding, procedures, and review process to support IT projects and Plan recommendations**

E-3 **Establish an IT Replacement Fund**

Lead Position:	VPIT/Provost designee
Timeframe:	FY07 (Phase III of III)
Implementation Resources/Costs:	IT surcharge on departmental purchases
Outcome:	**Budgeted funding, procedures, and review process to support IT replacement**

K-3 **Develop process to monitor web content and copyright**

Lead Position:	Chair, Website Advisory Committee/ Executive Director, Maag Library
Timeframe:	Ongoing
Implementation Resources/Costs:	Existing Resources
Outcome:	**Established, documented, web content/ copyright processes and procedures**

BEYOND Year 3 (July, 2007 and beyond)

C-5 **Establish state-of-the-art experimental labs**

Lead Position:	VPIT/Provost designee
Timeframe:	Beyond FY07
Implementation Resources/Costs:	TBD
Outcome:	**High-end computer and server environments and state-of-the-art experimental labs**

F-5 **Create an informal Internet sharing environment**

Lead Position:	VP, Student Affairs
Timeframe:	Beyond FY07
Implementation Resources/Costs:	TBD
Outcome:	**Computer Cafes and increased availability and use of wireless networks**

H-2 **Enhance digital telephone services**

Lead Position:	Director Support Services/Director, Network Services
Timeframe:	Beyond FY07
Implementation Resources/Costs:	TBD
Outcome:	**Deployment of Voice over IP**

J-7 **Provide high-volume document storage system**

Lead Position:	VPIT
Timeframe:	Beyond FY07
Implementation Resources/Costs:	TBD
Outcome:	**Enterprise storage and document management solution for viewing, distributing, printing, and archiving reports and documents**

J-8 **Provide high-volume digital media storage system**

Lead Position:	VPIT
Timeframe:	Beyond FY07
Implementation Resources/Costs:	TBD
Outcome:	**Enterprise digital media storage and indexed retrieval system**

J-9 **Evaluate and pilot smart card system**

Lead Position:	VPIT
Timeframe:	Beyond FY07
Implementation Resources/Costs:	TBD
Outcome:	**Complete evaluation and pilot of "smart card" program to provide access to systems and facilities**

BEYOND Year 3: Ongoing/Annual Review

C-4 **Identify specialized instructional equipment**

Lead Position:	Provost designee
Timeframe:	Ongoing
Implementation Resources/Costs:	Existing Resources
Outcome:	**Documented instructional information-based equipment**

F-4 **Provide access to alternate networks**

Lead Position:	VPIT
Timeframe:	Ongoing
Implementation Resources/Costs:	TBD
Outcome:	**Expanded access to alternative networks; Increased redundancy capabilities**

H-3 **Expand Internet II connectivity**

Lead Position:	VPIT/Provost designee
Timeframe:	Ongoing
Implementation Resources/Costs:	TBD
Outcome:	**Evaluate full I2 member institution status**

J-10 **Create clearinghouse to share technology-related information**

Lead Position:	VPIT
Timeframe:	Ongoing
Implementation Resources/Costs:	Existing Resources
Outcome:	**Established website with the latest security releases, patches, and software license information**

Appendix A

Table A-2

Enterprise Resource Planning (ERP) Software – Draft Estimated Budget

	Year 1		Year 2	Year 3	THREE YEAR TOTAL
	Jan 04 - June 04	July 04 - June 05	July 05 - June 06	July 06 - June 07	
One-Time Costs					
Software/Hardware					
Core ERP Software License					
Oracle Data Base License					
Supplemental Software					
Hardware					
Total Software/Hardware:					
Vendor Implementation/Travel					
Implementation					
Travel and Expenses					
Total Vendor Implementation:					
Contingency:					
Subtotal					
On-going Costs					
Maintenance					
Core ERP Software					
Oracle Data Base					
Supplemental Software					
Hardware					
Total Maintenance:					
Staff Travel and Training:					
Staffing					
Technical Staffing					
Functional Staffing					
Total Additional Staffing:					
Contingency:					
Subtotal					
TOTAL					

Draft Budget Estimates have been excluded in the web-based version of the report and will become available upon request at the conclusion of the RFP process.

Figure A-1
Information Technology Master Plan

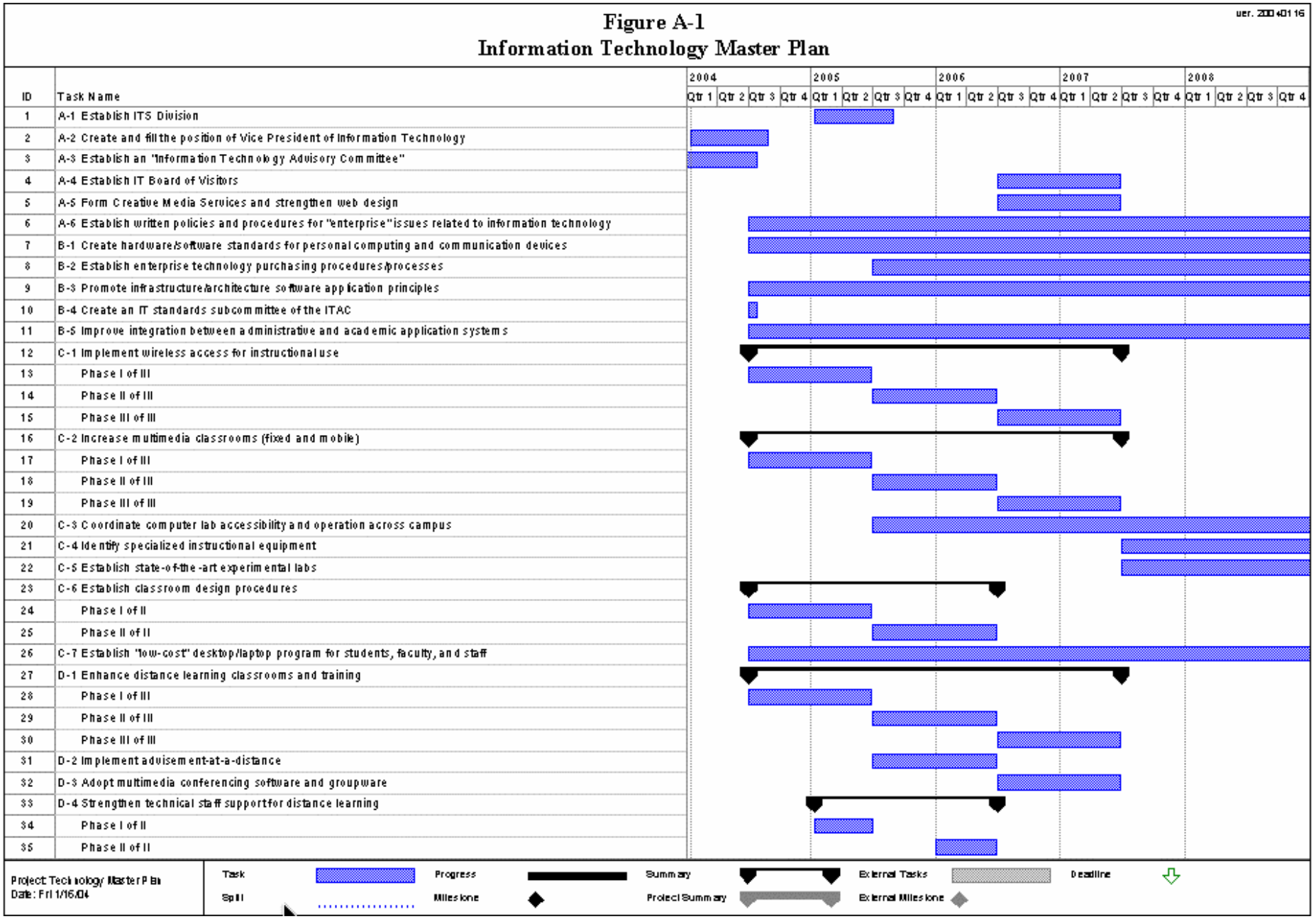


Figure A-1
Information Technology Master Plan

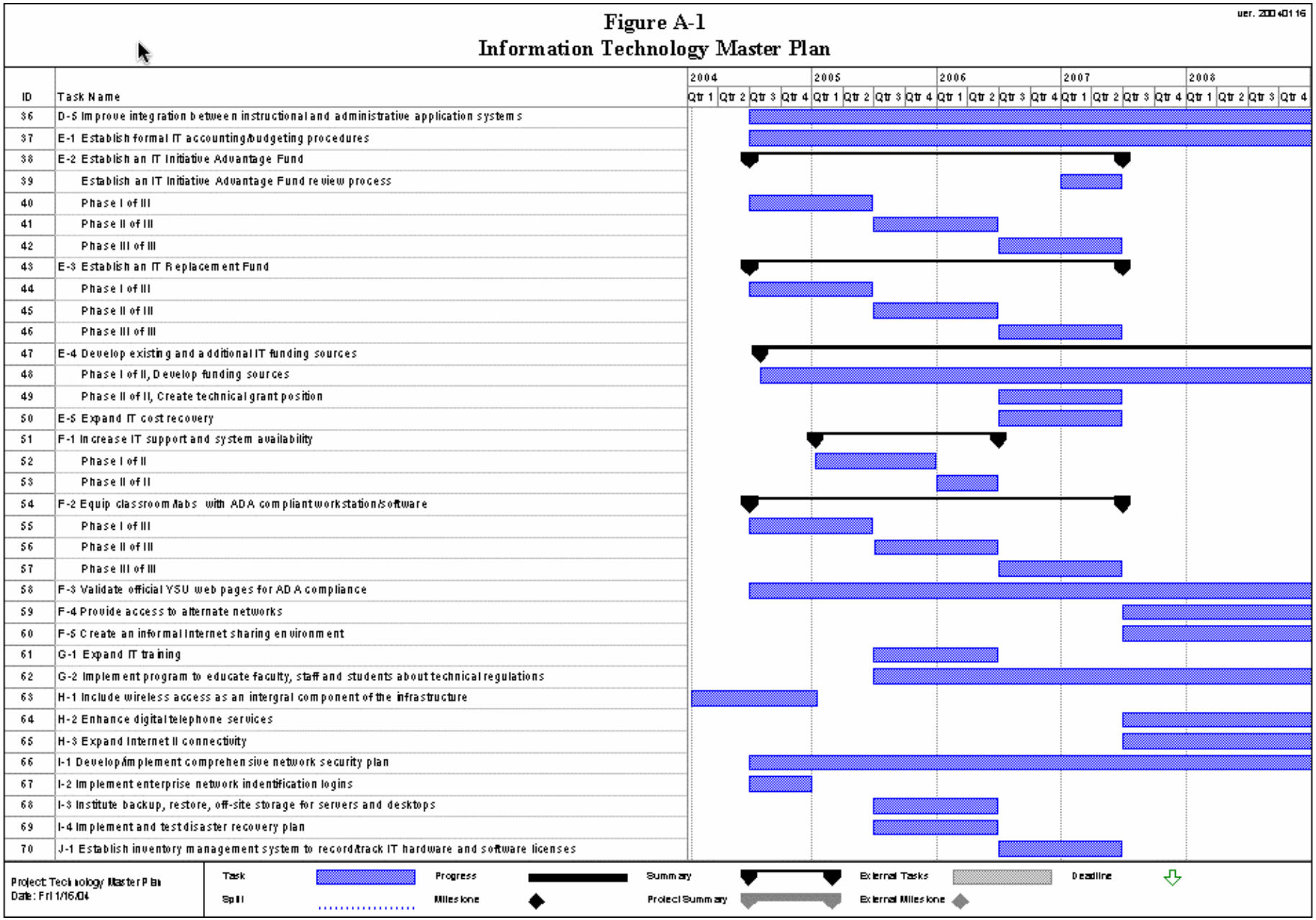
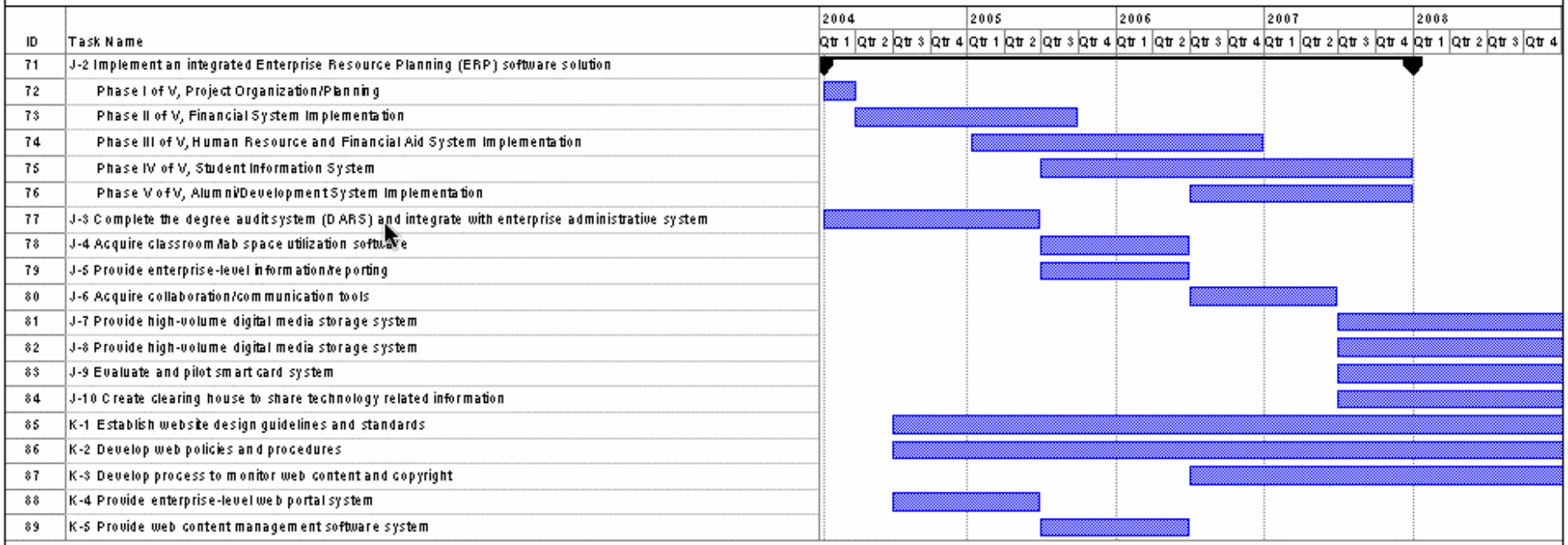


Figure A-1
Information Technology Master Plan

ver. 20040116



Information Technology Plan Development

The Information Technology Master Plan (ITMP) is based on the foundation within the Centennial Strategic Plan to design the future of Youngstown State University in the 21st century by providing "an integrated approach in using technology to meet the academic, research, student-services, and administrative goals of the University." The Plan establishes a vision for Information Technology (IT) Services that will keep pace with an evolving, interactive, student-centered and collaborative electronic learning environment, providing seamless access to data, information, and knowledge in an effort to meet the needs of the University community.

An Information Technology Master Plan Advisory Committee was appointed in July, 2002, to develop a comprehensive information technology plan, building on the foundation created within the University's strategic plan, and incorporating the recommendations from the State Auditor's Operations Improvement Report. A subset of the Advisory Committee was asked to serve on a Steering Committee to provide guidance, direction, and support.

The Steering Committee began meeting in the Fall of 2002 to establish the plan development process and define the overall scope of the plan. The Steering Committee completed a review of information technology plans from a variety of universities, including many peer, assembled background information, brainstormed issues within each goal and strategy, and developed an outline for the Master Plan. The following six major categories identified:

1. Institutional Governance, Planning, and Funding
2. Academic Classroom Technologies
3. Distance Learning/On-Line Education
4. Academic and Administrative Systems and Processes
5. Infrastructure and Architecture
6. Web Strategies

Subcommittees were formed to focus on these six categories and charged to further research and debate issues, identify actions and priorities, establish timelines, and determine funding requirements. These subcommittees were comprised of members from the Advisory Committee and solicited volunteers from the University community. The existing Website Advisory Committee was asked to address issues relating to the website.

A draft document was submitted by each subcommittee and combined into a comprehensive plan. Recommendations from the 6 categories were assimilated into the 11 principles of an *Information Technology Doctrine* that was developed. A draft document was prepared and widely distributed to obtain University and community feedback. The steering committee considered all comments, revised the document and, with input from the constituencies, assigned priorities and a time-line to the elements of the plan.

Appendix B

The Plan is guided by the Information Technology Services Mission Statement to provide the infrastructure and support necessary to enable the University community to use information technology effectively to facilitate the institutional mission of providing "open access to high-quality education through a broad range of affordable certificate, associate, baccalaureate, and graduate programs." Information Technology Services will be dedicated to providing responsible leadership, delivering quality services, maintaining a high level of satisfaction in the delivery of these services, strengthening communication, and developing productive partnerships to further enhance the technological environment.

A comprehensive *Information Technology Doctrine* was developed within the Plan to establish overriding principles that provide the foundation for an ongoing University-wide information technology planning process.

This doctrine approach provides the guidelines necessary to ensure flexibility in the planning process that must be taken into consideration in an ever evolving and shifting technological base. The plan was developed distinguishing between "Enterprise" and "local" administration of specific IT functions and resources. An "Enterprise" function/resource has University-wide ramifications for the entire information technology endeavor, as opposed to a localized need.

The Doctrine further defines the overarching goals and strategies found within Critical Issue 7 of the Centennial Strategic Plan. These goals include:

1. *Integrate, coordinate, and provide technology and information systems;*
2. *Maintain a current and reliable networked technology infrastructure;*
3. *Provide access to technology and information that is up-to-date and user-oriented;*
4. *Implement effective use of technology in teaching and learning.*

The Information Technology Master Plan supports the goals within the Centennial Strategic Plan and identifies a series of recommendations to meet these goals.

Integrate, coordinate, and provide technology and information systems.

In an effort to support the goal within the Strategic Plan to integrate, coordinate, and provide information technology and information systems, the Information Technology Master Plan Doctrine begins with identifying the need to **Develop an organizational framework that is responsive to the growing technological needs of the University**. This organizational framework includes establishing the "Information Technology Services" (ITS) Division and advisory committee structure, aligning Telephone Services and Creative Media Services within the Division, creating the position of Vice President of Information Technology (VPIT), and establishing written policies relating to information technology.

Consistent with the need for integration, the recommendation within the plan to **Promote compatibility among information technology systems and improve integration between systems and between applications** recommends creating hardware/software standards, information technology purchasing processes, and an information technology standards

subcommittee; promoting infrastructure/architecture software application principles; and improving integration between administrative and academic application systems.

Providing the financial structure to maintain and support information technology initiatives constitutes one of the over-arching principles found with the Information Technology Doctrine, and gives consideration to improving methodologies to track information technology-related resources/ expenditures and expand cost recovery for Information Technology support. The primary focus within the financial section revolves around recommendations to institute an Information Technology Initiative Advantage Fund and Replacement Fund, as YSU further develops existing and additional IT funding sources.

Two additional sections within the Information technology Master Plan overlap this first goal to integrate, coordinate, and provide IT systems. The need to **Improve services to support the administrative functions and business operations of the University** identifies a series of recommendations including acquiring collaborative and reporting tools, inventory management, document storage, digital media, and indexed retrieval systems, as well as evaluating and piloting a "smart card" program. A replacement of administrative computing systems with an integrated Enterprise Resource Planning (ERP) software solution is also recommended within the plan, implementing a modular approach (Finance, Human Resources, Student Information, Alumni/Development). Coordination of the University website is recognized, in addition to the need to **Develop and implement policies and procedures to address legal and operational issues concerning the University website.** Recommendations to develop design guidelines/ standards, associated policies and procedures, as well as the need to invest in an enterprise-level portal and content management software system have been identified in this section.

Maintain a current and reliable networked technology infrastructure.

Expanding on the goal within the Strategic Plan to maintain the information technology infrastructure, the plan identifies to need to include wireless capabilities as an integral component of the network infrastructure, enhance digital telephone services, and participate in Internet II as an effort to **Provide support for data, voice, video, and future technologies.** A comprehensive electronic security plan, an institutional network identification login, and a focus on backup and disaster recovery plans were considered to be fundamental recommendations to **Maintain a current, reliable, and secure computing and networking environment.**

Provide access to technology and information that is up-to-date and user-oriented.

Increasing access to information technology and facilitating compliance with local, state, and federal regulations centers on increasing availability of, and support for, administrative and academic information technology systems and to equip targeted classrooms and labs with ADA compliant workstations. The need to validate official YSU pages for compliance, extend the networked environment, and create an information Internet-based information sharing environment are identified as a series of steps to provide access to technology and information that is both up-to-date and user-oriented.

Appendix B

Implement effective use of technology in teaching and learning.

To support effective use of information technology in teaching and learning, YSU must recognize the need to **Provide technology enhanced classrooms and improved academic support systems,** incorporating wireless access for instructional use and increasing the number of multimedia classrooms and multimedia equipment. Better coordination of computer lab accessibility and operation is recommended, in addition to establishing state-of-the-art experimental laboratories and "low-cost" desktop/laptop programs for students, faculty, and staff. In an effort to keep pace with the electronic learning environment, YSU must **Enhance distance learning activities and instructional support,** increasing the number of interactive distance learning (IDL) classrooms within each college and strengthening technical support to effectively deliver courses at a distance. A crucial principle in implementing effective use of information technology is to **Expand training opportunities for faculty, staff, and students** with a series of recommendations identified within the plan to identify training needs and initiate new training opportunities**.**

These elements represent the underlying strategies within the Information Technology Master Plan, the established directions for the future, and comprise the comprehensive doctrine that will provided for an ongoing University-wide information technology planning process.

Technology plans from the following institutions were reviewed by the ITMP Steering Committee early in the planning process.

Arizona State University
Boise State University
Central Connecticut State University
Indiana University
Minnesota State University, Mankato
Mississippi State University
Northern Arizona University
Northern Kentucky University
Salem State College
St. Cloud State University
Suny Brockport Campus
University of Arizona
University of Southern Indiana
University of Tennessee at Chattanooga
University of Wisconsin Oshkosh
Western Kentucky University

The completed reports from the six subcommittees of the Information Technology Master Plan Advisory Committee are available for review on the YSU website at:

http://mac.ysu.edu/testsite

Glossary of Terms

ANSI	American National Standards Institute: organization that adopts consensus standards for the computer and other industries
API	Application Programming Interface: a language and message format used by an application program to communicate with the operating system or some other control program such as a database management system or communications protocol; implemented by writing function calls in the program, which provide the linkage to the required subroutine for execution
Applet	A program designed to be executed from within another application; cannot be executed directly from the operating system
ASITC	Academic Senate Integrated Technology Committee
ASP	Application Service Provider: a third-party entity that manages and distributes software-based services and solutions to customers across a wide area network from a central data center
Board of Visitors on Information Technology	Committee to advise the university on information technology issues comprised of fifteen members, two-thirds of which will be business and community representative Community partners may represent the regional Chamber, the Youngstown Public Schools, Warren Public Schools, and Industry representatives
BVIT	Board of Visitors on Information Technology
CGI Script	Common Gateway Interface Script: a specification for processing data on a World Wide Web server
Client/Server	System where server computer contains programs and files: client computers access data from server
Core Functions	Central functions that have university-wide enterprise ramifications
CSS	Cascading Style Sheets: an HTML feature that gives both Web site developers and users more control over how pages are displayed
DARS	Degree Audit Reporting System
Directory Service	A directory of names, profile information and machine addresses of every user and resource on the network, used to manage user accounts and network permissions
Distributed Computing	Processing power is spread over several sites and tied together with telecommunications lines
DRM	Digital Rights Management: a system for protecting the copyrights of data circulated via the Internet or other digital media by enabling secure distribution and/or disabling illegal distribution of the data

ECMA	European Computer Manufacturers Association: a non-profit international industry association founded in 1961 dedicated to the worldwide standardization of information and communication systems
E-mail Server	Manages e-mail functions
Enterprise Function/Resource	A function or resource that has university-wide ramifications for the entire information technology endeavor (as opposed to a localized need or function)
ERP	Enterprise Resource Planning: a business management system that integrates all facets of the business, including finance, student affairs, academic affairs, planning, and marketing
Firewall	A system designed to prevent unauthorized access to or from a private network
FLASH	A bandwidth friendly and browser independent vector-graphic animation technology that enables browsers to display similar images
FTP	File Transfer Protocol: the protocol used on the Internet for exchanging files; uses the Internet's TCP/IP protocols to enable data transfer
Hardware Architecture	The network hardware components, e.g., switches, routers
Hardware Infrastructure	Technical components of the fundamental IT transport structure and relationship between components, e.g., fiber, wireless, cabling
HTML	HyperText Markup Language: the authoring language used to create documents on the World Wide Web
HTTP	HyperText Transfer Protocol: the underlying protocol used by the World Wide Web; defines how messages are formatted and transmitted, and what actions Web servers and browsers should take in response to various commands
Information Technology Advisory Committee	University committee to advise the VPIT on information technology issues and comprised of faculty, students, academic administrators, Administrative Affairs, Alumni Relations, the Library, and University Relations
Information Technology Doctrine	Dominant principles that will inform an on-going university-wide information technology planning process
Information Technology Initiative Advantage Fund (Initiative Fund)	A designated reserve fund established to develop and implement multiyear fiscal plans and budgets for significant projects that will enhance the campus-wide information technology architecture and promote stability and effective long-term management strategies
Integrated Software	Programs that work interactively with each other requiring no programming bridges

IP	Internet Protocol: the network layer, containing a network address which allows messages to be routed to a network or subnet; resembles the postal system, allowing you to address and send a data packet without guaranteed delivery
ISO	International Organization for Standardization: an international organization composed of national standards bodies from over 75 countries
IT	Information Technology
ITAC	Information Technology Advisory Committee
ITS	Information Technology Service
Java	A high-level programming language designed for handheld devices and set-top boxes
Java Script	A scripting language developed by Netscape to enable Web authors to design interactive sites
JDBC	Java Database Connectivity: a Java API that enables Java programs to execute SQL statements
JSP	Java Server Page: an extension to the Java servlet technology, with dynamic scripting capability that works in tandem with HTML code, separating the page logic from the static elements (the actual design and display of the page) to make the HTML more functional (e.g. dynamic database queries)
LDAP	Lightweight Directory Access Protocol: a set of protocols for accessing information directories
Mission Critical Software/Hardware	Software and hardware that is necessary to carry out normal business operations
MPEG	Moving Picture Experts Group: (pronounced *m-peg*) an ISO working group that developed standards for compressing video; also refers to the family of digital video compression standards and file formats developed by the group; consists of three major MPEG standards: MPEG-1, MPEG-2 and MPEG-4
ODBC	Open DataBase Connectivity: a standard database access method that makes it possible to access any data from any application, regardless of which database management system is managing the data
OSI	Open System Interconnection: an ISO standard for worldwide communications that defines a networking framework for implementing protocols in seven layers
PLUGIN	A hardware or software module that adds a specific feature or service to a larger system

Portal	A Web site or service that offers a broad array of resources and services, such as e-mail, forums, search engines, and on-line shopping malls
Portlet	A small window on a portal page, allowing a portal page to be customized more quickly by the development team or by the end user; portals use portlets as pluggable user interface components that provide a presentation layer to information systems
Production Software/Hardware	Software and hardware that perform routine business tasks
Protocol	An agreed-upon format for transmitting data between two devices
PTD	Personal Termination Device (i.e., work station, laptop, etc.)
Recharge Operations	A facility, center, operation, function, account, or activity where output is susceptible of measurement on a workload or other quantitative basis
RFP	Request for Proposals
Servlet	A small program (usually a Java applet) that runs on a server
Software Architecture	Components that make it possible for software programs to communicate
Software Infrastructure	Describes technical components of software programs and relationships among programs
SQL	Structured Query Language: a standardized query language for requesting information from a database, first introduced as a commercial database system in 1979 by Oracle Corporation
SSH	Secure SHell: a program to log into another computer over a network, to execute commands in a remote machine, and to move files from one machine to another; provides strong authentication and secure communications over insecure channels
SSL	Secure Sockets Layer: a protocol for transmitting private documents via the Internet; uses a private key to encrypt data that is transferred over the secured connection
Streaming	A technique for transferring data which can be processed as a steady and continuous stream, allowing the client browser or plug-in to begin displaying the data before the entire file has been transmitted
TCP/IP	Transmission Control Protocol/Internet Protocol: enables two hosts to establish a connection and exchange streams of data; guarantees delivery of data and also guarantees that packets will be delivered in the same order in which they were sent
TELNET	A terminal emulation protocol commonly used on the Internet and TCP/IP-based networks which allows a user to log onto a remote computer and run a program

Timed Approval	An approval request process tied to an "objection" procedure with an automatic approval policy if no objection is made after a defined and expedient period of time
URL	Uniform Resource Locator: the global address of documents and other resources on the World Wide Web; the first part of the address indicates what protocol to use, and the second part specifies the IP address or the domain name where the resource is located
VPIT	Vice President of Information Technology
W3C	World Wide Web Consortium: an international consortium of companies involved with the Internet and the Web which develop open standards for the Web, enabling evolvement in a single direction, rather than being splintered among competing factions
WAI	Web Accessibility Initiative: ensures that as the Internet grows in usage, web sites are designed to accommodate people with disabilities
WAP	Wireless Application Protocol: a secure specification that allows users to access information instantly via handheld wireless devices such as mobile phones, pagers, two-way radios, smartphones and communicators
Web Server	A computer that delivers (serves up) Web pages; every Web server has an IP address and possibly a domain name
XHTML	Extensible Hypertext Markup Language: a hybrid between HTML and XML specifically designed for Net device displays
XML	Extensible Markup Language: an open standard for describing data from the W3C used for defining data elements on a Web page and business-to-business documents; allows designers to create their own customized tags, enabling the definition, transmission, validation, and interpretation of data between applications and between organizations
XSL	Extensible Style Language: a specification for separating style from content when creating HTML or XML pages
XSLT	Extensible Style Language Transformation: the language used in XSL style sheets to transform XML documents into other XML documents