Information Technology Overview

Partnering with faculty, students, and staff in the quest for knowledge, applying the power of technology to unite people and content anywhere, anytime.

Academic Year
2007-2008

A GUIDE TO IT DEPARTMENTAL SERVICES
Office of Information Technology
Academic Technology Center
George C. Gordon Library
Computing & Communications Center
Vision—where are we going?

The Information Technology Division’s (IT) vision for our future state is to fuel the success of WPI by understanding the community so well that solutions are sought, trusted, and in place as needs arise. We strive to position WPI, not on the bleeding edge of technology use, but out in front as an aggressive leader in its strategic application to higher education. IT staff and infrastructure provide WPI with competitive advantages that facilitate our research initiatives and unique undergraduate educational approach—the WPI plan.

Mission—why are we here?

The division’s mission is to partner with faculty, students, and staff in the quest for knowledge, applying the power of technology to unite people and content anytime, anyplace. This broad statement of purpose guides us in supporting a large breadth and depth of teaching, project, research, and administrative initiatives. We are a major service provider to all stakeholders within the university community and support most mission-critical processes and services, many 24x7. IT also provides a visionary and leadership role relating to e-content, infrastructure, services, and policy and often acts as a change agent.

Staffing and Budget

The Office for Information Technology (OIT) oversees three departments: the Academic Technology Center (ATC), Computing and Communications Center (CCC), and the George C. Gordon Library (GL). We have 76 staff and employ about 128 students each year. Our FY08 divisional expense budget is $9.8M, $6.1M of which are salaries and benefits. We administer between $2-3M/year in institutional IT capital projects for networking, computing, e-classrooms, e-resources, e-learning, video, multimedia, and advanced technology projects and assist the campus community with the purchasing of technology hardware and software. We maintain a 5 year planning horizon with 3-5 year replacement cycle for core computing, storage, and networking infrastructure.

Unified Digital Campus Project

Special emphasis was placed this year upon our work with the SunGard SCT/Banner administrative system to improve user access, reporting, data integrity, third party system integration and process improvements. SunGard consultants performed post implementation audits (PIAs) in most business areas (including advancement, finance, HR and student) and assessed our overall use of the Banner system. They have made a number of key, insightful recommendations including a course of action. As result, WPI initiated a multi-year project to align strategic business objectives, business processes, and initiatives, to implement cultural and technical changes, and to assess our results. Our visionary plan includes a new IT governance structure, use of an enterprise architecture approach to the management of technology and a roadmap for institutional intelligence. SunGard enterprise architects are guiding the process. To better support this distributed-access, business-unit data stewardship operational model Information Analysts have been hired for each business unit as well as a single Institutional Researcher.

Community Outreach

WPI owns the Goddard GigaPoP, a regional aggregation point connected to Internet2’s (I2) network at the Northern Crossroads GigaPop (NoX) in Boston. WPI led the formation of the Goddard Collaborative—a non-profit organization of over 20 educational institutions, museums, and a regional network. WPI sponsored WGBH as an I2 Sponsored Participant. WPI and UMASS jointly sponsor a statewide I2 K-20 educational network (Sponsored Educational Group Participant (SEGP)) that includes MECNet, UMASS/MITI, and the Goddard Collaborative. WPI also formed the Gateway Medical Network which provides access to the Boston and I2 medical communities as well as the Life Sciences Center at Gateway Park, WPI’s Bioengineering Institute, and the UMASS Medical Center.
Strategic Planning

The alignment of IT initiatives with our strategic plan and research areas is excellent. Our IT strategic plan uses the Balanced Scorecard methodology. We created performance metrics, with target values, to track progress on key initiatives from four perspectives—stakeholder, internal processes, employee learning and growth, and resources. All employees within the IT division have participated in the development and execution of our strategic story, and we have also enjoyed contributions from stakeholders from many other areas of the university community. We are using our plan to guide decision making to translate our strategy into action and to deliver exceptional customer service experiences. A five-point communication plan was implemented to significantly improve our ability to collaborate within the division and across the university.

Key Initiatives

The largest project is the Unified Digital Campus. We will implement the SunGard Luminis portal product as part of this work. Other initiatives include institutional data access and architecture, data warehousing, data protection and system recovery plans, network and data security and email plans and policy development, university-wide compliance audits of federal and state IT security acts, and work with our external auditors.

External Recognition

Our staff continues to take advantage of opportunities for external visibility—we made presentations at local conferences, received a number of awards, and were recognized nationally and locally through a number of press releases and interviews, quotations, and invitations to speak at events and conferences.

The IT Division also procured over $272k of corporate gifts for hardware, software, fiber/wire, and installation services and $40k of grants to the Gordon Library’s archives collection. WPI is the premier beta tester of Nortel Network equipment in the USA.

Summary

The Information Technology Division is aligned with WPI strategic and academic plans, honors revenue and expense budget commitments, is focused on improving services and creating new capabilities, exploits synergies across the division and university, hears critical feedback, and enjoys a culture of dedicated staff who strive to deliver “continuous customer delight!”
About the ATC

The staff of the Academic Technology Center (ATC) is divided into four major service groups:

- **The Technology for Teaching and Learning Group** works with faculty, staff, and students on the application of technology to teaching, learning, and supporting activities.

- **Campus Media Services** is responsible for the A/V management and support required by campus event planners as well as the day-to-day support of electronic classrooms, conference rooms and the ATC’s comprehensive inventory of loan out equipment.

- **Video Production Services** provides support for studio productions and studio facility utilization, remote productions, special event tapings, off-air recordings (i.e., satellite, cable TV) and video editing, duplication and format conversion.

- **Audio/Visual Systems Engineering** is responsible for the design, installation and maintenance of the ATC’s operational infrastructure as well as a host of other campus-wide resources.

Together, these service groups work with other departments in the IT Division to deliver a comprehensive suite of information technology services to the entire WPI community.

**Academic Technology Infrastructure**

The Academic Technology Center (ATC) is responsible for the design, installation, maintenance and day-to-day support of the multimedia technology found in the numerous electronic classrooms and conference rooms located on the main campus and at the Mass Academy on Prescott Street and it supports WPI’s distance learning programs. In addition, the ATC also manages a number of special teaching, communication and media development facilities; myWPI; the university's cable TV network and video bulletin board system; streaming media technology; video and web conferencing; and the infrastructure required to make these resources easily available to the WPI community. The ATC also maintains a large inventory of equipment available for loan to members of the WPI community to meet their academic and presentation needs.

**Course Capturing**

The ATC is piloting course capturing using the Accordent system, which automatically records the audio and video of a professor’s lecture as well as a high quality screen capture of everything that is sent to the projector in the room. The completed recording can then be viewed by students via a website that is linked in the myWPI course site. Students find it very helpful to review the recordings when working on homework or studying for exams. The new system was installed in three rooms on campus, including the ATC television studio, where it is being piloted as a delivery method for distance learning content to students enrolled in the Fire Protection Engineering and Environmental Engineering programs.
Usage of WPI's online learning and information portal, myWPI, continued to grow in FY07. This past year 885 course/project sites, 298 faculty, and 257 organizations took advantage of myWPI’s online communication and collaboration capabilities. myWPI is powered by the Blackboard Learning System with Community Portal, version 7.3. Along with a major software upgrade in the summer of 2007, the ATC installed blog, wiki and podcasting tools that integrate with Blackboard via building blocks from Learning Objects. The ATC also installed a new plagiarism prevention tool from Blackboard.

Course Redesign Grants

The Course Redesign Grants program kicked off in the spring of 2007 with two grants awarded to faculty who are working on incorporating technology into their redesigned courses. The Course Redesign Grants program is a joint initiative co-sponsored by the Academic Affairs Division and the Information Technology Division. The grants are administered by the ATC, which works with the Center for Educational Development and Assessment (CEDA), the Educational Development Council (EDC), and other instructional and information technology service groups on campus.

Professional Development and Training

The ATC provides opportunities for faculty and staff to learn about the technologies available to them through a variety of offerings. Instruction is offered throughout the year in short instructor-led classes for the MS-Office productivity suite, campus administrative information systems, myWPI, and several instructional technologies. Additionally, the Teaching with Technology Collaboratory located at http://www.wpi.edu/+Collaboratory provides faculty with self-help resources on using various technologies and incorporating them into their instruction. Faculty and staff also frequently benefit from one-on-one consultations with ATC staff to provide them with in-depth information on the use and application of technology.

Video and Multimedia Services

The ATC provides video and multimedia services to the WPI community. These services include video production, multimedia design, interactive CD-ROM development, DVD production and duplication, a four camera TV studio, editing facilities, large-format printing, and media conversion services. The media production group makes the dynamic world of multimedia available in support of course curricula, research, special projects and distance learning.
About the Library

The library pursues five primary areas of activity:

- **Access Services** manages the print inventory of library materials, ensuring maintenance of the stacks, circulation of materials, and course reserves in support of teaching on campus. It also ensures access to non-WPI materials through Interlibrary Loan and through consortial borrowing within Worcester.

- **Archives and Special Collections** acquires and preserves documents, photographs, publications, and artifacts telling the history of WPI, as well as other documents of historical interest in other areas. The Special Collections contains many old and rare editions such as those contained in the Fellman Dickens Collection.

- **Library Systems** develops the online research environment through licensing and evaluation of electronic resources, and through maintenance of the integrated library system which provides inventory management of collections.

- **Reference and Instruction Services** work to enable the WPI community to leverage library collections and services to their fullest potential, and to create information literate students who are ready for the workplace, future scholarly pursuits, and lifelong learning. Librarians provide research support and instruction through various in-person and virtual modes.

- **Collection Management Services** is responsible for identifying, acquiring, cataloging, and organizing works in print, electronic, audiovisual and other formats, according to nationally recognized standards. This area is also responsible for a preservation program that maintains the print collections in excellent order.

Library as Place

The George C. Gordon Library provides a diverse learning environment to meet the needs of the WPI community. The facility includes 16 group study rooms; seven group spaces enabled with high-end collaborative technology, or “Tech Suites;” two instruction labs equipped with PCs for hands-on learning; an open PC room offering 24 seats; a high-end multimedia lab; quiet and noisy study zones; and wireless network access throughout. Exhibitions and special events are held in the building and attended both by WPI faculty, students, staff, and the Worcester community at large.

A vision for library renovation has been underway for several years. Beginning in 2006, furnishings and offices on the main floor were reconfigured to foster greater visibility and highlight popular service points. These new renovations have proven to be immensely popular with students, and more improvements are planned for 2008.

The Digital Library

With 40,000+ e-books, 41,000+ e-journals, and more than 150 databases containing literally millions of articles, reports, and other types of scholarly communication, the electronic holdings are quickly expanding to meet the needs of library users. These resources, most of which are available 24/7/365 from anywhere in the world, are heavily utilized by the WPI community. Last year the Gordon Library web site received nearly 4,000,000 hits, and more than 270,000 database searches were performed.

Currently there are nearly 600 ETDs (electronic theses and dissertations) searchable from the library online catalog, and due to a recently passed faculty resolution, all undergraduate projects are now submitted electronically and are integrated into the catalog as well. Librarians are also adding to the digital collections. Podcasts and video podcasts featuring library resources and services are posted on the website at regular intervals. The Archives and Special Collections has made significant contributions, including the Woodbury and Company archive of company records and photos. The Theo Brown (Class of 1901) diaries, which chronicle his life and career at John Deere, are currently being digitized and a website is being created to allow researchers access to their unique content.
Library Collections

The library’s electronic collection grows in richness as full-text collections and interlinking among resources make search, discovery, and use of scholarly materials available anytime, anyplace. Print collections encompass book holdings, runs of numerous scholarly journals, conference proceedings, technical reports, multimedia resources, rare books, special collections, and offer strengths in support of curriculum, research, and project needs.

Special Projects and Initiatives

A sampling of activities underway or recently completed that advance the partnering role of the library in support of teaching and learning at WPI:

- **System Enhancements**: implemented “QuickFIND” federated search interface that allows multiple online databases to be searched simultaneously.

- **Inventory Control**: monitor shelf status of library materials via portable electronic barcode scanning; implement an electronic resource management system to track licensing of e-resources.

- **myWPI Integration**: offer assistance to faculty integrating readings and library instruction into their course sites; expand access to librarians via web conferencing and other virtual modes.

- **Remote Help**: utilize web conferencing software and Camtasia Studio® to offer with library instruction and reference assistance to remote groups.

- **Information Literacy**: promote an information literacy program that provides workplace skills and prepares students for graduate study, beginning with first year experiences, through project research, and into discipline-specific expertise.

- **Facilitate Research & Access to Collections/Spaces**: diversify options for users to connect with library staff and resources by implementing such innovative technologies as Facebook®, iGoogle™, and the LibX library catalog tool bar; launch web-based self-service scheduling of Tech Suites.

- **IQP/MQP Reports & eProjects**: create catalog records in online catalog for MQP and IQP reports; continue to promote and support the electronic project submittal process.

- **Service Point Streamlining**: leverage the single point of service information desk to enhance cross training opportunities, implement peer reference services, and improve interactions with library users.

- **Innovative Instructional Technologies**: expand the amount of information delivered via librarian created podcasting and RSS feeds.

- **Digitization**: digitize selected special collections to increase accessibility and preserve the integrity of primary source objects.

- **Collection Development**: work with faculty committees to identify collection needs for new academic programs.

- **Grants**: collaborate with WPI faculty and departments to gain funding from external agencies in support of strategic needs.
About the CCC

Support Services
The Helpdesk maximizes user productivity by enabling and supporting WPI faculty, staff, and students to make the most efficient use of the technology tools and services provided to them through significant investment by WPI. They provide quick answers, coordinate trouble-ticket processing, offer individualized desk-side support for office productivity challenges, and deliver technology orientation programs for new faculty, staff, and students. Additionally, they offer workshops, information sessions, and “Computer Tips” to the community in an effort to enhance and improve computer literacy. The Information Desk provides operation support, printing and inventory services, and local support for primary CCC computer labs. The trained staff triage incoming Helpdesk e-mail and web-based requests, and provide backup support for Helpdesk phone inquiries. The Computer Shop deploys new or rebuilt systems. They also configure, troubleshoot, and repair WPI-owned computers and printers while offering network connectivity, spyware, and virus protection services for personally-owned student systems.

Banner, WPI’s Enterprise Resource Planning (ERP) Platform
SunGard Banner is a fully integrated, Oracle-based, Internet-native technology package solution for the higher education community. Banner is the market-leading suite of software applications for student information, admissions, human resources, financial aid, faculty and advisors, alumni information, finance, and more. Banner Self Service, a web-based technology allowing self maintenance of personal information, provides active and prospective students, employees, and faculty the ability maintain and view their own registration, application, payroll, and financial data. In addition to the transaction-focused Enterprise Solutions Group the group supports an Operational Data Store (ODS) for daily reporting and data mining needs, and an Enterprise Data Warehouse (EDW) which provides long term data for trend analysis. The team provides support for maintenance and upgrades of the application software, and implements and maintains enhancements and extensions of the baseline software. The team also provides business critical reports and maintains a library of reporting views that are available to the user community for their use in developing ad-hoc reports.

Windows Services
The Windows team manages all Microsoft Windows-based services utilized by the WPI community. Recipients of these services include faculty, staff, students, and laboratory and classroom PCs. The team distributes over 100 software applications to users and manages respective licenses appropriately. The Windows group ensures that virus protection is available for all domain e-mail, desktops and servers, and provides incident response services when necessary. The team is constantly monitoring the health, security and performance metrics of systems and services within the enterprise. The Windows group also manages other community administrative systems and applications, including centralized file and print services, electronic locks, WPI ID’s, and other interfaces with the Banner group. The team also provides a robust messaging environment for all members of the WPI community with Microsoft Exchange Server 2003.

Operations
The Operations group directs CCC policy and general operation. They manage the CCC budget, contract and software licensing agreements. CCC operations manages the IT capital inventory and supports a multi-year projected funding requirements model. Operations assists the campus community with computer technology hardware and software purchases. In conjunction with academic departments, operations manages the public lab/PC classroom facilities in each of the academic buildings across the campus.
Telecommunications

Telecommunications is responsible for campus telephone services, including the voice mail and voice directory systems. The Telecommunications Manager is responsible for WPI's phone switch, including its repair, its local and long distance access, usage reporting, phone instrument repair, and day-to-day moves, adds, and changes.

UNIX

The UNIX team manages computer systems for interactive and computational use. They support over 5900 login IDs, including not only individual student, staff, and faculty accounts, but also group accounts for clubs, faculty committees, student project groups, fraternities, and others. The login ID also defines that individual's or group's email address at WPI.

All email entering or leaving the WPI campus or moving between WPI mail servers passes through the campus mail hub, which is also maintained by the UNIX group. WPI email users may read their mail using a POP or IMAP mail client or may, if they prefer, use a web-based email system. From here, mail may also be forwarded to private mail servers for academic departments or clubs, to the Exchange server operated by the Windows team, or to off-campus mail servers such as Google's Gmail service, other web mail services, or corporate mail systems.

Every message that passes through the campus email hub is scanned for malicious content, including viruses and email worms. There are also several systems in place that check the likelihood that any given email message is spam and we offer tools to delete the most likely candidates.

Other services provided by the UNIX team include the main campus web server at http://www.wpi.edu, and various other web servers. The UNIX team also installs and maintains a number of Linux systems. These systems provide login access for educational and research use and include access to Oracle and MySQL databases, Maple, Matlab, and other major research and academic software packages. A number of UNIX-based research systems are also supported by the UNIX team. These include the SGI supercomputer purchased through a grant by the Mathematical Sciences Department and Linux-based compute clusters. The library systems that provide the Encompass and Voyager services also fall within the UNIX domain.
About the CCC

The Network Operations and Security team is responsible for the engineering, installation, maintenance and security of the WPI network as well as the Goddard GigaPoP. They also manage the WPI presence at 1 Summer Street, Boston, and the connection to the Northern Crossroad GigaPop (NoX.) The Network Operations Center (NOC) monitors all aspects of campus data networking, including bandwidth consumption, equipment status, and security incidents.

The Network Operations and Security staff is also responsible for network and security policy development, identifying breaches of the WPI Network Security Policy (NSP) and the WPI Acceptable Use Policy (AUP) by WPI faculty, staff, and students as well as identifying external intrusions by outside entities. They use an array of intrusion detection sensors and flow monitoring sensors to identify suspicious behavior of equipment and to track hackers and viruses. Network Operations and Security is responsible for handing these incidents from detection to resolution and liaisoning with law enforcement when necessary.

Network Summary

A redundant 30 Gigabit Ethernet backbone is at the network core. The network connects 35 academic buildings, 34 dorms and fraternities. Network Operations manages networking for approximately 17,000 devices. They maintain approximately 2.75 million feet of copper cable and 700,000 feet of fiber. Network Operations also maintains the campus-wide 802.11a/b/g wireless network.

Goddard GigaPoP

At the GigaPoP, WPI connects to the Internet via a 1 Gbps fiber Ethernet connection over which WPI can vary service speed upon request, without the expense or delay of ordering telephone-style circuits. WPI typically uses about 90 Mbps during the academic session.

Besides connecting WPI to the commodity Internet, the Goddard GigaPoP has an OC3 (155 Mbps) connection to Internet2 via the NoX. The GigaPoP also serves as a regional aggregation point to Internet2. WPI is also tracking development of a New England region research network to determine how best to participate.
Research and High Performance Computing and Scientific Application Support

The team provides a variety of services, tools, and scientific and technical expertise to assist the research and academic efforts of the students and faculty. The team is also involved in strategic IT planning for all academic departments, as well as coordinating the efforts of academic department as well as coordinating the efforts of academic department local IT personnel with each other and the central IT services staff. WPI’s state-of-the-art HPC tools include the Access Grid, 2 Linux Clusters, SGI Altix 350 and a AMD Opteron based SMP system.

Access Grid

The Access Grid (AG) supports large-scale distributed meetings, collaborative work sessions, seminars, lectures, tutorials, and training. The Access Grid design point is group-to-group communication. The AG consists of multimedia display, presentation, and interactive environments, interfaces to grid middleware and interfaces to visualization environments. WPI's AG node has been used for coursework, workshops, seminars, research, and projects.

Scientific/Engineering Application Support

The program supports the core academic undergraduate, graduate curriculum, and research activity, by providing training sessions to the community, relieving faculty from teaching software and providing direct help and support for project groups. During the academic year 2006-2007, we conducted more than 100 training sessions, covering applications such as Matlab, Mathcad, Ansys, Fluent, Abaqus, Labview, attended by 430 students, faculty and staff. Part of these training sessions (41) were customized and integrated in the curriculum of 17 WPI courses, as invited lectures, hands-on workshops or help sessions. We have directly collaborated with 17 faculty members from 7 departments.

Linux Clusters, SGI Altix, SMP systems

WPI’s HPC group provides a distributed computing platform consisting of two clusters available to the whole community for large scale computing. This platform provides supercomputing capability at a fraction of the traditional cost. The SGI Altix is a powerful shared memory architecture supercomputer consisting of 16 Itanium 2 processors. The AMD Opteron system is the fastest system consisting of 16 AMD Opteron 2.4 GHZ, dual core CPUs.
Divisional Statistics

Information Technology Division

ATC
- myWPI Usage
  - FY03: 466 courses, 210 faculty, 97 orgs.
  - FY04: 516 courses/projects, 220 faculty, 120 organizations.
  - FY05: 681 courses/projects, 264 faculty, 156 organizations.
  - FY06: 809 courses/projects, 299 faculty, 186 organizations.
  - FY07: 885 courses/projects, 298 faculty, 257 organizations.

Media Support for Events
- 365 in FY03; 450 in FY04; 360 in FY05; 366 in FY06, 417 in FY07

- Annual major campus events include Admission Open Houses, Advisory Board meetings, University Lecture Series, Trustee meetings, Homecoming, Parents Weekend, Reunion Weekend, and Commencement.

Electronic Meeting Spaces
- Classrooms: 29 in Worcester; 1 in Mass Academy
- Electronic Labs: 16
- Conference Rooms: 22
- 7 Library Collaboration Rooms
- Design and build out of AV system supporting NOC and Access Grid
- Admissions Interactive Plasma Display
- Campus Center Info Desk Display

TV Studio/Production Facility
- 50 seats with 30x20 stage area, professional lighting grid
- 3 Sony DXC-D35WS triax camera packages with Telemetric robotics
- 1 Panasonic 3CCD document camera
- 24 Sony XGA flat panel displays
- 96x96 analog video routing switcher
- Mass duplication facilities: 41 VHS duplication decks; 4 SVHS production decks; 6 DVCAM decks; Betacam SP
- Digital, non-linear editing suites
- Ku and C-band satellite downlink (analog/digital)
- Tandberg IP/ISDN videoconferencing
- Anycast portable production switcher

Systems Support
- Carillon System (Campus Bells)

CATV Network
- Two parallel systems: a 550 MHz high-split, bi-directional network and a 550 MHz broadcast network
- 800 CATV nodes to classrooms, dorms, common spaces

Faculty Support Services
- Course Redesign Grants – 2 faculty in FY07
- Teaching Technology Fellowship Program – 8 faculty in FY02; 5 in FY03; 7 in FY04; 10 in FY05; 3 in FY06
- One-on-one faculty support for 39 ADLN courses in FY03; 52 in FY04; 45 in FY05; 49 in FY06; and 48 in FY07

Equipment Inventory
- Laptops (120)
- Digital Audio Recorders (18)
- Data/Video Projectors (13)
- Digital cameras (15)
- Digital/VHS/SVHS Camcorders (13)
- Portable IP/ISDN videoconferencing unit (1-Tandberg)
- Student Response Systems, VCRs, TVs, DVD players, cables, etc.

Mobile Computing Programs
- Library Laptops (25)
- Campus Center Laptops (10)

Multimedia Resource Facilities
- Full Nonlinear Edit Suite
- 2400 dpi scanners, 3 PDF scanners, a 35mm slide scanner, an automated CD-duplicator & printer (600 disc capacity), HP 42” 2400 dpi plotter & 42” scanner

Gordon Library
- 41,151 web-based full text e-journals
- 40,000+ web-based full text e-books
- 150+ web-based electronic databases
- 298,238 item print collection
- 9,200+ interlibrary loan requests
- 225,705 library building visits
- 42,002 circulations-all materials
- 16,683 registered library patrons
- 570 Electronic Theses & Dissertations
- 2,891 Print Theses and Dissertations
- 3,943,423 library homepage hits
- 270,421 database searches performed
- 200,000+ e-book pages read
- 400” wired ports in the library
- 32 PC stations

- 9 public access catalog stations
- 4 copiers
- 2500 volumes, 100 artifacts—Fellman Dickens Collection
- 140’ years of WPI historical records
- 2000’ linear feet of WPI archives
- 8000’ archival photographs
- 1500’ rare books in Special Collections
- 500 volumes of WPI newspapers, journals, yearbooks
- 8 art exhibitions
- 2 art galleries

Systems Administration
- Voyager integrated library management system on SunFire 280R Server
- ENCompass for managing digital collections on SunFire 280R Server
- Public access networked printing & copying integrated w/ cashless payment

CCC
- HelpDesk
  - IT support for ~5000 clients; Ratio = 5000/4.13 staff = 1211:1; National Average = 150:1
  - 900-2700 incidents per month; monthly average = 1507
  - BMC (Remedy) call tracking system
  - Support 100’ academic software apps
  - Online email, account provisioning, password reset, device registration, software media requests and tech support
  - Partner with Registrar’s Office, myWPI, Webmaster, and CMS for request routing

PC Shop
- Maintain 2000’ desktop computers
- Dell certified technicians

High Performance Computing
- EMC Clarion CX400, NX350, AX100 7 TB storage arrays
- Additional 3 TB storage array
- Dell Linux Clusters, each with 11, 14 nodes, 22 and 28 processors (2.4 GHz XEON), 2 GB RAM
- SGI Altix 350, 16 Itanium 2 processors and 40 GB of RAM
- AMD Opteron system with 16 dual core CPUs, 2.4 GHZ
- Access Grid group-to-group videoconferencing facility
Recent Gifts to IT Division

EDS
- Unigraphics—500 licenses
- Ideas—100 licenses
- SolidEdge—Site license

PTC
- Full Product line—500 licenses

Solidworks
- Solidworks—150 licenses

Cosmos—150 licenses

Integration Partners
- APC 80 KVA Unit
- APC Server Room Racks
- Cyclades Terminal Servers
- $40k toward Gateway Park

Nortel Networks
- Nortel Call Pilot System
- Nortel Wireless (HW/SW)
- Netops Closet Build out
- Nortel VPN and Licenses
- Nortel 48 port 10/100/1000 Switches (Server Room)

Grants
The IT Division has been awarded $40K in total funding including federal grants for preserving and digitizing library materials.

Library

ATC

CCC

Total

Sessions | 274 | 35 | 271 | 558

Topics | 187 | 18 | 49 | 144

Attendees | 3375 | 188 | 927 | 4190

Excludes faculty development & 1-to-1 support
Institutional IT Capital Budget

IT administers between $1.5M to $3M/year in institutional IT capital projects for networking, desktop computers, servers, high-performance workstations, printers, e-classrooms, academic computing labs, e-learning, video production, web-streaming, web-conferencing, software, telecommunications, and advanced technology projects (see figure below). Funding allocations are sometimes insufficient to meet the list of #1 priorities, but significant progress has been made without accumulating crisis-level backlogs to date. Funding prior to FY00 was in the $250K to $350K/year range which was inadequate. IT now maintains a 5-year planning horizon and uses a projected 3-5 year replacement cycle for mission-critical servers, storage, and networking infrastructure. 45 out of 55 classrooms and computer labs used for instruction (80%) and 22 conference rooms have multimedia capability. The e-classroom AV equipment replacement cycle currently averages 5 years. A total of 7 technology-enabled meeting spaces (Tech Suites) have been built in Gordon Library. An upgraded e-learning infrastructure supports a wide variety of technology-mediated communication tools such as student response systems, streaming audio/video, web conferencing, and IP-based videoconferencing.

The network capital budget covers the upgrading of our campus network/security hardware and infrastructure which includes all academic, administrative and residential buildings. A 10 year planning horizon is maintained for network projects. The Network Wiring Project budget funds major upgrades of the campus network such as the wiring infrastructure in the academic buildings and residence halls. In addition to the capital money that is allocated to fund these network projects, generous gifts from companies such as Nortel Networks and Integration Partners have contributed to our success in maintaining a robust and highly stable network.

The IT capital review process involves extensive data gathering, inventorying, and prioritizing of user requests. Once per year we request IT capital needs from all academic and administrative departments. The academic requests are reviewed and prioritized by the Provost with recommendations from IT. Administrative requests are reviewed by divisional Vice Presidents and IT. Summarized, merged, and prioritized lists are then submitted to the CFO and Capital Planning Committee for review, reprioritization, item elimination, and sent with recommendations to the President for final approval within the context of the constraints upon the overall budget (via funding mechanisms through gifts, debt, reserves, and depreciation). Core server replacement, backup capability, disaster recovery, and academic computing and labs are top priorities.
Operating Budget

Our FY08 divisional expense budget is $10.1M, of which $6.2M (62%) are salaries and benefits (see Staffing below) and $3.9M are non-salary expenses. The allocation of total expense across operating units within IT is shown in the figure below.

Much of the IT operating budget supports/funds resources that are not consumed by IT, but are required for IT services provided to benefit the entire campus. Two major institutional expenses are:

- Software and hardware maintenance contracts ~$1.3M/year.
- Library holdings—expense base of $1.6M/year requires budget increases of $100K/year to continue at current holding levels to offset ~8% yearly increases in costs.

Staffing

IT currently employs 76 staff and 128 students. The distribution of staff and students across the CCC/OIT, Gordon Library, and ATC is indicated in the chart below. WPI benefits from an expert and extremely dedicated staff, many of which have been at the university for 20-30+ years.

A growing number of IT services are now viewed as mission-critical. They are expected to be available 24x7 with little, if any, tolerance of downtime (e.g., email, networking, SunGard Banner, myWPI, library on-line access, etc.). Staff presence within our facilities is not yet at the 24x7 level but is approaching it due to the demand for extended hours of operation in certain computer labs, the library, the technology HelpDesk, special events support, and support needs of the global projects program. Many technical staff are on call with an automatic paging system.
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