

## Vice President for Information Services and Technology

MIT's vice president for information services and technology, Dr. Jerrold M. Grochow, focuses on providing information technology (IT) services to the MIT community. This role includes leading the central Information Services and Technology Department (IS&T); representing IS/IT to the Academic Council; advising senior management on IS/IT issues; leading the Institute-wide IS/IT advisory structure; chairing the Information Technology Strategic Planning and Resources Coordinating Council (IT-SPARCC); fostering collaboration among the many groups on campus that provide computer facilities and support; developing capital spending plans for IS/IT; and innovating, experimenting, and advancing the use of computer and communication technology.

IS&T's success relies on its ability to support MIT's core mission—to advance knowledge and educate students in science, technology, and other areas of scholarship that will best serve the nation and the world in the 21st century—by working in partnership with the Institute's faculty, students, and staff to maximize the value of information technology in their work.

### Highlights

Six key areas of focus stand out for FY2008:

- Data centers
- Student System Study
- Voice over Internet Protocol
- Mobile devices
- Kerberos Consortium
- HR/Payroll stabilization

### Data Centers

IS&T serves the MIT community from several key data and network centers across MIT's Cambridge campus. This year, MIT completed negotiations and execution of a multiyear lease for 3,500 sq ft of highly redundant data center space at a commercial colocation facility in downtown Boston. The colocation facility, also known as MIT building OC11, is built to house up to 80 cabinets accessing up to 250kW of uninterrupted power supply backed by generators. It will be connected to MITnet via MIT's metro fiber network with each cabinet having access to multiple 10Gb/s connections. This facility will come online during fall 2008 and allow the Institute to host key MIT enterprise and infrastructure services off campus, and expand its redundancy strategies for key services by utilizing this new addition to MIT's data center space portfolio.

Relocation of enterprise servers to this off-campus location will provide more on-campus space for research computing, as well as geographical distribution of critical services across multiple locations. IS&T will redistribute services across our four data center facilities (W91, W92, E40, OC11) to improve our service availability and

redundancy, thereby improving our position and ability to service our clients and the Institute community.

### **Student System Study**

The first phase of MIT's efforts to develop a vision for MIT's next generation of student systems was completed this spring. This year-long study was a collaborative effort of IS&T and the Offices of the Dean for Undergraduate Education, the Dean for Graduate Education, and the Dean for Student Life. The major goal of the study was to learn from the MIT community how the next-generation student system should improve student services that enhance communication and collaboration while supporting business processes essential to the Institute's educational mission, and how the new system can flexibly support changes in academic policy and future educational innovations.

In pursuit of this goal, the Student System Study team conducted workshops with more than 160 members of the MIT community and gathered survey data from more than 2,700 student respondents. The team talked with and reviewed the work of members of the Taskforce on the Undergraduate Educational Commons, as well as implementers from peer schools with new student systems. The team also reviewed commercial software products to assess their compatibility with MIT's application architecture and assessed the Quali Student Service System initiative, a community-source software development effort of which MIT is a member.

The following drivers for the study, taken together, converge to create a tipping point in support of a new student system:

- Obsolescent technology — of the legacy student system
- MIT's commitment to educational innovation — as seen in the Educational Commons report
- The MIT community's expectation for excellence in delivery of student services — as defined in the study

Work will continue in FY2009 with more detailed planning and analysis.

### **Voice over Internet Protocol**

IS&T began deploying MITvoip in January 2008. MITvoip is MIT's main IP-based voice service intended to replace traditional ISDN and analog phone service as currently used by departments, labs, and centers (DLCs). IS&T is responsible for supporting all aspects of the service from the infrastructure to the telephone devices used by staff and faculty. Some of the service features of MITvoip are:

- Web-based self-service tools for updating device preferences
- End-user portal to manage calling and voicemail features
- Remote office functionality that enables faculty and staff to answer and make telephone calls away from MIT as if they were physically present on campus
- Voicemail notifications and/or voicemail attachments delivered by email

IS&T continues to work with its Voice over Internet Protocol (VoIP) Advisory Board, along with other representatives from the community, to make the migration to VoIP as smooth as possible. Approximately 20 percent of MIT's 15,000 business telephony lines have been transitioned to MITvoip. The remaining lines will be migrated by 2010. A limited number of analog lines will remain for safety and security reasons. Examples of departments or buildings that have been fully transitioned to VoIP include MIT Sloan School of Management, the Computer Science and Artificial Intelligence Laboratory (CSAIL), and Stratton Student Center.

IS&T's VoIP fabric is augmented by an interoperable, open infrastructure that provides a flexible platform for innovation, application development, and experiments in integrated communications. Using this infrastructure, all members of the MIT community (faculty, students, and staff) are able to register for a personal SIP account, and to use this account for experimentation and innovative service development. There are approximately 600 active accounts under the open infrastructure. Additionally, 450 members of the community have registered for a personal SIP account. For more information, please visit: <http://web.mit.edu/ist/topics/voip/>.

### **Mobile Devices**

The percentage of smartphone users at MIT continues to grow at a fast pace. The provider with the largest campus presence indicates that more than half of their devices are smartphones, with a 19 percent growth rate during FY2008.

The market share for the smartphone platform is changing. BlackBerry devices continue to be extremely popular, Windows Mobile devices are growing steadily but at a slower pace, and the Palm OS share is dropping as expected. Even as the newcomer to the market, Apple's iPhone will most likely overtake all of the above devices during FY2009. Lastly, Google Android devices are expected to be available during FY2009; the popularity of the Google Phone is also expected to be high.

IS&T continues to address the needs of MIT mobile device users by providing an enhanced infrastructure along with improving the capabilities for the MIT Mobile Web. FY2008 was a defining year for the mobile team; they developed and deployed the MIT Mobile Web, <http://m.mit.edu/>, which offers essential MIT information and services anytime, anywhere, to mobile device users. The MIT Mobile Web will serve as the basis for future expansion of mobile web and native applications for the MIT community, as well as establish MIT as a leader among peer institutions in developing mobile applications for higher education. With respect to the MIT Mobile Web, we are seeing iPhone users accessing the site more than users of any other mobile platform—about 70 percent of mobile traffic originated from the iPhone as opposed to 21 percent from all other smartphones combined.

Another important effort was the cooperative teaching of Course 6.087 Building Mobile Applications with Google Android with Professor Hal Abelson of CSAIL. We worked with students to design and teach the building of mobile software using Android (a new open source mobile platform from Google). One of the student teams from the class won a \$25,000 prize in a Google mobile software competition.

For more information, please visit <http://people.csail.mit.edu/hal/mobile-apps-spring-08/> and <http://web.mit.edu/newsoffice/2008/google-android-0512.html>.

### **Kerberos Consortium**

The Kerberos Consortium was officially launched in the second quarter of FY2008 with the mission of establishing Kerberos as the universal authentication method for the world's computer networks. The Kerberos protocol was invented by MIT back in the 1980s. It already serves hundreds of millions of users worldwide by allowing for secure network connections between computers. Apple, Google, MIT, Microsoft, and Sun became founding sponsors of the consortium and took seats on the executive advisory board. A total of 18 sponsors joined the consortium, including Carnegie Mellon University, Cornell University, the US Department of Defense, NASA, and Stanford University, among others. Media response to the consortium was exceptional, with 23 articles published in the national and international press. The consortium anticipates releasing a new version of Kerberos for all platforms, as well as introducing Kerberos on a mobile device in FY2009. For more information, please visit: <http://www.kerberos.org/>.

### **HR/Payroll Stabilization**

Finance, IS&T, and Human Resources (HR) are taking steps to analyze, stabilize, and improve HR/Payroll service to MIT. In a joint effort, HR, the Office of the Vice President for Finance, and IS&T created the HR Payroll Coordinating Body (HRPCB) to stabilize and improve HR payroll systems implemented in July 2006. HRPCB produced a consolidated list of development needs, prioritized the projects, and produced a plan to address the issues. Our assessment confirmed need for better management of the inflow and backlog of issues, better organization of work, and significant improvements in quality assurance and testing processes. We expect this work to continue through FY2009 as a joint effort of all these groups.

### **Big Initiatives**

Beginning in FY2005, IS&T implemented a Big Initiative program to fund new experimental or prototyping initiatives that would be highly visible or have significant impact on the community and are likely to result in ongoing service or benefit for the Institute. For FY2008, we had three Big Initiatives.

- Next Generation Mobile Services Information for MIT: create mobile-friendly interfaces to existing MIT web services (such as MIT Campus Map, LDAP, ShuttleTrack, MIT Directory, Stellar, Emergency News, MIT Events Calendar, @Stellar, and 3Down); enter [m.mit.edu](http://m.mit.edu) in your mobile phone browser to use this site. To view the site on your computer, go to <http://mobi.mit.edu/home/>.
- Software Distribution and Licensing System: improved service by which MIT-licensed software can be more easily downloaded from a single secure site.
- Smart Routing Knowledgebase (Hermes): Intelligent knowledgebase that allows more direct access to FAQs as well as an enhanced ability to route questions to the most appropriate resource if an existing resolution doesn't currently exist.

## Summary of Financials for FY2008

A few highlights in summary of the FY2008 IS&T finances are worth noting. IS&T gross expenses for FY2008 totaled \$67.7 million. This is approximately 35 percent of the total IT expenditures at MIT, with the remainder being funded in DLCs for a variety of purposes. Approximately 38 percent of IS&T activity is funded from services re-billed to departments using telephone and network services, server management and colocation services, and other rate-recovered services, such as desktop support, software distribution, and departmental website and database consulting and development.

Spending in FY2008 was distributed as follows: 45 percent for ongoing operational support and service; 35 percent for maintenance and enhancements that retain current functionality; and 20 percent for new products and services, as well as upgrades that introduce new functionality.

In FY2008, IS&T used \$8.4 million of the annual \$10 million funding pool for software development projects. Approximately 45 percent was spent to develop student systems, including the Student System Study, Undergraduate Admissions Phases II and III, and Online Subject Evaluation/Who's Teaching What. An additional 35 percent was used for software infrastructure projects, including the release of Stellar 2.1, a limited release of Thalia, and an improved identity management software structure. The remaining 20 percent was spent to support Administrative Systems software development projects, including the Merchant Services project, ITS migration project, and the ongoing stabilization of the HR/Payroll system. The unspent balance of \$1.6 million will be carried forward and added to the prior year's carryforward, bringing the accumulated carryforward total to \$2.3 million.

Investment in new capital assets and infrastructure upgrades for the Telephone and Network Service Center in FY2008 totaled \$9.1 million. This includes funding for the connection of OC11 to MITnet, for the ongoing deployment of VoIP, for implementation of MIT's Regional Optical Network, and for all network upgrades and renovations of telephone and data communications rooms.

Capital investment in the Server Operations Service Center for FY2008 totaled \$1.6 million and consisted of server equipment and SAN storage.

At the close of FY2008, IS&T had roughly 350 full-time employee positions, of which 320 were filled and 30 were open. In a study of IT spending across MIT, findings indicated that another roughly 300–400 IT positions are being funded in other DLCs.

## IS&T Organization, Strategic Themes, and Accomplishments

The IS&T organization comprises six major groups:

- Client Support Services—Don Montabana, director
- Infrastructure Software Development and Architecture—Wilson D'Souza, director
- Operations and Infrastructure Services—Theresa Regan, director

- Student and Administrative Information Systems—Christine Meholic, director
- Human Resources—Jesse Simone, director
- Finance and Administration—Angie Milonas, director

These functional areas are supported by the IS&T vice president's office, which includes communications, relationship management, and project management.

IS&T's work focuses through the lens of seven strategic themes:

- **Service orientation**—understanding the goals and missions of the people and organizations at MIT to foster a collaborative environment for solving problems and planning for future information technology needs
- **Technological innovation and leadership**—generating the ideas and experiments that will lead to the next generation of IT services
- **Excellence in project execution and management**—on schedule, on budget, delivery of hardware and software systems that meet or exceed client expectations
- **Collaboration**—working with other IT departments on campus, computer users throughout MIT, and colleagues located at other higher ed institutions to ensure that IS&T is providing the highest and most cost effective information services support and technology available
- **Communication**—improving the flow of information throughout IS&T and the MIT community, engaging clients and colleagues in a dialog about IT needs and priorities, increasing the visibility and benefits of IT services, creating the identity of IS&T as an effective service organization
- A high degree of **fiscal responsibility** coupled with sound financial management
- **Personnel development**—giving each member of the IS&T community the opportunity to contribute to the full extent of his or her capabilities

Below are some examples of our activities grouped by strategic theme, although many IS&T activities may reflect several of these themes.

### **Service Orientation**

In compliance with the Payment Card Industry (PCI) data security standards to protect consumer credit card information, we converted over 100 MIT merchants to a PCI-compliant online payment processing service for their credit and debit card transactions.

We continued work on the insideMIT portal project. This centralized, secure web site will eventually replace the current SAPweb Self Service sites, providing the community with a single point of entry to many Institute business applications and top MIT links.

Stellar Course Management System version 2.1 was released in the fall. New features included the CourseGuide, which improved course shopping and allowed students to easily view all known sources of information regarding a particular subject. In addition,

enhancements to the Gradebook have noticeably improved performance, making it significantly faster to manage student grades online.

The MIT Wiki Service officially launched in 2007. For FY2008, the service hosted close to 720 wiki spaces in support of MIT classes, administrative units, community organizations, and research groups. In addition to regular MIT certificate authentication, the service is a pilot application for the MIT Touchstone single sign-on service.

Thalia, a web-based tool that allows the user to manage images and other digital media files, was made available in a limited release. This pilot provided a lot of valuable feedback on the product, allowing the team to make usability and performance improvements. Thalia also won an InfoWorld award for being a top educational application.

The first enterprise web services (User authorization, Geo codes and MIT ID) were put into production in the beginning of the year and are integral to Undergraduate Admissions and Roles applications.

- User Authorization is used to determine if a user has the appropriate authorization(s) to perform a given task
- Geo codes can lookup longitude and latitude of a location and also determine distances between locations
- MIT ID will search the MIT ID to determine if a person has an MIT ID and can also be used to assign an MIT ID

IS&T's Relationship Management program has established relationships with 18 of the 22 (82 percent) MIT organizational entities (such as schools, deans, and vice presidents) covering 95 of 193 DLCs (49 percent). Based on recent survey data of leadership across the DLCs, the community has found this function to be extremely valuable in partnering to identify potential technology solutions for business needs and informing IT strategic planning discussions.

IS&T plays a significant role in the orientation of new students and staff. We developed online instructional materials and conducted orientation sessions to introduce new students and faculty to computing and networking options at MIT.

IS&T Training Services offers MIT community members many options for learning to use computers to make their MIT work easier, more productive, and rewarding. During FY2008, we offered 342 courses in categories such as Web and Desktop Publishing, Computing Fundamentals, and Administrative Skills and Computing.

IS&T's Adaptive Technology for Information and Computing (ATIC) team offers information technology accessibility solutions for persons with disabilities. Through outreach programs, the number of web and software accessibility reviews performed in FY2008 increased by nearly 30 percent. The ATIC team assists individuals with the selection of adaptive (or assistive) technologies, which are usually computer hardware or software devices used to increase, maintain, or improve the functional capabilities of individuals with disabilities.

We implemented two new Client Services applications: Remote Support Application (Bomgar) and Asset Tracking software (Altiris). The Bomgar application enables a customer support technician to remotely access an end user's computer to resolve a problem without having to travel to the person's location, thus providing more immediate and personalized support. The Altiris application enables us to scan the software and hardware on a computer system to ensure that the system is up to date with the latest software releases and hardware patches and that the licenses are in compliance.

The Departmental Consulting and Application Development (DCAD) team continues to produce high-quality nonenterprise databases, as well as static and dynamic websites. They have grown 63 percent from 110 clients in FY2007 to 180 clients in FY2008. The usability team provides quality reviews to internal and external MIT clients, yielding easier access to developed applications.

### **Technological Innovation and Leadership**

MIT joined the Quali Student Service System consortium, a community-source initiative comprised of a consortium of universities committed to creating a next-generation student system that will surpass the capabilities available today. MIT contributed technical staff resources to the Quali Student technical team, assisted the Quali Student team in obtaining a \$2.5 million grant from Mellon Foundation, helped to define initial business services, and began business process mapping as part of the Quali Student team.

The Software Release team tested, approved, and released for MIT use 37 new software releases/updates in FY2008, as compared to 27 in FY2007; this included the multi-year Vista and Office 2007 release projects.

The Information Technology Architecture Group's Technology Architecture and Planning (TAP) team is organized to provide advice and counsel on IT projects, and to develop recommendations about appropriate technology for new projects. Members of the TAP are selected from senior technical staff in all IS&T directorates. Detailed information about TAP, including its charter and a list of members can be found at <https://wikis.mit.edu/confluence/display/TAP/Home/>.

IS&T completed an enterprise license agreement for VMware's full suite of products for both the data center and desktop computing environments. Our enterprise-level three-year unlimited deployment agreement with VMware encompasses all of MIT for data centers, lab infrastructure and desktops. After seven months, we now have more than 1,000 virtualized servers and 1,500+ desktops across the campus. VMware's data center products will allow MIT to develop a more energy efficient, manageable, and flexible use of computing resources in our centralized computing facilities. The VMware desktop products will help provide a more platform agnostic computing environment, in which members of the MIT community can use the desktop computing platforms of their choice, without impacting their ability to use specific applications or infrastructure due to platform requirements.



IS&T completed the installation and implementation of MIT's Regional Optical Network to New York City. Built on a footprint of over 2,000 miles of fiber spanning across the northeast, the MIT Regional Optical Network is one of the largest private institutional networks in the United States. This network will provide high-speed internet connectivity to key MIT research projects and collaborations such as the Large Hadron Collider, Darwin, Esnet, and the National Lambda Rail.

IS&T upgrades the network infrastructure in several MIT buildings each year as part of a multi-year plan for the MIT campus. This past year, IS&T completed full network upgrades in four buildings: W20, W31, W32 and W33, including a complete recabling of the copper wiring infrastructure and the installation of new edge switches and access points. The continued renewal of the MIT network infrastructure will ensure that MIT has a world-class telecommunications infrastructure to support its research, education, and student life activities.

We pioneered new software development tools (Maven, Bamboo, Fisheye, OpenGrok) and made them available to developers inside IS&T. The Maven repository allows the sharing of reusable code libraries and building them into Java projects without copying the code into every project. This can drastically reduce the storage overhead of the source control system and make the propagation of critical fixes to shared tools much more efficient. Bamboo allows developers to set up build-and-deploy functionality on a central server to propagate out to any IS&T java web-application server. This reduces the operational, or "webmaster" load, in manually deploying changes. It can also integrate code-quality tests and sends human-readable summaries of build results to managers. FishEye and OpenGrok are both web-based code browsers. FishEye is best suited for project teams to work with their own code. OpenGrok is best suited for open-source projects where code browsing is presented to the open source community.

### **Excellence in Project Execution and Management**

IS&T has expanded the quality assurance team to build a rigorous and comprehensive quality assurance program for student and administrative projects. The program involves both business users across the Institute involved in software testing and internal IT staff. It includes new tools, procedures, and training, and is expected to elevate application satisfaction, quality, and reliability.

We also deployed successfully a project and portfolio management system that facilitates project communications and other project-management best practices while supporting IS&T's ability to successfully implement projects.

### **Collaboration**

In collaboration with the Singapore-MIT Alliance for Research and Technology project, IS&T has developed robust financial and purchase-to-pay processes in the MIT SAP Environment to support the new research center in Singapore. The first phase of the project was delivered in April, and phase 2 is under way to deliver purchase to pay, goods receipt, and ACH vendor payment. The system is designed to support the quick implementation of additional research centers in other countries around the world.

IS&T has continued to work with MIT's Professional Education Program to support its partnership with Accenture in reviewing, critiquing, suggesting improvements to, and ultimately approving Accenture's SAP curriculum, training materials, and exams. This work started in late 2006 and has been ongoing.

MIT, in partnership with Olin College and Draper Laboratory, competed in the 2007 Grand Challenge of the Defense Advanced Research Projects Agency (DARPA). This event required teams to build an autonomous vehicle capable of driving in traffic and performing complex maneuvers such as merging, passing, parking, and negotiating intersections. Talos, our Land Rover LR3, finished in fourth place and was one of six vehicles to complete the nearly 60-mile course! IS&T staff worked with a CSAIL-led team on outfitting and supporting the high-performance computing systems used in MIT's vehicle. For more information, please visit <http://www.csail.mit.edu/events/news/2007/DARPA.html> and <http://grandchallenge.mit.edu/>.

IS&T participated in the MIT Alumni Association's review of its Email for Life (EFL) service, which provides continuing communication and collaboration between MIT's alumni throughout their lifetime. The committee conducted an intense review of the current EFL service offering, the current email service provider landscape, and the growing challenges presented by the increases in spam email. The committee's findings confirmed the overall importance of the EFL service to the MIT Alumni community, and also highlighted the additional challenges to providing an EFL service presented by today's email landscape.

In partnership with other IT providers across campus, IS&T developed a ten-year IT capital plan to be incorporated into the larger MIT campus and capital planning effort. The IT capital plan, presented to the executive vice president, identified major IT capital expenditures that will likely be needed to support MIT's teaching and research mission, and administration.

## **Communication**

The IS&T Communications Team was formed as a separate entity within the Office of the Vice President for Information Services and Technology in July 2007. The primary purpose of strategic communications is to create a unified identity for the organization, increase the visibility of our products and services, and promote our presence inside and outside the MIT community.

IS&T Annual Community Forum: we coordinated, planned, and hosted the IS&T services trade show community forum on February 13. The event included Departmental Information Technology Resource/AdminIT, MITvoip, DCAD, Mobile Devices, Stellar, MIT Wiki, Thalia, Colocation/Tivoli Storage Manager (TSM) Backup, IT Security, Training and IT Energy.

We completed a working version of the IS&T Public Facing Measures site, presenting selected quarterly report measures with historical data and descriptive text in a format for public consumption; the site is available at <http://web.mit.edu/ist/about/measures/>.

## **Fiscal Responsibility and Financial Management**

IS&T established an integrated strategic, operational, and financial planning process that incorporates metrics throughout the cycle. This new process was used to complete the FY2009 budget plan and is the first phase of an ongoing project to implement a standardized metrics-based budgeting process that focuses on expense driving metrics and critical success factors, as well as measurements for productivity improvements and demand.

We worked closely with the Office of the Vice President for Finance, the Office of Cost Analysis, the assistant deans, and members of the community to implement the new pricing methodology for the Telephone and Network Service Center. Under the new rate structure, most voice and data services (e.g., monthly recurring IP address and telephone) are bundled and billed using a proxy allocation based on modified full-time equivalents. The new charging methodology was necessary because the previous approach was no longer supported by the continuing changes in technology.

We developed and deployed a new pricing methodology for IS&T's TSM backup and restore service that provides the community with a multilayered approach for backup storage. The new pricing structure broadens the community's access to backup services by creating a basic service level that allows the backup of up to 15GB of data free of charge, which also promotes the sound computing practice of backing up files. As part of our ongoing educational campaign focused on finance and financial management, IS&T in collaboration with the Office of the Vice President for Finance delivered a procurement training/refresher course for all IS&T staff with spending authority. Other efforts in this area include training on software development capitalization guidelines and a new financial training course aimed at new staff.

## **Personnel Development**

In staffing, IS&T:

- Hired 75 new employees, 11 from inside MIT
- Promoted 20 staff members
- Said good-bye to 38 people, who left IS&T

One IS&T staff member was selected to participate in MIT's Leader to Leader Program.

We acknowledged three IS&T staff members—Joseph A. Calzaretta, programmer analyst; Larissa Kushkuley, senior programmer analyst; Andrew J. Yu, mobile devices platform project manager—for making significant contributions to improving the services, systems, and experiences of IS&T and MIT community members with an Infinite Mile Award. In addition, we distributed 95 spotlight awards to IS&T staff.

## **Services**

IS&T is a dynamic environment. We are constantly adding new services to our portfolio and to a lesser extent decommissioning services.

### ***New IS&T Services and Systems***

- Singapore-MIT Alliance for Research and Technology Phase 1
- Visitor parking
- Online Subject Evaluation/Who's Teaching What, Phases 1 and 2
- Creation of dedicated Business Services team in Client Support
- Hosted about 720 community wiki spaces
- Rolled out 37 new releases of commercial software products
- Support for VoIP phone services
- Merchant services conversion to CyberSource
- Undergraduate admissions, Phases 2 and 3
- DSL judicial case management
- Stellar 2.1 (new release)
- Enterprise Web Services: User authorization, Geo codes, and MID ID
- Support for Apple iPhones and BlackBerry World Edition
- Bomgard remote access services for client support
- Altiris asset and application patch management
- m.mit.edu mobile site: shuttle schedule, people directory, events calendar, Stellar, emergency information (3Down)

### ***Decommissioned IS&T Services and Systems***

- Eliminated three PowerBuilder applications by rewriting them in Java 2 Platform, Enterprise Edition: Grade20, MIT ID, Federal Work Study
- Several SAP Internet Transaction Server applications moved to Java
- Orders, Management, and Reporting Services, ClearCommerce
- Old MITSIS replaced with MITSIS on new hardware
- Labor Distribution System—custom solution in SAP

IS&T has always presented itself as a technological leader in the higher education community. IS&T staff participate in, contribute to, and often play key formal and informal leadership roles in various professional and industry organizations, including the Relationship/Account Management Community of Practice; Greater Boston Chapter of the Association for Computing Machinery; Boston Chapter of the Institute of Electrical and Electronics Engineers Computer Society; International SAP Higher Education and Research User Group; Higher Education Data Warehousing Forum; Greater Boston Chapter of the Data Management Association; Association of American Universities Data Exchange; Northeast Community Source Project Management Office; the Common Solutions Group; Research Universities Computing Consortium; Apple University

Executive Forum; Internet2; Educause; the Northeast Regional Computing Program; College and University Information Security Professionals; the Boston Consortium; the Ivy+ groups; the Internet Engineering Task Force security and calendaring standards groups; Syllabus; the Special Interest Group on University and College Computing Services; the New England Information and Technology Managers Group; IT Financial Management Association; the 5E Private Owners Association; Human Resources College and University Personnel Administration Conference; and the Association for Telecommunications Professionals in Higher Education, among others. In addition, IS&T staff provide advice on a regular basis to corporations such as Microsoft, Apple, Dell, Sun, Lucent, and Oracle via membership on corporate advisory boards or through ongoing consulting relationships. Staff also collaborates with a wide range of other vendors and outside groups.

IS&T is proud of its achievements over the past year in improving and expanding our services to the MIT community. We are committed to moving forward and continuing to improve in each of these areas in the coming fiscal year.

**Jerrold M. Grochow**  
**Vice President for Information Services and Technology**

*More information about Information Services and Technology can be found at <http://web.mit.edu/ist/>.*