Vice President for Information Services and Technology

The success of MIT's Information Services and Technology Department (IS&T) 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

The financial crisis that has impacted the country has also affected the university community. With an eye toward continuing to be fiscally responsible with MIT resources, this has been the first year of several in which restructuring our services to better support MIT's mission at a lower cost has been a core driver of change and decision making. IS&T reduced expenses by 7 percent during FY2009 and is making similar cuts for FY2010.

We continue to focus on the core services we provide to MIT's faculty, students, and staff. Six key areas stand out for FY2009:

- Data centers
- Email and calendaring
- HR/Payroll augmentation
- Identity services
- New student system
- Next-generation wireless

Data Centers

IS&T continues implementing its data center strategy to include on-campus and off-campus facilities, outfitting them to meet the broad community we serve.

Today we have four primary data center facilities: W91, W92, E40 (on-campus), and OC11 (off-campus). The addition of OC11 has provided redundancy and improved levels of service and availability, better positioning the data centers to meet community needs for colocation and research computing (high-power computing) services.

Enterprise-wide applications and services are in the process of being migrated from the W91 data center to OC11. At the completion of the migration, IS&T will have increased UPS power in W91 for use by colocation clients and research computing on-campus by 110 kW. The majority of services have been virtualized, simplifying the migration and saving approximately 8 racks of physical space along with at least 20 kW of power. In an effort to improve our data center facilities and maintain an even denser environment, we have used computational fluid dynamics (CFD) to analyze and implement methods for air flow improvements. CFD along with virtualization has allowed MIT to reduce our carbon output even further.

IS&T also continued to enhance our storage services. A new storage network has been deployed providing over 300 TB of data storage to the MIT community and allowing transit of storage traffic between any of our data center facilities.

In parallel, we have actively participated in two large research computing initiatives: Western Massachusetts/Holyoke and the Lab for Nuclear Science (LNS) Bates High Performance Research Computing Facility (HPRCF). These initiatives explore different aspects of computing infrastructure and costs, with a particular focus on leveraging lower cost utility power in different geographic areas. The LNS/Bates HPRCF is a retrofit of the former Bates Linear Accelerator site in Middleton, MA. IS&T is supporting the project through the implementation of a dark fiber network between Boston and Middleton providing a 10 Gb/s high-speed link.

In collaboration with the vice president of research, Lincoln Laboratory's chief information officer, the dean of the School of Engineering, the dean of the School of Science, and the associate provost for space planning, IS&T sponsored a cross-departmental team to develop an energy-efficient and cost-effective facility design in line with the growing needs of high-performance computing. MIT's high-performance computing center (HPCC) concept design has been completed and includes site alternatives, power source studies, power management and cooling technologies, and high-level cost estimates based on design alternatives. The outcomes of and knowledge gained from the study were instrumental in creating a collaborative opportunity that led to a memorandum of understanding among the state of Massachusetts, MIT, Boston University, the University of Massachusetts, and technology companies EMC and Cisco to build a new HPCC facility in Holyoke, MA, a key development area for the commonwealth. Planning is in the early analysis stages for a multifaceted environment supporting large-scale computing with power, cooling, and "green" objectives.

Email and Calendaring

Email and calendaring are two of the most significant applications in the MIT information technology (IT) landscape, and IS&T continues to assess and evaluate email and calendar service offerings to the MIT community. Based on our assessment and community input, IS&T added Microsoft (MS) Exchange infrastructure to provide an optional integrated email and calendaring solution in addition to the existing Internet Message Access Protocol (IMAP) infrastructure for email and MIT TechTime™ for calendaring. We will continue to evaluate other services, including outsourcing, in FY2010.

In FY2009, the Exchange infrastructure for email and calendaring services was offered to a limited number of IT experts, IS&T staff members, and departments. Early adopters included IS&T, MIT Press, the Office of Sponsored Programs, Human Resources (HR), the Sloan School of Management, the Alumni Office, Office of the Dean for Undergraduate Education administration, and Libraries. IS&T created a cross-directorate transition team to focus on client migrations, formal documentation, training, call center support, and communications. Beginning in September 2009, MS Exchange infrastructure will be offered as an optional solution for those members of the MIT community desiring integrated email and calendaring, a more feature-rich webmail environment, and stronger support for mobile devices such as iPhones and Blackberries.

This new integrated email/calendar environment will reduce our support costs and simplify our email and calendar service offerings to the community; in addition, it would enable the retirement of our existing webmail service and TechTime™ calendar.

IS&T also continues evaluating technologies to enable better spam email management by our community. In April 2009, IS&T introduced a new anti-spam service, Brightmail's Spam Quarantine. Spam Quarantine allows more efficient use of our email storage resources and enhanced backup and recovery as the amount of email data being stored is greatly reduced. Spam Quarantine also allows the retirement of aged equipment and the implementation of self-service websites providing more user-friendly and intuitive service to the MIT community.

HR/Payroll Augmentation

IS&T, Human Resources, and the Office of the Vice President for Finance made substantial improvements in HR/Payroll, reduced the backlog of issues, and achieved a significant reduction in the rate of new issues. New functionality supporting online vacation entry, online appointment processing for terminations and supplements, and the new spouse and dependent life insurance benefit was delivered. The entry of graduate and summer session appointments was automated. A three-year plan of further improvements to systems, processes, and organizations supporting HR/Payroll was developed, and projects were launched to automate MIT's request for payment process and implement a new travel expense reporting and reimbursement solution in FY2010.

Identity Services

MIT Touchstone, the IS&T single sign-on solution, was released to the general developer community in September 2008 and to the MIT community in October 2008. An Information Technology Architecture Group (ITAG) presentation was given to more than 60 members of the IT community with terrific interest in and response to Touchstone enabling of applications around the Institute. MIT has joined the InCommon Federation and will now have a seat on the InCommon Technical Advisory Council. With Touchstone/Collaboration Accounts Management System live, time was spent working with key applications on how to migrate to using Touchstone for the MIT community and its guests as the primary access mechanism.

IS&T launched another identity services project, "perMIT." The perMIT project's purpose is to translate MIT's Roles Database, the common tool for setting authorizations that has been in production use for over 10 years, to an open-source community project. The perMIT service interface to authorization management, facilitating loosely coupled applications, is a great benefit to the community. Development is still under way, with the goal of implementing perMIT at MIT by January 2010. The service will provide an authorization management system that can be used to support applications with awareness of federated authentication, allowing authorizations for the broader university community, not one simply defined by people who have an MIT Kerberos principal.

New Student System

The Next Generation Student Services System (NGS3) (formerly Student System Vision Study) program continued with several planning and analysis activities in collaboration with offices under the dean for undergraduate education, the dean for graduate education, and the dean for student life. MITSIS Decommissioning Analysis and Documentation Project results will help guide the eventual safe dismantling of the legacy student system. Work progresses on the Business Process Design-Enrollment Project, the first of about two dozen workflow analyses that will redesign and streamline current student administration business processes and, where appropriate, prepare them for automation. The IS&T Readiness Assessment and Technical Strategy and Testing projects were both completed. IS&T will need significant focus on process, methodology, and resource development once a technical solution path is chosen.

We continued our participation in the design of the multiuniversity collaborative Kuali Student with the goal of having components that can form a foundation for customized student systems on multiple campuses. In FY2010, NGS3 will continue the Scoping and Business Process Design projects, the MITSIS Analysis, Kuali Student, and a narrowly focused technical project in order to provide an assessment of Kuali Student's future capabilities for addressing MIT's student system needs.

Next-Generation Wireless

MIT's wireless network has developed from a complementary network service delivered to key "hot spot" locations into the predominant method of connecting to the MIT network across our campus. The continued development of wireless devices such as iPhones, laptops, and Blackberries has transformed wireless network connectivity from a luxury and convenience into a daily necessity. Originally deployed in 2004, MIT's wireless network is now made up of approximately 3,600 wireless access points throughout the MIT campus, providing speeds of up to 54 Mb/s with limited roaming capability.

In June 2008, IS&T started upgrading the campus wireless network to a centrally controlled Cisco wireless infrastructure that uses the latest high-speed wireless protocols (802.11n). The new wireless infrastructure provides higher bandwidth (up to 300 Mb/s), seamless roaming across the MIT campus, a higher degree of reliability through centralized controller management, and an overall increase in wireless coverage through improved radios and management. This next-generation wireless network upgrade will allow IS&T to meet the needs of an increasingly mobile campus over the coming years. By June 2009, approximately 40 percent of the academic and administrative buildings throughout the MIT campus had been upgraded.

Summary of Financials for FY2009

IS&T's gross expense budget for FY2009 totaled $67.4 million. Working carefully to cut spending in the second half of the fiscal year given the Institute's financial constraints, IS&T was able to end the year with gross expense spending of $62.2 million, $5.2 million, or 8 percent, under the gross expense budget. This was accomplished by very closely reviewing all expenditures and in part by negotiating reduced rates with vendors, as

well as not filling most open positions. Staff reductions through layoffs will further reduce the expenditures in FY2010.

Approximately 45 percent of IS&T activity is funded from services rebilled 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. The bulk of other IS&T funding is an allocation from MIT's general budget. Spending in FY2009 was distributed as follows: 49 percent for ongoing operational support and service, 24 percent for maintenance and enhancements that retain current functionality, and 27 percent for new products and services, as well as upgrades that introduce new functionality.

In FY2009, IS&T used $9.8 million of the annual $10 million funding pool for software development projects. Approximately 36 percent was spent to develop student systems, including the Next Generations Student System, Online Subject Evaluation/Who's Teaching What, Double Majors, and Ethnic Data Tracking and Reporting. An additional 37 percent was spent to support administrative systems software development projects, including Appointment Process Redesign (Manager Self Service), SAPweb Request for Payment and Direct Deposit, Graduate Appointments, and a number of smaller SAP New Functionality projects. The remaining 27 percent was used for software infrastructure projects, including the release of Stellar 2.1 and the online Textbooks Initiative, Touchstone and Thalia releases, MIT Mobile web, Athena 10 (Debathena), the IS&T website, completion of core developer tools, and Managed Data Services.

Investment in new capital assets and infrastructure upgrades for the Telephone and Network Service Center in FY2009 totaled $13.5 million; the depreciation and interest on these are included in the annual budget numbers above. This provided funding for the connection of OC11 to MITnet, for equipment related to the ongoing deployment of Voice over Internet Protocol (VoIP), and for all network upgrades and renovations of telephone and data communications rooms. Capital investment in the Server Operations Service Center for FY2009 totaled $707,000 and consisted of server equipment and SAN storage.

IS&T Organization, Strategic Themes, and Accomplishments

The IS&T organization comprises four operational groups:

- Client Support Services (Wilson D'Souza, acting director)
- Infrastructure Software Development and Architecture (Wilson D'Souza, director)
- Operations and Infrastructure Services (Theresa Regan, director)
- Student and Administrative Information Services (Christine Meholic, director)

These operational areas are supported by the IS&T vice president's office, which includes communications, relationship management, and project management, as well as Human Resources and Finance and Administration.

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 education institutions to ensure that IS&T is providing the highest-quality 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 dialogue about IT needs and priorities, increasing the visibility and benefits of IT services, and creating the identity of IS&T as an effective service organization
- Fiscal responsibility: 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

Stellar Course Management System version 2.2.1 was released in January. New features include updates to the Gradebook (spreadsheet upload, section-based filtering, and role-based access), easier materials management with topic reordering (drag/drop), topic collapse/expansion, a more streamlined upload form, and added ability to upload larger files. The Physics and Mathematics departments transitioned from a local course grade management application (run solely out of the Physics Department since 2003) to the Stellar Gradebook. January also marked the release of the Online Textbooks Initiative.

The MIT Wiki Service, launched in 2007, was hosting a total of 1,391 wiki spaces at the end of FY2009 in support of MIT classes, administrative units, community organizations, and research groups. Performance upgrades were implemented in March 2009. In April, the Wiki Service began relying solely on MIT Touchstone as the system for managing user log-ins. In June, the team released the Gliffy plug-in, giving users the capability to add diagrams to wiki pages.

Thalia, a web-based tool that allows users to manage images and other digital media files, was made available to the community in January. A general usability upgrade in April incorporated a series of fixes focused on improving usability of the global application.

Payment Card Industry (PCI) security policies and procedures for merchant (credit card) services were developed, and all but seven of the 100-plus MIT credit card merchants were converted to a PCI-compliant solution. This means that MIT departments now follow approved procedures for securing credit card transactions against identity theft.

The insideMIT portal (beta) was reinstated in January, followed by a soft rollout to IS&T and select administrative groups such as the Administrative Systems and Policies Coordinating Committee, the Administrative Advisory Council II, and IT Partners. The new portal will provide tighter integration with SAP data than current gateway pages and enable users to customize their homepage around individual needs. A wider rollout is planned for FY2010.

The IS&T Training Team delivered 239 classes in FY2009. Training classes supported the implementation of MS Exchange for email and calendaring, Coeus, graduate web appointments, the SAP Appointment Redesign initiative, departmental web publishing, and IS&T-supported software and services. The Training Team continued to deliver online, on-demand educational resources through the creation of Captivate informational and how-to videos as well as the popular Element K series of titles. Through the Boston Consortium, we continue to offer the MIT community access to high-quality training classes provided by CompuWorks and New Horizons at below-market rates.

A new system for Server Operations customer billing and server data was deployed this year, providing automated quarterly billing and service-level agreement (SLA) process changes and saving several weeks of staff time per year.

The Publishing Team documented 73 IS&T projects and initiatives, including MS Exchange for email and calendaring, Stellar, Coeus, SAP HR/Payroll, mobile devices, and multiple desktop software releases. Our documentation, distributed online and, as necessary, on paper, provides the MIT community with the knowledge and how-to procedures they need to use IS&T services efficiently and effectively.

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 FY2009 increased by 17 percent to 150 and included over 45 participating departments, labs,and centers (DLCs). The team completed 287 consultations for MIT students, faculty, and staff with disabilities and temporary injuries, recommending or providing software and hardware solutions specific to individual abilities. For FY2009, ATIC supported a 53 percent increase in the number of MIT undergraduate and graduate students requiring use of the ATIC Lab in 7-143. In addition, ATIC, in collaboration with MIT Facilities, published the first online MIT campus accessibility map (http://web.mit.edu/campus-map/pdf/mit-accessibility-color-2009.pdf), providing information on the major means of physical access to the MIT campus for persons with mobility impairments.

The Departmental Consulting and Application Development (DCAD) team continues to produce high-quality nonenterprise databases, as well as static and dynamic websites, including the IdeaBank system used by this year's Institute-wide Planning Task Force. In

FY2009, the team engaged in over 200 projects for more than 60 DLCs, an increase of 10 percent over FY2008.

The Departmental Information Technology Resources (DITR) group provides desktop support to 51 DLCs with over 1,000 computers. DITR has contracted with Dell's Factory Integration program to preinstall the hard disks of new computers supplied to Desktop Deployment and Maintenance Team clients with the range of MIT-supplied software, saving hours per computer in set-up time and ensuring error-free installations. The team uses the Bomgar remote support application and Altiris asset tracking software to reduce the need for on-site visits to DLCs, allowing more resources to flow to the Preventative Maintenance Program.

Technological Innovation and Leadership

ITAG's Technology Architecture and Planning (TAP) team was organized to provide advice and counsel on IT projects and to develop recommendations about appropriate technology for new projects. Members of TAP are selected from senior technical staff in all IS&T directorates. In FY2009, over 20 projects consulted TAP, including MIT Business Intelligence, perMIT, Athena 10, High Impact Data Protection, email/calendaring, and insideMIT's Portal platform.

The Web Services Working Group was initiated in the early part of FY2009. This group is intended to be the mechanism for guiding the creation of web services going forward and defining reasonable coding and deployment practices.

The Kerberos Consortium released Kerberos 1.7a, which incorporates an independent implementation of the Microsoft protocol extensions. In addition, the Kerberos team:

- Publicly released a significant new working paper titled "Towards Kerberizing Web and Identity Services"
- Held its first Interoperability Plugathon, hosted by Microsoft, with 14 attendees from six different organizations
- Initiated a new collaboration with Red Hat, Ubuntu, and Sun to create a bundle of open-source components whose combined functionality approximates that of a Microsoft Active Directory server

Working with staff in over 40 departments, IS&T continued the migration of MIT's telephone system to VoIP, with the majority of the MIT campus expected to be migrated by end-of-summer 2009. The MIT VoIP transition team completed the migration of more than 7,500 lines and 10,000 phone devices. Migration to VoIP technology will allow the use of a common network infrastructure for the delivery of data and voice across the MIT campus, realizing substantial savings for the Institute by leveraging the efficiencies of the MIT network.

As a replacement for MIT's aging analog cable TV infrastructure, IS&T started the implementation of an IPTV service in early 2008. Milestones in the project include successfully concluding negotiations with Comcast for digital TV content and the installation of the IPTV head-end at OC11. Closely watched by a number of MIT's

peer institutions, it is to our knowledge the first all-digital IPTV project at a university. This continues the trend started with the VoIP project to move services from separate, monolithic infrastructures to applications on the IP data network. This project, one of IS&T's big initiatives for FY2009, was completed in June of 2009.

MIT Mobile code was licensed as open source in March 2009. In addition, the team has developed new modules including TechCASH (beta), the MIT SMS text messaging service, and a customizable MIT Mobile homepage.

The energy impact from the use of servers on campus is significant. Server virtualization as a strategy enables the consolidation of a number of underutilized physical servers through the creation of multiple virtual machines on a single physical server. An added benefit is the ability to run multiple operating systems on a single server. The reduction in physical servers results in power and cooling energy savings as well as savings in overall capital costs. We have seen a reduction of almost 2 million kWh through hundreds of virtualized servers in IS&T, Lincoln Laboratory, and other departments. IS&T has licensed virtualization software for use at MIT from VMware Inc.

IS&T completed a review and investigation of alternatives for robust, scalable, and sustainable data encryption technology. PGP whole disk encryption has been selected for MIT. This will help MIT comply with rules and regulations related to personally identifying information stored on various computing devices. MIT has a technical infrastructure and process to deploy whole disk encryption technology for those who must carry sensitive information on their laptop computers.

The Technical Services (TS) team continually improved physical and application hardware infrastructures. By extending the capacity of MITSIS through the addition of two new application servers, it is now easier to handle the load at peak times such as Registration Day. TS also executed a successful SAP disaster recovery exercise, failing over from the W92 data center to the E40 recovery site across campus. Key findings were shared with Lincoln Laboratory to assist with its business continuity plan. Several Student Information Services (SIS) applications were migrated off the underutilized Works servers, which will allow for their retirement in FY2010, saving money and reducing the energy footprint.

The FY2009 Athena 10 implementation is based on the Debathena Project of the Student Information Processing Board (SIPB). IS&T released Athena 10 as a continued effort to provide cost-effective value as one of the many computing platforms at MIT. Athena 10 provides a tight integration of user interface, services, applications, and tools. What makes this deployment different from previous implementations is that it maintains service levels for existing customers and offers new customers the ability to install Athena on top of rather than instead of their present Ubuntu system. In addition, components are unbundled and can be mixed and matched into packages, marking a real departure from past practices. The Athena Release Team continues to collaborate with SIPB, making Athena a community-based development effort.

IS&T launched the Hermes Knowledge Base system in FY2009. Hermes serves as the community IT knowledge base and help portal for MIT. This service is a strong complement to our Service Desk and also allows for sharing of information across the organization. Hermes enables all IT support providers at the Institute to contribute to the knowledge base, allowing members of the MIT community looking for IT solutions to search Hermes and retrieve the broadest possible results. This wiki-based service provides the ability for many to contribute and modify content and includes an interface that can be customized. IS&T designed and implemented the interface to meet various functional needs, including an easy-to-use search feature and icons that indicate the sources of contributions.

Excellence in Project Execution and Management

Working with MIT Facilities, we successfully completed several large construction projects to install new or upgraded IP-based communications services. These MITnet implementations are critical to providing core services such as wireless and MITvoip to the new graduate residence (NW35) and three residential upgrades (W5, W51 and W61), as well as academic/administrative buildings (7 and 34).

The SIS team successful delivered five projects while maintaining committed resource allocation levels to production support and enhancement requests. Two projects were especially important to our graduate student population, as follows.

- Graduate P/D/F Project: This project provided functionality so that students could designate courses with a grading option of Pass/D/F. Given this flexibility, more students are likely to experiment with difficult courses outside of their degree program without being concerned that these courses could negatively impact their GPA.
- Online Dental Insurance Application: Steve Lerman, dean for graduate education, learned that students were neglecting their dental health because they did not have easy access to affordable dental care. In collaboration with Dean Lerman, SIS created a system for students, their partners, and their dependents to apply for Delta Dental insurance at a volume discount. This small project had a large impact on the health and wellbeing of our graduate student constituency.

Other project achievements during FY2009 included completion of modifications to MITSIS to accommodate double majors (instead of double degrees), as mandated by the Faculty through the Undergraduate Educational Commons Task Force recommendation. The project went live at the end of June, and the Registrar's Office has already received student applications under the new academic policy.

Collaboration

The Data Reporting Services team, in collaboration with DCAD, completed development and rollout of the first phase of the Managed Data Service for the Office of Minority Education in March. In addition, the team has been collaborating with the MIT community on creating new forecasting, modeling, and reporting tools. This effort will lead to an enterprise forecasting solution for research centers and DLCs across campus.

A collaborative effort of the Content and Collaboration Service development team, the Client Support Services (CSS) Publications team, and Operations and Infrastructure Services (OIS) Network Services resulted in the formal launch of a web authoring environment built on Drupal, a new technology for IS&T, and the new IS&T website moving into production at the end of June.

Several IS&T staff participated on MIT task forces this spring. Christine Meholic, director of Student and Administrative Information Services, served on the Administrative Processes Task Force, and Mark Damian, manager of student systems, served on the Education Task Force cochaired by Dan Hastings, dean for undergraduate education, and professor Eric Grimson. Theresa Regan, director of OIS, served on the Procurement Task Force. Two people served on the IT@MIT Task Force: Taeminn Song, senior project manager in the Office of the Vice President, and Wilson D'Souza, director of CSS and Infrastructure Software Development and Architecture (ISDA), who served as cochair with professor Tom Malone of the Sloan School.

Communication

The IS&T Communications Team, whose primary goals are 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, partnered with CSS, ISDA, and OIS to redesign the IS&T website, our primary communication tool.

In line with MIT's cost-cutting efforts and as part of our annual planning, we revamped our strategy to reduce print communications and refocus on alternative delivery methods such as the website, social media, and face-to-face outreach. As part of this reduction in print, we made a conscious decision to eliminate the IS&T print newsletter, resulting in approximately $30,000 in savings annually; the last print issue was the July/August 2009 issue. The future focus will be on developing an online newsletter that will be part of our newly designed website.

IS&T participated in the Procurement and Travel vendor fairs in an effort to promote and market IS&T services to the community. We developed two targeted brochures: "IS&T Services at a Glance" and the "Keep in Touch" brochure to promote services during outreach. We continued to engage in both formal and informal outreach with the community in areas such as targeted community forums, including the IT Security Day for Cybersecurity Awareness in October, where we collaborated with the Audit Division and the Facilities Department; focus groups on email and calendaring services; workshops at the IT Partners spring conference; DITR outreach to SLA clients; Stellar outreach with the faculty community; and individual staff outreach with clients on a regular basis.

Fiscal Responsibility and Financial Management

IS&T launched an internal team to identify cost-saving opportunities and help realize savings. IS&T as an organization identified over 250 potential opportunities for cost savings. More than $1.4 million in permanent savings was realized in FY2009, and over $1 million in further opportunities will be realized for FY2010. IS&T has begun

analyzing 15 additional ideas to assess the potential impact of various service delivery and outsourcing activities.

Personnel Development

Providing each member of the IS&T community an opportunity to contribute to the full extent of his or her capabilities, the IS&T HR Group offered services and support in the form of recruitment and staffing, employee relations, performance management, training and instruction, organizational development, rewards and recognition, and compensation, benefits, and policy administration.

A number of staff from all areas of IS&T have taken part in training and instruction sessions offered by the Institute, including AO (Administrative Officer) Fundamentals, Everyday Leadership, and Managing for Excellence. One IS&T staff member was selected to participate in MIT's Leader-to-Leader (L2L) Program, five senior staff enrolled in the IT Leaders Program hosted by MOR Associates, and one was selected to participate in the Susan Vogt Leadership Fellows Program offered by the Boston Consortium for Higher Education.

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

- Administrative systems ethnic origin reporting
- Configuration management
- Custodial and grounds web entry
- Double majors
- Early release of Athena 10 (Debathena)
- Exempt vacation tracking for sponsored research
- Graduate appointments
- Graduate dental insurance
- Humanities, Arts, and Social Sciences Distribution (HASS-D) lottery rewrite
- insideMIT reinstatement
- IS&T Drupal content management system
- Kerberos 1.7
- Managed data services
- MITSIS application hardware replacement
- Mobile 2.0
- New and improved Lightweight Directory Access Protocol (LDAP) service

- Online textbooks
- Open Enrollment 2009
- Online Subject Evaluation/Who's Teaching What Project, Phase 2
- Physical education registration
- Singapore-MIT Alliance (SMART)
- Student biofeed improvements
- Thalia image management tool

Significant consolidation of deployed server platforms was completed, including elimination of all HP Tru64 UNIX, HP VMS, IBM AIX, and Sun Solaris 2.6 systems from our data centers. Migration of the production AFS file system environment to virtualized Linux systems utilizing a new storage backend, replacing existing legacy Solaris file systems and adding significant redundancy and capacity to the environment, resulted in the default user quota being expanded from 1.5 GB to 2 GB. The MITID database environment has also been migrated to Linux as part of this standardization process, and the central print environment has been migrated to Windows.

A major milestone was reached as we outsourced the SumProp application to Blue Hill Data Systems and decommissioned the last MIT "mainframe computer," resulting in significant savings for the Institute.

Organizational Changes

In April 2009, as part of MIT's response to the global economic crisis, IS&T gave layoff notices to a number of staff members. These layoffs were part of our effort to reduce the IS&T budget and restructure the way we do business going forward. Careful review and attention was given by looking at the work and positions eliminated to ensure the least impact on service to the community. These layoffs and our focus on transforming our organization around core IT services and how we deliver these services to the community will result in reorganizing the work and management structure over time. As changes in the organization evolved, we focused on reshaping and focusing the organization to meet increasing demands for service even as the staff was reduced. Above all else, we continued to give our highest priority and consideration to ensuring the integrity of MIT's campus network, systems, and information security.

IS&T Beyond the MIT Campus

IS&T has always represented MIT 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 5E Private Owners Association, Internet Engineering Task Force, New England Information and Technology Managers Group, Association for Telecommunications Professionals in Higher Education, Association of American Universities Data Exchange, Boston Chapter of the Institute of Electrical and Electronics Engineers Computer Society, Boston Consortium, College and University Information Security Professionals, Common Solutions Group, Educause, Greater Boston Chapter of the Association for Computing Machinery, Greater Boston Chapter of the Data Management Association,

Higher Education Data Warehousing Forum, Human Resources College and University Personnel Administration Conference, International SAP Higher Education and Research User Group, Internet2, IT Financial Management Association, Ivy+ groups, Northeast Community Source Project Management Office, Northeast Regional Computing Program, Relationship/Account Management Community of Practice, and Research Universities Computing Consortium, among others. In addition, IS&T staff provide advice on a regular basis to corporations such as Microsoft, Apple, Dell, Sun, Nortel, and Oracle via membership on corporate advisory boards or through ongoing consulting relationships. Staff also collaborate 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. While I will be retiring as vice president on September 1, the organization remains 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://ist.mit.edu/.