Academic Media Production Services

Academic Media Production Services (AMPS) provides educational technology and media services in support of MIT's educational programs, events, and initiatives. As AMPS enters its fifth year of operation as a cost-recovery organization, we are pleased to report the progress made in four key focus areas: learning systems platforms; media-enabled teaching and learning spaces; production and delivery of rich media content; and continuous improvement as a professional services organization.

Executive Summary

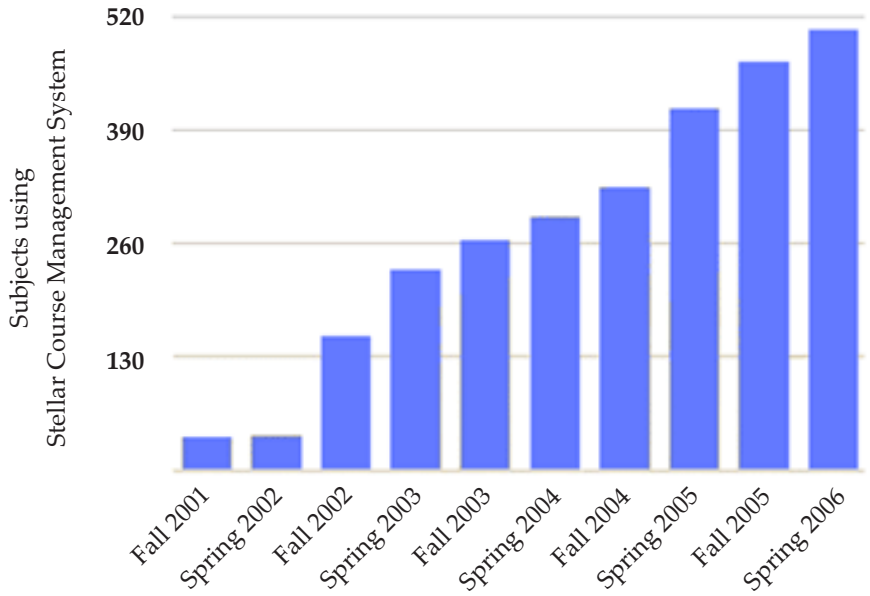
AMPS is affecting the way teaching and learning occur on campus through the thoughtful and strategic use of technology to support the Institute's future plans.

Learning Systems Platforms

AMPS has continued its development of the Stellar™ Course Management System (http://stellar.mit.edu/), a feature-rich and sustainable platform supporting a growing number of users in the MIT community. A total of 2,751 course sites were created between spring 2002 and summer 2006. The number of courses on Stellar has grown from 152 in fall 2002 to 511 in spring 200, representing about 56 percent of MIT's courses; in eight semesters Stellar's clientele has more than doubled even as participation in Stellar continues to be entirely voluntary. More than 800 instructors used Stellar in spring 2006, along with 6,100 students—over half the MIT student body. Our active participation in the collaborative Sakai project (http://www.sakaiproject.org/) continued with the development of a technical framework that will allow MIT to take advantage of applications developed by the collaborative.

In fall 2006, Stellar 2.0 will be released, featuring a Sakai version of the JForum discussion tool also being used by Sakai core partners at the University of California-

Figure 1. Growth of Stellar Course Management System, fall 2001 to spring 2006



Berkeley and Foothill Community College. Additionally, MIT will release a pilot version of Stellar Images, enabling faculty members to search for and retrieve images from the Rotch Visual Collection as well as from other repositories both in and outside MIT, and present them to students within a Stellar course site. Stellar Images was designed and built with the intention of Sakai adaptation. A Stellar 2.0 pilot at the Sloan School of Management will be offered in fall 2006 as a result of their decision to transition from SloanSpace, their current learning management system.

Stellar's faculty advisory board (http://web.mit.edu/amps/about/stellar-advisors.html) has been instrumental in representing faculty and student priorities and concerns to the Stellar development team. Since 2004, at their request, the Undergraduate Association's Student Committee on Educational Policy has had representation on the advisory board.

The rapid growth of MIT OpenCourseWare (OCW) has also fuelled increased interest in web-based content on campus (see http://ocw.mit.edu/ for more information). AMPS developed a tool that easily exports class materials from a Stellar class website to OCW's publication process. Students who like to shop for classes by visiting a class website now have two ways to do that. AMPS and OCW continue to collaborate on a series of videos of faculty members delivering classes, special events such as student presentations, and interviews with faculty on pedagogical models.

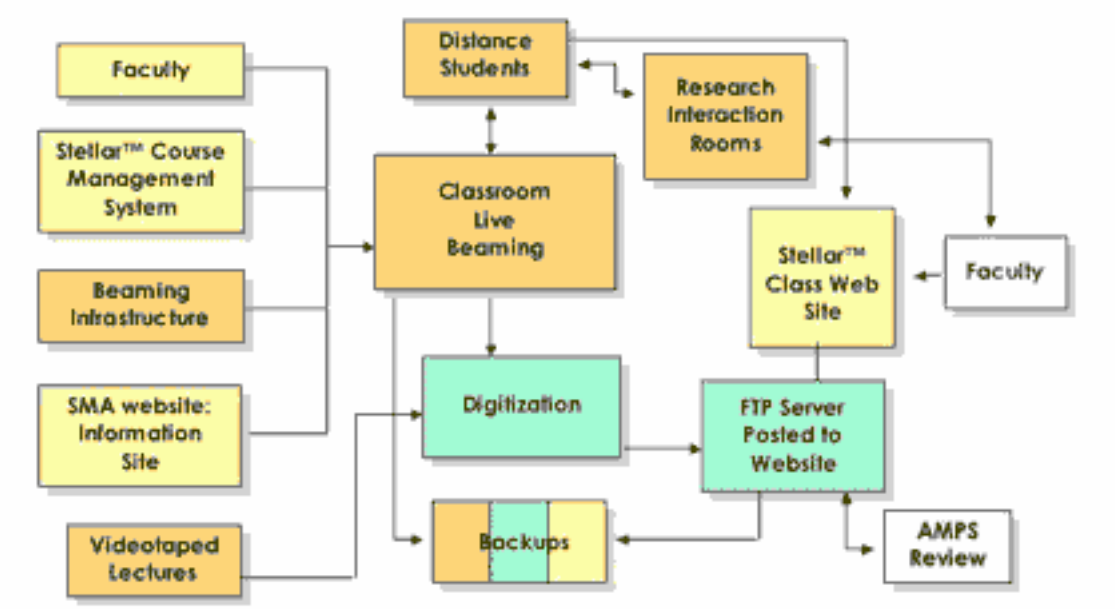
A major AMPS goal is to anticipate the needs of the MIT community and engage in continuous study of the learning environment and its impact on students, faculty, and staff. AMPS and Academic Computing/IS&T recently commissioned the EduTools unit of the Western Cooperative for Educational Telecommunications (WCET) to survey peer institutions and gauge the array of options used for centrally-supporting course/learning management system (C/LMS) products, the course materials life cycle used by several institutions, and related costs. The study covers the AY2005 and is intended to be part of an ongoing planning process attentive to the changing C/LMS landscape (see http://web.mit.edu/emcc/www/MIT-WCET-C-LMS-Final-Report-07-19-06.pdf).

Enhancing Media-enabled Teaching and Learning Spaces

MIT classrooms are classified, according to their level of installed technology, as levels 1 through 5. In the past year, AMPS has undertaken a substantial renovation of the level 5 classrooms (the most technologically advanced distance education classrooms) to support the quality of instruction and enhance the capabilities of the rooms. (For more information about recently constructed level 5 classrooms 1-390, 3-370, 8-404, 9-057, 9-151 and 9-153, see http://web.mit.edu/amps/facilities/classrooms.html.) Leveraging past work for the British Petroleum Project Academy and on the Anystream Apreso systems, AMPS has also tested new systems for scalable acquisition for the nonlevel 5 classrooms at reduced costs. Services now offered by AMPS include a wide range of options from low-cost unmanned acquisition and archiving, such as the British Petroleum system, to multicamera switched programs with screen capture in the level 5 rooms.

We have implemented network-controlled cameras and written code to allow remote teaching of a class, reducing setup time to zero. In addition, we are investigating such self-service systems for webcasting and podcasting. We are now actively involved with

Figure 2. Distance education infrastructure and support for SMA



the Sloan School in testing several acquisition systems that may be incorporated into their new building.

The Singapore-MIT Alliance (http://web.mit.edu/sma/) program is one of the Institute's strategic global partnerships. This innovative educational and research collaboration between MIT, the National University of Singapore, and the Nanyang Technological University promotes academic excellence in graduate education. AMPS continues to provide integrated infrastructure and educational technology support for SMA, which has been the single largest user of level 5 distance education facilities. SMA has evolved from an innovative distance learning experiment to a mature, stable program. AMPS has facilitated this transformation through improved production and service processes, technology innovation, and cost efficiencies.

Production and Delivery of Rich Media Content

AMPS has worked toward developing alternatives to resource-intensive capture, encoding, and delivery methods, such as digital and network-based approaches to production and delivery. For example, AMPS is employing direct-to-digital capture solutions for lecture, tutorial, and special event video and audio podcasting. Video podcasting technology provides exciting new opportunities for automatic content delivery direct to the desktops of key MIT constituencies and to the general public. We will continue to explore the use of these and other developing technologies to support education, research, and outreach at MIT.

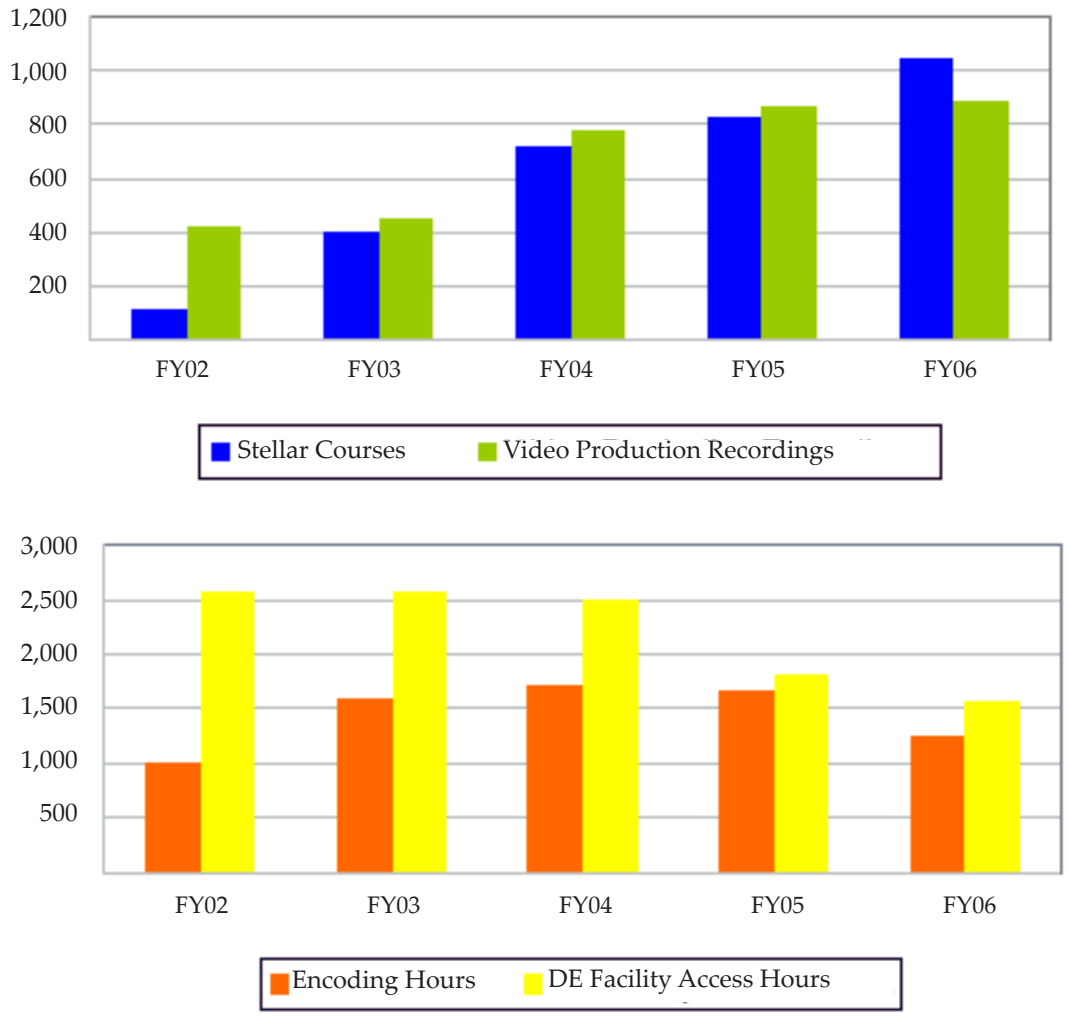
This year AMPS introduced ZigZag, MIT's video podcast magazine. ZigZag (http://web.mit.edu/zigzag/) is a pilot program that produces a bimonthly video podcast series. Each episode features stories that capture and communicate the richness and diversity of the MIT experience. Subject matter includes an array of topics such as the arts, research, student life, interesting people, special events, technical innovation, sports, and the occasional hack.

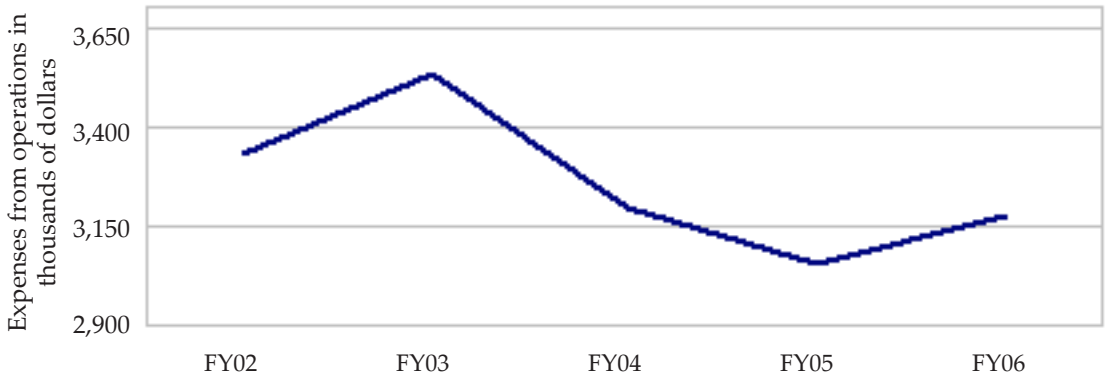
Continuous Improvement

As a professional service organization, we have employed appropriate service models and metrics for determining client satisfaction, evaluating organizational and individual performance, and delivering value on investment to MIT. Based on the unified video service process developed in the previous year, we were able to bring in further efficiencies and options for meeting the community's need for video services, and to better position ourselves to take advantage of newer and cheaper convergent digital technologies.

Over the last year, the volume, complexity, and customer-perceived value and quality of AMPS services have increased, whereas the resources applied have decreased or remained the same for most of the service. AMPS staff have been active in professional events, presenting technical papers and participating at conferences such as Educause 2005, the Sakai Educational Partners Program (SEPP) Conference, and several other professional forums. They have been recognized through awards, both internal and external to the MIT community.

Figure 3. Volume, complexity, and AMPS resources applied, FY02–FY06





Key Accomplishments in Areas of Focus

Learning Systems Platforms

Course management tools are a critical part of the resource suite that should be available to a vast learning environment such as MIT. These tools facilitate the organization, arrangement, and management of course content in support of teaching and learning. At MIT, the use and capabilities of the Stellar Course Management System (http://stellar.mit.edu/) has grown steadily over the past several years, as shown in figure 1. This growth coincides with the introduction of important features that have simplified course creation and have helped drive adoption.

Stellar versions 1.7 and 1.7.1 were launched during the academic year. This continuous effort included several upgrades, such as a direct link to the OCW site from the Stellar home page, an improved access control process, RSS feeds, a simplified website request process for both classes and projects, and several new course site templates to improve accessibility. Stellar also implemented user-friendly features such as an automatic form sent to students to request access if they are not yet officially registered for the course due to normal preregistration delays.

During the year, pilot programs for two new tools were initiated, the Gradebook and the Assessment Manager. This is an adaptation of efforts by the Sakai Project, an open-source software development effort for higher education. The Assessment Manager has a range of features delivering tests, quizzes, and surveys via the web. In order to support convergence and openness, information about Stellar is now available to the world at the Stellar wiki site, https://confab.mit.edu/confluence/display/STLR/Home. This includes information about Stellar versions, project plans, and the benchmarking study. The Stellar Roadmap, also open to the public, is available at https://confab.mit.edu/confluence/display/STLR/Roadmap. This is a tool for collecting new ideas and suggestions from meetings with faculty and students, usability testing, and other groups.

AMPS continues to make progress toward increasing access and satisfaction while delivering services in a reliable, cost-effective, and professional manner. Today, more than 3,000 users, faculty and students, access Stellar courses daily. The number of unique logins has continued to grow, from 3,850 in fall 2003 to 6,694 by fall 2004. As of fall 2005,

instructors can opt to make their class site open to the public or to the MIT community. This helps students who are shopping for classes. Students can easily navigate between a Stellar class site and a relevant OCW course. Presently, about half of the courses are world- or MIT community-readable. Campus awareness of the Stellar system is pervasive, as shown by *The Tech's* November 18, 2005 article characterizing Stellar as a "veteran upperclassman" system that has "matured considerably" during its four-year lifespan.

Satisfaction with the system is high, as shown by a Singapore-MIT Alliance survey, which found that 93 percent of students liked Stellar. At its April 2006 meeting, the Stellar faculty advisory group recommended that it was time to "declare victory" and move on to the next stage of increasing ease of use for faculty, teaching assistants, and students, especially in conjunction with other administrative and educational transactions. In spring 2006, to celebrate the achievement of Stellar's 501st course, 14.452 Macroeconomic Theory II, course instructor Professor Olivier Blanchard and his teaching assistant, Francisco A. Gallego, were given gift certificates.

As AMPS heads in to the fall 2006 term, AMPS will take the lead in ensuring greater functionality and modularity of the Stellar system and guiding institutional investments in educational technology platforms to better leverage our joint efforts and encourage greater integration. To encourage integration, it will be important to consider extending Stellar's use into the realms of research and administration. As always, we will continue to engage students, faculty, and staff in the planning process. The Sakai community of open source tools will continue to be a resource for this effort.

Sakai Project

MIT was a founding member of the Sakai Project (http://www.sakaiproject.org), along with the University of Michigan, Indiana University, Stanford, the uPortal Consortium, and the Open Knowledge Initiative. The Sakai Project receives support from the Andrew W. Mellon Foundation as well as seed funding for the SEPP program from the Hewlett Foundation.

The Sakai Project's duration was January 2004 through December 2005; it has now become the Sakai Foundation. MIT relinquished its membership on the Sakai Project Board as it transitioned to the Sakai Foundation Board.

WCET-EduTools Survey

As mentioned earlier, AMPS and Academic Computing/IS&T commissioned a WCET-EduTools survey covering C/LMS products, the course materials life cycle used by each institution, and related costs. The WCET-Edutools study (http://web.mit.edu/emcc/www/MIT-WCET-C-LMS-Final-Report-07-19-06.pdf) is probably the first ever such study undertaken. Covering the AY2005, the survey is intended to be a starting point for future longitudinal surveys by AMPS of the changing C/LMS landscape.

The institutions surveyed, in addition to MIT, were Carnegie Mellon University, Columbia University, Harvard University's College of Arts and Sciences, Middlebury College, Princeton University, Stanford University, the University of California

at Berkeley, the University of Chicago, the University of Texas at Austin and Yale University.

Institutions surveyed were asked to estimate the number of courses making "significant use" of their C/LMS. Among the ten institutions surveyed, five indicated that at least two-thirds of courses met this definition. Princeton and MIT estimated that about 50 percent of their courses made "significant use"—the three others did not wish to estimate.

Anecdotally, some of the institutions indicated that they had experienced tremendous growth in the number of courses, file space used in courses, and the number of students in C/LMS course usage over the past few years. The University of Texas at Austin experienced a four-fold increase over four years. The rate at which their blackboard was accessed increased five-fold in the same period.

Peer institutions use a variety of C/LMS products—open source, commercial, and locally developed. For institutions that have not already adopted a centralized model, there is a clear trend of evolving toward one primary enterprise-wide C/LMS rather than supporting multiple products. Identified needs were ease of use, more support for pedagogy needs, support from multiple mobile platforms including cell phones, and support for collaborative authoring (blogs, wikis, RSS feeds, etc.). Several institutions are planning to introduce some archival features into their C/LMS.

The birth-to-death materials life cycle continues to be foreign to the culture of most peer institutions. The institutions surveyed are still steeped in the nonelectronic course materials culture. The course materials are left to the faculty and only rarely are courses archived for use or reference beyond the terms offered. There are not yet repositories for this purpose. None of the other institutions surveyed is doing anything similar to OCW. Institutions continue to have difficulty getting a handle on the cost of their services; cost is often not a principal driver in decision-making.

Media-enabled Teaching and Learning Spaces

Multimedia classrooms for distance education delivery (level 5) spaces have been extensively used in the last year for synchronous course delivery via multipoint and point-to-point videoconferencing over ISDN, the commodity internet, and the I2. With direct video uplinks to the encoding facilities, level 5 rooms have comprised a substantial part of the infrastructure supporting the increasing demand for live webcasting, lecture and event encoding for asynchronous viewing, and multimedia projects.

Distance education programs are seeking alternative delivery methods and teaching modalities, from webcasting or exclusively asynchronous delivery to full-featured collaboration systems supporting lectures, small group meetings, and a full range of ad hoc multipoint interactions.

To support media-enabled teaching and learning spaces, AMPS has created process improvements such as documentation of best practices to provide contingency plans

for standard processes and operating procedures. We anticipate adding the following in FY2006:

- Anystream Apreso TM software, to provide high quality RealMedia video capture of the presenter with simultaneous Flash video capture of the presenter's desktop in level 5 distance education facilities;
- upgraded encoding systems for remote control, switching, and monitoring, real-time signal processing, deck controlled capture, and advanced codecs for pod casting and flash video; and
- a storage network to facilitate the smooth flow of content between the postproduction area and the encoding/hosting area.

Singapore-MIT Alliance

AMPS continues to provide integrated infrastructure and educational technology support for SMA (see figure 2), which has been the single largest user of level 5 distance education facilities. Over time, SMA has evolved from an innovative distance learning experiment to a mature, stable program. AMPS has facilitated this transformation through improved production and service processes, technology innovation, and cost efficiencies. With the SMA2 program approved till 2013, there will be new areas of support required, particularly in research interaction. The Singapore-MIT Alliance for Research and Technology (SMART) Center announced recently it will build on the already-strong relationships between MIT and Singapore and will also require innovative support models and services.

Production and Delivery of Rich Media Content

In the last year, AMPS successfully undertook several initiatives for developing delivery and playback technologies.

The growing popularity of personal media devices such as the iPod has created a demand for audio and video podcasts of lectures, special events, and sporting events. In anticipation of this demand, AMPS took steps to add lecture and tutorial capture for podcasting to its service offerings. During the spring term, AMPS provided video podcasts of Course 6.004 Computation Structures and 6.013 Electromagnetics and Applications lectures, 8.02 Physics II problem set tutorials, and 15.053 Optimization Methods in Management Science homework tutorials. Students valued the podcasts, and we intend to continue the experiment through the fall term. Our goal is to develop scalable and affordable capture and delivery methods that can be funded through individual course budgets.

In addition, AMPS executed its traditional range of projects involving video production, encoding, webcasting, and web publishing. These projects, such as MIT World and OCW, enable the global community to stay in touch with MIT. AMPS produced several tools enabling clients to publish web content on their own, without the intervention of the AMPS web design team. Overall AMPS activity levels are shown in the table below. The following is a representative sample of projects undertaken this year:

- AMPS created a media-rich Orientation 2005 website.
- AMPS collaborated with the MIT Museum on their "Museum Without Walls" project (http://museum.mit.edu/mwow/).
- Creation of MIT video podcast magazine, ZigZag—AMPS brought together the expertise and skills of its video and web production teams to create a website that supports ZigZag and invites ideas and feedback
- AMPS produced a webcast for an international audience for the dedication ceremonies for the McGovern Institute, the Picower Center, and Brain and Cognitive Sciences Project (http://web.mit.edu/spotlight/neuroscience/).
- OCW's users asked it to elaborate on the best applications of the mostly text-based course materials it publishes on the web. AMPS and OCW collaborated to produce a series of videos that show faculty members delivering classes (some videos cover all lectures, others just a sampling), special events such as student presentations, and interviews with faculty on pedagogical models used. AMPS provided pedagogical consulting, field production, and project coordination.
- AMPS hosted a first-ever AMPS Technology Seminar (http://web.mit.edu/amps/spotlight/podcast-seminar.html) on video podcasting and other emerging technologies in support of education, research and outreach.
- Production and hosting of Hawkcam's second season (http://amps-tools.mit.edu/hawkcam/)—AMPS created and maintained an interactive blog that allowed for viewers to share their thoughts, observations, and experiences.
- AMPS delivered a week-long Science and Engineering Program for Teachers (SEPT) (http://web.mit.edu/scienceprogram/) to 35 teachers at remote site at the University of Rhode Island, capturing the entire proceedings for DVD distribution.
- Customized weblogging software—AMPS has provided customized installations of weblogging software to several clients, including the Department of Undergraduate Education, Center for Real Estate, and a publishing collaboration between Stanford University and MIT called "Tomorrow's Professor" (http://amps-tools.mit.edu/tomprofblog/).
- CRE Website and MITREX (http://cre-mitrex.mit.edu/mitrex/)—AMPS continued to develop the Center for Real Estate website by promoting deeper communication with its constituencies and helping promote industry partnership.
- ERC website (http://web.mit.edu/erc/)— AMPS worked directly with the Energy Research Council, established by President Hockfield to address worldwide energy research, to create a website offering detailed information on conclusions and interdisciplinary research conducted at MIT on energy research.
- Museum Loan Network - Collecting Stories (http://loanet.mit.edu/cswn/csco/)—AMPS created a multimedia website that brings together techniques and lessons from the Museum Loan Network on how to bring oral history into museum collections.

- Tomorrow's Professor Weblog (http://amps-tools.mit.edu/tomprofblog/)—AMPS created a weblog for an MIT publishing project in collaboration with Stanford University that solicits community feedback on relevant topics in teaching with technology.
- Center for Educational Computing Initiatives (CECI) - iLab pages (http://icampus.mit.edu/ilabs/architecture/)—AMPS worked directly with CECI to improve the user interface for the iLab project, creating a simpler and more usable interactive experience.
- CRE Alumni/ae Blog (http://amps-tools.mit.edu/cre-alumniblog/)—AMPS developed a customized version of a weblogging tool, allowing alumni from the Center for Real Estate to communicate with each other more easily and to publish class notes.
- Interact at MIT (https://amps-tools.mit.edu:444/interact/home.jsp)—in collaboration with the dean for undergraduate education, AMPS designed and developed an interactive database tool that allows students and professors to learn more about each other and pursue extracurricular activities.
- IS&T icons—AMPS designed and produced a series of icons for institute-side usage within IS&T network systems.
- Sakai Style Guide 1.5—AMPS led the definition and production of the Sakai Style Guide, version 1.5, which defines the user interface requirements for all future Sakai tools. This collaborative project allows all Sakai participants to create new Sakai tools in conformance with a specific set of protocols and standards, and ensures a standardized user experience.
- Calendar & TechCheck Tool for Singapore-MIT Alliance (http://web.mit.edu/amps/portfolio/cases/techcheck.html)—AMPS continued to refine the existing web tools for SMA with the complete update of the SMA calendar tool. This tool allows MIT and the Singapore office to publish all class sessions within a single database, and publish them to students, faculty, and staff. AMPS substantially expanded the range of tasks possible with the tool and simplified its user experience.
- Stellar Internal Communication—AMPS has increased the channels of communication with the Institute through a weblog providing up-to-date information on new developments with the tool. Additionally, we have begun a print and outreach campaign to raise awareness of Stellar's utility and flexibility for administering and organizing course material.
- Stellar Template Updates (http://stellar.mit.edu/userguide/guide-instruct/stylegallery.html)—In response to user requests, AMPS has created a variety of Stellar templates, allowing users to choose a particular "look and feel" for their course site. AMPS also created a number of customized templates for various departments tailored to their needs.
- UEC Weblog (http://amps-tools.mit.edu/uec/public/)—AMPS customized and launched a weblog tool for the Undergraduate Education Committee, allowing selected participants to comment on a set of proposals for revision

of undergraduate requirements. The tool allowed committee members to participate in discussions over the summer months, despite being off-campus.

Continuous Improvement as a Professional Services Organization

AMPS has made progress toward becoming the preferred provider of educational technology services to the MIT community as seen in figure 3 above. Over the past year, the volume, complexity, and customer-perceived value and quality of its services have increased, even though available resources have been reduced or remained the same for most of the AMPS service lines.

AMPS held its first-ever forum, "The Potential of Video Podcasting, and Other Emerging Technologies—Supporting Education, Research, and Outreach at MIT," on Tuesday April 18, 2006. Presentations by Larry Gallagher and David Mycue featured new digital acquisition and delivery technologies, lessons learned from ongoing pilot programs, and a screening of ZigZag, the MIT video magazine podcast. AMPS staff also demonstrated a full range of content capture and delivery systems, from voice-over-PowerPoint to interactive rich media presentations for online viewing to live webcasting and course content video podcasting through Stellar.

Cost Recovery Organization

AMPS has initiated a range of organizational changes, technological innovations, and process improvements to ensure that AMPS remains on a positive trajectory as a cost-recovery organization:

—Organizational realignment for greater focus, clarity, and efficiency. AMPS strengthened the unified video services process developed last year to bring in efficiencies and options to meet client needs for integrated video acquisition and delivery across a spectrum of feature and cost options, as well as to take advantage of newer and cheaper convergent digital technologies.

—Improved processes, capabilities, and infrastructure. Through technology innovations, AMPS achieved continued savings for the Singapore-MIT Alliance through reduced in-class setup time. In addition, AMPS made capital improvements in the level 5 classrooms and built a new central transcoding facility. Efficiencies were realized through standardization of MIT-supported systems such as:

- Oracle TechTime for scheduling meetings as well as classrooms;
- AMPS Commons (using the Confluence wiki) for collaborative sharing and document repository including to support areas such as computer support, the AMPS Recognition program, AMPS Moves, Stellar, web development, Filemaker issues, etc. (see https://confab.mit.edu/confluence/display/AMPS/Home/); and
- Project Basecamp for project management.

—Improved financial structure and process to align more closely with business needs. AMPS renewed and upgraded its technology with no impact on rates. The establishment of equipment reserve funds (estimated at $1,578,299 at the beginning of FY2007)

contributed to rate stability. AMPS achieved increased transparency in communication of the relationship between costs and services delivered. Increasingly, AMPS managers base their decisions on a variety of data produced by a financial structure and process that employs activity-based costing methodology and budgeting.

—*Reduced costs*. AMPS reduced costs by negotiating better vendor prices, switching to cheaper media, recycling media, and saving on T1 lines, phone lines, and net drops. As a result, AMPS savings last year were approximately $50,000.

—*Improved communication*. Changes to the AMPS website (http://web.mit.edu/amps/services/) described our services using client-friendly descriptions, one-point contacts, pricing, and case studies showcasing our successes.

—*Management of vacancies*. AMPS reduced its staff line item by over 13 percent through appropriate separations and layoffs, delayed hiring, reduced percentages of effort, and hiring only necessary skills at lower cost. Given the current job market, which is heating up in the technology area, AMPS faces a significant challenge in retaining quality staff.

—*Professional and organizational development.* The AMPS Leadership Team employed a variety of approaches and opportunities for individual professional development, from individual feedback to participation in professional leadership development programs. We have used input from these activities, as well as from individual managers and their supervisors, to define annual goals and development plans.

Organizational Alignment

Table 1. Representative Metrics for AMPS Deliverables, FY 2006

Stellar (classes)*	1,038
Web Production	
Web Sites (projects)	15
Web Tools (projects)	6
Multimedia (projects)	6
DE Facility Access (hours)	2,138
Videoconferencing	
AMPS Facility Access (hours)	273
Maintenance & Support (SLAs)	3
Video Production	
Field and Studio Production (recordings)	887
Editing (hours)	1,246
Encoding (content hours)	1,559
Webcasts (events)	57

* Annual Stellar course sites (On-campus and SMA courses).

Our overall strategy has focused on leveraging AMPS expertise in the four strategic areas described previously, and extending this to broadly support audiences across the Institute. A key component has been building organizational alignment in order to more efficiently deliver a coherent and cohesive educational technology support environment

for faculty, DLCs, programs, and students at the Institute. Some of the alignments AMPS has developed include:

- a complementary relationship with Academic Computing/IS&T around OKI, Sakai, Stellar support, IT architecture and software expertise, usability testing, and recently, tool development.
- bringing Sloanspace and Stellar together—that is, creating an opportunity to converge on one platform. The Learning Platforms Alignment Group, a working group set up to consolidate and identify Institute-wide user requirements for course management and community development, helped facilitate this process.
- promotion of a web services alignment with PSB, IS&T WCS, and IS&T Administrative Computing. This resulted in presenting a more cohesive picture to the end user, fewer turf wars, and a strategic opportunity to tackle the rapidly increasing appetite for web services on campus.
- alignment of the services offered by other organizations within MIT with Stellar—for example, the Registrar's Office, Academic Computing, OKI, Libraries, Dspace, OCW, SSIT, IS&T Support, and Help Desk. Working more closely with the registrar's office has resulted in significant ease-of-use of Stellar by faculty; e.g., the registrar's class list is now available through Stellar, as are student photographs.
- positive feedback from faculty and students about the value of the eReserves-Stellar project, provided in collaboration with the Libraries.
- the Stellar 2 Alignment Group, a collaboration that led to the joint development of the Stellar Image tool by the Libraries, Academic Computing, and Dspace.
- a strengthened link between OCW and Stellar, enabling students to navigate to the OCW site directly from the Stellar class site home page.
- a Sakai Working Group's investigation of online systems that MIT can exploit.
- a collaboration with the Physics Department, which has produced the integration of Professor Bolek Wyslouch's Grade Management System into the Stellar system, to be published during FY2006–2007.
- AMPS continuing work on low-cost, scaleable lecture capture beyond the level 5 classrooms to the 160 classrooms operated by the registrar and the 59 classrooms operated by departments. AMPS will be piloting classroom technologies at the Sloan School during the 2006–2007 academic year.

AMPS Activity Metrics

Facilities

AMPS operates facilities for video production, streaming media, and distance learning (http://web.mit.edu/amps/facilities/index.html). These include the following:

Field and studio production facilities:

- Broadcast-quality television studio
- Video documentation of research projects
- Recording of demonstrations and laboratory experiments throughout a semester or the academic year
- Videotaping of any event on- or off-campus
- Satellite transmission
- State-of-the-art equipment

Multiformat broadcast quality postproduction facilities:

- Betacam and MPEG2 mastering from multiple formats (VHS, SVHS, Hi8, ¾", DVCAM, Betacam)
- Audio processing and EQ system
- Broadcast quality digital editing system with motion graphics capabilities
- DVD authoring and menu composition tools
- Professional grade Media 100 edits suite with 16-track audio and 4 graphic tracks

Streaming media and conversion facilities:

- Production of live webcasts (capturing and transmission of live courses) in Windows Media, RealMedia, Quicktime, and MPEG formats
- Conversion of traditional video to almost any digital format, including CD-ROM and DVD.

These facilities house the following technologies:

- Complete media conversion system for all common input and output formats
- Multiterabyte capacity for storage and streaming server
- Encoding stations for all standard digital video formats
- 15+ live encoding station integrated with MIT level 5 classes
- High-speed DVD and CD printing station
- Real time DVD recording unit

Organizational Changes

Over the past year, as the emphasis shifted increasingly to Stellar, the Educational Design and Development Group (EDDG) and the Stellar Group were combined to form the Educational Tools Group, coheaded by Mark Brown and Craig Counterman. As the School of Architecture and Planning moved to Building 9, AMPS began the process of moving to new premises. AMPS relocated in August 2006 to a new space in NE48 (700 Technology Square); some staff will move to Building 35 and a few will remain in Building 9 in order to be able to continue to operate and service the Building 9 infrastructure.

People

The AMPS management team for FY2006 was Mark Brown, Marine Brown, Dr. Craig Counterman, Lawrence Gallagher, Dr. M.S. Vijay Kumar, Dr. Amitava "Babi" Mitra, and David Mycue. Changes in personnel during FY2006 include:

- New employees: Chris Boebel, manager of multimedia; Rita Delaney, administrative assistant, AMPS; William de Figueiredo, network/systems engineer; Andrew McKinney, senior release engineer, Stellar; David Tames, multimedia producer/editor
- Promotions: Corinne Butler to financial assistant II
- Appointments: Christian Franco, streaming media assistant; Gloria Akuamoah, administrative assistant, AMPS
- Departures and transitions: Ben Brophy joined ATG; Rita Delaney left AMPS; Tom Doran left MIT; Stacy Keller joined MathWorks; Margaret Meehan joined MathWorks; Anna Pope left AMPS; Judy Prescott left MIT
- Leave of absence: Jeff Silva began a year's leave of absence at the end of June.

Recognition and Awards

2005–2006 saw the launch of the AMPS Recognition Program. With support from Kande Culver, MIT administrator for the Rewards and Recognition Program, the AMPS executive director formed a design committee for the discovery, execution, and implementation of the AMPS Rewards and Recognition initiative. Team members included Larry Gallagher, Joanne Flood, Kevin Tierney, Stacy Keller, Ben Brophy, Anna Pope, Corinne Butler, and Babi Mitra.

The program got off to a quick start with Spot Awards given to Clayton Hainsworth, Lily Ladd, Robert Sikkema, and Kevin Tierney for service to others; to Clayton Hainsworth, Mike Leoncini, Elaine Mello, and Stefan Stasik for professionalism and positive attitude; and to Joanna Proulx for problem solving. More information is available at https://confab.mit.edu/confluence/pages/viewpage.action?spaceKey=AMPS&title=Recognition.

The MIT Excellence Awards are among the highest honors presented to staff at MIT. These awards signify professionalism, commitment to best practices, and high standards of excellence. The 2006 Excellence Award to the "unsung hero, working behind the scenes" (http://web.mit.edu/hr/rewards/ex_past/2005-06_awards/unsung.html) went to Joanne Flood, office manager at MIT Video Productions, for exceptional work at AMPS (http://mit.edu/amps/spotlight/jflood.html).

Papers and Presentations

AMPS staff members made many presentations to the MIT community on using technology to support teaching and learning, including during the Independent Activities Period. Amitava (Babi) Mitra and Vijay Kumar made presentations for the purpose of reaching out to national and international audiences and to represent MIT's

leadership in this area. Babi Mitra was also invited to join the Northeast Regional Computing Program 2007 Program Committee.

Brown, Mark. "Collaboration between MIT and UC-Berkeley on Image Tools in the Sakai Environment," presented at Sakai Conference 2006 in Vancouver, June 1, 2006.

Kumar, Vijay, M.S., "Advanced Technologies in Higher Education—Where are we? We are we going?" Moderator/Panelist, Syllabus 2005, Hollywood, CA, July 27, 2005.

Kumar, Vijay, M.S., "Expanding the Culture: Recognizing and Serving Changing Student Populations," Syllabus Executive Summit Plenary Panel, Syllabus2005, Hollywood, CA, July 24, 2005.

Kumar, Vijay, M.S.,"IT Planning: A Vision for Technology Futures," Workshop Presentation, Syllabus 2005, Hollywood, CA, July 4, 2005.

Kumar, Vijay, M.S., "Open Standards, Open Source and Open Content—the Shape of Things to Come?" Online Educa, 2005, Berlin, November 2, 2005.

Kumar, Vijay, M.S., "Pervasive Technology and Educational Opportunity," University of Wales, Bangor's Event for Alumni and Friends, Harvard University, Cambridge, MA, October 6, 2005.

Kumar, Vijay, M.S., "Towards a Sustainable Ecology of Educational Opportunities," Harvestroad eLearning conference, Perth Western Australia, January 23, 2006.

Kumar, Vijay, M.S., "Towards a Sustainable Ecology of Educational Opportunities," International Forum: Outlook for E-Learning Using ADL-SCORM Technologies, Mexico City, Mexico, May 23–24, 2006.

Kumar, Vijay and Merriman, Jeffrey, "From Course Management Systems to Open Frameworks and a Sustainable Ecology of Educational Systems," in *Course Management Systems for Learning—Beyond Accidental Pedagogy*, P. McGee, C. Carmean, and A. Jafari, (eds), Information Science Publishing, 2005.

Mitra, Amitava and Joseph Hardin. "Sakai: The Road Ahead," presented at EDUCAUSE, 2005, Denver, Colorado, Oct. 19–22, 2004.

Norton, Mark, Mark Brown, and Craig Counterman. "MIT–Sakai Kernal Bundle," presented at Sakai Conference 2006 in Vancouver, May 31, 2006.

Looking Ahead: AMPS Strategy and Issues

The strategic focus, goals, and activities for FY2007 reflect the trends and transitions in each of the key AMPS service areas—development and delivery of learning systems platforms; design, implementation, and operation of media-enabled teaching and learning spaces; the acquisition, production, and delivery of rich media content for education and research; and continuous improvement as a professional services organization.

Our efforts on behalf of the Stellar Course Management System and the collaborative Sakai project will continue to be directed toward providing a feature-rich and sustainable platform to meet the educational needs of MIT, one that faculty and students find increasingly easy to use and that supports innovative pedagogic tools.

In the next year, AMPS anticipates progress in a number of strategically important areas: taking the Sloanspace-Stellar convergence beyond the pilot program; increasing the use of new tools offered by Stellar; establishing linkages with Student and Administrative Information Services to provide course evaluation and other functionalities; and extending Stellar's functionality to meet the needs of students and faculty. We also look forward to developing an enterprise approach to funding and resourcing the Stellar effort, as it moves from a project to a mission-critical education service at MIT.

MIT's participation in the Sakai project will also provide the opportunity to converge different learning management system-type applications across the Institute, such as Studio MIT, Sloanspace, Metamedia, and others. This will enable AMPS to leverage institutional investments in educational technology platforms, and to provide a coherent educational technology environment for faculty, students, and staff.

AMPS will continue to anticipate and meet the demands of change. All media-enabled teaching and learning spaces will move toward a 24-hour usage model configured to accommodate the diversity of formal and informal learning, as well as the schedules of extended MIT communities. AMPS focus will be on responding to these transitions in education and research practices, with an emphasis on collaboration and integrated communication.

AMPS will continue to provide innovative, network-based digital technology solutions and processes that facilitate disintermediated services and enable the provision of flexible, ad hoc spaces for media-integrated use. A key element will be continued support of strategic MIT programs such as SMA. AMPS will also lead efforts to develop a comprehensive video strategy for MIT that leverages MIT's infrastructure and the richness of its video resources.

We expect that the organizational processes developed over the past years, such as the formation of the Educational Tools Group, will enable AMPS to provide more coherent and efficient services.

The high quality of service and excellence demanded by the MIT community makes it imperative for AMPS to align even more closely with other infrastructure organizations and projects, such as Academic Computing, OCW, DSpace, the registrar's office, and the MIT Libraries.

The groundswell of interest generated by the MIT HawkCam experiment conducted by AMPS in 2004 (http://web.mit.edu/amps/spotlight/hawkcam.html) and again in 2006 (http://amps-tools.mit.edu/hawkcam/) highlights the MIT community's engagement with media-based technologies, as well as the potential uses for these technologies for academic and research purposes. It also underscores the significance of educational technology activities and the need for the appropriate service-focused organizational structure to respond to and facilitate technology transition within MIT.

In summary, AMPS will continue to strengthen its position as an efficient, cost-effective, and valuable provider of media services in support of educational initiatives and research, as well as community events at MIT. The focus and emphasis during FY2007 will continue to be on quality and sustainability and on making it easier and easier for faculty, departments, laboratories, and centers to create and deploy educational technology.

Amitava "Babi" Mitra, Executive Director
M. S. Vijay Kumar, Assistant Provost and Director, Academic Computing

More information about the Academic Media Production Services can be found at http://web.mit.edu/amps/.