

EXECUTIVE SUMMARY

Measures of Success (MOS) is the vehicle through which California State University informs the legislature about the progress and benefits of the Integrated Technology Strategy (ITS). This is the ninth report in the series and the seventh year describing changes from the baseline data (1999–2000). MOS reports measure progress in achieving the benefits associated with specific ITS initiatives in the following outcome categories:

- ◆ Excellence in Learning and Teaching
- ◆ Quality of the Student Experience (fully implemented; no longer reported)
- ◆ Administrative Productivity and Quality
- ◆ Personal Productivity

The four outcomes of the ITS result from the strategic application of information technologies in support of the core programs and operations of the university. These outcome areas correspond to four sets of ITS initiatives: academic, student services, administrative systems, and technology infrastructure. The MOS also discusses how technology can be used to leverage *existing* physical capacity to help meet CSU enrollment goals.

In March 1996, the CSU Board of Trustees approved the ITS framework for leveraging technology as a tool to achieve CSU academic and administrative goals. The ITS was always more than a plan; it is a strategic framework. As such, it has continued to guide the CSU's investments in technology for almost a decade and will do so well into the foreseeable future. In 2004, all 23 CSU presidents recommitted to the goals and objectives of the ITS and agreed to maintain their collective leadership of information technology. With implementation of the infrastructure and administrative initiatives nearing completion, CSU leaders in 2004 made academic technology a major policy priority of the system, and as a result, launched a second wave of initiatives.

Institutional and individual user data are collected to inform the MOS process. Institutional data are drawn from systemwide databases and annual campus surveys. Individual data are collected through biennial telephone surveys of representative samples of CSU students, faculty, and staff. Major findings are reported below. In some instances survey mean score ratings are cited based on an 11-point scale of 0 to 10, where 10 indicates maximum importance or satisfaction. This edition of the MOS also draws on comparative data from two national surveys.

The MOS provides an overview of institutional progress in meeting the goals of the ITS and an understanding of individual user needs and attitudes concerning information technology. The report documents the growing investment in information technology as a strategic resource of the CSU which continues to yield measurable positive return.

MAJOR FINDINGS

Excellence in Learning and Teaching

The ITS academic initiatives seek to improve academic quality, increase student access, and contain costs.

Technology in the Curriculum

- The number of classes (course sections) supported by Web-based Learning Management Systems (LMS) grew from 2.8 percent of all course sections offered in 1999–2000 to 33 percent in 2006-07.
- LMS have grown from small niche applications used by leading edge faculty in the late 1990s to “mission critical” enterprises. Today, LMS is integrated with other large campus systems accessible by all faculty and students. Licensing initially cost about \$3000 per year; current costs are now approximately \$100,000 or more per campus depending on size and other services needed.
- The number of classes in which instructors required students to use the Internet and email each increased approximately 25 percent since surveying began in 2001.
- Since 2005, the number of students reporting use of online tutorials grew by more than 40 percent. Those using virtual laboratories (simulations) increased by more than one third. One in three students also said they were required to participate in group project work online, up by almost 25 percent. Two out of three students said they used a chat room to meet course requirements, a ten percent increase.

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- In 2007, over 60 percent of students “agreed” or “agreed strongly” that use of information technology in courses: “helped them do better research”; allowed them to “take greater control of course activities”; “resulted in more prompt feedback from instructors”; “helped them to communicate and collaborate better with classmates”.
- Eleven percent of CSU students rate themselves as “innovators” in the use of information technology in 2007 (i.e., are among the first of their peers to use them). Twenty-nine percent rate themselves as “early adopters”, 38 percent as “mainstream adopters”, 13 percent as “late adopters”, and 7 percent as “laggards” (i.e., use them only when they have to). These percentages mirror those of a national survey of 28,000 students.

Instructional Resource Sharing

- In 2006, between 80 and 90 percent of faculty required use of online information resources such as databases, catalogs, and electronic journals in their courses. Students rated the level of satisfaction with the quality and ease of use of those resources consistently high (i.e., mean scores between seven and eight on a zero-to-ten scale for all four student surveys).
- By the end of FY 2006-07, there were over 17,000 learning materials in the MERLOT online information resource repository. Individual memberships in the MERLOT community increased to 47,541 members in 2006-07, continuing the annual 30 plus percent gain in membership of over the past four years. Currently, 23 institutions and systems of higher education are paying members of the MERLOT project.
- In 2007, a U.S. Congressional subcommittee identified the CSU Digital Marketplace as the leading innovation to reduce the cost of textbooks. Publishers are active participants in the project.

Administrative Productivity and Quality

The purpose of the administrative initiatives is to increase the accessibility and utility of major administrative information systems to students, faculty, and staff, while improving the efficiency and quality of administrative services. To achieve this, the goal of the Common Management Systems (CMS) is to have all campuses and the Chancellor’s Office use common Oracle/PeopleSoft applications in full production mode, supported by a consolidated data center, by 2007.

Common Management Systems Implementation

- By the end of FY 2006-07, 21 campuses had implemented the finance application; 23 campuses had implemented the human resources application; and 13 had implemented the student administration application.
- Overall, student use of campus administrative information systems grew by 34 percent since tracking began in 2001. As of 2007, almost all CSU students report use of the systems for registration and grade information.

Administrative System Data Center Consolidation

- In 2006-07, an estimated cost avoidance of \$16.76 million was realized for the consolidated administrative data center; the total was \$17.06 million in 2005-06.

Personal Productivity

The information technology infrastructure initiatives seek to provide to each campus a baseline quantity and quality of computing and network resources to enhance the personal productivity of individual students, faculty, and staff.

Workstation Environment

- Full-time faculty on *all* campuses had access to a university-provided workstation in 2006-2007. Systemwide, fully 88 percent of these workstations met hardware quality standards and 95 percent met software standards.
- In 2007, eight out of ten students owned laptop computers and made extensive use of them in their academic work.
- Although eight out of ten classrooms in the CSU overall currently are equipped to support the use of multimedia instructional resources, there are wide variations among campuses in the percentage of rooms equipped and in levels of currency.
- Over the last two years, CSU campuses have improved by more than a third the ratio of accessible workstations to eligible disabled students.
- The California Emerging Technology Fund has awarded the CSU \$250,000 for Fiscal Year 2007-2008 to develop an accessibility testing center for software.

Network Connectivity

- By the end of 2006-07, 19 campuses were able to provide connectivity at the speed defined in the CSU baseline technology infrastructure standards. In 2001–02, only three campuses were doing so. The gain is largely attributable to the campus backbone network improvements funded through the Technology Infrastructure Initiative (TII).
- Seventeen campuses now report full or almost full availability of wireless connectivity in their libraries and eleven campuses provide full wireless connectivity in student centers. Eight campuses provide wireless access to all or almost all classrooms and other instructional sites.
- Peak utilization rates for campus backbone networks were the lowest since tracking began in 1999-2000, an indicator of bandwidth capacity. The median peak utilization of 28 percent in 2006-07 marks a significant improvement over the 35 to 40 percent reported in previous surveys.
- Campus data network use has increased dramatically since 2001, particularly in the area of wireless and remote networking. Whereas two years ago only one in four students reported use of the campus wireless network, in 2007 more than one half of the students did so. Faculty use of wireless roughly parallels student use. In the 2004 survey 13 percent of faculty respondents said they used the campus wireless network. Almost half said they did so in the 2006 survey.
- Over 90 percent of CSU students now have broadband connectivity from their residence.

Training and Support

- In all -user surveys conducted since 2000, almost all faculty and staff report having access to technical support for resolving problems with university-provided computers or software. Both groups express a rather high level of satisfaction with the support they have received. For the relatively small percentage of students who report using support services, satisfaction levels are also high.
- In 2007, students expressed high satisfaction with technical support for both hardware and software.
- The widespread adoption of learning management systems and the Common Management Systems (CMS) has produced modest increases in training for students, faculty and staff over the past few years.
- In surveys administered biennially since 2000 faculty, students, and staff gave relatively high satisfaction ratings to campus-based training programs.

Baseline IT Infrastructure Capability

- Telecommunications Environment: In 2001-2002, no campus was at baseline, and one was between 75 and 90 percent. In 2006-2007, 14 campuses were at baseline and 3 were between 75 and 90 percent.
- Workstation Environment: In 2000-2001, three campuses were at baseline, and one was between 75 and 90 percent. In 2006-2007, ten campuses were at baseline, and none was between 75 and 90 percent.
- Network Connectivity: In 2001-2002, three campuses were at baseline, and two were between 75 and 90 percent. In 2006-2007, 19 campuses were at baseline, and one was between 75 and 90 percent.
- Technical Support: In 2001-2002, three campuses were at baseline, and five were between 75 and 90 percent. In 2006-2007, four were at baseline and four were between 75 and 90 percent.
- Training: In 2001-2002 no campus was at baseline and five were between 75 and 90. In 2006-2007, campuses one campus was at baseline and four were between 75 and 90.

Master Plan

One goal of ITS investment in distance and distributed (online) learning technologies is to accommodate additional enrollment without corresponding increases in building construction.

- Enrollment in distributed learning modes in AY 2006-2007 totaled 13,772 FTES, an amount equivalent to 4.1 percent of total main-campus FTES for the system. Eleven CSU campuses have smaller FTES enrollments than the aggregated total for distributed learning.
- Availability of online instruction has been ranked second in importance only to technology preparation for future employment in all four student survey administrations. However, students consistently have rated “satisfaction with online courses compared to regular classroom instruction” the lowest of any similar question in the survey.

Conclusion

The eight-year reporting history of the MOS documents the success of the ITS. Major factors contributing to that success include:

Executive Leadership: One of the most impressive features of the ITS has been the involvement of CSU campus presidents in its planning and execution. A Technology Steering Committee (TSC), comprised of seven presidents and two system executive vice chancellors, has met every month since its inception in 1993 to plan and develop the ITS process. This degree of collaborative presidential leadership in IT is a rare occurrence in higher education, and has placed technology near the center of the policy agenda in the CSU system. More recently, an IT steering committee of campus provosts was formed to complement the TSC.

Baseline Infrastructure: Information technology permeates every important facet of the modern university, academic and administrative. A robust technology infrastructure is a prerequisite for both quality and productivity in the digital age. Information technology is the crucial infrastructure of the 21st century, similar to the role that a physical infrastructure played in previous eras.

Campus cooperation has revolved around the concept of baseline, or the goal of ensuring for each campus at least a minimum level of IT resources and capabilities. By reducing inequalities among campuses in the system, both institutional and personal productivity and efficiency are enhanced. The CSU has leveraged the size and resources of the 23 campuses in the system, and thereby narrowed the technological gaps among them.

Culture of Evidence: Through investments in campus, student, faculty, and staff surveys, the CSU has become one of the most data-rich systems of higher education in the nation in the area of IT. The MOS has contributed to data-driven decision making among policy planners in the CSU. It has also served as a sort of “report card” for meeting the accountability challenge required by the state’s support of information technology. The CSU has publicly announced and annually tracked and reported on its “metrics for success.”