DATA SOURCES AND METHODOLOGY

The CSU has conducted a wide range of data collection efforts to support the *Measures of Success* (MOS) process. Both institutional surveys and individual surveys of students, faculty, and staff have been administered over the past several years, and more are scheduled through at least 2008. Following is a discussion of the nature, intent, and use of each of these surveys. It includes a list of the major topics that were covered; a brief mention of the questionnaire design process and pilot testing (if applicable); a review of the sample size, characteristics, and selection methodology; administration logistics; and explanation of the survey's confidence levels and sampling error margins (where applicable). The intent here is to provide both a technical and a practical overview of how the various surveys are conducted and what they contribute to the MOS.

Annual Systemwide Technology Survey

Certain types of campus data often are mandated by law and are collected, synthesized, and published by systemwide offices. In those instances, it makes little sense to collect the data a second time from the campuses. These data include official demographic and quantitative records on students, faculty, staff, space and facilities, course enrollments, administrative budgets, and so forth. Where appropriate, these official databases and reporting sources were used in preparation of this report.

Other aggregate statistics are collected at the program or department level to monitor and evaluate major systemwide initiatives such as the Technology Infrastructure Initiative (TII), Common Management Systems (CMS), the Center for Distributed Learning (CDL), Multimedia Educational Resource for Learning and Online Teaching (MERLOT), libraries, and so forth. These, too, require only a relatively modest, informal series of requests to make them available for reports of this nature.

Annual Campus Technology Survey

This institutional survey was initiated for the purpose of collecting information identified in the *Measures of Success* report and to provide technology-related data for internal CSU uses. The survey, coordinated by campus chief technology officers, addresses every important facet of the Integrated Technology Strategy—academic, administrative, and infrastructure-related. For the most part, the items in the survey call for quantitative data on the amount and use of technology resources. Other items ask campus Chief Information Officer's (CIO) for informed judgments about the state of technology or the roles of user groups. Campuses were also asked questions concerning institutional policies and practices pertaining to end-user technical support and training. The increasingly distributed nature of technology resources and services on most campuses makes each of these tasks more difficult. However, there is evidence that the standardized and institutionalized nature of the annual campus technology survey is improving campuses' ability to provide accurate data over time.

Biennial Student, Faculty, and Staff Technology Surveys

In addition to institutional data and broad aggregate indicators, it was necessary to gather individual information about staff, faculty, and student experiences with technology. Following are descriptions of those surveys and of the methodology underlying their administration.

The Social and Behavioral Research Institute (SBRI) at CSU San Marcos conducted the first faculty survey in the MOS series in fall 2000. In spring 2002 and spring 2004, additional faculty surveys were conducted. All of these surveys examine faculty access to, knowledge about, use of, and satisfaction with the full range of instructional technology resources and services on CSU campuses. Only full-time faculty were surveyed. Part-time faculty have only marginal access to campus space and technology resources, and it was determined that the costs of attempting to reach them by phone would be prohibitive. The stratified random sample included approximately 3,200 faculty selected according to discipline and rank.

The three student surveys in this series (administered in the spring of 2001, 2003, and 2005) closely mirrored the faculty surveys for the purpose of drawing comparisons between student and faculty perceptions and behavior. However, the surveys also drew items from previous CSU system student surveys in fall 1998 and fall 1999 in order to

track longitudinal change. The sampling methodology followed that of a systemwide fall 1998 student survey—a stratified (by class level and student ethnicity) random sample of approximately 3,200 students drawn from the entire CSU student population and conducted via telephone interviews by SBRI. The findings from the spring 2005 student survey are reported in this year's MOS.

Telephone staff surveys were conducted in summer 2000, spring 2002, and summer 2004. They were based on a sample of over 2,000 staff and administrators randomly selected by job classification according to their proportions in the campus community generally. The four stratification classes used for drawing the sample were managerial, professional, clerical/secretarial, and technical. Staff in service, craft, and maintenance occupations were excluded from the sampling design because most either had little exposure to information technology or could not be readily contacted by phone. The SBRI staff survey provides data for making comparisons among staff, students, and faculty, and among members of these groups over time. The staff surveys examined technology access, use, and satisfaction, as well as training and support services.

Rating Scale

In all three user surveys, an 11-point rating scale was employed to measure opinion. This scale was used on survey questions asking about the importance of technology and satisfaction with it. Respondents were asked to express their opinion using numbers from zero to 10, where zero equates to not at all important or satisfied, and 10 equates to extremely important or satisfied. Selected mean scores are referenced in the body of the report, and all mean scores together with standard deviations (indicating the degree of consensus around the mean) are reported in the appendix to the student executive summary.

Annual National Campus Computer Survey

Since 1990, the annual Campus Computing Project has been the largest continuing study of the role of computers and information technology in American higher education. This national study was conducted by mail each summer and fall through surveys sent to (in most cases) the chief information officers on U.S. campuses; in 2005, the survey migrated to Web-based administration. All 23 campuses of the CSU participated in the 2005 study. Information about this project is available at: www.campuscomputing.net.

The survey focuses primarily on academic computing resources and services to support instruction and scholarship. However, it also touches on institutional policies concerning information technology such as student technology fees, acceptable use policies for networks, intellectual property, and strategic planning.

Each year, the CSU contracts with the survey provider for customized data comparing the CSU findings to Carnegie Masters I institutions nationally. Many of the questions from this survey provide the CSU with a policy and practice context within which the MOS metrics can be considered, in addition to current budget conditions.

EDUCAUSE Core Data Service Survey

EDUCAUSE is the leading professional organization for information technology in higher education. In 2001, EDUCAUSE established a research task force to develop a member-based data collection strategy. The database of "core" campus data would allow peer comparisons and information sharing. Participating campuses complete the survey annually and in return have access to a Web-based interactive database service to help benchmark, plan, and make decisions about IT on their campus.

The major topics covered in the survey include IT organization, staffing, and planning; financing, budgets, and management; faculty and student computing; and networking and security. The first Core Data Service (CDS) survey was launched in December 2002 to capture data for FY 2001–2002. In 2004, 20 CSU campuses participated in the survey based on the 2003–04 fiscal year.

CSU Funding Gap Study

During the 2004–05 fiscal year, a sample of six CSU campuses (Chico, East Bay, Fullerton, San Marcos, Northridge, and Los Angeles) agreed to conduct a "bottom-up" inventory of all IT expenditures and match them against minimum baseline needs as a means for identifying the size and nature of the funding gap facing the system. The study team gathered data on IT expenditures in six major categories, drawing on the structure and process from an earlier survey on the CSU East Bay campus. The six categories are enterprise information systems; shared infrastructure; instructional technology/student computing; electronic content; office technology infrastructure; and training and support services.

Within these functional areas, the data collection template contained five major expense categories: hardware, software, maintenance and support, operating expenses, and salaries and benefits. The line-item totals were further divided into centralized versus distributed expenditures and academic versus administrative costs. Finally, two types of cost data were gathered: the one-time expenditures needed to achieve minimum baseline and the annual costs to maintain it (above current funding levels).

In addition to data collection, much of the study involved defining and developing metrics for minimum baseline in each area of unmet need. In some cases, minimum baseline could be inferred from common agreement within the IT community generally (e.g., for refresh cycles). In other instances, there were quantitative guidelines or standards concerning quality that could be used (e.g., for wireless networks, security). However, for some areas within academic technology (e.g., user training and support, smart classrooms, electronic core for e-learning), few standards for minimum baseline existed so they had to be defined through a consensus of campus experts. In many instances, individual CSU campuses had already conducted cost studies (e.g., on LMS, middleware) or implemented certain technologies (e.g., wireless), so those benchmarks were available.

The study team focused on the following questions:

1. How much are campuses currently spending on IT in various functional areas of the university?
2. What are the areas of greatest unmet need, and how large are the funding shortfalls in each?
3. For areas where no baseline metric currently exists (mostly in academic technology), how does the system define and measure baseline capability?
4. What would it cost the system, in terms of one-time expenditures and ongoing annual increases, to achieve and maintain minimum baseline in these areas?
5. What are some of the funding sources and strategies that should be considered?

The sample of six campuses represents 29.5 percent of total system FTES. Calculations were performed for system extrapolations using FTES.

A Methodological Note

The standards governing design and administration of the faculty, staff, and student surveys, and of the methods for analyzing the data, are those commonly used by professional social scientists. The sampling margin of error for the systemwide surveys of CSU faculty, staff, and students is +/- 1.75 percentage points. That is to say, given the sample size between 2,000 and 3,000 respondents, one can be 95 percent confident that the mean score for the survey sample would vary by fewer than 1.75 percentage points from the mean score of the total population if repeated surveys of this nature were conducted. In 5 percent of the cases, the margin of error would exceed 1.75 percentage points.

Because of the smaller number of cases collected at each campus, single-campus estimates are less stable. The margin of error for the individual campus samples is +/- 8 percentage points. *Only system data, weighted for campus size, are provided in this report.*

The MOS reports findings in simple, non-technical formats, and mentions only those changes over time or differences between user groups that appear to be of statistical significance or substantive importance. All user survey data are supported by detailed statistical analysis and published in studies prepared by the Social and Behavioral Research Institute (SBRI).

Social and Behavioral Research Institute (SBRI)

All of the surveys of individual students, faculty, and staff noted above were conducted through computer-assisted telephone interviews by staff of the SBRI. In each instance, professional SBRI staff drew the samples in conjunction with campus representatives, oversaw the survey administration, processed the data, and submitted reports to the Information Technology Services division at the system level. The final reports for all SBRI surveys are posted to the Chancellor's Office ITS website at

http://its.calstate.edu/documents/Data_Collection/III_Biennial_Surveys/III_Biennial_Surveys.shtml