



E D U C A U S E

CORE DATA SERVICE



# 2002 Summary Report

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EDUCAUSE is a nonprofit association whose mission is to advance higher education by promoting the intelligent use of information technology. Membership is open to institutions of higher education, corporations serving the higher education information technology market, and other related associations and organizations. Resources include professional development activities; print and electronic publications, including books, monographs, and the magazines *EDUCAUSE Quarterly* and *EDUCAUSE Review*; strategic policy advocacy; teaching and learning initiatives; applied research; special interest collaboration communities; awards for leadership and exemplary practices; and extensive online information services. The current membership comprises nearly 1,900 colleges, universities, and education organizations, including 200 corporations. EDUCAUSE has offices in Boulder, Colorado, and Washington, D.C.; [www.educause.edu](http://www.educause.edu), e-mail [info@educause.edu](mailto:info@educause.edu).

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# Introduction

Higher education is experiencing unprecedented pressure for accountability from both internal and external constituencies, from trustees to campus administration to prospective students and their parents to governmental agencies. In recent years, these accountability demands “have been especially targeted at information technology, putting strong pressures on IT leaders to explain and justify the costs and benefits of the expenses associated with their areas.”<sup>1</sup> Fundamental to such efforts is having reliable data about information technology practices, structures, and expenditures at comparable institutions for benchmarking purposes.

## Historical Context

Finding such useful and relevant comparative data for IT units in higher education has long been a challenge, and a number of data collection activities have arisen through the years to meet this need. Prior to its consolidation with Educom in the summer of 1998,<sup>2</sup> CAUSE had been capturing data from its members for nearly 20 years. Early surveys collected data primarily on administrative systems, as the CAUSE mission had not yet broadened to encompass academic computing. Academic computing data were captured in a survey done annually by Charles Warlick of The University of Texas at Austin. Between these two surveys, the IT community had access to some fundamental data about academic and administrative hardware and software. Warlick’s data were published regularly in a print compendium, while summary CAUSE data were published periodically in monograph format.

In addition, the CAUSE data were used to form the basis of an Institution Database (ID) service through which members could request custom reports drawn from the data in six major areas: staffing, budgets, organization, software, computer hardware, and communications. This service was quite popular with members, peaking at 442 custom reports

requested in FY1994–1995 and declining in 1996 after CAUSE stopped collecting data.

The CAUSE ID survey instrument changed over the years as the association’s mission changed, and especially after Warlick ceased to do his survey about a decade ago. Several years earlier, Kenneth C. Green had already begun to disseminate and report the findings of a comprehensive academic computing survey (called the Campus Computing Project) that focused on the microcomputer environment on campuses throughout the country, a survey that has continued to the present (see <http://www.campuscomputing.net>). In addition, several years ago David Smallen and Karen Leach (chief information officer and chief financial officer, respectively, at Hamilton College) partnered to begin a new data collection activity, called the COSTS Project, focused on identifying and capturing the cost of supporting technology services on campus (see <http://www.costsproject.org>). This activity for the most part has attracted the participation of small, liberal arts institutions, but institutions in other Carnegie classes also increasingly participate.

## A Role for EDUCAUSE

Following the merger of CAUSE and Educom, EDUCAUSE developed a number of strategies for delivering a research program to capture and share the data and information members need to plan for and manage IT on their campuses. First, an EDUCAUSE Current Issues Survey was launched in 2000 and has been conducted annually since then (see <http://www.educause.edu/issues>). Then, in 2001, the EDUCAUSE Center for Applied Research (ECAR) was created to respond to members’ increasing requests for applied research and analysis to help campus leaders inform and reinforce their IT-related decisions (see <http://www.educause.edu/ecar>).

Finally, a task force was convened in the fall of 2001 to consider establishing an ongoing core data collection activity similar to the ear-

lier CAUSE ID survey and service. Members of this task force (see the sidebar), who were representative of the diversity of the EDUCAUSE membership, were chosen for their interest and/or expertise in benchmarking, assessment, and data collection and analysis. The group recommended that the association develop a Core Data Service (CDS) that would disseminate a survey to collect data about information technology environments and practices on member campuses. The goal was to develop (1) a new, Web-based, interactive database serv-

ice available to all who complete the survey through which they can access data contributed by their peers to help benchmark, plan, and make decisions about IT on their campus; and (2) an annual summary report about campus IT environments based on data contributed through the survey.

This initiative would not duplicate but rather cooperate with existing IT-related data collection efforts and explore opportunities to partner with other associations in such efforts. Task force members worked with EDUCAUSE staff mem-

### EDUCAUSE Research Task Force Members

EDUCAUSE appreciates the efforts of the following individuals, who provided advice throughout the planning and developmental stages in the creation of the Core Data Service and who continue their work in a policy advisory role.

**Jack Duwe**  
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University of Wisconsin–Madison

**John Gregory**  
Executive Director, Information  
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**Brian Hawkins**  
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Chief Technology Officer  
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**David Smallen**  
Vice President, Information Technology  
Hamilton College

**Donald Spicer**  
Associate Vice Chancellor for Information  
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University System of Maryland

**Ann Strine**  
Vice Chancellor for Information  
Technology  
Pima County Community College District

bers to develop the direction and policies guiding the Core Data Service, and they continue to provide advice and counsel in this regard.

### **CDS Philosophy and Policy**

In the process of developing an underlying philosophy and policy for the new service, it became necessary to define how the data would ultimately be presented to participants. It was the consensus of the task force members that instead of presenting information in the traditional and “safe” aggregated data form, we would ask participants to submit their survey responses in a way that the data available through the interactive service would be identifiable by institution.

The task force believed that the value of being able to select a specific comparison group of similar, peer institutions would outweigh any reluctance to disclose identifiable data. Ultimately, it would be up to the community to decide if they shared this value proposition. The overwhelming number of schools that participated in this launch of the CDS (see Appendix A for a list of the 636 institutions that completed and submitted a survey as of the publication of this monograph) gives voice to that shared vision. Although no individual salary data or other sensitive information were sought, the willingness of the community to share what until now has been largely nondisclosed financial and other information has allowed this service to approach the status of a breakthrough application.

A second major criterion the task force established was that access to the service would be restricted to those who had accepted the potential risk (and the time and effort) to share their identifiable data. Only those campuses that completed and submitted the survey would be eligible to log in to the interactive database site; nonparticipants would not have access.

Because of the identifiable nature of the data, it was also clear that the service and data could be misused if corporations with products to market to higher education had access. Since such vendors could not submit data, their access was restricted by definition. However, since this project is underwritten by EDUCAUSE,

we feel an obligation to provide some overall data analysis to those campuses that did not participate this year, as well as to the vendor community, who are also valuable association members. For this reason, this monograph was created for distribution on a complimentary basis to the entire EDUCAUSE membership.<sup>3</sup>

### **Developing and Implementing the CDS**

Throughout 2002, task force members and staff worked to define various survey questions, test their appropriateness for different types of institutions, and set limits on what information would be sought. After an initial questionnaire was developed, EDUCAUSE was again able to draw upon the membership—nine individuals from demographically different institutions—to beta-test the instrument. The instrument was then modified to meet the aforementioned criteria.

As the instrument was being refined, a second parallel process was begun. From its inception this effort was designed as a *service*, not just another survey. It was hoped that a comprehensive set of tools could be developed to allow service users to analyze the data captured into the database in ways that would allow them to plan, to compare, and to better understand the IT environments of schools they considered their peers (whether competitors or aspirants).

The EDUCAUSE information technology staff, working closely with the first two authors of this monograph, developed filters, sorting tools, graphing tools, and other features to make the interactive database service as useful and valuable as possible to participants. When an initial set of tools was complete, the beta-testers from the first phase once again agreed to test the database service application, providing us with feedback on features that didn’t work, challenges with different browsers, and so forth. This feedback was immensely useful in enabling us to launch a near-faultless interactive database service on May 27, 2003.

### **Appropriate Use of the Data**

Prior to the launch of the interactive database service, all participants were reminded

through both print and electronic communications that their data were about to become viewable to authorized users of the database. The messages also informed participants of the terms and conditions of use, which included the following statements:

- Access to the database service will be restricted to participating campuses, that is, those that have completed the survey, and further restricted to individuals on those campuses who have been authorized by their campus to use the database.
- Access will be provided through an EDUCAUSE username and password that has been issued to authenticated individuals who will be recognized by the Core Data Service system as having the authorization to access the database.
- EDUCAUSE has established a strong copyright and appropriate use policy (see [http://www.educause.edu/coredata/use\\_policy.asp](http://www.educause.edu/coredata/use_policy.asp)) expressly to protect the information of participating institutions. Anyone authorized to access the database will need to “click through” and agree to all of the terms and conditions of use before gaining that access.
- Any campus found in violation of the terms and conditions of use will be penalized by loss of participation privileges in the Core Data Service, and EDUCAUSE may take legal action against any party who accesses or uses database content or data without authorization.
- Authorization to access the database service will not be available to the public, corporations, researchers, agencies, associations, or the media.

Finally, a note about the trust relationships and partnership we enjoy with our corporate members: While we decided to restrict use of the actual data to campuses that completed the survey, thus de facto precluding vendor participa-

tion, some of those who completed the survey were in fact employees or contractors with corporations that had facilities management contracts with a number of campuses. We contacted those companies about this dilemma and proposed a solution, which Blackwell Consulting Services, CampusWorks, Collegis, and SCT graciously agreed to. All four of these corporations agreed in writing not to seek access to the service or survey data, realizing that it was strictly for campus consumption for planning and institutional analysis. Further, they agreed that if any data did come into their hands, they would not use it. It is this level of true partnership that we in higher education are fortunate to enjoy with our corporate community.

### **CDS Methodology**

All EDUCAUSE member campuses that have an IPEDS<sup>4</sup> unit ID number, as well as international member institutions (which do not have such numbers), were invited to complete the core data survey through an e-mail message sent to the primary representative at each member campus in December 2002. We also invited schools that were not members of EDUCAUSE to participate in the Core Data Service if they were members of affinity groups such as the Consortium of Liberal Arts Colleges (CLAC), the Council of Independent Colleges (CIC), and the National Institute for Technology and Liberal Education (NITLE). More than 1,900 campuses were invited to participate in the survey.

In the case of an institution with a Carnegie classification of “system,” individual member campuses within the system were invited to complete the survey, provided they had an IPEDS unit ID number. A multicampus system with a single unit ID was invited to complete the survey as a single institution. System or district offices (except those that had a single unit ID) were not eligible to complete the survey; however, if 40% of the campuses within the system or district completed the survey, the system/district office would be eligible to access the interactive database service.

Access to the survey was provided through an authorization system that gave such access ini-

tially to the individual who was designated as the primary or key representative in the EDUCAUSE records database at that time. That individual was invited to manage the completion of the survey on his or her campus or to designate another individual or individuals to do so.

All data captured by the core data survey were submitted electronically. (See Appendix B for a copy of the survey.) Existing EDUCAUSE information systems enabled automatically matching respondents with their corresponding IPEDS data, so these elements did not have to be entered by the respondent. Based on data reported by U.S. colleges and universities through IPEDS for 2001, the number of FTE faculty, number of FTE students, gross general institutional expenditures, and type of institutional control (public or private) were matched, as was the 2000 Carnegie classification for each institution. All financial data sought through the core data survey were for the fiscal year 2001–2002, so actual rather than projected budgets were captured.

Embedded throughout the Web-based survey were a variety of pop-up and linked help notices, electronic navigation to a glossary of terms and definitions, and other aids to clarify intent and to obtain consistent responses and definitions. A copy of the glossary appears in Appendix C of this monograph.

The Web-based survey was designed to be easy to use. The approximately 50 questions, distributed over five sections of the survey, did not have to be answered in one sitting, as respondents could enter data, save them, and return to the site at another time to enter more data or change data already entered. Once a campus submitted its survey, data could not be changed except by special request in the case of incorrect data having been submitted.

With information derived from running several initial analyses of the data, we identified data that fell outside the range of what might be expected for responses to several of the questions. Surveys that included such data were removed from the database until we could communicate with the member representative who completed the survey to clear the questionable data, after which the survey

was reviewed and resubmitted into the database. This data integrity checking process continued over a period of several weeks, with a final snapshot of data for 621 institutions taken on July 28, 2003, for the analyses included in this monograph.<sup>5</sup>

We decided to report data for this monograph by Carnegie class, combining like Carnegie categories for ease of reporting and for manageable data presentation in the tables. In doing this, we ensured that by combining groups we did not lose important distinctions. Appropriate statistical tests were conducted with a large number of variables in the data to determine if consistent and meaningful differences existed between like categories. Within the Carnegie categories, tests were run to determine if such categories could be combined. In all these sets of analyses, no significant patterns were identified when the size differences in the schools were controlled for. This was also the case when controlling for public versus private control.

Thus, throughout this monograph—with a very few exceptions—the data displays focus on the following combined categories: BA, which combines Baccalaureate Colleges-Liberal Arts, Baccalaureate Colleges-General, and Baccalaureate-Associate's Colleges; MA, which combines Master's Colleges and Universities I and Master's Colleges and Universities II; DR, which combines Doctoral/Research Universities-Extensive and Doctoral/Research Universities-Intensive; and AA, which includes all schools with a classification of Associate's Colleges (community colleges, technical colleges, junior colleges, and other colleges that grant associate's degrees). Definitions of these official Carnegie classifications are included in Appendix D. Our category of "other" includes Tribal Colleges and schools in the Specialized Institutions Carnegie class (such as law schools, health-related institutions, art schools, and so forth), as well as participating international institutions, which do not have Carnegie classes assigned because that is a uniquely U.S. schema.

Keep in mind that the interactive database service component of the CDS allows for view-

ing data in a much more refined way (for example, by size, location, control, specific Carnegie classification), including setting up a customized peer group of as few or as many comparable institutions as the user defines. The purpose of this monograph is to provide aggregate data in simple form for those who do not have access to the service itself; in our analyses we have not tried to provide every possible cut on the data, but rather some summary data that we believe will be useful to the public.

### **The Fallacy of Relying Only on Input Measures**

We began this introduction by proposing that the collection of IT-related data is important to help campuses plan more effectively by virtue of having access to information about IT infrastructure, funding, and management practices of schools similar to theirs. But the problem with IT benchmarks of any kind—and the Core Data Service may be no exception—is that these input comparisons are too often used to convince decision makers to keep pace with their peers and that more is better where technology is concerned.

This effort to “keep up with the Joneses” is ultimately an inflationary pressure that can be dysfunctional, acting as a negative driver. Such pressure and focus on input measures is a fallacy that higher education is finally beginning to recognize. Rather than engaging in an “arms race,” we need to focus on effectiveness—trying to determine which institutions seem to be doing the best job with the fewest resources, with an eye toward understanding the environment and practices that make this possible. Hawkins and Barone made the case for a new kind of assessment model that not only uses input measures but recognizes the even greater importance of evaluating outcomes in higher education:

Although ... efforts [using input measures] may have leveraged additional funds (appropriately or not), they do not include measures that offer insight into how technology is enabling new and better research, whether or how technology

is enhancing teaching and learning, or whether administrative functions are easier for students to access or less expensive to operate. The problem is that in order to effectively measure the success and/or value of an IT investment, we must come to grips with evaluating these functional outcomes of the college or university. However, we have thus far successfully avoided grappling with these difficult challenges of assessing learning outcomes, administrative efficiency, effectiveness, and so on. Without working in tandem with others on campus to identify and evaluate these outcomes and then to understand and describe the enabling role of IT in facilitating these accomplishments (or the failure thereof), we will never be able to reasonably and meaningfully assess the return on IT investment.<sup>6</sup>

Some might suggest that the EDUCAUSE Core Data Service may contribute to the fallacy of overvaluing input measures, but we would counter such an allegation on several fronts:

- First, this kind of application was in very high demand by our members for a host of reasons, among them being able to understand where the market really is and what other campuses are actually doing, in order potentially to *reduce* the pressures on growth and expansion.
- Second, even if legitimate outcome measures *were* available, we would still require input measures to understand the effectiveness equation. Efforts such as the Core Data Service are necessary, but not sufficient, to achieve the ultimate goal of defining standards of optimal achievement of goals.
- Third, the CDS has the potential to dispel the myths surrounding IT funding and investment by presenting detailed data that present a more accurate and reliable picture of campus IT environments.

- Fourth, the service is providing a useful network to help participants find and communicate with colleagues like themselves, who have similar systems and characteristics and who are facing similar challenges, and to learn from them.
- Fifth, the Core Data Service has the potential to promote more congruity in campus IT funding models, provide models for IT organization and support, identify exemplary processes for allocating and expending resources (both human and financial), and overall promote more effective IT management through prompting more widespread tracking of IT expenditures (whether these occur internally or externally to the central IT unit) at higher education institutions.

We believe that the Core Data Service also has the potential to create a different sociometry for the IT community, replacing the casual inquiry to a listserv for information with a more informed method of obtaining comparative data. All too frequently a concerned member will post a query on the CIO listserv asking, for example, “Who out there has or is considering having the library report to the CIO?” A few folks respond, but the results are serendipitous and incomplete, based on who happens to be reading the listserv at the time, whether or not the respondents are from similar types of institutions, and so forth. That is but one question the CDS can answer, filtering responses based on criteria such as Carnegie class, FTE enrollment, public versus private control, and even institutional budget, until a short list of the most appropriate schools for comparison appears. Clicking on any school on the list will link to the EDUCAUSE member directory, where all of the representatives to EDUCAUSE for that campus are listed, including contact information. This facilitation of communication between and among members of the community, based on information about areas of common interest or challenges, has from the beginning been a key objective of the EDUCAUSE Core Data Service.

As illustrated by the excerpt from Hawkins

and Barone, there is a clear and pressing need for higher education to focus on outcome goals, and EDUCAUSE has both been advocating in this arena and partnering with other higher education organizations to advance this agenda. We fully recognize that our Core Data Service is not the endgame, but it is an important part of the total picture. It is our hope that eventually our service will be part of the analysis in determining the most efficient methods and effective practices for achieving important output objectives and goals.

## Notes

1. B. L. Hawkins and C. A. Barone, “Assessing Information Technology: Changing the Conceptual Framework,” in *Organizing and Managing Information Resources on Your Campus*, P. A. McClure, ed. (San Francisco: Jossey-Bass, 2003), pp. 129–145.
2. CAUSE, the Association for the Management of Information Technology in Higher Education, was founded in 1971 as a nonprofit association for colleges and universities, with an initial focus on administrative computing. Educom was a nonprofit consortium of higher education institutions whose mission was to facilitate the introduction, use, access to, and management of information resources in teaching, learning, scholarship, and research. The two organizations merged in 1998 to form EDUCAUSE, whose mission is to advance higher education by promoting the intelligent use of information technology.
3. Primary representatives of EDUCAUSE member organizations receive a single complimentary copy of the monograph, which is available for free download in PDF form on the Web at <http://www.educause.edu/coredata/reports/2002/>. Additional print copies are available for \$10 each.
4. The Integrated Postsecondary Education Data System (IPEDS) is a single, comprehensive data collection program designed to capture data for the National Center for Education Statistics (NCES) for all institutions and educational organizations whose primary purpose is to provide postsecondary education. IPEDS collects institution-level data in such areas as enrollments, program completions, faculty, staff, and finances.
5. The first two authors of this manuscript would like especially to acknowledge the invaluable statistical analyses that were conducted by our co-author, Joshua Madsen. These analyses added rigor and understanding to the interpretation of these data.
6. Hawkins and Barone, *op. cit.*, p. 133.