Foreword

The EDUCAUSE Center for Applied Research (ECAR) was launched on January 1, 2002, to create a body of research and analysis on important issues at the intersection of higher education and information technology. ECAR is fulfilling its mission through a program of symposia and through the publication of (1) bi-weekly research bulletins oriented to senior campus functional executives; (2) detailed studies designed to identify trends, directions, and practices in an analytically robust fashion; and (3) case studies designed to showcase campus activities and to highlight effective practices, lessons learned, and other insights from the practical experience of campus leaders. Since ECAR’s inception, two symposia have been held and more than 40 research publications have been issued.

Enterprise Systems in Higher Education

Each year, EDUCAUSE surveys its members to ascertain major concerns among higher education’s information technology (IT) priorities.1 Across all Carnegie classifications, and colleges and universities of all sizes, survey respondents identified administrative information systems and ERP as the issue foremost on their minds. This is not a surprise. Enterprise system implementation is one of the single largest investments higher education institutions ever make.

Financial, human resources, student, and other information systems provide the foundation on which the business of the higher education enterprise sits. Higher education’s business practices and processes, and the information that guides decision making in large areas of the academy, interact with and derive from these information systems. In turn, these systems and processes interact with college and university administrative culture in ways that determine how

◆ institutional resources are allocated,
◆ faculty and staff interact with an institution’s core business activities,
◆ student needs for information and services are addressed, and
◆ decision makers interact with institutional information to formulate policies and decisions and to communicate within the institution.

These systems are by definition critical to the institution’s mission.

Information technology in the academy traces its origins to the development of accounting systems that ran on very large mainframe computers. These systems were characterized by batch processing of trans-
actions and seemingly interminable reconciliations of all kinds. As the costs of data processing declined, administrative information systems proliferated through much of higher education's business enterprise, with each stove-piped administrative operation eventually getting its time at the system development feeding station. What resulted could be described as a patchwork quilt of stand-alone information systems integrated, when necessary, by periodic batch processes. The annual closing of the institution's books was, for many organizations, a defining element of the staff experience.

Nevertheless, for decades higher education's administrative information systems enabled institutions to pay bills, schedule classes, administer financial aid, pay employees, transfer funds, reconcile account balances, and perform all the myriad activities that make up the modern college or university. Given the remarkable enrollment growth during this period and the extraordinary growth in external regulation and reporting requirements, higher education's original information systems—like the old science buildings that have served institutions well for decades—have been nothing short of remarkable.

Between 1950 and 1980, a few niche vendors served the unique higher education administrative information systems market. As a result, many of higher education's so-called legacy administrative information systems are built on code supplied by firms no longer in the market. Much of the legacy entails either significant software customization and modification of vendor-supplied code, or information systems custom-developed from scratch. Many institutions became adept at developing administrative information systems, and some of these institutions are committed to maintaining and enhancing these systems.

As information technologies shifted from flat files or hierarchical database structures to relational databases, and from host-based systems to client-server and Web-based architectures, commercial software suppliers seized new opportunities to develop administrative information systems that could leverage the new architectures. The enterprise logic of manufacturing systems was added to this competitive and technical mix, resulting in the emergence of so-called ERP systems in the early 1980s.

As Christopher Koch admonishes us, “Enterprise resource planning software, or ERP, doesn’t live up to its acronym.” Koch goes on to advise that the enterprise part of the term is ERP's true ambition. “What ERP attempts to do is to integrate all departments and functions across an enterprise onto a single computer system that can serve all those different departments’ particular needs.”

Technology solutions that would counteract decades of stove-piped systems development attracted the attention of many in higher education. By 1995, this attention would become intensely focused, as the specter of the year 2000 (the Y2K bug) loomed large. Many colleges and universities in the United States, Canada, Australia, and elsewhere decided to invest in renewing their administrative information systems rather than in making these systems compliant with Y2K requirements.

perhaps because of the scale, ambition, or even the audacity of this endeavor, higher education's experience with the renewal and management of its enterprise systems attracted substantial attention in the press. Much of this attention focused on painful and problematic implementations. This reporting in turn made ERP a topic of discussion among institutional leaders and in executive cabinet meetings throughout
higher education. For better or for worse, information technology—through the experience of ERP—has come under the purview of the business officer, the president, and the board of trustees.

As much as any topic intersecting information technology and higher education, this recent renewal of enterprise systems in higher education has suffered from a maelstrom of tall tales, changing numbers, faulty assumptions, omissions, and misstatements. For this reason, it is a topic worthy of research and dispassionate analysis.

Important Contributions

The Promise and Performance of Enterprise Systems for Higher Education is the fourth ECAR research study of 2002. This study is the result of eight months of collaborative research conducted under the direction of Robert B. Kvavik, an internationally known political scientist and research university executive. As associate vice president and executive officer of the University of Minnesota, Kvavik, among other contributions, provided overall executive leadership of that institution’s implementation of new student and human resources enterprise systems. Joining Kvavik and me as primary contributors were ECAR Fellows Paula King and, later, Judy Caruso of the University of Wisconsin–Madison. These individuals made major contributions to this study and to the related case studies. They are acknowledged leaders in planning, developing, and maintaining enterprise technology applications.

At the outset, colleagues at Cap Gemini Ernst & Young joined the ECAR team for this research initiative. John Voloudakis was an integral member of the research team, and Karin Beecher led the collection and analysis of qualitative interview data. Andrew Vaz provided executive sponsorship for this project and applied wisdom and specialized Cap Gemini Ernst & Young resources in the form of regular expert input from internationally known subject-matter experts within the firm. This firm’s depth of talent and knowledge of enterprise systems is impressive.

Judy Pirani of Sheep Pond Associates was also a key member of the team and played both a pivotal role in the qualitative research and a leadership role in the development of the associated case studies. Ed Lightfoot of the University of Washington, one of higher education’s outstanding administrative IT practitioners, conducted research on institutions whose enterprise strategies included the extension of some or all of the campus legacy applications. This strategy let some institutions stake out leading positions in arenas such as Web-based services, data warehousing, and decision support.

Lori-Anne Williams of the University of Minnesota provided, prepared, assessed, and organized the technical and professional literature on ERP. Dr. Darwin Hendel of the University of Minnesota provided expert advice on the statistical analysis of the data. Rob LaFavor of EDUCAUSE provided an invaluable service by preparing and distributing the online survey and forwarding the data to the Minnesota Survey Research Center (MSRC) for conversion to Statistical Package for the Social Sciences (SPSS). Rossana Armson and Anne Caron of the MSRC prepared the survey data for analysis with SPSS.

The Promise and Performance of Enterprise Systems for Higher Education is perhaps the most comprehensive study of these important systems in existence. Thanks to EDUCAUSE members; to Rich Ekman, Russell (Rusty) Garth, and Edward Barboni of the Council of Independent Colleges; and to George Boggs and Margaret Rivera of the American Association of Community Colleges. Nearly 500 colleges and universities participated in a major survey in May 2002. More than 100 individuals participated in
focus sessions, telephone interviews, and campus visits. These contributors are recognized in the study. We cannot thank them enough.

A group of particularly gifted educational leaders gave significant time to reflect on higher education’s collective experience in this area and on the future of enterprise systems in higher education. This group includes Jim Bruce, vice president for information systems and professor at MIT; John Curry, executive vice president of MIT; Paul Gandel, vice provost for information services and dean of libraries of the University of Rhode Island; Chris Handley, executive director of systems at Stanford University; Weldon Ihrig, executive vice president of the University of Washington; Dave Lambert, vice president and CIO of Georgetown University; Ed MacKay, vice president for planning and budget at the University of New Hampshire System; Marilyn McMillan, associate provost and CIO at New York University; Polley McClure, vice president and CIO at Cornell University; Jenny Rickard, dean of admissions and financial aid at Bryn Mawr College; Fred Rogers, vice president of university relations for Student Advantage; Dan Updegrove, vice president and CIO of the University of Texas at Austin; and Richard West, executive vice president and CFO of the California State University.

This study should be read in conjunction with a number of case studies on the topic of enterprise systems in higher education produced by ECAR. Higher education is fortunate to enjoy a professional IT community possessed of a great generosity of spirit and commitment to the common good. ECAR benefited enormously from this generosity during visits to numerous campuses while producing case studies that illustrate insights, techniques, and practices to be shared and imitated—and pitfalls and mistakes to be avoided. This sharing of successes and failures is almost without parallel in higher education and represents an important source of experience for the reader.

We are indebted to many people, but we would like in particular to thank our hosts David Ernst, assistant vice chancellor of the California State University Office of the Chancellor; Mojdeh Mehdizadeh, vice chancellor of the Contra Costa Community College District; Norma Holland, associate vice president of Indiana University; Ruth Constantine, vice president of Smith College; Steve Relyea, vice chancellor of the University of California, San Diego; Robert Kvavik, associate vice president and executive officer of the University of Minnesota; Weldon Ihrig, executive vice president of the University of Washington; Dan Updegrove, vice president of the University of Texas at Austin; Ed Meachen, associate vice president of the University of Wisconsin System; Randall Thursby, vice chancellor of the Board of Regents of the University System of Georgia; and Vic Albino, executive director of the Washington State Community and Technical Colleges Center for Information Services. These individuals and their campus colleagues were extraordinarily generous with their time.

ECAR is a new venture. Its success as a research center and as a business enterprise depends in large measure on its reception by EDUCAUSE members and on their participation. As always, EDUCAUSE members have shown great confidence in us and have demonstrated their support by subscribing to ECAR despite a tough economic climate for higher education in 2002. These members understand that particularly in tough times, investments in good research and analysis can save money in the long run.

ECAR has been especially fortunate to enjoy the support of an unparalleled group of sponsors. While Cap Gemini Ernst & Young, Datatel, Hewlett-Packard, PeopleSoft,
and SCT provided significant financial resources in 2002 to enable ECAR’s research, they are more than financial sponsors. These companies truly believe that impartial applied research on critical issues in higher education makes for a more informed marketplace of both sellers and buyers. They are committed to understanding their customers and to helping them make the most effective decisions related to their technologies and products. Most impressively, these sponsors understand deeply and respect the importance of intellectual independence in the marketplace of ideas.

Finally, as we have toiled in this field, other ECAR fellows have been managing other elements of the ECAR program. Robert Albrecht, Mary Beth Baker, and Diana Oblinger are remarkable colleagues, and higher education is lucky to have them in its midst. The staff of EDUCAUSE under the leadership of Brian Hawkins never fails to amaze. EDUCAUSE is an organization that truly takes pride in excellence and strives for greatness in its performance. It is an honor to work with this group.

Richard N. Katz

Endnotes

3. Ibid.