

Administrative Information Systems

1. How will the role of e-commerce affect the future of higher education?

Michael R. Vitale, Professor, Centre for Management of Information Technology, Melbourne Business School, University of Melbourne: Students already expect to be able to do many routine commercial transactions electronically, and they will carry that expectation into their interactions with institutions of higher education. Like commercial organizations, institutions stand to benefit from the flexibility and speed of electronic commerce, and they should continue to adopt “e-commerce” as appropriate.

Ronald Bleed, Vice Chancellor, Information Technologies, Maricopa County Community College District: E-commerce has exploded and will drive major changes in many of the business and student service functions of the college. One development that may have the most profound impact is when students bid on their tuition and fees through college auctions.

John F. Chaney, Former administrator, Universities of Oklahoma, Illinois, and Colorado, and Founding father, CAUSE: E-commerce, doing business on the Internet, encompasses a wide range of university business functions. For institutions that include administrative systems in the fabric of strategic, academic, and economic goals, e-commerce will provide opportunities to improve services to students, parents, faculty, researchers, and administrators. Improved services and reduced administrative costs *can* make it possible to provide additional funds for teaching and research. The principal challenge is overcoming debate to embrace technology.

Larry Conrad, Assistant Vice President and CIO, Office of Technology Integration, Florida State University: E-commerce is enormously important. We need to electronically exchange information with all our customers and business partners. For example, most institutions have been utilizing EDI (Electronic Data Interchange) for years to exchange transcript information via SPEEDE. We need to reengineer other key business processes as well—for example, purchasing and personnel—to utilize work-flow, document-management, and EDI technologies that can reduce paper flow and eliminate the issue of “place.”

Susan J. Foster, Vice President, Information Technologies, University of Delaware: E-commerce is but a small, transactional part of the future of higher education. As Martin Clague recently noted, it is e-business, not e-commerce, that will provide care, services, opportunity awareness, information, education, and community to constituents—whoever they are, wherever they may be, and whenever they are ready.

James E. Morley Jr., President, NACUBO: If “e-commerce” here covers all types of activities over the Internet and other electronic means, it may not be much of an overstatement to say that e-commerce will have as much impact on higher education as did the invention of the printing press. E-commerce will be the basis for solutions that fill the gap between the need to produce education and services more widely at lower cost and the demand for education at all levels.

2. Can colleges and universities afford to continue operating unique and institutionally customized administrative systems?

Vitale: For a few colleges and universities, distinctive administrative arrangements are such an important part of their educational offering that the expense of operating a unique administrative system is worthwhile. Year-round operation, instituted at Dartmouth College in the early 1970s to permit expansion of the student body without adding physical facilities, is an example. For most colleges and universities, however, the extra cost is very unlikely to pay off. For them, standardized, off-the-shelf systems are a better choice.

Blead: The support for a unique system cannot be sustained or justified by most colleges, and new ways of collaborating must be found. The movement toward application service providers, systems of colleges, consortiums, or outsourcing will gain momentum.

Chaney: I think not. Maintaining institution-unique systems involves lengthy implementations, development on the run, and much of the technical staff’s time. Administrative systems should operate as a part of and in support of policy and strategic objectives. Until institutions learn to drive system design and implementation from the executive level, overcome tendencies to have new systems do business the old way, and change policies that deny the effective use of information systems, discontent with administrative systems will continue.

Conrad: Yes, but with a relatively few number of flexible vendor packages and with more convergence in business practices. Each institution has its own personality, which its business processes need to reflect. Reengineering business processes to conform to some “canned” approach is very difficult. However, institutions are moving toward a best-practices approach, which means the differences between them are converging over time. New, flexible information systems packages allow a fair amount of tailoring without extensive programming changes.

Foster: Object-oriented languages and Web protocols are making it possible for institutions to adopt standardized yet flexible systems that can be tailored to their culture as well as offer opportunities to reengineer processes. There are increasing opportunities for collaboration among institutions to share their knowledge and their customizations in a technologically standardized environment.

Morley: No, colleges and universities cannot continue to believe that each of the more than three thousand campuses is so distinctive that administrative systems must be hand-tailored. Solutions must be found to reduce the cost of functions that are fundamentally similar administratively. Campus leaders must make decisions, which have been avoided up to now, concerning the standardization and streamlining of administrative operations to be accomplished with other, similar institutions.

3. With Y2K behind us, will institutions remain committed to maintaining and enhancing their administrative systems?

Vitale: Y2K has shown many colleges and universities just how badly they have been managing IT. Some of these institutions are likely to conclude that they no longer want to spend time and money on the non-core area of administrative systems. It seems likely, therefore, that the movement toward standardization and outsourcing of such systems will continue.

Bleed: Institutions will be less committed to enhancing administrative systems because the costs to do so will now compete with other college priorities. Y2K was understood and feared by most people, but the need to change systems to newer technology is a politically tougher sell.

Chaney: Yes, for those institutions whose view of the future embraces (1) best-of-breed systems, (2) available technology, (3) changing economic environments affecting the affordability of education, and (4) increasing economic competitiveness. Technology will provide incentives for institutions to continue improving systems—systems that make it possible for educators to deliver instruction, for students to learn, and for researchers to provide scholarship and that provide improved services to customers (students, faculty, parents, staff, alumni, and administrators).

Conrad: Well, of course. Without continued maintenance and enhancement, any complex application system will lose its value to the institution over time as rules, laws, and processes change. Our dependence on our institutional information systems is too great to just let these systems degrade. Is there another Y2K-like issue out there that will require this kind of attention? It’s hard to say absolutely, but there’s nothing on the horizon at the moment.

Foster: There is no doubt that Y2K has been the recent catalyst to implement major new systems at many colleges and universities. However, unlike in the old days, in the future the flexible nature of information technology tools and environments will permit “painless” planned incremental enhancements.

Morley: Yes, institutions will see sufficient benefits of the value of good systems to encourage continued development.

4. Have campuses come to grips with reengineering their business practices?

Vitale: Some campuses certainly have reengineered, but the colleague who compared reengineering a university to moving a graveyard was not far wrong. One of the enduring lessons from the now-faded BPR (business process reengineering) movement is that leadership from the top is needed to keep an institution moving along the often-painful reengineering journey. Without leadership at the top, an institution is well advised to put BPR aside in favor of more conservative approaches to change.

Bleed: Although I have been very excited about reengineering business practices, I believe that colleges, with their built-in employee-centric biases, will have a very difficult time reengineering.

Chaney: In general, no! Many institutions continue to have trouble changing their internal systems culture. Unless and until chief executives and academic officers lead the way, reengineering business practices will stumble and falter. Technology and technicians should not lead the way (beware a system that threatens to drive policy and processes). Policy-level decisions that embrace technology and systems to reengineer administrative processes will help curb overhead, achieve significant savings, and provide expanded resources for academic budgets.

Conrad: In my opinion, no. As I noted earlier, reengineering is difficult. I applaud the institutions with the fortitude and leadership to take this on in any kind of systemic fashion. For many institutions, however, I believe the political exposure associated with reengineering processes for a recalcitrant customer department or campus is too great to pursue anything other than evolutionary change. I also think it's very difficult for the IT group to drive a reengineering effort.

Foster: Some more than others, I imagine. But I think most have taken on formal or informal reengineering models that fit their cultures and have effected change in areas they deem important. One needs only to browse the home pages of colleges and universities to see these changes reflected in their customer orientation and customized nature.

Morley: Generally, no. The culture of colleges and universities remains one of retaining department autonomy. This is exacerbated at many public institutions. The silos still need to be broken down and more training needs to be provided to staff to accomplish process improvements.

5. How will campus-based administrative systems support students who are engaged in distance or distributed education?

Vitale: In many ways, supporting students at a distance should actually be simpler, since issues like schedule clashes and library hours are no longer a concern. On the other hand, if distance or distributed education includes self-paced learning, notions like "class list" and "semester" are also obsolete.

Two separate and focused systems may be required, rather than one combined system. Obviously this gets complicated if the same student is studying in both ways at once!

Bleed: Inadequately, because distance education requires a much more flexible approach than traditional administrative systems provide. Distance learning is not necessarily tied to semesters, requires multiple starting and ending times, must have alternative forms of student support, and needs communication pathways with the students.

Chaney: Administrative systems and the role of technology in the pedagogical approaches of faculty are becoming more firmly rooted. The Internet and Web-based student services systems, integrated with financial and human resource systems, are enabling the development of distance and distributed education. Technology and enterprise systems make it possible to remove time and place constraints, open a wide range of student choices, and thus enhance a change from an institution-centered delivery of instruction to a learner-centered emphasis.

Conrad: We simply must remove the issue of "place" from the student services equation. We need to look at virtually every service that affects students and find a way to deliver that service via the Web. This is not easy, particularly in light of my answer to the previous question, but it must be done if an institution has any serious distance learning aspirations.

Foster: The same way they support residential students. This is why it is important that as colleges and universities develop or select portal services and instructional management systems, they recognize the integrating role of information technology and do not perpetuate service stovepipes.

Morley: Such systems as online registration and book ordering are examples. Tuition bill delivery and payment is another. Libraries will also be connected. Students will be able to obtain academic counseling on-line. In summary, nearly every activity that students now do on campus is open to enhancement by administrative systems and e-commerce.