Checking the Radar:
Survey Identifies Key IT Issues

by **James Roche**

At its meeting in October 1999, the EDUCAUSE Current Issues Committee proposed that EDUCAUSE conduct a survey of its membership to capture information about the most pressing issues or challenges in higher education information technology and resource management. For several months, the committee worked with the EDUCAUSE staff to develop this survey. In designing it, the committee wanted to examine the issues from two perspectives: resource critical and relatively resource independent. Within the resource critical category, the committee wanted to distinguish between the simple resource issues (dollars and staff) and those that require a lot of IT leadership attention because of their political nature. To give respondents a way to view the issues through different lenses, we asked four separate questions and allowed respondents to react differently when asked about the same 33 issues from four perspectives:

- strategic
- emerging
- demanding the most attention from the chief information officer
- demanding expenditure of the most institutional resources (human and financial)

In February EDUCAUSE sent an e-mail to the association's 1,241 primary representatives and asked them to participate in a Web-based survey, to which a link was provided. Within two weeks, we received responses from 464 of the representatives—a return rate of slightly more than 37 percent. We analyzed the respondents to see how representative they were compared to the entire group invited to participate. In checking such demographics as institution Carnegie Class and size, we found that in nearly every instance the percentages for the respondents were within a decimal point when matched against the population from which they were drawn.

The survey consisted of a list of 33 issues (see Table 1) generated by the Current Issues Committee. Respondents were asked to choose the top three issues in response to each of four questions (see box). The analysis showed that these four questions produced some notable differences in the way members viewed the importance of an issue.

The numbers presented in Table 1 for each issue represent an aggregate percentage based on the total number of times an issue was picked as important in response to the question. The issue's ranking was then based on this aggregate.

Four Survey Questions

The Current Issues Committee members thought it would be more useful to look at the critical issues by considering their long-term effects on the decision-making process as well as how the issues manifest in short-term or immediate planning. Questions No. 1 and No. 2 address planning and anticipating needs for the institution's future success, and questions No. 3 and No. 4 are related more to present concerns.

If we think of the questions in terms of owning a house, the first two relate to long-term improvements: changes or additions to the structure; anticipating the effects of growth or changes in the neighborhood; and predicting what and when major costs might arise (new furnace, hot water heater, roof). The third and fourth questions are more analogous to daily upkeep and immediate,

The Questions

1 Which of the issues are most important for your campus to resolve for its strategic success?

2 Which of the issues have the greatest potential to explode in the future in terms of their strategic impact?

3 Which of the issues are you as an IT leader or administrator spending most of your time addressing?

4 On which of the issues is your campus spending the most human and/or fiscal resources?

Table 1
How the Issues Ranked by Question

This table shows the list of items respondents were asked to select from and the resulting percentages for each. The number in parentheses indicates an issue's top-10 ranking for each of the four questions.

	Question 1	Question 2	Question 3	Question 4
Advanced networking	5.5 (9)	6.1 (4)	2.7	5.9 (5)
Benchmarking/assessment	1.2	0.4	1.2	0.0
Business process engineering	2.9	1.5	1.5	2.5
Data management	2.7	1.5	2.3	3.3 (10)
Desktop computing management	2.2	0.6	3.7	10.0 (3)
Digital libraries	1.0	2.8	0.6	1.1
Digital records management and preservation	0.1	0.7	0.2	0.4
Distance education	7.9 (3)	12.5 (1)	3.7 (8)	3.3 (10)
E-commerce	2.3	5.8 (6)	0.7	0.4
Electronic learning environments	7.5 (4)	8.9 (2)	4.1	3.3 (10)
Enterprise administrative systems (ERP)	6.5 (5)	2.2	8.3 (6)	14.9 (1)
Faculty development, support, and training	10.2 (2)	4.0 (10)	4.3 (7)	4.0 (9)
Funding IT	10.5 (1)	6.1 (5)	8.4 (4)	2.6
IT organization and delivery models	3.6	2.3	8.4 (4)	2.5
IT staffing and human resources management	6.0 (6)	5.2 (8)	10.9 (1)	5.1 (6)
IT strategic planning	5.8 (7)	2.1	10.0 (2)	1.3
IT training campuswide	1.7	1.2	1.1	1.2
Information policy development	0.8	1.2	3.5 (9)	0.1
Intellectual property	0.7	3.9	0.7	0.1
Java	0.0	0.0	0.1	0.1
Knowledge management systems	0.6	1.0	0.1	0.2
Middleware/network security	2.3	2.0	1.5	1.0
Network technologies (basic)	0.2	0.0	1.8	9.0 (4)
Network technologies (emerging)	2.2	7.0 (3)	1.9	2.2
Online student services	5.7 (8)	5.7 (7)	3.0 (10)	5.1 (6)
Outsourcing	0.1	0.9	0.2	0.4
Portals	0.8	2.0	0.5	0.1
Software site licenses	0.3	0.3	0.1	1.4
Standards for hardware and software	0.3	0.4	1.0	0.7
Student computing	2.5	2.6	2.0	4.6 (8)
Support services demands	3.7 (10)	4.5 (9)	8.6 (3)	10.3 (2)
Vendor relations	0.0	0.1	0.4	0.1
World Wide Web management and policy	1.9	3.9	1.4	1.6
Other	0.4	0.4	1.0	1.0

short-term costs and repairs for the home: mowing the lawn, cleaning, fixing the broken baluster on the deck, and so on.

What follows is an analysis of the responses overall, followed by a breakdown based on respondents' institution size and type (public or private). Although the same dozen or so items consistently show up in the critical groups, there are some notable differences in the way the items rank between questions and how they rank among institutions of differing size and type.

Responses Overall

As Table 1 shows, there were distinct differences within the top 10 items for each of the four questions. What IT leaders are spending their time on is not necessarily where their institution is spending the most human and/or fiscal resources. And the issues that are most important today to resolve for an institution's strategic success are not the same as those that have the greatest potential to explode in the future.

Question No. 1: Which of the issues below are most important for your campus to resolve for its strategic success?

Respondents named funding IT and faculty development, support, and training as top issues that need to be resolved for their campus's strategic success, accounting for more than 20 percent of the total responses. Distance education, electronic learning environments, and enterprise administrative systems (ERP) round out the top five issues for this question. Together these five items account for 42 percent of the responses. The next five items were IT staffing and human resources (HR), IT strategic planning, online student services, advanced networking, and support services demands, accounting for another 27 percent, mak-

ing the total for these ten issues nearly 70 percent of responses.

The Current Issues Committee has chosen to focus on the top 10 issues in this set of responses as the most strategic in nature (see "Top 10 IT Challenges of 2000" on page 10 as well as the Current Issues section of the EDUCAUSE Web site at www.educause.edu/issues/issues. html). It should be no surprise that many of these items show up in the top 10 for the other three questions as well, but not with the same distribution as they have in question No. 1.

As is obvious from the table, there are quite a few issues that got little or no consideration by the respondents in terms of their value to the strategic success of the institution. Vendor relations and Java were at the bottom of the list, followed closely by outsourcing, digital records management, basic network technologies, software site licenses, and

standards for hardware and software. Portals, intellectual property, information policy development, and knowledge management systems each received less than 1 percent of the responses. While it's likely some of these ranked low because respondents were convinced that they are not items of strategic concern, others, such as portals and knowledge management systems, may have received a lower than expected ranking simply because the terms represent concepts that are either ambiguous or were seen as a subset of larger issues that were ranked higher.

Question No. 2: Which of the issues below have the greatest potential to explode in the future in terms of their strategic impact?

There is little question that distance education is the issue that has the greatest potential to explode in the future in terms of its strategic impact across all institutions. While this issue is not commanding as much of the IT leader's time or the institution's resources (questions No. 3 and No. 4), there is obvious concern that it is a challenge to be reckoned with in the near future. Distance education was ranked the top issue for question No. 2, and an issue with strategic impact, coming in third for question No. 1. It's not inconceivable that in a year or two distance education will have migrated toward the top of the list for question No. 3 and/or No. 4 as well.

Electronic learning environments is another issue that has the potential to explode with respect to its strategic impact. Although these learning environments have a direct connection to distance education, they also will affect technology needs in classrooms on campus. In fact, in many cases the on-campus classroom will become totally integrated into new electronic learning environments, which will have a profound impact on the IT community and its support of the educational process.

By their very nature, the third and fourth issues for question No. 2 are likely to be perennial favorites on the "potential to explode" list. Emerging network technologies and advanced networking define the challenges that IT staff will face in delivering the goods with respect to many of these other topics, especially distance education and electronic learning environments.

Question No. 3: Which of the issues below are you as an IT leader or administrator spending most of your time addressing?

So where are IT leaders currently spending their time? The two most time-consuming issues today are IT staffing and human resources management and IT strategic planning, which account for more than 20 percent of the responses to this question. IT staffing has been a significant problem for several years, and with recent predictions of more than 840,000 high-tech jobs going unfilled this year, the problem is not likely to go away soon.

IT administrators are also spending their time on support services demands, funding IT, IT organization and delivery models, and enterprise administrative systems (ERP). There is a close connection among these top five issues: A shortage of good IT per-

sonnel challenges even the best administrators when it comes to strategic planning, organizing the department, managing successful distribution of IT resources, implementing enterprise resource plans, and meeting support services demands.
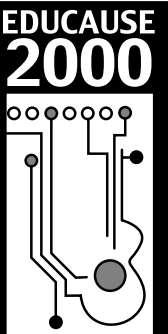
Question No. 4: On which of the issues below is your campus spending the most human and/or financial resources?

While IT staffing and planning issues are capturing a lot of the IT administrators' attention, these areas are not necessarily where the campus is spending most of its human and/or fiscal resources. According to our respondents, enterprise administrative systems (ERP) is by far the issue capturing the most financial and human resources on campuses today, not surprising given the escalating ERP implementation costs reported by many institutions. Support services demands and desktop computing management are also capturing institutional resources as are basic network technologies. The third and fourth issues in this group are interesting because they were in the top five only for this question. This indicates that while managing the desktop computing environment and providing basic network technologies may not be the current or emerging

Table 4

Top Five Responses to Each Question by Institution Size and Type

QUESTION No. 1: The issues most important for campuses to resolve for strategic success.

Small	Medium	Medium-Large	Large	Private	Public
Faculty development, support, and training	Faculty development, support, and training	Funding IT	Funding IT	Faculty development, support, and training	Funding IT
Funding IT	Funding IT	Electronic learning environments	Enterprise administrative systems (ERP)	Funding IT	Distance education
Distance education	Distance education	Distance education	Advanced networking	IT strategic planning	Faculty development, support, and training
IT strategic planning	Electronic learning environments	Faculty development, support, and training	Faculty development, support, and training	Electronic learning environments	Enterprise administrative systems (ERP)
IT staffing and human resources management	Online student services	Enterprise administrative systems (ERP)	Electronic learning environments	Distance education	Electronic learning environments

QUESTION No. 2: The issues with the greatest potential to explode in the future in terms of strategic impact.

Small	Medium	Medium-Large	Large	Private	Public
Distance education	Distance education	Distance education	Distance education	Distance education	Distance education
Electronic learning environments	Electronic learning environments	Electronic learning environments	E-commerce	Electronic learning environments	Electronic learning environments
Online student services	Network technologies (emerging)	E-commerce	Electronic learning environments	Network technologies (emerging)	E-commerce
Funding IT	Advanced networking	Network technologies (emerging)	Intellectual property	Funding IT	Network technologies (emerging)
Network technologies (emerging)	Online student services	Intellectual property	Network technologies (emerging)	Advanced Networking	Advanced networking

QUESTION No. 3: The issues IT leaders or administrators are spending most of their time addressing.

Small	Medium	Medium-Large	Large	Private	Public
IT staffing and human resources management	IT staffing and human resources management	IT staffing and human resources	Enterprise administrative systems (ERP)	IT staffing and human resources management	IT staffing and human resources management
IT strategic planning	Support services demands	IT strategic planning	Funding IT	IT strategic planning	Enterprise administrative systems (ERP)
Support services demands	IT organization and delivery models	Funding IT	IT organization and delivery models	IT organization and delivery models	IT strategic planning
Enterprise administrative systems (ERP)	IT strategic planning	IT organization and delivery models	Advanced networking	Support services demands	Funding IT
Funding IT	Enterprise administrative systems (ERP)	Enterprise administrative systems (ERP)	Electronic learning environments; IT staffing and human resources management; IT strategic planning (tie)	Funding IT	Support services demands

QUESTION No. 4: The issues campuses are spending the most human and/or fiscal resources on.

Small	Medium	Medium-Large	Large	Private	Public
Support services demands	Enterprise administrative systems (ERP)	Enterprise administrative systems (ERP)	Enterprise administrative systems (ERP)	Enterprise administrative systems (ERP)	Enterprise administrative systems (ERP)
Enterprise administrative systems (ERP)	Support services demands	Desktop computing management	Advanced networking	Network technologies (basic)	Support services demands
Desktop computing management	Desktop computing management	Support services demands	Support services demands	Desktop computing management	Desktop computing management
Network technologies (basic)	Network technologies (basic)	IT staffing and human resources management	Network technologies (basic)	Support services demands	Advanced networking
Advanced networking	Online student services	Advanced networking	Desktop computing management; Electronic learning environments (tie)	Online student services	Network technologies (basic)

strategic issues, respondents are well aware of the tremendous resources being spent to maintain these basic services.

Institution Size and Type

You might expect institutions of different sizes and types to be facing different challenges. We analyzed the data accordingly, and matching demographic data in the EDUCAUSE database to respondents, we were able to divide respondents into four size groups—small, medium, medium-large, and large (see Table 2)—and two types, public and private (see Table 3). The top five issues in each of these categories are listed in Table 4 to allow easy comparisons.

For question No. 1, notable differences among institutions of various sizes include the absence of distance education from the top five issues of large institutions and of ERP from the top five issues of small institutions. For question No. 2, it appears that small and medium-sized institutions are more concerned about online student services while the medium-large and large institutions reported e-commerce and intellectual property as potentially explosive issues. For question No. 3, while IT leaders at small, medium, and medium-large campuses were spending the most time on IT staffing and human resources, this barely cracked the top-five list for the largest

institutions, for whom ERP was the No. 1 attention-grabber. For question No. 4, there was more agreement overall than differences, with all sizes of institutions concerned about support services demands, ERP, desktop computing management, and networking (basic and/or advanced). Medium institutions are also spending large amounts of resources on online student services, medium-large institutions on IT staffing and human resources, and large institutions on electronic learning environments.

Overall there are far fewer differences between public and private institutions, and while these differences are interesting, they are not surprising. The top five issues to be resolved for the institution's strategic success were mostly the same for both public and private institutions with the exception of IT strategic planning (private) and ERP (public). Top five emerging issues were mostly the same except for funding IT (private) and e-commerce (public). IT leaders are spending the most time on pretty much the same issues except for IT organization and service delivery models (private) and ERP (public). Finally, both public and private institutions are spending the resources on most of the same issues except online student services (private) and advanced networking (public).

Final Tally

Results of the EDUCAUSE Current Issues survey provide a means for IT administrators to see where they stand compared with their colleagues as well as give a glimpse of what issues are driving the industry and what issues are on the horizon. In a business where change is the order of the day, there will always be emerging issues that capture our attention. In the short period between when the survey was completed (February) and this report, the Napster controversy exploded on the scene, escalating interest in intellectual property issues, and by the time you read this there may well be several other IT topics that are today's news. We encourage you to check the EDUCAUSE Current Issues Web site for the latest developments in such areas. We plan to do a Current Issues survey annually to track how issues and concerns evolve and hope that you will take the time to respond next year to increase the value of the survey results. For more information on this project, including complete tables of the numbers reported here, please see www.educause.edu/issues/survey2000.html. *e*

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