Current Issues for Higher Education Information Resources Management

The CAUSE Current Issues Committee is responsible for proposing a list of current or developing issues and trends that are important to the future of information resources management and use in higher education. The following topics have been identified by the committee as key emerging or ongoing issues. We encourage articles for CAUSE/EFFECT on these and related topics.

Information Policy in a Networked Environment

Our institutions are learning to deal with the explosive growth of networking, connecting every part of the campus community and linking to colleagues and information resources across the country and around the world. Many of the issues colleges and universities are facing today relate to this proliferation of campuswide networks and Internet connectivity—free speech, censorship, student information privacy, ethical standards, and other information environment issues. Many institutions are moving toward establishing policies to deal with these issues. Such policies must be appropriately balanced between competing interests; to meet the needs of students and faculty who are participating in learning and discovery processes using network-based interactions, policies must promote the development of a community that is as rich, satisfying, and effective as the traditional academic community. Some issues that need to be addressed include:

- How do you know a policy is needed?
- Must information policy be comprehensive, or can it be developed in response to specific needs?
- What should an information policy contain?
- What is the best mechanism for creating policy, and who should be involved?
- Is an “acceptable-use” policy needed?
- How should institutional values impact policy (for example, open access versus privacy)?
- How can information policy be effectively communicated to the academic community?
- Should access to electronic directories be limited to on-campus only?
- Can the use of institutional computers be limited to certain activities or purposes?
- What do you do when the FBI arrives?

Support for Distributed Computing

As we make the transition from the classical model of mainframe computing with dumb-terminal access to a distributed model where greater intelligence is moved to the desktop, we are greatly increasing the complexity of the computing environment and pushing a significant portion of the costs of computing to the customer. This is happening at a time when, in most cases, central computing costs are not declining at a proportional rate, if at all. It is difficult to even define a “standard” client configuration for the desktop, and as a result, the complexity of the desktop usually exceeds the capability of the customer when problems occur. Departments, both academic and non-academic, typically have not had increased operational funding to cover the required technology support costs, yet they continue to purchase more and more hardware and software, making the need for technology support even more critical.

It is very difficult for the central information technology organization to provide all of the support needed by campus customers. Instead, technology support needs to be a partnership between the central support unit and the unit closest to the customer. If local units do not share in the solution to the technology support problem, the probability of a successful solution is low. Many implementation questions exist, among them:

- Should some central support staff be housed in departments or should individual departments provide their own support?
- Since central organizations cannot provide all of the support needed, should they outsource some of that support? If so, who should pay for it, the central organization or user department? Which services can successfully be outsourced?
- Are new budget paradigms needed to address the ramifications of distributed computing?

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If you would like to suggest topics to be added to this list, send an e-mail message to the Committee’s discussion list: issues@cause.colorado.edu
What is the role of information resources leaders on campus? Should we lead, follow, facilitate, and/or partner?

Integrating Planning for Information Resources with Institutional Planning

In theory, it is a basic; it is what we all say we will do. But in implementation, we find it often doesn't happen. Both planning and information resources professionals grapple with the issue. However, there seems to be a model emerging from the small and community college sector where institutions have successfully incorporated planning for information resources—information, technology, and services—into their overall institutional plan. The common threads among these cases are that: the overall institutional plan guides all planning-related activity at the institution; information resources are an important priority for the institution (and noted as such in the plan); the president or chancellor actively leads the planning effort; the plan has explicit goals, activities, timelines, and benchmarks for assessing progress; and the plan is continually being refined. Given this, the issues become:

- What is the role of information resources leaders on campus? Should we lead, follow, facilitate, and/or partner?
- How do we assist our institutions in moving to a process model that works?
- If information resources aren't identified as an important priority for our institution, how do we facilitate a change in thinking?
- What more do information resources professionals need to learn about the broader context of our institutions and the environment of higher education in order to shape our planning efforts?

Benchmarking Information Technology in Higher Education

Information resources organizations in institutions of higher education are showing a renewed interest in benchmarking. Benchmarking is a means for an institution to continually measure and compare against itself over time and against recognized leaders, the core processes and services critical to higher education in terms of costs, quality, and performance, with the goal of improving these. Through the HEIRAlliance (a collaboration of the Association of Research Libraries, CAUSE, and Educom), CAUSE is participating in a National Benchmarking Council for Higher Education established by the National Association of College and University Business Officers (NACUBO) to promote awareness and effectiveness of operational performance measurement. Benchmarking needs to include the following:

- Identify the key processes affecting performance
- Measure these processes
- Compare performance with “best in class” practices, then develop a strategy to equal or exceed these
- Focus on main opportunities for improvement that have the most impact

Issues for consideration include:

- How do we develop a benchmarking implementation and management strategy?
- How do we define appropriate performance measures for core processes and services, in terms of both results and how they affect other processes and services?
- What level of performance is our goal? What quality and costs of services do our customers want or need?
- How does benchmarking work with other approaches to performance improvement, such as total quality management (TQM) and business process reengineering (BPR)?

Development and Deployment of Integrated Digital Libraries

The digital library is much more than a highly automated traditional library. It is a library where much of the content is in digital format and is delivered to patrons electronically. As a purveyor not just of text, but of graphics, audio, and video, the digital library is face to face with some of current technology’s greatest challenges. Publishers of all kinds—on campus, at other institutions, and in the traditional publishing industry—are making scholarly resources available in digital formats that librarians must find appropriate ways to deliver. Librarians in the digital context adopt such tools as electronic full-text databases, LAN-based CD-ROM jukeboxes, and World Wide Web search engines in order to meet their patrons’ information needs. More than ever they must be familiar with non-traditional resources physically located outside the confines of the library stacks (but only milliseconds away in cyberspace).

- How can we apply methods from the library and information science disciplines to a broader array of institutional information resources, and help shape the evolution of library practices (organization, description, retrieval, delivery, and preservation) to a digital world?
- The credentials of the average reference librarian are very different from those of the average college or university “Webmaster.” What is the role of the college or university library in defining and managing the electronic information “face” the institution presents to the world through the Web?
• How do we extend the cataloguing, organizing, searching, and accessing standards and policies of the library to other campus information resources?

• What are the ideal relationships between practitioners of librarianship and information technology specialists?

Achieving Widespread Integration of Technology in Teaching and Learning

The transformation of teaching and learning with technology promises to accelerate over the next five years. As the necessary technology and support become more readily available, faculty will integrate World Wide Web, multimedia, desktop video, and other new technologies into the teaching and learning process to serve students on campus, within commuting distance, and at great distances from the institution. Other providers will enter and compete for educational services business.

Issues that need to be addressed include:

• What is the role of information technology in the transition from teacher-centered to learner-centered instruction?

• What is the information resources organization’s role in this transformation—leader, supporter, participant in the creative process?

• How do we help our institutions to approach this in a way that effectively plans for and leverages the investments that will be necessary in technology, process, and pedagogy?

• Is there a model for effectively supporting faculty in using technology in their teaching and incorporating it into the learning experience of their students?

• How do we address the policy issues and challenges raised by distance education?

Expectations Rising Faster than Budgets

As demand for information resources escalates, it becomes imperative that colleges and universities address the need to increase budgets to meet demand. What is the best way to do this? Most institutions have a tough time with this issue because of the flat budget approach they take, which means that if the institution feels compelled to invest more in information resources, then something else must be curtailed. Dealing with priority setting is essential, and generally this is something that must happen outside the information resources organization.

Information resources managers need to demonstrate that demand for information technology and services is rising, using measures that will be meaningful to executive and/or budget officers: growth in the number of courses (with enrollment) using electronic information resources; number of faculty with hardware and software that need to be supported; number of students arriving with computers; number of data connections, rate of increase, size of backlog; number of packets of information transmitted over the network; number of computing cycles being used centrally; number of electronic mail accounts; and so forth. In addition, we need to demonstrate value for money. How has the institution benefitted from resources invested? Specific success stories may be more compelling than general data of the type listed above, and relating dollars spent to specific categories that executives can readily understand may be more meaningful.

A second component of this issue is managing expectations. How can information resources managers balance the services we promise against the resources allocated—and make it clear that we cannot take on more than those resources permit? Information resources managers must decide, in conjunction with the budgeting and planning process, what customer expectations can be met, addressing specific service levels and budget allocations. This level of service must then be communicated officially to the campus community (through official reports, plans, strategy documents, newsletters) and unofficially (through staff interactions with users).

Diversity in Information Resources Management

The issue of “diversity” encompasses more than looking at the ethnic origin or sex of personnel in our information resources organizations. We also need to consider diversity among our customers (students, faculty, staff, and the broader community), with respect to how we package and market our products and services in a way that best meets different technology adoption styles and paces. Diversity can include different learning styles, different types of interaction in teams, different levels of willingness to cope with change, and so forth.

Acknowledging and leveraging different viewpoints to enrich our work environment and better meet the needs of the institution can be good. Not managing the diverse work environment toward common aims can be detrimental.

• Why do we care? Different perspectives brought together constructively can lead to better outputs—we don’t end up doing the same old thing the same old way. Our workforce is a reflection of society (though not necessarily statistically equivalent—which can be a diversity issue of under-representation of minorities in information technology).

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to manage technology evolution. It highlights the need to not just set campus standards, but to manage them over time. It also creates new urgency and opportunities to partner with vendors. In this scenario, lead vendors would be asked to play a greater support role, manage the transition from one generation of computer to the next, and participate in developing longer-term campus technology architectures.

Conclusions

The new economics of information technology demand new financial strategies to manage them. The tenets of a new financial game plan must include: (1) a commitment to change the conventional wisdom to recognize the new economic realities, (2) a clear resolution to abandon legacy-based technical and economic assumptions, (3) a shift toward better economic analysis of the investment decisions being made, and (4) an institutional resolution to develop new financial strategies that are consistent with the economic realities of the information era. Two of the most challenging strategies will be the commitment to spend a greater portion of the institutional pie on technology, and the need to manage technology life cycles proactively by focusing on replacement strategies and recycling.

While chief information officers, financial officers, and academic leaders will have to come together to develop and implement these strategies, it is the role of CIOs that is likely to change the most. When viewing information technology systems in aggregate, the CIO’s ability to bring information technology to bear on the organizational imperatives of his or her institution might be the single most important factor in determining how technology is valued.

It is not surprising that chief information officers have a difficult job when it comes to delivering a set of services whose value is difficult to quantify and hard to measure directly. To make the information technology function a valuable asset to their respective institutions, CIOs should view their job as adding value to critical areas. They need to know the critical success factors inherent in their institution’s plans and be able to link information technology to these plans to create value chains where they are most needed.

As strategists, CIOs need to provide more than just the technology infrastructure. They need to be actively involved in developing the business plans and financial strategies that close the gap between today’s realities and tomorrow’s promises. It may prove to be more important to have a chief information technology strategist than it is to have a chief technologist.

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- What can we do? There are several things we can do, including: (1) build an action plan for promoting understanding and support for a diverse environment, (2) train people in how to recognize diversity and how to work with the different perspectives brought together in a diverse work environment, (3) perform cultural audits to provide data on your organization and then use that data when managing the organization or hiring new personnel, and (4) seek ways to diversify the workforce where such change can better lead to achieving organizational goals.

- What are the risks? One risk is that with a broadened view of diversity we may lose some emphasis on the critical issues of under-represented groups. Another is that faced with other pressures (changes in affirmative action legislation, budgets, changes in technology, shake-ups in higher education), we may not give this issue the attention it needs.

➤ Electronic Data Interchange (EDI)

Electronic data interchange is a set of transaction templates defined by the X.12 standard that occur in a secure environment and permit application-to-application transmission of information. While several hundred templates exist for business purposes, EDI for education has only recently become available. For example, EDI permits the transfer of grades from a junior college to a four-year college or university. To date, the use of EDI by education has lagged far behind the private sector, where some companies only accept electronic transactions; for example, Ford Motor Company will only do business with suppliers that can process transactions by EDI. Certain services, such as credit card purchases for business purposes, may only be available if EDI is used to process the billing and payment transactions.

- What issues must be addressed for EDI to be effectively used in education?
- Do we have an accepted definition of EDI?
- What are the most likely applications of EDI in higher education?
- How will security and privacy be addressed?
- What are the costs of doing EDI? What are the savings?
- Does EDI require a value-added network (VAN), or can the Internet be used in place of a VAN? If so, how?
- How will the secure World Wide Web protocols affect the use of EDI?

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