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The Integration of Library, Telecommunications, and Computing Services in a University

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EXECUTIVE SUMMARY

Today many IS departments and individuals are attempting to transform from technical groups and specialists to user oriented functions and customer support personnel. The major responsibility of the traditional IS department has evolved from the development, operation, and support of technology to the management of information. In the university environment, managers of information have traditionally been librarians. Librarians have increasingly become users of electronic information resources. A merger of the library with computing and telecommunications brings together technical expertise with information management skills.

This case study describes the process of integrating the library, computing and telecommunications services in a University. Within the last two years, a new manager in the newly created position of Chief Information Officer merged these diverse organizations. We will describe the techniques used during the first year to foster communication, develop new strategic direction, and create and implement a new organizational structure. We will focus on establishing leadership, the organizational change and operational planning process, and the initial implementation of the new organizational structure. We will describe some of the problems and obstacles that needed to be addressed, including new management's establishment of trust and control, creating an environment for change, managing change amid strong time pressures, human resource issues, and resource constraints.

It is expected that many of the issues that arose during this merger will be addressed by organizations in other industries as they attempt to evolve from technical IS groups to more customer oriented organizations. Today it is imperative that IS functions provide client support, which requires different types of skills from those traditionally nurtured among technical experts in traditional IS departments.

BACKGROUND

The University is an independent, coeducational institution located in northeastern United States. Approximately 5000 undergraduate and 1500 graduate students are enrolled in programs in the arts and humanities, business, education, engineering, natural and social sciences. The University employs approximately 1400 faculty and staff.

The University's mission is to advance learning through the integration of teaching, research and service to others. It is committed to integrated learning, promoting the discovery, integration, and

communication of knowledge. The University's mission statement embraces a commitment to the intellectual, physical, social, ethical, and spiritual development of all members of the academic community.

To support the discovery and integration of knowledge, the University built extensive library resources, including a collection of over 1 million volumes. The advent of the campus wide network enabled the library to supply all users with electronic as well as traditional services. In 1995 the university library staff numbered approximately 60, having just been significantly reduced from 75. The organization of the libraries in June 1995 is shown in Appendix A.

The University also built extensive computer and communications resources to support its mission. The computing center served the needs of students, instructors, researchers, and administrative users. A total of approximately 90 people worked in this department, whose structure is shown in Appendix A.

SETTING THE STAGE

The library and computing center at this university, as at most universities, evolved separately, with different roots and cultures. We describe here the evolution of these two groups, similar integration efforts at other schools, and the University's decision to integrate these functions.

Library Services vs. Computing and Communication Services: Evolutionary Differences

Historically the library's primary function has been to provide information to faculty and students who are in the pursuit of knowledge. Initially when computers were introduced into universities, their primary purpose was the storage and dissemination of data. Whereas data are simple observations of states of the world that are easily structured, captured, quantified, and transferred, information is data endowed with relevance and purpose which requires a unit of analysis, needs consensus on meaning, and requires human mediation (Davenport, 1997). The role of the librarian has generally been to aid the user in finding meaningful information that can be transferred to knowledge, information that has been reflected upon. As computers have become more pervasive and user oriented, they have evolved as a source of information rather than simply data. As a result, data processing centers have evolved to encompass information management.

While the library and computing and communications services both provided support for information gathering and processing, there were significant cultural differences within these professions. These differences were embedded in different approaches to problem solving. For the computing people, new technology was often the key to solve problems because it enabled more efficient and effective processing of data and information. For the librarians, the information itself provided answers.

Gender differences, the nature of the educational training, and the problems that were solved by librarians as opposed to computing personnel contributed to cultural differences. The library profession is predominately female while computing is male dominated. At the university, the library's director and four out of six associate directors were female. In Computing and Telecommunications, only one associate director was female and she was two levels down within the hierarchy. The demarcation between exempt and nonexempt staff was much greater in the library as compared to the computing center, most probably because of the greater importance of formal education in the library.

Librarians were generally excellent oral and written communicators. They used their skills in meetings where they joined together to plan and discuss various issues. The computing people had strong analytical skills and analyzed and solved problems often without as much discussion. Whereas the librarians worked best in a very collegial atmosphere, computing people often stressed doing the best individual job, i.e., developing the best program, solving the problem quickest, etc.

The librarians interacted primarily with faculty and students. They were comfortable working with novice users, often providing general solutions to meet the needs of large groups. Computing people entered the profession when communication with external constituents was minimized through the segregation of the computing center. "Many computer people were attracted to the IT

profession because they were happier communicating with machines than with people." (Caldwell, 1996) As the computing environment evolved to a more distributed model, computing people generally supported users with some degree of technical literacy, providing one-to-one interactions and customized solutions. Communication between the computing center and telecommunications personnel and faculty and students continued to be fairly limited to help desks.

Not only were the cultures of library and computing different, but both professions had different subcultures as well. In the library, there were differences between public services and technical services librarians. Media specialists had their own background and differences. In computing, subcultures existed between academic and administrative computing, between hardware and software support personnel, and between user services and programmers or technicians (Hirshon, 1998).

These departments also had very different structures. One year prior to her retirement, the Director of Libraries flattened her organization, resulting in the six associate director positions shown in Appendix A. The computing and communications groups remained more hierarchically organized. There was no comparability in the management titles.

Mergers at Other Universities

During the mid to late 1980s a number of universities integrated libraries and computing. Few of these mergers survived. They did not effectively merge the departments below the top level because the technology had not yet advanced to enable full integration. However, in the 1990s, with the advent of the World Wide Web, the need to access large amounts of interactive information, replacement of administrative systems with enterprise information systems, and increased incorporation of technology in the curriculum, many schools revisited the need for integration. Universities pursued several different integration models ranging from total integration to limited integration of one or two key service areas such as help desk, or joint management of some projects. Of the approximately 100 schools that have merged their functions, more than 80% integrated within the last five years and only 17% have attempted full integration (Hirshon, 1998).

The University's Decision to Merge

In 1994, the University's president decided to merge the library with computing and communications services. The vision was to integrate information systems, resources, and services in support of the teaching, learning, and research missions of the university. The decision was based upon the following recent trends in the environment:

- Library resources were increasingly electronic.
- Technical computing personnel were increasingly required to support end user computing as new technology enabled the transformation from centralized to distributed information processing and users became more technically capable.
- The objective was to manage information, not just systems.
- Both were support functions, providing information resources to the academic community.
- Content and technology were merging.

Most members of the community believed that this was a reasonable strategy. There were some who thought that economic considerations were driving the decision as well, suggesting that the ability to reduce administrative costs was a driving factor. The opportunity to merge was created when the Director of Libraries retired and the Assistant Vice President for Computing and Telecommunications returned to the teaching faculty.

CASE DESCRIPTION

This case will focus on the *process* of organizational change. It describes the establishment of new leadership, the six-month process of planning for the new organizational structure, and the initial implementation of that structure, including the importance of training personnel to meet the new requirements (Agarwal et al., 1997; Keen, 1991). A time line of major events is shown in Appendix B.

Leadership

In 1994 a search committee was constituted to select a Chief Information Officer (CIO). Since this was a newly created position, the committee not only selected a candidate, but also formulated the job responsibilities and qualifications detailed in Figure 1. Since this was a new type of position, it was recognized that it would be difficult to find an individual with experience in all areas: computing, telecommunications, and libraries. This was recognized as a potential problem, as members of the group whose background differed from that of the new leader were concerned that the new CIO might not be as supportive of their areas of operation. However, given the fact that few universities had previously combined these areas, candidates with experience in any one of these areas were considered.

Figure 1: Chief Information Officer Responsibilities and Qualifications

Responsibilities

- Integrate library and computing services and resources in support of the teaching, learning, and research missions of the university.
- Create an organizational structure and a working environment that encourage creativity, cost effectiveness, and change.

Qualifications

- Possess a vision for incorporating innovative information technologies in higher education.
- Understand the changing paradigm in scholarly communication.
- Understand the use of information technologies to support instruction, research, and administration.
- Understand the administration and operation of libraries, computing, and telecommunications services.
- Experience and expertise in at least one of the areas: libraries, computing, and telecommunications services
- 7-10 years of increasingly responsible management experience.
- Demonstrated commitment to participative management style and open decision making.
- Excellent interpersonal and communication skills.
- An advanced degree in a relevant field.

After reviewing the qualifications of numerous candidates, an individual was chosen who provided a vision for the use of information technology in higher education. This candidate understood the opportunities to improve support of the teaching, learning, and research missions of the university presented by the merger of the information management resources of the university. The candidate understood the challenges of merging the different cultures and offered a management style that was expected to recognize and deal with these challenges. The successful candidate had previous experience primarily in the area of library management with a background in library technology.

The new Chief Information Officer came on board in late 1995. The first weeks were spent meeting the staff, with scheduled interviews with every professional and offers to meet any individual support staff member. In addition, the CIO visited every department and held group department meetings.

Interim Management

Given the significantly different organizational structures of the two component units, an interim management group was established, consisting of 15 individuals pulled from the management of the existing organizations. Since the library had six direct managers, the CIO went down to

the next reporting level to provide similar representation from computing and communications. This resulted in a group of nine managers from the computing and communications group, shown in Figure 2. The purpose of the initial management group was to help the CIO manage solely during the transition for the six-month planning process, after which a new management would be established in a new organizational structure.

Figure 2: Interim Management Team

Associate Director, Library Technical Services
Associate Director, Library Automation
Associate Director, Library Special Collections
Associate Director, Library Reference Services
Associate Director, Library Access Services
Associate Director, Library Media Services
Director, Computing User Services
Director, Administrative Systems and Telecom
Associate Director, Computing and Networking
Associate Director, Computing Facilities
Associate Director, User Services
Manager, Computer Operations
Manager, Network Facilities Support
Manager, Systems Programming
Manager, Academic Programming

The interim management group met twice a month throughout the six-month planning process. Several participants noted that in early meetings, library and computing people typically sat separately and talked among themselves before meetings. Gradually, however, the managers began to mingle and communicate with others in different areas.

Interim Organization: Getting to Know Each Other

The combined organization was composed of approximately 140 people. At its inception, many people did not know the responsibilities of their colleagues in the other component units. Several initiatives were instituted to enable personnel to become better acquainted. First, in January each group was asked to provide an overview presentation of their area. Everyone was obligated to attend these sessions. Some consideration was given to making this a competition, asking groups to compete for the best presentation, to elicit more excitement about the process. However, it was thought that this might be unfair because some groups, by the nature of their jobs, had much higher presentation skills than others, e.g. media productions. Attendees believed that they learned some new things by attending these group orientation meetings. While these sessions provided a forum for presenting information, they did not necessarily engage people in cooperative efforts nor was this its purpose. If the group were to coalesce, they needed to have opportunities to work together. A retreat and cross-functional planning team structure were instituted to accomplish this task.

Planning for Organizational Change: The Retreat

Prior to instituting any organizational change, an intense planning process was begun. This was necessary to create motivation for change or "unfreeze" the set of different assumptions, values, and beliefs in the library and computing cultures (Schein, 1997). A one-day retreat was scheduled in early 1996. The entire organization was invited; approximately one half attended. The focus of the retreat was to develop mission, vision, environment, and values statements, which were discussed in a series of small group sessions.

Planning for Organizational Change: Working Teams

The major goal for the new CIO was to develop a plan for an integrated organization, and thereafter to restructure the functions to implement that plan. To develop the plan, four working teams were set up to focus on technology, information, financial and staff resources, and client services. In addition, a lead team coordinated the activities of all the teams. The lead team was made up of the four team leaders and four at large members. Each of the four working teams included 8-10 people. Each team was managed by a member of the interim management group and included at least one other member of that group. Teams were organized so that there could be a fresh look at the problems and extensive charges were prepared for each team to outline some issues. Figure 3 shows the leadership and composition of these teams.

Figure 3: Planning Team Composition

Lead Team
Leader: Chief Information Officer
Members: Team leaders (listed below), 4 at-large members from computing and libraries

User Services Team
Leader: Associate Director, Computing User Services
Members: Libraries (5), Computing and Telecom (3)

Information Services Team
Leader: Associate Director, Library Technical Services
Members: Libraries (4), Computing and Telecom (4)

Financial and Staff Resources Team
Leader: Associate Director, Library Reference Services
Members: Libraries (3), Computing and Telecom (4)

Technology Services Team
Leader: Associate Director, Computing and Networking
Members: Libraries (2), Computing and Telecom (7)

To identify appropriate people throughout the organization to participate in this planning process, the interim management group was consulted. They were asked to identify non-parochial individuals in the organization who would have the vision to help move the combined organization forward. Teams were to mix individuals who represented the different subcultures within the combined group. The CIO consulted with others concerning team appointments, but ultimately decided who would lead the teams. As unanimity in such cases is impossible, in some cases, the selections were inconsistent with some of the interim management group recommendations.

After the work teams were initially formed, there were some changes to the composition of the teams to incorporate further advice from the interim managers. In some cases, a team lacked experience in an area assigned to that team. Changes were made to add or change team members so that "experts" were assigned to each team, albeit not always the ones the group might have selected. Several people felt that lack of inclusion of a particular person who was considered an expert in a particular area caused a lot of unnecessary time to be spent in team meetings. However, this was purposeful, as change was a primary objective, and teams had the opportunity to call upon additional expertise as needed.

The team structure directly involved approximately 25% of the organization. Some who were involved found that time pressures were very uncomfortable because they could not get their regular

jobs done, which raised stress levels. On the other hand, those who were not involved were anxious because they did not know how the outcome would affect them. The team structure seemed to have accomplished several objectives:

- It brought together individuals with little prior relationship and got them to work well together.
- It brought together different and oftentimes new perspectives for looking at issues, getting people working intensively together in a cooperative environment while developing intra-organizational alliances not previously in place.
- It got staff involved in the planning process so that they would "own" the resulting strategy and organizational structure, building a base line of support for the outcome.
- It provided an opportunity for the new CIO to observe the actions of personnel in order to identify future leaders in the new organization, providing a testing ground for personnel.

Communication during the Planning Process

Throughout the planning process, there was an attempt to provide open communication both internally and externally. Traditional channels of communication were altered. The sensitivities of the process coupled with time constraints lead to the structuring of much of the communication.

Teams met from January through April to develop the strategic plan draft. During the process, there was an attempt to make this process more open via listservs and discussion groups providing everyone with input and access to the deliberations. As work progressed, however, information became more filtered. For example, as the teams got closer to defining organizational structure, there was concern that sharing too much raw information might cause panic among individuals. This sensitivity prompted the limitation of team postings to minutes that eliminated some of the detail, but resulted in the promulgation of significant rumors.

As the planning process evolved, traditional flows of communication were no longer satisfactory. With multiple teams working on issues simultaneously, managers could not provide answers to their own staff if they were not on certain teams. Channels of communication were altered. During this period, many individuals missed the camaraderie and felt a loss of community when, for example, librarians no longer met together, but they also bemoaned the significant amount of time they were spending in planning meetings. However, given the ambitious schedule and requirements on individuals, there was little time to mourn this loss. Open meetings and informal brown bag lunches were held periodically throughout this six-month process to share information. In fact, some members of the organization felt that there was too much communication and, in fact, they were overloaded with information.

During this time period, external communication was limited. Focus groups were brought together to gather input from faculty and students. Although these sessions were short (typically 1-1.5 hours) and very structured, many attendees noted that this had been the first time that they had been asked for their opinions. Some participants felt that the structure limited their ability to provide information on real problems but some structure was essential if useful information was to be gathered in a short time period.

Centralization of Internal Business Functions

During this time period, the CIO centralized the internal business functions that were previously in three separate structures into a central location to track and control financial resources. With a large and complex budget, the CIO believed this was necessary to manage effectively. Some managers who were now required to go through a central process to acquire needed items resented this act because they perceived that local support was removed. This caused some hard feelings during a time period when trust was still being established and staff were still very anxious and fearful about any type of change.

The Process of Introducing the New Organizational Structure

In mid April an open meeting was held to discuss the strategic plan draft. After the first draft of the strategic plan was sent out, each lead team member was given a week to propose the rough

outlines for a new organizational structure that would advance the strategic plan. Extensive discussions ensued within the lead team, and there were many iterations of the structure. In May, the first draft of a new organization was unveiled at a brown bag lunch. No individuals were named on the chart, only the broad outlines of the organizational structure. The purpose of this meeting was to allow people to ask questions. As anxieties were very high, the meeting was referred to facetiously by some staff members as a "body bag," rather than a "brown bag" lunch. Most individuals were trying to determine whether and how they might fit into this new structure. A concerted effort was made to use new terminology to communicate whenever possible. The intent was to help break away from the old patterns of communication and ideas and create a common language for the new integrated culture (Schein, 1997). This also caused some confusion and discomfort. In fact, one participant commented that "it is a bit like a puzzle to see where you fit in".

Within two weeks after this lunch, the organization chart was revised and the CIO identified the high level managers who would populate it. All others were given a formal opportunity to request in writing the types of jobs they desired and their placement in the organization by completing a job request form developed by University Human Resources. It was recognized that not everyone could be matched with his or her desires, but ultimately a substantial percent (90%) were placed in one of their top three choices. The newly identified managers selected people for their organizations after reviewing these forms. There were some cases where two managers wanted the same person in their group, which resulted in some discussions of what was best for the entire organization.

The New Organizational Structure

Major recommendations from the planning process were the need for improved management of technology in classrooms, and the creation of client service teams. It was recognized that client needs varied broadly across campus, from sophisticated researchers requiring heavy library resources and computing power, to those with very basic needs. The organizational structure that evolved to address these needs combined elements of the old structure with new requirements (Appendix C).

The old "glue" behind the organization that was retained in the new structure was the familiar functional organization or infrastructure group. What was radically different was a new matrix user (client) services organization. Each of the colleges was assigned a team of consultants in four areas: computing and networking, library assistance, instructional technology support, and administrative information systems support. While each consultant's primary assignment was to a College team, s(he) also was to report to a "functional team" leader who headed each of these four functional areas. For some individuals, these secondary assignments created conflicting loyalties.

Personnel and Job Changes

A key issue was finding personnel to fill new positions, particularly in the new user services area. In many cases, these jobs required very different skills from previous job responsibilities. Particularly among computing people, there was a concern that technical expertise was no longer a valued skill, but that management now primarily valued the ability to support and work with users. For some, this change was not welcome. Not unexpectedly, some individuals, particularly computing personnel who were most mobile in the job market, left to find employment elsewhere where they could continue to apply primarily their technical skills. Shortage of personnel also lead to the sharing of consultants between more than one college, which was an additional cause of stress.

All job descriptions were re-written within two months to reduce job ambiguity and insure that no tasks would fall between the cracks. This was particularly important in the creation of the new user services organization. The university Human Resources department audited all of the jobs. As a result, some salary levels were changed. Approximately 25% of all staff saw an increase in salary while a small percentage, about 5% of staff, received decreases in salary because managerial responsibilities were reduced.

Physical Changes

By early the next year, employees began to move their offices so the new teams would be

physically housed together. User services teams were consolidated by their college rather than by their functional departments. For some individuals, this physical move was as upsetting as the organizational change. It meant giving up "homes" to which they had become accustomed. Moreover, it meant physically leaving behind traditional sources of information that had supported functional capabilities. Some individuals experienced a loss of identity as they were moved away from their functional colleagues, and were concerned that they would not continue to learn and grow professionally.

Technological Change

Another item that had a big impact on the ability to implement these changes was the need to undertake simultaneously major technological changes. In particular, beginning in the second half of 1996, installation of Windows 95 began across campus. This occurred at the same time that the organizational changes were put into place. Some users blamed the new organization for difficulty in meeting this challenge, but it should also be recognized that in a technology-based organization there is always a major technological change that needs to be implemented.

Implications for Users

When the organizational change went into effect, it took some time for users to learn whom to contact in the new IR organization. Many users had to change old habits, as they were accustomed to contacting specific individuals in the old departments to obtain help. Users now were provided with specific contacts for their colleges. Initial user response was a function of the quality of their assigned user services team. Users who were assigned consultants who were primarily dedicated to their college and who possessed a good customer service ethos saw service improvements. Some users complained because service was not as promised. In some cases the clients may have been getting used to better service. In other cases, they may have been promised but did not receive improved service because individuals in the new structure were either not yet trained to provide it or were attempting to perform several jobs at the same time. The need for providing additional training for the new jobs, particularly in user services, became very clear. It is not possible to just change organizational structure; people need to be trained to work within a new organization (Agarwal et. al., 1997). As staff moved into their new positions and had to keep old operations going at the same time, there was not time to get all people trained at once. Some training occurred, but more was needed.

CHALLENGES/PROBLEMS

We will now review some of the specific problems and challenges that arose through the planning and implementation of the new organizational structure. Throughout the planning process, major challenges were associated with new leadership and the aggressive time schedule. Choices often had to be made that would satisfy some people and address some concerns, but would leave others unsatisfied. The challenges of implementing the new organizational structure included human and financial resource issues.

Leadership: Establishment of Trust

This traumatic change was instituted under the direction of a new leader. New leaders are often brought in from the outside to create change. They often have a "honeymoon" period to do so, but for the change to be accepted new leadership must build trust during this period. Initial respect is based upon the experience and credentials of the new leader. In this case, the computing people, in particular, were skeptical about the new CIO because of the perceived lack of computing experience. Since these people expected that he would not become involved in technical decisions, any efforts by the CIO to do so were considered "micro-management."

To help build trust not only of the CIO but throughout the organization, the collaborative and collegial planning process was put into effect. However, some staff believed that the CIO did not have the opportunity to learn about the capabilities of all managers and staff prior to the constitution of the interim management group and the working teams. Since the management structures in the library

and computing organizations were so different, the CIO initially created a larger and more inclusive management group rather than attempting to select a few from the existing structures. Several staff felt that, while this larger group enabled more personnel to have input, the size made it more difficult to build trust. As previously noted, the CIO's decision to centralize the internal business functions prior to the completion of the planning process also contributed to further difficulty in establishing trust.

Aggressive Time Schedule

The aggressive time schedule led to numerous challenges. A very ambitious and strict time line was established, announced, and adhered to. At the January 1996 retreat, the CIO announced that the organization would definitely change, and that all organizational changes would be announced within 6 months. It was felt that the schedule should be fixed not to exceed six months to minimize the stress of the traumatic changes, resolving doubts and ambiguities for staff as quickly as possible. However, the schedule needed to allow time for staff to participate while continuing with the work of the traditional functions. This meant that stress levels for these six months were exceptionally high. Staff were continuing with their own jobs and working very diligently on the new team assignments. There was often not a lot of time for exploration of actions. For example, when the management team was chosen, there was little explanation of its composition. This led to initial feelings that further input from staff might not be considered.

While the communication was intended to be very open, and very often was, the aggressive time schedule and the high stress level made open communication more difficult. Some staff found too much to review and too little time to digest all the material. Moreover, it was felt that there was too much at stake to publish everything in such a short time period. Opportunity for small group discussion was limited because of the time pressures. Some staff felt uncomfortable about their instructions and the level of detail required in the process, while others felt that they wasted time on issues that went away after the new organizational structure was announced. Communication with external constituents primarily occurred through job interactions, structured focus groups, and an open request to the campus for feedback on the published draft plan.

Resources

Other major challenges of the new organization were related to resources, both human and financial. The new organization required major changes in human resources. A change management plan and a human resources program were imperatives. The human resources plan included new job descriptions, performance measurements, and some training, but more training was required. "Changes in roles and performance appraisal criteria have to be supported by individuals who are appropriately trained to fulfil these roles. It is not simply a matter of calling an erstwhile systems analyst a project consultant if she is not equipped to handle the new job." (Agarwal et. al., 1997)

Existing staff had to learn to redefine long standing culture assumptions and develop new behaviors that would be reinforced by the external environment (Schein, 1997). A few technical personnel were immediately moved directly into user services positions. Some personnel did not have the training while a few others did not have the interest to redefine their own values and focus on user services. These staff revered their technical skills over their service skills. With a limited number of staff from which to choose, it was not always possible to place each person into their ideal position, but it was necessary to select those willing to acquire new skills for these new roles, provide training in new skills, and mentor those individuals.

The initial implementation was exacerbated by the lack of personnel. There were some vacancies to be filled when the new organizational structure went into effect, caused in large part by the significant university reduction in staff. These vacancies were not filled as quickly as hoped. In the meantime, some individuals performed more than one job, limiting their abilities to deliver user services and mentor others. There were also some shortages in critical areas with technical people assigned to cover areas for which they did not have all the requisite skills, which created some user frustrations. However, as these positions were filled, the new employees were generally better oriented toward their jobs than the people who were already on staff and had to adjust from their

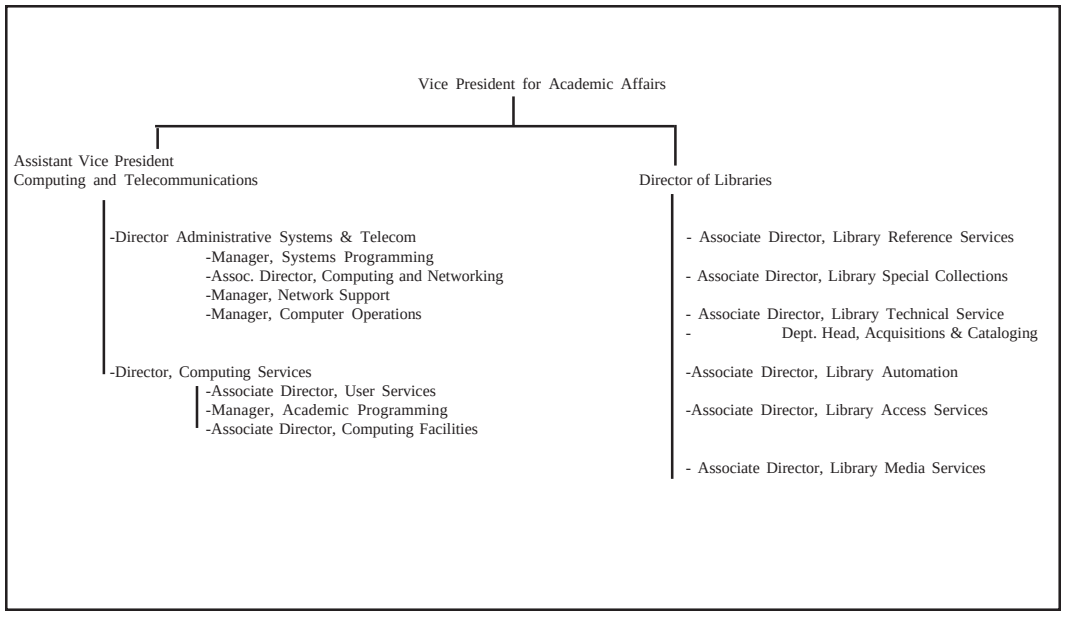
previous to their new positions.

In this case, increasing hardware and software demands had to be evaluated along with demands for new staff in a period of constrained financial resources. This was further exacerbated by a complete turnover of the senior management of the University, including the person to whom the CIO reported. These changes occurred in 1997 just after the new information services organization was implemented, and as individuals were beginning to develop new operating processes to test the effectiveness of an organizational structure that was driven by the strategic vision of the former top management of the university. Transitions at the top levels of management often alter institutional priorities and allocation of financial resources. As this top management turnover occurred sequentially and not at one time, it made it particularly difficult to secure commitments for additional resources.

SUMMARY

While this case illustrates the planning process used by a university to reorganize its library, computing, and telecommunications functions, it has applicability to information systems organizations in many other industries who are developing a new vision to provide end user support while supporting infrastructure investment. Most information systems organizations need to re-deploy human capital to allow for careers in business services and support as well as development support and technical services (Keen, 1991). Organizations must develop human resource strategies to develop new skills while providing opportunities to advance with traditional skills. IS functions who want to evolve from a technical oriented to a customer oriented approach must employ change management processes and provide training for client service functions.

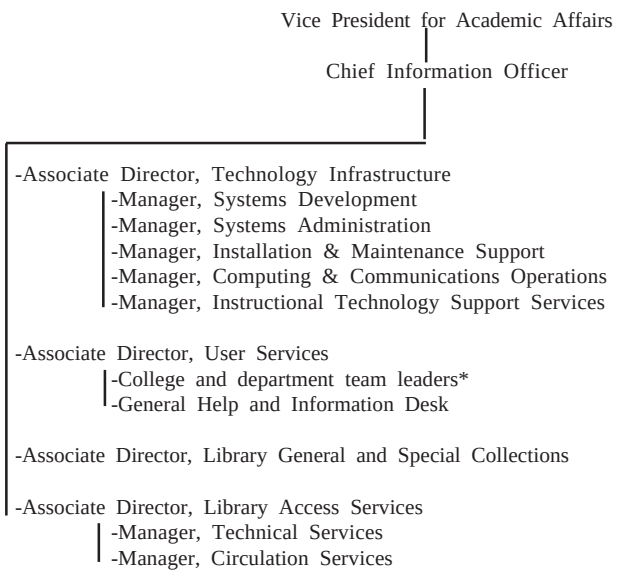
Appendix A: June 1995 Organization Chart



Appendix B: Schedule of Events

1994	Director of Libraries announces retirement and Assistant Vice President of Computing and Telecommunications announces intention to return to faculty Search committee established
Fall 1995	New Chief Information Officer arrives Interim management group established
First quarter 1996	Group orientation meetings The planning retreat Working teams established Working team meetings Client focus groups Centralization of internal business functions
Second quarter 1996	Open meeting to discuss strategic plan draft Discussion of proposed organizations Brown bag lunch unveiling first draft of broad organizational structure Revised organization chart released High level managers identified Staff completes job placement request forms
Third quarter 1996	Implementation of new organizational structure begins Installation of Windows 95 begins
1997	Physical relocation of employees

Appendix C: July 1996 Organization Chart



FURTHER READING

Huber, G., Glick, W., *Organizational Change and Redesign*, Oxford University Press, 1993

Knights, D., Murray, F., *Managers Divided: Organisation Politics and Information Technology Management*, Wiley, 1994.

Stoddard, D., Jarvenpaa, S., Business Process Redesign: Tactics for Managing Radical Change, *Journal of Management Information Systems*, Summer 1995, Vol. 12, No. 1 81-107.

Zuboff, S. *In the Age of the Smart Machine*, Basic Books, 1988.

REFERENCES

Agarwal, R., Krudys, G., Tanniru, "Infusing Learning into the Information Systems Organization," *European Journal of Information Systems*, 1997, 6, 25-40.

Caldwell, B., "We are the Business," *Information Week*, Oct. 28, 1996, p. 36.

Davenport, T. *Process Innovation: Reengineering Work through Information Technology*, MA: Harvard Business School Press, 1993.

Hirshon, A., "Integrating Computing and Library Services: An Administrative Planning and Implementation Guide for Information Resources," CAUSE Professional Paper Series, #18, Boulder, Colo: CAUSE, 1998.

Keen, P., *Shaping the Future: Business Design through Information Technology*, MA: Harvard Business Review Press, 1991.

Schein, E., *Organizational Culture and Leadership*, San Francisco: Jossey-Bass Publishers, 1992.