THE PERCEPTION OF EFFECTIVENESS IN MERGED INFORMATION SERVICES ORGANIZATIONS: COMBINING LIBRARY AND INFORMATION TECHNOLOGY SERVICES AT LIBERAL ARTS INSTITUTIONS

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THE PERCEPTION OF EFFECTIVENESS IN MERGED INFORMATION SERVICES ORGANIZATIONS: COMBINING LIBRARY AND INFORMATION TECHNOLOGY SERVICES AT LIBERAL ARTS INSTITUTIONS (171 pp.)

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Several higher education institutions have merged their libraries and computing centers/IT units to form a merged information services organization (MISO). It is believed that with the rise of information technology a natural convergence of these units is taking place and integrated organizations will best provide support in these areas. As information technology and libraries represent two of the largest, if not the largest support organizations on most campuses, it is important to understand how well merged units are succeeding. This descriptive, exploratory study is to ascertain the effectiveness of merged information services organizations at liberal arts colleges as perceived by chief information officers and academic deans. The study also examines their perception of how well these organizations have delivered proposed benefits in academic, administrative, institutional and organizational areas.

A survey of MISO heads (CIOs) and academic deans of liberal arts colleges with merged information services

organizations was undertaken. In addition to a general assessment of the MISO, a taxonomy of expected benefits was developed from the literature. A questionnaire was developed based on the literature to collect both quantitative and qualitative data. Respondents provided information that addressed the general effectiveness of the new organization, its delivery of the expected benefits, and costs their institutions have incurred using the MISO model.

Both CIOs and academic deans had a favorable impression of the MISO and believed it was effective in providing support and delivering most of the expected benefits. The perception of effectiveness in institutional benefits was not as strong as in the other areas. The study identified areas of concern among both CIOs and deans with the implementation of a MISO. Concerns were raised that the MISO organization requires staff development time to ensure its role and functions are understood by MISO staff. A potentially significant cost identified was a loss of focus among constituent units, such as the library and computer center, on their ongoing functions.

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Chapter One

Introduction

Higher education has spent at least the last 25 years dealing with the development of information technology (IT). Higher education institutions are extremely demanding of information and computer support. The breadth of disciplines and expertise of faculty and staff lead to high expectations and a wide range of information and technology demands. It has been a very expensive and important endeavor for colleges and universities of all sizes and classifications. The impact has been felt throughout higher education affecting institutions in a wide variety of aspects of their operations. In 1991, Woodsworth pointed out:

> In the space of a decade, colleges and universities have moved from using centralized mainframes for housekeeping functions to distributed computers linked by data networks. They have also placed increased emphasis at a slower rate, on using computers in the teaching and learning process. The amount of change on campus has been tremendous (p. 2).

By 2001 James Duderstadt, president emeritus of the University of Michigan, reiterated Woodsworth's earlier

observation and indicated that the scholarly academic efforts of higher education had also been changed:

> Higher education has already experienced significant change driven by technology. Our management and administrative processes, as well as research and scholarship, are highly dependent upon information technology (p. 147-148).

One outgrowth of these increasing pressures was the growth of CAUSE and Educom in the 1980s and 1990s. In 1998, they merged to form EDUCAUSE, “whose mission is to advance higher education by promoting the intelligent use of information technology” (EDUCAUSE, 2005, ¶ 1). Prior to merging they had collaborated in 1990 with the Association of Research Libraries to found the Coalition for Networked Information (CNI) to "enhance scholarship and intellectual productivity" (CNI, 2005, ¶ 2). The increasing pressures of information and instructional technology also helped fuel increased collaboration between libraries and campus IT organizations. EDUCAUSE has actively promoted increased collaboration between libraries and campus IT organizations and has been a champion of the idea of actually merging these two campus organizations.

As a result of the ever-changing world of technology, campus computing centers changed considerably in the last

two decades of the 20th Century. In the early 1980s it was common to have three separate units dealing with computers and networking on campus: academic computing, administrative computing and telecommunications. The pressure to deal effectively with the technological changes of the 1980s often led institutions to combine academic and administrative computing into a single organization. Telecommunications, especially after the breakup of AT&T, was rolled into the computer center's responsibility (Woodsworth, 1988b). Add into this the need to roll out new enterprise-wide systems, course management systems, replace aging administrative systems and deal with Y2K concerns and computing centers were a place of near constant change (Fulton, 2001). The supporting mechanisms that had worked when computing was a centralized mainframe service would not suffice for the more distributed, networked environment of the late 20th century (Supra & Johnston, 1997).

Change was also a constant in the world of academic libraries during this same time frame. In the 1980s, as information technology became more common, libraries increasingly utilized it to support their mission and often became centers of support for its use in other areas of campus as the computing center focused on administrative and high end research uses of computing power (Woodsworth,

1991; Lowry 1992). These developments led to discussion of convergence between the two areas. Libraries have been increasing users of computer resources since the 1960s. Already in the 1970s at least one library and campus computing operation was merged (Plane, 1982), but generally libraries maintained their traditional position as a support service in the academic division of the university.

This increasing use of and support of information technology helped initiate an ongoing debate: Should libraries and computing centers merge? In 1984, Battin wrote "The Electric Library" in which she championed a merged organization that would respond to all the information and technology needs of researchers be they undergraduates or full professors. In 1985, Neff wrote "Merging Libraries and Computer Centers: Manifest Destiny or Manifestly Deranged?" in which he effectively framed the ongoing discussion, identifying eight trends that created convergence between the two organizations. Many librarians argued that with the inevitable rise of electronic or digital or virtual libraries, convergence or merger of these two support services was also inevitable.

In the 1990s, campus administrators struggling to come to terms with the rise of the personal computer and other information technology began to follow up on the

convergence idea by pursuing mergers between these two campus support units. A number of higher education institutions of various Carnegie classifications responded by actually merging their library and computer center/IT operations into a merged information services organization. These institutions contended that the rapidly changing world of IT and heavy reliance on IT by libraries presented a situation where bringing the two together made it easier to provide effective services across the board to users of library and IT services and resources (Seiden & Kathman, 2000; Bolin, 2005). As Hawkins and Battin put it in 1998:

> For the past two decades, libraries and computer centers have radically altered both themselves and the higher education landscape, albeit in an incremental fashion. True transformational change continues to be constrained by the misguided belief that the technological revolution can be contained within the old organizational structures. Succumbing to the mirage of continuity that denies the need for financial and management reorganization and the belief in a technological panacea … will only increase dysfunction and paralysis (p. 5).

Merged Information Services Organizations

The results of these reorganizations of the past 20 years have not been as anticipated. Mergers did take place, but there was no explosion of mergers across higher education. In fact, several of the announced mergers were quietly reversed to more traditional arrangements (Hardesty, 1998). Others, it turns out, were only merged at the highest administrative level and the day-to-day functions and lower-level organization of the various units were left intact. While the reporting lines on the organizational chart may have moved, the operations and organizations remained the same (Hirshon, 1998). These reorganizations did increase collaboration and coordination did take place in some institutions. However, other institutions pursued a much more integrated structure that actually combined the personnel and functions of the different units to create a new information resources or information services organization, a merged information services organization (MISO).

In 1998, Hirshon identified about 90 institutions that had integrated these services. In 2002, the Council on Library and Information Resources facilitated the formation of the CLIR-CIO group, an informal group of chief information officers (CIOs) running MISOs. Between 2002 and

2006 the CLIR-CIO group, made up of CIOs primarily from liberal arts colleges, grew from 18 to 38 (S. Perry, personal communication, September 9, 2006). In the latest EDUCAUSE Core Data Service (Hawkins, Rudy, & Nicolich, 2005), about 130 respondent institutions are identified as having merged library and IT services into the same university division. This shows a slow but steady increase over the last decade. These integrated institutions make up about 15% of the almost 900 respondents. Is this slow trend a harbinger of things to come, or is it a fashionable trend that amounts to no more than a management fad?

As institutions gained experience with the MISO model the individuals involved were able move beyond just a theoretical convergence rationale and point to benefits that were delivered by the merger. Others used the literature to point out costs that institutions might have to pay if the MISO model was adopted. Both of these perspectives were put forward by individuals intimately involved with the information professions, either as IT professionals or as librarians.

Benefits. In 2006 Kenyon College hosted for a second time a Council on Library and Information Resources sponsored conference for those involved with or interested in MISOs. The organizers of the conference presented MISOs

as the best way to provide transformative support to the institution and allow "breakthrough" developments in the delivery of higher education (Kenyon Conference, 2006). The transformative developments are not radical shifts but are present in the literature on IT library mergers. This literature puts forth a number of benefits to the institution supporting a decision to create a merged information services organization. These benefits can be clustered into four different areas:

1. Academic – The proponents of MISOs contend that the new organizations will provide improved service to their primary end users – faculty and students. This will be manifested in better technology and information support across the board in the pursuit of research and scholarship and teaching and learning. In addition, through the effective implementation of new technology, value will be added to the academic efforts of the institution (e.g. Foley, 1997; Supra, Zabrowski, & Thompson, 1998; Fulton, 2001; Barth & Cotrell, 2002; & Ferguson, Spencer, & Metz, 2004).
2. Administrative - The proponents of MISOs contend that the new organizations will provide improved

service and increased efficiencies to the administration of the institution. This will be manifested in greater organizational flexibility with budget and staff as well as improved availability of enterprise information and enhanced distribution of appropriate information throughout the institution (e.g. Foley, 1997; Supra, Zabrowski, & Thompson, 1998; Campbell, 1998; Hirshon, 1998; Fulton, 2001; Oden, 2001; & Ferguson, Spencer, & Metz, 2004).

3. Institutional – The proponents of MISOs contend that the new organization will provide important benefits to the institution by improving the campus's visibility in the community. The success of these organizations will garner prestige and improve the reputation of the institution. This will have benefits of improved donations and better student and faculty recruitment (e.g. Hawkins & Battin, 1997; Supra & Johnston, 1997; Heather, 2000; & Ferguson, Spencer, & Metz, 2004).
4. Organizational – The proponents of MISOs contend that the staff of these new organizations will evolve into a new "information profession"

> dedicated to providing services previously offered by both the IT professional and the librarian. This new organization will encourage and support improved campus technology leadership, increased staff cooperation, and present new opportunities for professional growth to staff. The combined units will also provide better technology leadership to the institution by improving the environment on campus (e.g. Foley, 1997; Hirshon, 1998; Hales, Rea, & Siegler, 2000; Fulton, 2001; Ferguson, Spencer, & Metz, 2004; & Renaud, 2006).

(See Appendix B for literature and categories used to create benefits.)

Costs. Proponents of integration contend that the institution will benefit in several ways over a more traditional, divided organizational structure. But not everyone agrees with this convergence model. Dougherty (1987) and Weber (1988) wrote early articles challenging some assertions of the MISO model proponents. In particular, they highlighted the potential loss of the long-standing relationship the library has had with the academic units of a campus. More recently, Bolin (2005) summed up concerns that the idea of the convergence of the

library and the computer center is bringing them inevitably together is misplaced:

> the library has synergy with everyone, and, in a different way, so does the computer center. While organizationally imposed synergy may have worked for some institutions, it may be that the library and computer center can find "synergy," "convergence," and so on, by remaining organizationally distinct, preserving the strengths of each (p. 10).

Evaluating Perspectives

Authors examining the benefits and costs of a MISO to date have generally been actively involved with the functions of the MISO or its component units, usually either IT professionals or librarians. Earlier research has looked at library and computing center directors (Hardesty, 1997 and 1998), library directors (Marshalsay, 1998) or CIOs (Hughes, 1989; Hirshon, 1998 and Fulton, 2001). These efforts essentially looked internally to the MISO or MISO idea for their assessment sources. As the new model is expected to bring wide-ranging organizational benefits beyond just a user level, it is important to find knowledgeable people who can provide an opinion on these broad developments. They need to understand the support demands placed on information services and resources in an

academic environment. The individuals must be in a position to provide an informed opinion on the effectiveness of the MISO on a broad level, not just from a typical user's point of view-because the MISO is supposed to be supporting what they do-on a wide-ranging level.

When studying the MISO model, an obvious perspective on the effectiveness of these efforts can be received from the institution's CIO. This position is routinely faced with addressing the broad ranging demands placed on information services on a college campus. As the campus officer charged with managing the integrated efforts, this position is intimately involved with the ongoing programs, has a vested interest in seeing them succeed and therefore a strong desire to objectively assess the organization's efforts.

Another appropriate source for an assessment of the effectiveness of the campus MISO is academic deans. As a support organization, it makes sense to look to the areas that are supported by the MISO and try to get their perception of the MISO effectiveness. Academic deans are the leaders of any higher education institution's academic efforts (Wolverton, Gmelch, Montez, & Nies, 2001). They are directly connected with the faculty and students; and guide the teaching, learning, research and scholarship of the

institution. In addition, as administrators they are familiar with the ongoing concerns of higher education in general as well as particular issues facing their institution. Wolverton and Gmelch's (2002) study indicated that today's academic deans perform six roles: resource management, academic personnel management, internal productivity, personal scholarship, leadership, and external and political relations. Resource management includes the need to "keep current with technological changes" (p. 43).

Academic deans are in an ideal position to provide feedback on the effectiveness of the MISO organization vis-à-vis the many proposed benefits such an organization would provide to a liberal arts college. In addition, they are in a position to see benefits and costs that may not have been considered by the leaders of MISOs. They are in the position to provide an informed opinion on the effectiveness of the MISO because the MISO is supposed to be supporting what they do—academically, administratively and institutionally.

These two groups of administrators are well positioned to have an informed judgment about the operational effectiveness of the support provided by an institution's MISO. They provide different viewpoints to the issue-one

has an internal MISO point of view and the other an external viewpoint. Yet both are at a high level administratively and are able to take a wide-ranging view and consider the services of the MISO not merely as a "user" but as an institutional manager who must support and promote the institution as a whole. Agreement of their perceptions may indicate concept success. Some discrepancies in their evaluations may be evidence that there are problems with the MISO model and highlight these problem areas. Widespread discrepancies between the two might indicate that the model is not effective.

Statement of the Problem

There has been little evaluation on the effectiveness of the MISO model (Williams & Bly, 2000). An initial assessment effort was reported to be in the planning stages at the NERCOMP conference in 2006. Known as the Bryn Mawr survey, it has been undertaken by CLIR (Council on Library and Information Resources) and MISO (Merged Information Services Organizations) and is surveying users on their campuses to gauge their satisfaction with the transformed and integrated information organizations. The initial findings of this survey were reported at the EDUCAUSE 2006 Annual Conference in Dallas. They have not yet been published (D. Consiglio, personal communication, October

16, 2006).

As information technology and libraries represent two of the largest, if not the largest support organizations on most campuses (Hirshon, 1998), it is important to understand how well merged units are succeeding. The literature and research to date also provide several categories of benefits to creating a merged information services organization at a higher education institution. Has the implementation of information technology at liberal arts colleges in an integrated organizational structure with the library and IT facilitated the use and mastery of technology and information or not? This study is to assess the effectiveness of merged information services organizations at liberal arts colleges as perceived by chief information officers and academic deans at these institutions.

Research Problems

One major problem, the general effectiveness of MISOs with four subproblems, stimulated the five research problems identified for the analysis of this study. These are as follows:

1. To assess the overall effectiveness of merged information services organizations at liberal arts colleges as perceived by chief information officers

and academic deans at these institutions.

2. To assess the effectiveness of a merged information services organization in providing academic related benefits to an institution.
3. To assess the effectiveness of a merged information services organization in providing administrative related benefits to an institution.
4. To assess the effectiveness of a merged information services organization in providing institutional related benefits to an institution.
5. To assess the effectiveness of a merged information services organization in providing organizational related benefits to an institution.

Purpose of the Study

Proponents of merged information services organizations contend that MISOs provide a better structure with which to deliver any and all information related services and that there are specific benefits in academic, administrative, institutional and organizational areas from the integration. The purpose of this study was to assess the perception of the effectiveness of merged information services organizations in liberal arts colleges so that higher education administrations, generally, and library and IT administrators, specifically, can more effectively

create appropriate structures to support the institution's mission and goals.

Significance of the Study

Library and campus IT services are probably the two largest support units on most campuses. They are certainly among the most significant (Hirshon, 1998). Restructuring either of these units in ways that impacts their daily operations is a risky proposition. However, IT has had a large impact on higher education over that past 20 years and a number of liberal arts institutions have pursued not just a restructuring of each of these units but a combining of both of them into an integrated campus information services organization. Higher education leaders would be interested in indications that this is an effective or ineffective policy to pursue and if the integrated organization successfully achieves its goals or if it negatively impacts key support areas of the institution.

Delimitations of the Study

The population consists of Carnegie classified bachelor's level institutions identified as having a MISO based on the most recent information available to the researcher.

The population of respondents was limited to academic deans and CIOs at the selected institutions.

Limitations of the Study

The study was subject to the following limitations:

The study was limited to Carnegie classified bachelor's level institutions. This type of institution has been one of the leading adopters of this organizational model. The study does not necessarily provide any predictive knowledge on how this model would work at other four-year higher education institutions. Although every effort was made to identify all appropriate institutions, changes in institutional organizational structure occurring during the timeframe of the study could have resulted in queries to institutions without a MISO or not sending queries to institutions with a MISO.

The questionnaires were emailed to CIOs and academic deans at the selected institutions based on institutional web page information. Errors on the web site would have resulted in misdirected queries.

The responses to the survey items were subject to personal biases and subjective perceptions of the respondents whose motivations for responding were unknown. Although respondents were assured all answers and comments would be held in strict confidence, the lack of anonymity may have impacted the frankness of some responses.

The study was non-experimental in that the researcher

did not have manipulative control of the variables. Therefore no cause and effect could be determined.

Definition of Terms

1) Merged Information Services Organization (MISO) is an organization that contains at least academic computing, telecommunications, media services and library services. It may also contain administrative computing and other services such as printing and the registrar. In the combined organization, both the library and computing center report to a CIO (i.e. a new organization was created to bring the two together to improve collaboration.) (Hirshon, 1998).
2) Academic benefits represent an increase in the amount of time and or higher level of support and or increased access to resources and or services provided directly to faculty or students in pursuit of teaching, learning and scholarship.
3) Administrative benefits represent an improvement to work processes to provide administrative efficiencies, improved planning, and or managerial flexibility, etc.
4) Institutional benefits represent the ability to provide a favorable impression of the institution to outside individuals.

5) Organizational benefits represent a change that improves the integration, morale and professionalism of the information services unit and its ability to provide campus leadership.
6) Academic Dean is the individual with overall responsibility for the academic efforts of an entire college or institution. At many institutions this position may also be referred to as the chief academic officer.
7) Chief Information Officer is the individual with overall responsibility for information technology and library services and resources; both computing and library operations report to this position.
8) Liberal Arts College, for the purposes of this study, is defined as any higher educational institution with a baccalaureate only Carnegie classification.
9) Distributed Computing is information processing that takes place in functional departments and on desktops rather than through a mainframe at a central location (Pitkin, 1992).

Organization of the Study

The study is organized into five chapters. Each chapter includes appropriate supporting material such as charts, tables and appendices. References and appendices

follow the final chapter of the study.

Chapter one includes the introduction of the research topic, the statement of the problem and subproblems, the hypotheses, the purpose of the study, the importance of the study and the definition of the terms used in the study.

Chapter two contains a review of the relevant literature and highlights previous research dealing with merged information service units at academic institutions.

Chapter three includes the design and methodology used in the research study, including the population, the instrument, data collection and data analysis.

Chapter four is a thorough analysis of the data collected in the study. A summary of the survey population is presented in descriptive statistics, followed by a detailed discussion of the research questions and hypotheses.

Chapter five contains a summary of the research findings and conclusions as well as recommendations for additional research.

Chapter Two

Introduction to the Literature

This chapter presents a review of the relevant research and literature on the convergence and merger of campus computing organizations and academic libraries. This literature is a subset of the wealth of material written on the impact of technology on higher education in general, and libraries and information technology organizations and services in particular. The literature on merging libraries and computing centers is extensive and goes back over 20 years to 1982 with Plane's "Merging a Library and a Computing Center." Much of what has been written is theoretical (i.e. "what could be") or anecdotal (i.e. "how we did it") in nature. The scholarly research on mergers has spanned much of this same time frame, starting a little later at the end of the 1980s, but it is not nearly as extensive. This literature focuses primarily on the administrative issues of how to successfully merge these organizations, the strategic planning advantages of a merged information services organization in a higher education environment and how widely mergers have been implemented in higher education.

Over time this literature has changed from the more theoretical, about the natural convergence and advantages

of merging, to more polemical materials examining the case for transforming information services. Polemical works can be found on both sides of the issue, arguing that information services units must combine in order to improve services and maintain viability or decrying the need to merge, contending that the functions are distinct and combining them a mistake often undone at a later date. This theoretical and polemical literature is largely the literature relied on to define what the proposed benefits for the merger of IT and libraries are (See Table 1). The benefits are derived from various MISO support efforts and activities identified in the literature.

Table 1

MISO Support Activities Classified by Benefit Category

Category	Support Activities
Academic	Training & Education For Students Training And Education For Faculty Access To Technology Resources Access To Information Resources MISO Staff / Faculty Collaboration Instructional Support Academic Orientation Research Support Student Support Faculty Support

Table 1 Continued

Category	Support Activities
Administrative	Integrating Technology In Campus Activities Campus Information Policy Campus Information Infrastructure MISO Staff / Other Staff Collaboration Fiscal Benefits Enterprise Information Campus Web Presence IT News Flexibility Technology Planning
Institutional	Attract Students & Benefactors Community Relations & Outreach Reputation & Prestige Transformation Of Institution
Organizational	Evolution Of Information Professionals Leadership Role Of The MISO On Campus Integrating Into A Cohesive Whole Increased Visibility

This literature can be categorized into three periods: Theoretical Foundations and Organizational Developments, the 1980s; Experience, Caution and Administration, the late 1980s to mid 1990s; and Transformation Time, 1997 to the present. Beginning with the second period, the literature began to point to specific expected benefits from a merger and also raised concerns about the costs that mergers might impose.

Theoretical Foundations and Organizational Developments

The library literature was very active in discussing the concept of convergence and merger throughout this period. The computing literature was not nearly as active or involved in the early discussions. Plane (1982), a community college president, published in the computing literature, yet his call for merger seemed to fall on barren ground. Computing professionals did not respond to his insight. Early publications on the idea by librarians do not even cite him. Most computing publications continue to discuss collaboration with the library in terms of a more client/provider centered model from which computing was emerging at this time.

Patricia Battin of Columbia University initiated the ongoing discussion in the professional literature on the convergence of computing centers with the library and the nature of information technology, services and resources. Her article, "The electric library: A vision for the future" (1984), presented a wide ranging and far-sighted vision of libraries and information technology working together to serve the needs of the scholarly community. Her idea:

> The challenge for universities is not simply to explore the role of computers on campus—as so many

> institutions have interpreted the issue—but also to integrate information technology into the existing information system in a way that preserves the linkages to the existing knowledge base, encourages and stimulates the productive use of new technologies, and provides coordinated gateway access to the universe of knowledge in a manner convenient and invisible to the end user. (p.13)

After Battin (1984) the theme of convergence, collaboration and merger was taken up in the professional literature. With important articles published in both fields in 1985, Moholt's "On converging paths: the computing center and the library" and Neff's "Merging libraries and computing centers: manifest destiny or manifestly deranged?" These two articles picked up on Battin's dream and highlighted the areas that were driving convergence between the computing center and the library. Four primary themes emerged from the highly theoretical publications:

1. The conversion of information from a print format to a digital commodity that will ultimately need similar storage mechanisms.
2. An emphasis on access to information and not ownership with the increased ease of distributing or

sharing information away from centralized locations such as the computing center or library.

3. The changing of funding models bringing the operational aspects of the two units closer together.
4. User expectations of higher levels of service, service that goes beyond providing access to the tools or resources of information and includes assistance in the manipulation of the data.

These are followed by a series of articles through the end of the 1980s which represent an ongoing discussion of the convergence/merger thesis. This literature continued to be more theoretical than practical but stressed that both the library and computing center have similar responsibilities to provide support services to end users in the area of information technology. Duplication between the two occurred in a number of areas including the storage, retrieval, dissemination and management of information, building networks, training users in computer and information literacy, and providing access to information resources needed for teaching and learning (Jones, 1985; May, 1986; Higginbotham, 1986; Dougherty, 1987; Cimbala, 1987; Woodsworth, 1988a).

Pat Moholt's "What happened to the merger debate?"

(1989) signaled a shift in the merger enthusiasm. The predicted merger was presented as not being essential or inevitable and that the convergence trend "has instead evolved into a kind of functional cooperation" (p. 1). It represented, on the part of librarians, a waning of the enthusiasm for the convergence/merger concept. Increasingly, the librarians place emphasis on communication, cooperation and collaboration between the two units to accomplish their independent missions.

While the professional literature debated the merits of merger, very little merging was actually taking place in the 1980s. However, internally, both organizations were changing. The library was adjusting to the impact of distributed computing, as was the computer center. Libraries were reorganizing their structures and becoming a flatter, less hierarchical organization (Woodsworth, 1991; Lowry 1992). At the same time, campus computing was also undergoing a transformation (Emery, 1984; Warlick 1986). Historically, higher education had functionally separated administrative and academic computing. Throughout the 1980s many institutions acknowledged that in the new information age this separation was not effective and began to combine these functions as well as telecommunications and/or networking (Warlick, 1986; Penrod & Dolence, 1990; Pitkin,

1992).

Another mechanism used by higher education to respond to the developing distributed computing of the 1980s was adapted from the business world. Business responded to the interdepartmental computing chaos that came with distributed computing in the 1980s with the creation of a Chief Information Officer (Woodsworth, 1991). This was a single high level individual "assigned all policy and coordination responsibility for information management" (Pitkin, 1992, p. 4). A significant effect of the creation of CIO position was to shift focus away from a "preoccupation with the efficient manipulation of technology … to a focus on the enterprise-wide role of information in all its forms" (Heterick & Sanders, 1993, p. 23). This shift to an "enterprise-wide role of information" emphasized the strategic planning role of information services and would lead to new calls for partnerships between IT and the library (Rosser & Penrod, 1990; Lipow & Creth, 1995).

Experience, Caution and Administration

Authors writing on the topic in the 1990s were less theoretical and more practical, relying on real life experiences. Several institutions, particularly larger institutions, had implemented mergers in the mid 1980s. The

literature in this phase began to show the effects of some real world experience. Practical benefits expected from the merger, not theoretical rationales, started to be presented. And in addition, specific concerns about the negative impact of mergers began to get more attention.

Caution. The influence of real life issues over theoretical possibilities clearly started to come to the fore during this period. The primary concern raised became turf, who will be in charge of the combined operations? (Weber, 1988). Many librarians clearly were concerned that they would be consumed by the computing center and so focused on collaboration and partnership rather than merger and integration (Boss, 1987).

Dougherty's (1987) "Libraries and Computing Centers" was one of the first to emphasize a need for collaboration, not merger between what he saw as two distinct organizations. He emphasized that technology was providing new tools for librarians to use with the services and resources they had always provided. This was not a reason to assume the two entities were converging or should merge, just that librarians were trying to do the best they could with the resources, including technology, available. He also pointed out that mergers can only be successful if support comes from staff of both organizations as well as

from the faculty of the institution. He hinted at the cultural issues separating the two by examining the willingness to charge back for services in computing centers and reluctance by librarians.

Weber (1988) followed up on Dougherty's (1987) concerns by pointing out that a merger between the two could threaten the connection between the library and the institution's academic units. This is a traditional connection of academic libraries and goes back to their very founding when it was standard practice to name a faculty member as head of the library. Creating a MISO was implementing an organizational structure that emphasized process (automation) over program (educational resources and services).

Cultural differences between the two professions came to be emphasized in the literature, which repeated examples of stereotypes of the differences between librarians and IT staff. (Feng & Weise, 1988; Creth, 1993; Lipow & Creth, 1995; Allen, 1995). Articles that emphasized cooperation and collaboration rather than convergence and merger appeared during this phase (Dougherty, 1987; Boss, 1987; Weber, 1988; Creth, 1993; and Young, 1994). Sharrow (1995) closed out this defensive phase of the librarians by enumerating nine challenges facing library and IT

collaboration.

Benefits. Despite the increasing concern from some librarians, a number of points were made in the literature of this period for bringing these two organizations together—the ubiquity of technology in modern and future scholarly activity and the need for non-technically oriented individuals to have support and instruction on the use of this new information technology (Woodsworth, 1988a; Rosser & Penrod, 1990; Creth, 1993; Shapiro & Long, 1994 and Cady, 1996). More than these theoretical ideas began to appear in the pro-merger literature. Concrete benefits expected from bringing the library and campus computing together started to be highlighted. Creth (1993) highlighted academic and administrative benefits–instructional support, training and education for students, MISO staff / faculty collaboration and technology planning. Shapiro and Long (1994) listed specific developments such as MISO staff /faculty collaboration, campus information infrastructure, campus IT news distribution, and the integration of the two previously separate units into a cohesive whole that would provide academic, administrative and organizational benefits to the institution.

Impact of Administration. Some continued to view these new developments as opportunities for leadership with

librarians well positioned to take on these new roles (Martin, 1992). Small personal case studies indicating the viability of merger and its benefits continued to appear (e.g. Engeldinger & Meachen, 1996). Towards the end of this period, the trend for mergers seemed to shift from large institutions to smaller ones (Mech, 2000; Marshalsay, 1998). In reality though, the drive for combining the information service units had moved from the professionals to the administrators. Campus administrators were responding to pressure to control or cut costs and public scrutiny of their operations. As Seiden and Kathman (2000) reported:

> During the 1990s two major forces coalesced: the wide-scale implementation of networks and the development of networked resources, and an adoption of streamlining support services as a strategy to control costs in higher education. As a result, there developed simultaneously an environment in which synergies could best be realized through cooperation and collaboration and a perception by upper-level administrators that needed institutional economies could be realized through restructuring (p. 10).

A key component making this restructuring viable was the emergence of the World Wide Web (Hirshon, 1998). The

World Wide Web greatly increased the availability of digital information and blurred the lines between library content and computer center conduit. Both units were under pressure to have networks in place and available with computers on faculty desks, increase instructional support and end user training on new information resources and computer software, introduce technology into the classroom, and increase access to electronic information resources (Fulton, 2001). The restructuring that had taken place in the 1980s on both sides of the information services house, combined with the emergence of the World Wide Web made the administrative push for merger much more realistic. As a result, there was a definite sense in both professions that change was needed for either to be successful. As West and Smith (1995) concluded their report on merging at the University of Alaska Fairbanks, "We will prosper together, whether it is a merger or a collaborative effort, but we will certainly die separately" (p. 889).

Transformation Time

At the start of this period, when there was a resurgence of interest in the literature to undertake mergers, Hirshon (1998), Hardesty (1997 & 1998), and Marshalsay (1998) published their studies reflecting on the extent of the trend in higher education. In 2000, Hardesty

revisited the topic of merging libraries and computing centers with a book length treatment directly on the topic, *Books, Bytes & Bridges*. The collection of essays as a whole indicated that transformation is taking place, but that it was being done slowly on a case by case institutional basis. There was still no single model that was used and integration was still not being done wholesale throughout higher education.

The late 1990s were a period where the two sides, at least in some cases, came together and wholeheartedly pursued integration of their services into a new organization. At the 1997 Association of Computing Machinery Special Interest Group on University and College Computing Servvices (ACM SIGUCCS) conference on the theme of "Are you Ready?" two separate presentations on combining information services units were made. Foley (1997) from Lehigh University and Supra and Johnston (1997) from University of Southern California both championed the integrated model for information services units. Foley reported that Lehigh had worked to "redesign and implement a truly merged organizational model" (p. 1). While Supra and Johnston contended that integration was needed "in order to effectively serve the technology and information needs of the campus through unified approaches to support"

(p. 1). These papers, presented at a computing conference, marked off the start of two new developments: a wholehearted pursuit of integration and merged organizations by professionals not just administrators and a much more widespread participation in these efforts by IT professionals.

A series of presentations and publications added to Supra and Johnston (1997) and Foley (1997) and emphasized the need for information services organizations to transform themselves (Hawkins & Battin, 1997; Higgenbotham, 1997; Supra, Zabrowski and Thompson, 1998; Supra, Wong & Foley, 1998; Herro, 1998). Strong support for the need for transformation was also indicated by the Council on Library and Information Resources and the Association of American Universities when they published *The Mirage of Continuity: Reconfiguring Academic Information Resources for the 21st Century*. Its editors stated:

> The congeries of "information resources" that is replacing our traditional concepts of library, computer center, media services and instructional technology represents the leading edges of both change and paralysis. Efforts to resolve the conflicts over budgetary concerns and services to users with traditionally conceived boundaries of "libraries" and

> "information technology divisions" compound the problems and create unnecessary costs. Resolution of the inherent conflicts in these areas can occur only through a broadly conceived enterprise that redefines instruction, learning, research, management, and finances for the global digital society of the 21st century (Hawkins & Battin, 1998, p. 3).

This period also marked the arrival of a new institutional force in the effort to transform higher education information services. With the merger of CAUSE and Educom in 1998, EDUCAUSE became a prime forum for the discussion of this transformation process. It actually has as a subject heading, IT-Library mergers, used in the resources section of its web site. If librarians led the charge in the 1980s, and administrator's led the charge for change in the 1990s, it was now IT people, often through EDUCAUSE, who championed the convergence and merger of the library with IT.

The literature of this period put forth a wide range of benefits that would flow from an integrated model. The MISO would improve the academic orientation of its staff and increase access to information resources. It would facilitate the development of the campus information infrastructure and campus information policy and enable

better technology planning. The merged organization would also enhance faculty, student, research and instructional support, including the training and education of faculty and students. Administratively it would allow for administrative flexibility and provide fiscal benefits. Organizationally it would increase the visibility of the information services units. Several of these carry on benefits identified earlier, others represent new ideas being brought forward. These authors greatly expanded the trickle of benefits that had been identified in the previous literature (Campbell, 1998; Foley, 1997; Hardesty, 1997 & 1998; Hawkins & Battin, 1997; Herro, 1998; Hirshon, 1998; Marshalsay, 1998; Supra, Zabrowski and Thompson, 1998; Supra, Wong & Foley, 1998; Supra & Johnston, 1997).

After the spate of publications pressing for transformation in 1997 and 1998, there was a brief lull, then starting in 2000 there was an ongoing series of articles that again put forth the benefits of merging. Based on real life experience with the integrated model, they highlighted the benefits that can be expected from a merged information systems organization (Ferguson, 2000; Frand & Bellanti, 2000; Oden, Temple, Cottrell, Griggs, Turney & Wojcik, 2001; Renaud, 2001; Barth & Cottrell, 2002; Ferguson, Metz & Spencer, 2004; Renaud, 2006). These

authors picked up and expanded on the various theoretical reasons given for combining a library and computer center. Having reviewed the literature a taxonomy of these benefits was created with four broad areas: academic, administrative, institutional and organizational.

Benefits of Mergers. In general academic benefits represent an increase in the amount of time or higher level of support or increased access to resources or services provided directly to faculty or students in pursuit of teaching, learning and scholarship. Articles proposing academic benefits were categorized as such based the presence of examples that focused on at least one of 10 academic support areas, such as academic orientation, access to information or technology resources, faculty, student, research and instructional support training and education for students and faculty, or MISO staff and teaching faculty collaboration (see Table 2).

Table 2

Academic Benefits Authors

MISO Activity	Author	Date
Academic orientation	Foley	1997
	Fulton	2001
	Hawkins & Battin	1997
	Herro	1998
	Hirshon	1998
	Supra & Johnston	1997
	Supra, Wong & Foley	1998
Access to information resources	Ferguson, Spencer & Metz	2004
	Foley	1997
	Hardesty	1998
	Herro	1998
	Supra, Zabrowski & Thompson	1998
Access to technology resources	Ferguson, Spencer & Metz	2004
	Fulton	2001
	Herro	1998
	Supra, Zabrowski & Thompson	1998
Faculty support	Barth & Cotrell	2002
	Ferguson, Spencer & Metz	2004
	Foley	1997
	Frand & Bellanti	2000
	Hardesty	1998
	Herro	1998
	Kenyon Conference	2006
	Marshalsay	1998
	Oden	2001
Instructional support	Barth & Cotrell	2002
	Creth	1993
	Foley	1997
	Frand & Bellanti	2000
	Herro	1998
MISO staff/faculty collaboration	Creth	1993
	Fulton	2001
	Shapiro & Long	1994

Table 2 Continued

MISO Activity	Author	Date
Student support	Barth & Cotrell	2002
	Campbell	1998
	Ferguson, Spencer & Metz	2004
	Frand & Bellanti	2000
	Herro	1998
	Kenyon Conference	2006
	Oden	2001
	Supra, Zabrowski & Thompson	1998
Training & education for students	Barth & Cotrell	2002
	Creth	1993
	Ferguson, Spencer & Metz	2004
	Herro	1998
	Hirshon	1998
Training & education for faculty	Barth & Cotrell	2002
	Ferguson, Spencer & Metz	2004
	Herro	1998

Administrative benefits represent an improvement to work processes to provide administrative efficiencies, improved planning, and or managerial flexibility, etc. Administrative benefits articles were categorized as such based on the presence of examples that focused on at least one of 10 administrative support functions. These functions were development of the campus information infrastructure, information policy and technology planning, impact on the campus web presence, distribution of campus IT news and enterprise information, fiscal benefits (reducing internal competition, or generating better vendor deals), flexibility in using human and financial resources, increasing MISO

staff and other staff collaboration (See Table 3.)

Table 3

Administrative Benefit Authors

Subcategory of benefit	Author	Date
Campus information infrastructure	Foley	1997
	Herro	1998
	Marshalsay	1998
	Shapiro & Long	1994
	Supra, Zabrowski & Thompson	1998
Campus information policy	Heather	2000
	Herro	1998
	Marshalsay	1998
Campus web presence	Campbell	1998
	Ferguson, Spencer & Metz	2004
Enterprise information	Ferguson, Spencer & Metz	2004
	Foley	1997
Fiscal benefits	Campbell	1998
	Ferguson, Spencer & Metz	2004
	Foley	1997
	Frand & Bellanti	2000
	Hardesty	1997
	Hardesty	1998
	Herro	1998
	Hirshon	1998
	Kenyon Conference	2006
	Marshalasy	1998
	Supra, Zabrowski & Thompson	1998

Table 3 Continued

Subcategory of benefit	Author	Date
Flexibility	Ferguson, Spencer & Metz	2004
	Frand & Bellanti	2000
	Fulton	2001
	Herro	1998
	Hirshon	1998
	Kenyon Conference	2006
	Marshalsay	1998
	Supra, Zabrowski & Thompson	1998
Integrating technology in campus activities	Fulton	2001
IT News	Herro	1998
	Shapiro & Long	1994
MISO staff / other staff collaboration	Ferguson, Spencer & Metz	2004
	Hirshon	1998
	Kenyon Conference	2006
	Oden	2001
Technology planning	Campbell	1998
	Creth	1993
	Ferguson, Spencer & Metz	2004
	Foley	1997
	Herro	1998
	Marshalsay	1998
	Oden	2001
	Supra & Johnston	1997

Institutional benefits represent the ability to provide a favorable impression of the institution to outside individuals. Institutional benefits articles were identified based on the presence of examples that focused on one of four benefit areas: attracting students and benefactors, enhancing community relations and outreach,

enhancing the institution's reputation and prestige or supporting the transformation of the institution into an information age organization (See Table 4).

Table 4

Institutional Benefit Authors

Subcategory of benefit	Author	Date
attract students & benefactors	Kenyon Conference	2006
Community relations & outreach	Ferguson, Spencer & Metz	2004
reputation & prestige	Kenyon Conference	2006
	Ferguson, Spencer & Metz	2004
	Fulton	2001
transformation of institution	Hawkins & Battin	1997
	Heather	2000
	Oden	2001
	Supra & Johnston	1997

Organizational benefits represent a change that improves the integration, morale and professionalism of the information services organization and its ability to provide campus leadership. Organizational benefits articles were identified based on the presence of examples that focused on one of three benefit areas: the evolution of information professionals, increased visibility for the IS on campus, and integrating the various MISO constituent units into a cohesive whole (See Table 5.).

Table 5

Organizational Benefit Authors

MISO Activity	Author	Date
evolution of information professionals	Ferguson, Spencer & Metz	2004
	Foley	1997
	Fulton	2001
	Hales, Rea & Sielger	2000
	Heather	2000
	Kenyon Conference	2006
increased visibility	Hales, Rea & Sielger	2000
	Hirshon	1998
integrating into a cohesive whole	Ferguson, Spencer & Metz	2004
	Frand & Bellanti	2000
	Fulton	2001
	Herro	1998
	Hirshon	1998
	Kenyon Conference	2006
	Marshalsay	1998
	Shapiro & Long	1994

Costs of Mergers. While many have presented a positive outcome from mergers and have used their experience to present benefits from the model, experience has also indicated that they do not always work out. The dissolution of a merger is rarely as widely touted as the original combination (Hardesty, 1998). Perhaps the most infamous example is Gettysburg College's effort. Wagner (2000) outlines the planning mistakes, the creation of a leaderless management structure and cultural clashes that doomed the effort. Not surprisingly write-ups of similar

unsuccessful efforts are not common.

Critics of the model appeared early. They highlighted that the new structure would cause the loss of the traditional academic orientation of the library and weaken academic program support (Dougherty, 1987; Weber, 1988). These concerns have been voiced repeatedly in the literature (Ben-Chaim, 1996; Stoffle, Allen, Morden & Maloney, 2003; Bolin, 2005). Others indicated that successful and effective collaborations can be done without an organizational merger (Martin, 1992; Creth, 1993; Telatnik & Cohen, 1993; Digby, 2001). Even proponents agreed that creating a track record of collaboration could be a good first step to eventual merger and help in addressing other concerns such as the cultural clash between the two organizations (Hirshon, 1998; Cain, 2003).

While administrative developments from a merged model had been presented as a benefit, Clifford Lynch, executive director of CNI, in his forward to Hirshon's (1998) MISO study, pointed out that the most visible administrative development from the new model is often a new high level administrative position, the CIO, at the vice president level. In his report Hirshon pointed out several factors that should not drive a merger including: to save money or space, to remediate weak operations, or reduce direct

reports. Setze and Jordan (2000) raised concerns that administrative structures, even if intended to improve cooperation and communication, do not necessarily achieve this and are not necessarily responsive to changing needs. "Administrative structures do not necessarily represent or respond adequately to student and faculty needs—particularly when those needs are constantly changing" (p.59). Bolin (2005) questions the applicability of convergence and synergy to the library and computing center and posits that there are unique organizational strengths that could be lost in merger.

Critical Review of Relevant Literature

While the professional publications have been extensive in examining the convergence/merger concept and presenting both benefits and costs, scholarly research has been much more sparse. One of the nagging questions in the literature has been how widespread is the merger phenomenon. The literature is replete with comment to the effect that many institutions very publicly took on the merger role, but then later and much more quietly moved back to a more traditional organizational structure. The most recent EDCAUSE Core Data Service report (Hawkins, et. al, 2005) effectively addresses this question by having respondents indicate their organizational structure. It

indicates that smaller and medium sized schools tend to integrate more than two year and larger schools, but that in fact the integrated model is present across the board, much as Hirshon contended in 1998. Most of the research has been dissertations, with only a few published studies. In general the research focus is on strategic planning and the administration or extent of mergers.

Early Research

The earliest research related to the idea of convergence of IT and libraries was Flower's "Academic libraries on the periphery: How telecommunications information policy is determined in universities" (1986). This study was undertaken by the Association of Research Libraries. A survey of 26 technologically leading universities was undertaken and the relationship of the library to computing facilities was specifically examined. The idea of convergence and merger at this point was still fresh. This research focused on the role of the library, if any, on formulating telecommunications policy on campus. Flower's study found the library had next to no role in this, despite the importance of telecommunications to the library's ability to provide networked access to resources and its longstanding use of telecommunications (since the 1970s) to perform its back office functions. Flower

concluded that the library is not part of the discussion of telecommunications policy on campus but that the library needs to have a seat at the table, if only to make sure that the decision-makers are aware of the importance of the network to the library and its services and resources.

Hughes's (1989) "A clash of cultures: libraries and computer centers in an information age" presents a personal case study of engaging in the merger process and the ensuing clash of cultures between the computer center personnel and the library staff. Her dissertation examines her efforts to update an antiquated library with modern information technology and library practice as an outsider coming in from the computer center. It is the first study to look at the merger process and it views it from a strategic planning point of view – the implementation of a CIO at a small college. What are the issues? What factors need to be considered so it will be more likely to succeed? It focuses on the role of the CIO in a merger and emphasized the strategic planning aspects of a merger between campus information providers. Like many writings on mergers that focus on the role of the CIO the actual success of the idea is asserted or at best supported by anecdotal evidence.

The next study that examined the relationship between

IT and the library was Woodsworth and Maylone's review of "The information job family" (1993). This study examined the similarity between library and computing jobs in an integrated academic information environment. In light of the notion that libraries and computing centers were converging, it would make sense that the usually bifurcated job classification system used in higher education for IT and libraries was perhaps hiding this convergence administratively. The researchers found that there was "total or partial overlap on several important factors among the library and computing jobs examined, and some overlap in entire jobs as well as parts of jobs" (p. 7). They identified four types of jobs present in both libraries and academic computing centers:

1. Systems analysis and design
2. User services
3. Resources collection
4. Support services

The study also indicated that jargon obscures the value of a job's activity, particularly in the library field and that in fact new jobs were emerging that were blurring the distinction between the two fields and concludes that:

> It is the set of skills, knowledge, experience and competencies which is of central concern, not the

> departmental affiliation of the position or the source discipline of the qualifying degree. Creating a single job family strengthens the career paths for all information workers, and formalizes what some have fashioned creatively for themselves (p. 10).

The study made news by effectively pointing out to the library profession that much of what they did would be valued more if cast in an information services light rather than a library light (Library Journal, 1993).

Small Institution Focused Research

Despite the previous enthusiasm for merger in the literature and research, Hardesty, (1997, 1998) follows Moholt's (1989) lead in the research area and presents a much less enthusiastic response to merging the two organizations from leadership on both sides of the question. The study examined relations between computer centers and libraries at smaller institutions. From January 1994 through October 1996 Hardesty interviewed 40 computer center administrators and 51 librarians (49 directors) at 51 small colleges throughout the United States. His research represents the first and only substantial research based report on the status of merging libraries and computing centers at liberal arts colleges in the mid 1990s. It highlights the attitudes and opinions of the

leaders of the information service organizations, as opposed to the campus administrators, at liberal arts colleges. The study examines the professional and academic backgrounds, stereotypes and perspectives of the two groups.

The backgrounds of the heads of the two units were markedly different. The librarians all shared the same graduate degree and to a large extent have undergraduate backgrounds in the humanities and social sciences. In comparison, the computer center directors did not have a common graduate degree; some did not have an advanced degree at all. Their undergraduate degrees tended to focus on the sciences and mathematics, although there were some social sciences and humanities representation. Often, the directors of the computer center started as faculty who had an interest in technology. This was how the librarians started — over 100 years ago. The librarians have a long history and tradition, an established educational system and are a recognized profession. Computing center directors do not.

The perspectives of the two groups differ as well; the computing center directors tended to focus their attention on the conduit, the technology, while the librarians focused on content, the intellectual information. The

librarians felt they were engaged in an active educational service to the users, the IT directors presented themselves as an overworked support organization that provided help if asked but tended to let users sink or swim on their own. Both groups acknowledged that there were stereotypes of each other with librarians being overcautious, detail oriented and slow; computer people were much more accepting of change, willing to revisit decisions to the point of never reaching a final conclusion and in a constant state of motion.

Hardesty's study presented four key findings:

1. Most computer centers and libraries at small colleges have neither merged nor closely converged (1998, p. 37).
2. The key to an effective organization is not the structure — it is the people involved (1997, p. 5).
3. When they have moved more closely together, the driving force generally has come from outside the units. … The impetus most often (but not always) comes from the top administration" (1998, p. 37).
4. In the short term, most library directors and computer center administrators want to, and will continue to, collaborate and cooperate closely

> with their counterparts through traditional organizational structures. In the long term, most individuals interviewed believe the two units will evolve in order to work more closely together. (1997, p. 5).

Marshalsay (1998) reported on a much smaller study than Hardesty. In November 1996 she conducted site visits to five institutions in the United States that had merged or were considering merging their libraries and computing centers. All visits included a structured interview with the library director and in some cases other key staff. The study outlines the context, administrative structure, reasons for reorganization and approaches to change for each institution. This report echoes much of the non-research based professional literature in that it emphasizes identifying a model for the combined information organization and who will be in charge of a combined organization.

Marshalsay's (1998) study confirms two of Hardesty's (1997, 1998) key findings:

1. The initial push for merging the two units came from outside the organizations.
2. Changing the two organizations was heavily dependent on the personalities of the individuals involved in

leading the change process.

Contrary to Hardesty's finding that small institutions have not generally merged their library and computing center Marshalsay speculated that small private undergraduate institutions are more likely to be successful in bringing these two support organizations together. She also found "that rapid change without adequate forethought in this area is risky. It is better to move slowly in making changes, dwelling on commonalities and the satisfaction of mutual need to move forward together" (p. 58).

Big Picture Research

Hirshon's study (1998), like Hardesty's (1997, 1998), examined the recent trend of integrating computing centers and libraries at academic institutions and is the only other major published research report on the topic. He explores the causes of organizational integration, attempts to identify factors that would indicate that a merger would be beneficial and successful at an institution, and considers alternatives to integrating the two units. In addition he addressed the characteristics of a successful CIO and the initial planning process for creating an integrated organization was outlined. Integration of the two units should be viewed as a strategic benefit for the institution as a whole. It is not an end in itself,

something to be done because it is trendy but should help the institution achieve its mission and vision.

Hirshon (1998) initiated his study with a focus group with six CIOs at the annual CAUSE conference in December 1996. In the Spring of 1997 he sent an email survey to the 94 CIOs at four-year and graduate level institutions in North America that he had identified as having merged the library and computing center. He received 47 responses, a 50% return rate. In addition, he drew from comments at a discussion session of about 30 CIOs at the December 1997 CAUSE conference.

Hirshon's (1998) study confirms one finding in both Marshalsay (1998) and Hardesty (1997, 1998), that the push for merger comes from outside the two organizations. It is not generally a grassroots effort of the two units. Over three quarters of his "respondents indicated that the decision to integrate on their campus was an executive (top-down) decision" (p. 8). He also confirms Marshalsay's (1998) concern about rapid change in this area:

> The integration of computing and library operations on campus, and the creation of a chief information officer position, require a significant commitment of time and effort by a university or college. This is not a step that can or should be taken blithely. It is

> inevitable that changes required in the organization and culture of information resource operations and in the institution will bring upheaval. For the effort to succeed it requires forethought, planning and a sustained commitment and faith in the direction taken (p. 30).

Unlike the other two studies, which clearly indicated that the people involved and their personalities were important in the success of the merger effort, Hirshon only hints that this may be an issue. He clearly contradicts the other two studies by finding that the integrated organization model is ubiquitous across Carnegie classifications ranging from liberal arts colleges to large research institutions. There is a good distribution at institutions of all types.

As a CIO in charge of a combined information services unit he is presenting as balanced evaluation of the pros and cons with an insider's point of view. But Hirshon (1998) clearly does believe they offer considerable benefit to higher education. He found five major reasons merged information services organizations were a growing trend in higher education institutions:

1. There is a growing convergence of information and the technology upon which it relies, and a desire

to use the technology to advance the teaching, learning and research processes.

2. There is an increased ability to use information and technology to create and improve the coordination of services
3. There is a need on some campuses to remediate organizational weaknesses or to fix problems in service orientation.
4. A precipitating event caused a reexamination of how the units should be organized.
5. Information resources were reevaluated as part of the development of a new institutional strategic vision.

Hirshon (1998) also highlights five practical benefits to creating a merged organization: service improvements, improved visibility, greater organizational flexibility, increased cooperation and compensation equity. Hirshon's study is a research based how-to manual for higher education institutions interested in creating a combined information services organization.

Fulton's study (2001) is a qualitative examination of merging library and information systems units in higher education. Between February and May 1999 she conducted site visits to seven medium-sized higher education institutions

and conducted in depth interviews with each of the CIOs. She supplemented these with document reviews and staff interviews. Using a combination of grounded theory and phenomenological approaches, it explores the "sensemaking" processes these CIOs undertook as they worked through the creation of a new organization, Information Services. She examined the decisions CIOs made in restructuring related but previously distinct units into a new organizational structure, focusing on their organizational vision.

The study reviews 32 factors covering the personal, organizational and institutional that should be considered in creating a new merged information services unit and goes on to present 26 "lessons learned" for the consideration of anyone undertaking to create a new information services organization. Fulton's (2001) key findings are that the CIO must:

1. Undertake the role of change agent and take calculated risks
2. Consider many possible models for restructuring, but needs to work within the unique institutional environment; it may require evolution and not revolution to accomplish an integrated organization.

3. Articulate a vision of an integrated organization and the convergence of the information professions.
4. Be aware that personnel is as important as actual structure, highlight natural areas of overlap and encourage staff to come together to work on common issues that bridge the two units while incorporating new organizational forms where they provide benefits.

Considering Fulton's (2001) findings in light of the earlier research, it was clear that several findings from the earlier studies were addressed again. One key finding that was not considered was the idea that the impetus for creating a CISO comes from the top administration, or at least from outside the two units. Fulton's study started with the decision already having been made and does not delve into why or how the institution made the decision. This was the one finding the three previous studies agreed upon, Fulton took it as a given and so for this question, the field has definitely progressed.

A second major finding from earlier studies that Fulton (2001) confirmed was the role of personnel and personalities in integrating the two separate organizations. Hirshon (1998) only obliquely touched on

this point, both Marshalsay (1998) and Hardesty (1997, 1998), thought it a key point. Fulton confirmed this. "Remember that 'collaboration, communication and cooperation' may be more important to integration that the actual structure" (p. 402). The entire study was focused on the CIO as a change agent. Her lessons learned stressed that the CIO must pay careful attention to the cultural and professional identities of the staff and the CIO must work to bridge these differences and encourage the creation of a new professional affiliation, Information Services, for all members of the organization.

Fulton (2001) supported Hirshon's (1998) earlier findings that all types of institutions merge. She identified over 40 medium sized institutions as potential site visits and selected seven. Hardesty's (1997, 1998) and Marshalsay's (1998) emphasis on small institutions appeared to be incorrect. Fulton also questioned Hardesty's finding that cooperation and collaboration can take place within the context of the traditional structures. She clearly supported Hirshon's findings that institutions are combining and integrating these units into a single organization.

Bolin (2005) conducted a "census" of land grant universities to gauge whether or not "academic libraries

and computer centers in fact have an administrative relationship at many or most universities, and if so what is the relationship?" (p. 4). The census was conducted using a standardized questionnaire and reviewing the web sites of the 50 1862 Land Grant institutions. Bolin identified five possible organizational models from traditional to combined, depending on the director and reporting structure of the combined organization.

Bolin (2005) found that among land grant institutions, the library and computer center most often remain separate organizations. She further indicated that these findings were compatible with Hirshon's (1998) earlier study, because Hirshon indicated that the integrated organization model was present in large institutions at a lower rate than at small institutions. However, she also presented a more polemical conclusion that, while campus administrators may view the library and computing center as having synergy, it may be that this was because they each have, in their own way, synergy with everyone, including each other. By maintaining their organizational independence they could in reality be preserving the strengths of both. Bolin's conclusion therefore challenged much of what had been asserted in the professional literature by examining the same studies and providing a markedly different conclusion

from the same facts, supplemented by a small research effort.

Summary and Conclusions

The professional literature highlights both theoretical rationales and real-life experiences of benefits and costs for integrating information services organizations. Analysis of the literature indicates four areas that the MISO model will benefit: academic, administrative, institutional and organizational. The absence of evaluative literature is readily apparent. Previous research has focused primarily on how to integrate computing and libraries or alternatively, on how widespread the combined model was in higher education. The researcher has been unable to identify any other evaluative effort—published or reported—that examines how effective MISOs are in providing services and whether or not they were providing the benefits attributed to them in the literature.

Chapter Three

Methodology

This chapter describes the methodology that was used to acquire the data, conduct analysis and develop the conclusions for the study. This study is descriptive exploratory survey research which assesses the perceptions of CIOs and academic deans with respect to the effectiveness of merged information services organizations.

A survey of academic deans and CIOs was undertaken to assess the perceived effectiveness of MISOs in providing services and resources to the college as well as providing expected benefits. The participants in the survey were from Carnegie classified bachelor's level institutions that have merged their information services units into a single organizational structure. The questions provided for a general assessment of the MISO effectiveness. They also focused on benefits identified in the literature that a MISO type organization was expected to provide. These fall into four broad categories: academic, administrative, institutional and organizational.

Hypotheses

The following null hypotheses based on the problem and subproblems were tested.

H_{o1} There is no significant difference in the assessment

of the overall effectiveness of a merged information services organization as perceived by the chief information officer and as perceived by academic deans at liberal arts colleges.

H_{o2} There is no significant difference in the effectiveness of a merged information services organization in providing academic benefits as perceived by the chief information officer and as perceived by academic deans at liberal arts colleges.

H_{o3} There is no significant difference between the effectiveness of a merged information services organization in providing administrative benefits to the campus as perceived by the chief information officer and as perceived by academic deans at liberal arts colleges.

H_{o4} There is no significant difference in the effectiveness of a merged information services organization in institutional benefits as perceived by the chief information officer and as perceived by academic deans at liberal arts colleges.

H_{o5} There is no significant difference in the effectiveness of a merged information services organization in providing organizational benefits as perceived by the chief information officer and as perceived by academic deans at liberal arts colleges.

Identification of the Population and Selection of Sample

The population of interest is liberal arts colleges in the United States in which the computing center/IT units and the library have merged to form one merged information services organization. The exact number of institutions in which this merger has taken place is unknown. The best estimate can probably be drawn from the EDUCAUSE Core Data Service. This is a regularly administered self-reported survey that provides timely and accurate information on the information services organizational structure at higher education institutions. Based on calculations using data from the Educause 2004 Core Data Service (CDS) and the Carnegie Commission web site, the number is approximately 114 baccalaureate institutions. This number probably overestimates the number of MISOs. Since EDUCAUSE actively supports such developments institutions that are pursuing a MISO would probably join it. In which case a more realistic number, and the target population used for this research, is 46, the estimated number of bachelor's level MISO institutions in EDUCAUSE (15.4% of 299 bachelor's level institutional members in EDUCAUSE based on 2006 web site review).

The focus of the research is on bachelor's level institutions because these are the institutions that the

literature and conversation indicates are more likely to pursue this organizational structure. Although the CDS indicates that masters and bachelor's level institutions are equally likely to have a MISO type organization (15.4%), other factors seem to indicate that bachelor's institutions, at least in the MISO itself, are more focused on the MISO success. Two indications of this are the formation of the CLIR-CIO group and the implementation of the Bryn Mawr survey.

The CLIR-CIO group is an informal group that meets twice a year to discuss common issues among colleagues. It is composed predominantly of liberal arts institutions. It has 34 members, 22 of which are bachelor's level institutions and therefore represents about 46 percent of the total target population of 46 undergraduate level MISOs. The Bryn Mawr survey (also referred to as the MISO study) is currently in process and represents an effort of a number of MISO institutions, again predominantly liberal arts institutions, to survey their users and assess how well or poorly they are performing. These two independently taken efforts on the part of largely bachelor's institution MISOs indicate a commitment to this new type of organization and hopefully, a willingness to respond to an assessment effort.

The initial cluster for this research was institutions whose CIO joined the CLIR-CIO group as identified by a group directory. This was used as a starting point to identify other institutions. In addition the literature was reviewed to identify MISO institutions and several listservs were polled – the CLIR-CIO group, the Oberlin group directors, Affinity group directors, and the college librarians list. These efforts were expected to identify institutions and expand the list to include those that have not joined CLIR-CIOs. It was expected that this process would identify at least 30 undergraduate colleges with merged information services organizations; it identified 38 institutions. For this study, the population surveyed was the CIOs and academic deans at the 38 identified undergraduate colleges with a merged information services organization.

Development of Instrument

A survey instrument was developed to address the various independent variables identified. The instrument was developed by the researcher based on the literature. In addition to questions providing a general assessment of the MISO, the taxonomy of benefits identified from the literature review was used to create questions that were compiled into composite variables. Previous researchers

used some survey questions, apparently mostly for institutional and demographic characteristics. These were reviewed, when possible, as a starting place. The survey was confidential but not anonymous.

The questionnaire (see Appendix A) was based on the literature and framed around a general assessment and the expected benefits of a MISO model. The survey contained three sections. The first was for the collection of appropriate demographic and institutional characteristics. This section was slightly different depending on whether the respondent was a dean or CIO. CIOs were asked a few questions about the longevity and size of the MISO at their institution. These responses were used to provide uniform data for both the CIO and Deans on these issues. A second section consisted of multiple questions that address each of the previously identified expected merger benefits. The survey was composed of Likert scale questions. All of the items required respondents to choose 1 of 5 points on the scale. Recent research has indicated that the use of a 4 or 5 point scale and the horizontal format planned for the web form are appropriate formats for the questionnaire (Fink, 2003; Bourque & Fielder, 2003). The third section of the questionnaire provided an opportunity for respondents to provide free form information as well. A final question on

the survey was a request to indicate if the participant would be willing to be interviewed on a confidential basis by the researcher. In order to promote response and increase reliability and validity the researcher took care to design a concise instrument that would create minimal demands upon the respondents.

Validity of the instrument was accomplished through an expert panel review. After drafting the questionnaire and consulting with the committee the survey was reviewed by an expert panel for face and content validity. The survey was distributed to determine if it was capable of supporting this study. They were asked to consider such questions as:

- Do you think that it measures all the necessary variables or issues?
- Are any important issues or variables missing?
- Are there items that you don't think belong in the survey?

The panel suggested some modifications. This survey was then used in a pilot study of identifiable master's level institutions classified as small or medium and non-bachelor's level members of the CLIR-CIOs group that were using the MISO model. This was to ensure that key terms and definitions were understood and the individual questions were clear. Feedback from the pilot study, in consultation with the expert panel and the committee led to some changes

in wording and tense of the questions, the addition of a question on the size of the MISO and the reordering of the qualitative questions. Reliability for the instrument was established by using Cronbach's Coefficient Alpha. This test was run using the Statistical Package for the Social Sciences (SPSS) software after the data were collected.

Data Collection Procedure

Data were collected through a web-based survey. Research indicated that the dynamics and challenges of email or web based surveys closely parallel mail surveys (Fowler, 2002). The survey population was such that use of the web survey mechanism should not have an impact on survey results (Dillman, 2007). Several techniques were used in an effort to increase the survey response rate. An initial pre-notice letter was sent to the survey population by U.S. mail (See Appendix C). The letter encouraged them to respond by describing the value of their participation to the assessment of merged IT/Library organizational structures as well as the benefit this can have for the future development of successful merged IT/Library organizational structures. After the letter, an email from the researcher was sent to the survey population containing a link to the web based survey (See Appendix D). It repeated the rationale for participating and encouraged

them to respond by going to the provided web address to complete the survey.

The study utilized the SurveyMonkey web survey service. The SurveyMonkey software allowed the collected data to be exported in a common csv text file that could be imported into the SPSS software package for review and analysis. This survey service also allowed targeted follow-up reminders requesting completion of the survey to only those members of the target group who have not responded. The first of these follow-ups was emailed one week after the initial survey was sent (See Appendix E). Two weeks later a second follow up email was sent. One month after the original email was sent a final follow-up initiative was taken to contact the remaining non-responding participants in the sample through telephone to encourage their participation and provide as complete a sample for data analysis as possible.

Data Analysis

Multiple statistical methods were used to examine the data. The data collected from the survey were entered into and analyzed using SPSS. Descriptive statistics were run to provide an overview of the data and provide means, standard deviations and percentages. To identify and measure the relationship of the expected benefit independent variables

to the combined overall general assessment variable a Pearson correlation test was used for data analysis.

In order to identify significant differences between the two respondent groups (CIOs and academic deans) an independent *t*-test was used for data analysis. The null hypothesis for the test was that there would be no significant difference between the two respondent groups. In addition, a MANOVA was used to provide a multivariate test for variance between the CIOs and Deans across the four expected benefits.

Consolidated Variables

In order to conduct the analysis the individual items on the survey were used to construct five consolidated variables: General Assessment, Academic Benefits, Administrative Benefits, Institutional Benefits and Organizational Benefits (See Appendix A for complete questionnaire). A *t*-test was run to determine if there was a significant difference in the perceptions of CIOs and academic deans in the achievement of each of the expected benefits. The *t*-test assumes normally distributed data. However, it has been found that even with a far from normal population the *t*-test provides reasonably accurate results (Aron, Aron & Coups, 2005). So while the data in the survey were skewed the results were considered indicative of the

population.

For the first research question, the independent variable is the perception of the MISO's general effectiveness and was measured by adding the response to three items together (number 01 through 03) on the questionnaire. A *t*-test was run to determine if there was a significant difference in the perceptions of CIOs and academic deans on this variable.

For the second research question the independent variable is the perception of academic benefits and was measured by adding the response to 10 items together (number 04 through 13) on the questionnaire. A *t*-test was run to determine if there was a significant difference in the perceptions of CIOs and academic deans on this variable.

For the third research question the independent variable is the perception of administrative benefits and was measured by adding the response to 10 items together (number 14 through 23) on the questionnaire. A *t*-test was run to determine if there was a significant difference in the perceptions of CIOs and academic deans on this variable.

For the fourth research question the independent variable is the perception of institutional benefits and

was measured by adding the response to four items together (number 24 through 27) on the questionnaire. A *t*-test was run to determine if there was a significant difference in the perceptions of CIOs and academic deans on this variable.

For the fifth research question independent variable is the perception of organizational benefits and was measured by adding the response to four items together (number 28 through 31) on the questionnaire. A *t*-test was run to determine if there was a significant difference in the perceptions of CIOs and academic deans on this variable.

Qualitative Responses

Written responses to the open-ended questions on the questionnaire were compiled by hand and analyzed to generate appropriate categories for the data. The data were used to help the researcher develop the analysis of the perception of MISO effectiveness by identifying themes in the replies to help identify common points of concern or success. In addition they were used to supplement the quantitative data by providing appropriate illustrations for the survey results.

Chapter Four

Results

This study examined the perceptions of the effectiveness of merged information systems organizations at Carnegie bachelor's level institutions by academic deans and MISO heads (CIOs). These two groups of administrators were considered to be in a position to have an informed judgment about the operational effectiveness of the support provided by an institution's MISO. This chapter reviews the results of a quantitative and qualitative survey of academic deans and MISO heads at selected institutions. This chapter begins with a review of the descriptive statistics from the survey, followed by an analysis of the data in light of the null hypothesis with results presented in tabular and narrative form, and concludes with a review and analysis of the qualitative responses from the survey.

Survey Population

Of the estimated 46 bachelor's level institutions in EDUCAUSE with a MISO model, the researcher was able to identify 38 such institutions. Email surveys were sent to both the MISO head and academic dean at all 38 institutions. An email response was received from two of these that they no longer use the MISO model. A total of 41 survey responses were received for a 54% response rate. One

of these had no usable data, another had a truncated return with minimally usable data leaving 39 generally usable responses, a 51% response rate, for the data analysis.

Instrument Reliability

The questionnaire (see Appendix A) was based on the literature and framed around a general assessment and the expected benefits of a MISO model. The non-institutional/ demographic section of the survey consisted of 31 questions using a 5 point Likert scale where 1 was marked "strongly disagree" and 5 was marked "strongly agree." The reliability for each of the 31 items was established using Cronbach's Coefficient Alpha in SPSS. The alpha if deleted option was used. To be a good measure, it is generally accepted that for the social and behavioral sciences the Cronbach's Alpha should be at least .6 or .7 and preferably closer to .9 (Aron, Aron & Coups, 2005). On this scale, all items were found to be reliable and so no items were omitted from the analysis. Each grouping was measured independently and produced α from .816 - .939, which is at or above the generally acceptable value of Cronbach's Alpha (see Appendix F for complete results).

Descriptive Statistics

The responses came from 16 academic deans and 25 CIOs. It was a dean that failed to provide any responses and a

CIO who only responded minimally, answering the general assessment questions and skipping the MISO benefits and open ended responses. This leaves generally usable responses from 15 deans (a 39.5% response rate) and 24 CIOs (a 63.2% response rate). Each respondent was asked to provide the time they had been in their position and the time they had been at their current institution. Table 6 provides the basic descriptive information on these institutional and demographic variables.

Table 6

Descriptive Statistics on Time and Size by Position

	Position	N	Minimum	Maximum	Mean	SD
Time in Position	Academic Dean	16	0.1	9.0	3.5	3.1
	MISO Head	25	0.5	14.0	5.6	4.2
Time at Instition	Academic Dean	16	0.5	31.0	11.8	11.8
	MISO Head	25	0.5	36.0	12.6	8.7
Time with MISO	Academic Dean	13	1.3	11.0	6.3	3.2
	MISO Head	25	1.0	16.0	7.2	4.2
MISO FTE	Academic Dean	10	8.0	71.0	39.9	20.5
	MISO Head	25	8.3	101.0	44.1	23.0

The mean number of years in the position was 4.8, the mean number of years at the institution was 12.3. In addition, the CIOs were asked to identify how long the institution had been using the MISO model (mean 6.88 years), and how many FTE employees the MISO had. These responses along with information from the CLIR-CIO

directory, was used to provide this data for the many of the academic deans. In addition, the CIOs were asked to identify their professional background as computers, library, instructional media, faculty or other. The responses indicate that library was the most frequent professional background reported by the CIO with 18 of the 25. The "other" category responses were two faculty and academic administration, one instructional technology and one institutional research.

Questionnaire Responses – Means

Examining the means of the responses to the individual questions reveals that the CIOs consistently had a higher opinion of the MISO and its benefits than did the deans (See Table 7). The CIOs had a mean of 4 or greater (on a 5 point scale) on 11 of 31 questions. The Deans only had a 4 or greater on three questions. Conversely, the CIOs lowest mean was 3.23, which is above the mid point on the scale. The deans had two questions with a mean below 3, a generally unfavorable rating, and one with a mean of 3.

Table 7

Mean Scores for Individual Items

	Dean		CIO	
Question	N	Mean	N	Mean
MISO performance satisfactory	15	3.9	25	4.1
MISO provides needed IS and Resources	15	3.9	25	4.1
MISO effective providing user satisfaction	15	3.6	25	4.1
access to technology resources	15	3.9	24	4.1
access to information resources	15	4.1	24	4.4
instructional support	15	3.6	24	3.8
research support	15	3.3	22	3.8
faculty support	15	3.6	24	4.0
student support	15	3.9	24	4.1
training for students	14	3.3	24	3.5
training for faculty	15	3.0	24	3.4
collaboration between faculty & MISO staff	15	3.5	24	3.7
academic orientation	15	3.5	24	3.6
campus IT news	15	4.0	23	3.5
information sharing	14	3.4	23	3.5
fiscal benefits	15	3.7	23	3.8
collaboration between MISO staff and campus staff	15	3.3	23	3.7
flexible in using its resources	15	3.7	23	4.2
integrates technology into campus activities	15	3.9	23	3.9
technology planning	14	3.6	23	4.0
campus information policy	15	4.1	22	4.2
campus information infrastructure	15	3.7	22	4.4
management of campus web presence	15	3.5	23	3.4
community relations & outreach	15	2.8	23	3.5
reputation & prestige	15	3.3	23	3.3
attracting students and benefactors	15	2.9	23	3.5
transformation of institution for information age	15	3.6	23	3.9

Table 7 Continued

Mean scores for individual items

	Dean		CIO	
Question	N	Mean	N	Mean
creating cohesive whole	15	3.5	22	3.9
information professionals	15	3.3	22	3.2
visibility of IS on campus	15	3.8	22	3.8
leadership of IS on campus	15	3.5	22	3.9

The two questions that generated unfavorable means by the deans both dealt with institutional benefits—community relations and outreach (M = 2.8) and attracting students and benefactors (M = 2.9). A third institutional benefit, campus reputation and prestige (M = 3.3), is the fifth lowest means score for the deans. The responding deans do not rate the institutional benefits very strongly. The CIO respondents rate this benefit more positively. The dean's two low scores below a 3 are also two of the largest mean differences between the two respondent groups.

There were only three questions where the deans in the sample had a higher mean than the CIOs: the management of the campus web presence, evolution of information professionals and the delivery of campus IT news. Of these three, the delivery of campus IT news was the third highest for the deans and one of only three where their mean reached 4 or higher. This was one of only six questions that had a mean difference between the two groups of .5 or

greater.

More notable, the rank difference on the campus IT news question was 22. The deans had it as their third highest mean, for the CIOs it was the 25th highest mean. The next largest rank difference was nine for research support and the visibility of IS on campus.

The third area where the deans rated the MISO higher was the question dealing with the evolution of information professionals. This question is actually the lowest mean score for the CIOs (M = 3.2).

There was more agreement on the highest means (2 out of 3) than the lowest (1 out of 3). High ranking mean agreement came on the academic benefit of providing access to information resources (a 4.0/4.4 Dean/CIO split) and the administrative benefit of working out a campus information policy (a 4.0/4.2 Dean/CIO split). The low ranking mean agreement was on the academic benefit of providing faculty training (a 3/3.4 split).

Examining the mean scores (see Table 8) of the consolidated variables indicates that the perception of the MISO was favorable by both groups. The assessment of the grouped variables is notably consistent when ranked by mean scores. For both groups the consolidated variables are ranked in the same order: General Assessment being highest

with 3.8/4.08 Dean/CIO split, followed by Administrative Benefits, Academic Benefits, Organizational Benefits and then Institutional Benefits with a 3.15/3.55 split. In all cases the CIO consistently perceived the MISO as better performing than did the dean.

Table 8

Mean Scores of Consolidated Variables

	Position	N	Mean	SD
GA_Mean	Academic Dean	15	3.80	0.92
	MISO Head	25	4.08	0.70
Acad_Mean	Academic Dean	15	3.55	0.78
	MISO Head	24	3.83	0.70
Adm_Mean	Academic Dean	15	3.68	0.86
	MISO Head	23	3.86	0.68
Inst_Mean	Academic Dean	15	3.15	1.03
	MISO Head	23	3.55	0.75
Org_Mean	Academic Dean	15	3.55	0.97
	MISO Head	22	3.69	0.92

Data Analysis

To address the research question of the perception of a MISO's effectiveness generally as well as its ability to deliver specific expected benefits in four benefit categories a *t*-test was run to detect significant differences in means between the two respondent groups. An independent *t*-test was used to maximize the available data in each case, general assessment as well as academic, administrative, institutional and organizational benefits.

In all cases LeVene's Test for Equality of Variances was not significant ($\alpha > .05$) and therefore equal variances were assumed in all tests. The tests returned results that were not significant. The two groups of administrators did not vary significantly on any of these points. Complete results of the *t*-test are provided in Table 9.

Table 9

Independent t-test for Consolidated Variables

	Academic Deans		MISO Head				
	M	SD	M	SD	t	df	Sig. (2-tailed)
GA_Mean	3.80	0.92	4.08	0.70	-1.09	38	0.284
Acad_Mean	3.55	0.78	3.83	0.70	-1.18	37	0.246
Adm_Mean	3.68	0.86	3.86	0.68	-0.71	36	0.481
Inst_Mean	3.15	1.03	3.55	0.75	-1.40	36	0.170
Org_Mean	3.55	0.97	3.69	0.92	-0.46	35	0.652

$p < .05$

In addition, a subgroup of paired responses was created for the 10 institutions where both the dean and CIO responded and a dependent *t*-test was utilized to test for significant variances in the means. This test also returned non-significant results where the deans' administrative benefits score ($M = 3.8888$, $SE = .2214$) was higher than the CIO's score ($M = 3.580$, $SE = .2205$, $t(9)=.903$, $p = .390$) and the closest to being significant.

To further explore the results, *t*-tests were also run for each individual component of the consolidated variable.

This might indicate that portions of a benefit are viewed significantly differently between the two respondent groups. In no case was a significant difference in means found. All research hypotheses were found to be not significant. The lack of significant variance in the means indicates that both the academic administrator (deans) and the information administrator (CIO) agree in their perception of the effectiveness of the MISO organization as well as its ability to provide expected academic, administrative, institutional and organizational benefits.

In addition to the independent and dependent *t*-tests, a MANOVA was used to examine the variance between the deans and CIOs across the four expected benefits and their general assessment of MISO performance. This test also found no significance in mean differences between the two groups. Using the Wilks' Lambda test the MANOVA test returned a p =.353. These two groups of administrators are in general agreement in their perceptions of the MISO.

Correlations

Correlation coefficients were computed among the general assessment and four expected benefit consolidated variables. The results in Table 10 show that all correlations were statistically significant. Furthermore all were greater than .639 indicating a large effect size.

All correlations are positive indicating that as one factor goes up the others will as well. The highest correlation is between the General Assessment and Academic Benefits. This correlation indicates that the perception of the MISO's general effectiveness is related to the ability to deliver academic benefits.

Table 10

Correlations Between Consolidated Variables

	GA_Mean	Acad_Mean	Adm_Mean	Inst_Mean	Org_Mean
GA_Mean	-	.880(**)	.837(**)	.639(**)	.785(**)
Acad_Mean		-	.866(**)	.762(**)	.779(**)
Adm_Mean			-	.813(**)	.869(**)
Inst_Mean				-	.759(**)
Org_Mean					-

**$p < .01$

Both general assessment and academic benefits are also highly correlated to administrative benefits. Once again there is a relationship between the perception of the MISO's ability to administer resources and services effectively and its general assessment and its ability to provide academic benefits. It appears that administrative benefits have the broadest impact with its correlations being the highest for every variable combination except the General Assessment and Academic Benefits connection. Institutional benefits have the lowest scores across all variable combinations.

Supplemental Analysis

Significant differences between groups were found when the respondents were grouped not by position but by either individual or institutional experience. Time is an important factor in the assessment of the MISO. When split by "time in position" at a cut point of 5 years experience, approximately the mean for this variable, significant variance in means was found in the General Assessment, administrative and institutional variables. For these three consolidated variables the individual's experience in the position the split in means is consistent across all variables—more experience in the position corresponds to a higher the mean score. Table 11 provides the results for all five variables.

Table 11

Independent t-test for Time in Position

	Greater than or equal to 5 years		Less than 5 years				
	M	SD	M	SD	t	df	Sig. (2-tailed)
GA_Mean	4.26	0.64	3.71	0.83	2.3158	38	0.026
Acad_Mean	3.95	0.56	3.51	0.82	1.9618	37	0.057
Adm_Mean	4.05	0.58	3.56	0.82	2.0765	36	0.045
Inst_Mean	3.74	0.62	3.09	0.98	2.4093	36	0.021
Org_Mean	3.89	0.69	3.39	1.07	1.6557	35	0.107

$p < .05$

Significant variance in means was also found when the respondents were split by "time with MISO." Again using the

approximate mean for this variable of 7 years, significant difference was found but only in the academic benefits variable. Those with 7 years or more experience (M = 4.0029, SD = .63014) rated the MISO as more effective in providing academic benefits than those with less than 7 years experience (M = 3.5062, SD = .72783, t(35)=2.223, p < .05). In both cases, institutional experience with a MISO model or the individual's experience in the position, the split in means is consistent across all variables—the longer the experience the higher the mean score.

Correlations and Time

Correlation coefficients were computed among the general assessment and four expected benefit consolidated variables with the Time in Position and Time with MISO variables. With an α value of .05 four of the five correlations — general assessment, academic benefits, administrative benefits and institutional benefits—were statistically significant when considering "Time in Position". The results in Table 12 show that the Pearson Correlation was between .357 and .393 indicating a medium effect size of "time in position" with the general assessment and expected benefits.

Table 12

Correlations between Time in Position and Consolidated Variables

	GA_Mean	Acad_Mean	Adm_Mean	Inst_Mean	Org_Mean
TimeinPosition -	.358(*)	.387(*)	.357(*)	.393(*)	0.272

* $p<.05$ **$p<.01$

Similar results were not gained for the "Time with the MISO" variable. In this case only one benefit (academic benefits) showed significance ($p < .05$) but it was still a medium size effect at .361 (See table 13).

Table 13

Correlations between Time with MISO and Consolidated Variables

	TimewMISO	GA_Mean	Acad_Mean	Adm_Mean	Inst_Mean	Org_Mean
TimewMISO -		0.283	.361(*)	0.221	0.222	0.198

* $p<.05$ **$p<.01$

Open-Ended Questions

The qualitative data were evaluated in a number of ways to ascertain its meaning. Thirty-six of the 39 respondents (92%) provided written responses to the six open-ended questions at the end of the survey. Fourteen were provided by academic deans, twenty-two by CIOs. The first analysis was how did the respondents answer key issues raised directly in the questions. Secondly, the responses were evaluated to determine if they were in agreement with the survey's quantitative component questions. Finally, do the written responses confirm or dispute any of the findings from earlier research and the

published literature and are any new issues raised by the respondents that had not previously been identified?

Direct Responses

The qualitative questions were intended to allow respondents to address concerns that would include a general assessment of the MISO and its expected benefits but would also provide them with the opportunity to raise issues on a broad basis that may have been overlooked by the researcher. Many respondents did provide extended comments as they answered the five key issues raised directly in the questions:

- Would they encourage creation of a MISO?
- Did a MISO improve services?
- Was a "champion" motivating the creation of the MISO?
- Was creating the MISO worth the effort?
- What costs as distinct from benefits were involved in the MISO?

The general tenor of the written responses was positive. The breakdown of responses is listed in Table 14.

Table 14

Direct Question Responses

	Academic Dean			CIO		
	Yes	No	Other	Yes	No	Other
Encourage Creation	7	1	1	10	1	5
Improve Services	9	1	1	14		
Champion	7			18		
Worth Effort	7	1		18		
Cost	3	8		4	12	

In looking at the issue of creating a MISO where one does not exist, 2 respondents indicated a somewhat future orientation mentioning the enormous potential or "natural evolution" of the MISO. The five CIOs that responded "maybe" indicated that information service and support should not really be a structural issue. The answer depends on an effective assessment of local considerations and how best to provide service and support. It is interesting that the one CIO that indicated a negative reaction to re-creating a MISO is one of the four "other" category respondents and states that "The MISO is generally the merger of a satisfactory library with a weak-performing IT unit." Bringing the two together is basically a way to bury the problem, rather than address it head on.

Even more respondents believed that the MISO improved service than would create one. The general sense was that the MISO encourages collaboration and synergy across units. Some individuals indicated that it improved communication

and creativity among the staff. Even the CIO respondent who would not re-create a MISO acknowledged that it had provided service benefits.

The most frequently cited key influence in motivating the creation of the MISO was management issues. The most specifically cited was bad information technology service — "prolonged melt-down of IT services," IT "was faltering badly" and IT "was perceived as not serving the campus." The importance of a champion was clearly evident from the responses, 25 indicated that a champion pushed for the MISO's creation. Of these 68% indicated that this push came from the school's president or academic leadership not the information services units. This confirms what earlier research had found.

There was also an overwhelmingly favorable response to the question of whether or not the effort to create the MISO was worth it. Again 25 indicated an affirmative opinion, multiple respondents stressed their opinion by indicating it was "absolutely" or "definitely" worth the effort. The general sense conveyed by the respondents was that the MISO improved integration, collaboration and synergy. However it was acknowledged that there were difficulties in the early stages with some staff resistance.

Costs

The issue of costs "in the sense of services/resources stopped or opportunities not pursued" that a MISO entails largely generated a negative response — the respondents did not see any costs that had been paid. As one respondent wrote, "None come to mind that were lost or not pursued, that would be considered important to me." While the majority did not report any costs associated with the MISO there were responses that can be categorized into two different concerns — time in relation to staff development and the loss of focus by the reorganized staff.

The point of the staff development responses was that the creation of a MISO out of diverse staffs with differing cultures requires considerable time and effort in staff development. As two of the CIOs wrote, "integrating services is going to require that some staff development time be devoted to *helping staff appreciate the model* [italics added]" and "It has cost us time and effort to create broad institutional understanding *within the organization* [italics added] of what we're up to and how we are dependent upon each other". This recognition of an extensive need for staff development is new. Earlier literature and research indicated there might be some staff issues that a CIO would have to deal with but did not

indicate that a staff development program was needed.

The other mentioned cost was a loss of focus—in all cases there was a concern that the library would lose focus on its mission. Respondents reported, "The library suffered initially because the director was pulled away from library issues and forced to deal with many IT issues. That continues to be true to a degree today, but other library staff have since been cultivated and recruited to help fill this void." And "There is a suspicion that we do not pay enough attention to books." In two cases it was also thought that IT had lost focus when the merged unit was created. "I think both the library and IT have had their innovativeness blunted by the MISO arrangement and its all-consuming focus on customer service. Service should be excellent, but time, talent, and money need to go into other needs, too." While one of the deans report that "Academic Technology for Teaching and Learning gets subsumed under other priorities within a combined structure."

Qualitative and Quantitative Agreement

In considering the effectiveness of the MISO and whether or not it provides benefits in academic, administrative, institutional and organizational areas the tenor of all of the written responses was largely positive

and so they agree with the quantitative data analysis. When ranked by the number of positive comments the placements of the benefits exactly matched the rankings by mean of the combined variables (See Table 15).

Table 15

Positive Qualitative Responses and Mean Scores

	Number of Comments	Mean
General Assessment	28	3.98
Academic Benefits	16	3.72
Administrative Benefits	23	3.79
Institutional Benefits	1	3.39
Organizational Benefits	14	3.64

The respondents are largely in agreement in viewing the MISO as providing effective support. In reviewing the comments, 28 provided feedback categorized as a positive general assessment of the MISO. As one respondent wrote, "the MISO promotes sharing of resources and expertise in a relatively small environment. Collaboration and cooperation help us make the most effective use of our information and technical resources." An emphasis on collaboration and service improvements was common.

The expected benefits also find support in the written responses with one exception – institutional benefits. Only one comment was categorized as being institutional. Institutional benefits were defined as "the ability to provide a favorable impression of the institution to

outside individuals." It may be that respondents viewed this as a bit of a reach for a support organization. The other three benefits were all much more directly addressed by the written comments. This discrepancy between the numeric score and the written words may indicate that the score is somewhat soft.

Past Research and New Findings

In addition to responding to the direct questions and providing information on the expected benefits, the written responses also provided data that directly address points from the literature and past research as well as raising new points. Twelve additional topics were identified from the comments. They ranged from one comment on the strategic nature of the MISO to 14 connected to the importance of collaboration and coordination to the MISO. (See Table 16)

Table 16

Other Concerns Raised in Responses

	Dean	CIO
Time	2	5
Personnel	4	6
Culture	3	7
Synergy	2	4
Collaboration	2	12
Management Problems	-	5
Visibility	2	2
Leadership	2	2
Local Environment	1	5
Strategic	-	1
Focus	2	2
Future	1	2

These points shed light on the role of personalities and local environments to a MISO, culture and personnel and the costs as well as the benefits an institution must expect if deciding to create a MISO.

Confirmations of Earlier Research

A number of the comments provided by the respondents directly address the literature and past research. These provide additional confirmation for earlier findings.

Collaborations and Synergy

The most frequently commented on development of creating a MISO is the improvement and potential for collaboration and synergy between the units brought together. A number of respondents indicated that the collaboration and synergy were extremely beneficial or that

the future potential for these developments were an important consideration in moving to the MISO model.

Local Environment

Another thread in the comments was the importance of the local environment in creating the MISO. Whether it was bad management, the significance of personalities or high level champions, several respondents provided very thoughtful comments on the importance of local considerations. One CIO wrote, "A MISO is not in and of itself a silver bullet to solve all problems. The benefits of creating a MISO are very dependent on the needs and characteristics of the institution." While another reported, "I believe that whether or not a MISO is effective depends on the culture of a campus."

Culture, Personnel and Personalities

Related to the stress on local considerations were the comments on the issues of culture and personnel. These comments repeat earlier research findings that any effort to merge the library and IT will bring together individuals who often are coming from very different cultural backgrounds. Managing these cultures is an important role for the CIO and champion. The initial implementation of the merger always generates concerns among staff and that these need to be addressed directly.

Role of a Champion

Outside support and personalities were a factor in implementing a MISO. A few commented that the "CIO to be" favored it, but they also indicate that it was not possible to implement a MISO without significant outside support. The responses clearly confirm earlier research indicating that there was an outside force pushing for a merger of the information services units. When asked about the importance of a champion, the respondents overwhelming indicated that this was essential to the success and that it was someone at a high level—the president, or dean most often. Twenty-five respondents indicated that the importance of a champion was essential, of these 17 indicated that it was the president or dean.

New Issues — Costs

While few respondents actually identified costs for implementing the MISO directly, several individuals did identify points of concern with the MISO. One CIO believed that the unceasing stress on customer service blunted developments in other areas for both the Library and IT. In particular, innovation was seen as having suffered due to the unyielding stress on customer service. The two most frequent concerns were the loss of focus for the individual units, especially for the library, and the need for staff

development.

Chapter Five

Summary

The use of the MISO model is not widespread; only about 15% of the responding EDUCAUSE institutions use the model. It has seen a slow and steady increase in implementation over the last decade. However, little assessment has been done to determine if the new model is effective in meeting the support expectations of their parent institutions. The purpose of this study was to describe academic deans' and CIOs' attitudes towards the effectiveness of merged information services organizations at Carnegie classified bachelors' institutions and whether this organizational model delivered benefits proponents claim they will.

The literature review indicated that the push for a MISO began as a theoretical rationale drawing on the expected convergence of computing and libraries due to the ever developing and increasing role of information technology and digital information. As institutions began to implement the model the literature developed a more anecdotal and experiential tone. Specific benefits were pointed out that would flow from the MISO. These were classified into four categories: academic, administrative, institutional or organizational. At the same time

detractors of the experiment voiced their concerns and challenged the need to promote what they viewed as a dubious convergence.

This study used mixed methods to explore the research questions drawing on both quantitative survey data and qualitative written responses. A researcher constructed survey was used in this descriptive exploratory research. Seventy-six surveys were sent to 38 different institutions, 39 generally usable responses were received, a 51% response rate. Written responses were received from 36 different individuals for a 47% response rate.

The individuals surveyed were higher education administrators who are considered to be in a position to appreciate the support demands placed on information services in an academic environment — the MISO head and the Academic Dean. These two groups of administrators are in a position to have informed judgments about the operational effectiveness of the support provided by an institution's MISO. One has an internal MISO point of view and the other an external viewpoint. But both are at high levels at the institution and are able to take more wide-ranging views and consider the services of the MISO not merely as "users" but as institutional managers who must support and promote the institution as a whole. If their perceptions of the

MISO are in agreement, the model will have either strong support for its effectiveness or a marked indication of ineffectiveness. Some discrepancies in their evaluations may be evidence that there are problems with the MISO model and highlight these problem areas. Widespread discrepancies between the two might indicate that the model is not effective.

For the quantitative component of the research a null hypothesis was formed that there would be no significant variance in responses provided by the two groups of administrators. Despite having differing vantage points on the MISO their responses would be the same as to its effectiveness in providing support and benefits to the institution. The results failed to reject the null hypothesis. The two groups of administrators viewed the effectiveness of the MISO in a similar fashion—favorably. Differences that appeared in the data were not based on position but on the length of time the MISO had existed or the amount of experience an individual had in their position. Experience, either individual or institutional, appears to be more important in the perception of the MISO than administrative position. The qualitative responses to the survey provide support for the positive responses reported from the quantitative survey. Favorable responses

far outweighed negative ones. They also raise concerns about the cost of a MISO, indicating that there are two areas, staff development time and loss of unit focus that may need to be addressed by an institution implementing or using a MISO. There was remarkable agreement between the two groups in their perceptions of the MISO.

Conclusions

This study focused on Carnegie classified bachelor's level institutions and cannot be generalized to institutions in other Carnegie classifications. Five research problems were addressed. One major question and four subproblems were created to examine the study's research problems. Five null hypotheses were developed to be tested. The results failed to reject the null hypothesis in all cases. The two groups of higher education administrators whose perceptions on the effectiveness of MISO organizations were sought viewed their effectiveness in the same way. Both groups, academic deans and MISO heads, perceived the MISO organization as basically effective. In terms of their general assessment, their mean score was 4.0 on a 5 point scale. They also agreed on the effectiveness of the MISO in delivering the four expected benefits. While not quite as strong as the general assessment these scores also leaned toward the favorable

side of the scale with the lowest mean score being a 3.4 for institutional benefits.

The qualitative responses supported all of these scores with the possible exception of institutional benefits. There was only one written response that addressed the institutional benefits variable. This single response was much smaller than the number of responses directed towards all the other variables. The next lowest was 14. It may be that the claims for institutional benefits are over-reaching.

The quantitative data also highlighted three areas where the deans rated the MISO more highly than the CIOs: the management of the campus web presence, evolution of information professionals and the delivery of campus IT news. Campus IT news was the most marked of these three with a rank difference of 22. Such a large discrepancy in rank may be due to the differing perspectives. CIOs may hear complaints about lack of communication constantly despite their best efforts to keep the campus community informed and so rank themselves lower on this question. Deans however may hear all the steps MISOs are taking to convey their information and rate them highly on this.

The higher rating for the campus web presence may also have to do with differing points of view with the CIO

seeing more influence in this area by the campus marketing unit than the dean sees from his position. The high rating for the evolution of information professionals, in conjunction with the reality that the CIOs rated this item as their lowest score may indicate that there is less confidence among the CIOs than they generally acknowledge about the transformation of the various information professions into a single unified profession.

Significant results were not achieved when considering the position of the respondent but when the respondents were split by the approximate median years of individual experience in the position or institutional experience with a MISO the results in some areas were significant. Time in position was significant for the general assessment, administrative benefits and institutional benefits. Time with MISO was significant only for academic benefits. Time is an important factor; in all cases the longer the experience, whether institutional or individual, the higher the ratings given to the MISO. It would seem that experience either tempers a harsh judgment, allows one a perspective that more highly values the accomplishments of the MISO or allows proper development of the MISO so it can deliver its support effectively.

The importance of time to a favorable perception can

be confirmed by the qualitative responses. Several writers (e.g. Hirshon, 1998; Marshalsay, 1998 & Fulton, 2001) indicated that when implementing a merger time needs to be provided to allow for staff development so that the MISO staff would understand and accept the MISO. This would dovetail with the higher mean scores by more experienced respondents, either they had gone through a staff development phase already or the school of experience had taught the MISO staff what was expected and what they could deliver.

The consistency of the academic benefits correlation across both individual and institutional would seem to confirm the importance of academics in an educational institution. It may suggest that as time goes by more attention is given to this concern as the long term focus of the institution and not administrative benefits which may represent a current concern such as bad management. The high correlation for institutional benefits probably flows from the need for an individual to have some institutional experience to make a judgment in this area. Longer experience would allow the individual a better opportunity to ascertain if the MISO is having any impact in this area.

Qualitative Conclusions

The qualitative responses to the survey provide

support for the favorable responses reported from the quantitative survey. Favorable responses far outweighed negative ones. Furthermore, the written responses provide additional support for the claims of earlier research. These confirmations fall into four categories: collaboration and synergy, role of the champion, local environments and culture, personnel and personalities.

The survey respondents strongly indicated that a major rationale for merging and a significant benefit of merging is the increased ability to collaborate among information professionals and the synergy of bringing diverse points of view to bear on information services concerns. Another point frequently raised in earlier research is the importance of a champion in creating a MISO. The responses indicating the vital role of a champion to support the MISO implementation adds further support to these earlier findings (Hughes, 1989; Hardesty, 1997 & 1998; Hirshon, 1998).

The role of the champion can also be tied to another earlier contention—that MISO implementation is in reality a local affair (Hardesty, 1997 & 1998; Hirshon, 1998; & Fulton, 2001). Several respondents were quite articulate in emphasizing that any creation of a MISO is in reality a development of the local environment. A MISO is not, as one

said, “a silver bullet” that will solve problems, but if the local environment, the people and history of the institution, are agreeable the MISO can be very effective.

One possible reason it may be so important to have a high-level champion is that often the merger was undertaken not merely to lead the way in the information age, but rather to address management problems and poor service by one of the units. While Hirshon (1998) indicates that this is not a reason to pursue a merger, the comments by the people in the field clearly indicate that this is indeed a significant reason institutions choose to pursue the MISO model: “we would not have proceeded except as a solution to management/personnel issues.” The poor performance of the IT unit is singled out for attention: “Prolonged melt-down of IT services.” And “The key influence for MISO was that the IT dept. was perceived as not serving the campus. The IT Director was fired.”

In light of this it is not surprising that one of the major aims of a MISO is to improve user orientation and customer service (Foley, 1997; Hawkins & Battin, 1997; Supra & Johnston, 1997 & Herro, 1998). IT is frequently perceived as providing poor service. Libraries on the other hand are often known for just the opposite, being very patron focused and providing excellent customer service. As

one respondent wrote the, “library brings a more academic and customer centric consciousness to traditional IT operations.” None of the respondents identified a poor performing library, although one of the first research studies done (Hughes, 1989) was just such a case.

Culture and personnel are a fourth issue that earlier writings have raised as a concern with the implementation of a MISO (Hardesty, 1997 & 1998; Marshalsay, 1998; Fulton, 2001). The individuals who make up the MISO are often coming from very different cultures and efforts to bring them together need to take into account their anxiety at the new organization and their role in it. The respondents to this survey stressed that time is needed to address staff concerns and a few emphasized that this requires attention to MISO staff development.

It is interesting that the backgrounds of the CIOs were by and large in the library field. Eighteen reported a library background while only two reported a computer background. This dichotomy in light of service concerns calls up the stereotypes of librarians and computer professionals stretching back over 20 years. It may reflect a kernel of truth in the stereotypes, in which librarians were identified as being educationally oriented and the computer professionals were seen as being systems oriented.

It also alludes to something a prominent MISO proponent indicated in the course of the research. Successful MISOs are not about management but are about education. Liberal arts institutions are generally viewed as teaching institutions, not research oriented organizations. This being the case it may be part of the reason so many liberal arts institution MISOs are headed by librarians — they have a tradition of being academically focused and educationally oriented, often seeing themselves as educators. These institutions may see the librarian as CIO as forwarding the educational and academic orientation of all of the college's information services.

This educational orientation of liberal arts college MISOs is also buttressed by the almost complete lack of comments presenting the MISO as a strategic imperative. Only two respondents indicated that strategic planning had anything to do with the MISO. One indicated that it was the result of campus strategic planning and the other that its creation improves strategic planning.

New Developments

In addition to the confirmation of older research, this study has also raised some issues that are new or counter to older findings. These issues are the strategic planning role of the MISO and the costs of implementing a

MISO.

Earlier literature and research presented the MISO as an important institutional strategic planning effort (Hughes, 1989; Hardesty, 1997 & 1998; Hirshon, 1998). The low institutional benefit mean score, particularly from the external viewpoint of the dean (mean was 3.15), coupled with the complete lack of comments connecting the MISO to strategic considerations indicate that this earlier finding may be mistaken. The dearth of comments attesting to the strategic planning importance of the MISO may indicate that at smaller institutions this is not as significant a factor. The sense that MISOs provide important strategic planning advantages may reflect the experience of larger institutions. Its main roles may be basic administrative improvements and academic and organizational support. These areas received much more written support as well as higher mean scores. Academic support in particular seems to be an important factor in assessing the MISO.

Considering the cost of implementing a MISO led to the identification of two concerns: the need for time for staff development and the loss of focus among the constituent elements of the MISO. These concerns had not been raised directly in earlier research.

Staff Development

The written responses clearly indicate that staff development time is an important cost of developing a MISO. Earlier research indicated that it takes time for collaboration and cooperation to develop, but it was conveyed in the sense that over time working together would generate a sense of shared ownership. It appears to be more than just the disgruntled grumblings of reorganized units or the CIO being aware that there are cultural issues between the various units of the MISO. The divergent cultural backgrounds need to be addressed directly and consistently through a development effort so that the new organization is staffed by people that understand its role and are on the same page in this effort.

The need to devote time for MISO staff to increase their understanding of their roles in the new organization was pointed out repeatedly in this study. Academic deans recognized this reporting that, "Merging library and IT cultures takes time." And that "some of the folks don't always understand their merged roles." But some of CIOs reported that it took active staff development efforts to address staff concerns. As two of the CIOs wrote, "integrating services is going to require that some staff development time be devoted to *helping staff appreciate the*

model [italics added]" and "It has cost us time and effort to create broad institutional understanding *within the organization* [italics added] of what we're up to and how we are dependent upon each other". The scope of this effort seems to be larger than previous research indicated.

Loss of Focus

The second significant cost to implementing a MISO is a potential loss of focus by the constituent units. While the most frequently voiced concern is that the library will lose focus on its role, confirming a contention found in the literature (Dougherty, 1987; Weber, 1998; Ben-Chaim, 1996; & Stoffle, 2003). A cost clearly identified in the course of reviewing the written responses is that both IT and the library can lose focus on their responsibilities as they put their energies into learning about and collaborating with each other.

The concern is broader than just the library, although it seems to be more of a concern for the library; twice as many comments (4 to 2) were directed to the loss of focus by the library as to the IT unit. This echoes the concerns raised in the literature that as library converge with IT they will lose their traditional academic orientation and become just another IT service (Boss, 1987; & Ben-Chaim, 1996). But the concern was not limited to the library. Both

deans and CIOs indicated that the IT components could also lose focus and suffer a decrease in performance in aspects of their responsibilities. These comments echo Bolin's (2005) contention that the library and IT both have synergy with the rest of campus, but they may be able to best develop that synergy independently.

This raises the issue of what is the focus of the MISO. Hirshon (1998) had concluded that the MISO needs to be grounded in the institutional mission and vision. Where the MISO is viewed as a transformation entity and traditional structures are abolished this is probably true. But in other cases the institution needs to balance the gains made by creation of a MISO with the loss of focus in the constituent units.

Recommendations for Further Research

Given the results of this study and the review of the literature a number of areas could be fruitful for further research on the MISO model.

1. This research indicates that MISOs are perceived to be effective in providing support to their institutions. What are the factors that influence success? Case studies that look beyond the MISO for assessment could be beneficial in identifying institutional factors that support successful MISOs.

2. What is the mission focus of a MISO, academic or administrative? This study indicates that the MISO provides both academic and administrative benefits, is one focus more effective in supporting the mission of the institution?
3. Given the identified stress on staff development in this study, how much time have MISO institutions placed on staff development? Does it have any relationship to the speed of a MISOs development or the effectiveness of its efforts on campus?
4. Given the past research emphasis on the role of champions and personalities at a high level in implementing a MISO (Hughes, 1989; Hardesty, 1997 & 1998; Hirshon, 1998 & Fulton, 2001) and given the identified stress on staff development in this study what level of staff satisfaction exists in MISO organizations? Some literature indicates that staff appreciate the broader perspectives and new challenges of the MISO structure (Renaud, 2006).
5. One of the costs associated with the MISO are a loss of focus by the constituent units. What specifically is being lost and is that a conscious choice or an unintended consequence?

6. Does the favorable response to the broad benefit areas hide a very unequal assessment of the underlying components of the benefit? Are certain services or resources making gains that are hiding an erosion of services and resources in other areas?
7. How well, if at all, does the MISO actually provide the expected institutional benefits? While this study's quantitative measures indicated, weakly, that they did provide such benefits, the lack of supporting qualitative responses indicates that perhaps the expectations in this area are not being realized.
8. Organizational benefits called for by earlier literature contend that librarians and computer professionals will evolve into a hybrid "information professional." What are the indications that this is actually happening? How exactly are the positions changing and what are the new or different needs of these positions? Research in this area may help explain the often reported cultural clash between the various groups brought together in a MISO.
9. Earlier research indicated that a MISO should have an important role in strategic planning (Hirshon, 1998), this study hardly registered any strategic

planning considerations for the MISO. Does this have any implications for the administrative and institutional benefits of a MISO?

10. What are the similarities and differences between MISOs at liberal arts institutions and larger institutions? Is there an educational focus at smaller institutions and a more administrative focus at larger institutions?

11. In light of the findings that time in position or time with the MISO is more important than position in the perception of a MISO, what is the role of time in assessing a MISO? As the MISO is a development of ever expanding technological capabilities, is the time frame used to study MISO formation sufficient?

12. Several institutions have created a MISO structure and then reversed that decision and reverted to more traditional structures, what considerations factored into that decision? Are there commonalities among the institutions that have switched back? Did the gains provided by the MISO not offset a loss of focus among the constituent units necessitating the reversal?

Recommendations for Practice

Given the results of this study and the review of the literature the following analysis, conclusions and recommendations are offered as guidelines for future practice.

1. When asked directly most respondents to this study did not identify any costs involved in creating a MISO, but when their answers were analyzed one concern identified was a need for staff development time. Some comments indicate that institutions pursuing a MISO need to work to provide sufficient staff development so the personnel who are the MISO can be effective in the new environment. Many of the MISO personnel are apparently unsure of how new unit should work. How exactly are the positions changing and what are the new or different needs of these positions? Significant effort is needed to identify these needs and help staff understand the new organization and its role.
2. In light of the warnings of a loss of focus among constituent units, do the favorable responses to the broad benefit areas hide a very unequal development of the underlying components of the benefit areas? The institution should be aware, especially if there

was a pre-existing underperforming unit, that large gains increasing short term satisfaction by the user community may be masking losses in other areas that will only develop over time. The leadership needs to take steps to ensure that increases in once area do not unintentionally degrade others.

3. Given the weak support for institutional benefits institutions creating MISOs should be cautious about expecting benefits in this area and devoting resources to their development.
4. In light of the findings that time in position or time with the MISO is an important factor in the perception of a MISO, a concerted effort needs to be undertaken to promote understanding both internally to the MISO and externally across the institution to promote understanding of the MISO's role.
5. Deans consistently rated the MISO lower than do the CIOs. Institutions contemplating the creation of a MISO should ensure that academic administration is sufficiently involved in its development and implementation so as to inform the creation process with their view of the role of the MISO.
6. Hirshon (1998) identifies a need to tie MISO to institutional mission and vision. However examining

the MISO in terms of the previously existing constituent units and their missions may highlight what is lost by merger and enable the institution to better judge if the gains expected are worth the costs that will be paid.

7. From an institutional perspective use of the identified benefits as factors for evaluating whether or not to create a MISO might be beneficial. Will gains be made in all of the areas? Will certain areas be negatively affected?

References

Allen, B. (1995). Academic information services: A library management perspective. *Library Trends, 43*(4), 645-662.

Aron, A., Aron, E. n. & Coups, E. J. (2005) *Statistics for the behavioral and social sciences*. (3rd ed.). Upper Saddle River, NJ: Pearson.

Barth, C. D., & Cottrell, J. R. (2002). A constituency-based support model for delivering information services. *College & Research Libraries, 63*(1), 47-52.

Battin, P. (1984). The electronic library: A vision for the future. *EDUCOM, 19*(2), 12-17,34.

Ben-Chaim, D. (1996). *The library and the computer center—friends or foes?* Paper presented at the IATUL Enschede Conference 1995, University of Twente, Netherlands. Retrieved Nov. 23, 2005 from http://iatul.org/conference/proceedings/vol05/papers/Benchaim.html

Bolin, M. K. (2005). The library and the computer center: Organizational patterns at land grant universities. *The Journal of Academic Librarianship, 31*(1), 3-11.

Boss, R. W. (1987). Libraries and computer centers. *College & Research Libraries News, (8)*, 442-447.

Bourque, L. B., & Fielder, E. P. (2003). *How to conduct self-administered and mail surveys* (2nd ed.). Thousand Oaks, Calif.: Sage.

Cady, S. (1996). *Merging libraries and computing: Information services at Lehigh University.* Paper presented at the 17th Annual IATUL Conference. `Networks, Networking and Implications for Digital Libraries', Retrieved Nov. 25, 2005, from http://iatul.org/conference/proceedings/vol06/papers/full/cady.html

Cain, M. (2003). The two cultures? librarians and technologists. *Journal of Academic Librarianship, 29*(3), 177-181.

Campbell, J. (1998). *Evolving effective organizations in an age of technology: Beyond university libraries as separate divisions.* Paper presented at the International Conference on New Missions of Academic Libraries in the 21st Century, Beijing, China. Retrieved Aug. 15, 2006, from http://www.lib.pku.edu.cn/98conf/paper/b/JerryCampbell.htm

CAUSE study finds infotech librarians are underpaid. (1993). *Library Journal, 118*, 13.

Cimbala, D. J. (1987). The scholarly information center: An organizational model. *College and Research Libraries, 48*(5), 393-398.

Coalition for Networked Information. (2002). *CNI timeline.* Retrieved Nov. 20, 2005, from http://www.cni.org/timeline.html

Creth, S. D. (1993). Creating a virtual information organization: Collaborative relationships between libraries and computing centers. *Journal of Library Administration, 19*(3-4), 111-132.

Digby, T. R. (2001). Managing library technology resources jointly: Collaborative headache or panacea? *Computers in Libraries, 21*(1), 56-60.

Dillman, D. A. (2007). *Mail and internet surveys: The tailored design method* (2nd ed., 2007 update with new internet, visual, and mixed-mode guide. ed.). Hoboken, NJ: Wiley.

Dougherty, R. M. (1987). Libraries and computing centers: A blueprint for collaboration. *College and Research Libraries, 48*(4), 289-296.

Duderstadt, J. J. (2001). Between a rock and a hard place: Leading the university during an era of rapid change. In M. Devlin, R. C. Larson & J. W. Meyerson (Eds.), *The internet and the university : 2000 forum* (pp. 143-158). Cambridge, MA; Boulder, CO: Forum for the Future of Higher Education; EDUCAUSE.

EDUCAUSE. (2005). *About EDUCAUSE*. Retrieved Nov. 20, 2005, from http://www.educause.edu/about

Emery, J. C. (1984). Issues in building an information technology strategy. *EDUCOM Bulletin, 19*(8), 4-13.

Engeldinger, Eugene A. & Meachen, Edward. (1996). Merging libraries and computer centers at small academic institutions. *Library Issues, 16*, 1-4.

Feng, C. C. H., & Weise, F. (1988). Implementation of integrated information services: Library/computer center partnership. *Journal of the American Society for Information Science, 39*, 126-130.

Ferguson, C. (2000). "Shaking the conceptual foundations," too: Integrating research and technology support for the next generation of information service. *College & Research Libraries, 61*(4), 300-311.

Ferguson, C., Metz, T., & Spencer, G. (2004). Greater than the sum of its parts: The integrated IT/library organization. *Educause Review, 39*(3), 38-42, 44, 46.

Fink, A. (2003). *How to ask survey questions* (2nd ed.). Thousand Oaks, Calif.: Sage Publications.

Flower, K. E. (1986). *Academic libraries on the periphery: How telecommunications information policy is determined in universities.* Washington, D.C: Office of Management Studies, Association of Research Libraries.

Foley, T. J. (1997). Combining libraries, computing, and telecommunications: A work in progress. *Proceedings. ACM SIGUCCS 1997 User Services Conference XXV. Are You Ready?* 97-104.

Fowler, F. J. (2002). *Survey research methods* (3rd ed.). Thousand Oaks, Calif.: Sage Publications.

Frand, J., & Bellanti, R. (2000). Collaborative convergence: Merging computing and library services at the Anderson Graduate School of Management at UCLA.

Journal of Business & Finance Librarianship, 6(2), 3-26.

Fulton, T. L. (2001). Integrating academic libraries and computer centers: A phenomenological study of leader sensemaking about organizational restructuring. (Doctoral Dissertation, The Pennsylvania State University, 2001).

Hales, S., Rea, D., & Siegler, M. (2000). Creating a technology desk in an information commons. *Proceedings. ACM SIGUCCS 2000 User Services Conference.* 96-101.

Hardesty, L. L. (2000). *Books, bytes, and bridges: Libraries and computer centers in academic institutions.* Chicago: American Library Association.

Hardesty, L. L. (1997). Libraries and computer center relations at smaller academic institutions. *Library Issues, 18*, 1-6.

Hardesty, L. (1998). Computer center-library relations at smaller institutions: A look from both sides. *CAUSE/EFFECT, 21*(1), 35-41.

Hawkins, B. L., & Battin, P. (1997). The changing role of the information resources professional: A dialogue. *CAUSE/EFFECT, 20*(1), 22-30.

Hawkins, B. L., & Battin, P. (1998). *The mirage of continuity: Reconfiguring academic information resources for the 21st century.* Washington, D.C.: Council on Library and Information Resources and Association of American Universities.

Hawkins, B. L., Rudy, J. A., & Nicolich, R. (2005). *EDUCAUSE core data service: Fiscal year 2004 summary report*. Boulder, CO: EDUCAUSE.

Heather, G. (2000). *Creating information structures that work for the new millennium* (ERIC Document No. ED447827). Paper presented at IATUL Conference Virtual Libraries: Virtual Communities in Brisbane, Australia.

Herro, S. J. (1998). The impact of merging academic libraries and computer centers on user services. (Masters Thesis, Minnesota State University, Mankato, 1998). Retrieved from http://www.educause.edu/ir/library/pdf/CSD1193.pdf

Heterick, R. C., Jr, & Sanders, W. H. (1993). From plutocracy to pluralism: Managing the emerging technostructure. *EDUCOM Review, 28*(5), 22-28.

Higginbotham, B. B. (1997). *Marriage, Brooklyn style: How the library, the faculty and administrative computing deliver Brooklyn College's academic computing program.* Paper presented at The Information Professions and the Information Professional, Walt Disney World, FL. Retrieved Nov. 23, 2005, from http://www.educause.edu/ir/library/html/cnc9731/cnc9731.html

Higginbotham, B. B. (1986). Academic libraries and academic computing: Rationale for a modern marriage. *The*

Bookmark, 45, 13-16.

Hirshon, A. (1998). *Integrating computing and library services: An administrative planning and implementation guide for information resources.* Boulder, Colo.: CAUSE.

Hughes, J. R. (1989). A clash of cultures: Libraries and computer centers in an information age. (Doctoral Dissertation, The Union Institute, 1989).

Jones, C. L. (1985). Academic libraries and computing: A time of change. *EDUCOM Bulletin, 20*(1), 10.

Kenyon Conference. *The conference at Kenyon 2006: Integrating library and computing services*. Retrieved July 22, 2006, from http://conference.kenyon.edu/2006/

Lipow, A. G., & Creth, S. D. (1995). *Building partnerships: Computing and library professionals.* Berkeley, Calif.: Library Solutions Press.

Lowry, C. B. (1992). Management issues in the "informated" library. In G. M. Pitkin (Ed.), *Information management and organizational change in higher education : The impact on academic libraries* (pp. 100-132). Westport: Meckler.

Marshalsay, B. (1998). Convergence and resurgence: The integration of academic libraries and computing centres. *Canadian Journal of Information and Library Science, 23*(4), 28-61.

Martin, M. J. (1992). Academic libraries and computing centers: Opportunities for leadership. *Library Administration & Management, 6*(2), 77-81.

May, J. H. (1986). The integrated university information center. *CAUSE/EFFECT, 9*, 15-20.

Mech, T. (2000). The organizational and historical context of the chief information officer's position. In L. Hardesty (Ed.), *Books, bytes and bridges* (pp. 26-37). Chicago: American Library Assoication.

Molholt, P. A. (1989). What happened to the merger debate? *The Journal of Academic Librarianship, 15*, 96a-96b [insert between p96-7].

Molholt, P. A. (1985). On converging paths: The computing center and the library. *The Journal of Academic Librarianship, 11*, 284-288.

Neff, R. K. (1985). Merging libraries and computer centers: Manifest destiny or manifestly deranged? an academic services perspective. *EDUCOM Bulletin, 20*(4), 8-12,16.

Oden, R. A., Jr., Temple, D. B., Cottrell, J. R., Griggs, R. K., Turney, G. W., & Wojcik, F. M. (2001). Merging library and computing services at Kenyon College: A progress report. *Educause Quarterly, 24*(4), 18-25.

Penrod, J. I., & Dolence, Michael G. (1990). Managing information technology: Facing the issues. *Proceedings of the 1989 CAUSE National Conference*, 71-81.

Pitkin, G. M. (1992). *Information management and organizational change in higher education: The impact on academic libraries.* Westport: Meckler.

Plane, R. A. (1982). Merging a library and a computing center. *Perspectives in Computing, 2*(3), 14-21.

Renaud, R. (2001). What happened to the library? When the library and the computer center merge. *College & Research Libraries News, 62*(10), 987-989.

Renaud, R. E. (2006). Shaping a new profession: The role of librarians when the library and computer center merge. *Library Administration & Management, 20*(2), 65-74.

Rosser, J. M., & Penrod, J. I. (1990). Computing and libraries: A partnership past due. *CAUSE/EFFECT, 13*(2), 21-24.

Seiden, Peggy and Kathman, Michael D. (2000). A history of the rhetoric and reality of library and computing relationships. In L. Hardesty (Ed.), *Books, bytes and bridges* (pp. 1-12). Chicago: American Library Association.

Setze, P. J., & Jordan, K. A. (2000). Evolving relationships: The intersecting and non-intersecting roles of the small college library and computer center. In L. Hardesty (Ed.), *Books, bytes and bridges* (pp. 54-60). Chicago: American Library Assoication.

Shapiro, B. J., & Long, K. B. (1994). Just say yes: Reengineering library user services for the 21st century. *The Journal of Academic Librarianship, 20*, 285-290.

Sharrow, M. J. (1995). Library and IT collaboration projects: Nine challenges. *CAUSE/Effect, 18*(4), 55-56.

Stoffle, C., Allen, B., Morden, D., & Maloney, K. (2003). Continuing to build the future: Academic libraries and

their challenges. *portal: Libraries & the academy*, *3*(3), 363-380.

Supra, J. R. Jr., Zabrowski, J., & Thompson, D. S. (1998). *What is possible? Benefits from the integration of libraries and computing*. Paper presented at the CAUSE98 Annual Conference, Seatle, WA.

Supra, J. R., Jr., & Johnston, B. (1997). Toward an integrated approach to information services support. *Proceedings. ACM SIGUCCS 1997 User Services Conference XXV. Are you ready?* 295-302.

Supra, J. R., Jr., Wong, M. A., & Foley, T. J. (1998). The road to integration efforts to combine computing, libraries and telecommunications. *Proceedings. ACM SIGUCCS 1998 User Services Conference. 26,* 281-287.

Telatnik, G. M., & Cohen, J. A. (1993). Working together: The library and the computer center. *Proceedings. ACM SIGUCCS 1993 User Services Conference XXI. Toward New Horizons.* 62-68.

Wagner, R. (2000). The Gettysburg experience. In L. Hardesty (Ed.), *Books, bytes and bridges* (pp. 164-177). Chicago: American Library Association.

Warlick, C. H. (1986). Academic computing facilities and services in higher education--A survey. *EDUCOM Bulletin, 21*(3), 2-7.

Weber, D. C. (1988). University libraries and campus information technology organizations: Who is in charge

here? *Journal of Library Administration, 9*(4), 5-19.

West, S. M., & Smith, S. L. (1995). Library and computing merger: Clash of titans or golden opportunity. In *Realizing the Potential of Information Resources: Information, Technology and Services* (881-889). Boulder, Colo.: CAUSE.

Williams, D. E., & Bly, O. J. (2000). Does the scholarly information center work? Evaluating library computer center cooperation. In L. Hardesty (Ed.), *Books, bytes and bridges* (pp. 46-53). Chicago: American Library Association.

Wolverton, M., & Gmelch, W. H. (2002). *College deans: Leading from within.* Westport, CT: Oryx Press.

Wolverton, M., Gmelch, W. H., Montez, J., & Nies, C. T. (2001). *The changing nature of the academic deanship*. San Francisco: Jossey-Bass.

Woodsworth, A. (1991). *Patterns and options for managing information technology on campus*. Chicago: American Library Association.

Woodsworth, A. (1988a). Computing centers and libraries as cohorts: Exploiting mutual strengths. *Journal of Library Administration, 9*(4), 21-34.

Woodsworth, A. (1988b). Libraries and the chief information officer: Implications and trends. *Library Hi Tech, 6*(1), 37-44.

Woodsworth, A., & Maylone, T. (1993). *Reinvesting in the information job family: Context, changes, new jobs,*

and models for evaluation and compensation. (CAUSE Professional Paper Series No. #11). Boulder,CO.: CAUSE.

Young, A. P. (1994). Information technology and libraries: A virtual convergence. *CAUSE/EFFECT, 17*(3), 5-6,12.

APPENDIX A

This survey examines your opinions on the effectiveness of combining campus computing center/IT and library operations in a merged information services organization (MISO). The survey's open ended questions are a valuable component of understanding the perception of MISO effectiveness. If you do not know the answer to a question you do not have to answer it.

Section 1

Please provide some basic institutional and demographic information.

1. Are you the head of the merged information systems organization or an academic dean?
2. How long have you been in your current position?
3. How long have you been at your current institution?
4. If a CIO, what would you describe as your professional background?
   a. Computers _____
   b. Library _____
   c. Instructional Media _____
   d. Faculty _____
      i. Discipline _____
   e. Other, please identify _____.
5. When was the MISO created on your campus?
6. How many individuals (FTE) work in the MISO organization?

Section 2

Below are statements of opinion about the effectiveness of the merged information services organization (MISO) on your campus. Please indicate your level of agreement or disagreement with them by selecting a number on the scale that best represents your view. Numbers range from the lowest (strongly disagree) to the highest (strongly agree).

GENERAL ASSESSMENT

1. The performance of the MISO (merged information services organization) on campus is satisfactory.

Strongly Disagree				Strongly Agree
1	2	3	4	5

2. The campus MISO provides the information services and resources needed by the institution.

Strongly Disagree				Strongly Agree
1	2	3	4	5

3. The campus MISO is effective in providing user satisfaction.

Strongly Disagree				Strongly Agree
1	2	3	4	5

ACADEMIC BENEFITS

4. The campus MISO is effective in providing access to technology resources.

Strongly Disagree				Strongly Agree
1	2	3	4	5

5. The campus MISO is effective in providing access to information resources.

Strongly Disagree				Strongly Agree
1	2	3	4	5

6. The campus MISO is effective in providing instructional support.

Strongly Disagree				Strongly Agree
1	2	3	4	5

7. The campus MISO is effective in providing research support.

Strongly Disagree				Strongly Agree
1	2	3	4	5

8. The campus MISO is effective in providing support to faculty.

Strongly Disagree				Strongly Agree
1	2	3	4	5

9. The campus MISO is effective in providing support to students.

Strongly Disagree				Strongly Agree
1	2	3	4	5

10. The campus MISO is effective in providing training and educational programs to students provided by the MISO units.

Strongly Disagree				Strongly Agree
1	2	3	4	5

11. The campus MISO is effective in providing training and educational programs to faculty provided by the MISO units.

Strongly Disagree				Strongly Agree
1	2	3	4	5

12. The campus MISO facilitates collaboration between the college faculty and the MISO staff.

Strongly Disagree				Strongly Agree
1	2	3	4	5

13. The campus MISO enhances the academic orientation/ focus of its personnel.

Strongly Disagree				Strongly Agree
1	2	3	4	5

ADMINISTRATIVE BENEFITS

14. The campus MISO is effective in communicating campus IT news to the campus community.

Strongly Disagree				Strongly Agree
1	2	3	4	5

15. The campus MISO is effective in supporting information sharing among units on campus.

Strongly Disagree				Strongly Agree
1	2	3	4	5

16. The campus MISO provides fiscal benefits to the institution.

Strongly Disagree				Strongly Agree
1	2	3	4	5

17. The campus MISO facilitates collaboration between MISO staff and other campus staff.

Strongly Disagree				Strongly Agree
1	2	3	4	5

18. The campus MISO is flexible in using resources to respond to campus needs.

Strongly Disagree				Strongly Agree
1	2	3	4	5

19. The campus MISO is effective integrating technology into campus activities.

Strongly Disagree				Strongly Agree
1	2	3	4	5

20. The campus MISO is effective in providing technology planning on campus.

Strongly Disagree				Strongly Agree
1	2	3	4	5

21. The campus MISO has a significant role in the implementation of a campus information policy.

Strongly Disagree				Strongly Agree
1	2	3	4	5

22. The campus MISO is effective in developing the campus information infrastructure.

Strongly Disagree				Strongly Agree
1	2	3	4	5

23. The campus MISO has a significant role in the management of the campus web presence.

Strongly Disagree				Strongly Agree
1	2	3	4	5

INSTITUTIONAL BENEFITS

24. The campus MISO is effective in supporting the institution's community relations and outreach efforts.

Strongly Disagree				Strongly Agree
1	2	3	4	5

25. The existence of a MISO on campus enhances the reputation and prestige of the institution.

Strongly Disagree				Strongly Agree
1	2	3	4	5

26. The campus MISO is effective in supporting the institution's ability to attract students and benefactors.

Strongly Disagree				Strongly Agree
1	2	3	4	5

27. The campus MISO is effective in promoting the transformation of the institution so it can function in the new information age environment.

Strongly Disagree				Strongly Agree
1	2	3	4	5

ORGANIZATIONAL BENEFITS

28. The campus MISO is effective in integrating the previously existing separate units into a cohesive whole.

Strongly Disagree				Strongly Agree
1	2	3	4	5

29. The campus MISO is effective in supporting the evolution of distinct library and computer/technology professionals into information professionals.

Strongly Disagree				Strongly Agree
1	2	3	4	5

30. The campus MISO enhances the visibility of Information Services on campus.

Strongly Disagree				Strongly Agree
1	2	3	4	5

31. The campus MISO enhances the leadership role of Information Services on campus.

Strongly Disagree				Strongly Agree
1	2	3	4	5

Section 3

Please use the space provided to answer the following questions.

1. If your institution did not already have a MISO, would you encourage its creation? Why or why not?

2. Do you have any comments or concerns about the MISO you would like to share?

3. Do you believe the MISO provides improved services compared to separate campus IT and library units? In what way(s)?

4. What were the key influences on the creation of the MISO at your institution? Was there a 'champion(s)' pushing for its creation? How important was that role?

5. Do you believe the effort to create the merged information systems organization on your campus has been worth it? Why or why not?

6. In considering the implementation of the merged information services unit on your campus, can you identify costs (in the sense of services/resources stopped or opportunities un-pursued) that have resulted from the change to a MISO?

1. Would you be willing to be interviewed confidentially as a follow-up to this survey? If so Please provide your contact information:

    a. Name:
    b. Phone:
    c. Email:

APPENDIX B

Appendix Table B1

MISO Benefit Source Examples and Sources

Benefit	Suport Function	Reported Example	Author	Date
academic	academic orientation	Improve client orientation	Foley	1997
academic	academic orientation	Greater focus on academics	Fulton	2001
academic	academic orientation	Support research and instruction not books and technology	Hawkins & Battin	1997
academic	academic orientation	Improved relations between computing staff and academic departments	Herro	1998
academic	academic orientation	More faculty driven / client responsive	Hirshon	1998
academic	academic orientation	Greater focus on customer needs	Supra & Johnston	1997
academic	academic orientation	Provide more effective customer service	Supra Wong Foley	1998
academic	access to information resources	Increase usability and accessibility of networked information	Foley	1997
academic	access to information resources	Access a growing variety of electronic resources	Hardesty	1998
academic	access to information resources	Delivery of information to the individual desktop	Herro	1998
academic	access to information resources	Enhanced integration among all information sources	Herro	1998
academic	access to information resources	Improved access for students and scholars	Herro	1998
academic	access to information resources	Automated document delivery systems	Supra, Zabrowski & Thompson	1998
academic	access to information resources	Reference via the network	Supra, Zabrowski & Thompson	1998

Benefit	Suport Function	Reported Example	Author	Date
academic	access to information resources	Expanded access to electronic resources	Supra, Zabrowski & Thompson	1998
academic	access to information/tech resources	Offer integrated access and technology support services	Ferguson, Spencer & Metz	2004
academic	access to information/tech resources	Increase availability of Services (i.e. new services)	Supra, Zabrowski & Thompson	1998
academic	access to technology resources	Make technology accessible to users	Fulton	2001
academic	access to technology resources	Improved access to new information technologies	Herro	1998
academic	faculty support	Professionals will better understand and develop needed skills to serve their patrons	Barth & Cottrell	2002
academic	faculty support	Designing & implementing new technology-based facilities along with faculty to support new curriculum efforts	Barth & Cottrell	2002
academic	faculty support	Provide personalized support for faculty using computers, software and instructional technology	Barth & Cottrell	2002
academic	faculty support	Collaborative teams responsible for outreach	Foley	1997
academic	faculty support	Provide personalized support to faculty using computers, software and instructional technology	Oden	2001
academic	faculty/research support	Faculty incorporating computer technology into their teaching and research	Hardesty	1998
academic	faculty/research support	Positive impact on faculty in scholarship, teaching & learning	Kenyon Conference	2006
academic	faculty/research support	Add value to scholarship and teaching	Marshalsay	1998

Benefit	Suport Function	Reported Example	Author	Date
academic	faculty/student support	Support the full spectrum of information problem solving issues.	Barth & Cottrell	2002
academic	faculty/student support	Improving orientation for 1st year students and new faculty & staff	Ferguson, Spencer & Metz	2004
academic	faculty/student support	Direct user services including reference, training, help desk & consulting	Frand & Bellanti	2000
academic	faculty/student support	Support greater personal knowledge management skills among faculty staff & students	Frand & Bellanti	2000
academic	faculty/student support	Better at answering users direct questions	Herro	1998
academic	instructional support	Encourage long-term multifunctional relationships that encourage integration of library and technology within the pedagogy	Barth & Cottrell	2002
academic	instructional support	Provide support for curriculum development	Creth	1993
academic	instructional support	Improve quality and availability of classroom technology and support	Foley	1997
academic	instructional support	Better instructional & classroom support	Frand & Bellanti	2000
academic	instructional support	Development of information consulting teams for individual departments or colleges	Herro	1998
academic	instructional support	Do faculty get improved assistance in implementing information technology in curriculum	Herro	1998
academic	instructional support	Enhanced faculty use of technology in instruction	Herro	1998
academic	instructional support	Improved integration of technology and curriculum development	Herro	1998
academic	instructional support	Provide greater support to curriculum development	Herro	1998

Benefit	Suport Function	Reported Example	Author	Date
academic	MISO staff / faculty collaboration	Create and support a knowledge management environment	Creth	1993
academic	MISO staff / faculty collaboration	Increase collaboration, communication & cooperation	Fulton	2001
academic	MISO staff / faculty collaboration	Increased collaboration with faculty	Shapiro & Long	1994
academic	student support	Reduce confusion among users of who will/can help them	Campbell	1998
academic	student support	Improved public services	Campbell	1998
academic	student support	Providing improved support and management of public access facility	Ferguson, Spencer & Metz	2004
academic	student support	Develop computer consulting in residence halls	Herro	1998
academic	student support	Modernization of labs and classrooms	Herro	1998
academic	student support	Do users get better personal service when using information resources	Herro	1998
academic	student support	Enhanced user instruction	Herro	1998
academic	student support	Student expectations of single source solutions	Kenyon Conference	2006
academic	student support	Prepares students for the full integration of information resources of the future	Oden	2001
academic	student support	In-person & online instruction	Supra, Zabrowski & Thompson	1998
academic	student support	Integrate research and technical sides of IT to provide broad, complete and balanced program for users to effectively learn from	Supra, Zabrowski & Thompson	1998
academic	training & education for faculty/students	Fostering joint instructional programs for students and faculty	Ferguson, Spencer & Metz	2004

Benefit	Suport Function	Reported Example	Author	Date
academic	training & education for students	Allows a higher level training of students in research methods and technical issues	Barth & Cottrell	2002
academic	training & education for students	Teaching information technology and information resources	Creth	1993
academic	training & education for students	Developing campuswide education efforts on plagiarism, copyright & intellectual property.	Ferguson, Spencer & Metz	2004
academic	training & education for students	Collaborating to offer training	Ferguson, Spencer & Metz	2004
academic	training & education for students	Offer educational programs	Herro	1998
academic	training & education for students	Joint training sessions by staffs of information units	Herro	1998
academic	training & education for students	Improved programs due to collaboration between units	Hirshon	1998
academic	training & education for students	Joint development of instructional programs	Hirshon	1998
academic	training and education for faculty	Facilities the understanding of departmental pedagogical research and technology goals	Barth & Cottrell	2002
academic	training and education for faculty	Assist faculty in implementing technology in curriculum	Herro	1998
administrative	campus information infrastructure	Employ technology most effectively	Foley	1997
administrative	campus information infrastructure	Greater cohesion between all computer hardware, software & networks	Herro	1998
administrative	campus information infrastructure	Development of an informational infrastructure	Marshalsay	1998

Benefit	Suport Function	Reported Example	Author	Date
administrative	campus information infrastructure	Implement and support strategic technologies	Shapiro & Long	1994
administrative	campus information infrastructure	Better distribute technology across both organizations and campus as a whole.	Supra, Zabrowski & Thompson	1998
administrative	campus information infrastructure	Simplify support and setup of technology	Supra, Zabrowski & Thompson	1998
administrative	campus information infrastructure	Technology Resource Allocations	Supra, Zabrowski & Thompson	1998
administrative	campus information policy	Lead comprehensive Policy development	Heather	2000
administrative	campus information policy	Develop campus information policy	Herro	1998
administrative	campus information policy	Developing campus information policy	Marshalsay	1998
administrative	campus web presence	Web presence providers	Campbell	1998
administrative	campus web presence	Developing & Managing the institutions web presence	Ferguson, Spencer & Metz	2004
administrative	enterprise information	Administrative integration encourages more shared information, coordinated planning and joint approaches to decisions	Ferguson, Spencer & Metz	2004
administrative	enterprise information	Improve availability of enterprise information	Foley	1997
administrative	fiscal benefits	Inceased Cost effectiveness	Campbell	1998
administrative	fiscal benefits	Reduce competition for scarce resources	Campbell	1998
administrative	fiscal benefits	Joint research and development	Ferguson, Spencer & Metz	2004

Benefit	Suport Function	Reported Example	Author	Date
administrative	fiscal benefits	Achieve greater fiscal efficiency (not necessarily reducing costs)	Ferguson, Spencer & Metz	2004
administrative	fiscal benefits	Avoid some costs	Ferguson, Spencer & Metz	2004
administrative	fiscal benefits	Increased budget flexibility	Ferguson, Spencer & Metz	2004
administrative	fiscal benefits	Reduce competition for resources between existing organizations	Ferguson, Spencer & Metz	2004
administrative	fiscal benefits	Share financial resources	Ferguson, Spencer & Metz	2004
administrative	fiscal benefits	Develop plan for technology life cycle funding	Foley	1997
administrative	fiscal benefits	Keep costs at a minimum	Foley	1997
administrative	fiscal benefits	Greater overall budget flexibility	Frand & Bellanti	2000
administrative	fiscal benefits	Economies of scale	Hardesty	1997
administrative	fiscal benefits	Decreased resources	Hardesty	1998
administrative	fiscal benefits	Increased costs	Hardesty	1998
administrative	fiscal benefits	Greater chances for obtaining capital for new technology initiatives	Herro	1998
administrative	fiscal benefits	More efficient financial administration of information technology	Herro	1998
administrative	fiscal benefits	Seek economies	Herro	1998
administrative	fiscal benefits	Greater organizational flexibility with staff and budgeting	Hirshon	1998
administrative	fiscal benefits	Productivity and cost benefits	Kenyon Conference	2006
administrative	fiscal benefits	Administrative and budget readiness	Kenyon Conference	2006
administrative	fiscal benefits	Negotiating with vendors to maximize resources & minimize costs	Marshalsay	1998

Benefit	Suport Function	Reported Example	Author	Date
administrative	fiscal benefits	Dealing with declining levels of support	Marshalsay	1998
administrative	fiscal benefits	Greater flexibility in budgeting	Supra, Zabrowski & Thompson	1998
administrative	flexibility	Greater organizational flexibility	Ferguson, Spencer & Metz	2004
administrative	flexibility	Establishing creative staffing arrangements	Ferguson, Spencer & Metz	2004
administrative	flexibility	Provide cross-training opportunities	Frand & Bellanti	2000
administrative	flexibility	Build a flexible organization	Fulton	2001
administrative	flexibility	Cross training of staff (forced cross training of library and CC staff)	Herro	1998
administrative	flexibility	Interchangeable use of staff from different information units	Herro	1998
administrative	flexibility	Cross trained staff more flexible	Hirshon	1998
administrative	flexibility	Resource efficiency,	Kenyon Conference	2006
administrative	flexibility	A fluid and flexible organization	Marshalsay	1998
administrative	flexibility	Greater flexibility in resource management	Supra, Zabrowski & Thompson	1998
administrative	flexibility	Organizational, Budget & Human Resource Management	Supra, Zabrowski & Thompson	1998
administrative	flexibility	Greater flexibility in organizational structure	Supra, Zabrowski & Thompson	1998
administrative	integrating technology in campus activities	More active involvement with campus in general	Fulton	2001

Benefit	Suport Function	Reported Example	Author	Date
administrative	IT News	Development of IS newletter (better communication?)	Herro	1998
administrative	IT News	Disseminate information	Shapiro & Long	1994
administrative	MISO staff / other staff collaboration	Collaborating on grant writing	Ferguson, Spencer & Metz	2004
administrative	MISO staff / other staff collaboration	Work cooperatively on projects	Ferguson, Spencer & Metz	2004
administrative	MISO staff / other staff collaboration	Increased staff cooperation	Hirshon	1998
administrative	MISO staff / other staff collaboration	Operational & collaborative readiness	Kenyon Conference	2006
administrative	MISO staff / other staff collaboration	Quality support system for administrative offices	Oden	2001
administrative	technology planning	Reduce rivalry (improve cooperation) in planning	Campbell	1998
administrative	technology planning	Provide leadership on campus information policy	Creth	1993
administrative	technology planning	Improve strategic planning	Creth	1993
administrative	technology planning	Rolling out a new campus initiative more quickly and smoothly	Ferguson, Spencer & Metz	2004
administrative	technology planning	Sustain currency of new services	Ferguson, Spencer & Metz	2004
administrative	technology planning	Combined strategic planning	Ferguson, Spencer & Metz	2004
administrative	technology planning	Increasing collaborative planning and goal setting	Ferguson, Spencer & Metz	2004
administrative	technology planning	Undertaking integrated visioning and planning	Ferguson, Spencer & Metz	2004
administrative	technology planning	Improve planning and technology integration	Foley	1997
administrative	technology planning	Better resource planning	Herro	1998
administrative	technology planning	Improve strategic planning	Herro	1998

Benefit	Suport Function	Reported Example	Author	Date
administrative	technology planning	Sustaining growth and development of information & network services	Marshalsay	1998
administrative	technology planning	Strategic planning for information technology on campus	Marshalsay	1998
administrative	technology planning	Focusing on constitutents support allows different voices to be presented and so not short changed	Oden	2001
administrative	technology planning	Increased planning	Supra & Johnston	1997
institutional	attract students & benefactors	Attractiveness to big buck donors	Kenyon Conference	2006
institutional	attract students & benefactors	Attractiveness to student recruits	Kenyon Conference	2006
institutional	Community relations & outreach	Enhancing community relations & outreach	Ferguson, Spencer & Metz	2004
institutional	reputation & prestige	Benefits to reputation and prestige	Kenyon Conference	2006
institutional	transformation of institution	Creatively meet needs of a rapidly changing institution	Ferguson, Spencer & Metz	2004
institutional	transformation of institution	Better integration of CISO efforts with campus goals and activities	Fulton	2001
institutional	transformation of institution	Supporting the transformation of the institution	Hawkins & Battin	1997
institutional	transformation of institution	Provide a unified vision for the university for information & communication	Heather	2000
institutional	transformation of institution	Digitizing administrative records – new project not just library stuff	Oden	2001
institutional	transformation of institution	Reevaluation of business processes	Supra & Johnston	1997
organizational	evolution of information professionals	Creating new professional positions	Ferguson, Spencer & Metz	2004

Benefit	Suport Function	Reported Example	Author	Date
organizational	evolution of information professionals	New opportunities for professional growth	Ferguson, Spencer & Metz	2004
organizational	evolution of information professionals	Opportunity to learn more skills	Foley	1997
organizational	evolution of information professionals	Think in ways required by “new information environment	Fulton	2001
organizational	evolution of information professionals	Improved professionalism at helpdesk	Hales, Rea & Sielger	2000
organizational	evolution of information professionals	Public manifestation of “ISR-ness”	Hales, Rea & Sielger	2000
organizational	evolution of information professionals	Opportunities for staff development	Heather	2000
organizational	evolution of information professionals	Cultural issues – new professional orientation	Kenyon Conference	2006
organizational	evolution of information professionals	expanded roles for librarians	Renaud	2006
organizational	increased visibility	Increased visibility for the service points	Hales, Rea & Sielger	2000
organizational	increased visibility	Improved campus visibility	Hirshon	1998
organizational	increased visibility	Remediate weak service organization	Hirshon	1998
organizational	integrating into a cohesive whole	Synergies among IT & library organizations	Ferguson, Spencer & Metz	2004
organizational	integrating into a cohesive whole	Blending operations of IT help desk & library reference desk	Ferguson, Spencer & Metz	2004
organizational	integrating into a cohesive whole	Deliver services jointly	Ferguson, Spencer & Metz	2004
organizational	integrating into a cohesive whole	Reduce number of service entry points	Ferguson, Spencer & Metz	2004

Benefit	Suport Function	Reported Example	Author	Date
organizational	integrating into a cohesive whole	Enrich participation of all staff	Frand & Bellanti	2000
organizational	integrating into a cohesive whole	Align spaces with people – single location	Fulton	2001
organizational	integrating into a cohesive whole	Restore reputation of IT staff	Fulton	2001
organizational	integrating into a cohesive whole	Establishing end user advisory groups	Herro	1998
organizational	integrating into a cohesive whole	Improved compensation equity	Hirshon	1998
organizational	integrating into a cohesive whole	Physical space considerations	Kenyon Conference	2006
organizational	integrating into a cohesive whole	Measuring the effectiveness of computing and information services	Marshalsay	1998
organizational	integrating into a cohesive whole	More activities and processes achieved throguth team-based work groups	Shapiro & Long	1994
organizational	integrating into a cohesive whole	Increased collaboration between once isolated departments	Supra & Johnston	1997
organizational	integrating into a cohesive whole	“merging library and computing organizations provides opportunities to do exactly that – deliver a seamless information environment where the organization and not the user assumes responsibility for answering questions and resolving problems.” P.4	Supra, Zabrowski & Thompson	1998
organizational	integrating into a cohesive whole	Unification of Services	Supra, Zabrowski & Thompson	1998
organizational	leadership role of the MISO on campus	Improved campus visibility for technology leadership	Ferguson, Spencer & Metz	2004
organizational	leadership role of the MISO on campus	Enhance campus’s technology presence	Fulton	2001
organizational	leadership role of the MISO on campus	Greater recognition of CISO contribution to parent organizations mission & goals	Herro	1998

APPENDIX C

Pre-Notice Letter

February 2, 2007

Dear Dr. X,

I am graduate student working on my Ph.D. in higher education at Ohio University. For my dissertation, I am looking at the effectiveness and benefits of combining campus computer/IT and library operations in a merged information services organization (MISO) at Carnegie classified bachelor's institutions.

I have identified your institution as using a MISO model and am asking you to participate in this survey of academic deans and heads of merged information services organizations. You will soon receive an email message that contains the web survey link. It will have the subject line: Merged Information Services Organization Survey. Your participation is important for the success of the study.

The library and campus computer/IT support are probably the two largest support units on most campuses. An organizational model that merges these units is receiving renewed interest in higher education institutions. Merged information services organizations (MISOs) are often asserted to be a better structure with which to deliver information related services and that institutions derive specific benefits in academic, administrative, institutional and organizational areas from the integration.

The purpose of this study is to assess the perception of the effectiveness of merged information services organizations in liberal arts colleges from knowledgeable individuals on campus. While this type of organization has been used for at least 25 years, there is very little assessment of it available. Higher education leaders will be interested in your assessment of the effectiveness of such mergers.

Your participation is important for the success of the study. The pilot study indicates the entire survey can be completed in 15-20 minutes. The survey consists of a few demographic/ institutional items, 31 Likert scale questions and 6 open ended questions. All survey responses will be kept strictly confidential. I have arranged to have email addresses stripped out by the local survey administrator so the downloaded data I analyze will not actually contain your personal information. If you volunteer your personally identifying information nothing collected will be released without prior permission.

I appreciate your willingness to participate in the study. I look forward to reviewing the data and reading your responses. Thank you.

Sincerely,

APPENDIX D

Cover Email with web survey link

Dear Dr. X.

I am graduate student working on my Ph.D. in higher education at Ohio University. I recently sent you a letter requesting your participation in this study. For my dissertation, I am looking at the effectiveness and benefits of combining campus computer/IT and library operations in a merged information services organization (MISO) at Carnegie classified bachelor's institutions.

I have identified your institution as using a MISO model and am asking you to participate in this survey of liberal arts college academic deans and heads of merged information services organizations. Your participation is important for the success of the study and I hope you will agree to participate.

The purpose of this study is to assess the perception of the effectiveness of merged information services organizations in liberal arts colleges from knowledgeable individuals on campus. Higher education leaders will be interested in your assessment of the effectiveness of such mergers.

Your participation is important for the success of the study. The pilot study indicates the entire survey can be completed in 15-20 minutes. All survey responses will be kept strictly confidential. I have arranged to have email addresses stripped out by the local survey administrator so the downloaded data I analyze will not actually contain your personal information. If you volunteer your personally identifying information nothing collected will be released without prior permission.

I appreciate your willingness to participate in the study. I look forward to reviewing the data and reading your responses.

Please follow the link below when you are ready to begin the survey. I look forward to reviewing the responses and reading your responses.

Thank you.

Sincerely,

John Stemmer
Director of Library Services
Bellarmine University

To begin survey: http://www.surveymonkey.com/

APPENDIX E

Follow up email with web survey link

Dear Dr. X.

I am graduate student working on my Ph.D. in higher education at Ohio University. I recently contacted you requesting your participation in a survey looking at the perception of the effectiveness of combining campus computing center/IT and library operations in a merged information services organization (MISO) at Carnegie classified bachelor's institutions. My records indicate that you have not yet responded.

I have identified your institution as using a MISO model and am asking you to participate in this survey of liberal arts college academic deans and heads of merged information services organizations. Higher education leaders will be interested in your assessment of the effectiveness of such mergers. Your participation is important for the success of the study and I hope you will agree to participate.

The pilot study indicates the entire survey can be completed in 15-20 minutes. All survey responses will be kept strictly confidential. I have arranged to have email addresses stripped out by the local survey administrator so the downloaded data I analyze will not actually contain your personal information. If you volunteer your personally identifying information nothing collected will be released without prior permission.

I appreciate your willingness to participate in the study. I look forward to reviewing the data and reading your responses.

Please follow the link below when you are ready to begin the survey.

Thank you.

Sincerely,

John Stemmer

To begin survey: http://www.surveymonkey.com/

APPENDIX F

Table F1
Cronbach's Alpha Results General Assessment Questions

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
GA01 (MISO performance satisfactory)	7.93	2.481	.854	.732	.831
GA02 (MISO provides needed IS and Rsrc)	7.90	2.810	.805	.666	.876
GA03 MISO effective providing user satisfaction)	8.03	2.538	.789	.630	.889

Table F2
Cronbach's Alpha Results Academic Benefits Questions

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
AcadB01 (access to tech resources)	33.39	48.530	.724	.612	.937
AcadB02 (access to info resources)	33.11	49.816	.685	.685	.939
AcadB03 (instructional support)	33.67	46.743	.801	.697	.934
AcadB04 (research support)	33.81	48.618	.678	.561	.939
AcadB05 faculty support)	33.56	47.340	.848	.764	.932
AcadB06 (student support)	33.39	48.187	.755	.694	.936
AcadB07 (training for students)	33.94	47.368	.753	.713	.936
AcadB08 (training for faculty)	34.17	46.600	.799	.714	.934
AcadB09 (collaboration bwtn faculty & MISO staff)	33.72	45.292	.829	.867	.932
AcadB10 (academic orientation)	33.75	47.279	.742	.695	.936

Table F3
Cronbach's Alpha Results Administrative Benefits Questions

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
AdmB01 (campus IT news)	34.03	52.757	.454	.434	.915
AdmB02 (information sharing)	34.29	50.032	.760	.644	.897
AdmB03 (fiscal benefits)	33.94	49.512	.631	.547	.904
AdmB04 (collaboration btwn MISO staff and campus staff)	34.15	49.644	.756	.746	.897
AdmB05 (flexible in using its resources)	33.76	50.913	.737	.679	.899
AdmB06 (integrates technology into campus activities)	33.79	49.684	.766	.695	.896
AdmB07 (technology planning)	33.82	48.332	.758	.845	.896
AdmB08 (campus information policy)	33.59	50.007	.751	.869	.897
AdmB09 (campus information infrastructure)	33.53	48.257	.841	.857	.891
AdmB10 (mgmt campus web presence)	34.18	51.483	.437	.352	.919

Table F4
Cronbach's Alpha Results Institutional Benefits Questions

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
InstB01 (community relations & outreach)	10.34	7.258	.641	.436	.883
InstB02 (reputation & presitge)	10.29	7.238	.763	.589	.830
InstB03 (attracting students and benefactors)	10.29	6.968	.798	.665	.816
InstB04 (tranformation of inst for info age)	9.82	7.614	.752	.638	.837

Table F5
Cronbach's Alpha Results Organizational Benefits Questions

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
OrgB01 (creating cohesive whole)	10.81	7.991	.800	.658	.883
OrgB02 (information professionals)	11.27	8.092	.724	.580	.912
OrgB03 (visibility of IS on campus)	10.73	8.147	.822	.833	.877
OrgB04 (leadership of IS on campus)	10.81	7.769	.850	.848	.866