COLLABORATION BETWEEN LIBRARIANS AND INFORMATION TECHNOLOGISTS:
BENEFITS TO THE CORPORATE INFORMATION CONSUMER

by
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“Fundamentally, information is the glue that holds together the structure of all businesses.”

I. INTRODUCTION

Librarians are dedicated to the never-ending quest of improving service to their patrons while at the same time managing budgets and new technology. Collaboration has long been discussed as a method to enhance the quality of service and manage administrative budgets in the library environment. Many discussions have explored collaboration between librarianship and information technology, but little research has been conducted on this topic. The primary focus of many of the discussions has been the benefit of collaboration to the librarian or the library rather than the potential advantage to the patron. Most of the discussions urged librarians to seek new partnerships to ensure job security or professional stability (e.g., Molholt, Peters). Very few studies have been conducted with the primary purpose of understanding and measuring the value of collaboration to the information consumer. This study sought to document measurable benefits, if any, to the information consumer of collaboration between information technology (IT) departments and libraries in the corporate setting.

Griffiths stated that there are five characteristics that are key to professional success for information professionals. One of them is collaboration. She stated that “cooperation is a key theme for the future, and all information professionals are going to have to function as collaborators” (1). Kanter identified eight characteristics of best

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1 Evans and Wurster 72
partnerships and stated "productive relationships usually require and often stimulate changes within the partners, changes that they may not anticipate at the outset of collaboration" (12). According to Lippincott in 1996, the Coalition for Networked Information identified factors that tend to motivate collaboration between librarians and information technologists. These factors include sharing common goals, clients and tools; leveraging resources; and the existence of management pressures.

This present study viewed relationships between libraries and IT departments within one corporate setting. It sought to determine if benefits exist in this setting when these two groups of professionals partner on projects. In addition, it looked to identify what these advantages might be to the information consumer.

**Background**

The information industry has undergone a tremendous change in recent years. The following discussion outlines some of these elements of the information environment that have emerged within the industry:

- Information has become a commodity
- Electronic and virtual environments are commonplace
- Information overload/anxiety is rampant
- Technologies are converging
- Reporting structures are changing
- Work practices are evolving
- Information needs of consumers are more complex
Information has become a Commodity

Information brokers have developed a branch of information science by researching and reselling information packages for profit. Corporations are beginning to measure the intellectual capital of their knowledge workers and report these results along with ratios such as return on investment. The demand for knowledge workers is displacing production workers in the job market. In addition, the cost of acquiring, processing, and maintaining information is now being calculated.

In many industries not widely considered information businesses, information actually represents a large percentage of the cost structure. About one-third of the cost of health care in the United States--some $300 billion--is the cost of capturing, storing, and processing such information as patients’ records, physicians’ notes, test results, and insurance claims. (Evans and Wurster 72)

Electronic and Virtual Environments are Commonplace

A virtual library environment is supplanting many physical aspects of the libraries (e.g., the physical walls and print materials). A case in point is the corporate library at Nortel Networks, a world leader in the telecommunications industry. In 1999, the corporate library created a completely virtual environment across the global corporation by eliminating reference desks and print materials within the collection (Peacock). The Internet, specifically the World Wide Web, has opened a new marketing channel for businesses, facilitating an explosion in the growth of electronic business by providing an electronic means of marketing, selling, and servicing products directly to customers. Corporations have designed award-winning web sites and created one-to-one marketing strategies. Traditional hierarchical information dissemination is being replaced by a hyperarchical structure. “Millions of people at
home and at work are communicating electronically using universal, open standards. This explosion in connectivity is the latest--and, for business strategists, the most important--wave in the information revolution” (Evans and Wurster 71).

Information Overload/Anxiety is Rampant

Information consumers are being inundated with information. The growth of electronic mail alone has greatly increased the amount of information that business employees process, store, and retrieve. It is now estimated that the average U. S. office worker spends almost half the day in messaging-related activity (Davenport). In the same discussion, it was reported that sixty percent of workers feel overwhelmed by the amount of information they receive. Davenport offers readers suggestions on how to reduce overload and relieve some “info-stress.” Others discuss the proliferation of data and the confusion it creates for the information consumer. “It is easier to find data today than probably at any other point in the history of mankind. The critical issue today is not what data is available, but how to make sense of everything that is available” (Kennedy 124).

Technologies are Converging

Dougherty discussed how technology growth is “blurring the boundaries” (295) between the computing centers [IT] and libraries. Extranets and intranets provide an excellent example of the convergence of technology and content. Historically, the Chief Information Officer (CIO) has been involved with the pipeline (or technological and network infrastructure) and has been involved with making sure the pipeline
(infrastructure) is running the internal data effectively. Information professionals, i.e., librarians, have been focused on external collections of information. As a result of the emergence of the intranets and extranets, areas of technology that were once isolated are now converging. Most companies have an intranet that is used as a major information source for employees. A 1997 white paper prepared by the Information Services Advisory Council highlights not only the popularity of corporate intranets, but confirmed that they are now recognized as an integral part of the business.

Reporting Structures are Changing

According to an information industry briefing, “Information professionals are beginning to report to the Information Systems [IT] unit” (Outsell 8). The briefing found that, according to a recent survey, thirteen percent of information professionals now report to the IT department in corporations. The practice of information professionals reporting to an IT department now ranks third behind Executive Management or Research and Development departments. In 1998, Fye predicted that “special librarians will become aligned with information systems personnel, and may even be systems personnel.” Information industry analysts stated that ”[t]his is an important trend as companies begin to combine pipeline (technology infrastructure) with the information that flows through it” (Outsell 8).
Work Practices are Evolving

According to Thorin and Sorkin, librarians are being asked to make radical changes in the way they work (174). They are being asked to:

- Eliminate hierarchy
- Work in teams
- Consider and meet clients’ needs
- Learn to communicate with information technologists
- Implement business practices such as long-range and yearly planning and be accountable for implementing those plans
- Change long instilled work practices and organizational structures
- Keep their eyes on "the big picture." (174)

Corporate librarians are finding it necessary to work in teams and develop alliances with colleagues outside their profession. “Keeping on track in information delivery means working with multidisciplinary teams that represent the owners of the information, the information technologist, and the decision makers” (Kennedy 124). The Special Libraries Association’s “Competencies for Special Librarians of the 21st Century” (item 2.4) states that a competency for special librarians is the ability to look for alliances and partnerships (Marshall). It states as a practical example, a required competency is the ability to seek “alliances with management information systems (MIS) professionals to optimize complementary knowledge and skills.”

Information Needs of Consumers are more Complex

Drucker predicts that information needs of business executives and professionals are likely to change rapidly (22). He stated,

We have concentrated these past years on improving traditional information, which is almost exclusively information about what goes on inside an organization. . . . In fact, approximately 90% or more of the information any organization collects is about inside events. Increasingly, a winning strategy will require information about events and conditions
outside the institution: noncustomers, technologies other than those currently used by the company and its present competitors, markets not currently served, and so on. Only with this information can a business decide how to allocate its knowledge resources in order to produce the highest yield. (22)

This situation is creating a major new challenge for businesses and information professionals to develop “rigorous methods for gathering and analyzing outside information” (Drucker 22).

With information consumers overwhelmed with the quantity of information available, information providers need to assist clients with wading through the tremendous proliferation of information sources and provide quick, efficient access via state-of-the-art systems and tools. This state of "information anarchy" provides an excellent opportunity for all information professionals, both librarians and IT professionals, to work together to provide information solutions. Peters states, “Now that knowledge workers are becoming recognized as key corporate assets, information professionals can seize the opportunity to help them maximize the return on investment with decision-making information” (15). Therefore, a study to better understand the benefits of collaboration between IT and corporate librarians could provide encouragement to librarians and IT professionals who struggle in isolation and look for improved methods to meet the onslaught of the changing information environment.

The next section discusses the state of IT and corporate libraries and the relationship between these two departments and professions.
Librarians and IT Professionals: “Natural Allies?”

Since both IT and Library and Information Science (LIS) are considered areas of the information profession, it would seem logical for these two fields to naturally migrate toward healthy and productive working relationships. Molholt discussed the characteristics of both fields and how they might complement one another (286). She concluded that computer scientists [IT] have technical expertise while librarians have subject expertise. However, Creth provided another view of this partnership. She stated that “If computer professionals [IT] and librarians are to be a productive team, they will need to develop a much clearer understanding of one another” (120). She discussed the cultural differences that tend to keep the two professional groups apart. She stated that computing professionals tend to come from a variety of educational and experiential backgrounds and have a technical orientation. Also, they tend to exhibit entrepreneurial behavior. On the other hand, Creth noted that librarians share a common educational background and experience a cultural process that develops a shared philosophy and common values within their profession. She found that librarians, unlike their IT colleagues, have a service orientation and use a consensus approach in their working environments.

Lippincott, writing in 1996, outlined factors that hinder collaboration between librarians and technologists:

- Different attitudes towards change;
- Different levels of technological expertise.
- Lack of understanding of the others’ skills
- Desire to control one’s own resources
- The budget process

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2 Dougherty 296
In corporate settings, both departments are typically in support or overhead organizations such as Corporate Services, rather than contained within the functional business departments. Therefore, they both act as service providers to the same clientele: employees in the line functions.

**Information Technology Departments**

In the corporate environment, information technology departments have traditionally focused their efforts on the performance of the operational components of their computing centers and network infrastructure. "Organizations [IT] often focus inappropriately on managing the life cycle of the hardware and software systems that produce the information instead of on the information itself" (Wang, *et al.*). The focus has been placed on improving the delivery system rather than the information product provided to the consumer (Wang, *et al.*). Corporate IT departments have concentrated on measuring their success in operational terms such as computer and network uptime or downtime. Wang, *et al.* cite an example from Eyewear Company that demonstrates a typical IT department’s focus:

The MIS [IT] director gave his attention to upgrades of hardware and software and did not pay sufficient attention to how each function interpreted the information being transmitted. No one held a cross-functional perspective. Too often, IT departments emphasize the quality of the delivery system and its components rather than optimizing the quality of the information product delivered to the consumer.” (98)

During the 1990s, the IT departments in many corporations experienced an organizational transformation to better align with the functional business units. By building effective working relationships with line and functional managers and
participating in corporate decision making and problem solving, IT departments created partnerships that required taking some of the same business risks as their colleagues in the line functions. Today, departments such as manufacturing, accounting, billing, order management, and human resources, are heavily automated and depend on software information systems to perform their job functions. Information technology departments, which support the automation, are now recognized as integral components of the business. Along with systems automation, the explosive growth and popularity of the Internet has increased the importance of the IT department within organizations. According to Wilson, "Internet technology has given the IT department more influence on a company's core business than ever before. CEOs and other top executives no longer just tolerate the leveraging of technology, they demand it" (80).

The Corporate Library Environment

In many cases, librarians still struggle with low-organizational profiles and are continually challenged to justify their existence (Peters 15). Peters states that “Survival within the corporate environment demands that information professionals reinvent partnerships and reposition themselves . . .” (16). Corporate librarians compete internally for resources and externally with outside vendors who promote their outsourcing services to corporate executives as a method of reducing administrative expenses. Market research companies also peddle their products and services (e.g., consulting and packaged research and industry reports) directly to the internal business units, bypassing the corporate library. In this environment, the
corporate library struggles to maintain adequate levels of funding and staffing as it meets the challenges of the turbulent and changing information industry. In many organizations, librarians are beginning to seek collaboration with the IT departments to leverage the relationship that IT departments have developed with their business partners as a result of organizational re-alignment.

Corporate librarians have knowledge of internal and external information sources, information analysis and evaluation, and strength in packaging the information to meet business partners’ stated goals and objectives (Kennedy 121). An information industry briefing stated, “As information professionals broaden their role to overall collection management and content deployment, they provide an excellent complement to the CIO [of IT] who isn’t really familiar with managing content” (Outsell 8). An alliance between the corporate library and the IT department could provide the opportunity to bring together these skills of “content management” with those of tools integration and systems maintenance and enable the delivery of comprehensive, integrated information solutions.

The next sections provide information about the current research study.

**Purpose**

The purpose of this study was to determine if information consumers benefited from the partnership of librarians and IT staff. The study used an actual project team as the source of data collection and evaluation. In addition, the study was designed to gain an understanding of how librarians and IT staff collaborated, leveraged one another’s skill sets, and to capture feedback on their experience during an actual project setting.
Research Questions

This study explored the following research questions:

- Are librarians and information technologists collaborating today?
- How do librarians view collaboration with information technologists?
- How do information technologists view librarians as members of project teams?
- Are there benefits in collaboration to the information consumer?

Significance

This study is important to the field of information and library science (LIS) because it measured the results of collaboration in improving services to patrons and users by enhancing the information solution. In the commercial environment, relevant and timely information is a major key to success, and the business that has the best information holds the competitive advantage. This research attempted to determine if the consumers’ information needs are better met when the IT department, often called Information Systems, and the corporate library create partnerships to deliver information solutions. The need for accurate and timely information has never been greater. In fact, some believe that “the most critical new function for the information professional today is to ensure that organizations have the information they need, not merely the data, to compete in today’s ‘knowledge economy’” (Ribbler 19). In this environment, it is imperative that corporate knowledge workers have access to superior information quickly and easily. Today’s companies have a competitive advantage when their knowledge workers have faster access to the right information.
than their competitors’ employees do. Today’s successful business decisions are time critical. Getting key information in the hands of the decision makers is also crucial to maintaining the corporation’s financial success. Effective information solutions can only be achieved by combining quality content with superior storage, access, retrieval, and delivery services. A partnership between content specialists and technologists could have tremendous payback to the corporation and its information consumers that they exist to serve.

**Definition of Terms**

*Collaboration* is defined as “the process of shared creation: two or more individuals with complementary skills interacting to create a shared understanding that none had previously possessed or could have come to on their own. Collaboration creates a shared meaning about process, a product, or an event” (Schrage 40).

For the purpose of this study, *information need* is defined as “inadequacies in a state of knowledge” which can “be of many sorts, such as gaps or lacks, uncertainty, or incoherence” (Belkin 137). The fulfillment of this knowledge gap, inadequacy, or insufficiency may require no more than a question posed to a reference librarian. However, in virtual and electronic environments, access and delivery of the information to meet the need may be more complex. The fulfillment of information needs not only encompasses the content of material, but also transmission and delivery of the information. Information solutions may comprise the full spectrum of locating, packaging, and refining quality information or data, as well as the systems or tools
required to process, store, and deliver the information product to the requester in a
timely and efficient manner.

The term *information professional* is used throughout the research. The author
uses the term to refer to both IT and LIS; however, many sources cited and discussed use
the term to refer to LIS professionals only.

This study makes references to the differentiation between the term *data* and
*information*. In this context, *data* is used in the sense as *raw data*. *Information* is "an
assemblage of data in a comprehensible form capable of communication and use: facts to
which a meaning has been attached" (Feathers and Sturges 184).

The IT department is commonly referred to in corporations as Information
Systems (IS) or Information Services. This term is usually exclusive of the corporate
library and should be distinguished from Information Science in the same sense as LIS.

*Extranet* describes a controlled internet environment that is established between a
corporation and either a partner or customer. This extended intranet allows customers
and partners to venture inside the controlled environment of the business’ corporate
network in a limited and gated environment.

*Web farming* is "based on the idea that information external to the organization is
as valuable to strategic decisions and planning as information collected from internal
transaction-based systems" (Fye). An IT consultant defined *web farming* as "the
systematic discovery and acquisition of business-relevant Web content as input to the
data warehouse” (Hackathorn).
**Research Study Environment**

This research study was conducted within a large, worldwide telecommunications corporation. Study participants were a sample of the staff members from the IT organization and the corporate library. The company had revenues of $US17B with approximately eighty thousand employees. The corporate library had a total staff of fifty personnel with approximately thirty of those being non-management, practicing librarians. The information technology organization had approximately 4,500 personnel. The IT group reported to the Chief Information Officer (CIO) of the corporation. The library reported to a corporate employee services department. Both IT and the library were corporate organizations responsible for global support to internal business line functions, although the library did not report into the office of the CIO.

The context of the study was a collaborative effort between the library and IT to develop a software system. The IT department was asked by the sales and marketing organization to create a new software tool that would “provide the sales force with the right information at the right time by consolidating ‘oceans’ of information available both internally and externally through one window on the desktop” (Popp). This information included both external content (e.g., the Internet) and a variety of types of internal content contained on the corporate intranet and residing in internal databases and systems applications. The project produced a new software system called *Infobus* that uses client/server technology and resides on the corporate network but is not accessible via the corporate intranet. The project team consisted of a project leader and team members from both IT and the library. The project leader was an IT staff member, and one librarian was assigned to the project for twenty hours per week. Other librarians acted as
consultants and were involved in the project as needed. The initial thirty-four users of Infobus were located in the client sales organization.

**Scope and Limitations**

Obvious limitations arise due to this research study being conducted on a single project team within one corporate setting. In addition, the study was conducted soon after the system was implemented and the system was still novel to the users. Because many of the users had little experience with the new system, they were not fully aware of its capabilities and may have evaluated it differently after gaining more expertise. In addition, the project worked in a set time frame and monetary budget. Therefore, the project team was limited in its ability to thoroughly conduct user needs analyses or provide a comprehensive set of commercial databases that would satisfy all the information consumers’ needs.

This study was conducted in an environment where IT and the library were in different organizations. Due to the small number of survey respondents and the limited number of interviewees, it is impossible without further study to generalize the findings of this research study.

The next section summarizes the important literature in the area of collaboration of information professionals in various environments and shows its progression from early discussions on the topic through some of the most recent literature.
II. LITERATURE REVIEW

The literature examined provided a review of collaboration in three settings; university and academic campuses, medical and hospital institutions, and business and corporate environments. The basic themes found in the literature were:

- Collaboration between IT departments and libraries is beneficial
- Partnership between the professionals is characterized with misunderstanding, distrust, and a difference in cultural and professional styles
- Convergence of technology is driving librarians and technologists together
- Librarians and technologists have complementary skills and knowledge
- Optimal organizational reporting relationship models remain inconclusive

Most of the discussion on collaboration between librarians and information technologists has been conducted and published in library science literature. From the beginning of research on this topic, the discussion outlines the competitive environment, fear, and distrust along with misunderstanding, that hampered the integration process. This theme is prevalent throughout the library literature, with most librarians being called to action to “reinvent” themselves and move past the “traditional role” of librarians in order to ensure job security and expansion of the profession. Early literature is oriented toward how to organize the integrated information department and who was best qualified to head this department--the director of the computing center or the head
librarian. Very little research or discussion has been found on the topic in the information technology literature.

Collaboration between IT departments (computing centers) and libraries has been recognized and documented since the 1980s. The discussion of the advantages and disadvantages began in the academic university setting with a focus on how to manage the administrative structure and who should be placed in-charge. From the university campus, the discussion has spread to hospitals and medical environments. Corporate and business settings are now beginning to demonstrate an interest in exploring the benefits of collaboration and leverage partnerships between their librarians and IT staff.

**Academic and University Environments**

To facilitate the *integration* of the combined information department, Molholt suggested a model of the library, “not as a museum or archive sitting out the print era, where collecting is an end to itself, but as an information support center” (285). Her article outlined the “pieces” necessary to build and support this information center vision. She provided characteristics of the computing center and demonstrated how the library complements these characteristics. The unifying theme of her article was the administrative challenges to the transition. She noted that “within universities, the library and computing center affect more people more directly and more often than do any other departments or service units” and therefore these challenges must be addressed (288). She strongly urged librarians to take a leadership role in the task and warned “the current barriers we face are insoluble if we [librarians] act alone” (287).
The progression from integration to the idea of cooperation was discussed by Dougherty who viewed the relationship between IT and the library as a good opportunity for cooperation. He felt that the question of merger and who should be in charge was irrelevant and that the departments should look for opportunities to work together without having to solve the merger dilemma. He stated that “the relationship between libraries and computing centers is changing rapidly” and predicted that “soon, higher education professional[s] will not refer to ‘library issues’ and ‘computing center issues’; they will be concerned with cross-campus issues in information science that will reach the heart of the library’s traditional mission” (290). Dougherty also stated that “because the difference between libraries and computing centers is so great from an organizational viewpoint, I believe models that rely on coordination and collaboration are more likely to predominate in the near term than models that subordinate one unit to another” (290). The author recommended that computing centers and libraries establish formal working relationships at operational levels in order to stimulate a process of “constructive organizational mimicry.” He provided examples of how convergence of activities has begun to “blur the boundaries” between the two departments in the campus environment. He also stated that ultimately, libraries and information technologists are “natural allies” (296). “Both have special and complementary skills that are in short supply” (296).

Creth took the idea to the next level by advocating the move from cooperation to collaboration. She stated that “a first step in moving toward a collaborative environment is recognition of the current role, strengths, and attributes of each organization and its professionals” (118). She discussed the differences in the culture, education, and professional development of the two fields and stressed that the two professions must
start by developing a clearer understanding of one another. She concluded that in the “turbulent and rapidly changing environment, the contribution and the value of the role of computer and library professionals will be magnified if they pursue a strength in collaborative partnerships” (130-131).

Lippincott, writing in 1998, cited several projects conducted on university campuses that were successfully developed by teams of librarians and information technologists. However, she contended that these collaborative projects might not have been painless. She cited several articles that discussed the concerns of librarians who participated in these projects and reported that the experience was full of conflict and competition.

Billings also provided examples to support the existence of competition and discussed the feelings of defensiveness of librarians at the fear of being absorbed by computing departments. He stated that assigning a senior academic officer with combined library and computing center responsibilities was often discussed, but only occasionally implemented. However, Billings declared that for libraries to “fulfill their long-held responsibilities as the chief stewards of the information and wisdom left by our intellectual progenitors . . . they must form new alliances in this flowering information age” (35). Billings suggested that “despite the prophets” who say otherwise, it is the librarians alone who can effectively transform the old information model into the new model (37).

In the mid-1990s, the theme of converging technologies began to arise in the literature. The Coalition for Networked Information (CNI) merged library and computing organizations. The Association of Research Libraries (ARL) and two
computing organizations, CAUSE and Educom, sponsored the formation of CNI in 1990. This new organization developed because the sponsoring associations “felt that bringing together the content expertise of librarians with the networking expertise of information technologists could help enrich the developing Internet . . .” (Lippincott 1996). Authors began to discuss how this convergence was “blurring” the two disciplines and driving collaborative ventures. At a regional CAUSE conference held in London, Bernbom suggested that “the Internet and networked information resources represent a specific case for convergence of interest for librarians and technologists.”

Bernbom offered six ways that the two disciplines work together:

- **Discovery and retrieval**: search engines and algorithms, search strategies and goal-directed information behaviour;
- **Classification and description**: standards and metadata;
- **Content evaluation and assurance of quality**: collection development, content selection activities;
- **Labelling**: classifying and authenticating information (quality) to attest to its accuracy;
- **Authentication and authorisation**: methods of asserting individual identity, or masking individual (anonymity) while asserting identity as a group member, and associating identity or group membership with access rights and privileges.
- **Terms and conditions**: associating rights information with digital content.

Bernbom noted that the potential of new services has created an enhanced set of expectations among users and senior administrators. He concluded that this situation drove librarians and technologists toward a mutual goal of fulfilling these expectations and delivering new services to users and patrons.

Marshalsay re-examined the literature and discussed trends in the various models of academic library and campus computing center collaboration. She revisited the similarities and differences in the two departments and outlined the benefits of
partnerships between computing centers and libraries. The author suggested that campus issues, such as lack of funding and physical space and the convergence of once separate technologies, are working together to bring the two disciplines closer together.

Marshalsay purported that what is really needed to create the new relationship is for someone to be “put in charge of the situation” (58). However, as she reviewed the research to determine the success model, she found no data to develop a conclusive opinion regarding whether that individual should be the librarian or the technologist. Marshalsay concluded that whether the librarian or information technologist should be in charge of a combined organization was situational and depended on institutional climates and priorities.

**Hospital and Medical Environments**

This section is a discussion of the literature in the hospital and medical environment. In the hospital setting, Grosman and Larson reported how IT professionals found themselves within the same Joint Commission on Accreditation of Healthcare Organizations (JCAHO) standard as the medical library. In order to facilitate the two departments to work together and “move past the obstacles created by stereotyping,” the authors created a model called the “Knowing/Caring Ladder” which provided a roadmap for IT professionals and librarians to begin to work together (197). They hoped to motivate hospital librarians to work with their IT colleagues to build an information management team within the hospital. According to Grosman and Larson, demands for the knowledge-based information needed in a hospital environment will continue to draw
the hospital library and the IT department into a closer partnership. They urged librarians to welcome this as an opportunity rather than as a loss of independence.

Coble, et al. describes a collaborative project between IT and hospital librarians to implement the Internet at Rapid City Regional Hospital. They found that there were benefits of the Information Systems [IT] department working with librarians on the project. Increased mutual respect and enhanced communication developed between the two staffs during the project. In addition, by the teams working together, “unnecessary duplication of efforts [was] avoided” (412). As a result of the pilot project, the hospital experienced a smooth transition to hospital-wide Internet access.

**Corporate and Business Environments**

In corporate settings, there is less discussion on the topic of collaboration between IT departments and the corporate library. From the literature published, however, it is possible to derive some conclusions about the current state of collaboration.

In the early 1990s, management strategies emerged encouraging the partnerships between IT departments and their line functions to ensure the effective use of technology within the corporation. Henderson found that the “I. S. [IT] organization was viewed strictly as a service organization providing support and resources to line management in their pursuit of business objectives” (12). Over the decade, I.S. departments [IT] have implemented these partnerships and become recognized as more integrated into the fabric of the business units. Today, Henderson’s portrayal of organizations seeking partnerships in the early 1990s to ensure their raison d’être is more representative of the current initiatives of corporate libraries than of IT departments.
Kennedy, writing in 1996, echoed Henderson’s recommendation but directed it toward the corporate librarians to build intelligent partnerships with the decision-makers. Kennedy suggested that “keeping on track in information delivery means working with multidisciplinary teams that represent the owners of the information, the information technologist, and the decision makers” (124).

Developments such as the intranet, data warehousing, data mining, and web farming have provided a perfect opportunity for special librarians to team with IT departments. Fye urged special librarians to seek integration, to look for partnerships and alliances. She stated “arguably, the most important place to seek partnerships and alliance is the friendly neighborhood Information Technology (IT) department.” She also predicted that as businesses increasingly integrate more electronic operations, IT becomes the “ship’s rudder.”

The Information Services Advisory Council published a white paper in 1998 that included reports from nine large companies on the topic of their corporate Intranets. The following companies were included in the study:

- The Boeing Company
- Cargill, Incorporated
- Dow Chemical Company
- General Electric Legal Organization
- Hewlett-Packard
- MCI
- Microsoft
- Monsanto
• Xerox

Although the report did not specifically set out to define IT/library collaboration, it provided insight into the real world situation. The purpose of the white paper was to “produce a useful study of the development of the Intranet in a variety of corporations and to address specifically the role played by libraries and information centers in that development.” The study outlined roles and responsibilities in Intranet development as well as describing the key teams who oversee its management and development. In all cases, the Intranet was a joint effort between corporate librarians and their IT departments.

Other articles from the corporate-focused literature provided an outline of the characteristics of collaborative efforts between information technologists and librarians. Kay stated, “few would disagree that information is a critical strategic weapon in today’s business world. Yet in many large organizations, the traditional information of the corporate library is not integrated with and, in some cases, is downright at odds, with the information systems department.” The author suggested, however, that the integration model of IT and libraries on university campuses is migrating to the corporate world.

At the Draper Lab, a team approach was used to implement a gopher, a client/server-based software that provides access to internal and external information via the Internet. The IT department approached the library about collaborating on the project. The authors stated that “team building was our key to success” (Rotman, et al.). They noted that IT and the librarians brought to the table “differing perspectives and a different set of skills. These differences were the team’s greatest strengths, as well as the source of its potential weakness” (Rotman, et al.). Developing a sense of mutual trust
and legitimacy enhanced the cooperation, and communication was maximized by the team-building experiences. The result of these efforts to the user community was “a cost-effective and useful service with minimal redundancy” (Rotman, et al.).

At Ford Motor Company, “the library has constructive relations with other departments, particularly IT and IS” (Pack and Pemberton). This collaboration has resulted in Ford transforming a completely paper system into a paperless, virtual library. In addition, IT collaborated with the library to provide full-image access to a variety of computing forecasting reports. According to the supervisor of the corporate library, “at Ford, we’ve been able to work with the systems community to help develop standards and enterprise-wide information management solutions. We’ve been able to develop novel approaches to getting information to a large and diverse company” (Pack and Pemberton).

Finally, an earlier study conducted in April of 1999 (McMannen) researched the current relationship between information technologists and librarians in a corporate environment. The study found many of the themes in the previous literature were again manifested. The IT group demonstrated a lack of awareness of the services of the library and they were uncertain how, or even if, to engage them. They preferred to have a defined relationship with an assigned librarian rather than using a process of “first come, first served” as you would find at a typical reference desk. They expressed concern over roadblocks to collaboration due to perceived differences in the cultures. Information technologists perceived the library staff to be a service organization to meet their information needs rather than colleagues in the information industry.
The librarians desired to establish a formal relationship with the IT professionals as equal partners. Much concern was expressed over the lack of trust of the IT department and the fear of being swallowed up by this larger organization. The librarians, however, wished to leverage relationships with the business units firmly established by IT groups. The librarians recognized the value of the complementary skill sets of the library and the IT department.

Both groups acknowledged the value of collaboration, recognized the need to define formal one-to-one relationships, and suggested the need for executive sponsorship. Information technologists' responses appeared to be more process and production-oriented while the librarians' responses tended to focus on the wider corporate view and the improved end result for clients. The librarians appeared to understand the role of the IT staff better than IT understood the librarians' and their potential contribution to the organization.

Overall, the literature from all the fields studied clearly demonstrated the value of collaboration. The motivation for the creation of partnerships varied, but it appeared that under any circumstance, the information consumer benefits from the complementary skill sets of IT professionals and librarians working together. In spite of cultural and professional differences, the complementary expertise and knowledge provided a compelling reason to create collaborative, on-going professional relationships. As the literature also demonstrates, more work is required to motivate business organizations to leverage their information professional staffs for a greater return on their investment. This study is intended to add to the research findings in this area.
III. METHODOLOGY

Overview

The purpose of this study was exploratory: to determine the impact of professional collaboration between librarians and information technologists in a specific corporate setting. Two data gathering techniques were used during the project, surveys and semi-structured interviews.

Participants

All participants in the interviews were corporate employees of either the corporate library or the Information Systems departments. Three interviewees were IT staff and two were corporate librarians. The clients/users who were surveyed were also corporate employees but belonged to the corporate sales organization. These personnel had previously identified the need for an information repository and approached the IT department with a request to build a software system that included a central location to gather, collect, store, and access vital information needed to do their jobs. The Infobus project team leader was an IT employee. The librarians joined the IT project after it was underway as a result of the study conducted by the author in the spring of 1999. One librarian was initially assigned to the project and brought in colleagues as required based on the information needs identified. For example, when the information need required a commercial database vendor such as Dow Jones Interactive, the librarian who had the most expertise with that product was added to the project team as a consultant.
Data-Gathering Techniques

Data were gathered through two techniques. The project team members participated in semi-structured interviews. Surveys were distributed electronically to the clients of the new system, *Infobus*, to capture their evaluation of the tool in terms of information richness, utility, and navigability.

Semi-structured Interview

Semi-structured interviews were conducted with members of the project team. Team members were asked about their experience in terms of the project and any impact that assigning a librarian to the project may have had on the work effort and outcome. The questions were designed to determine the extent of experience in similar collaborative projects in order to determine the interviewees' experience with collaborative projects. In addition, it was important to gain an understanding of how much IT/library collaboration was actually occurring. Other questions were designed to gather the interviewees' insight into the benefits of collaboration to the end product. Interviewees were asked about their experience with their professional colleagues to determine if the "culture clash" between IT professionals and librarians discussed in the literature was demonstrated in this particular project. A copy of the interview questions can be seen in Appendix A.

Three IT project team members and three librarians who contributed directly to the project were requested to be interviewed. One member of the library staff failed to respond to the request for interview; therefore, only two librarians participated in the research project. Interviews were conducted in October 1999.
Survey

Surveys were distributed electronically to the clients of Infobus to capture their evaluation of the tool in terms of information richness, utility, and navigability. The survey participants were asked to rate the new system in relationship to other systems with which they had personal experience. The questions were designed to gather the survey participants' evaluation of the tool produced by the collaborative project. These answers would lead to measuring the benefits to the information consumer of the cross-functional project team (IT and the corporate library). The participants were also asked to identify their main source of information for their job because this could impact their evaluation of Infobus as an information repository. A copy of the survey can be seen in Appendix B.

Because many of the sales staff worked in various locations, Infobus users were registered in stages in order to manage training and administrative support for the release. Upon initial release of Infobus, there were thirty-four registered users within the sales organization. Therefore these thirty-four users were surveyed in the research. Surveys were distributed in September of 1999. The participants were given thirteen working days to submit completed survey forms. Fourteen users responded by submitting a completed survey. A follow-up was conducted on October 30 with a response rate of twelve percent. The final total response rate was fifty-three percent.
Data Analysis

Data were organized and summarized into meaningful categories and reviewed using either quantitative measurements or qualitative evaluation.

Semi-structured Interviews

The interviews combined both a qualitative and a quantitative approach to collect data. Interview responses were captured during the interview by the interviewer who recorded responses to each question. The responses were then divided into two categories. Data were analyzed based on the organization that the interviewee represented, i.e., the corporate library or Information Systems (IT), as well as the entire group of responses. The researcher reviewed the data for themes as well as similarities and differences.

Surveys

A quantitative method was used for the survey findings. Responses to each question were tabulated and percentages were calculated for each question. In addition, verbatim comments provided by the participants were summarized and reviewed for themes to assist with the interpretation of the results.
IV. RESEARCH FINDINGS

The findings clearly supported the published research in this area. The interview responses yielded more data than the surveys and provided a depth of understanding from the information professionals' perspectives. Since most of the research on collaboration has focused on the impact to librarians and information technologists, the limited findings of the surveys, which were gathering data from the information consumer, were not surprising. The study findings also provide an understanding of why there is so little research on the impact to the information consumer. It was obvious in the findings that meaningful, convincing data in this area is more difficult to gather.

Interview Results

The first question asked the interviewees, "Was this your first experience working on a team on a project team with both library and IT/IS staff?" Both librarians answered “yes” to this question. Neither had worked on projects with members of the IT organization outside the library in prior situations. One had worked with information technologists who were staff of the library, not of the IT department. All IT respondents answered “yes” to this question.

The second question posed to both the librarians and IT interviewees was, "What benefits, if any, did you note of having both IS and library employees working together?" The librarians’ responded with three main ideas. First of all, the librarians were quick to identify the lack of content knowledge of the IT professionals. They noted that the IT
staff did not know how to identify information resources, nor did they have knowledge of selection criteria and methodology for choosing quality content. Secondly, the librarians noted that their IT colleagues brought the technology expertise to the project. In addition, they stated that IT staff understood corporate IT standards and guidelines and comprehended how and when they were applicable. They noted that IT had access to tools and networks to enable the project to be implemented. Finally, the librarians recognized the project management expertise of the IT staff and noted that they were responsible for keeping the project on track. The responses noted that IT seemed to be more task-focused than the librarians’ perspective.

The overwhelming response from the IT staff was that the librarians knew content and quality sources of information. They noted that the knowledge and expertise of the IT staff and the librarians complemented one another. They were impressed with the acumen of the librarians regarding sources of information and their understanding of the structure, organization, and accessibility of commercial databases such as OneSource. The IT staff felt that their librarian colleagues best knew what type of information would add value to a sales and marketing client and what type of information was available in the industry that would be helpful. In addition, they noted that their library colleagues understood what information the corporate sales and marketing clients needed and identified that best information fit for the corporate clients. The IT staff also noted that the librarians were skilled in packaging and categorizing information to better meet the clients’ information needs. The IT staff commented that the library was able to re-use content materials, such as market research reports, that the company had already purchased.
The third interview question asked, "Do you think that having IS and library staff work together enhanced the quality of this project? and if so, would you like to work on a similar project in the future?" Both of the librarians answered in the affirmative to both of these questions. All IT respondents answered affirmatively to both questions. One respondent (IT) exclaimed, “Absolutely! Having IS [IT] and librarians working together enhanced the quality of the project. The team only worked together for thirty days and with more time, it would be even better.”

The next question asked the librarians, “What attributes of your IT colleagues contributed to the success of the project?” Several of the same themes were mentioned again in the librarians’ responses. It was again highlighted that the IT staff seemed to be better at keeping the project on track and that they were focused on the project timeline. Again, the responses recognized the technology expertise of the IT colleagues. An example was identified of how IT created a unique interface to the information database, OneSource, that enabled the users to access the information efficiently and effectively and without training. Several new ideas were also discussed. The librarians stated that IT staff listened well, were open-minded, and evolved their ideas about the important elements of the product throughout the project. They stated that IT was responsive and willing to learn about content. In addition, the librarians noted that the IT project members understood their clients’ information needs and the context for use. The librarians recognized that IT staff brought a different skill set as well as mindset to the project team. Finally, the librarians acknowledged that the user community had approached IT to develop an information system and that the library was leveraging the
IT/client relationship as a channel to contribute the librarians' skills and expertise to the clients.

The same question was posed to the IT staff, "What attributes of the librarians contributed to the success of the project?" Several of the same themes were again noted. The IT staff recognized the expertise of the library staff and their knowledge about information sources as well as their knowledge of the information needs of the corporate sales and marketing organization. In addition, they noted that the librarians knew how to find and organize information. They noted that the librarians were good at getting to a workable description of the information need with the client. The IT staff recognized the librarians’ willingness to look to their colleagues within the library and leverage their knowledge and expertise to solve a problem. The IT staff noted that the librarians were enthusiastic, open to working with IT staff, and they did not seem protective of their “turf.” They stated that the librarians were service-oriented and quick to respond to requests. They also noted that the librarians were customer-oriented with good interpersonal skills. The IT staff stated that they felt that the librarians also treated them like customers, accepted responsibility and followed-up to ensure that needs were resolved. The IT staff commented that the value of the contribution of the librarians had been underestimated and that librarians should be involved in the development of web sites. The IT staff noted that they recognized that the librarians were eager to gain recognition for the corporate library and demonstrate its value to the corporation.

The next question asked the librarians, "What attributes of the IT staff do you consider were a roadblock during the project?" The librarians responded that the IT project team members were more focused on solving the software and hardware
challenges while the librarians were concentrating on the content requirements. In addition, both respondents expressed that the IT staff felt a higher priority to satisfy the client (who provided the funding) instead of the end user of the new system. They felt that IT staff was more focused on the financial and funding aspect of the job than they would have been.

The same question was asked of the IT staff, "What attributes of the librarians do you consider were a roadblock during the project?" One IT staff member declared “NONE!” when asked this question. Another felt that a minor concern was that IT staff had to expend time to explain technology to the librarians.

The final question asked during the interview was, "What do you consider to be the most significant achievement of the project?" The responses from the librarians noted that this collaboration was a major “first step” towards educating the IT staff on the value that the librarians could contribute. They felt that they would be able to capitalize on what was learned from this project in the future. Another respondent focused on the technology and stated that providing the users with the ability to customize their information solution and have it delivered to them via “push technology” was a major accomplishment. The IT project team members noted the example of the OneSource opportunity where the librarians identified this database as a source of information to meet the users needs. The technologists worked with the OneSource vendor and created an easy and effective method for the users to access the database and not just point them to a web site address via a hotlink. This provided the access to the external information and eliminated the need to train all the system users on another database tool.
Additional Comments from the Librarians:

The librarians noted that there was a good working relationship among the project team members and that there was enthusiasm on the team. They also felt that they were somewhat constrained due to project timelines and could have contributed more value if the project timeline had been extended. One librarian stated that she would have liked to conduct a formal user needs analysis with the sales and marketing clients, but was not allowed to do so due to the time constraints of the project. The librarians acknowledged that IT staff had an existing, ongoing client relationship that provided the environment for the project initiation.

Additional Comments from the IT Staff:

The IT staff members noted that the librarians provided information willingly and responsively. They stated that the librarians participated as full team partners and demonstrated true collaboration. The IT staff commented that the librarians were service-oriented and were thorough with their follow-up and checked with their IT project team members regularly to ensure they had what they needed. They noted that they were impressed with the librarians’ customer service. An additional comment was that the librarians not only knew how to locate and identify information sources, but they knew how to get the best information from the commercial databases. The IT staff noticed that the librarians were invaluable at determining which source to choose and then how to get to the information inside the database.
Survey results

Survey participants were asked several questions about their information-seeking environment and about their assessment of the Infobus tool.

The first question asked them, "What is typically the major source of information you use for your job?" This question was asked to gain an understanding of where the participants seek their information and whether or not they are experienced software systems users. Their comfort level with using software systems could have an impact on their evaluation of Infobus. The following highlights that the system users' main source of information is via electronic mail, which is a simple method of information seeking. If statistics for Internet and intranet usage are combined, users conduct fifty percent of their information seeking from a web source. In addition to the simplicity of electronic mail, navigation techniques for World wide web usage also allow users flexibility and a "free form" search style. Software systems such as Infobus require users to follow a predefined search technique.

<table>
<thead>
<tr>
<th>Source</th>
<th>Responses</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronic mail</td>
<td>8</td>
<td>44%</td>
</tr>
<tr>
<td>Corporate intranet</td>
<td>5</td>
<td>28%</td>
</tr>
<tr>
<td>Internet</td>
<td>4</td>
<td>22%</td>
</tr>
<tr>
<td>Print materials</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Co-workers</td>
<td>1</td>
<td>6%</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

Table 1. Major information source for the job

The next question asked them, "How would you rate the quality of Infobus compared to other information delivery sources you have used before for similar
purposes?" Overwhelmingly, the participants rated the quality of the software tool average or above average for all the aspects questioned. Functions and features and information-richness received a score of fifty-six percent above average. However, in the areas of information-richness and navigability, one of the respondents rated Infobus below average.

<table>
<thead>
<tr>
<th>Area</th>
<th>Above Average</th>
<th>Average</th>
<th>Below Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functions and features</td>
<td>56%</td>
<td>44%</td>
<td>0%</td>
</tr>
<tr>
<td>Ease of use</td>
<td>50%</td>
<td>50%</td>
<td>0%</td>
</tr>
<tr>
<td>Information-richness</td>
<td>56%</td>
<td>39%</td>
<td>5%</td>
</tr>
<tr>
<td>Navigability</td>
<td>50%</td>
<td>44%</td>
<td>6%</td>
</tr>
</tbody>
</table>

Table 2. Ratings of the quality of Infobus

The participants were asked to list any attributes of the system that would help them perform their jobs more efficiently or effectively. Most of the comments focused on the area of the system’s ability to deliver news and stock prices "automatically" and the functionality that consolidates competitive news and information into a single repository. So, even though one respondent noted in his/her selection (Table 2) that the system was below average in information richness, the majority of the attributes identified were regarding the content and not the technical aspects of the tool.

The participants were asked to state whether or not they were satisfied with Infobus. Only one participant answered no to this question.

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>94%</td>
<td>6%</td>
</tr>
</tbody>
</table>

Table 3. Overall satisfaction with Infobus
Comments provided at the end of the survey were grouped into two major themes:

- Quality of content
- Novelty of the system to the users

One survey stated that *Infobus* was an "excellent tool for gathering internal resources together." In addition, another noted, "*[Infobus is] a good single-point to access a wide-range of information." Several comments noted that the participants were "still learning the tool" and "discovering the advantages and capabilities" of *Infobus*. 
V. DISCUSSION AND CONCLUSION

This study investigated the state of collaboration between corporate librarians and information technologists and captured some of their thoughts as they worked collectively as project team members. Based on the interview findings, several themes emerged regarding the relationship. It is clear from the responses that both professional groups felt that there were benefits in working together. In addition, it is not surprising that they recognized both the complementary skill sets and the differences in work styles. The survey results were not as conclusive. There appeared to be some discrepancies between the survey respondents' answers to the questions and their comments. Based on the responses, the overwhelming response was that the quality of Infobus was either average or above average. However, since there are no comparative survey data, it is difficult to conclude whether or not the tool is improved as a result of collaboration. The interview responses provided insight into this area and led to some conclusions about the quality of the information system as a result of collaboration. Overall, the data support that the findings of research conducted in this business setting contain similarities to those articles that discussed collaboration in the academic and university environment.

Current State of Collaboration

Based on the findings of this study, collaboration between IT professionals and corporate librarians remains somewhat of an anomaly. Collaboration may exist, but not as a routine practice. Librarians still remain in a fairly self-contained environment and
are not integrated as member of a multi-disciplinary information management team routinely. In this study, none of the team members had worked formally on a cross-organizational team composed of IT and the corporate library. One librarian had worked with an IT professional, but this person was supporting library systems and was located in the librarian's department.

The findings supported prior research and discussion outlining the differences in working styles and the culture between the two professions. The study also highlighted differences in priorities between the two types of information professionals. Librarians tended to focus on the end-users' information needs, while IT applied a more operational approach, compromising a “perfect tool” in order to meet project management requirements of cost and date commitments.

Overall, both groups reported enthusiasm and excitement over the collaboration. The IT professionals, especially, expressed a great deal of enthusiasm; it seemed as if they felt they had discovered a new opportunity. Librarians, somewhat more reserved in their level of enthusiasm, expressed what appeared to be relief at being recognized for their contribution and expertise.

Implications for IT:

Several benefits to the IT professionals were apparent from the interview responses. Their responses indicate that they were pleased to have the content expertise on the team to fill the gap in their knowledge. In addition, they commented that the librarians understood what sources were available in the industry and which would be most appropriate and provide the most value for the end-users.
The major benefits of collaboration with librarians to the IT staff were:

• Allows technologists to focus on technology
• Provides learning opportunities
• Saves time

With librarians on the team, the IT professionals were able to focus on technology during the project. This allowed them to work within their area of expertise. With technology changing so rapidly and technologists struggling to stay abreast of these changes, IT professionals should welcome collaboration as a productivity enhancement.

With technologies now converging and the boundaries becoming blurred, collaboration affords technologists exposure to another view of the information industry. This should allow them to grow and learn more about what services and products are available to the information consumer. Maintaining professional currency in a discipline where yesterday's technology is obsolete today is extremely difficult, especially when coupled with tight project timelines and constraints. IT professionals struggle to maintain current skill sets as technology changes rapidly.

Overall, the collaboration could save IT professionals much needed time. IT departments are being pressured to reduce their "time to market" and development time as the competitive environment continues to increase. Even though one interviewee commented that during the project the team had to spend time explaining software and technology to the librarians, overall the librarians' contribution of identifying content and quality resources outweighed this factor. IT professionals gained from collaboration by having the librarians take responsibility for identifying content.
With cost pressures on many corporations, the IT departments' budgets are scrutinized for possible reductions. If IT departments and librarians can develop multi-disciplinary teams, they should be able to recognize some efficiency gains and eliminate redundancy. An increase in productivity by decreasing project resources and timelines could be an even greater implication for the IT staff. Working closely with the library staff could also provide IT professionals access to technical information faster, thereby resulting in less unproductive time searching for information.

*Implications for Corporate Librarians*

There appeared to be even more benefits of collaboration to corporate librarians. These included:

- Organizational exposure
- Leveraging of established relationships
- Job satisfaction
- Recognition of unique and valuable skills and knowledge
- Marketing opportunities
- Professional growth opportunities
  - Technology
  - Business practices

In the study, the librarians were able to leverage the relationship that IT had within the line functions to create new communication lines with the users and the client community. Their linkage with the IT professionals provided direct access to clients without having to consume the time to identify contacts and establish these relationships.
in order to deliver services. They viewed the IT professionals’ existing relationship and organizational alignment with the line functions as advantageous to the corporate library. In addition, becoming part of the team allowed the librarians access to IT resources: hardware, software, and personnel, that would have been much more difficult without the partnership.

The librarians were pleased at being able to contribute and use their skills and expertise as well as being recognized and appreciated by their IT peers for their contribution and skills and knowledge in the area of content and organization of information. This recognition could contribute to job satisfaction for the librarians.

Participation on the project team provided marketing opportunities to the librarians. They were able to showcase their skills and knowledge to a wider audience and as documented in the findings, succeeded in impressing their IT peers.

Another benefit to the librarians is that it gave them an opportunity to increase their knowledge base by learning about new software and technologies. The librarians recognized the value of their IT professionals on the team and commented on their ability to keep the project on track and manage the funding budget. Even though the librarians noted that the IT professionals were sometimes too focused on funding and project deadlines to fully meet the information needs of the information consumer, it was apparent that they appreciated this ability as a skill set.

Librarians have a great opportunity in working on multi-disciplinary teams. Traditionally, librarians deliver their services on a more personal, one-to-one scale, such as at a reference desk. Team assignments allow a wider exposure of their skills and knowledge in a reduced time frame. If the response of the IT staff on this project is any
indication, librarians have much to gain and nothing to lose from collaborative partnerships.

**Implications for the Information Consumer**

Although, there are clearly advantages for both IT professionals and librarians of collaboration, the information consumer has the most to gain from their partnership. As the amount of information available has grown exponentially and IT has matured as an organization, consumers have begun to change their requirements from a focus on information systems performance to their content or information richness. The collaboration of both IT and librarians recognized the need to balance the approach to information delivery. With collaboration, information consumers can begin to expect:

- Improved information products
- Reduced cost and delivery time
- One-stop shopping for their information needs
- Improved management of information anarchy leading to lower anxiety levels
- Balanced approach to technology and content

As IT professionals and librarians begin to form partnerships, information systems will become more balanced through better technology and content. With the *Infobus* project, IT members recognized that without the librarians, the quality of the content would have been inferior to that contained in the final product. In addition, the synergy of the two professions produced a product that they could not have developed if they had worked independently. This was the example most noted as the greatest achievement of the project--the *OneSource* solution. In this situation, the librarians
identified *OneSource* as the product to meet the information needs of the consumers. The information technologists, however, worked with the vendor of this commercial electronic database and developed a user interface that greatly simplified user access to the database. It eliminated user training which benefited both the consumer and the library staff.

Survey comments stated that *Infobus* is an "excellent tool for gathering internal resources." This feedback demonstrated that the collaboration results in some improvement to the information consumer of managing the volume of information available today. The surveys also show that ninety-four percent of the users were satisfied with the new system. In addition, the ratings for the overall quality were overwhelmingly average or above average.

A major advantage to the information consumer is "one-stop" shopping. If consumers can work with one team instead of two different sets of teams, this provides a time savings. In addition, it eliminates redundancy, thereby reducing administrative overhead costs and also reducing development time. Coordination of the project development by both professionals during the planning alleviates fitting two products together at the end. For example, if the *Infobus* project had not contained both IT professionals and librarians, they may have selected different information products for the consumer. This could have resulted in additional time being added to the project to make the two different products work together and increased the cost of the project by purchasing two different products.

The results of this study clearly outline the benefits to the information professionals of collaboration. In addition, it identifies the advantages to the information
consumer, as well as the corporation, that both groups support. This should provide encouragement to librarians and IT professionals to get outside of their organizational boundaries and embark upon long-term partnerships in the corporate environment.

**Future research**

Additional research is needed in the corporate environment to determine if the findings of this study can be generalized. In addition, research should be conducted with future project teams and additional measurements gathered for comparison. Repeat studies could provide validation of these findings and further data to launch a transformation in the working relationships between corporate librarians and information technologists.

Other questions arise as a result of this research. They are:

- What factors will drive librarians and IT professionals to work together more routinely?
- Should librarians be moving into IT organizations or should the groups remain independent organizationally?

**Conclusion**

With the dynamic state of the information industry, we can certainly expect more discussion on this research topic. The future for all information professionals appears promising and as librarians and IT professionals begin to leverage one another's skills and expertise, it will become more and more apparent that they are "natural allies." After
overcoming the initial phase of novelty and unfamiliarity, they will probably ask themselves how they ever operated independently of one another.
Appendix A.

Interview Questions

Check one:
I am an IS employee______ or an IRN [corporate library] employee______.

1. Was this your first experience working on a team on a project team with both library and IT/IS staff?  Yes______  No______

2. What benefits, if any, did you note of having both IS and library employees working together?
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

3. Do you think that having IS and library staff work together enhanced the quality of this project?  Yes________  No________

If so, would you like to work on a similar project in the future?  Yes_____  No______

4. For librarians, what attributes about your IS colleagues contributed to the success of the project?  For IS, what attributes about the IRN staff contributed to the success of the project?
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

5. For IS employees, what attributes of the IRN staff do you consider were a roadblock during the project?  For librarians, what attributes do you consider that your IS colleagues exhibited that hindered the project?
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

6. What do you consider to be the most significant achievement of the project?
# Appendix B.

## Survey

Mark an "X" in the cell of Col. D that represents your most appropriate answer.

<table>
<thead>
<tr>
<th>#</th>
<th>Question</th>
<th>Choices</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>What is typically the major source of information you use for your job?</td>
<td>E-mail</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(choose one)</td>
<td>Corporate intranet</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Internet</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Print materials such as trade journals</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Co-workers</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>How would you rate the quality of Infobus compared to other information</td>
<td>Above average</td>
<td></td>
</tr>
<tr>
<td></td>
<td>delivery sources you have used before for similar purposes? Specifically, rate the functions and features (e.g., navigation; offline usage; downloads, etc.).</td>
<td>Average</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Below average</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>How would you rate the quality of Infobus compared to other information</td>
<td>Above average</td>
<td></td>
</tr>
<tr>
<td></td>
<td>delivery sources you have used before for similar purposes? Specifically, rate the ease with which you can find what you are looking for.</td>
<td>Average</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Below average</td>
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<tr>
<td>4</td>
<td>How would you rate the quality of Infobus compared to other information</td>
<td>Above average</td>
<td></td>
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<tr>
<td></td>
<td>delivery sources you have used before for similar purposes? Specifically, rate how information-rich the system is (contains the information needed to do your job).</td>
<td>Average</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Below average</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>How would you rate the quality of Infobus compared to other information</td>
<td>Above average</td>
<td></td>
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<tr>
<td></td>
<td>delivery sources you have used before for similar purposes? Specifically, rate the ease of navigation and use.</td>
<td>Average</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Below average</td>
<td></td>
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<tr>
<td>6</td>
<td>Please list any attributes of the new Infobus tool which help you perform your job more effectively or efficiently.</td>
<td></td>
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<tr>
<td>7</td>
<td>Overall, are you satisfied with the Infobus tool?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Please provide any comments you may have about the tool.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


