Online Services to AT&T Employees

INA A. BROWN-WOODSON

ABSTRACT

AT&T INFORMATION SERVICES EVOLVED FROM A MAINFRAME COMPUTER ENVIRONMENT INTO A CLIENT-SERVER OPEN ARCHITECTURE IN THE EARLY 1990S. THIS CHANGE IN COMPUTING ENDED THE ONLINE SERVICES AVAILABLE TO LIBRARY AND INFORMATION SERVICE CUSTOMERS, PRIMARILY AT&T EMPLOYEES. THIS ARTICLE WILL DESCRIBE THE STAGES OF TRANSFORMATION THAT OCCURRED DURING THE CHANGE YEARS, AND HOW END-USERS PARTICIPATED IN THE TRANSFORMATION PROCESS. THE TOPICS COVERED ARE:

- moving from traditional to electronic services;
- assessing users' needs and expectations;
- library staff as team participants;
- developing vendor partnerships for outsourced services; and
- evaluating service quality.

BACKGROUND

From the mid-1960s until 1984, AT&T operated Bell Laboratories as its premier research unit for the development of technological innovations. Within this research unit, the library organization created an online catalog to replace its book catalog. In the late 1970s, the library organization also established an online cataloging process and installed UNIX as its operating system with C as the programming language. In collaboration with the internal computing center, the library used the local mainframe computer to house its operations in Murray Hill, New Jersey.
In 1984, AT&T deregulated itself from the local telephone companies to acquire the right to enter into the business of computers and computing. Consequently, AT&T became a player in the information industry arena. Over the next thirteen years, AT&T provided a challenging and testy environment for library and information services to grow, downsize, re-engineer, right size, and re-invent itself to meet the challenges of the telecommunication business and its employees' online information needs.

**Moving from Traditional to Electronic Services**

Libraries were charging for their online services as early as 1986. This prompted researchers to query why they could not search online databases for themselves. As an experiment, selected scientists established their own accounts with online vendors, and the library organization served as the major customer to the vendors. The usage was observed and accounted for all users via the library organization. Over a two-year period, it became clear that novice end-user searchers needed assistance for complex searches due to the variation in online database command structures and terminology. Simple author or source verification queries did not pose problems for end-users.

Library computer programmers created an in-house library interface that would simplify the end-users' need to become proficient online searchers. The prototype interface was created for the 1985 International Federation of Library Association's annual conference held in Chicago, Illinois. AT&T Bell Laboratories joined forces with the National Commission on Libraries and Information Services to create the main exhibit for the conference. The "Access Station" created a full service library in a space of 400 square feet. Penniman and Hawkins (1987) described how the corporate library would be reduced in size without shrinking the services provided to its customers through use of technology. Commercial and internal AT&T databases were linked and accessed via this interface. America Online and CompuServe were just beginning to develop at this time. Initially, end-users applauded the new interface. However, response time became slower as more end-users searched among the various databases, especially after lunch time. A new solution was needed to meet the new demands for more responsive online access by end-users.

Since library data had been centralized via the mainframe, the response time became an important issue to end-users. Moving to a client-server architecture means that a decentralized structure is established through several machines that act as "clients" to another machine that serves as the central server. Library processes were separated into the various clients which provided greater memory capacity and decreased delays in response time since transactions were expedited as well. The computer center became the maintainer of the system rather than the
controller of the processor flow. The library programmers began to develop systems for the company's central computer service to emulate.

ASSESSING USERS' NEEDS AND EXPECTATIONS

Information specialists surveyed users' needs on various time schedules and utilized multiple methods to determine how to satisfy their customers. Prior to the initial downsizing effort in 1986, the libraries surveyed customers through semi-annual site visits to their technical customers' locations at the department head level. The business and marketing customers and their management were visited on an annual basis. Quarterly paper surveys would be mailed to end-users based on their use of the service during that particular quarter. The users' names were obtained from the billing records from the financial database established to show service activities and which organizations used library services.

During the mid-1990s, the library organization began to explore the potential of electronic surveying of its customers. The response rate was disappointingly low as compared to the results collected via the in-person and paper processes. In 1992 and 1993, the library organization experimented with a site-exit survey among the physical libraries to complement the paper survey results. A library staff member interviewed the end-users as they left the library. Baker and Lancaster (1991) stated that patron interviews have all of the benefits of the questionnaire but tend to be more expensive than other procedures. Information specialists performed the interviews to reduce the costs associated with going to patrons' offices. The other benefit was to learn immediately if needs not met could be rectified quickly.

With the transition to client-server architecture completed by 1995, the library organization decided to move some paper processes to the electronic mode. In 1996, the organization used the electronic survey process among all the customer segments—i.e., technical, business, and marketing arenas. The results showed that more customers did use online services—i.e., AT&T and non-AT&T online services—than were reported in earlier surveys. However, one of the major findings supported the continued need to market the full range of products and services available to employees. Using electronic surveys promoted awareness of library services to nonusers—i.e., employees who did not know about the diversity of resources supported under the library organization's auspices. Monthly telephone interview surveys now supplement the results obtained from the electronic surveys.

INVOLVING LIBRARY STAFF AS TEAM PARTICIPANTS

The library organization in 1985 consisted of over 200 employees who represented full- and part-time, as well as temporary, professionals, scientists, and clerical assistants. Through several organizational changes—
i.e., re-engineering, downsizing, and right sizing—the organization found itself in 1995 with only 100 employees. During those ten years, teamwork and group performance became the primary focus for accomplishing work. Library leaders began to empower employees to take on decision-making through the team processes for increasing service excellence and customer satisfaction. Miller (1996) describes the forces that are impacting industrial leaders, such as empowering employees, restructuring of corporations, the proliferation of information, globalization, and the rate of change, and points out that leaders are at the crossroads of the twenty-first century. If leadership fails to lead, organizations will fail and lose their purpose for existing.

Library staff created team performance goals through Total Quality Management processes. AT&T found the business world changing rapidly. Using quality processes provided a new vehicle to implement change and move forward. Kovel-Jarboe (1996) states that “one characteristic of most formal improvement efforts is a reliance on teams to develop and implement improvements in the context of the larger organization” (p. 607). Process improvement committees were developed as employees suggested work processes that could be made more efficient and, subsequently, more cost effective. Occupational status of an employee would not matter because all team members were valued for their input and not their level within the organization. Special quality circles were created among employees who belonged to labor unions to comply with contractual agreements already in place.

Ackerman et al. (1987) provided AT&T employees with their own book on process quality guidelines to increase their acceptance and understanding of quality processes. The book uses Lewis Carroll's *Alice's Adventures in Wonderland* “to describe AT&T's post-divestiture challenges in an increasingly competitive and global economy” (inside cover). Early in the 1950s, AT&T had created its own statistical quality control handbook, but the content referred to operations in factories. There was a need for a book that would look at “white collar operations” in a similar fashion. Any employee could understand how process improvements could result in increased customer satisfaction.

**Establishing Vendor Partnerships for Outsourced Services**

During the period of reorganization from 1985 to 1995, the library organization found itself looking to non-AT&T external resources to provide services to its customers. In 1985, the organization used temporary information professionals when hiring freezes occurred. Over time, the expectation was that the temporary status would change to full-time status. This uncertainty caused the library organization to lose many qualified professionals due to its inability to permanently hire its temporary specialists.
By the 1990s, some online services were being outsourced to external agencies due to time constraints imposed on limited library staff or lack of expertise. Prabha and Dannelly (1997) state that the “use of external services is increasing as libraries downsize and streamline their personnel resources” (p. 367). Interlibrary loan and document delivery requests were also outsourced to external vendors. Employee salaries and their benefits cost more than the company wanted to pay. Consequently, outsourcing provided AT&T with a means to move overhead expenses to vendor expenses and reduce the overall budget since end-users paid the vendor expenses from their budgets and not the library’s budget line.

Marcinko (1997) defines document delivery as the transfer of photocopies as well as routing an image to the e-mail account of another end-user (p. 534). As a commercial document delivery supplier, Marcinko has experienced the demands as the outsourced provider for other companies’ document needs. In a study of the fulfillment rates for various suppliers, Prabha and Marsh (1997) reviewed five commercial document suppliers to ascertain how well they fulfilled requests they received through their own periodical holdings.

The suppliers studied were the British Library Document Supply Center, Canadian Institute of Scientific and Technical Information, University Microfilms International, Institute for Scientific Information, and Uncover. The results of this study found that the suppliers that had in-house resources could provide more articles, but the cost of the articles varied with each vendor. The study also showed that libraries would benefit from software that would identify commercial suppliers with their subject matter strengths and periodical title holdings. They also suggested that pricing should be included because libraries still have limits on paying for document delivery: “Of the libraries surveyed, 29 percent wanted the article at no cost...nearly 60 percent wanted the article at $10 or lower” (Prabha & Marsh, 1997, p. 557). At AT&T, customers pay for expedited delivery at a premium rate beyond the cost of the article—i.e., by fax, e-mail, or overnight methods. Clearly, time is a major factor for AT&T’s end-users, but price is still an important consideration. Garman (1996) suggests that service providers must find the “right price” to satisfy their customers.

Total quality management processes include supplier management as a vital issue if the goal is total customer satisfaction. AT&T representatives from the Purchasing Division collaborate with library staff to obtain the best pricing for the most content in print and electronic formats. Suppliers who are reluctant to participate in the quality processes are encouraged to do so if they plan to do business with AT&T on a long-term basis. Gilchrist and Brockman (1996) discuss the implementation of quality in Xerox Corporation in the LIS sector in Europe, and they strongly recommend that libraries and information services “need to take quality
seriously, to work sensibly with its suppliers, to objectively evaluate customer satisfaction, and integrate activities and potential within the corporate quest for excellence" (p. 603).

AT&T has been recognized as a quality service provider by receiving two Malcolm Baldrige National Quality Awards from the U.S. Department of Commerce. However, quality processes mean a commitment to continuous improvement for customers and service excellence. In an overview on quality issues in libraries, Shaughnessy (1996) states that "from an engineering perspective, quality means conformance to specifications. . . with a customer or consumer oriented approach, quality becomes a judgment of the customer" (p. 459). From the AT&T viewpoint, quality meant meeting both expectations irrespective of what product or service was under discussion. Libraries in the manufacturing sector participated in the ISO 9000 reviews with the other departments in that environment. The library organization participated in the development of a "best practices" database with one of its customer organizations in the mid-1990s to increase the availability of AT&T successes in quality performance and service excellence.

**EVALUATING SERVICE QUALITY**

The library organization has four values that it has used as its mandatory components for evaluating the quality of services that AT&T provides itself and those from various external vendors. AT&T's library customers care about timeliness, costs, accuracy, and content relevancy. Regardless of what survey method or process has been undertaken, these four elements are relevant to the AT&T employees that are served.

Timeliness refers to the customers getting what is required within their time expectations. Cost refers to the price that the customer is willing to pay for the product or service requested. Accuracy refers to the correctness of what is requested versus what is received. Finally, the content relevancy is determined by customers' subjective view of how the service or product meets their content expectations.

During the ten years of system design, implementation, and evaluation, AT&T library programmers expected the process to be continuously revised and reassessed as new technology became available. In 1996, AT&T decided to select external products for its information systems rather than creating its own as it did in the past. Since the 1980s, the speed of technological change had increased dramatically when inventing in-house systems to meet the needs of the organization at that time. Senior management had announced that Lucent Technologies would be created and separated from AT&T. The size of the new AT&T meant that outsourcing would become the norm in doing business. Consequently, the focus now is evaluating the quality of the external service provider in meeting internal
customers’ requirements while being compatible with internal systems. Time constraints and reduced funding have increased the corporation’s need to focus on its core businesses and outsource all other services.

Davis (1997) suggests that evaluating system compatibility is only one of many criteria when selecting electronic resources that must be reviewed. Content and presentation are important but “purchase/lease options and varying cost structures are elements,” according to this author, that are unique to electronic resources (p. 392). Archiving, system security, and licensing terms for software are included in the discussion of the other criteria essential for acquisition satisfaction and service quality for end-users.

AT&T is now negotiating with its vendors to establish corporate buying patterns for its online services to reduce the need to charge end-users for individual searches and resultant print charges. Customer satisfaction with this development will depend on how knowledgeable and familiar the employee is with online searching and the employee interest in obtaining his/her own information. The internal AT&T Intranet has been established to facilitate ease of access to database resources.

During the early years of outsourcing journal articles, vendors were given a delivery expectation of five days as the acceptable time for delivering requests from AT&T employees. Quick turnaround is possible when resources are readily available. However, the real experience during the first two years was eight to nine days on the average, and customer dissatisfaction occurred more often than was acceptable.

To reduce the delays, customers were asked to pay a premium surcharge for premium handling—e.g., overnight delivery or faxed response within twenty-four hours. The premium charge became another source of dissatisfaction when customers were held accountable for their line expenditures. Consequently, the corporate pressure to reduce the number of vendors and improve buying power was dependent on end evaluation of the vendors by the end-users themselves. Two years of financial negotiations among all parties involved, including computer systems’ upgrading and the AT&T Intranet, have resulted in implementation of a simple buying plan. Despite the changes, the end-users’ expectation of timeliness has still not been satisfied.

When the library organization moved its major research journal collection to a remote site, it proved to be an excellent budgetary and financial improvement. Yet library customers remained upset about the move for years after it occurred. It has taken a few years of adjustment for some researchers to find that the Internet does not always provide instant gratification on all of their needs—e.g., timeliness.

Search access for some databases became available when the end-users provided a credit card number for a premium surcharge. The library information specialists found that some end-users began to appreciate the specialist’s knowledge and expertise shortly after their initial trials
with the Internet. "Easy access" became more complicated when end-users realized that they lack the time it takes to manage the new ways of obtaining information and in meeting their own demands.

**CONCLUSION**

Shaughnessy (1996) states that "measurement continues to be a major impediment to improving the quality of our libraries...[and it] will continue to be an issue of strategic importance to librarianship and information science..." (pp. 460, 463). AT&T continues to use customer satisfaction as its primary focus for measuring service quality. The library organization is an integral part of this process, and the employees and change will continue to be key drivers in the process of moving into the twenty-first century of electronic networks and connections.

**REFERENCES**


