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## ABSTRACT

This paper describes the Duke University Libraries' transition in early 1994 from its traditional hierarchical model to an organization emphasizing Total Quality Management (TQM) concepts such as self-managing teams and continuous improvement. Existing conditions at the libraries that played a role in the decision to switch included: (1) rising costs of library materials leading to less purchasing and more temporary access; (2) the arrival of networked information; (3) a truncation of time and workspace; (4) fiscal distress at other universities; (5) diminishing library share as a percentage of the overall university budget; and (6) expectation among non-MLS support staff for a career ladder in library service. The participatory approach had been getting results in technical services since the late-1980s, but it had yet to be implemented on a wider scale. Library administrators developed and made public a "Library 2000 initiative" to create a more flexible, holistic, and customer-based approach to library services. Three pilot project teams, or "quick start" teams, were assembled to define and investigate three problem areas. At the end of 3 months, the Implementation Planning Team looked at the quick start teams' work to assess the effectiveness of continuous improvement processes and of the team infrastructure. Team members were also surveyed for their comments. Then library administrators solicited proposals on organizational redesign; the 99 responses resulted in the formation of quality circles within "home teams," the new name and less hierarchical arrangement for "departments." Department heads were invited to become home team leaders. Recent team assessment has included performance criteria like inputs, processes, outputs, and outcomes as well as group-dynamics factors like inclusion, elbow room, ease of discussion, approach to conflict, support, clarity of purpose, use of skills, and leadership styles. (BEW)

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## FROM QUICK START TEAMS TO HOME TEAMS: THE DUKE TQM EXPERIENCE

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### THE TRADITIONAL MODEL

The Duke University Libraries, in January of 1994, broke away from its traditional hierarchical model to become an organization emphasizing self-managing teams and continuous improvement concepts clustered under the Total Quality Management (TQM) umbrella. How did this come about? How could a well-established, long term hierarchy achieve this without collapse? While the date for the transformation is recent the process actually started back in 1986.

Here (Illustration 1) is what Duke's general library system looked like organizationally not very long ago. As you can see in May of 1993, we did not look very different from most other university libraries. Duke, in many regards, is a prototypical large research library. The Perkins Library System contains slightly over 3.6 million volumes, the budget is approximately \$12 million dollars, and has a staff of about 220 full-time equivalents.

The May 1993 organization chart suggests there is a regularity to our decision making and communication. Orders are given and they flow downward, along with adequate resources. Results, one hopes, flow upward and all is well. There is an implicit and expected delegation and acceptance of authority and responsibility, flowing from the President's office through the Provost's to the University Librarian. Jerry Campbell, the University Librarian, in turn, authorizes several of the administrative staff members to supervise, coordinate, organize, and otherwise pursue the mission of the library. These

administrative officers including the deputy, associate, and assistant university librarians authorize department heads to carry out their work. All of this, of course, is done in a collegial manner but there is a firm protocol that is followed nevertheless.

As with most organization charts, ours is limited by not showing the many informal communication networks, i.e., it fails to show "the way things really work" and it excludes the customers, the people for whom we do it all. They are, of course, the central tenet of TQM-based organizations. In walking about the organization, we noticed this somewhat crude but apt representation (Illustration 2) of the way some staff see the organization. We include it to suggest that at least some staff members are not happy with the bureaucratic model prevalent in all American libraries for most of this century. What staff members would rather have is not totally clear but we know from the organizational literature that most people like to work, that they want a say about their work and how it gets done, and about the decisions affecting their work. The hierarchy or pecking order limits and in fact inhibits the achievement of organizational and personal goals, sometimes to a significant extent.

We were aware of the limitations of the present organizational structure, but like many others working within the inherited organization had worked with it and around it, figuring out ways to inspire cross functional efforts, creative thinking, and streamlining to get rid of rework and duplication — yet staying within the general

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lines of the hierarchy.

### **AN IMPETUS FOR CHANGE: THE BOARD OF TRUSTEES AND TQM**

In late 1992, the President of Duke University convened a select group of his staff members and encouraged them to consider using Total Quality Management. This was at the insistence of certain members of the Board of Trustees who had first hand experience in their organizations with TQM concepts and had found them useful. They saw direct application to Duke, a university that was in good budgetary health, but possibly anticipating future budgetary difficulties similar to what was already occurring at all of our peer institutions. Why, they may have asked, should Duke be exempt from what is happening nationally?

Several of those in attendance at the President's meeting, including the University Librarian, saw the possibilities TQM offered in helping us move forward, enabling us to anticipate and confront the major changes and challenges already facing universities and all research libraries. That's not to say that this meeting with the President was our wake-up call or that we had not already seen the handwriting on the wall requiring us to be more proactive and flexible. All of us know about the upheaval in the world of information and that what we now see is but a precursor of more changes in how libraries work and are used. There are long lists of issues bearing down on the traditional approaches used by libraries. These are some of the more important for our situation:

- Rising costs of library materials leading to far less purchase and more temporary access;
- Delivery, at long last, on the electronic promise of networked information;

- A truncation, if you will, of time and space in how we do our work (electronic records flow unlike paper ever did or could — ubiquity achieved, sort of);
- Fiscal distress visible at other universities as seen in sizable staff layoffs and cut backs in programs;
- Diminishing library share as a percentage of the overall university budget; and
- Expectation among our non-MLS support staff that they have a career ladder in library service.

This chart, (Illustration 3) derived from ARL data, was distributed at a recent OCLC meeting in March of 1994. It shows that in 1980 we started a downward skid toward a projected total loss of purchasing power in the year 2010. The speaker, Brian Hawkins from Brown University, ventured when that happens no one will be able to buy anything and we will have to borrow everything from each other.

While we have been spared much of the pain of downsizing and other budgetary reduction schemes found at other institutions, the Perkins Library System has had too little money for automation or staff development. That which we have had has come from a rigorous examination of how we use existing resources. Illustrative of this is the visible diminishing of the percentage that salaries take up in the total budget (Illustration 4). Starting in 1986 we began to move dollars deliberately from the staff lines into those budget items most in need, e.g., computers and training. No layoffs were made nor was anyone fired to accomplish this. More than a few positions saved were moved to "hot spots" where the case was made that need was so great that

positions should go there. Over ten FTE now are working on transforming the card catalog into an electronic one — all of these positions came from existing staff.

There was another reason to explore the promises held by TQM: The participatory approach was getting results in technical services. From about 1986 onward we began to seek efficiencies in how we worked in technical services. We were challenged to improve when we saw the results of a productivity survey conducted by Stanford University Libraries. Illustration 5, "Duke's Ranking," sums up where Duke fell out compared to about 20 other research libraries in per capita output. While the results confirmed what we thought might be happening, we were dismayed (even a bit jolted) that our overall score in the 1987 column put us at the bottom of the list. Over the next several years we sought to eliminate complexity, rework, duplication, and irrational work processes. We pushed the hierarchy to its limits during this time and went largely to a team-based approach in all of our work. Staff members were expected and encouraged to speak up about ideas and decision making was based solely on speeding up all of our processes and eliminating the backlog to better meet the needs of our users.

That we made real progress is seen in the column for 1992/93 wherein our overall score is now the best among our peers. Achieving this, the questions became, "Okay, what's next?" and "How do we exceed the present boundaries?" The answer is linked to the general sense among many of us that we are in an era of transition, one of uncertain dimensions and qualities. It is a time for opportunities. As K. Wayne Smith said at OCLC's Research Library Directors meeting in March of 1994, "This is a golden age for libraries, if we choose to make it so." While he did not elaborate on his emphasis of the implied

choices, we think what we are trying to do at Duke is to create an organization that can make those choices. We believe that organizations can anticipate and deal with what is going to confront them in the near and long-term; it just does not happen to them like a roll of the dice.

So in December 1992, the library's administrative officers attended a TQM workshop sponsored by Duke University's Office of Human Resources. We learned that TQM principles include defining quality from the customer's focus, fostering employee involvement and training, applying statistical methodologies to manage by fact, benchmarking (searching for best practice), and understanding the cycle of continuous quality improvement. Total Quality Management appeared to be a workable management system that would enable the library to accommodate the conditions of our changing environment. Our vision for change is officially known as the Library 2000 initiative. Its goal is to create the library of the 21st century through the principles of Continuous Improvement (CI), the library's name for its adaptation of TQM. Along with our vision, we developed guiding principles, that serve as a compass to keep us on course with our vision (see Illustration 6). Both the vision statement and guiding principles were published broadly and were referred to frequently as we began to shift paradigms within our library culture (see Illustration 7).

In order to meet the emerging demands of our technologically enriched environment, we needed to create a more flexible, holistic and customer-based approach to library services. We want to meet and exceed our external and internal customers' needs for quality services. Our goal is to develop interrelationships among ourselves, to develop partnerships both externally and internally. We want to emphasize results by working on methods and to shift our



focus from the individual and the end product to the work process. If we are able to improve how the work gets done instead of simply improving what is done, then we will have developed systems that will become less reactive. By recognizing the process of change, we will learn to recognize how through our own best efforts we contribute to some of our own problems. We wanted to discard systems based on numerical quotas, a controlling atmosphere, and decision by opinion. Too often our reliance on numerical quotas created internal conflict as staff members found themselves competing against one another to reach goals that were short-term in nature, or were often set too low to ensure a safe return. Our focus on individual or departmental actions was at the expense of the larger collective consequence; we simply lost sight of the library's purpose. We wanted to move to a working environment where staff members make decisions based on facts. Jerry Campbell is fond of the saying that no one is prohibited from thinking on the job. We wanted to use this philosophy to ensure that quality is the responsibility of everyone in the library and is not confined to a single "department of quality."

We define continuous improvement as using specific methods and measurement to systematically collect and analyze data to improve those processes critical to the library's mission. Instead of trying to do better in an undefined, intuitive way, Continuous Improvement emphasizes a structured, problem-solving approach to building quality into every system and process in the library. With each improvement, processes are better and there is a recognition that systems (not employees) are responsible for most inefficiencies.

## PILOTING WITH QUICK START TEAMS

After looking at TQM models used in business and at the medical center at Duke, we created our own infrastructure to plan and guide the progress of CI throughout the library (see Illustration 8). We have five CI steering teams responsible for staff education, recognition, communication, implementation, and futures research. Our CI infrastructure is probably typical of most organizations that embark upon TQM except for the Futures Team that is responsible for scanning the library's environment and the external environment to identify issues that may contribute to the creation of the library of the 21st century. The CI steering teams have one member from the library's administrative group plus staff members from throughout the library. Each team has developed a role statement to describe its functions and purpose, and works with all library staff to implement CI. Before deciding whether or not to implement CI throughout the library, the administrative group decided to test actual models of the CI process using three pilot project teams, referred to as quick start teams.

The administrative group and the management group (composed of branch librarians and department heads) used several CI tools to select topics for the quick start teams. Each team was given a brief problem to define and investigate: the Shelf Failure Team was asked to improve the success rate of users in finding books on library shelves; the Document Delivery Team was asked to improve and expand the present document delivery service; and the Branches/Perkins Team was asked to improve the working relationships among our centralized services and the branches. The teams were cross-functional, with representation from most areas of the library. Each team had approximately seven people including a team leader and two facilitators (drawn from our regular

staff). One of the goals of involving many staff members as either participants or facilitators was to distribute to the functional, home teams hands-on experience in applying CI methods. The teams learned, tested, and demonstrated an objective approach to identifying problems, gathering and analyzing data, and developing solutions within limited time frames. At the end of the three month period the Implementation Planning Team (IPT) surveyed each of the quick start teams to assess the effectiveness of the CI process and the team infrastructure. We wanted to determine how well the teams understood and accomplished their mission, how effective they were in using the scientific approach to problem-solving (e.g., data gathering, use of CI tools such as brainstorming, multi-voting, selection grids, etc.), how they communicated and interacted with the CI steering teams, especially with the IPT and the administrative group, and how effective the facilitation was.

All 21 team members responded to the survey and 85 percent found the CI approach overall to be effective, only 3 percent found the experience not to be effective and 76 percent would serve on another quick start team. Those declining the opportunity to serve on another quick start team cited restrictions on their time as the barrier rather than a lack of confidence in the CI process. The teams also made valuable observations about what worked and what needed improvement (see Illustrations 9 and 10). Given this level of support, we decided to implement CI throughout the library. However, it became apparent that our existing hierarchical organizational structure was a barrier to the achievement of our vision of creating the library of the 21st century. We would not be able to emphasize a customer focused, problem-solving approach to building

quality into every system and process in the library unless we were willing to work in teams.

#### REDESIGNING WITH HOME TEAMS

In the spring of 1993, the University Librarian invited all library staff to make suggestions for the library's organizational redesign that would improve the library and its ability to offer services. Our goal was to create a library organization with flexible structures and processes that will enable us more rapidly and effectively to incorporate new methods of offering information and services while still maintaining the key functions of our traditional operations. We wanted to accomplish our goal within our existing budgetary resources and had four major objectives to:

- Increase the library's technological capabilities;
- Increase the technological expertise on the staff;
- Shift more financial resources toward new methods of offering information; and
- Streamline existing supervisory layers (one in every four staff members was a supervisor).

Thirty-five staff members submitted ninety-nine proposals for redesigning the library. Several of the staff members suggested dramatic changes including the mergers of major departments and the elimination of other departments. Other staff members took a more cautious approach to the redesign asking us to also consider the demands and upheavals already imposed by the installation of a new online catalog system, and a major renovation of the largest branch library on

campus. The ideas were compiled and scrutinized using CI problem-solving tools including selection grids and multi-voting. As a result, we chose an organizational design that flowed easily from the existing structure. Departments became home teams and are grouped into quality circles of similar function (see Illustration 11 and 12). In their quality circles home teams cooperate in addressing issues of mutual interest and responsibility. The quality circles are also essential to the plan to distribute control of the library's budget throughout the organization. Although the home teams coincide with the former departments, their internal structure is less hierarchical and their boundaries are more porous. All library staff members are based in a home team, but they also participate in various temporary cross-functional teams as appropriate. We are working to empower library staff members so that each will be able to think about what they do, explore how they can do it better, and then act to implement continuous improvements.

The administrative officers of the library are also dealing with change. Supervision is now less important for both the administrative officers and the former department heads. All existing department heads were invited to become home team leaders. The main objective of the home team leader's role is to empower and lead the home team to deliver quality services and products. The home team leader is responsible for looking beyond the boundaries and interests of the home team. To seek out opportunities to work with other individuals and teams to focus on library-wide issues that will move the library forward into a new era of information service. Department heads not wishing to assume this new leadership position were reassigned without prejudice within the Perkins Library System. Instead of supervising specific team leaders, the

deputy, associate, and assistant university librarians now work with all the home team leaders on system-wide issues. Leadership and facilitation are now the major responsibilities of the administrative team. Emphasis is on open feedback, coaching, enabling, and counseling.

We officially began to implement our redesigned organizational structure on January 1, 1994. The redesign reflects the vision statement and guiding principles of the Perkins Library System and we hope that it will be flexible enough to help us meet existing and emerging challenges. In working in our redesigned organizational structure we have discovered the benefits of having people of all levels work together in teams. At the same time, we recognize that it requires hard work. Each team has its own dynamics and we are still working at breaking down barriers and rivalries to build interrelationships and partnerships among teams. We have many issues still to resolve including personnel matters such as classification, compensation, recognition, and career paths. Currently we are considering how to shift from an individual performance appraisal system to a team-based assessment system.

#### TEAM ASSESSMENTS

For us, team assessment differs from performance appraisals. The focus of performance appraisal is to serve as a tool for pay, promotion, and training and development for the individual. Team assessment focuses on the team's work performance, i.e., on what that team has done and whether those actions are appropriate. Although jobs may vary within the home teams, each team has core work processes that can be used to analyze team performance. At this workshop we divided the participants into four different teams, gave each a task, and then had them brainstorm a list of criteria to use to assess

the team's performance. Each team multivoted to select their top four criteria that they would use to design an instrument for team assessment. Most of the top criteria that were identified (results achieved, time taken, cooperation, risk-taking, and collaboration) show that teams can develop a variety of ways to measure the following key performance indicators:

- Inputs - Resources used to provide service
- Processes - Work activities carried out to produce outputs
- Outputs - Amount/type of services provided
- Outcomes - Impact on the customer

Another way to look at the results from the team brainstorming and multivoting exercises, is to examine the elements that make groups work well. One of the briefest but best summaries is provided by Marvin Weisbord in his book, *Productive Workplaces?* We have amended his criteria somewhat for use when assessing teams:

- Inclusion: Who's in, who's out?
- Elbow room: Comfort in working together, ranging from "I'm crowded" to "I'm easy."
- Discussion: Is it free and easy, or labored and guarded? Does everyone speak up or only a few?
- Conflict: Is it worked on or avoided?
- Support: Who does the work? All, one, or a few?

- Purposes: Known to the team or are they ambiguous? If known are they acted upon?
- Use of skills: Full or poor?
- Leadership: Facilitating or controlling?

For the most part of our ARL workshop, teams identified the critical elements experts believe are basic to group effectiveness. There is however a difference in the teams not mentioning, in any direct way, dealing with conflict. It is noteworthy that in our other observations of teams in libraries conflict resolution generates the greatest differences in how people assess team performance. If conflict is normal and healthy among groups, and we think it is, then teams may need extra help from trainers and coaches in recognizing and managing conflict. It does appear that conflict is difficult to deal within the dozen or more groups we have worked with in libraries.

At Duke we are working to replace individual performance appraisal with team assessment. We have stopped doing the former for all support staff and are now working on ways to incorporate a system for regular feedback on the work of teams. The temptation is to replace the old individual assessment with something similar but adapted to a group. We think we are working towards something, but the shape of that something is not well-defined. It will be different in its frequency, input from customers, and its lack of paper and formality. If we can achieve it, the discussion will be spontaneous more than orchestrated. We hope to encourage our teams in the Perkins Library System to measure performance not just annually but throughout the year as projects end, turning points are experienced, budgets are developed, equipment is acquired, and new



services are designed. Our goal is to devise an assessment tool that will promote teamwork and encourage problem solving, not finger pointing.

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