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Total Quality Management Techniques Explored at Carolina Cream and Scott Specialty Foods: A Case Study

David A. Crank

Abstract: This case study examines the implementation of Total Quality Management (TQM) in two food processing firms. The two firms, which are separate divisions of a large food processor, used different implementation strategies, management leadership and employee empowerment. These strategies are compared on a strengths-and-weaknesses basis. The analysis shows that the context in which TQM is implemented is an important factor when planning such a dramatic strategic change and that the implementation of TQM or any other managerial innovation requires building teamwork and devotion of significant resources by all stakeholders in a company.

Key Words and Phrases: Total Quality Management, TQM implementation, Food processing, Teamwork, Statistical process control, Management leadership, Employee empowerment.

Total Quality Management (TQM) has brought spectacular results to some companies and disasters to others (Hammonds and DeGeorge). Observers of TQM argue that these differences emanate primarily from the effectiveness of the implementation process. Implementation of company-wide changes (TQM, Reengineering, Employee Empowerment, Decentralization, etc.) is complex and challenging because successful implementation requires changes in a company's culture and in the production and/or services processes.

The objective of this article is to provide readers with an opportunity to analyze the implementation of TQM. Readers should assume they are in the position of Chris Miller, plant manager of Butler Foods, who is faced with leading the implementation of a quality improvement program at Butler, a division of Mountain Foods Company (MFC). In an effort to formulate his own implementation plan, Chris analyzes the TQM implementation efforts of Scott Specialty Foods and Carolina Cream, two other MFC divisions. Please note that neither Scott nor Carolina implemented their programs perfectly and the reader may find inconsistencies within

each company's efforts. The case concludes with a bibliography of readings, Appendix I, Questions for Readers, and Appendix II, a case analysis that an instructor may choose to omit if the case is used in the classroom.

Case Setup

On August 15, 1993, Butler Foods plant manager Chris Miller stares at the outline he has created on his PC and shakes his head. He knows his challenge—improving operational efficiency and overall division profitability above an already impressive level. However, he is not sure how this can be accomplished. The concept of Total Quality Management, commonly known as TQM or quality management, has attracted the interest of several managers at the corporate level of MFC because of four corporate pilot projects undertaken in 1991. He has also read many business magazine and trade journal articles about the successes and failures of TQM programs. After being exposed to all of this information, Chris has been left wondering if TQM is actually a good program to adopt at Butler Foods.

In an effort to explore TQM programs, Chris attended a seminar at which several TQM theories were presented. He is now faced with the challenge of evaluating the practicality of those theories in a Butler Foods world. From what he understands, the three key aspects of TQM are: defining quality, controlling processes, and building teamwork. The theories makes sense on the surface, but he wants to be sure the particular TQM program he chooses is best for Butler Foods, especially since implementation would require total support of the employees from the corporate office to the maintenance staff. Chris summarizes his questions:

1. How can a TQM program be evaluated? How is success achieved and measured?
2. How can I get everyone to buy into such a program and devote time and resources to implementation?
3. What implementation issues and processes will I need to address?
4. Is TQM good for Butler Foods? Why?

Chris has a quarterly business plan review at the corporate offices next month. He would like to present a TQM implementation plan at that meeting. Chris knows he should incorporate information from the seminar, the magazines and journals, as well as his knowledge of the pilot projects. At a recent company-wide managers' meeting, he visited with managers of Scott Specialty Foods and Carolina Cream, two of the four plants that attempted to implement a TQM program with mixed results.

Background Information

Before analyzing the TQM efforts of Carolina Cream and Scott Specialty Foods, Chris pauses to reflect upon the historical context of MFC, Butler, Scott and Carolina prior to TQM implementation efforts. The seminar he attended emphasized that the historical context of a situation is one of the most important considerations when a manager is considering TQM implementation.

Mountain Foods Company. Mountain Foods was founded in 1906 by Joshua E. Stewart. What began as the Mountain Milk Company, with one plant in Paducah, Kentucky, has grown into a major Fortune 500, broad-based food processor.

At present, there are more than thirty divisions operating more than sixty plants. Products include fluid milk, canned and frozen vegetables, powdered products, and food ingredients. While operations are concentrated in Kentucky, there are other plants spread throughout the United States.

Butler Foods Company. One of the Midwestern vegetable divisions of MFC, Butler was purchased by the company in 1982. Prior to its purchase by Mountain Foods, Butler Foods lacked investment and, as a result, had not shown good profitability levels for three of the last five years. The company gradually improved operations and is now consistently profitable. This was accomplished through investments and adopting the MFC culture which has been summarized as being "firm, fair, and honest" with employees as well as customers.

Butler Foods has approximately 150 employees during the peak production season and 35 during the off season. Management enjoys a good working relationship with its union and a recent contract renewal was accomplished without a strike. The plant relies on systems that operate consistently throughout the harvest season since equipment failures can severely impact production through inventory spoilage and product quality defects. Overall, Butler Foods has been successful in the management of its employees and in maintaining high-quality products.

Carolina Cream. The Carolina Cream plant, located in Columbia, South Carolina, was acquired in January, 1986. The company was acquired because it was one of first dairies in the United States that produced and marketed extended-shelf-life dairy products such as half-and-half, lactose-reduced milk, acidified sour cream, and liquid coffee creamers.

After the acquisition, Mountain Foods assigned a new manager, Bruce Stevens, to the plant to "convert" it to the MFC culture. The unionized employees were Stevens' greatest challenge. At the time of purchase they lacked professional discipline—as revealed in improper dress, unsanitary methods, and lack of respect for management—as well as the support technology can offer line operators. Stevens had to gain their respect and convince them that it was necessary, and in their best interest, for the plant to adopt the MFC culture. He also had to build an investment plan that would modernize the very out-of-date facility and bring the production processes under control by implementing MFC quality control methods.

Stevens was successful in his endeavors at Carolina Cream and has since been promoted. The plant is continuing to undergo investment and quality improvement programs.

Scott Specialty Foods. Scott Specialty Foods, located in Jackson, Ohio, is engaged in the manufacture and sale of aseptically packaged, low-acid food products—predominantly puddings and cheese sauces for the food service trade. Scott, formed as Scott Sterile Packaging Company in the fall of 1959 by an entrepreneurial food technologist, was purchased by MFC in 1969.

Scott Specialty Foods has been one of MFC's most profitable divisions, winning Division of the Year in 1983 and 1984. Founder Henry Scott, who retired from MFC in 1987, managed the company dictatorially as what could best be described as a "fiefdom," failing to involve supervisors and others in profit planning or performance reviews. This changed dramatically when his replacement James McDaniel came on board. Without plant management experience and lacking industry knowledge, McDaniel invoked modern management practices centered around teamwork and participative management. Goals were set for performance and processes were closely examined.

McDaniel was promoted to the corporate offices in Lexington, Kentucky, two years later. His replacement Nathan Henderson continued the successful programs, but chose to concentrate on marketing, delegating other management decisions.

What is Total Quality Management?

After reviewing the historical context, Chris turns to his seminar notes in an effort to refresh himself on the important theoretical issues of TQM implementation.

Chris had learned that TQM is a way to continuously improve performance at every level of operation, in every functional area of an organization, using all available human and capital resources. Improvement is aimed at satisfying broad goals such as cost, quality, market share and growth. He also had noted that all participants along a TQM-oriented value chain benefit from its implementation. For example, suppliers can reduce inventories, production costs decrease for the manufacturer, and, most importantly, the end users purchase a defect-free product that meets their needs. Chris decides to focus on the potential improvements at Butler Foods before becoming involved with suppliers and customers.

According to the seminar, a successful TQM program combines fundamental management techniques, existing and innovative improvement efforts, and specialized technical skills in a structure focused on continuously improving all processes. It demands commitment and discipline and an ongoing effort that relies heavily on people and involves everyone, making it both a philosophy and a set of guiding principles that represent the foundation of a continuously improving organization.

Chris was particularly attracted to the idea of making small improvements in business and manufacturing processes constantly instead of focusing on a few "large" improvements over a longer time frame. At the seminar, Chris was shown one example in which the cost of a requirements error after product deployment was 100 times greater than an immediate correction of the error in the plant. To reduce cost and increase productivity, the focus of a TQM program must be on the process that produces the product. Improving the process reduces or eliminates variation and increases the uniformity of the product. This results in lower costs through the reduction of scrap, rework and complexity.

TQM techniques center around worker empowerment and training. Chris remembers that empowering workers enables them to achieve their highest potential. However, empowerment requires turning the organizational chart upside down, recognizing that management is in place to aid the worker in overcoming problems. Theoretically, training workers tends to modify behavior via increased interpersonal skills or specific manual skill improvements. This, in turn, leads to improved communication of problems and solutions to those problems. Chris notes that convincing

others in management positions at Butler Foods to assume supportive positions will be difficult.

The TQM implementation process varies according to the model adopted by a firm's management. However, it is not uncommon for the program to begin with buy-in from a company's executives, followed by selection of a facilitator, education of employees, implementation planning, and program execution. The facilitator leads these processes after management has "bought into" the TQM ideals. A facilitator typically conducts interactive educational and planning seminars for hourly and salaried employees and managers.

Chris sees the logic in the theories discussed at the seminar. But as a plant manager, he also recognizes the complexity in introducing such a program and in maintaining a long-term effort. He recalls his question: "Is TQM good for Butler Foods? Why?" Chris knows Butler Foods does occasionally experience production problems and customer complaints, and that feedback from employees rarely occurs. He thinks a properly planned and implemented program would be very good for the division. However, the problem of implementation and planning looms large for Chris and Butler Foods.

How TQM Came to Mountain Foods

Chris recalls a conversation he had with MFC's Chief Operating Officer Charles Stinson about how MFC became interested in quality management techniques and how Stinson felt the program had progressed.

On January 11, 1991, Stinson wrote a letter to all MFC officers and general managers which signaled the start of the relationship between MFC and TQM techniques. This letter was a result of the relationship MFC has with a large fast food chain which it supplies with pickles, cheese sauces, and other products for its U.S. restaurants.

Throughout 1990, the fast food company requested that input providers gradually adopt some version of TQM. Stinson had worked closely with the fast food company in that year, attending seminars it conducted and keeping in close contact with its TQM program leader in an effort to ascertain exactly what MFC should do about this new management trend.

According to Stinson, two principles were set before implementation: 1) The programs had to be top management driven. 2) Top management needed a support person—a TQM facilitator to lead the implementation process. It was decided not to hire new people for the purposes of the

TQM program, so the plant managers were told to choose a facilitator from the current division payroll.

Stinson evaluated the pilot programs positively and expressed a desire to see TQM in other divisions. He stated that the techniques of teamwork and training were positive steps forward for MFC. However, Stinson stated he did not expect all divisions to adopt such a program, and that TQM would not be forced upon any division or plant. Near the end of their conversation, Chris learned of another potential advantage of TQM—decreased employee turnover, which Stinson viewed as one of the program's greatest company-wide benefits.

Chris knows his implementation plan must include the current quality control efforts of Butler Foods. The production processes are closely monitored, with random samples of product being taken at different locations in processing. These samples are analyzed for bacteria, composition and temperature. All MFC divisions have a similar program. The dairy plants must meet or exceed the high U.S. Department of Agriculture and local health department standards for milk and other dairy products. MFC has followed a business strategy of exceeding such standards at all times and earning an extra margin in the marketplace for that reason. Chris realizes that even though MFC follows a quality-oriented business strategy, TQM implementation is still a "leap of faith" for many managers in the company. He recalls that *Total Quality Management* goes beyond traditional quality control efforts, reaching all stakeholders in a company.

Comparison of Carolina and Scott Programs

Chris considers himself fortunate. He has been able to visit both the Carolina and Scott divisions during their TQM implementation processes. While conducting other business, he was able to discuss specific aspects of TQM implementation problems with them, distilling the strengths and weaknesses of their methods. He reviews his notes from these discussions to see if any of his questions can be answered.

Scott Specialty Foods. Scott's division manager James McDaniel specified that Scott would follow a low-cost, results-driven approach to implementation. He specified Scott's training materials after reviewing materials and methods from multiple sources. McDaniel decided upon a video-based training program from Bootstrap Quality Training in Columbus, Ohio. The video program would be available to any new hires as needed and was much less costly than external corporate training or developing in-house training programs.

The videos, similar to many TQM seminars, addressed defining quality, controlling processes and building teamwork. Scott managers were expected to view the videos as a group and discuss the topics presented. However, many of them did not completely understand the new information, and not being able to ask questions was frustrating and stifled discussion. Program implementation was expected to be ongoing.

As a result of this method of program choice, and although Scott's new plant manager Nathan Henderson quickly chose plant superintendent Mike Burris as program facilitator, Henderson and others at Scott did not "buy into" the TQM program, although the corporate offices may have thought so.

Carolina Cream. Carolina Cream's manager Bruce Stevens had no input into the choice of Carolina as a pilot plant and took considerably longer to choose a specific TQM program. He did, however, choose a facilitator quickly, human resources manager Arthur Stone, a man well liked who easily served as a bridge between management and the line employees.

From July through October, 1991, most managers at Carolina Cream as well as those at Scott visited Milliken, a North Carolina firm widely considered to have undergone one of the most successful TQM implementations in the United States. Stone also visited the Malcolm Baldrige Award-winning Wallace and Company in Houston, Texas, which used the Total Quality Services (TQS) system, and Texas Instruments, another recent Malcolm Baldrige Award winner that used portions of both TQS and TQM systems. Winners of the Malcolm Baldrige Award are obligated to provide information regarding their quality management implementation to others.

The TQS system has three key elements: Quality Institute, Quality for Managers System (QMS), and Quality for Non-Managers System (QNMS) training. Quality Institute is designed to introduce TQM to a firm's managers. QMS is an in-house training program, led by a facilitator, for these managers. QMS is divided into ten sessions each lasting about two hours. The QNMS portion of the program, also an in-house program led by the facilitator, is designed to introduce the program to the line operators as well as to aid them in developing quality practices. From the period following the Milliken visits to the spring of 1992, Stevens concentrated upon building management commitment to the program. This included articles on TQM, letters from the fast food company, etc. He was concerned that the program could be implemented too quickly without managers truly believing in the program. However, as a result of this delay, the implementation plan was not completed until December, 1991.

The TQS company in Pittsburgh, Pennsylvania, set up a preliminary meeting in October, 1991, at which the TQS system was introduced. Despite some reservations, Stevens and Stone decided they would purchase the TQS program. The fee of \$63,000 included a week-long Quality Institute session for nine managers, QMS and QNMS training for facilitator Stone and books for both the QMS and QNMS process.

Carolina Cream's plant manager Bruce Stevens chose the TQS system because there was no local university program, he did not want a consultant, and TQS was being successfully implemented in Malcolm Baldrige Award-winning plants. He knew of some program failures but suspected they were caused by the businesses adopting the system as a marketing gimmick without total commitment. Stevens was prepared to take five years to implement the program because of the tenuous relationship with the line employees.

The Quality Team, comprised of the managers who would attend Quality Institute and go through the QMS process, was supposed to meet once a week and manage the quality implementation process. Standing committees and working committees were to report their activities during these meetings. Quality Team meetings started on June 26, 1992, with an implementation planning meeting. Although the team had begun its meetings nearly one and one-half years after Carolina was chosen as a pilot plant, the team was committed to the program.

Implementation Issues—Involvement, Training, Tools, Awareness

Scott Specialty Foods. The Scott steering committee was formed in mid-1991. The members of this committee viewed the Bootstrap videos, but they experienced great difficulty internalizing the information. According to Burris, most committee members felt they were obligated to watch the "very boring" tapes but were unable to apply the abstract concepts presented.

Scott managers decided to use Clear Creek Community College to aid their program by offering seminars about TQM programs to line employees. The steering committee set up several seminars for salaried personnel during 1992 which attained varying degrees of success. In February, 1993, the community college conducted an in-house seminar in which all employees rotated through the conference room for an introduction to TQM. This seminar was not well received since it was presented in general terms and was not directly related to Scott. In March, 1993, there was a four-hour presentation at the college which was well received, but

the improved attitudes were largely the result of overtime paid to all those in attendance. Two years after implementation, most of the employees at Scott still lacked a basic understanding of TQM programs as well as the actual problem-solving skills required for widespread success.

Scott's facilitator Mike Burris began implementation by forming cell groups in functional areas. He chose to start the program with the packaging group because he felt this would be the easiest cell to get started. The cell group was given the authority to work on its own problems. As a result, during each of his plant visits, the sales representative of the plant's primary box manufacturer was encouraged to consult with the Scott employees actually using the boxes. Because the automatic box sealer sometimes missed boxes, members of the cell group requested and were provided with glue guns in order to speed packaging. This was viewed by the corporate staff, the Scott managers, and the other employees as a tremendously successful, quick, and results-oriented implementation.

The administrative cell group was the second to start in January, 1992. Its formation was followed by the formation of the steering committee, comprised of managers, as well as many other cell groups. Each cell group had a coordinator, typically a union member, and a facilitator, typically a manager or supervisor. The coordinators were given the responsibility of looking into customer problems. They were also given authority, within reason, to get problems fixed, but were not allowed to alter the production process independently. The facilitators had great difficulty in finding union members to volunteer as coordinators.

The steering committee had the responsibility of developing the implementation plan, stimulating others so the program would continue, and keeping it organized. However, McDaniel had developed most of the program on his own, which resulted in the steering committee's floundering for an identity. Due to this struggling and personal differences between the plant manager Henderson and facilitator Burris, many duties of the steering committee were taken over or supplemented by a new advisory committee formed by Burris in late 1992. The advisory committee was comprised of cell coordinators, which included hourly employees.

The steering committee developed Recommendation for Improvement forms (RFI's) designed to solicit suggestions from employees regarding problems occurring in their activity areas. Initially the program resulted in an excessive amount of routine maintenance requests and few actual problem statements but eventually worked well. RFI's as well as cell group meeting minutes were placed in a binder in the company mail room, an area readily accessible to most employees. Scott Specialty Foods uses statistical process control to monitor defects, yields, damaged products,

sales deductions and customer complaints. Results are regularly posted on plant bulletin boards. One Scott committee conducted a customer satisfaction survey which pointed out unmet needs of customers and aided the steering committee in defining quality for Scott Specialty Foods. To boost employee participation and motivation, an annual employee appreciation banquet was held.

Carolina Cream. After struggling to schedule the purchased training sessions with TQS, the formal training began in March, 1992, when facilitator Arthur Stone attended Quality Institute. The other members of Carolina's Quality Team attended Quality Institute in four groups spanning the months of April and May. Stone went through QMS and QNMS training in July and August, respectively. The members of the Quality Team returned from the sessions highly motivated and ready to begin the QMS.

The QMS program began in August, 1992, with Stone instructing the sessions. At first, he was very nervous about being the instructor, but this nervousness subsided and the program continued with success. Each member was allowed to miss only one QMS session. The program, which was supposed to take ten weeks, lasted much longer—from August 7 to December 9, 1992. The greatest struggle came near the end of the program when the group tried to calculate Carolina Cream's quality cost. Quality cost calculations were to be presented at the next profit plan committee meeting in January, a quarterly event held at corporate headquarters to evaluate performance. Members of the Quality Team had formed different impressions of the quality cost procedure, which resulted in healthy, but time consuming arguments.

The QMS process was also hindered by a System Model Worksheet exercise during which managers composed a "model" of their respective departments. The model, aimed at clearly identifying each department's activities and processes, along with their interrelationships, is to be used to aid in problem identification and resolution. The consensus of those who attempted this activity was that the TQS people did an unusually poor job of explaining the mechanics of the process. The TQS organization sent a consultant to Carolina to help the Quality Team resolve these issues and finish the QMS program.

At this point, Chris defined each stage of the Total Quality Institute system implementation program (Table 1). Chris recalled that Stone had experienced a lack of support for the program from Carolina Cream managers before they went to Quality Institute in early 1992. As in most companies, everyone was very busy already and unwilling to commit to what was considered another time-consuming management fad. The

Table 1.

Stages of the Implementation Program

Stage	Comments and Suggestions
Choose the facilitator	The facilitator is responsible for managing the implementation process. Communication skills are a must.
Form the Quality Team	The Quality Team should be comprised of upper level managers. This should include the president, vice presidents, and those supervising production, engineering, and maintenance.
Send the Quality Team to Quality Institute	Quality Institute is designed to build the foundations of Total Quality Management for the members of the Quality Team. Quality Institute must also motivate the members of the Quality Team to "buy-into" the quality program.
Send the facilitator to Quality for Managers training	The facilitator must instruct the other members of the Quality Team in the Quality for Managers sessions. Therefore, TQS conducts a "training-the-trainer" program to prepare them.
Send the facilitator to Quality for Non-Managers training	This is similar to the QMS. QNMS is designed to train the line operators in the plant regarding Total Quality Management.
Facilitator conducts QNMS and QMS in-house	In-house training controls cost and enables the facilitator to address the division's unique problems.
Implement the results of QMS	During the Quality for Managers training, the Quality Team analyzes the division, establishes standing committees, and suggests improvements.

management team at Carolina Cream had to be persuaded to "buy into" the program wholeheartedly. Stone also had problems getting support from the TQS people who tried to make everyone happy and failed to help Stone answer the tough questions being posed by Carolina Cream personnel.

Since the TQS staff had advised him the union should be involved, Stone also attempted to persuade the chief union steward to become a member of the Quality Team. However, based on the recommendation of

the head of the union at the state level, who directed the steward not to become involved, union members did not want to participate. Stone told Chris, "It was clear they did not understand jobs were at stake because of industry conditions."

Since the union was not showing interest in the program, the Quality Team became concerned about employee involvement in the program. As they progressed through the QMS sessions, it became clear that line employees had to become key players and that the historically opposing positions of management and line employees would have to be resolved. TQS staff helped them resolve this issue by suggesting methods to include the union members.

The Quality Team had decided upon a standing committee structure as an exercise in one QMS session. Committees were established to cover education, awareness, opportunity for improvement, systematic error removal, and recognition of achievement. Each standing committee was to include salaried and hourly employees. The standing committee announcements were delayed from November, 1992, until February, 1993, for the following reasons: 1) Stevens and Stone were leaving Carolina (on excellent terms) as of January 1, 1993. 2) The Quality Team was uncertain what the new manager would want to change when he arrived. 3) A large customer had been lost. 4) The holiday season is Carolina Cream's busiest time of year. 5) Layoffs were coming up in January.

The new manager Kenneth Nelson was from the corporate offices, as was the new facilitator Robert Sorenson. The new manager, facilitator, and three others attended Quality Institute in March, 1993.

Upon returning from Quality Institute, Nelson decided to abandon the rigidity of the TQS system and was openly critical of Carolina Cream's lack of progress on TQM, indicating it had not achieved any results after two years of work. This criticism caused considerable turmoil among Quality Team members who thought they had made great progress toward successful implementation. However, the Quality Team rose to the challenge with the standing committees getting off to a reasonable start and several working committees being established to address the following problems: deductions, cooler operations, customer satisfaction and cream processing operations. While some union employees participated in these efforts, the challenge of involving more union employees still loomed large.

Carolina Cream was successful in developing quality management tools although many results took months to materialize. The standing and working committees comprise most of the effort. In July, 1993, the opportunity for improvement (OFI) and systematic error removal committees circulated a new OFI form, solicited suggestions from employees in

much the same way as Scott's RFI forms. The customer satisfaction working committee conducted a survey that was very successful because it pointed out weaknesses in customer service and helped the Quality Team define quality for Carolina Cream. The cooler operations working committee implemented a cooler database that tracked the inventory of Carolina Cream's large storage facility. The cream processing operations working committee aided the installation of a new manufacturing line. The recognition of achievement standing committee conducted the annual employee recognition banquet. The awareness standing committee modified the monthly newsletter to feature TQM in some manner in every issue.

Recognizing that a specialty dairy plant producing multiple products is obviously at risk when manufacturing multiple products at any given time, Carolina Cream, as a part of its continuing investment program, installed an Allen-Bradley process control system using programmable electronic valves and monitoring devices to conduct processing of milk products. This system nearly eliminated processing errors by employees.

Program Status as of Summer, 1993

At Scott Specialty Foods there were a total of eighteen cell groups, twelve of which were production oriented. As of June, 1993, nearly all production areas had at least one cell group. Currently, the steering committee meets once a month to monitor the implementation progress in the company and all RFI's are handled within cell groups, a process that has become an integral part of Scott's program.

The consensus of Scott managers is that the long-term success of the RFI program requires an integral view of the production process, something most employees do not have. The division manager estimates the plant operates with approximately a 15 percent cost of quality, a measure of the cost of mistakes. A 15 percent quality cost indicates that there would be a 15 percent gain in sales if defects were completely eliminated.

Many of the managers, including the facilitator, have become tired of the program, tending to delegate most of their authority to cell group leaders. The managers, in effect "run to catch up" when they are asked to contribute to the program. However, the cell groups have continued to deal with their area problems and suggest management-level improvement opportunities. The plant is undergoing expansion and renovation.

At Carolina Cream the committees continue to experience difficulty in attaining a satisfactory union membership level. Some members of the

union, mostly the senior members, have chosen to largely ignore the new program. However, the standing and especially the working committees have been successful. The program continues to consume an abundance of meeting time for managers. However, many decisions at Carolina are discussed extensively, with input from the entire Quality Team.

Chris' Summary

After reviewing his interview notes, Chris summarizes his discussions with fellow managers at Carolina Cream, Scott Specialty Foods, and the Chief Operating Officer. He begins his analysis by building the progress time lines for Carolina and Scott shown in Table 2 and continues by summarizing the programs at Carolina Cream and Scott Specialty Foods shown in Table 3.

Chris then returns to his four questions:

1. How can a TQM program be evaluated? How is success achieved and measured?
2. How can I get everyone to buy into such a program and devote time and resources to implementation?
3. What implementation issues and processes will I need to address?
4. Is TQM good for Butler Foods? Why?

Chris knows that the performance of a new project needs to be closely monitored. He is concerned that many aspects of a TQM program are not easily evaluated and reflects upon how he would measure performance at Scott and Carolina. He decides he would first analyze production costs, including product discarding because of process errors. He would also look into overhead expenditures to see if these have been reduced. He would also evaluate customer satisfaction although he knows it is very difficult to measure customer satisfaction and to measure the value of *not* losing customers. It seems that a TQM program may actually be a method of keeping current customers, offering them a reason not to switch to a competitor.

Chris knows his fellow managers at Butler Foods are very busy. He thinks following a slow, information-driven management introduction to TQM would probably be the best way to persuade them to "buy-into" the

Table 2.

Progress Time Lines for Carolina and Scott

Progress at Carolina Cream		Progress at Scott Specialty Foods	
Date	Activity	Date	Activity
2/91	Chosen as pilot plant	2/91	Chosen as pilot plant
3/91 - 11/91	Stevens gathers information and builds "buy-in"	6/91	Steering committee formed
12/91	Stevens chooses the Total Quality Services system	10/91	Packaging cell formed
1/92 - 2/92	Awaiting the scheduled seminars by TQS	1/92 - 4/92	Other cell groups formed
3/92 - 7/92	Managers attend Quality Institute seminars	1/92 - 3/93	Community college conducts quality seminars
8/92 - 12/92	Quality for Managers System sessions conducted	11/92	Advisory committee formed
1/93	New manager Nelson and facilitator Sorenson arrive	7/93	Employee banquet
2/93	Standing committees announced		
3/93	New managers go to Quality Institute		
4/93	Working committees established and program underway		
7/93	Employee banquet		

Table 3.

Program Summaries

Stage	Scott Specialty Foods	Carolina Cream
Implementation Strategy	Low cost—close involvement of corporate staff familiar with plant.	Management free to choose a system. Manager chose the TQS system.
Early Labor Involvement	Heavy—immediate use of cell groups. Good union relationship enabled early successes on production floor.	Light—union steward did not want to be on committees. Substantial resistance from state union organization.
Management Training	Videos recommended by the corporate office.	Quality Institute, Quality for Managers System.
Labor Training	Local community college held a few disappointing sessions.	Quality for Non-Managers System not yet conducted and probably will not be.
Awareness	Charts posted on bulletin boards relating to plant performance. Employee appreciation banquet.	Meeting minutes posted on bulletin boards, monthly newsletter, employee appreciation banquet.
Improvement Tools	Recommendation For Improvement forms (RFI), cell group meetings.	Opportunity for Improvement forms (OFI), standing and working committee meetings.
Program Evaluation	Needs more training in problem solving, quality management systems, and team building for all those involved.	Needs more employee involvement and training. Program was slow to achieve results and had to be modified.

program. The manner in which Bruce Stevens at Carolina Cream introduced TQM would fit well into Butler, although Chris thinks he could do it somewhat more quickly.

In order to formulate an implementation plan, Chris realizes he needs to involve the other Butler Foods managers. Teamwork and cooperation are vital for successful implementation of a TQM program. Therefore, he will delay the formulation until after his upcoming business plan meeting in order to meet with the other managers and begin work on this very complex plan.

Chris knows that TQM, in some form, would be a valuable performance improvement tool for Butler Foods. Even if such a program fails, it would seem that it might still be able to highlight the needs of customers and the power of employee involvement. Although Chris does not think he manages dictatorially, he knows that line operators are not involved in problem identification or resolution. He also realizes it has been years since a customer survey was conducted. Butler Foods relies on salesmen to provide feedback from customers, and now Chris realizes this information can be seriously biased. It seems as if a TQM program could also help improve food processing programs, although Chris knows this will have to be analyzed further.

Notes

David A. Crank, is an Assistant Professor, Department of Agricultural Economics, University of Kentucky. This case was written while the author was a doctoral candidate in the Food and Agribusiness Management program at the University of Illinois. The author would like to thank Dr. Steve Sonka and Karen Coaldrake at the University of Illinois, as well as those in the subject company, for their helpful comments. The comments of three anonymous reviewers are also appreciated.

This case was written to illustrate the strengths and weaknesses of TQM systems, not to indicate proper or improper management of any situation. The names of all persons, places and companies have been changed to protect the identity of those actually involved.

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Appendix I

Questions for Readers

1. How would you evaluate the culture at the plants before implementation?
2. What were the driving factors at each plant during implementation?
3. Under what circumstances do you think management leadership is an appropriate strategy versus employee empowerment?
4. Evaluate the Scott and the Carolina Cream implementation process. What do you think will happen to each over the long run?
5. If you were Chris, what kind of a quality management program would you implement at your plant/division? Would you follow a completely different strategy?

Appendix II

Case Analysis

Since this case reflects actual events that occurred in two divisions of a large food processing firm, it may be more difficult for the reader to ascertain which implementation steps were good and which were not. In this section, the developments at each company are analyzed as well as Chris' decisions.

Scott Specialty Foods. The leadership at Scott Specialty Foods tended to send confusing signals to the other managers in that division. They went from a dictatorial style to one of cooperation and teamwork to one of laissez faire. Nathan Henderson's laissez faire style of management gave many of the other managers opportunity to perform at their best but lacked the necessary vision to guide the plant through a quality improvement program. This manifested itself through slow implementation, poor participation in meetings, outside influence from McDaniel, and "management's running to keep up with employees" regarding implementation issues. Had Scott's TQM program been properly led, it would have been implemented with greater success. However, it should be noted that the people at Mountain Foods thought it was going very well. Also note that the high percentage of employee participation was definitely positive.

The training methods used at Scott, and chosen by McDaniel for their low cost, were a complete failure. The employees and managers at Scott disliked the videos because they were too abstract and not interactive. It would have been more appropriate for Henderson and the other managers to choose their own implementation program and instructional materials. If they had done this, then they would have been much better champions of the process.

The summer, 1993, status of the program suggests that the managers at Scott still do not understand the basic concepts of TQM and its potential benefits. Their lack of interest and excessive delegation indicates their disenchantment with TQM and therefore their misunderstanding of its basic tenants. TQM is about building teamwork to improve plant performance through increased efficiencies and *fundamental* change in processes. It is probable that many opportunities for dramatic change in the company's production processes have not been discovered and will not be until there is full participation and thereby full implementation.

If we abstract to reality, it should be mentioned that the plant was undergoing dramatic expansion and improvement during 1993. Many of

the managers and employees were distracted by these events and were unable to devote adequate resources to the TQM implementation problems.

Carolina Cream. The background for Carolina Cream as well as Scott Specialty Foods and MFC must be carefully considered when evaluating the potential for a quality improvement program and/or any managerial innovation. While Scott Specialty Foods enjoyed good labor relations, Carolina Cream was still in the process of transforming a highly adversarial relationship to one of trust and cooperation. The poor, although slowly improving, relationship between management and the unionized employees at Carolina encouraged the managers to eliminate the union in the implementation planning process. This was clearly a mistake since employees are key to implementation. Although it would have been very difficult, the managers should have negotiated the union steward's involvement.

Bruce Stevens, the plant manager, and Arthur Stone, the facilitator, carefully implemented the program at Carolina Cream. While this took a long time to accomplish, it was successful. Other than the lack of union involvement, the management committee had bought into the program and had a good understanding of TQM. The lengthy implementation did create problems though since Stone left for another job and Stevens was promoted. This created a void in leadership and skill because they had spent the largest amount of time on the implementation program. However, the Quality Team was able to overcome these problems because they worked as a *team* and the leadership of Stevens and Stone was no longer crucial.

The Quality Team found that many of the new and younger employees were eager to become involved with the committees once the Opportunity for Improvement (OFI) program started and the committees began functioning. The older, more entrenched employees who had been there under the previous ownership did not participate to a great degree. The Quality Team remained committed to employee participation and realized that a few employees might never become involved.

Chris Miller's Decisions. Chris is the self-proclaimed champion of quality improvement at Butler Foods. While TQM implementation is a teamwork exercise, the group requires *early* leadership. In the latter processes of program selection and implementation, teamwork becomes crucial to ensure buy-in from all stakeholders. Therefore, the fact that he is examining the programs at Scott Specialty Foods and Carolina Cream by himself is not an error. In his summary, he concludes that he must involve others in his division before deciding precisely how to plan implementa-

tion. He did make the crucial decision of choosing to do something and that may be the most important step.

When evaluating the implementation processes at Scott Specialty Foods and Carolina Cream, the reader must keep in mind the context or culture of each location. This is key to determining how to proceed with implementation planning. Management leadership is appropriate for most situations in which the employees are not prone to participation. Employee empowerment may be more appropriate for businesses with a large number of salaried employees or hourly employees who are already empowered. Choosing the primary source of training for a company is also very difficult and must be a plant-by-plant decision to ensure adoption. It should be noted that implementation requires dedication of resources in addition to widespread buy-in. The job of facilitator is very important and may require someone's full-time attention. In conclusion, the implementation of TQM or any other managerial innovation requires building teamwork and devotion of significant resources by all stakeholders in a company.