

## **Cycle-Time Reduction: “As Is” vs. “Should Be”**

by

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Customer satisfaction is essential to companies wanting to remain competitive in today's business environment. The incredibly fast-paced lifestyle of most Americans demands that companies deliver products and services without delay. Customers no longer find it acceptable to wait: Pizzas must be delivered within 30 minutes, stores must offer instant credit, and tax preparers must provide quick-return income tax refunds.

Time has become an increasingly valuable commodity for companies as well as individuals. Organizations hope that reducing the time it takes to satisfy customers' needs will encourage customers to return. Imagine manufacturing a product or performing a service in half the time it currently takes.

Unfortunately, managers at most companies cannot sideline day-to-day operations to conduct a thorough time-management analysis. Nor do they have the tools and detailed plan to implement one. They need a third party's objective analysis.

Eight years ago, Motorola discovered itself in such a dilemma upon learning that the company had a reputation for being difficult to work with. Motorola found that most customer complaints related directly to time issues, *e.g.*, delivery times, the time it took to get credit approval and even the time employees took to return phone calls. Concerned about rapidly growing competitors, Motorola realized it needed to change.

After searching for ways to address these time-related complaints, Motorola adopted the concept of total cycle-time reduction.

Realizing that cycle-time reduction could benefit more than the many organizations within Motorola, the company quickly applied it to customers and suppliers. To help other companies, Motorola presents this methodology at its Quality Briefing seminars, held monthly at its corporate headquarters in Schaumburg, Illinois. This seminar is an outgrowth of Motorola winning the 1988 Malcolm Baldrige National Quality Award. This one-day seminar attracts high-level management from a wide array of national companies and organizations. Members of Motorola's applications consulting team and other corporate staffs give presentations at the seminar on quality, cycle-time reduction, team empowerment and Motorola University.

While attending the New Mexico Business Leaders Conference in 1991, Bob Jung, president of United New Mexico Bank, heard Chris Galvin, executive vice president of Motorola, explain the benefits of a new quality culture change that Motorola created to reduce total process time, Jung saw the possibilities.

“Our company felt the way to compete more effectively in the banking industry was to concentrate on improving quality,” says Jung. “The concept of cycle-time reduction seemed to be a natural vehicle for accomplishing our plans to improve daily business operations.”

Total cycle time—defined as the time between a customer's request and the fulfillment of that request—focuses on the importance of meeting customer expectations. Reducing cycle time is necessary not only in manufacturing operations but also in administrative and service areas, which typically consume more than half of the total time to process customer orders.

Australian-based building materials company CST recently hired Motorola to help them reduce cycle time for a central process they call “order to remittance.” OTR covers the time from when a customer calls to place an order to when the company delivers the product and the customer pays. With Motorola’s expertise, CSR expects to cut this cycle time by at least 50 percent to 60 percent in all their businesses throughout Australia and New Zealand, as well as in the United States. By using Motorola’s methodology, CSR achieves cycle-time reduction by eliminating the very causes of the errors, not just continually fixing the errors as they come up.

### **Eliminating rework**

The most logical step for companies to take in reducing cycle time is eliminating unnecessary work that causes long delays in completing a specific process. As a result, companies must eliminate waste and rework any activity that doesn’t add value for the customers. The decision to eliminate unnecessary work is certainly not revolutionary, but the means by which the Motorola methodology decides which activities in the cycle to eliminate are unique. Instead of using employee opinion to determine the value of tasks performed, Motorola’s cycle-time reduction bases this judgment on the customers’ opinions. Using this evaluation method, Motorola’s team determines which tasks add value in the eyes of the customer and which tasks do not.

Cycle-time reduction also assists companies involved in new-product development such as Modicon, a Massachusetts-based designer and manufacturer of microcontrollers. Motorola examined Modicon’s process for new-product development and helped them to rebuild it, with the goal of improving cycle time for delivery of products to market.

“If you can bring your products to market sooner, obviously that will give you a competitive advantage,” says Modicon President Paul White.

The primary tool needed to achieve cycle-time reduction is a process called cross-functional process mapping, which involves developing “maps” of process flows by describing the functions involved at each step of a particular process within the company. Maps are developed for both the ways things are being done, known as the “as is” map, and the ways things should be done, known as the “should be” map. The technique focuses on the key processes *across* an organization. The goal of the process is to eliminate nonvalue-added steps and, then, redefine the remaining steps for more efficiency. The time it takes to complete each step is vital. The final step in cycle-time reduction involves creating an action plan based on these two maps. The goal of the action plan is to implement the transition from the “as is” to the “should be” process flow.

### **Map makers**

Cross-functional teams, made up of representatives from each functional department under study, develop these maps. Team members aren’t necessarily all upper-level managers. Cross-functional teams include employees deep within the company—the “doers” of the current process. Because of their close vantage point, these employees can offer valuable insight into day-to-day business operations. Management empowers the team to implement any changes they develop that will reduce the cycle time and create customer satisfaction. This team composition adds a unique twist to the total quality management concept now being implemented in many companies.

“Two goals our bank hoped to achieve by mapping was to decrease the length of time it took to process commercial loans and to reduce the amount of errors in our accounting department,” says Jung.

In the period since Motorola’s team completed its consultation and mapping sessions with the bank, cycle time for processing commercial loans has been cut in half, according to Jung. And, in one phase of accounting, the bank saw a decrease in employee errors due to a 90-percent reduction of cycle time. Once the unnecessary steps were eliminated in the bank’s accounting procedures, employees had less chance to make errors.

To preserve objectivity, Motorola recommends that companies use an outside facilitator with the initial groups attending a mapping session. An objective outsider is more likely to identify and challenge any bureaucracy within the organization.

“Another reason why outside consultants are so valuable is their experience in working with a large number of companies with similar problems,” says Jim Weathers, director for manufacturing services at St. Louis-based MEMC Electronic Materials Inc.

MEMC asked Motorola to help reduce the time it took to respond to customers’ orders.

“Our company was more willing to accept the direction given by Motorola’s facilitator because of his established credibility,” says Weathers.

Motorola usually sends two applications consulting team facilitators to the company for the three-day mapping session. The sessions typically take place off-site and operate in an open-forum style. Cross-functional team members take turns describing, in detail, the functions of their department as it related to the operation being reviewed. They create maps to document the entire cycle time of the process. During this initial three-day session the team members create the “as is” process, which shows the way the company currently operates.

“In my experience, most companies immediately uncover similar problems during their initial mapping session,” says Kathryn Linder, a consultant from Motorola’s team. Many companies find they are duplicating efforts by unnecessarily performing a step two or more times, says Linder. Another common wasteful practice is excessive signature loops, where a document needs multiple signatures for approval. A third very common problem is nonvalue-added actions. Motorola defines these actions as employee activity that does not increase the value of the product or service or get the product or service to the customer any faster.

For example, Modicon discovered multiple testing being done within their company by different departments because each was wary of leaving the job to someone else. Because of a lack of communication between design engineers and manufacturing, the departments overlapped steps. The situation wasn’t corrected until Modicon’s mapping sessions with Motorola.

“We knew there were extra delays and inefficiencies, but I don’t think we expected to be able to cut the process to one-half of what it was,” says James Robertson, Modicon’s manager of program management.

### **The customer’s prerogative**

Cross-functional process mapping details all the internal operations and decisions for a particular phase in the overall process being studied. Then, the team, aided by the facilitator,

re-examines the whole process from the customer's perspective to see if each step adds any value perceived by the customer. When reviewing each step, the facilitator asks: "Why is this step being done this way?" and "Does this step add to our product or service for the customer?" If the internal operation or detail does not add value, then that element is brought into question and, if possible, dropped.

"Every person is guilty at one time or another of needlessly tolerating an operation or procedure they know needs improvement," says Weathers. Unless the company takes time to examine the way it operates by using cross-functional process mapping, employees will continue to overlook wasteful practices and operate as they always have, Weathers explains.

By placing the business practices of the organization under careful scrutiny, the facilitator forces the company to explain the significance of each operation. Because the company under examination must provide a rationale for every step in its operation, management soon discovers, by their own admission, which steps they no longer need.

"All members of our cross-functional team found themselves in the 'hot seat' at one time or another when they were asked to prove the value of every step in their department's operation," recalls Weathers.

A value-added advantage to this exercise was that people began to understand the inner workings of all areas within the company with which they were not familiar, according to Weathers.

The mapping process also led to improved communication between departments, says Jung.

"Team members who made up the cross-functional mapping teams developed a better understanding of each others' problems during the mapping sessions," says Jung. "Communication increased between department heads, and this resulted in improved relationships, a stronger dedication to teamwork and newly found respect for one another."

### **Get to the issue**

"The focus of cross-functional process-mapping becomes a critical business issue, the stated goal the company hopes to accomplish through cycle-time reduction. "For a company in today's competitive business environment, there's money to be made if you shorten cycle time and can respond to your customers more quickly," says Weathers.

MEMC's stated critical business issue was reducing the time from when a customer expressed interest in a product until MEMC received payment for the order. (The total cycle time included scheduling a customer's order, launching the order, manufacturing the material, shipping the material, invoicing and receiving payment.)

"We address a company's critical business issue as we map their business process by developing a list of approximately 100 to 200 process issues," says Linder. The facilitator interjects questions, when necessary, but for the most part, the cross-functional team creates the process issues. These issues then become clearly stated action items that require the company's attention for the critical business issue to be accomplished.

One month later, during another three- to four-day session, the company's same cross functional team gathers. From the lengthy process issue list, the team creates a "should be" map. "The one-month wait between mapping sessions is important because it allows the team to think about the process issues, share information with co-workers and let the information we've uncovered soak in," says Linder.

Weathers says: "Formulating the "should be" map was more difficult than the "as is" map because it required more thinking to improve operations in a practicable and realistic way."

The team spends the final day creating an action plan for the company to accomplish the goal the team set out to achieve. Team members are then assigned action items they become responsible for researching and improving. The more difficult action items requiring a great deal of authorization are directed to high-level management, whose commitment to change is critical to the program's success. It is difficult to go through a change process without organizational readiness.

"Out bank's success with cross-functional process mapping is due mostly to senior-level management's commitment to the program," says Jung.

Another important element in achieving effective change is regularly reviewing action plans during staff meetings or operation reviews. Constantly reviewing the issues brought up during the cross-functional process-mapping program continuously reminds employees of every person's role in the change process.

MEMC has experienced difficulty implementing some of the more detailed changes due to the complexity of the critical business issue. But Weathers maintains that the program was still a success because MEMC shortened total cycle time by 35 percent.

"On a routine basis, our company still meets and goes over the issues brought forth during our mapping sessions, so I expect to see our cycle time continue to decrease," says Weathers.

Linder says: "We also encourage companies to reward efforts and share employee success stories throughout the organization." Once employees see co-workers beginning to succeed, somehow their goals seem much more attainable. One way the bank plans to apply the knowledge acquired during cross-functional process mapping is to make their compensation programs directly relate to quality.

"Once implemented, our compensation programs will stand as a reflection of our commitment to improve quality and customer satisfaction," says Jung.

Is your company doing all it can to make sure your customers are being satisfied? Because most companies typically get so involved in the day-to-day operations of their organization, they forget the No. 1 rule of doing business: Satisfy the customer. Motorola saw this problem internally, developed a methodology to solve it and now exports the theory to interested companies. Motorola's application consulting team provides companies with the training and education vital for successful progress in today's competitive business environment.

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