A common sense approach to quality management

Continuous improvement results from small gains which, over time, will add up to big gains

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Quality is a never-ending journey. The journey should involve steps for continuous improvement. When such steps are followed, the result is TQM's goal: customer satisfaction (Fig. 1). Contrast this methodical approach with the one used by most organizations: emphasis on quality or quality improvement. Such organizations offer a lot of talk, but few results. The problem lies in a focus on higher goals and individual performance instead of process improvement.

Foundations for continuous improvement. To better understand the foundations necessary for success with TQM and continuous improvement, we must think of work as a process. All work is really a process. A process is "any set of events or actions that combine to produce an outcome." Effective continuous improvement efforts must focus on process improvement, not just task improvement. Too often managers focus on task improvement and "people improvement" without understanding the process and its constraints.

People. The key elements are involvement, desire, trust and empowerment. Employees and managers are "in it together." Managers must earn the trust of their employees, and employees must earn the trust of their managers. This is only done through consistent daily effort where "quality walk = quality talk." Decisions that affect quality must be consistent with the "quality lingo" being used in an organization. Management and employees must be willing to change and try

new or different methods. Managers can't become roadblocks. They must participate in the efforts to continually improve processes. Focus on *us,* not them. Management and employees are all a part of the business team. Remember, the goal is improved customer satisfaction.

Two simple contrasting examples vividly illustrate these concepts. A small company in Arkansas has been extremely successful with their quality
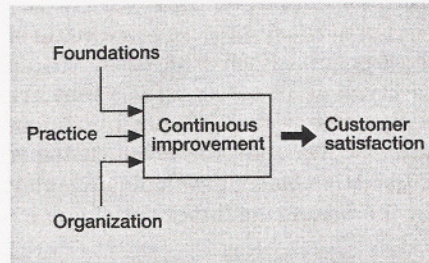
Fig. 1. A firm foundation, practice and organization leads to continuous improvement, which leads to customer satisfaction.

process while a very large company still worries about "what looks good" to upper management. The small company has involved people at all levels working with each other and with customers. The large company still has not eliminated the bureaucracy nor focused on teamwork. Substance is important, not looks! Customer satisfaction is the goal instead of "looking good" for top management.

Training is one way of involving everyone in the continuous improvement process. People at all levels of the company should be trained in "what they need to know," but not "overdosed" on training. In fact, on the people side of continuous improvement, training needs must be identified and every employee given opportunities to learn new skills every year.

One company requires 100 hours of training per employee per year. While your business may require only a small amount of training each year, it is important to recognize that a continual investment in training is vital to continuous improvement. Studying your processes will help identify "who, where and what" training is needed. Remember, the common goal is increased customer satisfaction.

Common sense tells us that "ya really gotta wanna." Management can't make people participate or be involved in the quality process. Management must set the stage to allow and encourage involvement in the continuous improvement process. This can be accomplished by empowering employees to make on-the-spot decisions to correct a process problem or satisfy a customer. An approach that empowers employees demonstrates management's involvement in continuous improvement for customer satisfaction.

Remember the forgotten areas. Generally, companies will involve the management team, hourly employees and others from the major areas of the business. Sometimes it is easy to overlook the "forgotten areas" such as design, clerical, maintenance, measurement, packaging, transportation or other support areas. Teams organized for problem solving can miss key players because one of these areas has been overlooked. For example, one company has identified design drawing errors as a high cost quality problem. Initially they didn't involve the design engineers and draftsmen in identifying the process steps that can lead to incorrect drawings in manufacturing. Instead, they complained about "poor" engineering. This company finally established a problem-solving team to identify ways to improve the process for completing drawings and getting the correct draw-

ings to manufacturing. While this scenario may not fit your particular business, it should be easy to generalize the concept to your operations.

Another example is in the installation of equipment, whether factory, refinery or office equipment. Is maintenance involved in specifying key equipment and/or locating it? Remember, they're the ones who actually *know* what's required to keep equipment properly performing. We must think outside the "box" of people we normally include in the decision-making and problem-solving process to include those "forgotten" areas.

Have a strategy and a plan. It is vital that we focus on the *system* for quality and continuous improvement and not just the activities or even the end result. Involve people from all areas and be realistic about expectations for improvement. Generally, managers say things like "we've got to improve quality" or "reduce rejects by 10%" or "improve customer satisfaction." Yet, there is no strategy or plan for achieving these results. In fact, just the opposite may be true. Goals could be contradictory, such as a goal on "pounds shipped on time" with no reference to the quality requirements of those pounds. Each department should be involved in setting goals that are compatible with the overall business strategy. Ask questions about customer satisfaction before developing the plan for increasing customer satisfaction.

Practicing continuous improvement requires a long-term thought process. It says we will forever be looking for ways to improve processes. That seems harsh and perhaps impossible, but it is really very practical. If we want our businesses to survive, we must be seeking ways to do the work better every year. The problems experienced by the U.S. automotive and steel industries in the 1980s were because of the failure to focus on continuous process improvement. Dr. W. Edwards Deming, the quality pioneer, has said that we must always work toward improving the system. We must involve people in finding better ways of doing the work right the first time and improving it the next time. This represents true process improvement.

Systems and processes. A process or systems focus means that we look at the "big picture" and then break it down into key steps or elements using tools such as flowcharts,

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pareto charts, and cause and effect diagrams.[1] Look for small gains that can have a multiplying effect downstream. For example, by reducing the variation in solids concentration in the feedstock, a processing unit may be stabilized and final product variation reduced to improve customer satisfaction. Another scenario exists in a tube mill. If the initial drawing process isn't stabilized then all other processes will have excessive variation in them. Remember, variation is the culprit. We need to use the simple tools of statistical process control to quantify and identify variation in our processes. These tools will help keep the focus on prevention and continuous improvement.

To help focus on customer satisfaction, five questions should be answered about any process:

1. Who are the customers?
2. What do they like?
3. How can we give them what they like?
4. How do we know they like what we give them?
5. How can we improve this process?

Effective process documentation aids the effort to improve customer satisfaction. It is important to know how the work is being done and to document the work being done. Standard operating procedures and work instructions are critical building blocks of continuous improvement. After documenting the work actually being done, it is easier to gain consistency from person to person or shift to shift. Using the process documentation, a group of empowered employees can identify improvement opportunities and even revise procedures to aid the continual improvement journey. Again, this is a long-term journey and requires a shift in the traditional management thinking of task
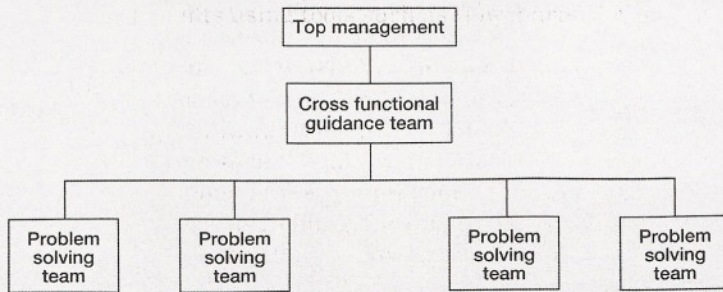
Fig. 2. Organize for continuous improvement by cutting across departmental boundaries.

orientation and quick results.

Keep score of results *not* people. Many companies have elaborate performance appraisal systems. Regardless of your company's mechanism for "keeping score," it is important to focus on *results*. It is easy to focus on activities, such as the number of suggestions for improvement an employee makes, or the number of accidents an employee has. However, it is sometimes more difficult to expand our thinking to results. Pareto charts can help focus on results by highlighting top problems and opportunities for improvement.

Managers and employees together should decide what is to be measured on every process. Make these measurements visible for all to see. Visual aids will help us focus on results. A simple example will emphasize the importance of this point. A tire manufacturer had a process where two or three managers reviewed the previous day's rejected tires early every morning. Results were recorded, but not communicated to the employees. Their first step was to involve more employees in the review process. Initial results indicated a reduction in the number of rejected tires. Next, the quality manager requested permission to pile all the rejected tires outside the employee entrance for one week. A Pareto chart of the top defects was posted near the entrance. Top problems were easily identified by all employees. This led to an emphasis on *results,* by using the tires and charts together to involve the employees. The result was a reduction of waste by encouraging a process focus and continuous improvement actions aimed at solving the problems in the process. This beats the alternative of tracking rejects by shift and blaming the employees for not doing the work right.

Recognition. Studies of management practices indicate that people desire recognition and appreciation for what they do. It is vital to the long-term success of any quality management process for managers to provide feedback and reinforcement for desired behaviors. This doesn't mean that you must give prizes or other items as "bribes" for performance. It simply means that sincere "thank yous" are a fundamental element of continuous improvement.

A few years ago we observed a situation that highlights the importance of being sensitive to people. An engineer implemented a simple solution for a nagging process problem. Instead of being reinforced for the simple and inexpensive solution, a manager told him, "that's so simple you should have come up with it six months ago." Do you think the engineer ever presented another solution for a problem? No, in fact, he transferred to another location shortly after that incident. A simple "thank you" would have encouraged continuous improvement. Instead, process improvement became a punishing concept for the technical staff.

Organize for continuous improvement. Successful efforts at establishing continuous improvement as "the way we do the work" or as a "way of life in our company" involve a coordinated and systematic approach. An easy way to accomplish this is to establish an overall continuous improvement guidance (leadership) team (Fig. 2). This team cuts across lines of responsibility and levels of management. They can break down barriers to continuous improvement. In general no more than nine people should be on this team and seven is usually optimum. (Depending upon the size of your organization this may only be a team of three to five.) Also, there should be some team members with "positional power" so that the employees realize management is serious about the process. Power is not to be used as a club, but rather to make cutting across traditional barriers and lines of authority easier.

As they begin work, the team members should be trained in team skills so they will function as a team and not a committee. Top management *must* be involved in helping this team or it is doomed to frustration and failure. The guidance team sets the overall direction for the continuous improvement process, develops the strategy and plans, and serves as "cheerleaders for continuous improvement." This team should meet periodically and publish minutes of each meeting.

Involving employees in ways to do the work better comes about with minimal resistance when a guidance team is used. The guidance team can serve as a resource to other teams in your company. Often a member of the guidance team can work with departmental or other problem solving teams on specific continuous improvement projects.

Simple ways to get results with continuous improvement are:

- Involve people
- Train
- Don't spend big dollars—focus on how we can do the work better
- Just do it—enough philosophy and talk, let's have some action!

LITERATURE CITED

[1] Woodruff, D. M., "Tools for better management," *Hydrocarbon Processing,* August/September 1989.