

## What's in It for Me?



### Benefits of a quality management system (QMS)

As a consultant, I have been asked numerous times by management teams that are considering quality management systems (QMSs) such as ISO 9001, QS 9001, ISO/TS 16949, AS 9001, or TL 9000, “What’s in it for me? Companies complain that QMSs, such as ISO 9001, take up their employees’ time and cost too much money. They question the value that a QMS offers for their investment.

I answer in terms of money—the language of upper management—“The only reason your company should implement a QMS is to reduce costs. Your QMS should pay you back more than you put into it. Doing it for any other reason is a waste of time and effort.”

They further complain that customers force compliance and expect lower prices in the future. I tell them, “Those customers requesting compliance have a QMS in place at their companies, and they know a QMS can reduce costs. That’s why they want you to implement a QMS. If you can reduce costs, then they expect you to pass a portion of the savings on to them in reduced prices.” Many executives don’t understand this, and they look at ISO standards, technical standards, and test laboratory standards as expenses instead of ways to reduce costs. I ask these companies what rework, sorting, rejects, scrap, and customer complaints cost. Most companies have no idea how much these internal and external quality nonconformities actually cost.

Every company that I’ve assisted with QMS implementation had the potential of reducing their operating costs by 10 to 40 percent. The savings flow directly to the bottom line. This concept is important, because it often takes R100 in sales to yield R10 of profit. A rand saved is indeed a rand earned.

Over the years, I have found that the best way to explain the advantages and disadvantages of a QMS is to discuss the day-to-day business functions of a manufacturing company. Carrying out these functions is characterized as many things to do (sales, purchasing, operations, quality, maintenance, warehousing, packaging and shipment, customer service and satisfaction) with the fewest number of people.

A good QMS can offset the complexity of manufacturing processes, including complexities that are introduced by suppliers and customers over whom the organization has limited control. A manufacturing operation is different from other businesses. Functions such as purchasing raw materials, designing tooling, assuring conformance to numerous customer specifications, and the amount of training and skill level of employees are added responsibilities for the company’s management. The return is greater for manufacturing vs. non-manufacturing, but the effort requires substantial energy from all levels of the organization. If a mistake occurs while carrying out these business functions, those few people become stretched even more.

ISO 9001—or any other QMS—gives your company tried and true guidelines for those rules. It even lets you modify the rules, within the provisions of the standard, to suit your business. Once you have the rules in place, you go on the honour system and conduct self-examinations (internal audits) to ensure that you are following the rules.

A company without a QMS, such as ISO 9001, is at a disadvantage, because business functions aren't standardized, and reoccurring problems add pressure to the company's ability to manage its operations. These problems are a continuing struggle that frustrate employees, waste time, and, most importantly, add expense to the company's operation.

The following problems can result from lack of a good quality system, with the relevant portions of the QMS shown in parenthesis:

- Starting a job and then realizing that there aren't enough raw materials to complete it (contract review, purchasing, process control).
- Beginning a run and then discovering a shortage of qualified operators (training).
- A process can't make quality product because a new (low cost) raw material has been substituted for the original one without proper review (purchasing, process control).
- The customer changed the drawing or tightened specifications, and the changes were not implemented into current production (design control, contract review).
- Yields depend on that new machine that nobody on the second shift knows how to operate (training).
- Accepting nonconforming product because a damaged gauge was used to inspect the product, or the operator hasn't been trained how to use the gauge (calibration, training).
- Accepting a customer's order and losing money upon shipment due to excessive rework, sorting and scrap (contract review, process control).
- Shipping product to the customer and realizing then that the product was nonconforming (control of nonconforming product).
- Receiving a customer complaint and convincing yourself that the customer is just whining (customer satisfaction).

The usual explanations of why these issues happen are

- Murphy's Law—"Whatever can go wrong will go wrong"
- Friday afternoon follies—"Something always goes wrong at 3:30 Friday afternoon, just before it's time to go home."

A QMS keeps Murphy's Law at bay. Friday afternoon follies become a thing of the past. They work by simply establishing rules for conducting your basic business functions. Train your employees in the rules. Then conduct your business in accordance with those rules. Implementing a QMS is nothing more than writing down what you do and then doing what you say you do.

The next section will show how writing down what you do when you solve a problem ensures that you have to solve that problem only once.

## **Corrective and preventive actions prevent problems from recurring**

Even though you try to stay the course, errors and mistakes happen and Murphy's Law shows up again on that Friday afternoon when you wanted to leave a little early. The true value of a functioning QMS is the rule for correcting mistakes with the intention of preventing them from happening again. The rule is called corrective and preventive action. Corrective and preventive action is a QMS's most powerful rule. If applied to internal errors (mistakes that were discovered before shipment) and external errors (mistakes that were shipped, causing customer complaints and dissatisfaction), it reduces costs every time you use it. The rule drives your company's continuous improvement efforts, thus reducing costs. Again, the only reason your company should implement a QMS is to reduce costs. Doing it for any other reason is a waste of time and effort.

Corrective and preventive action can save money. It's simple to use but it must have a QMS documented system (rules) to fall back on. If a mistake or defect happens, a defective material report (DMR) or corrective and preventive action request (CPAR) is initiated for the mistake (internal or external). A written statement of the mistake, error, or customer dissatisfaction is recorded and forwarded to the responsible department or individual. The responsible department or individual determines the root cause and fixes the problem in the short term, and records the actions on the CPAR/DMR form. The responsible department or individual now attempts to fix the problem for the long term and formulates preventive action to eliminate mistakes for good.

At a set time in the production schedule, a standard such as ISO 9001 uses a verification audit to determine whether the preventive action is working. If the preventive action is working, you have eliminated a problem that won't happen again, thus allowing your company to concentrate on other problems.

Corrective and preventive actions are required for external (customer complaints) non-conformance, vendor non-conformance, and quality audit non-conformance findings. A DMR is required for both internal non-conformances and in-process outside services (vendor) non-conformances. For corrective actions resulting from quality audit findings, the internal auditor initiates a CPAR and forwards it directly to the management representative. Audit findings will receive immediate attention and be assigned to the appropriate department/individual. The management representative maintains the DMR/CPAR logs on an ongoing basis.

## **Execute a corrective and preventive action system**

The system provides for methods to analyze non-conformances, establish a resolution date, find root causes, eliminate the problem, and follow-up implemented solutions to verify their effectiveness.

Resolution dates for DMRs/CPARs: Fifteen days for customer complaints and 30 days for internal non-conformance, vendor non-conformance, and internal quality audits. For DMRs/CPARs that cannot be completed within the required time frame, an extension must be requested using form "DMR/CPAR request for extension." Verification is done by the management representative or department head best suited to verify and sign-off on effectiveness of solutions. If the problem isn't resolved, the management representative will reinstitute corrective action. If the problem is resolved, the management representative will so note in the DMR/CPAR log.

## **Corrective and preventive action meetings**

Problem-solving groups will meet as necessary to review DMR and CPAR solutions, verify corrective and preventive actions taken, analyze past DMRs and CPARs for trends, and close out successful actions. The management representative or a group leader maintains records of problem solving meetings in the employee-training file(s) for three years.

Any employee can initiate a DMR or CPAR for problems beyond those mandated above. DMR/CPAR requests can be submitted directly or through the employee's supervisor. The management representative will assign corrective and preventive actions to a person or team best suited to solving the problem.

If the original corrective and preventive action doesn't correct the problem, try another. Initiate another CPAR/DMR and formulate a new approach. With an ISO standard, your company has a system to approach those recurring, mind-numbing problems that seem to happen at 3:30 p.m. every Friday. Without the QMS, the problems keep happening again and again. If you categorize all the CPARs and DMRs, you will start to see trends that will direct your future efforts on fixes before mistakes happen. For example, a trend analysis might show numerous past corrective actions that required operators to be retrained in process awareness. If you decided to be proactive and train all operators on a regular quarterly cycle, you could expect reduced mistakes due to process misunderstandings.

## **Summary**

Having an ISO standard provides the discipline and rules to make your company approach corrective action the same way every time so that you can continuously improve your product or service. Perhaps the most powerful rule of ISO standards is correction and preventive action, and its importance cannot be overemphasized. Continuous reduction of non-conformance (mistakes and errors) along with rejects, rework, scrap, and lost time due to sorting, all contribute to customer satisfaction. Over the long term, non-conformances become fewer and fewer, customers are satisfied, and the cost of doing business is reduced. This means higher margins and increased profitability.

Implementing ISO standards requires that you set yearly goals and objectives for continuous improvement. These goals must be supported by action plans that drive company efforts to reduce mistakes that cause rejected product, rework, sorting, scrap and customer complaints. Again, these rules assist your company in reducing costs.

If you can produce a product without non-conformances, you reduce costs associated with rejection, sorting, rework, or scrap. Solutions to these problems and the corresponding reductions in cost contribute to your company's continuous improvement efforts. If you can do this time and time again, that is continuous improvement. The goal of an ISO standard is to continuously improve your processes, which reduces the cost of doing business.

The only reason your company should implement a QMS is to reduce costs. Doing it for any other reason is a waste of time and effort.