Qualityinfo

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Using the Cost of Quality to Guide Manufacturing Improvements

Leveraging CoQ can improve your bottom line and strengthen your teams

Delivering high-quality products and experiences for your customers is usually the top priority for manufacturers. But how can you improve your operations to deliver better results while reducing costs along the way? Keep reading to explore how leveraging cost of quality (CoQ) at your manufacturing business can benefit you and your customers.

Knowing the cost of quality at your manufacturing organization is essential to understanding your overall bottom line. Product quality dictates how well your product sells, how loyal your customers will be to your organization, how many times your product is made with defects, and more. From start to finish, your manufacturing business is only as good as the quality of its products.

Let's look at it from the perspective of these questions:

- How much higher would your company's profitability be if you were able to reduce your rework by just 10 percent?
- How different would your manufacturing organization's profitability be if you were able to reduce price adjustments due to process problems in half?
- What would your revenue stream look like if you lost one or two big-ticket customers?

Defects are expensive in both obvious and subtle ways. On the surface, a product might incur additional production, inspection, and processing costs due to aesthetic or functional defects as well as time to replace the parts and process the return-material authorization (RMA) for the customer.

But upon deeper investigation, that same product might be costing the manufacturer in largely unseen ways, such as additional freight costs, administrative processing time, extra inspection, reworking and retesting the product, and more. These costs might seem subtle or infrequent enough to be ignored at first, but they can have significant cumulative effects on your company.

Four major cost-tracking categories

When determining which costs to track in relation to quality, consider the following four factors:

Prevention costs

These are the costs incurred to prevent defects and production failures. They might include the cost associated with quality planning, product specifications, design reviews, and employee training. What steps are your manufacturing company taking to prevent product defects?

Appraisal costs

This factor is the cost to evaluate if your product meets established quality standards, such as those from your customer or other regulatory agencies. These costs might include product inspection, product testing labs, auditing process controls, preventive maintenance, and supplier development.

Internal failure costs

Internal failure costs can be broken down into five components:

- Scrap: Defective product or material that can't be repaired or sold
- Waste: Additional paperwork, extra inventory due to poor organization
- Reworking, sorting, and retesting products to fix errors
- Machine breakdowns
- Corrective action costs associated with failure analysis and investigating causes of product or process failures

Basically, this category of cost addresses which internal processes are leading to defective products or lessened quality.

External failure costs

Unlike internal failure costs, external failures are those that result from poor quality making it into the field. These include service and repair costs, warranty claims, shipping damage that affects products, and incorrect sales orders.

How KPIs support the CoQ

Key performance indicators (KPIs) are essential metrics that help companies determine whether they are achieving their goals in key areas, such as expected process outputs, costs, resources consumed, quality, delivery timeliness, and safety. The measurement must always be expressed over time and compared against a plan or goal to maintain consistency and objectivity.

When addressing the CoQ within your manufacturing organization, KPIs that aren't hitting their goals are your best indicators of where to improve. Measure the success of your efforts to reduce defects, rework, and cycle time to see the effect that quality has on your organization. Be sure that your metrics are evaluated positively—for improvement rather than punishment. Your goal is to use KPIs to develop a culture that's intensely oriented toward cost reduction and process improvement, which benefits everyone involved.

CoQ strategy for success

The CoQ strategy for success is only as effective as the people who are striving to bring it to fruition. The foundational step to success here is to make improving an integral part of your business.

Follow this suggested flowchart when creating your own company's CoQ strategy:

- Flowchart your company's key processes
- Identify weak spots as financial opportunities
- Create small teams for each major opportunity
- Teams track cost data to highlight project impact from start to finish
- Teams meet weekly to work through these opportunities
- Teams perform root cause and corrective action analysis
- Projects may continue for weeks or even months
- Teams report on progress, which is celebrated no matter how small

- A problem-solving culture is facilitated at your manufacturing business
- Select the next set of projects and repeat

Leveraging the cost of quality at your manufacturing company to improve your operations and bottom line is a great way to strengthen your team and thrive.

Partnering for success

By assessing your organization's CoQ, you're demonstrating a commitment to your customers and your team that you're always striving for the best quality possible, from start to finish. CoQ processes can be affected by many factors.

Sponsored by: **D. L. Shah Trust For Applied Science, Technology, Arts & Philosophy** Mumbai. email: dlshahtrust@yahoo.co.in Ph: 022 2267 2041	Edited by Hari Taneja, Mumbai email: dlshahtrust@yahoo.co.in