



WHITE PAPER

5 ways a QMS reduces cost of poor quality





The cost of poor quality (COPQ) is an important consideration for any organization looking to cut costs, but that doesn't mean the cost of good quality should be sacrificed too. Being proactive in avoiding the detrimental costs of poor quality can reduce the overall cost of quality without sacrificing any element of the final product.

Without the guiding hand of a quality management system (QMS), the cost of poor quality can spiral as defects and issues are missed during the manufacturing process, hindering a business's growth potential. A QMS not only aids in swift problem resolution and seamless change management but also minimizes operational errors, often the silent culprits in escalating the cost of poor quality.

As organizations strive to strike a balance between cost-effectiveness and quality, the role of a QMS becomes indispensable.

01

Demystifying the cost of quality

Figuring out the cost of quality might seem like a daunting task. However, it's not as complicated as it might seem, and being more aware of both good quality and poor quality costs is essential to developing and improving an organization's processes.

The cost of quality (CoQ) is about what it costs to maintain good quality and prevent nonconformance issues plus the expenses incurred when quality fails. There's a simple formula for this:

$$\text{CoQ} = \text{Cost of Good Quality (CoGQ)} + \text{Cost of Poor Quality (CoPQ)}$$

Investment in good quality is vital in keeping costs low as this will help prevent the costs of poor quality from skyrocketing. A QMS helps organizations better understand their quality costs, such as those associated with maintaining good quality, including:

Prevention costs

This is anything designed to keep failures at a minimum and establish product specifications, development, employee training and using a quality management system.

Appraisal costs

These are costs that are incurred when quality levels are being maintained at an acceptable level. This includes materials inspections, supplier assessments and quality audits.

The costs of poor quality, on the other hand, include:

Internal failures

This is where errors and other problems occur before the product reaches the customer, and includes waste caused by inefficient processes.

External failures

These are where something goes wrong after a product has already reached the customer, e.g. warranty claims, shipping damage and product returns.

These costs will likely change day by day, but without the intervention of a QMS, they will almost certainly get out of hand and prevent a business from growing.

Supercharge your cost reduction with automated QMS

Implementing a QMS will drive down your overall CoQ in a multitude of ways, including:

Problem resolution

A key element of cost reduction is addressing issues before they can evolve into bigger problems. A QMS does this through:

- **Automated Corrective and Preventive Action (CAPA) processes** — This automates the process of reviewing the issue, identifying its root cause, taking action and following up. This not only makes everything quicker but also ensures problems are detected quickly and don't snowball into something major.
- **Intelligent issue prioritization using risk-based filtering** — Risk-based filtering allows businesses to prioritize the most important issues, meaning far fewer errors will slip through and delays are less likely to occur.
- **Total visibility across operations to pinpoint problems swiftly** — With full visibility across operations, it's easy to pinpoint the source of an issue and put a stop to it. This makes problem-solving a methodical process rather than constant frantic firefighting.

Seamless change management

Change is constant in any organization and a QMS helps manage that change and navigate it easily by:

- **Analyzing the costs and risks associated with different options** — A QMS can calculate potential costs and risk levels, allowing businesses to make the best decision for them. This makes transitions smoother and stops problems from popping up.
- **Simplifying change management with integrated tools** — Tools that create visibility and collaboration make the shift more straightforward and streamline the business's immediate future.
- **Linking processes like employee training and document control** — Having vital data hosted within a QMS ensures a source of truth and removes confusion. Document control, for example, guarantees information is kept safely in one accessible (for those granted access) location.

Minimizing operational errors

The combination of always having accurate and up-to-date data to hand, timely employee training, prioritization of issues, broad visibility and automated CAPA processes all contribute to fewer operational errors. Problems are either stopped at the source or dealt with quickly, meaning faulty products don't slip through and delays don't happen.



03

Human error: the silent cost

Humans play a major part when it comes to CoPQ. Even with the best, most sophisticated production system available in place, if people aren't adequately trained to use it, problems will still happen. With an integrated QMS, businesses can limit the possibility of human error in several ways.

- **Enhancing employee training programs and tracking proficiency** — With a QMS, employees will receive the appropriate training for their location, department and role. Their proficiency test results can also be easily accessed via the QMS.
- **Providing real-time data and automated alerts to prevent errors** — A QMS updates data automatically across all locations meaning it's always accurate. This helps prevent problems before they have the chance to happen.
- **Streamlining workflows to standardize processes and ensure consistency** — Automating workflows allows businesses to customize procedures to suit their needs. A QMS enables standardization of those workflows, making sure they're consistent.

04

Proactive risk management

Making risk management a priority requires a proactive approach. Reducing CoPQ requires effective risk management. Here are some ways in which a QMS helps businesses be proactive.

- **Risk tools within various processes, including audit management —**
Having thoughtfully-placed tools in place to monitor risk helps weed out problems before they can occur. Audit management is especially important as audits create enormous amounts of data, which can lead to a big list of action items. With the right tools in place, it's easy to see where the high-risk items lie, allowing quick prioritization and follow-up.
- **Clear identification of high-risk areas to prioritize follow-ups —**
A QMS allows quality managers to identify the highest-risk gaps to fill first. This means business hours are spent in the most effective way possible and potential issues are dramatically reduced.
- **Centralized reporting based on risk for informed decision making —**
Risk-based centralized reporting used in this way allows businesses to make more informed, strategic decisions, reducing CoQ along the way.

05

Supplier quality enhancement

Sometimes, it's a supplier at fault for poor quality. [bold] 50% of organizations believe their organization is doing a good job managing quality, despite an increase in product recalls and supplier-related issues. With an integrated QMS, it's easy to manage suppliers and use tools to benchmark performance while working to increase and manage communication. When excessive costs are driven by poor supplier quality, a QMS can help by offering:

- **Detailed supplier ratings to identify top-performing suppliers —**
This allows you to identify your top-performing suppliers, specifically targeting those that contribute the most to quality costs.
- **Secure portals for efficient communication and problem resolution —**
These portals allow approved users to view open corrective actions wherever they are, meaning problems can be resolved more quickly.
- **Reporting tools for data-driven supplier negotiations —**
Reporting tools create quick access to data. This is useful during supplier negotiations as it allows a business to produce evidence in a timely manner.



Your path to cost-effective quality

Improving quality and bringing down costs starts by looking within the organization. Implementing a quality management system provides quality managers and business leaders with the tools needed to accomplish this quickly and efficiently. With a QMS that touches each area of the business and its quality processes, it's easy to build a picture of areas for improvement and where further investment might be needed to improve good quality while reducing the cost of poor quality.

An organization's ultimate goal should be to find ways to reduce the cost of quality while improving the overall quality of the product. Usually, this comes down to looking for ways to prevent poor quality costs from skyrocketing in the form of failures, returns and damage to brand reputation.

One key way to do this is by using a QMS to identify potential issues as early in the manufacturing process as possible. This reduces the likelihood of defects further down the line where they are more difficult (and costly) to correct.

A big consideration for businesses looking to cut costs is not to cut corners when it comes to quality. Implementing a QMS can increase workflow efficiency to bring about fast change management while ensuring business leaders have all the correct information at their fingertips to support decision-making.

¹ 2024 Octave Pulse of Quality in Manufacturing Survey

About Octave

Octave is a leader in enterprise software, turning data into decisive action and intelligence into your edge. Our software solves for and simplifies complexity, from the design and build to operations and protection of people, property, and assets— for any scope, at any scale. For decades, we've partnered with customers to sharpen performance, elevate efficiency, and amplify results. From factory floors to entire cities, our solutions are tuned to scale up what's possible from day one onward.

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