



Study of Importance of Quality Control in Supply Chain Management and Importance of Quality for a Business : A Review

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Abstract : Supply chain management directly impacts product quality and the overall profitability of a company. For these reasons, quality control in the supply chain is critical for maintaining a competitive edge in the marketplace and reducing operating costs. Without quality control, waste becomes prevalent beyond a tolerable amount.

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SCM (Supply Chain Management) is driven and motivated to achieve “least cost possible” when identifying and qualifying new suppliers. In the past two decade the focus of SCM is to contract with suppliers from low cost countries. The SCM department is often recognized for exceeding their annual goals for cost savings. Unfortunately in the life cycle of the final product the initial cost savings by SCM ends up in extra costs when the final product is manufactured and delivered.

Quality must and needs to be an integral part of SCM supplier evaluation and qualification to achieve life cycle cost avoidance. It is best practice to establish a Management Operating System (MOS) that has typical Key Performance Indicators (KPI's) as follows:

- On-time delivery
- Scrap rate, re-work, and spills or escapes at supplier (ppm or per batch product) at supplier
- Quality of product received by customer
- Cycle time for resolution of customer complaints
- Supplier quality assessment major and minor findings



Key Words : SQM, SCM, MOS, KPI, Business, Six Sigma

Introduction : The cost increase results from rework in manufacturing and poor Quality of products delivered because the SCM negotiations focused on price and not quality. This problem is widespread for both products and services, e.g. parts, software providers, transportation, etc. Historical data and experts claim that quality impacts 30-70 percent of the final cost of the product. Factors that impact increased in cost of products are:

- Rejected parts which will need to be replaced, returned, scrapped or fixed;
- Part or software failure during quality testing, and/or and the next level of integration or assembly;
- Delays in re-work and replacement impacting production schedule;
- Customer dissatisfaction after product delivery and warranty Costs

The Six Sigma rule of thumb is “least waste possible”, which counters the SCM goal of “least cost possible” which leads to increased costs at every step of the final product. The “rule of 10” is that the cost to replace or fix an assembly increases by 10X at each step of progression due to the poor quality of the low cost product. For example; a casting costing \$100 is tested on site and at the first step the casting fails. The replacement for shipping costs, delays, etc. will cost 10X or about \$1000. If the casting passed the first step, and was installed in the assembly as the next step, the cost would increase by 10X to \$10,000 because the assembly could not be completed due the casting being out of tolerance specified by the engineering drawings.

Importance of Quality for a Business

Managing quality is crucial for small businesses. Quality products help to maintain customer satisfaction and loyalty and reduce the risk and cost of replacing faulty goods. Companies can build a reputation for quality by gaining accreditation with a recognized quality standard, such as ISO 9001, published by the International Organization for Standardization.



Quality control is essential to building a successful business that delivers products that meet or exceed customers' expectations. It also forms the basis of an efficient business that minimizes waste and operates at high levels of productivity. A quality control system based on a recognized standard, such as ISO 9001 published by the International Organization for Standardization, provides a strong foundation for achieving a wide range of marketing and operational benefits.

Meeting Customer Expectations

Your customers expect you to deliver quality products. If you do not, they will quickly look for alternatives. Quality is critical to satisfying your customers and retaining their loyalty so they continue to buy from you in the future. Quality products make an important contribution to long-term revenue and profitability. They also enable you to charge and maintain higher prices.

Managing A Reputation

Quality influences your company's reputation. The growing importance of social media means that customers and prospects can easily share both favorable opinions and criticism of your product quality on forums, product review sites and social networking sites, such as Facebook and Twitter. A strong reputation for quality can be an important differentiator in markets that are very competitive. Poor quality or a product failure that results in a product recall campaign can create negative publicity and damage your reputation.

Meeting Industry Standards

Accreditation to a recognized quality standard may be essential for dealing with certain customers or complying with legislation. Public sector companies, for example, may insist that their suppliers achieve accreditation with quality standards. If you sell products in regulated markets, such as health care, food or electrical goods, you must be able to comply with health and safety standards designed to protect consumers. Accredited quality control systems play a crucial role in complying with those standards. Accreditation can also help you win new customers or enter new markets by giving prospects independent confirmation of your company's ability to supply quality products.



Managing Costs

Poor quality increases costs. If you do not have an effective quality control system in place, you may incur the cost of analyzing nonconforming goods or services to determine the root causes and retesting products after reworking them. In some cases, you may have to scrap defective products and incur additional production costs to replace them. If defective products reach customers, you will have to pay for returns and replacements and, in serious cases, you could incur legal costs for failure to comply with customer or industry standards.

Competitiveness

The ability to offer customers quality products provides a strong competitive advantage. Quality helps you to win business from competitors who are not able to match your standards and gives you the opportunity to charge premium prices for a superior product. It can also open new business opportunities in market sectors where quality is critical.

Customer Loyalty

Providing the market with quality products helps to increase customer satisfaction and loyalty. Satisfied customers have confidence that your products will continue to provide reliable performance in the future, and that increases the likelihood that they will buy from you again. Satisfied customers may also recommend your products to other companies, either directly or by providing testimonials that you can use in your marketing communications.

Reputation

Quality makes an important contribution to your company's reputation, particularly with the growth of social media. Customers share their views on products and services on product review sites and social media, such as Facebook. Positive reviews and comments can reinforce your own marketing efforts, but quality problems can have a damaging effect on your reputation if the word spreads. A major quality issue, such as a product recall, may also attract media attention, causing further damage.



Compliance

Compliance with recognized quality standards may be essential for doing business with certain groups of customers. If you are part of a supply chain, for example, the lead manufacturer may impose consistent quality standards on all members of the chain. Some customers aim to reduce or eliminate the cost of inspecting incoming components or materials by insisting that their suppliers implement the same quality system. If you operate in a regulated sector, such as chemicals or food, you may have to comply with industry quality standards.

Conclusion :

Quality impacts nearly every step in the process for final product assembly or services provided. Pre-emptive measures and verification at each step avoids costs to re-work and fix issues, hence cost avoidance. Resolving customer issues and seriously acting on customer feedback should be woven in the fabric of the organization. Quality is common sense and the fingerprint of suppliers' quality culture can be determined by target measured and reported KPI's.

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