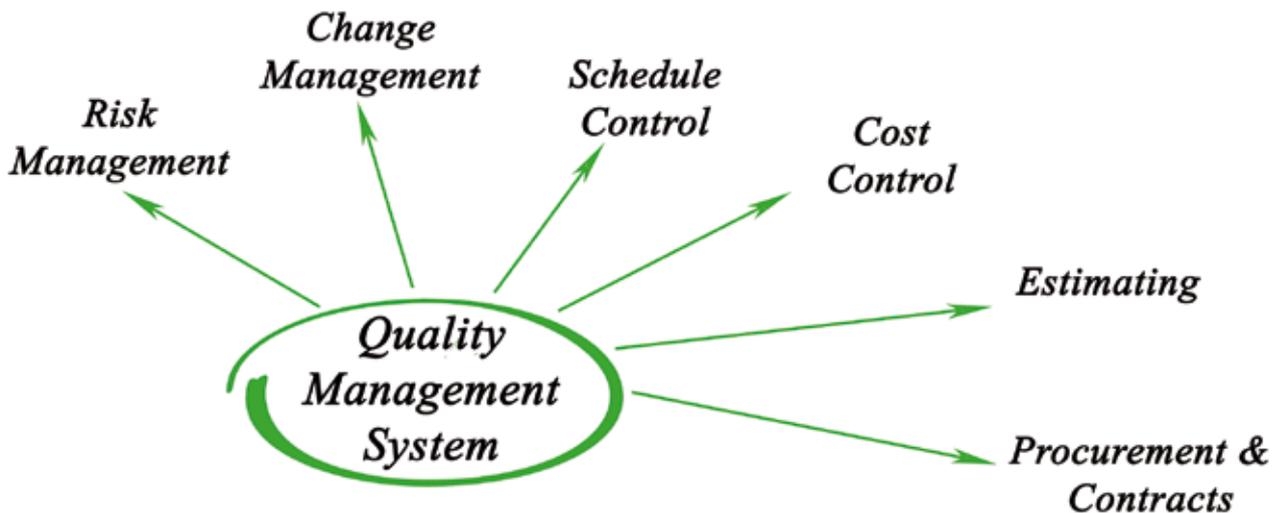


Understanding the Cost of Quality

*Quality is much talked about, but ironically is also one of the least understood subjects in the apparel industry. Most manufacturers do not know the real cost they pay for ignoring quality, which could be as high as 25 per cent of the total manufacturing cost. Greater understanding of cost of quality can reduce these expenses and improve profitability of operations, says **RAJESH BHEDA***





There is little doubt that downward pressure on unit value realisation (UVR) of apparel products in the international market is here to stay. As pressure on UVR continues to increase, the biggest challenge for apparel manufacturers is to retain profitability of operations. Another major area that can give considerable internal savings and a real-time boost to profitability is quality.

Much has been written about quality. However, it is one of the least understood subjects in the apparel industry. Most apparel manufacturers do not know the real cost they pay for ignoring quality. As shown in the illustration from *Managing Productivity in the Apparel Industry*, the money going down the drain could be as high as 20 per cent to 25 per cent of total manufacturing cost. This cost incurred due to poor quality is aptly called Cost of Quality (CoQ). Greater understanding of cost of quality can reduce these expenses and improve profitability of operations.

Importance of Cost of Quality

A *Business Week* Special Report on the change in the attitude of American industry to quality quoted by Pradip Mehta in his book, *An Introduction to Quality Control in Apparel Industry* says, "What finally sank into US industry is the tremendous cost of ignoring quality. In most traditional factories that cost is probably the biggest item on their list of expenses, and it is always bigger than gross profit. But because CoQ is rarely broken out in gory detail, management has no idea of its true dimensions." He points out that quality audits uncover hidden plants that find and fix defective products. "The typical factory invests a staggering 20 per cent to 25 per cent of its operating budget in finding and fixing mistakes." That translates into a quarter of the workforce only reworking mistakes. "Add in the expense of repairing or replacing the flawed products that slip out of the factory and into the market, and the total burden of "un-quality" can mount to punishing 30 per cent or more of production costs."

Classification of Cost of Quality

Cost of Quality is classified in four categories:

- ▶ Prevention Costs: Associated with personnel engaged in designing, implementing and maintaining quality system. This also includes auditing.
- ▶ Appraisal Costs: Associated with measuring, evaluating or auditing products, components and purchased material to assure conformance with quality standards and performance requirements.
- ▶ Internal Failure Costs: Associated with defective products, components and materials that fail to meet quality requirements and result in manufacturing losses.
- ▶ External Failure Costs: When defective products are shipped to customers.

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THE OBJECTIVE OF ANY ORGANISATION SHOULD BE TO ELIMINATE THE COST OF FAILURE BY INVESTING IN COST OF PREVENTION AND RATIONALISED APPRAISAL COST. THOUGH QUALITY AND MANAGEMENT GURUS HAVE WRITTEN ABOUT COST OF QUALITY FOR DECADES, THERE HAS BEEN VERY LITTLE RESEARCH ON THIS SUBJECT IN THE INTERNATIONAL APPAREL INDUSTRY. THIS IS MAINLY BECAUSE DATA NEEDED FOR COST OF QUALITY STUDY IS GENERALLY NOT MAINTAINED IN THE APPAREL INDUSTRY OR IF THE DATA IS AVAILABLE, IT IS CONSIDERED TOO CONFIDENTIAL TO SHARE.

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In many cases, Prevention Costs and Appraisal Costs are clubbed together as Cost of Conformance. Internal failure and external failure costs are together called Cost of Non-Conformance or Price of Non-Conformance. The objective of any organisation should be to eliminate the Cost of Failure by investing in Cost of Prevention and rationalised Appraisal Cost.

Though quality and management gurus have written about Cost of Quality for decades, there has been very little research on this subject in the international apparel



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MANAGEMENT OF COST OF QUALITY THROUGH STRENGTHENING QUALITY SYSTEMS AND INSTITUTIONALISING PROBLEM-SOLVING TECHNIQUES PROVIDES SUBSTANTIAL FINANCIAL SAVINGS WHILE IMPROVING ORGANISATION WIDE QUALITY PERFORMANCE.
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industry. This is mainly because data needed for Cost of Quality study is generally not maintained in the apparel industry or if the data is available, it is considered too confidential to share.

My study, *Cost of Quality in Indian Apparel Industry*, involved 61 Indian apparel manufacturers, contributing to over 5 per cent of total export. The results, provided in Table below, were an eye-opener for most participants.

Cost of Quality Components	Average Cost of Quality in the participating apparel factories (as % of sales)
Total Cost of Quality	14.05%
Prevention Cost	0.26%
Appraisal Cost	3.31%
Internal Failure Cost	9.36%
External Failure Cost	0.66%

Source: Dr. Rajesh Bheda, *Cost of Quality in the Indian Apparel Industry*, study carried out at National Institute of Fashion Technology, supported by Ministry of MSME, Govt. of India, 2005

The key results are:
 Participating apparel factories lost on average 14.05 per cent of annual sales on account of Cost of Quality. It can safely be said that this is higher than the profitability rate of the industry.



Because Cost of Quality (CoQ) is rarely broken out in gory detail, management has no idea of its true dimensions.



Management of CoQ through strengthening quality systems and institutionalising problem-solving techniques provides substantial financial savings while improving organisation wide quality performance.

- ▶ Only 0.26 per cent of sales was spent on Prevention Costs and 3.31 per cent was spent on appraisal. This meant almost 10 per cent of sales was cost of internal and external failure.
- ▶ Cost of Quality varied from 3 per cent to 33 per cent of sales among participant factories. This means, many factories lost huge amounts while there were factories that managed Cost of Quality better and lost very little money. This gave them the competitive edge.
- ▶ The results also demonstrate that if CoQ of the average apparel manufacturer covered by the study goes down from average level to about 6 per cent of sales, the firm could improve its profitability by almost 50 per cent.
- ▶ This also meant an additional profit of \$1.6 million for a firm that had sales turnover of \$20 million in 2005.

My own consulting experience has demonstrated that management of cost of quality through strengthening quality systems and institutionalising problem-solving techniques provides substantial financial savings while improving organisation wide quality performance.

In the past five years, RBC has supported over 150 apparel manufacturers in Asia, mainly in India, Bangladesh and Central Asia, for strengthening quality systems. Average results from India and Bangladesh involving over 100 factories show that the factories achieved about 25 per cent reduction in rejection level

and improved their Cut to Ship Ratio by over 1 per cent. Average reduction in defect rates on sewing floors has been 20-40 per cent.

Some key initiatives that have helped strengthening of the quality system and reducing cost of quality are:

- ▶ Zero Defect Operator
- ▶ Improved defect recording and daily management
- ▶ Quality Management Information System
- ▶ Problem solving skills through 5 Why Analysis
- ▶ Internal customer orientation

Improvements achieved by factories are not the end of the journey but just the start. Should factories continue their march towards manufacturing excellence, the journey will yield rewards like improved customer satisfaction, higher employee morale and financial returns. [H](#);

About the author

Dr. Rajesh Bheda is Managing Director of Rajesh Bheda Consulting Pvt. Ltd. (RBC), a management consulting firm specialising in competitiveness enhancement in the fashion industry. He has authored *Managing Productivity in the Apparel Industry* and led projects aimed at competitiveness enhancement of clothing sector in India, Bangladesh, Kyrgyzstan, Tajikistan, Myanmar and Sri Lanka. He is a consultant to International Trade Centre, EBRD, ADB and Asian Productivity Organisation.