

## **Impacts of Cost of Poor Quality in Indian Automobile Sector**

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### **Abstract:**

This paper presents the cumulative impact of poor quality on the cost of product duly taking the case of Indian automobile sector. There are number of factors which are effective in improving the quality of product of automobile industries such as leadership, customer focus, supply chain management, product and process management etc.

The cost of quality places a fundamental role to make the product cost efficient and competitive. In absence of desired quality of the product the total cost incurred in manufacture convert to scrap cost accounted as loss to the company. Keeping in view of that various factors causing poor quality are highlighted in order to take preventive steps as well as control.

### **INTRODUCTION:**

[1]Juran suggested that the most important facet of the cost of poor quality is its value to any company. Regardless of how people report it, the cost of poor quality must be understood in terms of its significance to the business world. By breaking the concept down into its origins, development and impact, corporate executives cannot only avoid the burdensome nuances of its technical details, but they can also clearly understand why it's important and how it can help them earn greater profits. The literature regarding the cost of poor quality shows opinions ranging from 10% to 40% of annual sales of the company

The International organization of standard (ISO) defines quality is the totality of characteristics of entity that wear on its ability to satisfy entity and employee needs.

The cost of poor quality is accounted as the annual monetary loss of an industry on its balance sheet. Apparently the cost of poor quality is not concerned with quality only but cost of waste associated because of poor performance and process along with serious impact on companies market reputation and good will.

Since last three decades, Indian automobile sectors have emerged to a large extent by way of manufacture and marketing. Particularly passenger vehicles have a change the complete market scenario and consumer needs. A good number of new manufacturers pushed varieties of model & capacities by adopting import technology and infrastructures to share the market maximum. Obviously the cost competition and customer satisfaction are the paramount challenge to the manufacturer and thus the cost of poor quality is now become most significant factor to brought down the same to its minimum and associated with culture of zero defects.

**FOUR TYPES OF QUALITY COST ARE GIVEN BELOW:**

**Prevention Costs**

- Systems development
- Quality engineering
- Quality training
- Quality circles
- statistical process control
- Supervision of prevention activities
- Quality data gathering, analysis, and reporting
- Quality improvement projects
- Technical support provided to suppliers
- Audits of the effectiveness of the quality system

**Internal Failure Costs**

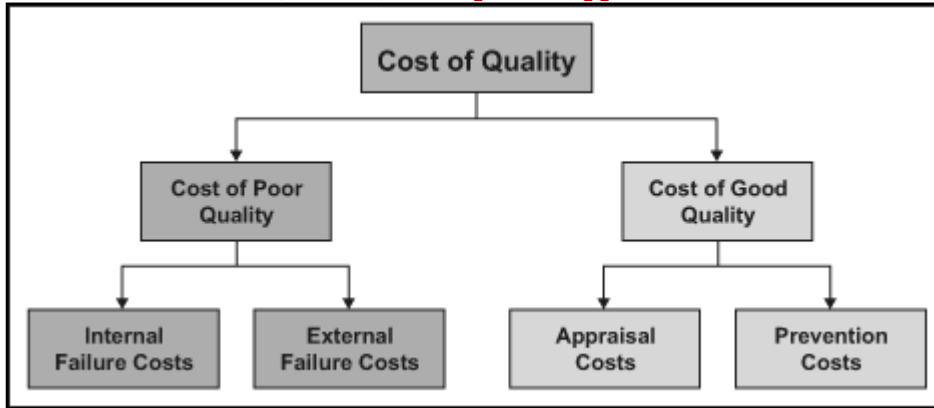
- Net cost of scrap
- Net cost of spoilage
- Rework labor and overhead
- Re-inspection of reworked products
- Retesting of reworked products
- Downtime caused by quality problems
- Disposal of defective products
- Analysis of the cause of defects in production
- Re-entering data because of keying errors
- Debugging software errors

**Appraisal Costs**

- Test and inspection of incoming materials
- Test and inspection of in-process goods
- Final product testing and inspection
- Supplies used in testing and inspection
- Supervision of testing and inspection activities
- Depreciation of test equipment
- Maintenance of test equipment
- Plant utilities in the inspection area
- Field testing and appraisal at customer site

**External Failure Costs**

- Cost of field servicing and handling complaints
- Warranty repairs and replacements
- Repairs and replacements beyond the warranty period
- Product recalls
- Liability arising from defective products
- Returns and allowances arising from quality problems
- Lost sales arising from a reputation for poor quality.



**Approach:**

The presentation is exclusively related with four wheeler auto industry with latest technology, R & d facilities, and corporate planning work culture. IN India the auto manufacturers are having kee manufacturing facilities for assembly of major assemblies like gear box , transfer case , axle , frame chassis and cabin use for end product that is final assembly of vehicle. Small components ( semi finished & finished) , Electrical & Electronic Items and other miscellaneous item are purchased from ancillaries and vendors. Therefore maximum stress on quality is essentially to put on supplier.

The cost of poor quality is mostly loss of product and process and it improve internal and external categories as under.

**A.INTERNAL FACTORS:**

1. Cost of failure to meet customer’s requirements.  
 Scrap generation – accounted with labor, material, and apportioned overhead as loss.
2. Rework: accounted with labor, material, and apportioned overhead as loss.
3. Cost of Re inspection & Retest: Man hours lost
4. Change in design: Man hours lost
5. Cost of inefficient process:
6. Inventory shrinkage - loss due to rejection and reworking
7. Unplanned down time of machine and equipments – Machine hours loss.
8. Additional Man Hours Cost – Man hours lost compensated by extra man hours (Over time)

**B.EXTERNAL FAILURE FACTORS:**

1.	Warranty Charges	Repair / Replace
2.	Return of Products	Not acceptable
3.	Rework on support operation	Cost incurred on correction and adjustment.
4.	Impact on Market Potential	Revenue Loss
5.	Loss of Opportunities of new customer	Revenue loss



**Cost of Quality Failure In Automobile sector**

Sr.No.	Head	In Percentage Revenue
*01.	Defective Stock Inventory	0.45
**02.	Rejection Of In House Manufacture	8.50
03.	Rework Of Major Assembly Like Gear Box , Transfer Case , Axle , Frame Chasis And Cabine	4.35
04.	Rework On Final Assembly	2.05
05.	Services After Sales	0.60
06.	Customer Dissatisfaction	Non Accountable

**TOTAL: 15.95 PERCENTAGE, SAY 16 PERCENTAGES**

\*COST OF CKD (COMPLETELY KNOCKED DOWN) STORE -INCLUDED

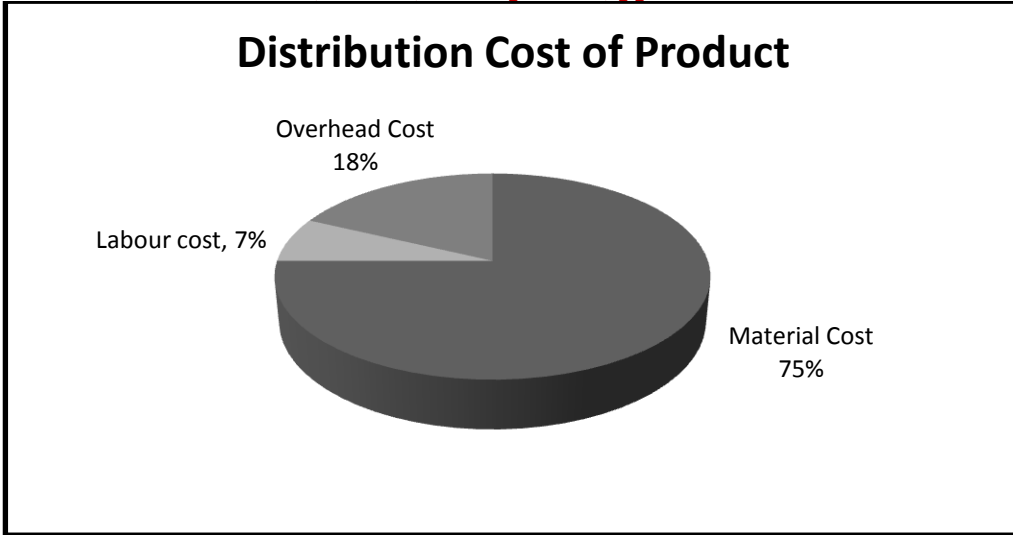
\*\*COST OF REINSPECTION AND RETEST INCLUDED

This interpret that the cost of poor quality is added with the cost of production and accounted as hidden cost of good products.

**FINDINGS :**

The approach to reduce the cost of poor quality. In general the cost analysis of auto products in percentage form is as under:

01.	Material Cost	75
02.	Labor cost	7
03.	Overhead Cost	18

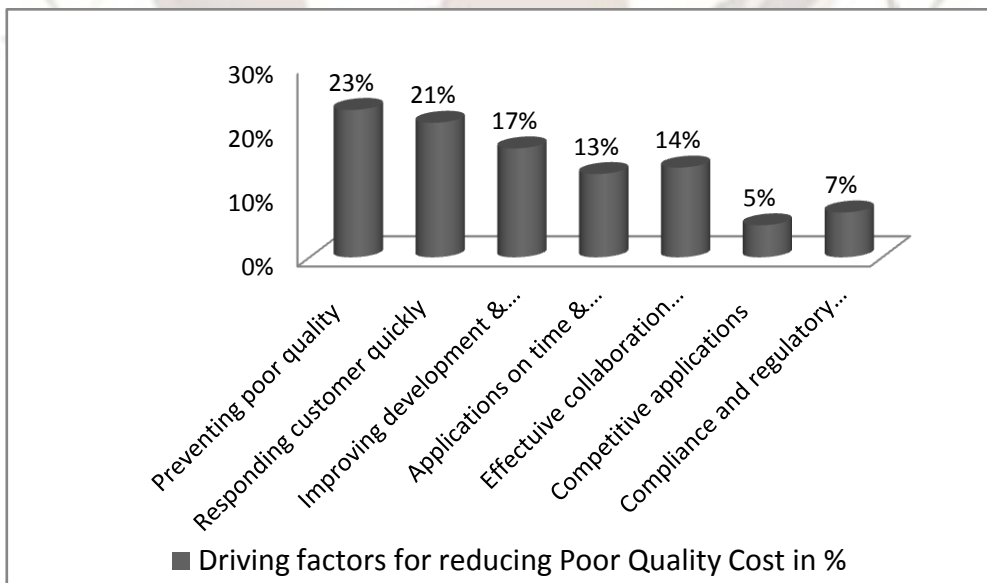


From the above it is obvious to exercise maximum on quality control towards material and its process to minimize the rejection. Apart from that practice on the following points are also essentially required:

1. To identify the quantity the size of quality problems in terms of money.
2. To explore cost reduction by way of minimum rejection
3. To utilize opportunities to reduce customers dissatisfaction.
4. To Implement rigorous stage inspection to the process.

**Driving factors for reducing Poor Quality Cost:**

By preventing poor quality	23%
Responding customer quickly	21%
Improving development & testing productivity	17%
Applications on time & budget	13%
Effective collaboration between development and QA	14%
Competitive applications	5%
Compliance and regulatory issues	7%





**Poor Quality Impacts a Company's Overall Revenue and Profitability as shown below**



**Conclusion:**

- The aim of this paper is to carryout study on the cost of poor quality in Indian auto industries to overcome various related problems , can be resolved by application of TQM approach which is played an important role to minimize the cost of poor quality.

**Ref. :**

[1] Mark De Feo , August, 2005 , **The Juran Institute Research on Cost of Poor Quality**  
<http://www.juran.com>