

## Shell Brasil: Hidden Costs of Poor Quality

### Description

Shell Brasil was distressed to discover that some of their oil product shipments to customers were delayed. The Shell executives realized that delays were an obvious, expensive problem. Since there never was a *shortage* of the 15 different types of lubricating oil in stock, the delays were not easily explained.

In order to ship these 15 different oil products, Shell Brasil stocked 15 different shipping boxes with 15 different box labels (a different box type and label for each of the products). As a quality improvement team searched for the root cause of the shipping delays problem, it learned that when a particular box type was not available, shipment had to be delayed until that box was back in inventory. The team also discovered some costs which had been hidden from sight for years. Some of the hidden costs of poor quality included:

- inventory costs to store and handle 15 different boxes with 15 different labels
- cost of the delays in product shipment when the right box was not in stock
- cost of scrap due to deteriorating boxes caused by intense Brazilian humidity
- label printing costs
- costs of lost revenue when frustrated customers did not return

The team developed a clever remedy that saved Shell Brasil over \$100,000 per year. The team created one “generic” box that could be used with all 15 oil products. Cut-outs on the side of each box allowed the contents to be easily identified, eliminating the need for different boxes and different labels. With only one box type to stock, there were no shipping delays, no costly inventory management, no scrap due to humidity, and no label printing costs.

### Learning Points

In any organization, there are costs that are the direct result of poor quality. Costs of poor quality are the costs that would disappear if every task was always performed without deficiency.

Often, these costs of poor quality are not obvious, and discovery of one cost of poor quality is often only the tip of the iceberg. These hidden costs of poor quality become part of the normal way of doing business. We accept these costs because we are either unaware of them or we do not know how to eliminate them. When we identify the true root cause(s) of a problem, we are often surprised by the enormity of the related, hidden costs of poor quality. Finding and eliminating these hidden costs of poor quality can make a significant difference to an organization’s success.

### Discussion Questions

**Question:** What are the major categories of costs of poor quality?

**Answer:** There are four major categories of costs of poor quality.

- Appraisal/inspection costs include those costs associated with discovering deficiencies before customers are affected by them. Appraisal/inspection costs make it possible to avoid the more serious cost of failures later in the process. It is far better to detect a defect in a component through inspection of incoming materials than to face a delay or failure later on.
- Internal failure costs are the costs to repair, replace, or discard defective work that the customer does not see directly, although customer service may well be indirectly affected adversely.

- External failure costs are the failures that customers see. They are the most expensive to correct, and they are costly in other ways as well. They result in costs to attempt to regain the customer's confidence, and they are likely to result in a loss of customers—a cost that usually cannot be fully calculated.
- Non-value-added work is carried out in every organization. These are the multitude of activities that bring little or no benefit to us or our customers, e.g., elaborate filing systems that are never utilized, memos which are never read, procedures that have been in place for years for reasons long since forgotten, weekly meetings for which there are no concrete objectives or outcomes.

**Question:** What category(ies) of costs of poor quality did Shell Brasil experience in this **Quality Minute**?

**Answer:** When the product shipment is delayed due to the lack of packaging, e.g., cost of the delays in product shipment when the right box is not in stock, and costs of scrap due to deteriorating boxes caused by intense Brazilian humidity, these are internal failure costs.

**Question:** What are some examples of appraisal/inspection costs that you have experienced in your own organization?

**Answer:** Responses will vary but may include examples similar to the following:

- testing appliances before shipping
- reviewing insurance policy before mailing
- inspecting purchased equipment/supplies
- proofreading reports or correspondence
- auditing customer bills prior to sending bill
- testing a locomotive to be certain repairs are made

**Question:** What are some examples of internal failure costs that you have experienced in your own organization?

**Answer:** Responses will vary but may include examples similar to the following:

- repainting scratched surface of products
- making up for unplanned computer downtime
- replacing products damaged during packing and shipping
- rewriting part of a proposal
- working overtime to make up for schedule slippage
- correcting errors in various databases
- stocking extra parts or components to replace defective ones
- scrapping products that do not meet specifications

**Question:** What are some examples of external failure costs that you have experienced in your own organization?

**Answer:** Responses will vary but may include examples similar to the following:

- satisfying warranty claims
- investigating complaints
- offsetting customer dissatisfaction with a recovery strategy, e.g., free hotel room
- collecting bad debt
- correcting billing errors
- processing customer complaints
- expediting late shipments
- replacing or repairing shipper's goods damaged or lost by carrier
- arranging hotel rooms for stranded passengers from a cancelled flight
- paying interest or losing discounts for late payments
- providing on-site assistance to customers to overcome field problems

**Question:** What are some typical activities associated with poor quality?

**Answer:** Some key words that often suggest activities associated with poor quality include:

- |              |            |           |
|--------------|------------|-----------|
| ■ rework     | ■ waste    | ■ check   |
| ■ review     | ■ correct  | ■ wait    |
| ■ adjustment | ■ refund   | ■ penalty |
| ■ complaint  | ■ warranty | ■ replace |
| ■ expedite   | ■ dispose  | ■ fix     |
| ■ return     | ■ scrap    | ■ repair  |