

Operations management (quality control in operations)



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Quality of a product or service is defined as a means to consistently meet or exceed expectations. It is Conformance to requirements or fitness for use.

Quality can be explained in the following 5Qs ;(1) Quality is a condition of excellence. (2) Quality is based on a product attributes. (3) Quality is fitness for use. (4)Quality is conformance to requirements. (5) Quality is the degree of excellence at an acceptable price.

Quality Assurance describes the steps that are taken to enforce the quality in products or services. All the actions that are taken to ensure that standards and procedures are strictly observed and delivered products or services meet customer's requirements. (2) The planned systematic activities necessary to ensure that a component, module, or system conforms to established technical requirements. (3) The policy and procedures, established in an organization which is meant for the purpose of providing and maintaining a specified degree of confidence in data integrity and accuracy throughout the life cycle of the data.

The different characteristics of quality are:

Performance - main characteristics of the product/service

Aesthetics - appearance, feel, smell, taste

Special Features - extra characteristics

Conformance - how well product/service conforms to customer's expectations

Reliability - consistency of performance

Durability - useful life of the product/service

Perceived Quality - indirect evaluation of quality (e. g. reputation)

Serviceability - service after sale

Effect of quality on Productivity

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If the process is not established and the standard procedures are not adhered to, then it will result in poor quality. As a consequence the deadlines will not be met within the required time frame and subsequently deliverables to the customer will be delayed. Thus productivity is affected.

Effect of quality on cost control

The cost of a product includes the manufacturing cost and cost of quality.

The cost of quality is the money spent what it would cost to build a product right the first time. If every worker could produce the defect-free products the first time, COQ would be zero. Since this situation would not occur, there are associated with getting defect free product is produced.

The cost of quality is of three kinds; Prevention, Appraisal and Failure.

Prevention: Money required to prevent errors and to do the right first time is considered prevention costs. This category includes money spent on establishing methods and procedures, training procedures, training workers and planning for quality. Prevention money is spent before the actual product is actually built.

Appraisal: Appraisal costs cover money spent to review completed products against requirements. Appraisal includes the costs of inspections, testing and reviews. This money is spent while the product and sub components are being built but before shipped to the user.

Failure: Failure costs are associated with defective products. Some failure costs involve repairing products to make them meet requirements. Others are costs generated by the failures.

Internal Failure Costs: Costs incurred to fix problems that are detected before the product/service is delivered to the customer.

External Failure Costs: All costs incurred to fix problems that are detected
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after the product/service is delivered to the customer.

Studies show that COQ in IT is approximately 50% of the total cost of building a product. Of the 50% COQ, 40% is failure, 7% is appraisal and 3% prevention. Other studies have shown that 1\$ spent on appraisal costs will reduce failure costs three fold; and each dollar spent on prevention costs will reduce failure costs tenfold.

Effect of quality on Customer service

It is extremely important that a customer is treated with courtesy right from the beginning of the product development. Serviceability is one of the important functions of quality. Customer service unit should be started for handling of complaints and/or requests for information. The following features determine Service quality:

Tangibles

Examples: Were the facilities clean, personnel neat

Convenience

Examples: Was the service center conveniently located

Reliability

Examples: Was the problem fixed

Responsiveness

Examples: Were customer service personnel willing and able to answer questions

Time

Examples: How long did the customer wait

Assurance

Examples: Did the customer service personnel seem knowledgeable about the repair

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Courtesy

Examples: Were customer service personnel and the cashier friendly and courteous

Effect of quality on response time

Most important priority for any industry or organization is to get the product to market. The attitude would be " If we don't get our product to market quickly, we won't make sales and profit". Putnam & Myers asserted in " Measures for Excellence", that " When productivity improves, errors seem to decline, or, as others put it, when more emphasis is put on quality, productivity increases."

Reliability i. e consistency of performance is required for the delivery of product in time. Excellent planning including product specs, project plans and test plans before starting development. Quality of design is also required.

Effect of quality on Corporate Image

The top management should be aware of the advantages of quality and believe in quality to get the corporate image. They should be able to drive their employees . The management should possess these qualities

Leadership

Customer focus

Corporate social responsibility

People development and involvement

Results orientation