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QFD Explained

Use this process to ensure quality throughout the product development process

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Quality function deployment (QFD), often referred to as listening to the voice of the customer, is a structured method for translating customer requirements into appropriate technical requirements for each stage of product development and production.¹ It is a way to develop a design aimed at satisfying the consumer and translate the consumer's demands into design targets and major quality assurance points to be used throughout the production stage.² Traditional quality systems focus on reducing negative quality. (Are there any defects? Is our service poor?)³ QFD is different because it looks for customer requirements and maximizes positive quality that creates value. (Is the product fun and easy to use?)

QFD can be used in product development, business, site and test planning, and problem solving. It is used in the aerospace, manufacturing, software and IT, defense, government, healthcare and service industries.

Background

Shigeru Mizuno and Yoji Akao created QFD in Japan in the 1960s. It was first presented to an American audience in 1983 when *Quality Progress* published the article "Quality Function Deployment and CWQC in Japan" by Masao Kogure and Akao.⁴ Shortly thereafter, the Kaizen Institute (then Cambridge Research) invited Akao to Chicago to lecture on QFD.

The Matrix

A typical QFD matrix has two parts (see [Figure 1](#)):

1. The horizontal part contains customer information. It lists the customer's needs and wants and determines their relative importance. It also lists customer feedback and complaints.
2. The vertical part contains technical information that responds to customer input. It translates customer needs and wants into language that can be measured, examines the relationship between customer and technical requirements, and contains competitive technical data, the targets or goals set by a company to achieve competitiveness.



The target value--the level of performance that needs to be achieved to meet the perceived outcome of an organization's OFD project--is determined by comparing the customers' evaluations to the competitive technical assessments. The co-relationships of the technical requirements are then examined. The objective is to locate any requirements that conflict with each other.

Other sections can be added to the matrix depending on a company's needs and the services it provides.

Benefits

There are several benefits to using QFD. Besides requiring fewer resources than other quality tools, it can:

- Improve a company's processes, products or services.
- Produce a faster outcome than other methods can.
- Give definition to the design process.
- Help a team stay focused.
- Allow for easy management and peer review of design activities.
- Help present the information graphically.
- Leave the team well positioned in case it needs to improve upon its results for future processes, products or services.⁵

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