WHAT IS QUALITY FUNCTION DEPLOYMENT (QFD)?

Every organization has customers. Some have only internal customers, some have only external customers, and some have both. When you are working to determine what you need to accomplish to satisfy or even delight your customers, an essential tool is quality function deployment or QFD.

BACKGROUND

Quality professionals refer to QFD by many names, including **matrix product planning, decision matrices, and customer-driven engineering.** Whatever you call it, QFD is a focused methodology for carefully listening to the voice of the customer and then effectively responding to those needs and expectations.

First developed in Japan in the late 1960s as a form of cause-and-effect analysis, QFD was brought to the United States in the early 1980s. It gained its early popularity as a result of numerous successes in the automotive industry.
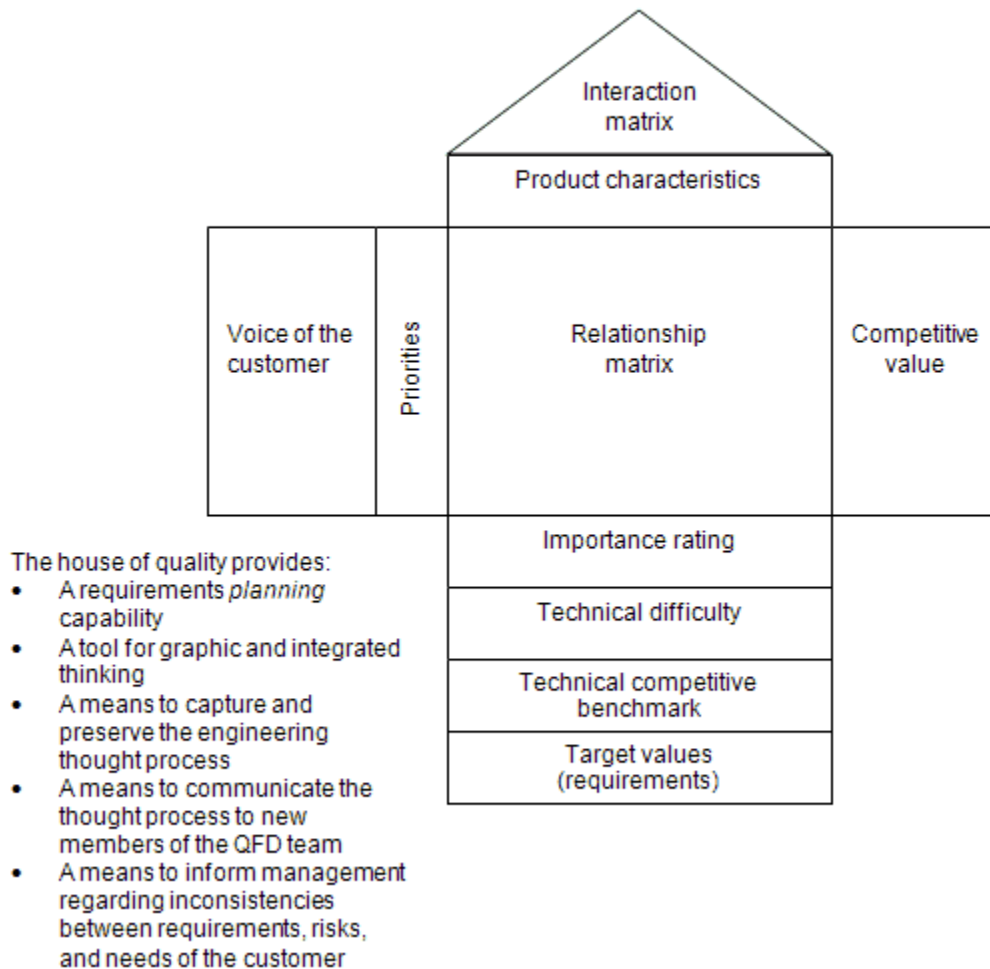
METHODOLOGY

In QFD, quality is a measure of customer satisfaction with a product or a service. QFD is a structured method that uses the seven management and planning tools to identify and prioritize customers' expectations quickly and effectively.

Beginning with the initial matrix, commonly termed the **house of quality**, depicted in Figure 1, the QFD methodology focuses on the most important product or service attributes or qualities. These are composed of customer *wows, wants,* and *musts.* (See the Kano model of customer perception versus customer reality.)

Once you have prioritized the attributes and qualities, QFD deploys them to the appropriate organizational function for action, as shown in Figure 2. Thus, QFD is the deployment of customer-driven qualities to the responsible functions of an organization.

Figure 1 — House of quality template and benefits

The house of quality provides:
- A requirements *planning* capability
- A tool for graphic and integrated thinking
- A means to capture and preserve the engineering thought process
- A means to communicate the thought process to new members of the QFD team
- A means to inform management regarding inconsistencies between requirements, risks, and needs of the customer

Figure 2 — Waterfall relationship of QFD matrices