

Quality Function Deployment

You would use this approach as part of the design process for new products.

Projected performance gain



Improved

- Product design – by understanding customer requirements
- Processes
- Systems

What investment is needed to understand the concept?

DIFFICULTY



Challenging

Requires a thorough knowledge of the subject and a structured approach.

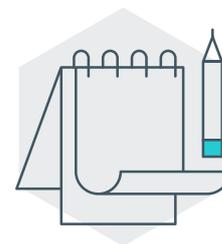
ACTIVITY



Team

Best results come from a team of Procurement, Design, Engineers and Assembly Operators.

EQUIPMENT



None

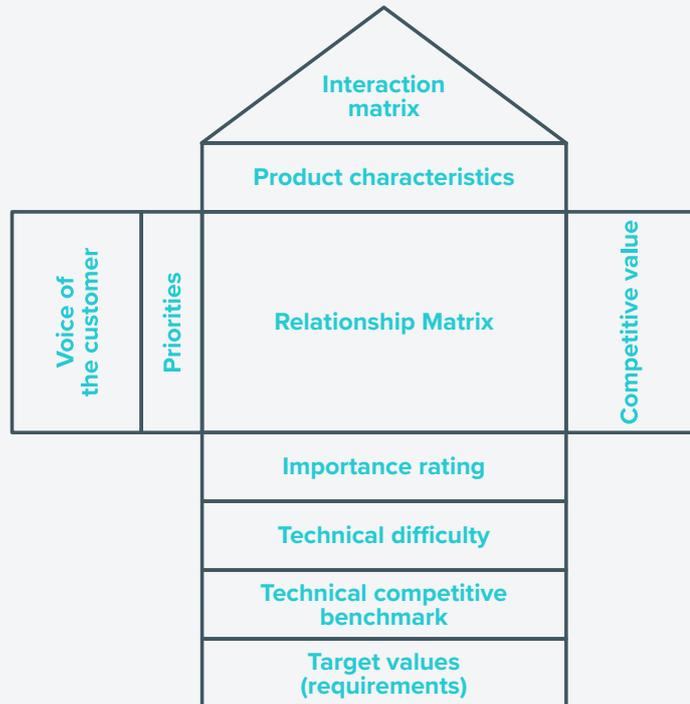
No equipment is needed.

Explanation of the concept

Quality function deployment is a method which was developed in Japan in 1966. The method helps to transform the voice of the customer [VOC] into engineering characteristics for a product. The goal of QFD is to build a product that does exactly what the customer wants instead of delivering a product that emphasises expertise the manufacturer already has. This process can also dramatically improve efficiency as production problems are resolved early in the design phase.

The house of quality provides:

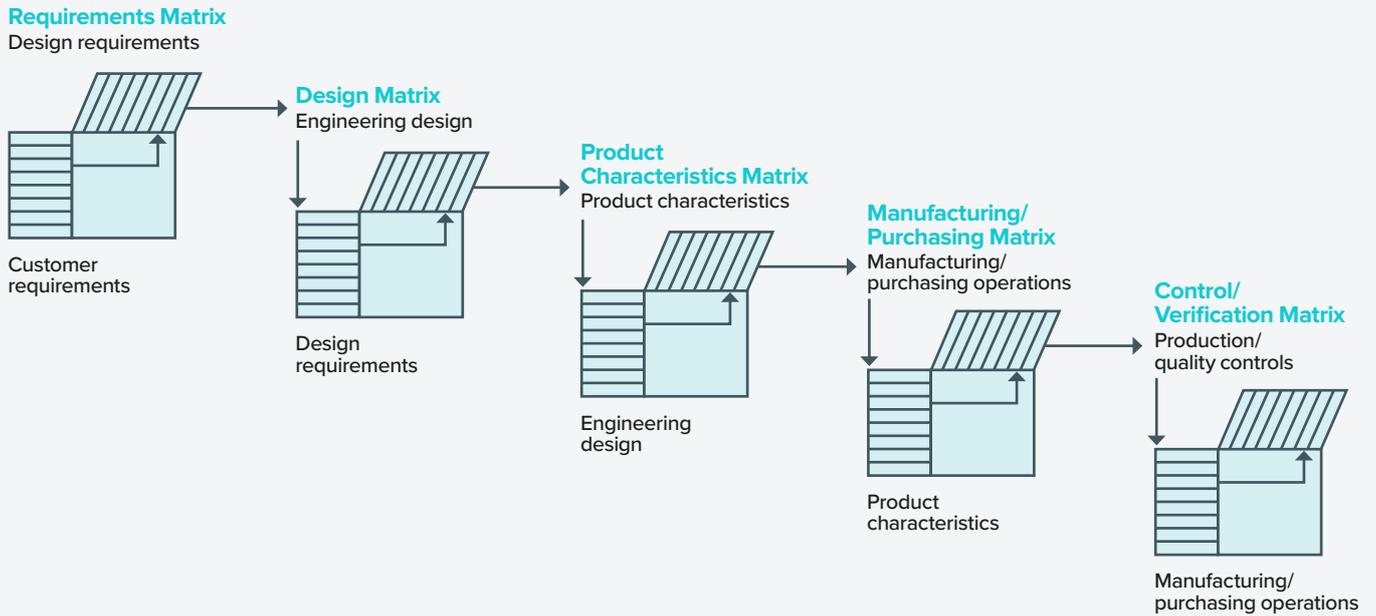
- A requirements planning capability
- A tool for graphic and integrated thinking
- A means to capture and preserve the engineering thought process
- A means to communicate the thought process to new members of the QFD team
- A means to inform management regarding inconsistencies between requirements,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



QFD uses a diagram / model known as 'The House of Quality'. The centre of the model is the Relationship Matrix that links together customer requirements with:



- Understanding 'true' customer needs from the customer's perspective
- What 'value' means to the customer, from the customer's perspective
- Understanding how customers or end users become interested, choose, and are satisfied
- Analysing how do we know the needs of the customer
- Deciding what features to include
- Determining what level of performance to deliver
- Intelligently linking the needs of the customer with design, development, engineering, manufacturing, and service functions.



What action should I take?

- 1.**



Gather together a group of procurement, designers, engineers and assembly operators.
- 2.**



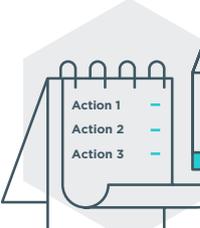
Meet with the Customer (or use market research) to develop the VOC.
- 3.**



Use the Relationship Matrix to understand what your business can deliver with existing process, and where there are gaps.
- 4.**



For the gaps, understand what your business would have to do to be able to meet the stated customer requirements in the VOC.
- 5.**



Develop an action plan to close the gaps to be able to deliver the products that the customers wants.

Recommended resources



Akao, Y. (2012) Quality Function Deployment : Integrating Customer Requirements into Product Design. Productivity Press.
ISBN-10: 1563273136; ISBN-13: 978-1563273131; ASIN: B00RWTPSKE

Ficalora, J, P. (2009). Quality Function Deployment and Six Sigma, Second Edition (paperback): A QFD Handbook (QFD Handbooks). Prentice Hall.
ISBN-10: 0133364437; ISBN-13: 978-0133364439

COHEN. (1995). Quality Function Deployment: How to Make QFD Work for You: How to Make It Work (The Addison-Wesley Engineering Process Improvement Series). Prentice Hall. ISBN-10: 0201633302; ISBN-13: 978-0201633306

Quality Function Deployment: The evolved 4-phase model Paperback
– 12 Mar 2017 by Frede Jensen (Author). Product details: Paperback: 80 pages, Publisher: Lulu.com (12 Mar. 2017), Language: English, ISBN-10: 1326905910 ISBN-13: 978-1326905910



[GC Business Growth Hub Manufacturing Factsheet 23: The Kano Model](#)

Glossary

Voice of the Customer (VOC): The true stated (or unstated) requirements of the customer.

Quality Function Deployment (QFD): A method of transforming the VOC into engineering characteristics for a product.

For more advice, case studies and additional factsheets visit: www.businessgrowthhub.com/manufacturing