Business Line
Business Daily from THE HINDU group of publications
Monday, Dec 08, 2008

Quality function deployment

Quality Function Deployment, better known universally as QFD, is an important tool used primarily in the manufacturing sector. QFD and the techniques associated with its implementation were first developed around 25 years ago.

Nonetheless, they have not become as widely used as they should have, probably because of poor implementation in some organisations.

So what does QFD try to do? It tries to bring in a holistic perspective to product development and improvement by combining an:

Understanding of customer requirements

Understanding the competitive framework

Translating the customer requirements into technical improvements

Ensuring cross-functional co-operation

The first stage in a QFD exercise involves talking to the customer. This can be done through formal market research, which is the recommended option, or through informal conversations with as many customers as possible.

The idea is to understand customer expectations by studying how they use the product, what kind of problems they face while using it (combination of voiced feedback and observations), and hence how the product-use experience can be improved.

In QFD lingo, this is referred to as VOC i.e. Voice of the Customer. The next stage is to translate these customer expectations and requirements into technical specifications. This clearly requires the technical team and marketing team to work in close collaboration. This stage has to be followed by the development of product concepts to satisfy these requirements.

While developing product concepts, the competitive situation existing currently as well as the likely developments and product innovations that may be launched by competition should be kept in mind. When multiple concepts are developed, the company needs to choose the most optimum concept in terms of meeting not just customer requirements but also customer priorities as well as technical feasibility. Based on the product concepts identified, the system architecture has to be developed and further streamlined into the sub-processes / assemblies as required. From this step on, the steps followed are more or less the same as in any manufacturing process, and will naturally need excellent implementation to ensure that the resulting product or feature leads to customer satisfaction.

Some of the important tools that are utilised in the QFD process are:

Analytical hierarchy process

House of quality representation

Product planning matrix

Concepts selection matrix

The Quality Function Deployment Institute based in the US enables organisations across the world to implement QFD by running workshops and certificate courses on the subject. The institute's website is www.qfdi.org

In recent years, QFD has been successfully used in some service products as well, especially financial service products. Unfortunately, it is a little difficult to find very specific case studies and relevant reference material on the Internet about QFD applications.

This is primarily because the matrices have so much confidential information about the product or the industry that sharing them is not possible

QFD techniques have also been successfully used along with other quality management programmes such as TQM and Six Sigma. Of late, QFD experts have been recommending the Blue Ocean strategy as an important reference for QFD.

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