

Systematic Management CASE STUDY

Transforming Management Performance

Quality Function Deployment is arguably the most powerful management methodology ever devised. With this one simple tool, we have clarified our objectives, inspired our team, engaged the whole organisation and transformed our performance. For me, Quality Function Deployment is now an essential part of all management activity.

So writes Dietmar Hartevelde, World-Wide Supply-Chain Director for Emerson Process Management, after using Quality Function Deployment to improve his organisation's delivery performance from 40% to better than 95% in nine months, while at the same time halving its inventory levels.

Quality Function Deployment (QFD) is unique among quality tools, in that it focuses entirely on the processes of origination and creativity. It does its work long before the concepts are cast, before boundaries are set, and because of this it has the potential to transform rather than to simply correct.

In this brief paper we look at:

- Why QFD is important to performance management
- The origins of QFD
- How QFD works
- The benefits of QFD
- Linking QFD to other management tools
- Where QFD is applied

Why QFD is important to performance management

QFD is essentially a methodology for translating a set of ambitious goals into a confident and compelling strategy. By means of a simple matrix, QFD maps the responsibility for delivering the objectives onto the various processes by which they will be fulfilled. The matrix allows management to move their thinking beyond simple one-to-one relationships, and explore all the synergies and creative possibilities that exist (or may be made to exist) in the organisation.

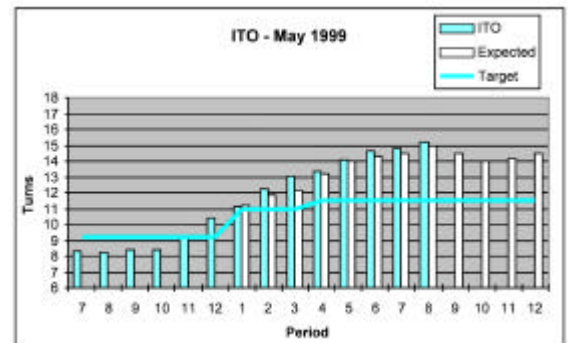


Fig. 1 Impact of QFD on inventory turns (the inverse of stock costs) at Fisher-Rosemount SAE

Within a QFD, the team responsible for delivering performance can:

- draw out new and unrealised opportunities for the processes to support the objectives
- fully evaluate how well their objectives are supported, and develop or amend their strategies as required
- ensure the design and performance of their processes are fully focused on their objectives, and thereby challenge and address areas of inefficiency
- efficiently deploy this understanding into the teams or individuals responsible for implementing the conclusions.

What is more, QFD can do all this wherever new goals are being developed, whether these concern a corporate strategy, a product specification, a service level agreement, or a job description. QFD is powerful enough to transform a global business, simple enough to be developed on a flipchart, and flexible enough to design anything from a complete organisation to an isolated activity or product. And it is the combination of these

qualities that makes it so effective in transforming performance. One tool links top to bottom, strategy to decision, purpose to action, intent to desire and mission to culture. It does so visibly, simply and inexorably, across all levels of the organisation; guiding and harnessing every effort. Yet at every level it provides opportunities for new ideas and creativity, inspiration and commitment.

The origins of QFD

QFD was originally developed in Japan by Yoji Akao and Shigeru Mizuno, and first applied in 1972 by Mitsubishi at their Kobe shipyards. Over the following twenty years it was predominantly applied to product development. In this form, its distinctive shape, and its focus on direct dialogue with the customer, earned it the names by which you may be more familiar with it: 'House of Quality' and 'Voice of the Customer'.

In the mid '80s, QFD began to be adopted in the West, but it was not until the early '90s that its potential for redesigning organisations was recognised. As a result, many books and papers now exist on the application of QFD for product development, but sadly, very few provide guidance on the use of the tool for business design.

How QFD works

At its simplest, QFD is a matrix: a series of rows and columns (see fig. 2). Each row reflects a clear business objective, and each column reflects a separate mechanism, e.g. function, unit, department or process of that business.

The cells represent the capacity for each business mechanism to influence the attainment of each objective. Developing the framework for the matrix provides an opportunity for the management team to reconsider the organisation's mission, its logic, and its operating structure.

The quality of insight that QFD can provide depends greatly on the care with which the 'mechanisms' are defined. The 'mechanisms' (columns of the QFD matrix) are the means by which the organisation fulfils its goals - they are logical subdivisions of the organisation. Some ways of dividing up the business provide a richer depth of understanding within QFD than others, and in practice the most useful models tend to be ones based on business processes. For some companies, QFD has caused them to fundamentally rethink how they organise themselves.

By discussing each cell of the resulting matrix, the managers develop a complete understanding of how the business must work as a whole if it is to succeed. This provides insight as to how the processes could exploit their potential in new and innovative ways, and, equally importantly, how they may have adverse effects that need to be controlled.

Through a simple mathematical relationship, QFD provides a means of ranking the objectives, and prioritising improvement of the processes. Teams

responsible for managing each process can then draw up additional, more detailed, QFDs, to think through how their process can be creatively developed to best fulfil the expectations now placed upon it.

By further developing the basic diagram, QFD also provides for the management team to think through their communication and reporting needs. A triangular, half-matrix on top of the main QFD diagram (shown in fig. 3) provides an opportunity to look at the interactions between each of the business processes (or departments or business groups, depending on the organisational model chosen) and to highlight the extent to which they are likely to work in harmony or conflict. This helps those who manage those processes to think through the level of communication they need to arrange between them.

The Benefits of QFD

QFD thus provides each manager with a clear understanding of what his or her area should deliver, in the context of how the organisation needs to operate as a whole.

The rigour and structure that QFD provides, allows the management team to consider goals and strategies that they might otherwise consider unthinkable or irresponsible, even to the extent of entirely redefining themselves, their role, and their operations.

The structure provides a means to examine every part of the organisation, and to succinctly document the conclusions, but the real value of QFD arises from the discussion when building the matrix. The valuable outcomes leave the room in people's minds and not just on the piece of paper that is the QFD. The QFD diagram is not the goal of the exercise; it is simply a tool within it.

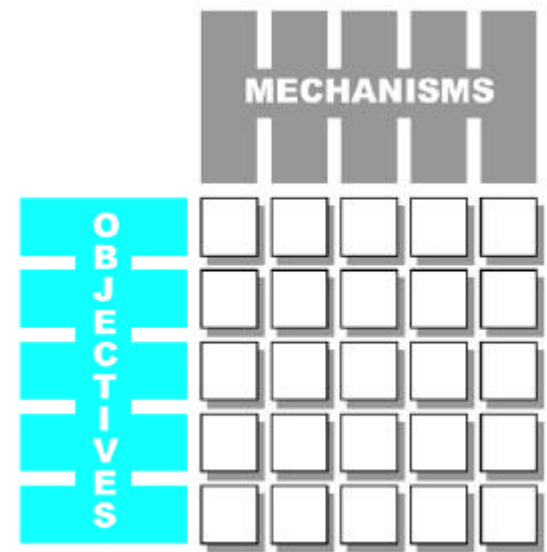


Fig. 2 QFD is essentially a matrix for mapping out the relationships between what you are trying to do (your objectives), and how you are trying to do it (your mechanisms). In the case of organisations, the mechanisms are usually business processes

The discussions, on the other hand, do much to:

- build deeper understanding of the organisation's objectives, and greater clarity of exactly what they mean and how they fit together
- ensure a holistic grasp of the organisation and how the various parts need to interact and function together
- inspire new insights into the capacity for each part of the organisation to contribute to achieving the objectives
- equip the management team members to inspire and encourage their own teams to commit themselves to achieving their potential.

All of these factors develop a real sense of teamwork in transforming the organisation, and it is this teamwork that makes the difference in effectively harnessing the talents and energies of people in transforming their performance.

In the case of Smith & Nephew Group Research Centre, this translated into an annual performance improvement of 40% on five out of their seven key metrics.

Linking QFD to other management tools

QFD has tremendous power in helping any organisation: to determine its ambition; to develop efficient strategies to ensure achievement of that ambition; and to deploy effective ownership of the responsibility for the delivery of those strategies.

As a result of this it provides an excellent basis for anchoring and supporting a whole range of other management methodologies:

- The left hand column of the QFD (objectives) provides a means for reflecting the conclusions of: strategic reviews; stakeholder analysis; customer feedback etcetera, and for ensuring they drive the focus and alignment of the whole organisation.
- The consensus basis by which the QFD is deployed down into the whole organisation provides clarity to the performance management and appraisal of staff. Furthermore, the focus on performance improvement provides a creative platform for developing new and existing competencies
- The clarity with which process objectives are defined provides a powerful starting point for process management and business process reengineering projects (both for focusing their efforts and for evaluating their ultimate effectiveness).
- The basis for measurement that QFD deploys down through the organisation provides a tailor-made framework for balanced scorecards, quadrant charts, and problem solving methodologies.
- The balancing of performance improvement with day-to-day operations that takes place within the QFD provides a practical understanding and appreciation of the principles inherent in excellence models such as EFQM and Baldrige.

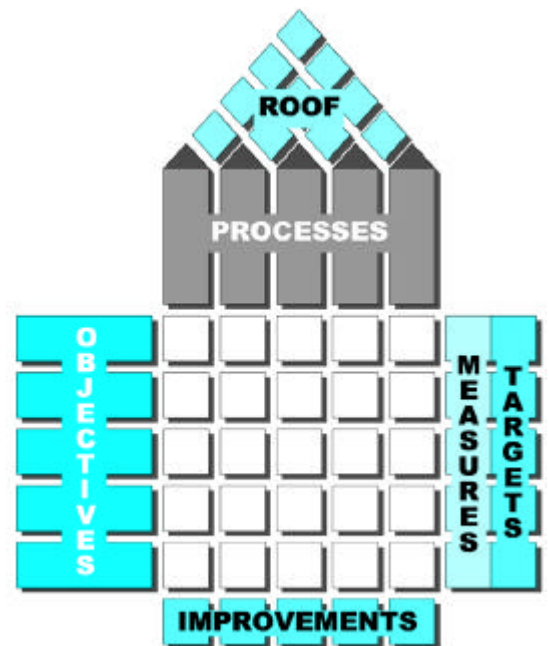


Fig.3 The basic QFD matrix can be further developed to reflect measures and targets against each of the objectives, the interactions between the processes (known as the roof) and the priorities for improvement

The application of QFD to business design

To date QFD has been successfully applied to, and generated performance improvements in:

- product and service development, where it has more than halved development times
- organisation design in research, manufacturing, retail, and service industries, where it has better than doubled performance
- business process development across most typical industry functions
- partnership and joint-venture planning, where it has increased productivity by two thirds
- event, workshop and training course design, where careful QFD planning has led to uniformly well received results
- role definition and time management.

However, this list is not exclusive. QFD can be used to gain insight, build commitment and drive performance in any situation where ambitious objectives need to be delivered by interdependent mechanisms, whatever those objectives and mechanisms may be.

QFD is not a magical tool. All it does is provide a structure for a team of people to rigorously consider how they will make their visions reality. QFD does not transform performance, that's what the people do. QFD merely helps them to see how.

On the next page, we list some case studies that illustrate these points further.

To learn more about the practical application of QFD to the management of organisations, please feel free to access the following case studies through the Tesseract website www.tesseract.com:

- 'Driving Business Performance' provides a brief overview of the application of QFD to a European distribution facility where it helped to generate 140% improvement in delivery performance at the same time as a 45% reduction in stock
- 'Harnessing Innovation' tells the story of the application QFD to a scientific research centre, where it helped to generate a 40% improvement in performance over a period of twelve months
- 'Aligning Business Focus' illustrates the use of an adapted QFD to bring together a set of diverse businesses under a common vision to improve their overall performance as a group
- 'Building Full Commitment' shows how QFD was used to design a new business-critical organisation from scratch, and to ensure the conclusions had the full commitment of all the staff members (newly appointed to their roles)
- 'Making Alliances Work' illustrates how QFD was used to improve the performance of a critical joint venture between a retailer and their IT supplier
- 'Managing Project Management' shows how QFD can be applied at the departmental/process level to dramatically improve performance of key processes
- 'Leveraging Partnerships' provides an overview of the application of QFD to business partnerships where it has generated performance improvements through identifying joint objectives and clarifying responsibility for their delivery.

All of these case studies have been extracted from 'Managing by Design: Transforming Management Performance through QFD' published by Tesseract November 2002, ISBN 0 9543021 0 9, with permission of the publishers.

'Managing by Design: Transforming Management Performance through QFD' is a step-by-step guide to applying QFD to an organisation, and is available through the Tesseract website: www.tesseract.com, or from Amazon.co.uk.

QFD gives you a model to manage your organisation from Board level right down to the individual teams, and it achieves the focus and collective commitment of the stakeholders to deliver benefits. QFD enables you to manage complex business environments, simply.

Dilip Popat, Service Manager, Partner Practice, Enterprise Services, Microsoft Limited

My experience of organisations in need of surgery is that they don't usually lack people with enthusiasm, creativeness and drive. The key to creating their success is very often the creation of a common vision and a systematic approach to management, which channels all efforts in one direction to achieve this vision. QFD has helped me personally achieve this in several different organisations

Juergen Maier, Managing Director, Siemens Shared Services Ltd

QFD is the only tool I have seen that allows a manager to implement cultural, structural, and process changes into an organisation whilst still being able to keep an overview. It allows me to monitor progress on all aspects of change and focus my attention appropriately, safe in the knowledge that I understand why I need to focus attention in that area, and sure that it will give me a sustainable change in the performance of my department. As a consequence of QFD, and the resulting clarity of the goals, aims and vision, the whole department is more focused, but also having more fun despite the difficulty of their task.

Clare Healy, Programme Manager, Wound Management Business Unit, Smith & Nephew plc

QFD has allowed us to truly understand, what we do, whether we should be doing it, and how we can do it better. It has given us a clear understanding of what we need to achieve, at all levels of the organisation, and helped us to work as a team to deliver it. It has improved my performance, that of teams I work with and the company as a whole. I know of no other management tool that would have achieved what QFD has done for us.

Len Pendle, HR Director, Smith & Nephew Group