

Confront undisciplined planning

So, now you know the issues in your organisation, what has that to do with QFD? Well, whatever performance or practice shortfalls currently exist in your organisation, they are almost certainly a result of weaknesses in your planning process.

If that sounds a bit harsh, consider the following: those performance and practice deficits can only exist if one or more of the following is true.

- The planning process failed to identify the potential for improvement.
- The planning process didn't set objectives that would force the improvement to take place.
- The planning process didn't schedule and prioritise the resources to enable improvement.
- The planning process didn't establish the means to highlight lack of improvement.
- The planning process didn't address the issues that prevented improvement.

In short, the issues remain because the current planning system has failed to identify, demand or pursue the necessary improvement. This is directly analogous to deficiencies arising in a product due to weaknesses in the design process.

The intention of implementing QFD is to establish a planning and management system that ensures that the potential of the business is fully exploited in pursuing its current and future goals.

The purpose of this chapter is to provide a brief overview of the core tool in Quality Function Deployment: the QFD diagram; what it is; and how it works.



On a scale of 0-5 (5 being best), how well does your own planning process fare?

Ensuring all improvement opportunities are identified



Setting objectives that drive improvement to happen



Ensuring the right level of resources are available at the right time



Defining the means and mechanisms to objectively monitor progress



Addressing the barriers that have limited improvements in the past



How much would your organisation gain if it could score 5 in all of these areas?

Chapter 6

The following day found Lucy in Richard's office at 8.30 in the morning, for only the second time in the ten days she had been in the UK. Richard had dropped all of his previous charades of dismissal, and welcomed her in. This was much more like his normal approach, but he realised how incongruous the difference seemed to her when he glimpsed a wry smile of amusement as she sat down.

He thought about explaining this was his normal approach, by apologising for his behaviour to her last week, but he realised that this would make him seem even worse, like a Dickensian bank manager who had suddenly discovered his cleaner was a multi-millionaire. He did not even feel he could compliment her on her presentation for exactly the same reason. And there was no way he was going to validate her findings by remarking on their quality, especially since he was probably going to need to undermine them subsequently to his bosses in the States.

Instead, he busied himself with pouring them both a cup of coffee and getting straight in his own mind what he wanted out of this meeting. He had decided that he needed to better understand her agenda, and where she was coming from, and so without any preamble he asked: "So, what do you see as the next steps?"

Lucy caught the emphasis on 'you'. Richard was clearly not giving anything away here. He wanted to emphasise that Lucy's views were simply her own opinion, and carried no authority for him, his business, and what they might do in the future. Lucy parried. It actually was not her modus operandi to come in with a shopping list of actions and suggestions. She knew from experience that it did not work. People tended to be a lot more committed to plans and ideas that they developed themselves, and Richard was going to need a lot of commitment if he was going to fix the problems in Gloucester.

The best way was to identify what the client already had planned, understand where their enthusiasm and strengths lay, and then build on these. So, she asked: "What do you want to do next?"

Richard's face told her that he did not like that response, and he was just thinking how to phrase 'You tell me, you're the expert!' into something a bit less clichéd when she pitched in with: "What's QFD?"

History of QFD

QFD was first applied in Japan in 1972, at the Mitsubishi Kobe Shipyards, where engineers were struggling to make sense of how to break down exacting customer specifications into the complex of assemblies and systems that are a ship.

The problem was that all of the systems and assemblies were interrelated, and achieving the optimum performance in apparently conflicting requirements meant that some exacting compromises needed to be made. Conventional means of breaking down the specification into the various design areas limited the engineers' scope for finding the optimum solution, and was in danger of creating conflict and rework as the true needs of each component became clear. (Does any of this sound familiar to you in your management role?)

Shigeru Mizuno and Yoji Akao hit on the simple idea of creating a matrix of relationships between the main areas of the specification and the key systems and assemblies required to deliver them.

The matrix revolutionised the Mitsubishi engineers' thinking and helped them to see possibilities and potential that had previously been dormant in the design. Since then the tool has spread within the automotive and computer industries, where its potential for reconciling conflicting requirements and sophisticated mechanisms has been fully exploited.

As has been discussed earlier, the concept of a complex design clearly has parallels with the nature of business and companies. They too, often have challenging and apparently conflicting requirements placed upon them (e.g. increase market share and cut inventory), and can certainly be viewed as complex systems of processes and resources. It



Richard was visibly taken aback by the quick change in topic, so she continued: “A number of people I spoke to said you had plans to focus Cylek UK on its objectives through a tool called QFD, but they weren’t able to tell me what it was. I’ve never heard of it and it intrigued me. What does it stand for?”

This made Richard smile. He could not think of a worse way to introduce QFD to someone than to explain what the letters stood for. For him, personally, the acronym was the biggest turn-off about the tool. But Richard was quite torn. On the one hand he didn’t want to expose his cards until he knew where Lucy was coming from. And on the other hand, here was a great opportunity to win Lucy over to his way of things. He was convinced that Lucy’s apparent interest in engineering would make her vulnerable to the charms of a design tool like QFD, but he wasn’t yet sure of her.

He looked at her for a moment, while he made up his mind how best to respond. Her appearance was one of innocent interest, and he felt so proud of his own thinking on this matter that he really didn’t want her to hear it from anybody else.

Eventually his enthusiasm for his own ideas overrode his caution. “Let me show you,” he said. He went to his desk and pulled out the list of seven objectives for Cylek UK that he had developed from the Why-How chart, and pinned them to his notice board by the side of the organisation chart that was already there.

“These are the objectives for Cylek UK. They haven’t been approved by Frank yet, but if you look at them you will see that they are comprehensive and cover everything we need to deliver.”

He invited Lucy up to take a closer look. She did so, and then she went back to her file and pulled out the business objectives for Cylek UK that had been sent from the States. She held them up against Richard’s list and compared them.

After about a minute she said: “I can see that they might encompass your actual objectives, but they seem far more vague. I can’t see Frank approving these!”

“No, he wouldn’t,” replied Richard. “But that’s because they don’t have measures and targets established for them yet. Interestingly, your little exercise last week helped a bit there, and I’ve used some of the ideas from it.” He went back to his desk and picked up another sheet of A4

was therefore likely that QFD would also add value in this area of design.

This idea of applying the tool of QFD to the design of an organisation was explored by the American Supplier Institute and Ford, in the late 1980's, based on research undertaken in Japan.¹ It was successfully applied to the holistic design of an organisation in the UK in 1993 (Siemens Congleton), and it has since been used successfully in other parts of Siemens, and also in parts of Emerson, Sainsbury's, Microsoft, and Smith & Nephew, where it has generated previously inconceivable performance improvements.

How (organisational) QFD works

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

Each cell then represents the potential for that business mechanism to influence the attainment of the 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 business objectives (rows of the QFD matrix) may be drawn from the Why-How chart (right), choosing a series of statements that together represent exactly what the organisation is trying to achieve (see Chapter 2). Each objective should be further clarified to the extent of having clear measures associated with it, and a quantified target performance defined. These will be addressed in the following chapters.



¹ Reported in 'Policy management through QFD', Lawrence P Sullivan, Quality Progress, June 1988.

with a number of measures on it, some of which she recognised from her first session with the management team.

"Now, this is in no way complete. We still have to do some work on anchoring exactly what we mean by those objectives. But when we have finished, delivering these objectives would guarantee the delivery of what the States have requested, and more."

"So what is wrong with just using these?" asked Lucy, waving the objectives she had in her hand.

"They are incomplete," replied Richard, and when Lucy looked sceptical he continued: "They focus only on the financial aspects of the business such as turnover, capital employed and market share, and yet we know that the States is also interested in customer satisfaction and employee development."

"But they are interested in customer satisfaction and employee development because they lead to the financial targets," interjected Lucy.

Richard was just about to respond with: "Yes, tomorrow's! Not today's!" when a thought struck him. "Don't give me that! It was you who ran the exercise on measures last week. It was you who was emphasising the importance of a balanced management focus." Lucy smiled as she realised she had been hoist by her own petard. "Well that's what this will become," concluded Richard in a slightly less aggressive tone.

"Okay," said Lucy, "let's say that I buy that. How does all this relate to QFD?"

"Imagine our objectives are now fully defined. The next question is how do each of the departments contribute to delivering those objectives?"

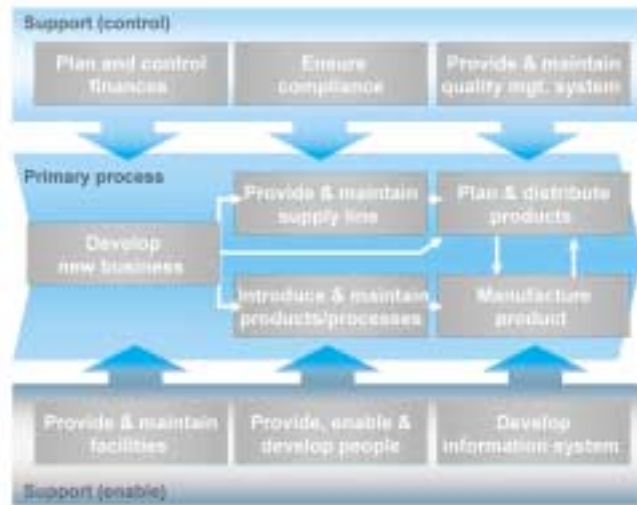
"Management by Objectives," put in Lucy.

"No, not Management by Objectives," responded Richard. "MBO leads to a number of problems and missed opportunities."

"Such as?" prompted Lucy.

"MBO can be very divisive. Departments tend to focus on the more obvious objectives, and miss out on considering their potential to influence others, even adversely. And often when the objectives are cascaded down, they lead to sub-optimisation and sections working against each

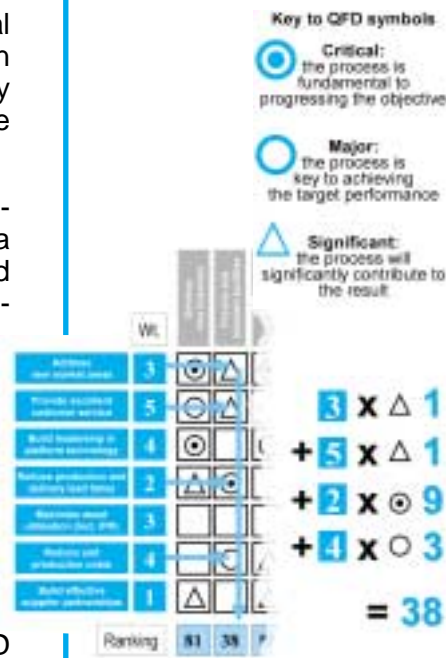
The quality of insight that QFD can provide depends greatly on the care with which the 'mechanisms' are defined. The 'mechanisms' (columns of the QFD matrix) are the means by which the organisation fulfils its goals - they are logical subdivisions of your organisation. Some means of dividing up the business 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, this has caused them to rethink how they organise themselves (see example process diagram on the right, and Appendix 2).



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 new insights as to how the potential of each mechanism can be exploited in new and innovative ways, and, equally importantly, how they can have adverse effects that need to be controlled.

Through a simple mathematical relationship (see Appendix 5), QFD provides a mechanism for ranking the objectives, and prioritising improvement of the mechanisms. Teams responsible for managing each mechanism can then draw up additional QFDs, to think through how each mechanism can be creatively developed to best fulfil its potential.

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



other. Objectives get achieved, but potential is lost and overall the business suffers.”

“MBO does not have to be like that!” retorted Lucy.

“No, it doesn’t, but in all of the practical applications of it that I have seen, it has either turned out that way in practice, or it has been toned down to a series of wish lists that carry no effective teeth. It might work for a year or two when it is first implemented and all the gross inefficiencies are ironed out, but how many implementations can you name where it has been sustained effectively without causing sub-optimisation or lost opportunities?”

Lucy nodded to accept the point.

Richard continued: “We used to design products in a similar way to MBO. The overall specification was broken down into specifications for systems and subsystems in a very linear way, and that too created sub-optimisation and conflict in the design. But then the Japanese came up with the idea of QFD. QFD was developed for product design, and that’s where it has been used, but I want to apply it to the development of this business, so I’ll explain it to you in those terms.”

Lucy nodded. She could sense an enthusiasm and a passion building in Richard that she had not seen before, and she was as interested in that as she was about the explanation.

“Imagine if we created a grid between the objectives and the departments, where the departments are the columns and the objectives are the rows. And then imagine if, as a team, we explored the potential of each department to contribute to, or to detract from, each objective.

“The whole management team would be drawn into a complete understanding of how the business could work, and could be encouraged to think creatively about untapped potential. For instance,” he jabbed with his finger at an imaginary cell, “they could explore the potential of the invoicing system to develop customer loyalty, or,” he jabbed at another cell, “they could explore the role of our IT system in personal development.”

Lucy conjured up possibilities in her mind as Richard spoke. She was intrigued by the idea of a management team using these types of discussions to design new functionality and focus into their business. She was developing a sense of how businesses could proactively shift com-

diagram (shown below) provides an opportunity to look at the interaction of each of the business 'mechanisms' (be they processes, departments, business groups or whatever) and to consider the extent to which they are likely to work in harmony or conflict. This helps those who will manage those 'mechanisms' to think through the level of communication they need to arrange between them.

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.

Within this, the rigour and structure that QFD provides gives freedom for 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 document¹ the conclusions, but the real value of QFD is in the discussion. The valuable outcomes leave the room in people's minds and not 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.

The discussions on the other hand will do much to:

- build deeper understanding of the organisation's objectives, and

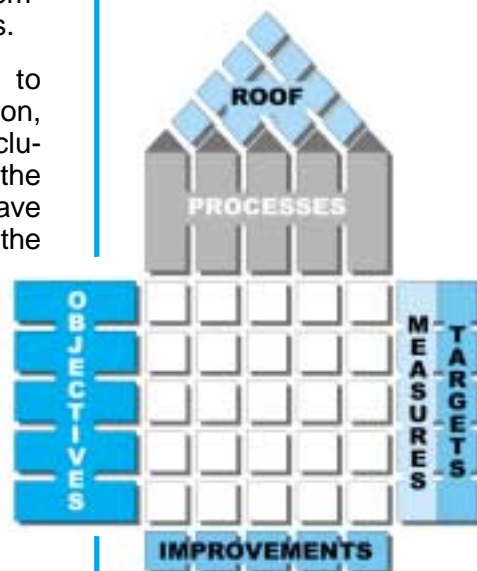
¹ The QFD diagram can be further enhanced as a summary document by including measures and targets for the objectives, and by reflecting relationships between the various mechanisms in the 'roof' of the diagram (as explained earlier). See illustration on the right.

Information on Measures and Targets can be found in Chapter 7. Information on developing the roof can be found in Chapter 23.



Not choice. But habit rules the unreflecting herd.

William Wordsworth
English poet



petitive goal posts by leveraging the potential of their 'Cinderella' processes.

Richard continued: "And when the grid is complete, and the discussions documented, the departments can review their performance against their potential, and redesign themselves where there are advantages to be gained. And through some simple maths, priorities can be determined and resources allocated to where they have the best competitive leverage, just like in product design.

"And just as in product design, each department can develop their own QFD, to better focus themselves on their enhanced goals."

Richard went silent, and he watched Lucy gaze at the blank space on his notice board, and he imagined the pictures that were floating in front of her eyes.

She turned and looked at Richard appraisingly, and said: "You really have a vision for this place don't you?" Richard looked back at her. Her face was a guileless picture of enthusiasm that in that moment seemed to mirror his own. In that moment, he just wanted her to know the true him, to appreciate his thoughts and dreams. He nodded, and she continued: "So, let me ask you again. What do you want to do next?"

Richard smiled, accepting this was where they started out, and then began to explain his plans for refining the measures and targets, and for the schedule of meetings he had prepared to develop and implement the QFD approach. His enthusiasm was infectious.

At the end of it Lucy said: "You know, there is tremendous potential in this to address a lot of the issues that were raised yesterday!"

"I know," said Richard, a trifle ruefully.

"For instance," continued Lucy, "it could dramatically improve target setting and performance measurement. It could give people a better understanding of role, and could therefore improve how they are used. It could provide better focus on the processes, and it would provide an excellent platform for continuous improvement."

Richard simply stared blankly back at her. He was quite amazed at how quickly she had grasped the concept. "But you still haven't told me what it stands for," challenged Lucy.

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 potential for each part of the organisation to contribute to achieving the objectives, and build a greater appreciation of the contributions being made
- equip the management team members to inspire and encourage their own teams to commit themselves to achieving their potential.

All of these factors are key to developing a real sense of teamwork in transforming your organisation, and it is this teamwork that will make the difference in effectively harnessing the talents and energies of your people in transforming their performance.

In the next section we look in more depth at precisely how QFD will help you to do this, and we work through the practical mechanics of developing a QFD for your own organisation.

“Oh,” said Richard, “I’m afraid that is probably the least endearing aspect of the whole tool. It stands for Quality Function Deployment.” Lucy gave him a quizzical look. “Well you did ask!” he retorted, “but personally I only ever refer to it as QFD.”

Lucy looked back at the wall where Richard had created the makeshift QFD, and after a few moments she said: “I have some consulting tools that might make bits of your planned meetings more effective, and if you want I would be happy to facilitate them for you.”

Richard hesitated. He still was not sure about her. It was his job to lead the team. Was she trying to take over?

Lucy sensed Richard’s uncertainty, and some intuition told her it was a concern about losing control of his plans, so she chipped in quickly: “Look, I think this QFD is a brilliant idea. I’ve never seen anything like it. A lot of my success has stemmed from the fact that I’m an outsider and that people think I have the ear of the board. Most of what I do, quite frankly, they already have the ability to do for themselves. But this is different. I’ve got a feeling that, with this approach, I can really add something new to my clients. I want to learn about it. I want to see it work. I want to introduce it to other companies. But this is your company, and your tool. You would lead the workshops of your people, and I’d just be the hired hand, facilitating selected sessions so that you could take a full part in leading the discussions. How about it?”

Richard had been touched by her honesty, and slightly reassured by what she was proposing, but he still was not fully sure about this.

“Look, what say we sit down and plan out the first of your sessions together. I’ll chip in some approaches that you can take or leave, and at the end you can choose whether you get me involved, and how! What do you say?” And before he could respond, she said: “We can plan it tomorrow, over dinner at my hotel. Now that the conference call on the next range of products has been cancelled, I know you’re free from 7pm onwards. I’ll book the table!”

As she watched her departing back, he smiled. It was the first real evidence he had seen of the aggressiveness he often associated with American consultants. And actually, the thought of dinner with her was beginning to appeal to him.