Managing Quality in The 21st Century

Principles and Practice

Graeme Knowles

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GRAEME KNOWLES

MANAGING QUALITY IN THE 21ST CENTURY

PRINCIPLES AND PRACTICE

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1 INTRODUCTION

This study guide is designed to give a coherent view of the underlying principles quality management, and how these relate to practical application. The tools and techniques which support the principles are not covered in detail in this guide, More information on these can be found in the companion guide: "Six Sigma: Principles and Practices" also available at Bookboon.com. Due to the complexity of many of the issues addressed, it is possible to write much more on any single topic but I have tried to cover most of the key points in order to provide a foundation; further depth of coverage can be found in the companion guide to this in the textbook section of the Bookboon site.

1.1 DEFINITION OF QUALITY

Before we study the subject of Quality in any depth, we must be clear on what we mean by the term "*Quality*". For the purposes of this book we shall consider several elements of a definition of "*Quality*":

- Quality is defined by the customer, and as such will change over time, often in unpredictable ways.
- Quality is associated with creating customer value.
- A quality good or service meets or exceeds the whole range of customer expectations, some of which may be unspoken.
- As a complex concept, quality can only be addressed by the whole organization working together.

1.2 UNDERSTANDING QUALITY MANAGEMENT

If 'Quality' is the end point, then 'Quality Management' is the approach and process for getting there. In this context there is no simple definition which encapsulates the area; instead we need to consider the key principles which are central to the topic. There are a number of principles which are central to the practice of Quality Management (all of which will be discussed further later in the book):

- ***Customer Focus***: If we wish to create value for our customers we need to become obsessive about understanding our customers and their requirements and expectations.
- ***Strategic Focus***: Quality Management must be a strategic undertaking. If companies survive and thrive through delivering value to their customers, then they must treat this as a (indeed, ***the***) key strategic objective, creating a strategic vision and deploying this throughout the company in associated goals and actions. This implies a long-term commitment and focus.

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- ***Leadership Focus***: Nothing happens in any organization without commitment of leaders and their active driving of the strategy, and constant positive engagement with its application.
- ***Process Focus***: For too long organizations have been obsessed with outcomes. Outcomes are driven by the effective application of appropriate processes. Emphasis needs to move from assessment of outcome performance to the development and control of processes to deliver customer value. In particular it should be recognised that organizational processes flow across departmental boundaries and management focus on departmental outcomes will often have a detrimental effect on the overall business process.
- ***People Focus***: Quality Management is fundamentally about people. Processes are only effective in delivering customer value if they are associated with appropriate behaviours from the individuals involved. An excellent process can be let down by a demotivated or poorly trained member of staff. An important aspect of managing quality is the creation of a motivated and empowered workforce able to work with and on processes to maximise customer value.
- ***Scientific Focus***: Quality management is fundamentally based on the Scientific Method – Plan, Do, Study, Act. – where decisions are evaluated based on evidence and data, and these evaluations are, in turn, used to drive further iterations of action. This is supported by the appropriate use of analytical tools to derive maximum information from the data available.
- ***Continual Improvement, Innovation and Learning***: At the heart of Quality Management is dissatisfaction with the status quo. Process improvement in such an organization is not simply about responding to problems (although this is necessary) it is about proactively seeking to learn about customers, processes and behaviours; and to improve upon existing practices, or to innovate in developing new markets, processes and practices.
- ***Systems Thinking***: It is important to see the organization as a whole when thinking about Quality Management. The impact of changes in one area of the organization on other areas; process changes on people, etc.

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1.3 DEVELOPMENT OF QUALITY THINKING

The current thinking on what defines 'Quality' and 'Quality Management' is the result of a series of historical shifts in thinking and approach.

Figure 1.1. A Quality Timeline

Figure 1.1 indicates the new ideas which arrived in quality at various point in history. The figure is indicative; bands are meant to indicate eras in which certain ideas/approaches became predominant rather than their first articulation, and clearly many ideas are still in reasonably common practice today (e.g. inspection, ISO 9000, etc.).

1.4 SUMMARY

This section has clarified our understanding of the rather abstract concepts of both "Quality" and "Quality Management". Perhaps the most important point to note is the integrated nature of the elements of Quality Management; all of the ideas are useful individually, but it is only when they are integrated into a holistic approach that their transformative power is fully harnessed.

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2 WHY QUALITY MANAGEMENT?

2.1 INTRODUCTION

Before we look at what constitutes a Quality Management initiative, and how we might implement it, we need to understand the rationale for doing so, because the amount of effort involved in such change is very significant. The rationale presented by the proponents of Quality Management tends, as with most arguments for change to fall into two categories:

- A critique of existing practices to demonstrate why the status quo is not a viable option
- A list of benefits to be derived from the change.

2.2 WHAT IS WRONG WITH TRADITIONAL APPROACHES?

2.2.1 LACK OF LEADERSHIP

Leadership is not management. Management is concerned with producing order and consistency through actions such as planning, budgeting, organizing and controlling, while leadership is concerned with producing change and movement by vision building, motivating, aligning people and communicating (Kotter, 1996). This is not to imply that leadership is 'good' and management 'bad' but to recognise that they serve different purposes and require different skills. Management serves us well in static situations (one might think of the situation of Ford in the early 20th Century) however, more dynamic situations require leadership.

Traditional organizations have tended to emphasise control and organization (management) over vision and motivation (leadership). This results in static organizations good at doing what they have always done, and focused on ensuring management instructions are carried out, but poor at responding to changing environments and developing situations which are increasingly the norm in the modern business environment.

2.2.2 SHORT TERM FOCUS

> *"For 60 years we have been the victims of Keynesian economics. Everything has to have a payback in the next quarter or the next year, or it cannot be justified."*
>
> – Goetsch and Davis (2010)

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They note that most organizations are unable to take a long term view. This is often driven by the stock market where companies are expected to declare a profit for the year, half-year, or even quarter. With share prices, liquidity and senior-management bonuses dependent on these results it is inevitable that short-term priorities win out. An investment which pays off dramatically in 3 years will be overlooked in favour of one which delivers much more modest results but within the current financial year. This can also lead to 'cost-cutting' measures which save money in the short term at the expense of higher costs in the future. For example, an organization may choose not to shut down for maintenance of key assets in a particular year, saving on lost production, and labour or material costs associated with the maintenance. However, the decision may lead to catastrophic machine breakdown with much higher costs in terms of lost productivity or labour and material costs to fix the problem.

2.2.3 LACK OF CUSTOMER FOCUS

The traditional 'Product-Out' concept, where the company works to a set of standards and a 'good' product is one which conforms to the company standards, contrasts starkly with the 'Market-In' concept where the focus is on satisfying the customer. A 'Product-Out' mentality will lead to adherence to standard despite unhappy customers – "It meets our standard so it must be OK". This approach will be compromised with an unexpected change to customer tolerances, and has led to the demise of many organizations when a better alternative hits the market causing customers to suddenly expect more of the product.

An example might be the advent of smart phones and the problems Nokia have experienced (search the web for the Nokia "burning platforms" memo) in their market share since Apple launched the iPhone, and radically changed the market. Playing catch-up when the market changes suddenly is very difficult and expensive, as Nokia has discovered. A 'Market-In' approach encourages the active engagement with customers which makes it less likely that companies will stick to outmoded specifications, or miss coming trends for too long.

There is also a degree of arrogance which can set in with the 'Product-Out' mentality. An assumption (often expressed by designers) that the customer does not really know what they want. A quote attributed to Ford is often used to illustrate this idea:

"If I had asked my customers what they wanted, they would have said a faster horse."

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Of course this merely misunderstands the idea of customer focus. What customers can (and should) be asked is what they need, or what they would value –in this case faster movement from A to B- rather than how we should deliver the requirement – the horse versus internal combustion engine. This is not to say that at times an innovation cannot create a hitherto non-existent need, simply to say that this happens fewer times than is perhaps suggested. Did Apple truly create a new set of customer needs, or simply respond innovatively to emerging trends of mobile computing?

2.2.4 LACK OF SYSTEMS THINKING

Deming developed a simple, but effective view of an organization as a system which is shown in figure 2.1.

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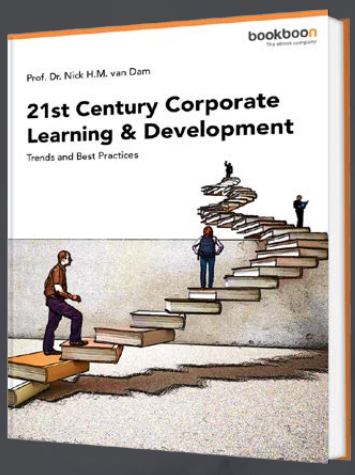

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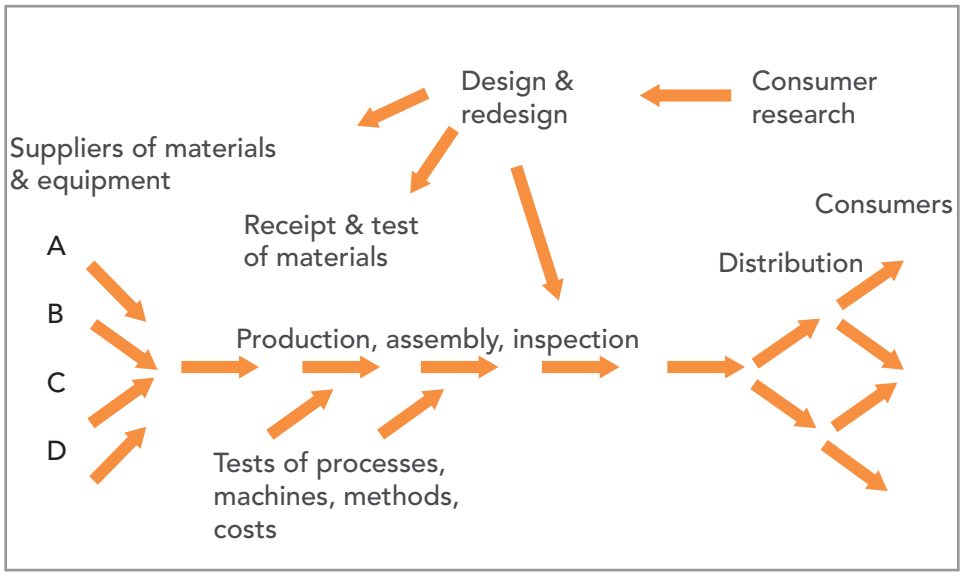

Figure 2.1. Production as a System (Deming, 1990)

This shows the interdependence of all the various elements of a manufacturing organization (although a similar model could be drawn for a service organization). It includes both 'line' and 'support' functions and it can be seen that the success of the system relies upon the effective integration of its parts. As a chain, it is unlikely to deliver customer satisfaction if any aspect does not work. However, the system is usually broken into departments or areas of influence which have their own metrics and chain of command to be satisfied, often with negative consequences for other parts of the system.

If designers, for example, choose not to consult with production on how their designs might be made easier to manufacture they may well improve their timeliness and cost of delivering the design, but in the process impose significant costs on production in delivering an acceptable product to the customer. A manufacturer of military vehicles had a significant issue in the late 1990's when it began to build its newest tank. The designers had forgotten to take into account the constraints of the manufacturing facility and, as the turret was about to be mounted on the first vehicle on the production line, it became apparent that the crane did not have sufficient height to allow the stem to clear the vehicle body. This required a major refit of the line and for the months taken to achieve this, vehicles were driven outside the building to have turrets fitted by a crane specially hired for the task.

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2.2.5 'HUMAN RESOURCES' MENTALITY

There is no doubt that traditional attitudes have led to a serious underestimation of the potential and contribution of employees across the organization, particularly in blue-collar positions. This is a direct result of industrialization; in years gone by the craftsman (or woman) was a respected figure, but the work of Taylor and Ford amongst others reduced them to labourers completing simple repetitive tasks as quickly as possible. Accordingly, respect diminished until most employees of an organization were expected to use their hands but not their brains. The best known quote on this phenomenon is from Konosuke Matsushita (Gomes, 1996).

"We are going to win and the Industrial West is going to lose out; there's not much you can do about it because the reasons for your failure are within yourselves.

Your firms are built on the Taylor model. Even worse, so are your heads. With your bosses doing the thinking while the workers wield the screwdrivers, you are convinced deep down that this is the right way to run a business. For you, the essence of management is getting the ideas out of the heads of the bosses and into the hands of the labour.

We (in Japan) are beyond the Taylor model. Business, we know, is now so complex and difficult, the survival of firms so hazardous in an environment increasingly unpredictable, competitive and fraught with danger, that their continued existence depends on the day-to-day mobilization of every ounce of intelligence."

This quote is from 1979 and, despite a significant number of western companies recognising the same issues, and taking action it is still true of an alarming amount of our businesses. As long as we regard the vast majority of our people as 'resources' we will struggle to compete.

Taken together, these issues suggest a need for change, but it is important to consider positive reasons for change as well as reasons why the status quo is no longer acceptable.

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2.3 TANGIBLE BENEFITS

Tangible benefits refer to items which have a direct financial value or are 'monetisable' in some sense. So the loss, due to quality issues, of a customer currently spending $50,000 a month would be a loss of $600,000 per annum to the company concerned. If improvement in performance brought the customer back then the tangible benefit would be $600,000 per annum. See table 2.1.

2.3.1 COST OF POOR QUALITY

Perhaps the most obvious tangible benefit of quality improvement is the reduction of costs associated with non-quality. If we have to throw a product away because we have made an error in its manufacture, it is clear that there is an immediate financial impact as all the costs sunk into the product are lost. Similarly, doing an incorrect operation over again absorbs cost (operator time, power, additional materials, etc.).

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Cost Area	Cost of Control (Cost of Conformance)		Cost of Failure of Control (Cost of Non-Conformance)	
Sub-Category	Prevention Costs	Appraisal Costs	Internal Failure Costs	External Failure Costs
Description	Arise from efforts to keep defects from occurring at all	Arise from detecting defects via test, audit, inspection	Arise from defects caught internally and dealt with by discarding or repairing the affected items	Arise from defects that actually reach the final customer.
Examples	Quality planning Statistical Process Control Quality training and workforce development Product design verification Market research	Test and inspection of purchased materials Inspection Testing Quality audit	Scrap Rework costs Management of rework systems Rejection paperwork	Warranty costs Out of warranty complaints Product recall Product liability claims Loss of customer goodwill

Table 2.1. Cost of Quality types and examples

Although anyone who works in an organization will be familiar with many examples of both of these issues, business accounting systems are not set up to capture these costs. Traditional accounting approaches are designed to track the inflow and outflow of money in an organization (and, by extension, to product lines or departments). There is little emphasis on whether the money in the department is spent effectively. For example, budget reporting will recognise that overtime cost £100,000 this month, but will not differentiate between time used to respond to short lead-time customer demand and time spent correcting errors. Even when it does highlight a cost of poor quality, perhaps in an over-budget condition in material spend, it will give no clear indication of where exactly the over-spend occurred.

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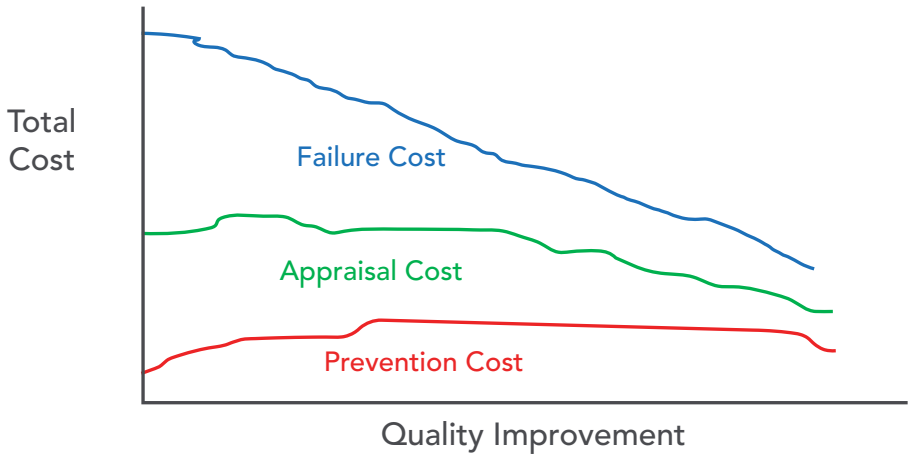

Figure 2.2. Quality costs during improvement

The lack of clarity of the cost of poor quality in organizations led to a lack of focus on improvement for many years. It was only with the advent of the "Cost of Quality" approach in the 1950's that organizations had a financial tool to assess the costs associated with quality failures and thus focus on the most important areas for improvement. There are a number of detailed ways of assessing costs, but they are not dealt with here. However, by assessing quality costs and increasing the spend on 'prevention' both failure and appraisal costs can be reduced (figure 2.2).

2.3.2 WASTE

Cost of Quality models are certainly helpful in generating momentum in the quality improvement movement, however, they are, at best, a partial view of the economic benefits. The focus on failure neglects aspects of waste which relate to flow and efficiency as opposed to accuracy. For example, an operator having to wait for products from a previous process would not register on the P-A-F model, but would clearly have an impact on the costs of the organization.

The concept of waste is fairly generic in nature and has been around for a long time. Many organisations refer to 'non-value added activities' and 'process waste'. However, these are rather broad terms and, whilst it is easy to agree that waste is bad and should be eradicated (or at least reduced) it does not much help in the process of improvement. The Seven Wastes were identified by Ohno as part of the Toyota Production System (Ohno, 1988) and have since been widely applied to process improvement, becoming particularly associated with the principles of lean manufacturing.

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- **Waiting:** A typical example of this form of waste is found when dealing with components or paperwork in batches. The first item in a batch has to wait for the remainder of the batch to complete that operation before the whole batch can move on to successive operations.
- **Correction:** Put simply, this is the waste resulting from a failure to achieve a 'right-first time' way of working. Having to rework or scrap components or paperwork, adds additional processing cost as well as introducing delays that affect lead-time.
- **Over-production:** This is where more than is required is produced, usually under the misapprehension that the company is 'saving' set-up time. It fails to appreciate the extra costs involved in working capital, storage space and the delays affecting following jobs.
- **Processing:** Over-engineering, a good example of this form of waste, is where additional operations are performed that do not add any value for the customer.
- **Conveyance:** This is the movement of materials, components or paperwork around a business; in order that the various value adding operations can be performed.
- **Inventory:** This not only ties up working capital, but adds storage costs and reduces the businesses flexibility in being able to bring in new products.
- **Motion:** This is an ergonomic factor where employees are forced to undertake unnecessary movement in order to perform their tasks. Examples include ill-considered positioning of equipment and material in relation to the workplace.

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It is worth noting at this point that organizations like Toyota do not feel the need to quantify the cost of waste, as the war on waste is well embedded within their culture and behaviours. The costing element is primarily necessary in the early stages of application when management may need persuading that the resources deployed are providing 'good value'.

2.4 INTANGIBLE BENEFITS

Many benefits are difficult to quantify in purely financial terms but are nevertheless relevant to organizational competitiveness. These will be introduced here, but will be treated in much more detail later.

2.4.1 INCREASED CUSTOMER SATISFACTION

Fewer defects, more reliable products, reduced lead times and products better matched to customer requirements should all be the natural consequences of an effective Quality Management system. This should, in turn, lead to more satisfied customers (York and Miree, 2004; Ahire and Dreyfuss, 2000). Satisfied customers are more likely to buy from the organization again, to pay more for the products they buy and to recommend the organization to others. The converse is true of dis-satisfied customers, only more so! It is, for example, estimated that unhappy customers will tell 10 people, whereas happy customers will tell only two.

2.4.2 INCREASED WORKFORCE SATISFACTION AND MOTIVATION

The ability to take pride in the work you do is increasingly seen as a motivating factor for workers, and clearly quality improvement efforts contribute to this. Motivated workers are seen as much more effective in delivering good quality and customer satisfaction. Richard Branson is quoted as saying:

> *"If you look after your internal customers you don't have to worry about your external customers."*

Additional benefits from a happier workforce will include better teamwork, lower absenteeism rates and more flexibility in difficult times.

2.4.3 IMPROVED ENVIRONMENTAL IMPACT

Reducing waste will allow organizations to reduce their environmental footprint. This will help to generate a positive corporate image in addition to cost avoidance associated with lower material and energy usage and a reduced burden in respect of costs of environmental impact such as 'polluter pays' initiatives and carbon taxes.

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2.5 SUMMARY AND IMPACT

This section has clarified the business case for Quality Management based on a critique of traditional approaches and description of mechanisms whereby increased competitiveness can be generated. But the theory has to be bolstered by practice. So what is the evidence that this impact actually accrues?

Much empirical work has been carried out which supports the practical impact of Quality Management on business performance. Corredor and Goni (2010) conducted a studying Spain which showed higher mean performance (in terms of profitability) for leaders in TQM implementation than a control group. Bendell and Boulter (2008) found that two years after winning a national quality award the award winners outperformed comparison companies by 24 percent for share value.

It is also interesting to note that 'Quality' remains at the top of the agenda for many organizations. Burcher et al (2010) conducted a study in Australia and Britain noted that 'Quality Lives On' as a business challenge in both countries and that a high proportion of firms surveyed were implementing new quality initiatives.

As Deming says:

> *"In the future there will be two kinds of companies – those who have implemented Total Quality Management and those that have gone out of business; you do not have to do this – survival is not compulsory."*
>
> – Quoted in Gill (2009).

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3 STANDARDS AND MODELS

3.1 WHY DO WE NEED STANDARDS AND MODELS?

Quality management is a contested area, and with the plethora of differing views on what to do, and how to do it, authoritative and impartial guidance is required to help the majority of organizations make sense of the area. It should, of course, be noted that these standards and models are for guidance purposes, rather than comprehensive and complete 'how to' manuals.

3.2 ISO 9000 SERIES STANDARDS

3.2.1 HISTORY

The ISO 9000 series of standards is the international standard for quality management. The objective of this series of standards is to aid supplier quality assurance and to provide a common, authoritative and widely accepted standard by which to evaluate and compare the potential of firms to meet acceptable levels of quality and reliability. The word potential is vital here, since it looks at the system and not the product.

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The evolution of the ISO 9000 series of standards began with defence standards and gathered pace as large organizations realised the need for assessment of suppliers, and then sought to externalise the cost to third party audit processes, rather than use internal supplier assessment resources.

3.2.2 WHY ADOPT ISO 9000?

ISO 9000 usage has more than doubled from 457,834 in December 2000 to 1,064,785 in December 2009 (ISO 9000 2011). It is clearly popular, and there are a variety of possible reasons for individual organizations to adopt the standard:

1. There are a significant number of organizations around the world which require their suppliers to hold ISO 9000 certification. This has forced some companies to adopt the standard.
2. For some companies ISO9000 provides access to markets which would otherwise be closed to them. This is particularly relevant to companies from developing countries. It is also likely that simply being seen as 'taking quality seriously' by achieving certification gives a marketing benefit.
3. Some organizations see ISO9000 as a genuine opportunity to improve the way they do business.
4. In particular ISO 9000 has been seen as a stepping stone to Total Quality Management. This has been a key argument for many consultants, but the necessity of having ISO900 in order to become an excellent organization has no strong evidence base.

There is, however, research evidence to suggest that ISO 9000 certification is correlated with business improvement. A survey by the British Assessment Bureau (BAB 2011), for example, showed that 44% of their certified clients had won new business, and other research shows correlation with achieving certification and business performance.

3.2.3 ISO 9000 (2008) PRINCIPLES AND CONTENT

The underlying principle of the standard is that quality systems are based on formality since this permits objectivity. The standards attempt to formalise and standardise the general approach towards Quality (without standardising unnecessarily the detailed activities that underpin this approach) by:

- A documented quality policy representing the management's approach to delivering customer requirements being set out and committed to by senior management.
- The policy being deployed throughout the organization with more detailed descriptions of processes developed for implementation at lower levels in the business.

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- The organization internally auditing adherence to the policies and procedures, keeping records of audits and quality performance.
- The records being used as the basis for corrective and improvement actions.
- The quality system being audited by third party certification bodies to ensure compliance, and the organization working to improve the system in line with the external audit.

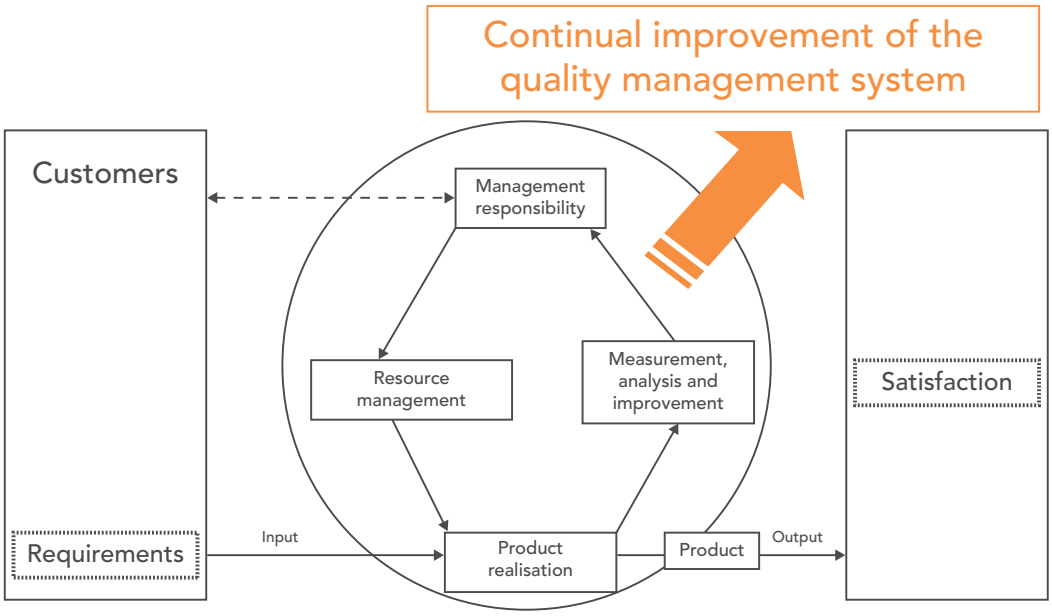

Figure 3.1. The ISO 9000 process approach to quality

Senior management have a responsibility to ensure customer requirements are clearly identified. They deploy appropriate resources to address the requirements. The product realisation (note this can also apply to a service) process takes the detailed customer requirements as an input and transforms the resources provided into a product (or service) output. The customer receives the output and the organization seeks feedback. The organization measures the product realisation process (cost, efficiency, etc.) and analyses this in conjunction with the customer feedback to assess the operation of the system and drive improvement where required. This is fed back to senior management as an input to further strategic planning. Measurement and analysis of the performance of the overall quality system is also used to drive improvement at that level.

The detailed clauses of the standard provide greater depth on the requirements for each element of the system. This detail will not be provided here, but can be obtained by perusing the standard or one of the many books on the topic.

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3.2.5 ISO 9000 CRITIQUE

As noted above, there is evidence that implementation of ISO 9000 has a positive business impact. The principles employed in the 2008 version are certainly sound, encompassing as they do the principles of management responsibility, process focus and customer satisfaction. However, ISO 9000 remains controversial. Critics of the approach raise a number of key issues:

- The value of the good practices associated with the TQM ethos which ISO 9000 is supposed to mimic are lost when they are being completed for the purposes of compliance with a standard.
- Many organizations are actually adopting ISO 9000 as an end in itself, either due to misunderstanding of its purpose, or due to pressure from existing or prospective customers. These organizations will see few real benefits as, once certification is attained, they tend to drift back to 'business as usual' until the next audit is due.
- ISO 9000 may perpetuate the myth of quality as outside normal operations, rather than something which is integrated with the greater whole of the business. This mentality is linked to the first two failings, and is highly damaging to the chances of improved organizational performance.

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- ISO 9000 is criticised for the cost of accreditation and associated paperwork. This is certainly an issue, but if real gains in quality and process efficiency are made then it is less significant.
- In order to prove that you are doing a good job it may be necessary to create rather more paperwork than is necessary to do it. This brings the risk of over-procedurisation which will act to stifle improvement actions due to increased bureaucracy of change. It may therefore promote compliance over understanding and improvement.
- Customers in particular often complain that ISO 9000 certification does not guarantee good products. This seems counter intuitive, but is true, nonetheless.
- ISO 9000 is seen as a partial system; it talks of people involvement and leadership but fails to engage with them on any meaningful level.

3.2.6 SUMMARY OF ISO 9000

The idea of a standard for quality management is a seductive one. It is, however, fraught with difficulty in application; particularly when the pressure to achieve accreditation from senior management or customer can be extremely high. This can lead to game-playing, a compliance mentality and other unintended negative consequences. Undoubtedly, the standard can be a useful first step on the road to excellence, but it must be recognised as just that, and even then, only when undertaken in the right spirit. ISO 9000 is not 'Quality' – more needs to be done, particularly in respect of leadership, people and customers. It may also inhibit exactly those things by being, to a degree, bureaucratic and top-down in nature.

3.3 SELF- ASSESSMENT MODELS OF QUALITY

In addition to standards there are a number of widely recognised models of quality, where the focus is not on achievement of a certificate, but on recognition through self-assessment and associated awards.

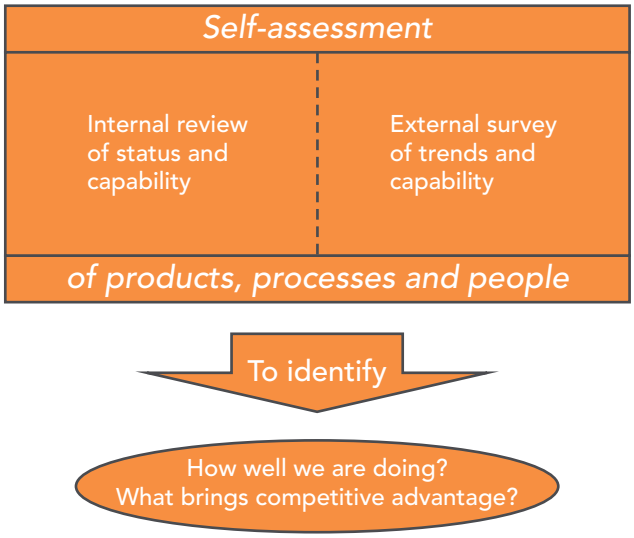

Figure 3.2. An overview of self-assessment

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Self-assessment is the process of evaluating your own organization against a model for continuous improvement. By doing this, it is possible to understand both achievements and improvement opportunities.

The **objective of self-assessment** is to identify and act on the areas of the improvement process that require additional effort, while recognising and maintaining that which is already going well (see Figure 3.2).

Self-assessment has advantages over a certification system in that it does not carry the same pressure to pass, so there is less incentive for game playing, cheating, etc. Whilst other models exist (Deming Price, Malcolm Baldrige National Quality award) we shall focus on the European Foundation for Quality Excellence Award.

3.3.1 THE EUROPEAN FOUNDATION FOR QUALITY EXCELLENCE AWARD (EQA)

This will be the main focus of this chapter. The EQA was established by a consortium of 14 European multi-national organizations in 1991. It is administrated by the European Foundation for Quality Management (EFQM) and closely follows the Baldrige Model, with the means to facilitate comparisons both internally and externally. It has a number of guiding principles:

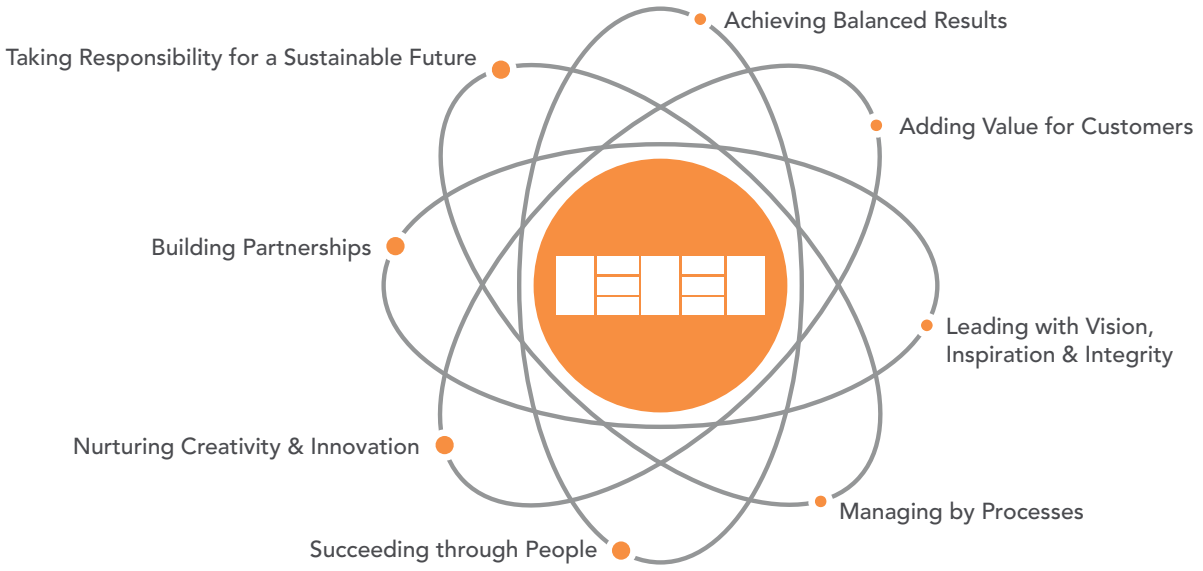

Figure 3.3. Fundamental concepts of EFQM (EFQM.org, 2011)

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According to the EFQM model, an excellent organization should be ***Achieving a Balanced Set of Results*** and progress towards their vision by meeting or exceeding the expectations of stakeholders in both the short and long term. A particular focus within this is ***Adding Value for Customers*** through active engagement with their requirements and innovation. Excellent organizations have leaders who ***Lead with Vision, Inspiration and Integrity*** acting as role models for values and ethics and ***Succeeding Through People*** by valueing and empowering staff and seeking a balance between organizational and personal goals. An excellent organization will also actively and systematically ***Nurture Creativity and Innovation*** to deliver increased value and ***Build Partnerships*** for mutual success based on trust with stakeholders including customers, suppliers and wider society. Ethical organizations embed an ethical mindset within their operations and ***Take Responsibility for a Sustainable Future*** from an economic, social and ecological standpoint.

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Based upon these fundamental concepts the EFQM Excellence Model is designed to provide a holistic view of an organization with respect to its journey towards excellence. It provides an over-arching framework within which other approaches, tools and techniques can be applied. Crucially, the Model considers both the achievements of an organization, and the mechanisms by which these achievements are delivered. Without sustained results, actions have been ineffective, and results without clarity on how they are achieved will not be sustainable. The *enablers* are those processes systems, and behaviours that need to be in place and managed to deliver excellence. The *results* provide the measure of actual achievement of improvement. The Model is currently used by over 30,000 organizations across Europe and the wider world (EFQM.org, 2011), and recent winners include Robert Bosch Fahrzeugelektrik Eisenach, Siemens, Congleton (EFQM.org, 2011).

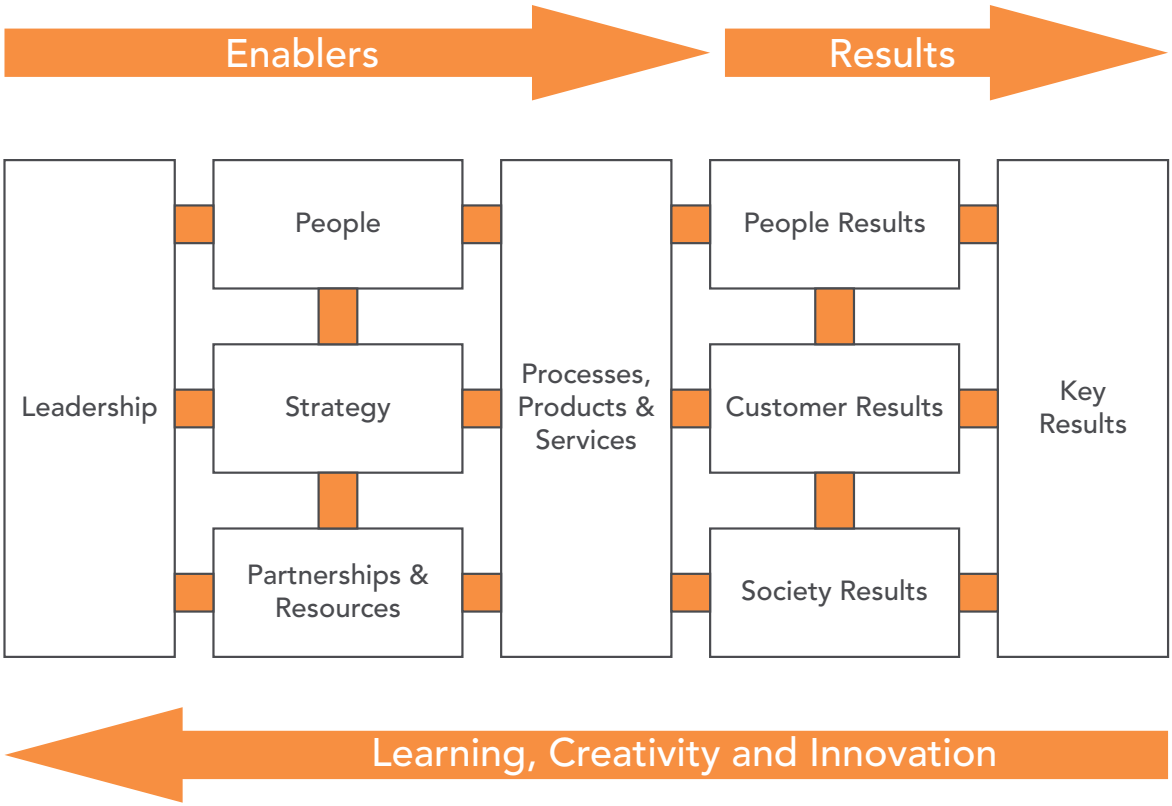

Figure 3.4. The EFQM Quality Model (EFQM.org, 2011)

The Model links results to means (or enablers). The results are a balanced scorecard of internal people issues; customer results; impact on society and more traditional measures of performance such as market share, profitability, etc.

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3.3.2 SELF ASSESSMENT PROCESS

The approach to self assessment employed by the EFQM Excellence Model is the Results, Approaches, Deploy, Assess and Refine (RADAR) system (figure 3.5).

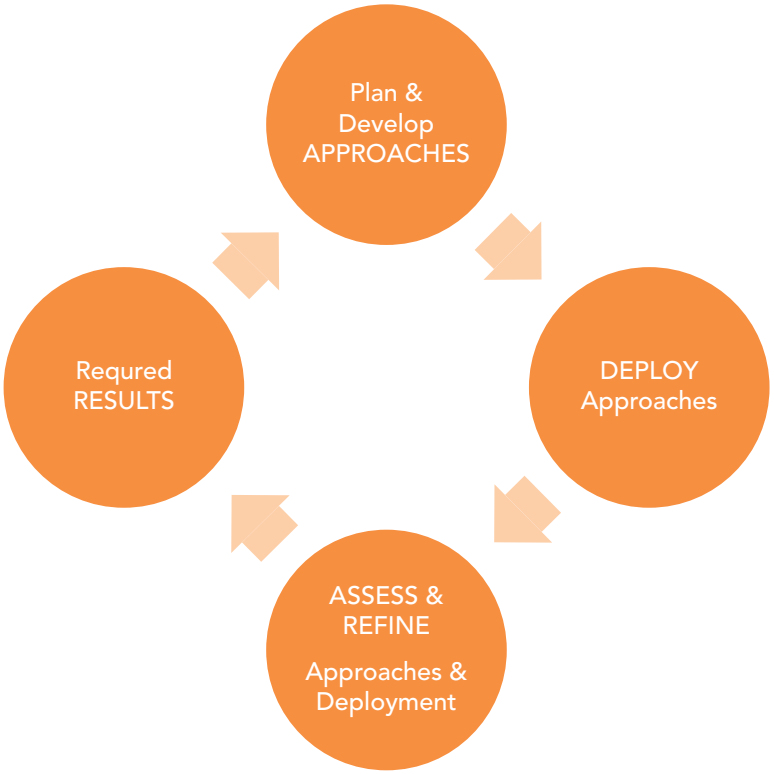

Figure 3.5. RADAR self-assessment system.

The senior management team must consider the strategic results they are looking for from the application of the model, and agree appropriate measurement instruments to assess how well they are delivered. They may, if they choose, benchmark current performance at this point for future reference. The next step is to develop a robust and integrated set of actions which are necessary and sufficient to deliver the results. These will need to be agreed with the individuals involved in delivering the actions, and deployed to appropriate levels in the organization. As the actions are carried out, regular assessment of both the approaches and deployment should be undertaken and refinements made as required.

The application for the award is a natural extension of the approach, and can be undertaken whenever the company feels ready. This will give an external calibration of progress and, if successful, kudos in the marketplace.

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3.3.3 BENEFITS OF THE SELF ASSESSMENT PROCESS

Well planned and executed self-assessment, including follow-up action, can deliver significant benefits, including:

- Gaining consensus on what has been achieved and what still needs to be done, thus enabling managers to prioritise action based on facts and identified needs.
- Providing data to compare with, and learn from, 'world class' organisations in addition to learning from each other.
- Providing a practical tool to driving continuous improvement and data on improvements over time for an objective review of progress.
- Providing a common approach to use in all departments and on all sites and minimising the effort needed to develop assessment methods at different sites.
- Enabling everyone to contribute to the assessment process, thereby bringing ownership of the results and proposed actions. Enabling staff to see the impact of their improvement efforts.
- Enabling senior managers to drive the improvement process and to empower their staff to exercise initiative at their own level.
- Demonstrating the long-term commitment and consistency of purpose. Integrating improvement activity into everyday life by focusing on business results.

3.3.4 SUMMARY

It is very useful for organizations pursuing Quality (or Excellence) to have some form of roadmap. This needs to be an enabling model, which sets out broad principles and the direction of travel without imposing unnecessary constraints on how exactly to move forward. Such constraints would reduce the effectiveness of any approach by reducing the opportunity for innovation and sensible customisation based on the unique situation of the organization.

The ISO 9000 standard is mandated in many cases by customers or market norms. It has the benefit of wide recognition and a general market advantage, but suffers from the problems of pressure to achieve the standard and a scope (especially in application) which lacks significant focus on leadership, people and results.

The broader self-assessment models are focused more on improvement than attainment of a standard or award, and thus perhaps represent a sounder approach which allows for more honesty and integrity in assessing opportunities and progress. The basis tends to be wider, considering both results and the sustainability of those results through the approaches which delivered them.

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4 CUSTOMERS

4.1 INTRODUCTION

The jargon of 'customer satisfaction' is now very prevalent in most organizations, which is clearly a good thing. However, there is significant evidence that the practice of customer focus lags behind the rhetoric. In particular there are pervasive myths which inhibit good practice.

4.2 CUSTOMERS AND QUALITY: THE MYTHS

Many of the assumptions we make about how customers view quality are rooted in a simplistic and outdated view.

4.2.1 MYTH 1: WE KNOW WHAT CUSTOMERS WANT BETTER THAN THEY DO

We often consider ourselves, due to our experience and technical expertise, as 'expert' in our customers' requirements. It is easy to see how this logic leads us to take a rather patronising attitude to customers who either don't really know what they want, or don't understand the complexities of the product. I have lost count of the number of designers who have told me that their customers don't really know what they want.

This is known as the 'Product Out' concept where the focus is on working to specification or instruction and the product is 'pushed' from the company to the customer. The problem with this is that it is slow to respond to changing markets and customer requirements. The 'Market-In' approach allows for a much more responsive system and requires the organization to go and find out the customer requirements. Customers may not be expert in the technicalities of the product, but they do know what the need the product to do for them.

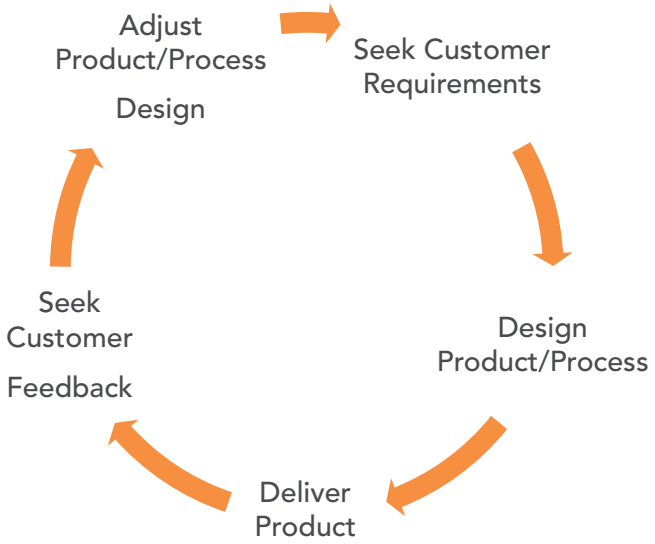

Figure 4.1. Market In Concept

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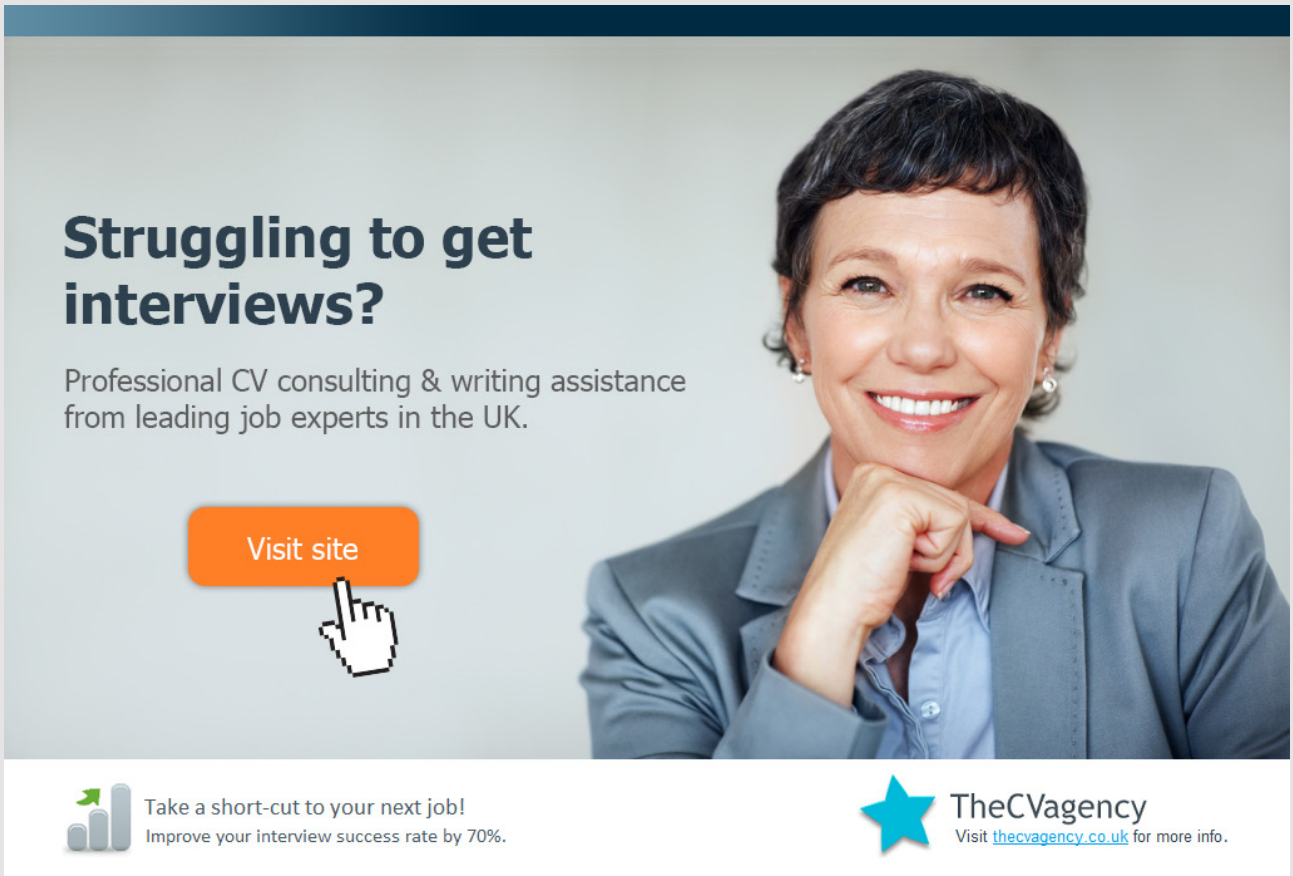
4.2.2 MYTH 2: RESPONDING TO COMPLAINTS IMPROVES SATISFACTION

Customer complaints clearly need to be dealt with effectively. An unhappy customer is a negative advocate in respect of your organization; they will be sharing their experiences and dissatisfaction. However, too many companies rely solely on feedback from customers to drive their improvement processes. There are two basic assumptions in this approach, both of which are flawed:

- ***Assumption 1: Customers always complain.*** Studies over the years have shown that the majority of customers will often simply go elsewhere if they are not satisfied, rather than complain.
- ***Assumption 2: Lack of dissatisfaction is the same as satisfaction.*** Removing a cause of dissatisfaction only returns the customer to a neutral state. If our response systems simply remove the causes of dissatisfaction we do nothing to address creating a positive experience for customers.



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It is not suggested that we do not respond to complaints, just that such responses are only part of the answer. It is important to use data from previous products or services, and from risk analysis to establish potential failure modes and take pro-active measures to avoid failures. Use panels of 'lead customers' to prove products/services before launch; the software industry does this extensively, selecting individuals who will push products way beyond what 'normal' customers expect.

4.2.3 MYTHS 3 & 4: CUSTOMER SATISFACTION AND CUSTOMER LOYALTY

Customer satisfaction is a cherished notion, but it is rather reductive in its conception. Goetsch and Davis (2010) point out that if Customer value (as per the theory of service relativity) conforms to the equation below, when the results equal the expectation the customer value is zero.

RESULTS – EXPECTATIONS = VALUE

Satisfaction is the absolute minimum that should be expected, and that its achievement does little or nothing to enhance company performance in terms of retention of customers, or profitability. Exceeding expectations (and thus generating positive value) needs to be the goal.

Only when the customer sees value in our product will they actively choose it over others. Similarly, the concept of customer loyalty is not helpful. This is because customers are not loyal in any meaningful sense. They will stick with a brand as long as they perceive value there, but desert it as soon as they see more value elsewhere. This is most obvious in fashion-driven markets where this year's hot designer is next year's nobody, but is true of all markets. Our goal needs to be to create (and maintain) customer preference for our offering. The implication of this is that we need to constantly refresh that offering in the light of new market data, with the aim of staying ahead of the 'results minus expectation' equation, given the fact that better results will automatically drive up future expectations.

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4.2.5 MYTH 6: CUSTOMER SATISFACTION HAS A LINEAR RELATIONSHIP WITH PERFORMANCE

The Kano model of quality (see Figure 4.2) indicates that customers have a more complicated view of quality than is often assumed.

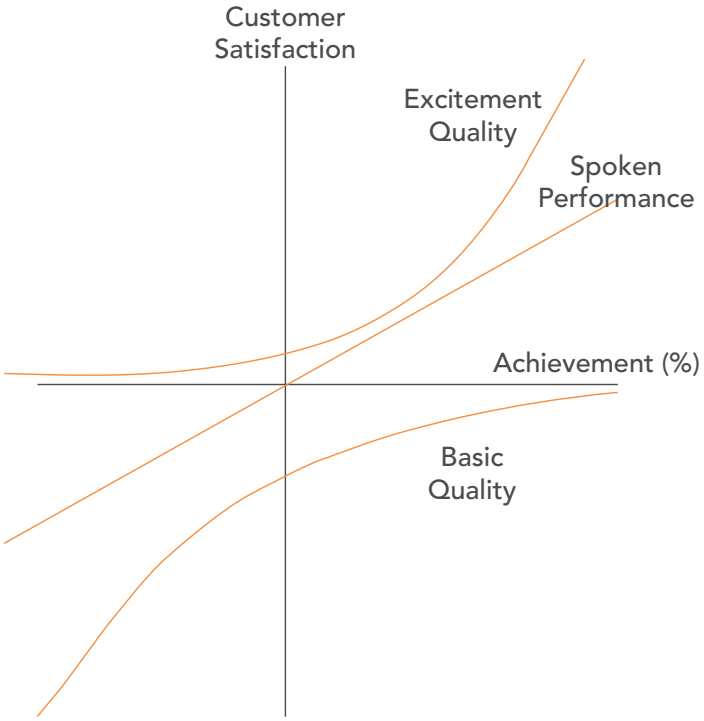

Figure 4.2. The Kano model of quality (Adapted from Kano, 1984)

Spoken performance issues will be of the form "I would like the product/service to achieve this level of performance". If the performance meets or exceeds this level the customer will be satisfied on that issue; if it does not then the customer will be dissatisfied. There will be a roughly linear relationship between performance against the specified criteria and customer satisfaction in that area. However, this does not cover all eventualities. Basic quality is related to items that a customer will not specify performance levels for since (s)he assumes these levels will be met as a matter of course. In effect, these are the assumptions that (s)he makes about your product or service and if you achieve all these you will not greatly impress them.

However, if you fail to fully satisfy one of these criteria you will have a very dissatisfied customer on your hands. Excitement quality refers to giving the customer something (s)he didn't know (s)he wanted (witness the leap-frogging of each generation of smart phone with functions which most people couldn't have asked for but which they can now not do without). Clearly, no customer can be dissatisfied because you didn't give them something they didn't know they wanted, but if you do then you have a chance of obtaining extraordinary customer satisfaction.

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From the above we can see that, although spoken performance issues are important, the real areas where you may lose (basic quality) or win (excitement quality) large amounts of customers are in areas where the customer will not generally volunteer the requirements but where there is a need to get inside his/her head to understand in more detail how they view the product or service.

In marketing terms you might think of 'Basic Quality' as 'Order Qualifiers' – without them you are not even in the game. 'Spoken Performance' would be 'Order Winners', where you compete to give best customer value. 'Excitement Quality' features, are a competitive advantage; they are game-changers, such as the first smart phone, or the first electric window on a car. Your customers will think you know what they want before they do (Apple are arguably the most consistent users of 'Excitement Quality' features at present) and competitors will come under pressure to follow your lead. And the beauty is that, even if they create better versions of these features you are still in the customers mind as the innovators.

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4.4 REQUIREMENTS GATHERING AND VALUE ANALYSIS

4.4.1 CUSTOMER VALUE

Before we consider how we might gather customer requirements it is important to understand the concept of value in a little more depth, as the requirements need to be considered in this context. Value is a complex measure which is shaped by a number of factors:

- Freedom from faults.
- Degree to which requirements/expectations are met.
- Emotional engagement with the product/service.
- Quality of contact with the supplier.
- Cost of the product or service.

Freedom from faults implies that, the product or service must be delivered to the customer as specified. Similarly, the degree to which customer needs and expectations (basic quality, spoken performance and excitement quality aspects) are met is significant to the value the customer will place upon the product. More complicated is the emotional engagement with the product or service; this is a combination of things such as: ergonomics, perceived social and cultural cachet, brand perception, aesthetics, etc. A product which looks beautiful (to the customer in question), fits their values (for example, eco-friendly), is seen as aspirational in the media and popular opinion, is easy (or ideally elegant) to use, and is associated with a brand which has high value for the customer will score highly on this element. Quality of contact with the supplier is also a major factor; customers often cite feeling important and cared for as a crucial factor in their decision to do business with a particular organization. Again, this is itself a complex issue with ease of interaction, perceived competence and degree of responsiveness of staff playing a part, among other things. Finally, cost is important in assessing value; importantly, this does not just mean purchase price, customers are often sophisticated in assessing longer term costs (e.g. running, taxation and insurance costs for cars).

To add to the complexity the five factors interact in ways which are sometimes obvious, and sometimes not. For example, it is reasonably clear that if you buy a cheaper car, you may accept a few more faults, but how important is usability for a more aspirational product? For example, the Apple iPhone 4 saw no dip in popularity, despite issues with reception and signal strength when initially launched (PCWorld.com, 2010).

This complicated context means that it is crucial, if we are to understand what the customer values, that we take a relatively sophisticated approach to customer requirements data.

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4.4.2 REQUIREMENTS GATHERING

Customer requirement gathering is often regarded as an unfortunate necessity. It will often be out-sourced to market research companies. Listening to your customers is probably the single most important thing you can do as an organization, you should take the opportunity to get as many of your people as possible face to face with the customer, especially designers. Questionnaire based approaches, where people are asked what they want from a product or service may be fine for generating 'spoken performance' requirements, but are unlikely to provide insights into 'basic' or 'excitement' features. Be creative; engage with your customer in more direct ways. If you design taxi cabs, send engineers to take rides in cabs and talk to drivers about what it's like to use your product, as LTi Carbodies did. Rubbermaid's 'Customer Encounters' programme put engineers in commercial and domestic kitchens to observe their products being used.

Be The Customer: The US Air force 'Blue Two' Visit (BTV) Programme

"The BTV program, named for the two-stripe maintainer, is designed to give corporate people, particularly designers, and Air Force Program Management personnel a first hand look at the 'real world' of supporting and maintaining systems and equipment. The participants put the same hours in as the two-stripe maintainer and get to bust their knuckles trying to loosen a bolt in a tight place or thread a nut on a bolt with Chemical, Biological and Radiological (CBR) gear on. They experience the cold and heat of a flight line. Some corporate design engineers have seen their designs in use and wondered why they designed it that way when they have the opportunity to try and work on the equipment or system."

– Skinner (1989)

There is no single answer to the best way of gathering customer requirements, but the process requires careful attention and some innovation to be effective.

4.4 SUMMARY

'Customer focus' is often a trite phrase used without much thought in order to sound good. Sadly, the superficial way in which it is treated means that companies rarely understand the (often complex) ways in which their products and services deliver value to the customer.

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5 LEADERSHIP IN QUALITY MANAGEMENT

5.1 INTRODUCTION

Leadership is very important; any text on Quality Management, or indeed any major initiative, will confirm this fact. However, leadership is a subject that is understood in many different ways. This section does not purport to be a definitive or comprehensive look at leadership; it is focused on leadership in the context of Quality Management. For the purposes of this book leadership will be defined thus:

> ***"Leadership is the creation of a vision and environment which inspire people to contribute to organizational goals and nurtures both their capability to do so and their well-being within their endeavours"***

Leadership is a term loaded with meaning for most individuals, much of which is subconscious and comes from our experience of leadership within the family, through the media and in our experiences at work. This has led to some persistent and damaging myths.

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5.1.1 LEADERSHIP MYTHS

This list is not exhaustive, nor is each myth discussed in the depth it deserves, but the reader can investigate them further using the references provided. Much of this is built around the myth of the heroic leader. This myth is complex and culturally embedded for many of us. If you have watched a Hollywood action movie you have seen the heroic leader in action; Margaret Thatcher's iconic status as "The Iron Lady" is essentially about the leader as hero.

- ***The Leader Knows Best***: A heroic leader must have all the answers. You are there to answer the questions of your subordinates and make decisions for them, directing their actions and co-ordinating their efforts. In fact, the leader can rarely know better about the work of a subordinate; each individual is an expert in his/her own situation and job, if you have 10, 100, or 1000 people working for you, how can you possibly know best? And if you try to solve all their problems how will you have time to do your job? Or sleep?
- ***Leaders are Strong and Decisive***: In leaders we value decisiveness above everything, even being right! A leader must never admit to being unsure, and particularly not wrong. If you listen to politicians (who see themselves as leaders, no matter what we think) even when they change their minds they were not 'wrong', new evidence may have come to light, circumstances may have changed, but they were never wrong. Does this enhance the respect we have for them as leaders? Standing firm when the evidence is against you is folly, not leadership. Most leadership decisions are complex and there is probably no 'right' answer, leaders need flexibility.
- ***Leadership is a Function of Position***: Leaders are present (and in some cases absent) at all levels in an organization, there is no alchemy which transforms an ordinary mortal into a leader above a certain pay grade.
- ***Leaders are Born, not Made***: It is clear that some people are more natural leaders than others. There is, however, little evidence to suggest that any individual cannot become an effective leader with appropriate development.
- ***Leadership is About Control***: Many leaders feel that their purpose is to control the actions of those beneath them in the hierarchy. As they are accountable then they should be listened to, and they need to check to see if their instructions are being followed. The 'Controller-Cop' model of management is still very widespread.

These myths tend to create leaders who are overly controlling, afraid of admitting weakness or a lack of certainty on any subject, and focussed on the minutiae of operations rather than more strategic matters.

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5.2 PRINCIPLES OF LEADERSHIP FOR QUALITY

The Leadership paradigm for Quality Management is somewhat different from the myth of the hero-manager.

5.2.1 EMBODY THE VALUES OF QUALITY

It may seem an obvious statement, but leaders need to believe in the central tenets of Quality. The Leader must be invested in the principles of Quality; s/he must focus on customers and make clear their importance at every opportunity. They must embody the principles in all of their actions; staff will always take their cues as to the priorities of the organization from the way the boss behaves. In the same way that body language trumps spoken assertions in person to person communication, actions trump declarations and policies as far as leaders of the organization are concerned.

5.2.2 CREATE UNITY OF PURPOSE

One of the most important aspects of the role of a leader is to generate and articulate the vision and mission in a clear, accurate and compelling manner. The vast majority of employees need to believe in and commit to the attainment of the vision, 100% would be ideal, but practically this may not be achievable. As a leader you need to convey your passion for the vision but also to incorporate and co-opt the passion of others. As well as advocating, you will need to listen.

Creating A Vision

1. Ask yourself, "What do I want to create?"
2. Develop a vision you find inspiring. Your enthusiasm will motivate you and others. Listen to what they find important and exciting.
3. Expect that not all people will share your passion. Be prepared to explain why people should care about your vision and what can be achieved through it. If people don't get it don't just turn up the volume. Try to construct a shared vision.
4. Don't worry if you don't know how to accomplish the vision. If it is compelling and credible, other people will discover all sorts of ways to make it real – ways you could never have imagined on your own.
5. Use images, metaphors, and stories to convey complex situations that will enable others to act.

Ancona, Malone, Orlikowski and Senge (2007)

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The communication and drive associated with these values must come unambiguously from the top; and will, of necessity, be a long-term commitment. Visions cannot be delivered quickly; they require consistency of purpose over time, as well as across the organization.

5.2.3 FOCUS ON PROCESS NOT OUTCOME

Historically leaders and managers have focused on the outcome measures: Did we meet quota? Are the quality levels acceptable? These are valid questions, but they neglect the important issue of how the results are obtained. If the mechanisms for delivering good (or bad) results are not understood then it will be impossible to understand why results change, or how to improve upon current levels.

A good leader will always look to understand the system which generates results and to drive improvement in the system. Both Deming and Juran believed that around 85% of problems relate not to the workers, but to the system. As Deming (1990) points out, responsibility for the system lies with leaders and managers. Workers work within the system, management work on the system.

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The Danger of Outcome Over Process

An object lesson in the risk of focussing on outcome over process is provided by the financial crisis in 2007. Traders and financial marketers had been awarded massive bonuses for performance over a number of years. The bonuses were calculated based on how much money was made for the company, with no consideration of how the money was made (all profit is good profit, isn't it?). The high stakes led employees to deliver highly leveraged products which delivered more profits. Of course, as it turned out, this was based on unsustainable levels of risk which, eventually, crashed the whole system causing massive losses and pain for all of society. If more attention had been paid to the process of generating the short term profits this could have been avoided.

5.2.4 MOTIVATION OF INDIVIDUALS

All business processes involve people; the part that people play in the processes is vital. Yet, the principles of Scientific Management have been adhered to and non-management workers have been told over the decades that all that is required of them is that they report to work on time, work hard and above all do as they are told. The humanistic approach to management has long recognized the fallacy of the scientific approach and can best be summarised by the following diagram that is attributed to the work of Maslow.

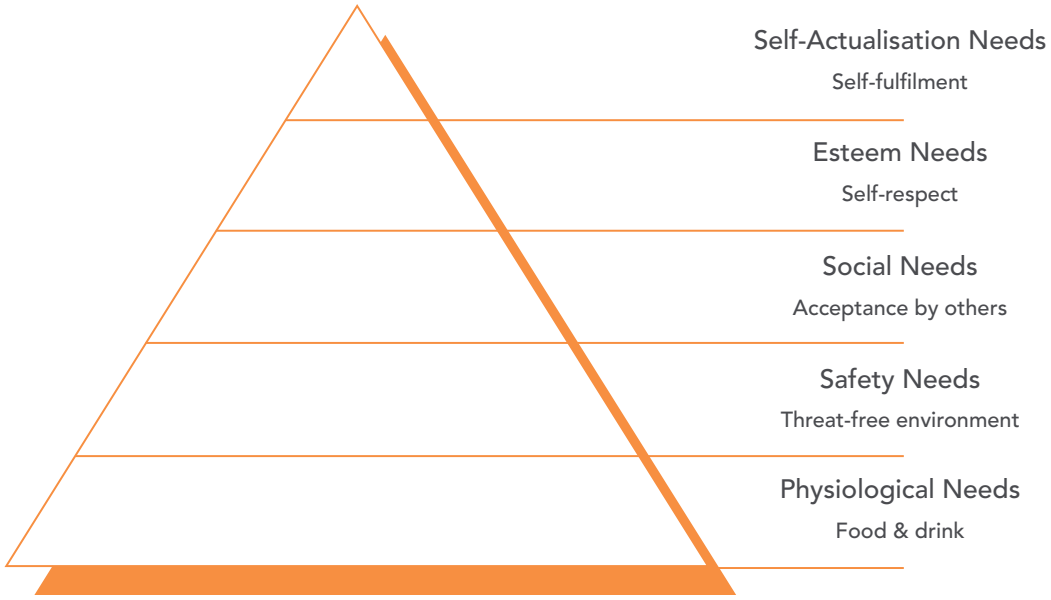

Figure 5.1. Maslow's hierarchy of needs (adapted from Maslow, 1987)

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Most people in full and secure employment will not think about their physiological and safety needs because they have been fulfilled. Also, most people in an organisation achieve their basic social needs of being accepted by their peers. Maslow's point was that once a need is satisfied, it becomes unimportant and the next higher need becomes an important factor in a person's life. The vast majority of the workforce under scientific management achieve their social needs and go no higher in the hierarchy because of the management – worker relationship.

The need for self-fulfilment drives people to better themselves in their chosen area; they do this to satisfy their own inner needs and not specifically to impress those around them. The importance of recognizing this approach to human endeavour in the industrial situation is that *everyone* has these needs; how strongly they drive an individual will vary enormously from a vague wish to intense motivation. The successful manager and leader will understand what makes everyone with whom he has contact "tick", and by doing so will know how to inspire people to give of their best.

7.2.5 CONTROL AND PARTICIPATION

In contrast to heroic leaders the leader in Quality Management recognises the incomplete nature of their knowledge and experience in any given situation and understand that others have both a different perspective and different (possibly more relevant) expertise. Participative leaders see themselves not as controllers and policers of behaviours and decisions, but as coaches helping subordinates make good decisions, and supporting them in taking the actions they deem necessary.

The Quality leader recognises that the people in the company who actually add value for the customer are the operators; they are the ones who deliver products or services which generate income. All supervisory staff are there essentially to support the front-line staff in the development of customer value. Figure 5.2 shows this shift graphically.

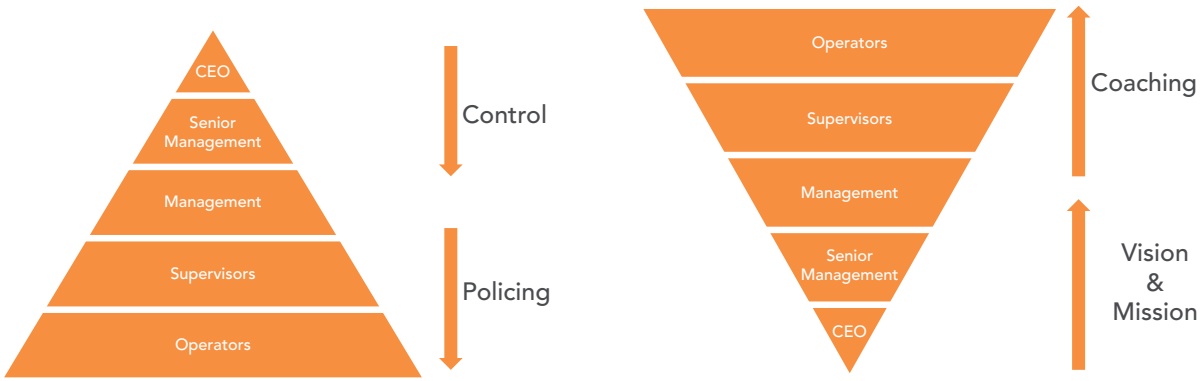

Figure 5.2. Traditional Control hierarchy vs. Participative Management

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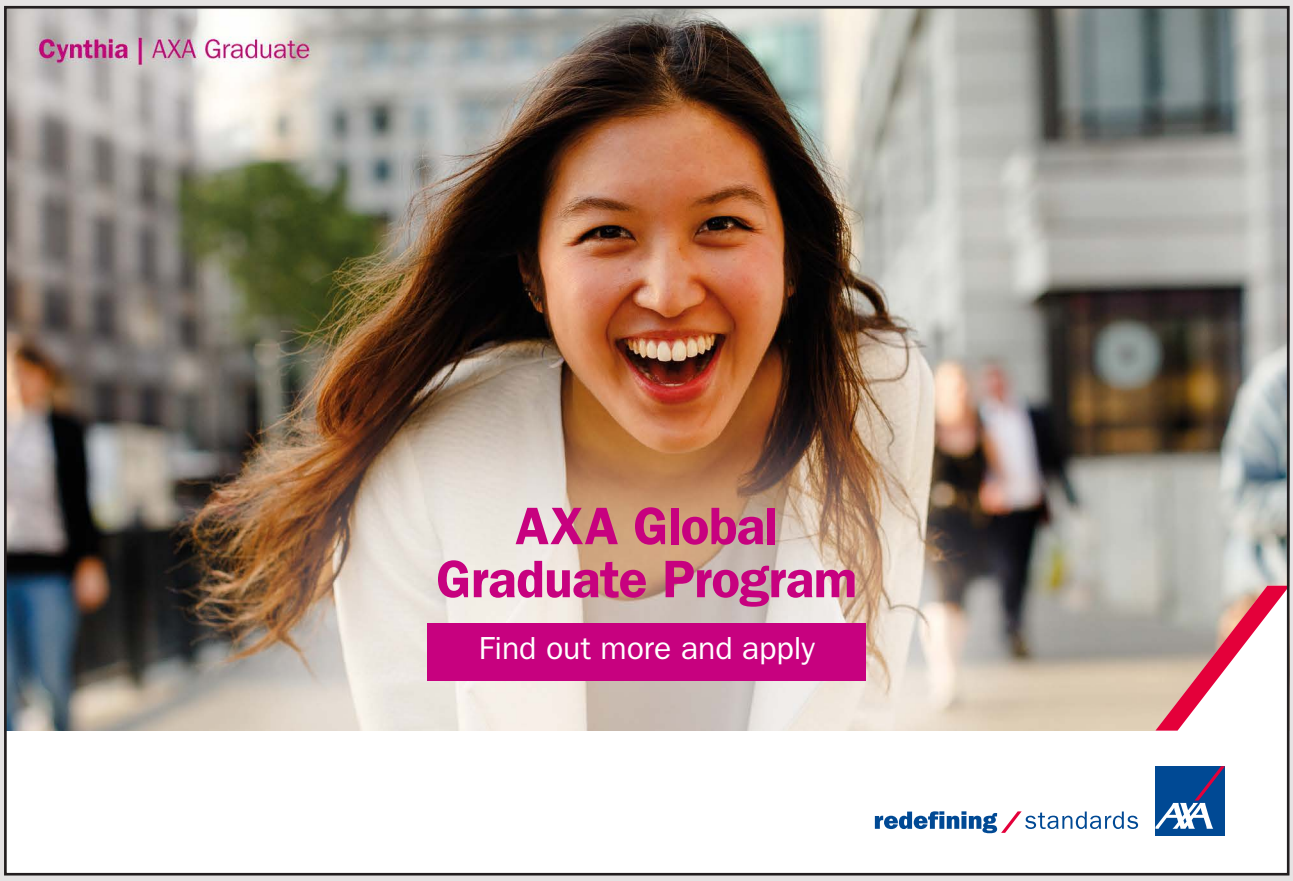
The new model is one of deference to expertise rather than to rank. Decisions are made as close to the operational level as possible, those who know the process best are in control. The role of the higher echelons of the company is to ensure that those making the decisions are aware of the wider context in which they are operating (the flow-down of vision and mission) and that they are operating appropriate decision mechanisms (the coaching element).

The move requires a degree of humility and of bravery on the part of leaders; they have been told that they are responsible, but they must hand over control to others. They need to let go of the heroic model and put themselves in the hands of their subordinates. In fact, they are treating the subordinates as customers in ensuring they have appropriate support in making good decisions.

The new approach also requires some changes on the part of others in the organization. They are used to deferring to the 'expertise' of leaders and managers; they must now recognise that they are the experts in their area, and take responsibility for their actions in a way which has not been required before. It is scary and hard to take on what can appear to be even the simplest responsibility. Support, encouragement and positive reinforcement will be required to help them make the transition.



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Leaders need to utilise the knowledge and expertise available to them to develop a comprehensive understanding of a situation, and to do what Weick et al (2005) described as "sense-making", which he described as a similar skill to cartography. The leader draws upon the views of multiple informants to create a 'map' of the topic area. The map may not be the objective truth in a complex situation, but it represents the best combination of existing knowledge, and therefore the best basis for decision making. A leader making decisions (particularly in crisis situations) might consider the following model of communication:

"This is how I see the situation. Does anyone see something I've missed, or have a different view?"

"Based on the understanding I have outlined, these are the options I can see. Does anyone see any other options?"

"These are the criteria I think are relevant (and their relative importance) to make the decision, and this is why. Does anyone disagree with these criteria, or feel there are any to add?"

"So this is my conclusion on what to do. Does that make sense? What have I missed?"

5.2.6. LEARNING, EDUCATION AND TRAINING

The previous point hints at the need for learning as a key part of leadership in a Quality Management context. Leaders must see themselves as life-long learners; incomplete but building on their knowledge, experience and abilities day by day. They must not only be open to challenge, but must actively encourage the participation of others in decision making by framing their ideas and suggestions as postulations rather than fact. Invite questions and welcome all builds where a positive intent is evident. Even direct criticism is an opportunity to learn; the leader needs to try to understand what has prompted the criticism (while perhaps taking the personal elements out of the phrasing) and see how it might be incorporated.

It is necessary to create a learning friendly environment. Openly support admissions of failure or error as an opportunity to learn. The alternative is to push people into hiding their errors for fear of the consequences and this is likely to lead to repetition of the same mistakes at a later time either by the same people or by others. Leaders foster open debate and sense-making as opposed to blame and reward. Create opportunities for learning such as After Action Reviews and open debate forums (either physical or virtual).

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5.2.7 HONESTY, INTEGRITY AND A LONG-TERM PERSPECTIVE

A leader is nothing without followers, and people will not follow if they perceive they are being deceived or manipulated. The first time duplicity is noticed all credibility evaporates. The old adage: "fool me once, shame on you; fool me twice, shame on me" is well judged.

Integrity is a step beyond mere honesty. Integrity means being consistent, as far as possible, in your decisions and actions. It is no good banging the drum for quality if, when deliveries are threatened, you decide that some borderline goods can be shipped. You need to take the short-term pain in order to stay true to the bigger vision. This is also really about thinking long term. It may be more profitable in the short term to ship the dubious quality goods, but in the long term it is likely to affect your reputation and probably the motivation of your staff, leading to a downward spiral of reducing orders and poor quality. Keep your vision in mind at all times. The litmus test for any decision or action is:

"Is this consistent with the vision, mission and values of the organization?"

Anything which fails this test should be avoided.

5.2.8 EMBRACE CHANGE AND THINK SYSTEMICALLY

An oft-repeated truism is that the only constant in today's world is change. The old saw is true for all its triteness. Leadership is about change, complexity and uncertainty. Leaders need to be at home with the fact that they cannot know all the answers, and that, in fact, there may be no right answer to know. The strategic problems with which leaders wrestle are necessarily abstract and confusing, the butterfly effect is endemic with what appear to be small changes in one area impacting the rest of the system in unpredictable ways. They require the brainpower of the whole organization to make sense and act upon. Change is uncomfortable and difficult for everyone but getting used to it is vital. Try to find futures which are closer to satisfying the needs of all stakeholders, encourage win-win thinking and democratise the process of change wherever possible.

Small experiments to test understanding should be the norm. Expect that changes will have unexpected consequences, learn for this and make better decisions in the future. Creating the ability to react to these unexpected effects will allow your organization to become much more sustainable.

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5.3 SUMMARY AND IMPACT

This section looks at leadership in the context of Quality Management. There are many books dedicated solely to this topic so there is no claim here of a comprehensive treatment. However, the principles set out reflect a sound basis for the leadership approach to developing excellence. Leadership is complex and difficult. It involves the combination of integrity, people management skills, process understanding, a learning outlook and humility. But the rewards are extremely high on both a personal and an organizational level.

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6 STRATEGIC QUALITY MANAGEMENT

6.1 INTRODUCTION

In order to be effectively implemented, quality management needs to be treated as a strategic priority alongside marketing, finance and operations. This implies an effort to manage quality at a strategic level. To understand what this means we need to define some terms:

- ***Strategy***: Is a plan of action to achieve organizational goals, usually related to performance in the market place.
- ***Strategic Management***: is the development, deployment and execution of strategic plans. It involves the development of organizational mission, vision, values and goals; the development of policies and plans, their execution and evaluation.

6.2 VISION, MISSION AND VALUES

6.2.1 VISION

Corporate vision is essentially a tone setting idea, which is designed to align and inspire the stakeholders in an organization (principally and crucially those who work for it). It should be concise, easily understood and stirring. Vision statements vary in length and content. One of the best known was the vision statement for Fuji Film:

"Kill Kodak"

It can be seen to fulfil all the requirements above in two words. Vision statements which are this succinct are rare, but this should be the aspiration. Below are further interesting examples:

"Democratize the automobile"

– Ford Motor Company (1900s)

"To be the number one athletic company in the world"

– Nike

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"To make people happy"

– Walt Disney Corporation

"Become the company most known for changing the worldwide poor quality image of Japanese products"

– Sony (1950s)

Again, they capture an inspiring vision for the organization at the time, of course, visions can change over time.

6.2.2 MISSION

Mission statements add detail to the vision statement. It captures who the organization is and what it will do to achieve its vision. Examples are:

"Google's mission is to organize the world's information and make it universally accessible and useful"

– Google

"McDonald's vision is to be the world's best quick service restaurant experience. Being the best means providing outstanding quality, service, cleanliness, and value, so that we make every customer in every restaurant smile"

– McDonalds

Leaving aside any personal views on the organizations concerned, it can be seen that these develop the vision to suggest more practical aspects of strategy and set boundaries, be they industry sector, geographic, or temporal.

6.2.3 VALUES

Alongside vision and mission it is important to develop organizational values. These are the things in which the organization espouses belief. They are an indication of the way in which missions will be delivered. Values add nuance to vision and mission statements, but are actually more enduring than either; while external circumstances may affect the vision or mission of an organization the values should be unchanged in most circumstances.

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Southwest Airlines: Values in Action

Southwest Airlines places relationships at the heart of its business values. Relationships with its people; with its customers; and with its shareholders (very definitely in that order). When faced with the post 9-11 world of vastly reduced passenger numbers and squeezed margins most airlines, understandably, tackled cost by laying off staff. This was an option open to Southwest Airlines, but they deemed it contrary to their values (even though they were similarly stated to those of many other airlines). They refused to lay off a single member of staff, instead engaging them in cost saving activities which resulted in improved fuel efficiencies amongst other things.

This counter-intuitive, but value based decision allowed them to make a profit every quarter while the rest of the industry lost $22 million over the next 3 years.

– Based on Leavenworth, S. (2011)

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Values need to be properly respected in an organization. If the espoused values are not supported by the corporate behaviours they will be unconvincing to the staff of the organization, and they lose all relevance and value. In fact, they can become counter-productive, serving as a parody of the actual behaviours and a focus for staff resentment. For example, many organizations claim that 'people are our most important asset, but in companies where the actual experience falls short of this ideal such statements are viewed with bitter irony. On dishonest values statements, noted leadership author Patrick Lenconi points out that:

> *"Far from being harmless, as some executives assume, they're often highly destructive. Empty values statements create cynical and dispirited employees, alienate customers, and undermine managerial credibility."*
>
> *– Lencioni, P.M. (2002)*

6.2 STRATEGIC OBJECTIVES

Strategic objectives need to be developed from the vision, mission and values of the organization. These need to be a few significant items which are clearly stated, relatable to all levels and challenging, but not impossible.

6.2.1 STRATEGIC PLANNING

The primary role of strategic planning is to set the right objectives for the business, determine the best means of achieving the objectives and to facilitate the effective implementation and review of the means as the plan is executed. This requires that planners should work in the context of higher-order purposes of the organization, which are usually very specific to its own situation including the needs and desires of the owners and stakeholders. An example of a higher order purpose may be to provide the best products and services to society, with specific objectives of introducing four new products next year. Strategic management is needed in addition to strategic planning in order to translate the strategic intent through a reliable execution methodology into planned results.

In some cases incremental activities can be used to improve current business processes through use of facts and analysis to solve recurring problems. But some performance gaps are large and require breakthrough (or step change) activities (see Process Improvement in chapter 10). The planning system needs to cater for both types of improvement.

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6.3 HOSHIN KANRI

6.3.1 INTRODUCTION

Hoshin Kanri is a planning system developed in Japan in the 1960's aimed at deploying strategy effectively throughout an organization. The major elements of the model can be summarised as:

- ***Five-year vision****:* This should include a draft plan by the president and executive group. This is normally an improvement plan based on internal and external obstacles, and revision based on input from all managers on the draft plan. This enables top management to develop a revised vision that they know will produce the desired action.
- ***The one-year plan****:* This involves the selection of activities based on feasibility and likelihood of achieving desired results. Ideas are generated from the five-year vision, the environment and ideas based on last year's performance.
- ***Deployment to departments***: This includes the selection of optimum targets and means to achieve the plan. It focuses on the identification of key implementation items and a consideration of how they can systematically accomplish the plan.
- ***Detailed implementation****:* This is the implementation of the deployment plans. The major focus is on contingency planning. The steps to accomplish the tasks are identified and arranged in order. Things that could go wrong at each stage are listed and appropriate countermeasures selected. The aim here is to achieve a level of self-diagnosis, self-correction and visual presentation of action.
- ***Monthly diagnosis****:* This is the analysis of things that helped or hindered progress and the activities to benefit from this learning. It focuses attention on the process rather than the target and the root cause rather than the symptoms. Management problems are identified and corrective actions are systematically developed and implemented.
- ***President's annual diagnosis***: This is the review of progress to develop activities which will continue to help each manager function at their full potential. The president's audit focuses on numerical targets, but emphasis is on the process that underlies the results. The job of the president is to make sure that management in each sector of the organization is capable. The annual audit provides that information in summary and in detail.

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Each phase of the deployment employs a consensus building approach known as 'Catchball'. Catchball is an important concept in Hoshin Planning, and is derived from the children's ball game, where instead of a ball, an idea or goal is tossed around from person to person. It is a vital element which requires constant communication, to ensure the development of appropriate targets and means, and to their deployment at all levels in the organization. Systems must be implemented to ensure feedback in bottom-up, top-down, horizontal and multi-directional horizons. To realise such a communication network, there must be a company commitment to employee involvement and continuous improvement. This approach builds buy-in through participation in the goal-setting process, and consensus with the team to ensure appropriate levels for goals and targets. The focus is on individuals making plans that are tied into a company vision, diagnosis of company processes and comparing actual results against the original targets.

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An Example of Hoshin Kanri

Rover Group was one of the early Western adopters of Hoshin Kanri in the 1990s. It applied a catchball process involving interviews with over 100 members of staff at all levels to identify appropriate strategic goals for the 9 key business processes (Product improvement; new product introduction; logistics; sales & service; manufacture; maintenance; business planning; corporate learning; management of people). They then developed milestones and business plans which were cascaded throughout the organization. A gap analysis then allowed focus on the breakthrough areas where significant work was required to meet the challenging milestones. Some impressive results were achieved in several areas; for example, the area of new product introduction was reengineered to deliver dramatic improvements in lead-time (26%), warranty levels (25%), and product satisfaction ratings (20%). Sadly, the dissolution of Rover's ill-fated ownership by BMW stopped the process in its tracks.

– Adapted from Tennant and Roberts (2001)

6.3.2 THE BENEFITS OF HOSHIN KANRI

The benefits of Hoshin Kanri as a tool for *Strategic Quality Management (SQM)* compared with conventional planning systems include; integration of strategic objectives with tactical daily management, the application of the plan-do-check-act circle to business process management, parallel planning and execution methodology, companywide approach, improvements in communication, increased consensus and buy-in to goal setting and cross-functional-management integration.

6.4 SUMMARY

The problem with applying the concept of Strategic Quality Management (SQM) by using Hoshin Kanri is that it can tend to challenge the traditional authoritarian strategic planning models which have become the paradigms of modern business. Hoshin Kanri provides an appropriate tool for declaration of the strategic vision for the business whilst integrating goals and targets in a single holistic model. Most reported applications of Hoshin Kanri have originated from companies based in Japan or in overseas divisions, although there are some examples of Western business applying the technique.

The case study at Rover Group has demonstrated that it is possible to involve line managers in the Hoshin Kanri target development process, cross company deployment and the implementation of effective review mechanisms. This approach to managing the business can be a powerful mechanism for harnessing and directing resources to achieving common business goals.

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7 PROCESSES

7.1 INTRODUCTION

7.1.1 DEFINITION OF A PROCESS

A business process, simply defined, is any activity, or set of activities designed to change one or more inputs – which may be physical or information- into one or more outputs. It is desirable, although not universally true, that a process should in some way add value to the inputs so that the output is worth more than the combined value of the inputs and the processing. Figure 7.1 show this in diagrammatic form.

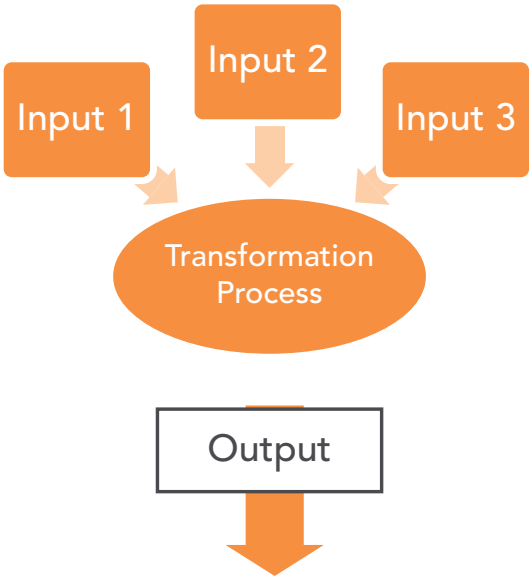

Figure 7.1. A process

Based on this definition, a process can refer to a physical manufacturing process or to a virtual or service operation where the output is not a physical product – a doctor's advice, or the transfer of funds between bank accounts for example.

7.1.2 PRODUCTION AS A SYSTEM

Deming's model of production as a system (see figure 2.1 in chapter 2) looks initially chaotic, but simply reflects the myriad of activities that go on within a production environment. The flow is as follows:

- Consumer research drives an initial design.
- This is flowed down to suppliers who pass material into the organisation.
- The material is verified to design and passed into production.

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- Processes, machines, methods etc. are monitored as the material flows through the production process.
- On successful completion goods flow into the distribution chain to consumers, whose feedback is sought to drive design changes as appropriate, and the cycle begins again.

This concept is hardly revolutionary now and, indeed, the wording of the model may look rather dated. However, the recognition that outputs of a process are clearly driven by inputs was the vital first step on the road to managing processes rather than outcomes. Deming made some supplementary points on viewing production as a system. He noted that 'the system must have an aim' (defined by the customer of the process). An obvious comment, but it is amazing how often we lose sight of the end goal of the process in the endless debates over precedent and practicality which attend most manufacturing processes. Deming also noted that in the increasingly competitive production environment of recent years it is necessary to improve the system 'constantly and forever'. Perhaps the most insightful of his comments is that:

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"Every organisation is perfectly designed to achieve the results that they do"

– (Deming, 1990)

This encapsulates the fact that processes drive results, and that if you wish to change the results you need to change the processes. Process design and management are thus seen as key to performing on all business measures. This demands a purposeful and planned approach to defining and refining the system with which we attempt to achieve our aims.

7.2 BUSINESS PROCESSES: THE REALITY

In many organisations the reality of business processes is complicated by the existence of 'functional silos' within the process. This is due to different departments or groups of experts 'owning' parts of the process and often having measures which conflict with each other.

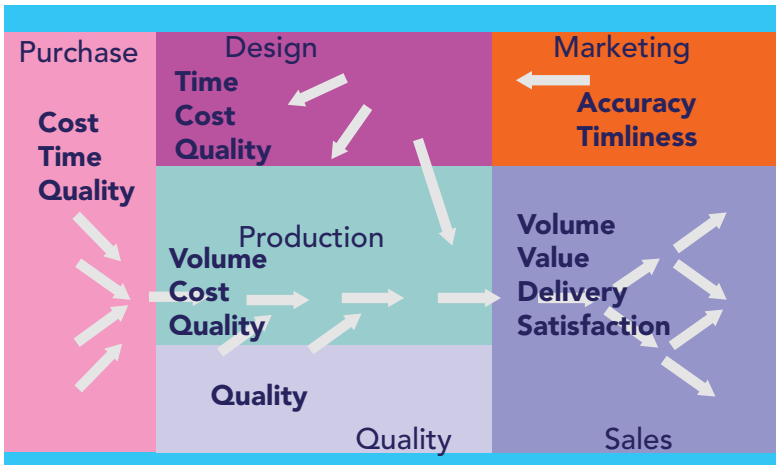

Figure 7.2. The Reality of Responsibility & Measurement in a Process

Figure 7.2 shows typical 'owner' departments in each coloured segment and key measurements that might be applied. The interfaces on this diagram require careful management if conflict is to be avoided. This, in effect, is where the continuous process model is most likely to break down with sub-process optimisation and local goals taking precedence over the broader picture. Everyone is driven by different goals so that the commonality of purpose one might reasonably expect breaks down. We need to ensure we take a systems view, which optimises the whole rather than individual parts of the process.

Until departments can look beyond their own boundaries conflict will always exist. It can be argued that this integrating function is, perhaps, the key function of management. Developing the vision and buy-in required to make this a reality can be supported by the application of Hoshin Kanri (see chapter 6).

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7.3 PROCESS PLANNING

Processes need to be planned in order to be successful, in previous sections we have discussed how corporate goals and visions can be deployed to departmental/process levels.

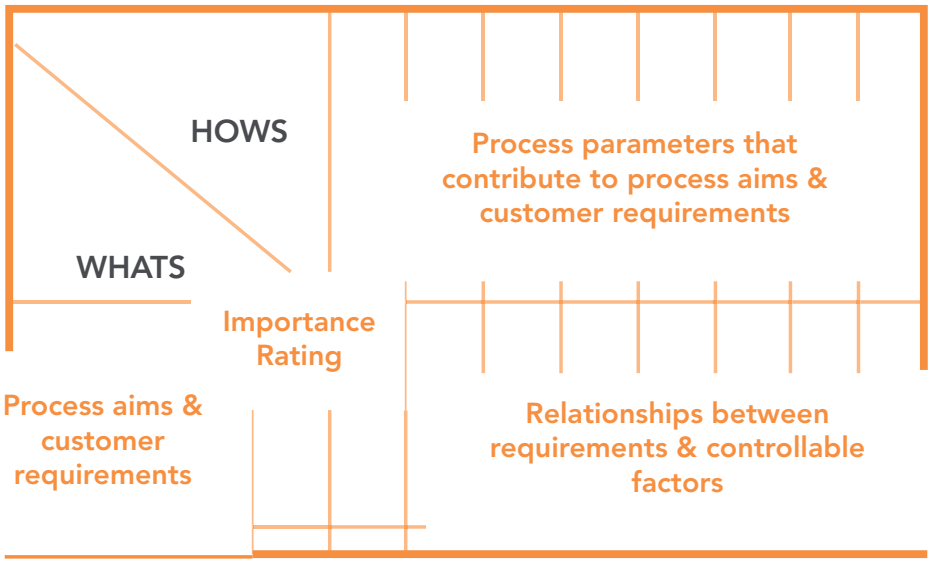

Figure 7.3. The Process Planning Matrix

This section looks at a methodology for creating a process focused on the needs of the customers of this process. The process-planning matrix links the customer requirements (prioritised by importance on the left hand side of the diagram) to the process parameters (across the top) via the relationships matrix in the centre of the chart. The process owners in consultation with customers and process fact holders will fill in this chart. Where difficulty is experienced in filling in the chart it will indicate a need to develop process understanding further via discussion or experimentation.

By using this approach there is a formal recognition of the need to link goals to means and to robustly define the priorities for improvement within the process. This is a necessary pre-cursor to establishing process stability and capability on key parameters, rather than wasting improvement effort on less relevant aspects of the process.

7.4 PROCESS CONTROL

Having established what aspects of a process are important to deliver customer satisfaction, it is necessary to ensure that these aspects are properly controlled, in order to deliver the required outcomes.

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7.4.1 BACKGROUND

Figure 7.4 reminds us of the generalised process diagram for a process operating on a detection basis.

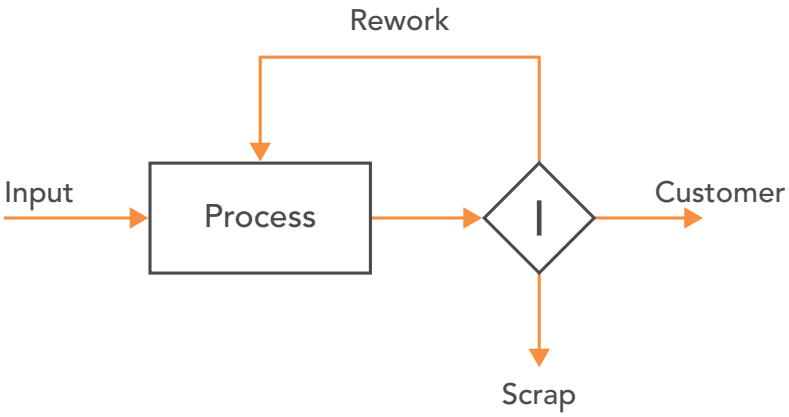

Figure 7.4. A process using 100% inspection.

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There are four major problems that can be identified with such a system:

- ***It doesn't work***: 100% inspection is not 100% effective. No matter how good the inspector, some good products will always be rejected or sent for rework due to fatigue, boredom or a dozen other factors. More significantly, bad product will get shipped to customers.
- ***It is expensive***: The system is costly in terms of manpower, equipment etc. enough inspectors must be employed to ensure that inspection does not become a bottleneck in the production system.
- ***It is too late***: Products have already been made before diagnosis, and often there is sufficient lag between production and inspection that any feedback would be meaningless.
- ***It misplaces responsibility***: Responsibility for quality devolves from the person making the item to the inspector of the item whilst the control of quality remains where it always will remain, with the person in control of the production process. Thus, the only one with the ability to affect the final quality of the finished product has no incentive to pursue such improvements.

The logical way to overcome the problems associated with this type of system is to apply preventative techniques at the operation stage to ensure that the product is produced to the required quality. The key approach here is Statistical Process Control (SPC). The origins of SPC date back to the inter-war period, and are based on the work of Walter Shewhart who, in 1927 identified the use of control charts to detect process variation. The man who is seen to have most influenced the development of SPC as a technique, and popularised its use is W. Edwards Deming. Deming was a disciple of Shewhart and was sent to Japan at the end of World War Two to help redevelop Japanese industry. Amongst other philosophies he propounded the principles and practices of SPC, the Japanese listened, took up his teachings with enthusiasm and the rest is, as they say, history. The core principle of SPC is the belief in the need to understand the variation in a process and manage it on that basis.

7.4.2 SPECIAL AND COMMON CAUSES OF VARIATION

Variation is part of our everyday lives. Both at work and in our private lives we make allowances for its effects from the process of getting to work in the morning to the output of a complex manufacturing system. However, whilst a seat-of-the-pants approach to deciding how long we allow ourselves to get to work may be perfectly adequate, a similarly haphazard approach to managing processes at work is not desirable. We need to get a **quantitative** feel for the variation in our processes. There are two basic elements to this variation: the central tendency and the spread. We need to have a handle on both these since they are vital to a successful process. It's no good being the right temperature on average if, to achieve this, you've got one foot in the fire and one in the fridge!

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At this stage it is important to note the two potential causes of variation that can affect a process, these will be illustrated by means of a simple example of driving to work in the morning: even when we set off at exactly the same time, following the same route, in the same car it is obvious that arrival time will vary.

Common Cause (Unassignable) Variation: This is variation that is inherent in the process; it is always there. In the process of getting to work this will mean things like waiting time at fixed traffic lights, or the driver's mood and condition, or weather conditions. Only fundamental action on the process can change common causes. For example, changing route to avoid the traffic lights will remove that cause of variation.

Special Cause (Assignable) Variation: This is variation due to transient causes outside the process norms and can usually be traced back to the specific cause. In the journey to work example this would include road works, breakdowns etc. In many cases action can be taken to achieve a reduction in the future effect of these 'transient problems'. For example, better maintenance to avoid breakdowns, which does not fundamentally change the process.

The difference between the two types of variation is crucially in their effect on the process. Common cause variation affects the overall spread of the process (so, for example, a journey with a lot of traffic lights would tend to have a wide variation as the variation caused by red or green at each light would add up), it would not affect predictability. A process which is subject to only common causes will be predictable (within limits), so we know that our journey to work might take between 20 and 30 minutes provided that nothing odd happens. We cannot, of course, predict the exact time it will take tomorrow, but we can make sensible decisions with regards to process management.

On the other hand, a special cause will tend to not only increase variation but also to destroy predictability. For example, if you were involved in a road traffic accident you would expect the journey to take longer. It would not, however, be possible to estimate the effect; it might be 10 minutes to exchange insurance details with anyone else involved, or if the car was no longer fit to drive you might miss the whole day at work. If a process is unpredictable it is not possible to make any sensible management decisions; you could not, for example, allow an extra 30 minutes for your journey time if you knew you were going to have an accident.

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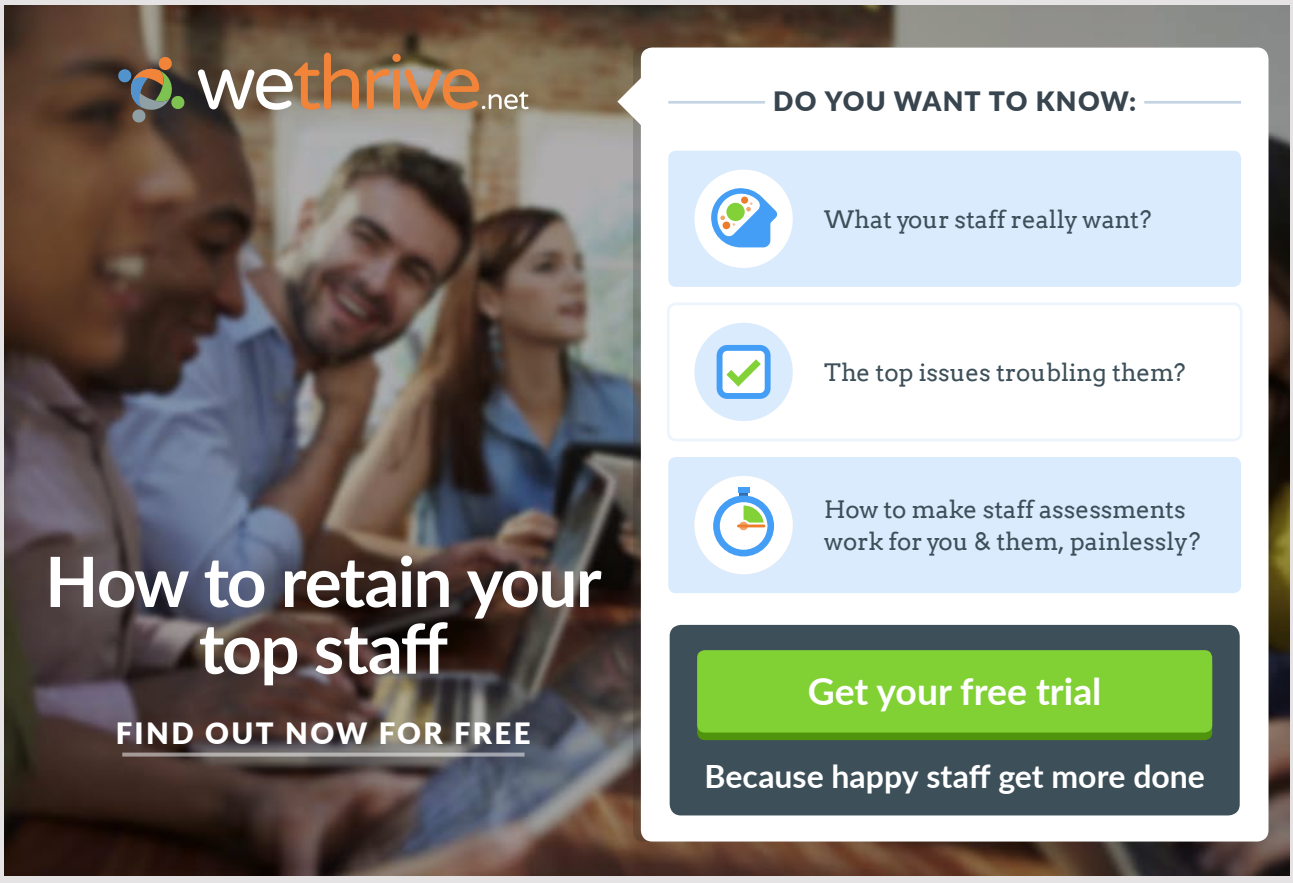
Accordingly, a process which is subject only to common cause variation is described as being ***"In Statistical Control"***. This is sometimes reduced to ***"In Control"*** or described as ***"Stable"***. This essentially means it is predictable, and we know what is coming (within limits). When a process is under the influence of special causes it is described as being ***"Out of Statistical Control"***, ***"Out of Control"*** or ***"Unstable"***.

7.4.3 SHEWHART CHARTS: APPLICATION OF ECONOMIC AND SCIENTIFIC PRINCIPLES

To effectively manage a process we need to be able to distinguish between In Control and Out of Control conditions. To do this we need to establish what the natural limits of the common cause variation are. Shewhart uses the empirical rule for homogenous data (Wheeler, 1995) which suggests that 3 standard deviations is an appropriate level to set up rules by which we can make consistent judgements about changes in the process – these are called the 'natural' or 'control limits'.



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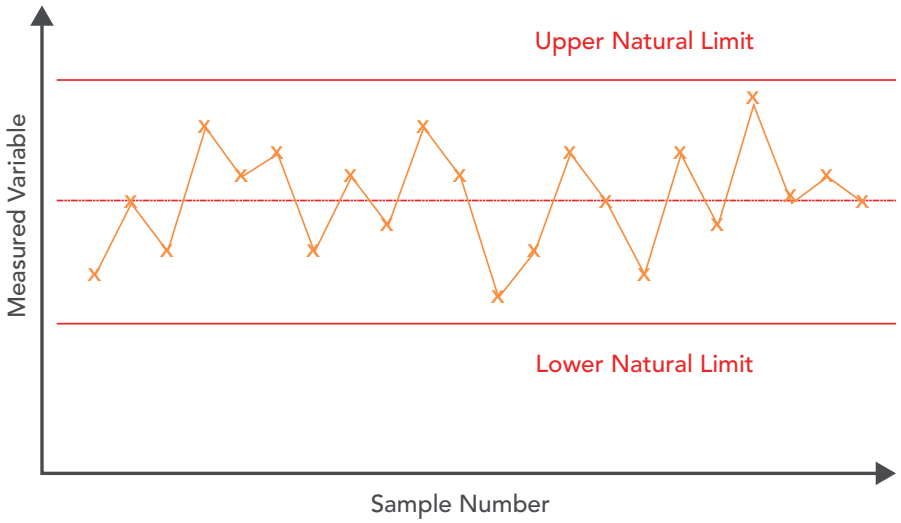

Figure 7.5. A control chart

The concept of natural limits for a process means that we can distinguish significant changes from insignificant ones: Special Causes from Common Causes of variation. Since the decision rules are based upon characteristics of all homogenous data sets rather than the specific attributes of one particular distribution this is a very robust model.

Shewhart has set down methods of calculation for the control limits for each type of chart. These are based on the assumption of 3 sigma limits for both average and range charts. These will not be discussed in detail here, but are covered in "Six Sigma", also available on Bookboon.com.

It is worth noting that the choice of 3 sigma is an economic rather than a statistical one. Shewhart (1980) states this in his seminal work on the topic. At this level he considers that it would be economic to find and fix the causes of any point outside the limits but uneconomic to do the same for points inside the limits.

7.4.4 OUT OF CONTROL CONDITIONS

The purpose of calculating the control limits is to support the identification of out of control conditions and subsequent process learning. There are a number of rules for detecting out of control conditions, but for the moment we shall look only at points outside the control limits.

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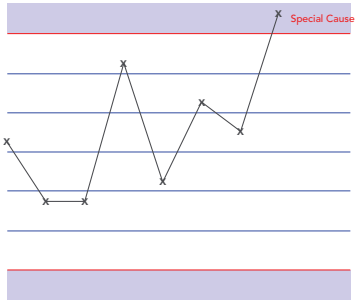

Figure 7.6. A point outside the control limits indicating an out of control condition.

When an out of control condition is observed it is necessary to take appropriate action; no out of control point should be ignored. The chart can be seen as the voice of the process; if the process says that something has changed you must always listen and look for the special cause. To ignore this warning is to run a process in whose output you have no confidence. In the ideal case, the process should be stopped until the cause has been found and eradicated. However, this is unlikely to be possible in every instance, so it may be necessary to run with an unresolved special cause potentially present. In such a case it will be important to ensure that customer protection measures (such as inspection) are in place until stability has been re-established.

The mechanisms for taking action will vary depending upon the situation in which you find yourself. To make the response to out of control points easier it's desirable to keep alongside (or preferably on) the chart a log of everything which happens that might have an impact on the variability of the process. This will obviously include such things as shift, operator, tool and batch changes but might also include observations about ambient temperature, passing traffic, tea breaks etc. In fact, the more detailed the better. As an example, it was found on one turning process that the opening of nearby external doors for the passage of factory traffic was sufficient in winter to reduce the local ambient temperature to such a degree as to have a significant effect on the process. Had this factor not been identified on the process log it is likely that this special cause would have gone undetected for much longer. In the majority of cases a comprehensive process log will allow you to tie a special cause to an effect. If this is not the case then a brainstorm will need to be carried out (possibly supplemented by a cause and effect diagram) to establish what elements of the process (in its broadest sense) and its environment might have been responsible for the disruption. Normal problem solving disciplines will need to be applied to ensure that the right solution is arrived at.

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These activities will need to involve all process related local personnel and possibly technical experts. Please note that in the best organisations such activities are not merely reserved for the resolution of special causes but learning from and responding to the chart will be shared between the local team in regular informal meetings around the chart. In this way reduction of common as well as special causes can be undertaken even at the local level. Do not content yourself with tweaking the process when an out of control condition occurs. The point of SPC is to **improve not adjust**. There are, of course, occasions when adjustment is the correct short-term response, but consideration should be given to how to make the adjustment unnecessary -or less frequent- in the future.

7.5 PROCESS CAPABILITY

7.5.1 UNDERSTANDING PROCESS CAPABILITY

Once a process is stable, it is necessary to determine whether the outcomes of the process can meet customer expectations – as described by tolerance limits in most product oriented applications and service level agreements in service oriented applications.

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Capability evaluation is the method by which we determine whether a process is up to the job of meeting the specifications set for it. It is important, before attempting to establish the capability of a process to ensure that the process is stable. The key issue is that if a process is not stable the capability will be constantly changing due to the transient effects of special causes and will hence be uncertain.

Consider the four processes shown in Figure 7.7 with the specification limits. Clearly, process A is producing many components both above and below tolerance (incapable); process B is offset and is, as a result, producing components below the bottom tolerance limit (potentially capable); process C is producing almost all components within tolerance (barely capable) and process D is operating well within the tolerance limits (highly capable).

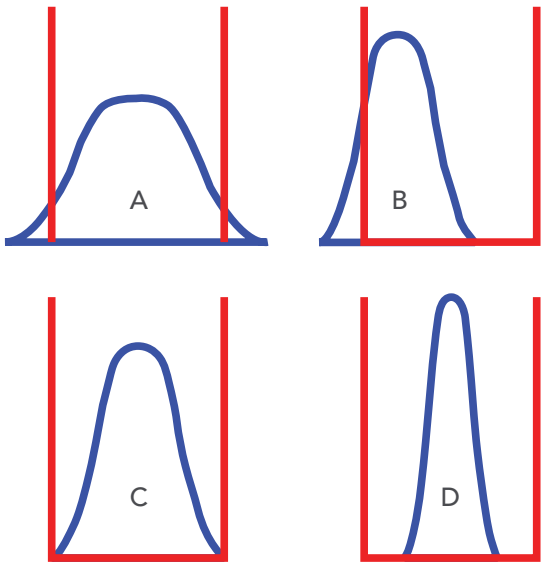

Figure 7.7. Process capability diagrams

Given the information provided in the Figure 7.7 we can act upon the process (resetting process B, for example, or attempting to reduce the spread of process A), without such information we would be making such decisions in the dark. Similarly, this information would be of use in selecting suppliers having these capabilities. If we do not understand the capabilities of processes at an early stage in the product lifecycle we give ourselves little chance of making appropriate decisions about which processes to use as they are and which to work on. If we find this out when we reach volume production we incur additional costs. Indices may be calculated to quantify capability, but these are not dealt with here.

Clearly, customers expect all products to (as a minimum) conform to the specifications which relate to their requirements. Capability is useful in determining such conformity. However, the importance goes well beyond this.

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7.5.2 CAPABILITY AND CUSTOMER SATISFACTION

Historically, manufacturers have taken a 'goalpost' approach to quality. This logic (see figure 7.8) suggests that any product that falls inside the tolerance limits is "good". The unspoken assumption here is that they are equally good and that no cost is incurred. Following the logic through we can see that any product falling outside the limits is "bad" and a cost equivalent to the full cost of producing that product is incurred. In this simple scenario we have assumed that reworking the product is either not possible or uneconomic. Again, the hidden implication is that all products outside the limits are equally bad.

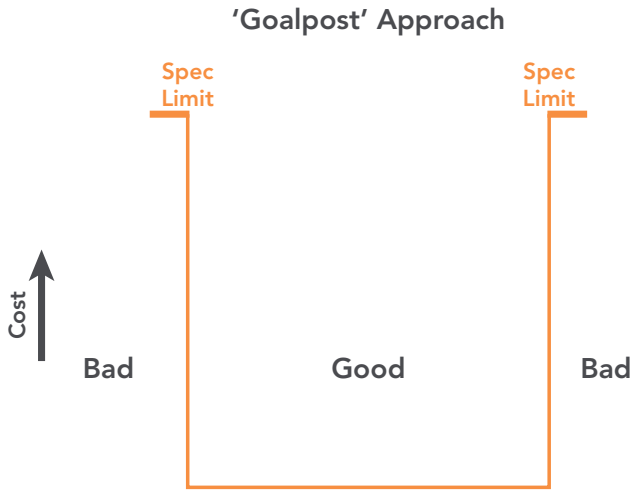

Figure 7.8. 'Goalpost' approach to quality

This approach clearly assumes that the tolerance limits represent the exact limits of acceptability for the product. However, the generation of specification limits is rarely as precise as this, as can be seen by the fact that many allow 'off-spec' or 'deviations' where products just outside the limits may be authorised by the design authority as acceptable for use. In any case, the specification limits will always be what is acceptable, rather than what the customer or designer wants. In most cases the ideal will be all products exactly on target; this will mean the design works exactly as intended. However, this is recognised as unrealistic, hence the use of specifications.

In fact, there are numerous costs implied in variation even within the tolerance band, for example:

- ***Fitting Costs:*** if two or more parts need to be fitted together when parts at the extreme ends of the tolerance band (barely acceptable) have to be fitted together they may require finessing work which extends cycle times or even selective assembly which adds further expense.

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- ***Material usage:*** If the process is, for example, filling a bottle of drink there is a minimum level below which the manufacturer cannot go. If there is a lot of variation in the process (i.e. low capability) then many bottles will fill significantly over the minimum requirement. This is effectively giving away free product.
- ***Product performance:*** It is possible that product performance may deteriorate when components are not close to the target (see panel).

Variation in Gearbox Components

Back in the 1980's Ford had a joint venture with Mazda to produce a car called the Batavia. One aspect of the collaboration was that both companies produced gearboxes. After a short time in the field most customers preferred the Japanese gearboxes which were reputedly smoother, quieter and easier to use. When Ford investigated the two products they found that although the Ford gearbox components were all in tolerance, the Mazda components were much closer to target and exhibited much less variation.

Although both gearboxes met the tolerances, customers were migrating to the better performance delivered by the more consistent product.

– Based on "A Prophet Unheard", BBC Video (1992)

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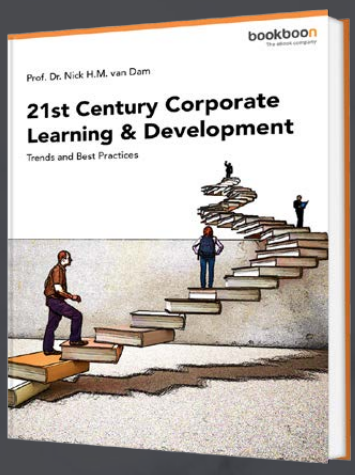

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This effectively creates a new definition of world class quality, one with capability at its heart. No longer is 'in specification' sufficient, the new definition is:

"On target with minimum variation"

7.5.3 JURAN'S TRILOGY

Juran's Trilogy (Juran, and Gryna, 1998) effectively illustrates the steps in variation reduction. The trilogy indicates that a process is designed with an initial level of capability and an inherent amount of (common cause) variation. This needs to be controlled and any sporadic (special cause) variation spikes addressed as they occur. In order to make a breakthrough improvement the inherent common causes must be tackled to reduce variation and to move the process closer to target (in this case zero). This new level of performance must then be controlled as before and, importantly feedback to the designers of new processes of the learning enables them to create new processes which are at the new level, rather than repeating the mistakes of the previous process. This forms an excellent template for managing variation reduction at both a process and an organizational level.

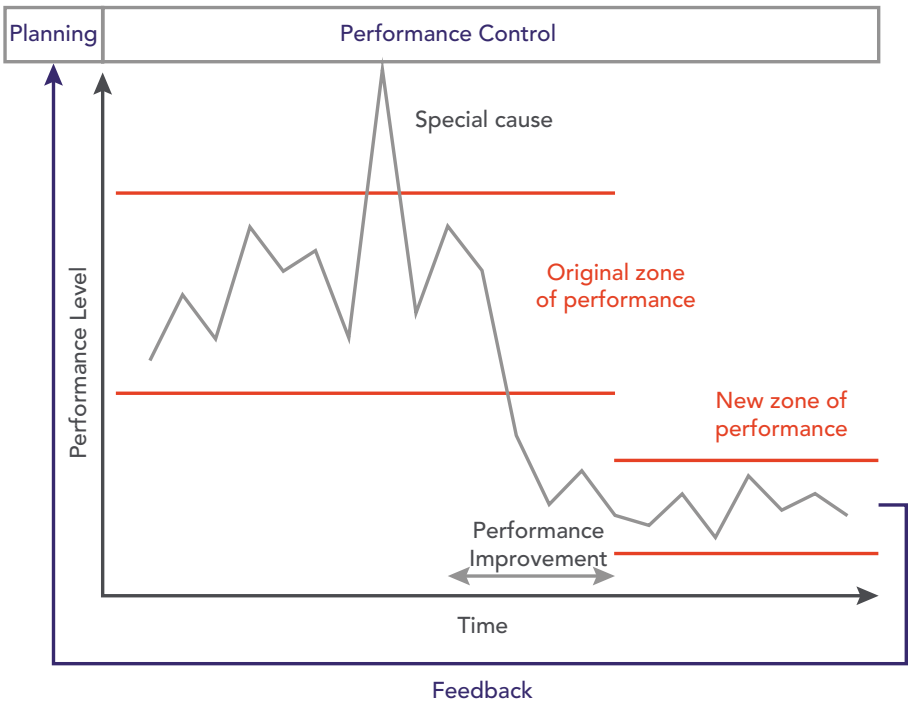

Figure 7.9. Juran's Quality Trilogy (adapted from Juran, and Gryna, 1998).

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7.5.4. PEOPLE ISSUES

People are the most important element of the implementation of SPC. Don't forget, this is a way of thinking rather than just a tool. The system will stand or fall on the actions of people rather than just how accurately the charts are developed and interpreted. You are attempting to change behaviour here. Remember these salient points:

- The best people to improve a process are those who are close to it.
- Management need to be actively involved, especially in reduction of common causes.
- Company 'experts' can be useful in kick-starting and supporting the process but they should not own it (or be perceived by others to own it).

7.6 BENEFITS OF SPC

These are, obviously dependent upon the quality of the approach but should include the following:

- A more consistent product or service leading to happier customers.
- Reduced waste and thus lower costs and better profits
- Better management decisions at all levels of the business.
- A more consistent and controlled workplace.
- Pride for all those who are now allowed to be in control of their processes, rather than having the processes run them and living in fear of the next big problem.

7.7 SUMMARY

Processes are crucial components of how an organization operates and delivers value to its customers. Processes need to be considered holistically as a system, since all business processes will affect each other. The aim of the system needs to be clearly understood, and the impact of the various processes upon this defined in order to establish goals for those processes. Once it is clear what a process should do it is necessary to establish a process which is both in control and capable of delivering its key outputs to the satisfaction of customers (be they internal or external). To paraphrase Deming:

Process management is a way of thinking with some tools attached: not the other way around.

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8 SUPPLIER PARTNERSHIPS

8.1 THE 'TRANSACTIONAL' SUPPLIER RELATIONSHIP MODEL

8.1.1 BASIC ASSUMPTIONS AND BENEFITS

Traditionally, the approach to suppliers has had three central tenets:

1. ***Cost is Everything***: The job of the customer is to drive down piece-part cost. Suppliers are expected to make year-on-year reductions in cost. If an alternative supplier offers the same specification at a reduced price they should be preferred regardless of the length of relationship with the current supplier.
2. ***Short Term Contracts and Competitive Tendering***: We do not wish to commit to a supplier for a long contract because they will become complacent. They need to be 'kept on their toes' by regularly having to face open competition for their business. This not only encourages them to stay competitive, but it allows us to find better suppliers in the long run.

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3. ***Suppliers are not Your Friends***: The customer/supplier relationship is necessarily adversarial. Suppliers try to get as much money for as little value as possible. We must police them carefully and bear down upon costs. Mutual interest will always be subordinate to individual gain in the supply chain.

This type of relationship is often seen as 'efficient' because it maintains competition between suppliers, ensuring that 'best value' is offered and that a company cannot be 'held to ransom' by a supplier upon whom they have come to depend. There is also an implied flexibility in that if demand changes extra suppliers can be brought on-line or suppliers can be 'turned-off' if required. Organizations are also free to take advantage of innovations wherever they occur, rather than being tied to one supplier whose technology may be overtaken by another (Slack, et. al., 2006).

8.1.2 ISSUES WITH THE TRANSACTIONAL MODEL

Despite the superficial appeal of the transactional model it has, over the years, garnered a significant amount of criticism:

1. ***Purchase costs may not be reduced***: Slack, et. al. (2006) point out that the costs of regularly re-selecting suppliers can be significant and need to be factored in to the savings made on the price of goods. There is also the learning curve costs associated with developing the relationships with a new supplier that had been developed over months or years with the existing supplier.
2. ***Lifecycle costs may increase***: An over-reliance on price as a selection criteria for suppliers could lead to buying products which have a low purchase price but may have higher consequential costs. An example might be materials which have lower quality standards and might therefore create more wastage during production or increase production times due to fitting less well, or being more difficult to handle. These costs would, in most circumstances, be opaque to the purchasing department who would, at most, receive complaints from the operations departments. In the end, the total cost to the company of choosing that supplier goes up, even if the purchase cost is smaller.

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3. ***The adversarial relationship***: Probably the most significant issue here is the adversarial relationship which the approach fosters. Trust has been stated many times to be a very significant driver of supply chain performance and the adversarial relationship implied in the transactional model destroys trust. In this model neither supplier nor customer has any obligation to the other party beyond the contract. Consequently supply is guaranteed only in so far as it meets the contract. Requests for help from a supplier (where, for example the customer has accidentally damaged a delivery of there has been a sudden surge in demand) are likely to be met with requests for extra payment, or polite refusal. In fact, during the tendering process it is likely that suppliers will seek out areas of poor definition in the specification in order to regain the margin lost in the bidding process. Any mis-specification or elements missing can be charged as extras, or used as a pretext for re-negotiating the contract. It is unlikely that any specification is gap-free as the supplier is much more expert in the product or service specified than the customer (why else do you go to them?). As the supplier has no confidence in the long term relationship, why should they spurn any chance of a short-term profit? Overall, the traditional approach can be seen as short-termist, divisive and, ironically, not even very cost-efficient.

Competitive Tendering: The Law of Unintended Consequences

Under government legislation requiring local government authorities to seek „best value" in the provision of services a UK local authority out-sourced the running and maintenance of sports facilities in the city to a private contractor. The contractor was selected on the basis of a competitive tendering activity, and submitted the lowest compliant tender. The contract was let for an initial 3 year period.

Two weeks after handover of the council began to receive complaints about the length of the grass on football, rugby and hockey pitches. They contacted the contractor to ask why the playing fields had not been mowed, only to be told: "That is not in the contract". Sure enough, on checking, the contractor was proved to be right and the contract had to be re-negotiated but with the contractor in a very powerful position as the incumbent service provider and not being in breach of contract. Total contract cost was inflated by 3% for this one issue, representing a sizable loss for the authority and a good bonus for the contractor.

Of course this put the future of the contract in jeopardy, but that was always the case in a lowest bidder wins situation – and they had 3 years of extra profits to spend finding other work.

We must ask ourselves if this was the anticipated outcome of a "best value" policy.

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8.3 THE SUPPLIER PARTNERSHIP MODEL

The historical model of competition between individual companies is defunct; competition is now between supply chains. If your supplier has quality or delivery problems they will either disrupt your production or affect your customer satisfaction. If your car breaks down it is likely to be the assembler who is the focus of your irritation rather than the second tier supplier who manufactured the component which failed. We therefore need to view our suppliers in a different way: as partners in delivering superior customer value over competing supply chains. The characteristics of a partnership are suggested below:

- ***Strategic***: Partnerships need to be undertaken in a strategic manner; in particular the cultural and business 'fit' of the organizations needs to be clearly understood.
- ***Long term***: Partnerships are designed to be lasting; the effort that goes into building up strong relationships is only repaid over time. Decisions need to be made with long term benefits in mind, rather than short term ones. The security of the long term partnership frees up much effort which would have usually gone into looking for the next business opportunity to be focused on improving processes and products.

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- ***Collaborative and trust-based***: They are voluntary and focused on working together; contracts are either not required, or minimal. The focus is on seeing the supply chain as a whole and delivering customer value by working together. The assumption is that all parties will work for mutual benefit rather than trying to take advantage at the expense of other partners. Trust is difficult to establish and maintain, but is the heart of a partnership.
- ***Transparent:*** This helps to build trust. Sharing information allows the partnership to work more effectively. The principle is to share as much as possible, as early as possible to support effective joint decision making.
- ***Joint problem solving and gain sharing:*** In a partnership all problems are mutual. The long term approach allied to trust allows for sharing of learning from experience within the partnership. Part of the collaborative nature of the relationship is to share gains, no matter where they are made. This facilitates the effective assignment of resources to wherever in the partnership they can do most good, rather than where they will help an individual partner.
- ***A small number of partners:*** Usually a one-to-one relationship in a given area – so multiple suppliers for a component would not be envisaged.

8.3.1 BENEFITS OF PARTNERSHIPS

The benefits of partnering are really the polar opposites of the problems with the traditional approach. The partnering approach allows for 'constancy of purpose', fostering collaboration, systemic thinking and through supply-chain improvement to deliver sustainable customer value. The risks are few if the partnering is done effectively, but clearly the safeguards which exist in the traditional approach are missing. If the will to partner does not exist then all partners are exposed to much more risk. But, of course, that is all the more reason for everyone involved to make it work.

8.4 SUMMARY AND IMPACT

This section has shown how partnerships come in a range of types and demonstrated the potential for benefit of employing them in an organization's supply chain and beyond. The focus on long term relationships, quality and improvement replaces the traditional lack of trust and focus on cost alone.

As Ruskin says:

> *"There is scarcely anything in the world that some man cannot make a little worse, and sell a little more cheaply. The person who buys on price alone is this man's lawful prey."*
>
> – (attrib).

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9 PEOPLE IN QUALITY MANAGEMENT

9.1 INTRODUCTION

This section is very closely related to the section on leadership, since leadership is about change and change, for the most part, is about people. This section looks in a little more detail at some of the specific people oriented aspects of a Quality Management approach.

9.2 RESPECT FOR THE INDIVIDUAL

The central tenet of a Quality Management approach to managing people is respect for the individual. It is recognised that everyone has their own unique contribution to make, whatever their role in the organization. The view of an organization as a system which permeates the quality mindset helps in this regard. If we see the organization as a system we can easily realize that poor performance in any aspect of the system can reduce the effectiveness of the whole, and that interdependence is the order of the day. Apparently menial tasks can have significant impact on other aspects. For example, if cleaning is not done effectively it can have a knock-on impact on machine performance (swarf becoming an issue on cutting machines, for example), health and safety (trip hazards, slippery surfaces or dust causing allergic responses for example) and morale (no-one likes to work in squalor). Recognition of this enhances the importance of the staff that perform those tasks.

A second aspect of respect for the individual is to respect the differences amongst the workforce; we need to accept the fact that an organization has a multiplicity of views held by individuals. This may lead to conflict if individuals or groups within the organization see an issue differently, but rather than trying to impose a common view, a more effective approach is to see areas of conflict as opportunities to learn by understanding all the different perspectives. By supporting individual's right to disagree (constructively) we can more fully explore the way the system works and see how it might be improved for the benefit of all.

9.3 EMPOWERMENT, MOTIVATION AND PARTICIPATION

Again, many aspects of this are already covered in the chapter on Leadership. Empowerment, motivation and participation are all inherently linked; there is no point in empowering staff if they are not motivated to accept their enhanced role, motivated staff who are not empowered to take action, but must refer to managers or stick to rigid procedures will deliver little (and soon become demotivated) and without participation it is impossible to sustain either of the other elements.

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9.3.1 MOTIVATION

As mentioned in the chapter on leadership, it is the responsibility of leaders to motivate the individuals who work for them. Theories of motivation recognize the power of intrinsic motivation; Sarmiento, Beale and Knowles (2007) show that there is a positive and significant association between job satisfaction and performance. Motivation stems principally from the opportunity to contribute to a range of business activities and from feeling invested in the organization and its goals. Clear vision and values, management behaviour which is consistent with these and integrity and care in the way individuals are treated all help to foster and sustain motivation.

9.3.2 PARTICIPATION

Quality Management is a participative process. It has been made clear in previous chapters that this is a very significant activity and it cannot be left to a small proportion of the organization to deliver its goals. Participation is all about involving a wide variety of employees in as much of the organizational strategy setting, policy making and deployment, and process improvement as possible. By mobilizing the brain power of all individuals within the organization it is possible to generate better ideas, better decisions, better productivity, and better quality.

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9.3.3 EMPOWERMENT

If participation refers to the breadth of involvement within a company then we might want to think of empowerment as the depth of involvement. Empowerment is strongly linked to ownership. In empowering our employees we give them genuine ownership of the processes they run. True empowerment allows them to make decisions about how to do their jobs, how to best serve customers and what actions are in the best interests of the company. An empowered employee is able (and willing) to question the status quo in his part of the organization; asking not just 'how can this be done better?', but 'why are we doing this?' Empowerment implies trust; a manager must trust her staff before she can empower them, otherwise she will feel the need to put in checks and approval systems. Clearly in some cases these are necessary, but the central idea of empowerment is for decisions to be made as close to the process in question as possible. Semler (1993) points out that most participative leadership amounts to little more than consultation, as managers retain the decision making. Until you allow employees to take decisions they are not empowered and practical participation is hamstrung.

Empowerment may also require significant amounts of training; it effectively enlarges the job of the employee and they need to be prepared to take on the additional responsibilities. In some cases individuals and teams are fully able to adopt empowerment without any additional training, but where this is not the case it is unfair to push responsibility at an individual without giving them the tools to discharge the responsibility effectively.

Empowerment is most obviously visible in service organizations, whether it is the experienced midwife over-ruling a doctor in the delivery suite, or a waiter offering immediate compensation for a poor or slow meal, or a salesman negotiating a deal without recourse to his manager we know when we are dealing with an empowered employee.

One of the key outcomes of empowerment is an enhanced level of ownership, pride and engagement in all staff. It is natural to care more when the process more closely reflects your decisions and priorities. A caution to note is that many organizations say 'empowerment' when what they mean is 'blame'. By this I mean that they see this as a way of holding employees more responsible for the outcomes of their process without necessarily giving them more control. This is a disastrous error; the 'responsibility' is on paper only and not in the hearts and minds of the employees; as they know that they cannot take genuine responsibility for things they are not allowed to control.

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To create an empowered workforce the role of management is to create the environment for empowerment to happen. This will involve things such as:

- Encouraging challenge and questioning; not being defensive of their position.
- Facilitate and mentor to help people take on extra responsibility.
- Acting quickly on concerns where possible, recognizing efforts and accomplishments.

9.4 TEAMWORK

Teamwork is a crucial aspect of Quality Management, while individuals are very important, most of the work undertaken in an organization will be undertaken in teams, whether they are manufacturing teams, management teams or improvement teams. Teams are important for several reasons:

- ***Task Complexity***: Most tasks in organizations are multi-faceted and complex. The likelihood that the knowledge and expertise of one individual will be sufficient to complete the task is limited.
- ***Synergy***: Working together, teams can become much more than the sum of the individuals within them – think about great sports teams; although there may be outstanding individuals within the team, it is those that work best together who maximize their potential and win more often than not.
- ***Communication and Understanding***: Working together in a team (especially a cross-functional team) allows for individuals to better understand the issues they and others face as part of their working lives. Communication will be enhanced and a broader understanding of processes and their problems generated.
- ***Social Interaction***: Humans are social animals, working in isolation is not normal for us; being in teams helps with the sense of belonging which Maslow (1987) identified on his Hierarchy of Needs.

9.4.1 BUILDING AND LEADING TEAMS

Although working in teams can be seen to be 'natural', the work situation can create stresses which mean that they require care and effort to set up and lead. They are essentially a microcosm of the organization as a whole and so present similar issues to leaders: Team leaders need to act as coaches and mentors rather than controllers and drivers; it is important to have clear vision and goals for the team to which the team are bought-in; support, challenge and trust are also important within the team and between the leader and the team; teams need to be environments where learning occurs and is stimulated.

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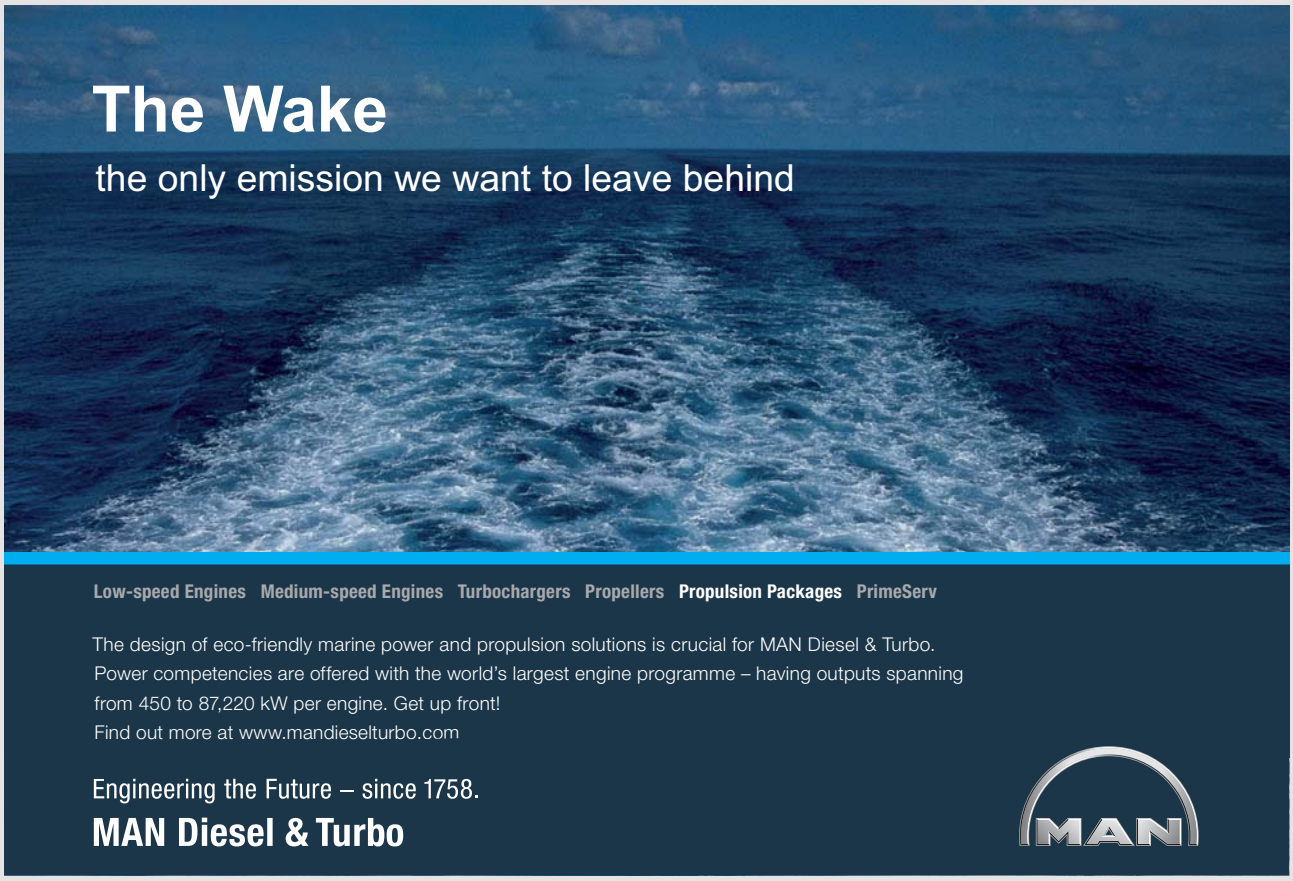
An effective team must have the following:

- A strong team identity and purpose.
- Clear goals, strong commitment and effective accountability.
- Healthy levels of challenge and conflict.
- Trust and integrity.
- Mutual support and participation towards team results.

9.5 DEVELOPING PEOPLE

Since we accept that people are crucial to the success of an organization, it follows logically that we should pay attention to the development of this important organizational resource. It is worth noting the difference between training and education in the work context: Training is immediate, specific and focused on the current role of the employee. Education, on the other hand, is about developing latent abilities, seeing bigger pictures and contextualizing experiences. In short, training helps us to respond to an immediate organizational need better, while education is about an uplift in our knowledge and capability which may not have an obvious immediate impact, but which may allow for a broader or more effective contribution in the future.



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Training might, for example, involve learning how to do a particular aspect of your job better; an advanced course on a computer program or a customer care workshop. Education might involve something like learning about psychology. This may have no direct impact on the job you are presently doing but could bring benefits in improving the way you interact with your team, or recognize the mental processes at work in decision making, allowing for more effective contributions in this and more senior roles.

It is crucial to see development as something that benefits the organization (even if indirectly) rather than a 'perk' which has to be earned. Also, formal courses are not the only way to develop staff, mentoring and reflection opportunities are also important. For example, Giordano (a clothes retailer based in South-East Asia) guarantees staff at least 60 hours of training a year, and new staff are allocated a 'big brother' or 'big sister' to help them develop their skills.

9.6 SUMMARY AND IMPACT

This section looks at people in the context of Quality Management. As previously mentioned, each of the topics have many texts which deal solely with that issue in the wider literature, the purpose here is not to replace those.

Quality Management is highly people focused and requires emphasis on the motivation, participation and empowerment of people. In support of this careful consideration needs to be given to how we select, develop, organize and reward teams and individuals. The principle consideration is respect for the individual and recognition of their central part in achieving excellence.

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10 CHANGE AND PROCESS IMPROVEMENT

10.1 INTRODUCTION

If Quality management is about anything, it is about change; change for the better (improvement) and learning are crucial if an organization is to achieve a degree of excellence. The three are intimately connected in that change management and learning are both necessary for improvement to happen. Learning, however, is a more holistic concept covering culture, attitudes and behaviours as well as mechanistic processes and short-term benefit. For sustainable benefit organizations need to become learning organizations, continually challenging the status quo and re-inventing how they do business at all levels.

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10.2 PROCESS IMPROVEMENT

The basis of continual improvement of processes is the scientific model, as embedded in the Plan, Do, Study, Act (PDSA) cycle. This model suggests that we need to begin with a goal and then develop a plan as to how the goal might be achieved; the plan needs then to be enacted and the results (good and bad) observed. The analysis of these results (and our understanding of the causes) then leads us to act to modify our original plan, which brings us back to the start of the cycle. There are a huge number of improvement models, but careful analysis reveals the PDSA underpinning all of them.

It is imperative that when we seek to improve a process we recognise that we need to remember what we are trying to do, and how we shall know when we have achieved it. A practical model is provided by Process Management International (Gillet and Seddon, 2009).

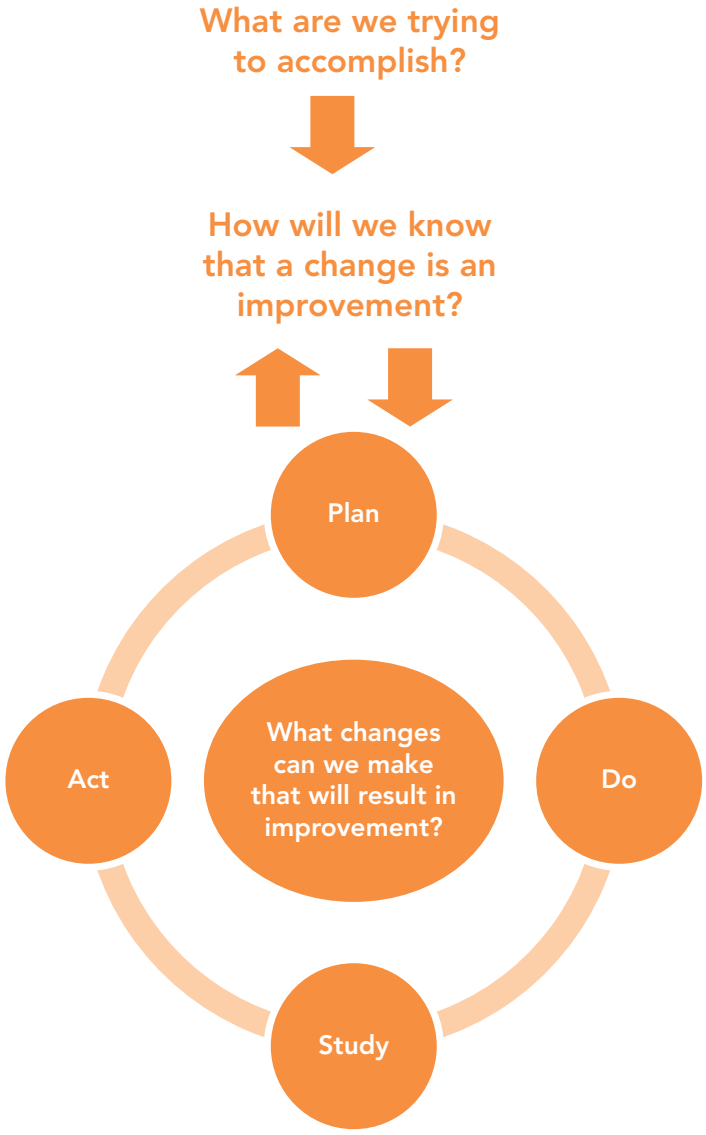

Figure 10.1. The three question model (Gillet and Seddon, 2009)

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The plan-do-study-act cycle (PDSA) guides the definition of appropriate actions, allowing for learning as implementation happens and promoting reflection on the outcome of actions, while this occurs in the context of a clear understanding of not only the goals of the change, but also (crucially) how we will recognise improvement. This recognises that all improvement requires change, but not all change is an improvement.

Probably the most popular model for process improvement at the present time is the Six Sigma Define-Measure-Analyse-Improve-Control (DMAIC) model. This model is not treated in detail here as it is, unsurprisingly, a derivative of the PDSA model. However, more detail can be found in the companion text (also on Bookboon.com) "Six Sigma: Principles and Practice".

10.2.1 FOCUS OF IMPROVEMENT

Improvement activities basically focus on one (or a combination of) three areas:

1. Reducing process cost.
2. Increasing process quality.
3. Increasing process speed (reducing time).

The precise focus will depend upon the analysis of customer priorities and current performance to assess where maximum benefit can be gained. It should be noted that these areas are not mutually exclusive, as was once thought to be the case.

10.2.2 IMPROVEMENT APPROACH

There are essentially two approaches to process improvement: the Kaizen, or continuous improvement approach and the step change approach.

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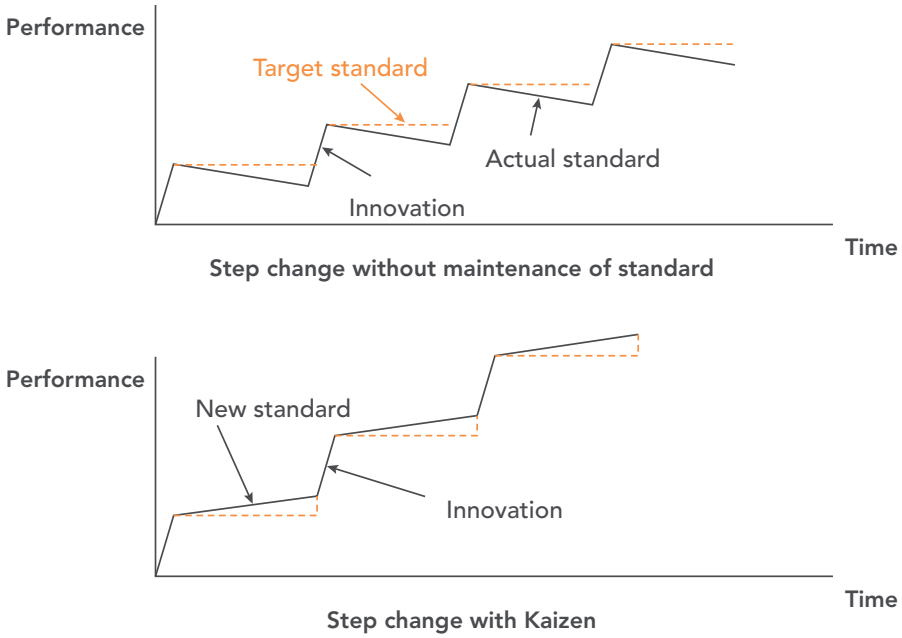

Figure 10.2. Standard Step-Change and integrated Step-Change and Kaizen. (Imai, 1996)

Kaizen: Favours the use of a large number of small local projects (such as those run by quality circles) in order to deliver significant aggregate improvement. This is the mainstay of Japanese organizations and is about the cultural change to everyone pursuing improvement. It has advantages in gaining company-wide momentum and delivering behavioural change and lasting improvements but may miss opportunities to rethink larger systems.

Step Change: Is a more Western idea and modern approaches such as Six Sigma which are expert led epitomise the approach. The advantage is that it allows a radical rethink of processes giving much bigger potential improvements, and may take into account wider processes rather than the local focus of Kaizen. However, the nature of the approach means that it has higher levels of risk (bigger changes always mean more risk) and Imai (1986) amongst others points out that the lack of local ownership of changes proposed by 'expert' teams means that improvements often fail to be sustained.

Figure 10.2 shows how step change projects fail to hold the (admittedly significant) gains made when the project team departs. The lower diagram shows how he suggests that by integrating Kaizen into step change the gains can be both sustained and built upon. This would imply a much greater involvement, and deference to the opinions of, local staff in step change projects. This is now recognised as the most appropriate model to strive for; an underlying basis of Kaizen with step-change projects implemented sympathetically with this system in areas where significant (sometimes called 'breakthrough') performance improvement is required.

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10.2.3 VALUE, WASTE AND VARIATION

Both waste and variation have been touched upon in earlier chapters. In the context of improvement they represent different focuses: waste approaches look to improve process flows and to reduce non-value adding activities as well as to reduce the time taken to do a task, whereas variation centred approaches look to improve consistency of processes and products. In many ways they are complimentary, but most improvement efforts will principally focus on one or the other depending upon the circumstances. If we consider the broader context of customer value we can see that tackling both waste and variation can contribute to improvements in the value experienced by customers.

10.3 CHANGE AND CHANGE MANAGEMENT

> *"It is not the strongest species that survive, nor the most intelligent, but the ones most responsive to change."*
>
> – Charles Darwin

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This section does not seek to provide an answer to 'the best way for managing change' in fact it is probably true to say that there is no single solution. What it does seek to do is to outline the key aspects of the management of change and to give some 'pointers' in useful directions. The management of change is highly context sensitive. The approaches, tools and techniques that are appropriate will vary from one situation to the next. You will ultimately develop your own models for change that work for you in your situation. There are a number of aspects to consider.

10.3.1 LEADING CHANGE

There are a number of elements of leadership that are useful characteristics for the manager of change:

Congruence – 'walking the talk', 'doing as you say', and 'saying as you do'. This is about demonstrating your commitment to the change in everything that you do or say in the organisation.

Flexibility – an effective leader will readily adapt to the use of new tools, and will support those around them with a wide variety of approaches to everything that they do.

Facilitation – being the leader does not always mean making the decisions. In most cases the process of change will benefit from the people involved being given the opportunity to develop their own solutions and to create their own meaning. The effective leader will support this process by facilitating the group processes and coaching individuals.

Perhaps the key element of being a good leader is 'knowing when and how to ask for help'. It is unlikely you will have either all the knowledge or all the answers. See the chapter on 'Leadership' for more details.

10.3.2 PEOPLE

A change isn't a change until people are doing things differently. People in the organisation can thus be seen as being the principal enabler in change.

In discussions on the management of change much time is taken up talking about how people are uncomfortable with change. The very nature of change is that it is likely to involve uncertainty and this is often the aspect of change that most unsettles people. Whatever the causes you can be sure that if you seek to create change then along the way you can expect to meet some strong reactions from individuals – often emotional and sometimes apparently irrational. As Machiavelli once said (paraphrased from his book The Prince):

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"There is no greater task than the development of change since the change agent can expect violent criticism from those who feel that they may lose out as a result of the change and only lukewarm support from those who expect to benefit."

Much of being an effective manager of change comes down to understanding these 'emotional'; reactions in others – where do they come from, what do they hope to achieve through it and most importantly, what can you do to help them move forward? Remember also that you are dealing with individuals – terms such as 'the shop floor', 'the workers', 'the management', 'the front office' and so on are generalisations that hide a multitude of attitudes, emotions, motivations and behaviours. They do not describe the individuals that work within these units.

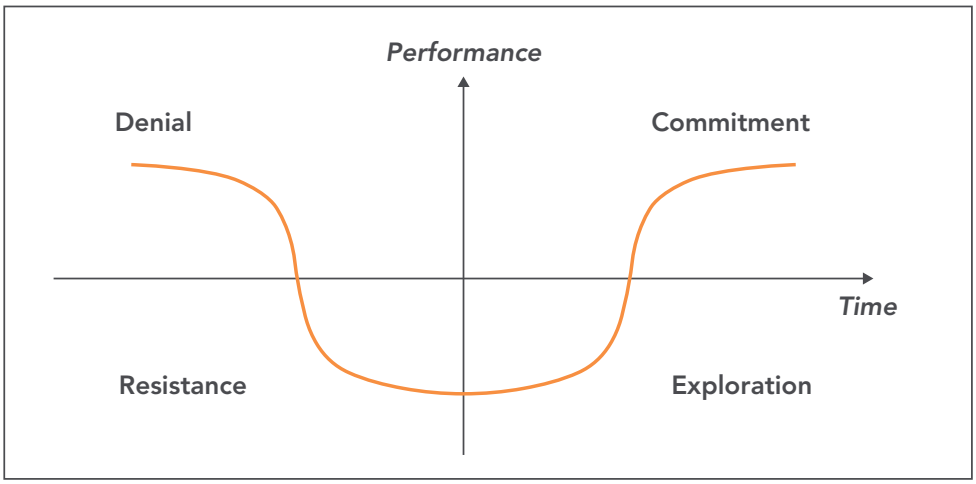

Figure 10.3. The emotional phases of change (adapted from Kets de Vries and Miller, 1984)

Figure 10.3 is adapted from the grief curve defined by Kubler-Ross. This recognises that all change involves loss. In an organizational sense this can be loss of expertise, status, connections and contacts, or control. The initial response is to deny the need for change, followed by resistance (which can be active or passive), then engagement with the change and exploration of possible effects followed by commitment to the new status quo. However, it should be noted that this does not occur at the same rate for all and that adverse interactions can send an individual back to an earlier phase. As a leader of change it is important to understand that all those involved go through this process (even you!) and that your job is to help them (and you) work through the emotional side of the change as well as the practical one.

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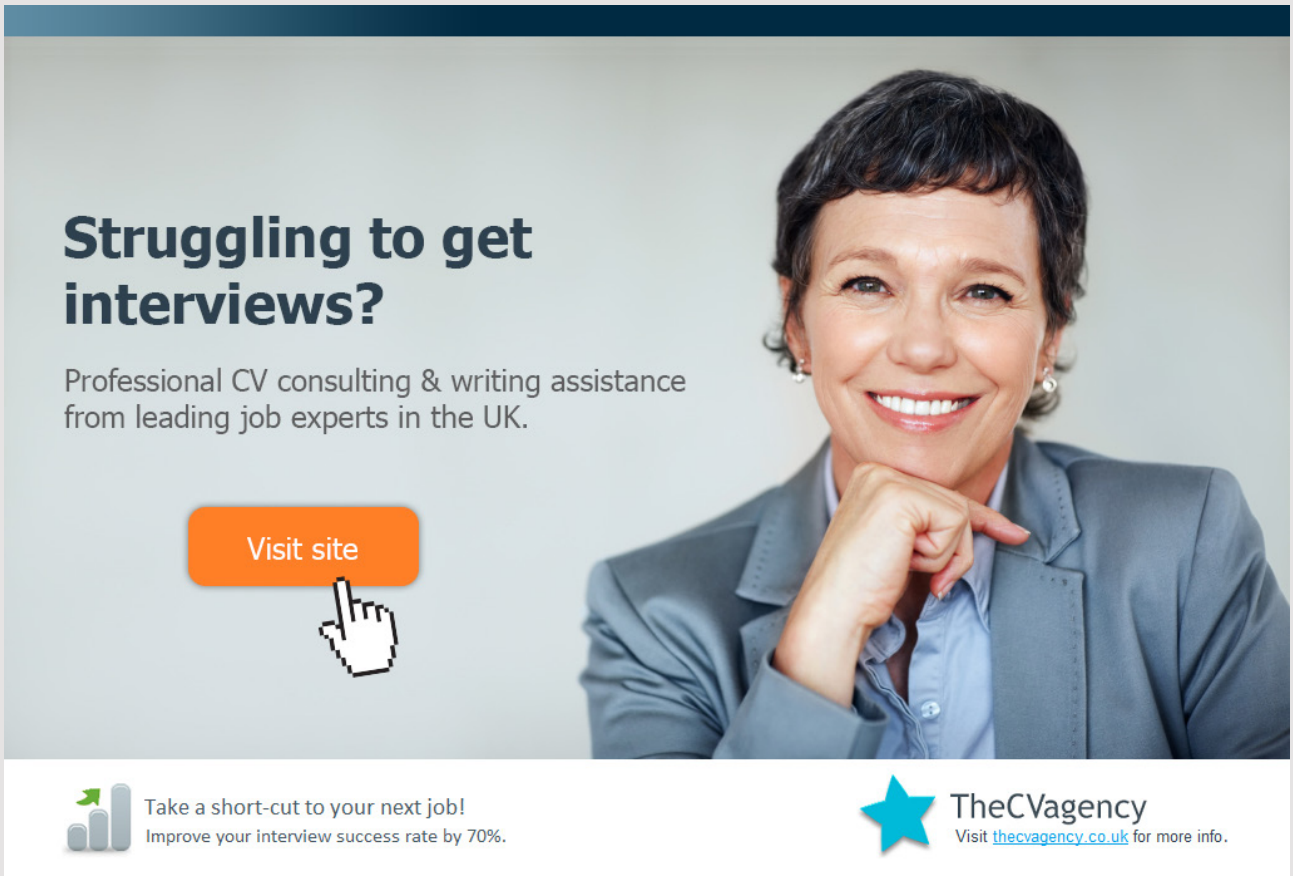
Focusing on the individuals in change is an essential element of success. However we are talking about organisational change so we need to also consider the effect of the organisation. In the literature on change you will find a good deal of discussion of the relative merits of top-down and bottom-up change. Naturally there are strong arguments for both. Top-down change provides a framework for the organisation through the use of strategy, strong vision and the provision of enablers for change – such as resources, money, time, external support and so on. The down side is that often the requirements for the change are not fully understood at a local level; the message is lost on the way and the individuals in the organisation can feel uninvolved and therefore are unlikely to be motivated towards effective implementation. Hence the effect noted by Imai in figure 10.2.

Bottom-up change ensures that the change is based on a good understanding of local conditions, the needs of a particular unit of the business and the skills and interests of the people within it. A major benefit of a bottom-up approach is that through involvement you can gain understanding and commitment. The down side of bottom-up change is that it can result in sub-optimisation of processes if the scope of the project is not appropriate, and of course it can meet with opposition from above if it is not seen to be supporting the goals of the business.



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One useful strategy is to do both top-down and bottom-up. The strategy and direction are provided from above (top-down) whilst the solutions and approach to change is generated locally and fed back up the hierarchy (bottom-up). We have seen this approach work well in an organisational context with Directors providing the strategy and a multi-functional, multi-level project team providing the solutions – presented back to the Directors as "This is what we are planning to do and this is the support we need from you in order to achieve it". You may want to look again at Hoshin Kanri in chapter 6 in this context.

Successful change is achieved through the changing behaviour of individuals and groups within the organisation. This change in behaviour only follows if people are motivated towards it – they need the answer to the question "what is in it for me?" This motivation comes through creating meaning. The key to creating meaning is involvement – that is, when people are fully involved in creating change than they are given a real opportunity to develop their own understanding of what it means for them.

If you are not able to fully involve everybody in the change then you will have to rely on effective communication to spread understanding and meaning. There are many way to communicate information but the most important aspect is to remember that it is a two way process. The meaning of the communication is in the response it elicits and different people will need different approaches – don't guess what makes people tick, build relationships based on trust and mutual understanding.

10.3.3 PROCESS

Many times new approaches or procedures implemented in one part of the organisation to improve performance ultimately have a negative effect on another part of the organisation. The sales team that begins to sell single units without consideration of the effect of production, the purchasing department that changes the nature of supply without considering the impact of goods-inwards, the planning department that changes the nature of its reports without considering the needs of the users … and so on. So, in considering change we need to be able to consider an entire process. This will lead us away from sub-optimisation, towards looking at the whole picture and will bring a focus on the needs of the customers (both internal and external).

In addition to taking a process view we must remember to consider the interactions between the various business processes (the tangible or formal elements of the system) and the 'human' processes (the intangible or informal elements of the system). This is what is meant by taking a systems view.

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There are many proposed change processes, and all have their merits, but here we shall remain generic and consider Kotter's (1996) 8 step model, which is perhaps the most commonly used:

1. ***Establish a sense of urgency***: This is generally taken to mean create dissatisfaction with the status quo. However, this may have a negative impact on the early phases of the emotional journey of change; we are all invested in our existing processes to some extent and beginning change by attacking them may harden the initial denial and resistance phases. Try also to explore and understand what is presently good in the organization, and how that can be grown and expanded in order to operate effectively across the organization. This aids buy-in by celebrating the good in the existing system and looking to grow it.
2. ***Form a powerful guiding coalition***: Effectively ensuring that the process will have appropriate and effective support. This needs to be across the organizational spectrum, rather than just focused on senior managers.
3. ***Create a vision to direct the change effort***: As noted in earlier chapters the direction of the effort and the rationale need to be clear to enable people to accept both the need for and direction of change.
4. ***Communicate the vision***: The vision needs to be made available to all who will be affected by the change.
5. ***Empower others to act on the vision***: As a change leader, you cannot do it all yourself; engage, resource and empower appropriate individuals and teams to take action to deliver the vision.
6. ***Plan for, and create short term wins***: To establish and maintain momentum it is useful for benefits to be seen as early as possible, so that people are aware of progress. If possible, target areas of known staff dissatisfaction (difficult to use systems, causes of customer complaints, areas of stress) so that individuals can see how they benefit from the change.
7. ***Consolidate improvements, producing further change***: Build on what works and modify what doesn't.
8. ***Institutionalise new approaches***: Build new measurement systems which support the new processes and behaviours (what gets measured, gets done) and create structures which build new practices into day-to-day work. Ensure that management focus and behaviours are appropriate in this regard also.

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The Gillet and Seddon (2009) process, shown in section 10.1, offers a sensible way of progressing from steps 3 to 8, and a good model for operationalising the principles of Kotter's model. In particular, the aspect of ensuring that the change is delivering the goals of the action is useful in keeping change on track and ensuring a reflective, learning stance is maintained.

10.4 SUMMARY AND IMPACT

Change, improvement and learning are vital to continued organizational health. They are all inter-related and must be thought of in the context of both the process and the contextual issues which can make the process a success. In essence, the leader of change, improvement and learning must develop approaches and strategies to allow for the effective integration of the process and the human element of change. In terms of impact, it is perhaps interesting to note that these areas are perennially top of the agenda for most organizations and account for very significant amounts of consultancy spending in larger businesses.

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11 IMPLEMENTING QUALITY MANAGEMENT

11.1 INTRODUCTION

Although the preceding chapters, taken as a whole provide sufficient detail on how to implement a Quality Management approach this section is designed to provide a summary of principles to be borne in mind, and one approach to the journey which has been successful. The important caveat is that this section does not purport to present a 'best practice' approach, nor even that such an approach exists. What follows is 'A Way' not 'The Way'.

11.2 WILL-FOCUS-CAPABILITY

For individuals to act they need the will, this will be bound up with their personal motivations, and the culture and politics of the organization. They also need the capability; this will mean they need to have the skills, techniques and experience that allow them to deliver change. But to make it an attractive proposition to act they must perceive that this is a priority for the organization; leaders and managers must encourage and create an environment where the desired behaviours are supported by systems and procedures as well as their own actions and statements. This is summarised in figure 11.1.

Figure 11.1. The Will-Focus-Capability model (adapted from Smith and Tosey, 1999)

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Many organizations try to begin TQM with a campaign to win hearts and minds and lots of training. However, if there is no immediate organizational focus on action once the training has been conducted they will lose momentum. If we stir up interest with a campaign and set up appropriate systems but fail to show people how they can make a difference then we have the kind of top-down initiative which does not work because most people don't know what action to take. Finally, unless we address changing the culture and motivating individuals, process change and training will not make much difference; they could act, but the likelihood is they will not.

For an effective transformation, the three elements need to be kept in balance throughout the process.

11.3 PREPARE THE ORGANIZATION FOR TRANSFORMATION

For most organizations, the transition to a Quality Management approach is nothing less than a total transformation of the culture of the business. To this point I have avoided the use of the term 'culture' because it is often used vaguely and defensively. By this I mean phrases like 'that's not part of the culture here' or; 'it's OK for the Japanese, this stuff is part of their culture'. In this context I am referring to culture as the shared norms, mental models, attitudes and accepted behaviours that define 'the way we do business'. Changing the norms and behaviours built up and reinforced over years is not a trivial activity.

11.3.1 DEVELOP SENIOR MANAGEMENT COMMITMENT

No Quality Management initiative ever succeeded without the genuine commitment of the senior team. This needs to be informed and active commitment. The senior team will need to be role models for the new attitudes and behaviours as well as committing resources to the initiative; they must realise how much effort they are personally responsible for putting in, without active involvement the programme will falter when people notice their leaders behaving incongruently with their words.

As the leader you need to ensure the team understand your vision and what it means for them. Running workshops (possibly facilitated by external consultants) will help to establish these, but cement this by giving the top team some homework; give them a week to go away and come back with proposals as to how they might implement this within their own areas. When they present their ideas encourage challenge and discussion about the approaches and how they might integrate. These will not necessarily be the final approaches, but it will show how they are thinking about the initiative and if their suggested approach is 'hands off' it shows that they don't yet see it as part of their day job.

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This part of the process is so important that it is worth whatever time it takes to generate genuine commitment. Without this, the success of the initiative is very unlikely.

11.3.2 DEFINE VISION, MISSION, MEASURES AND GUIDING PRINCIPLES

As with any strategic activity the direction of travel is crucial and need to be articulated as clearly as possible and as early as possible (chapter 6 will remind you of detailed considerations for this phase). Develop the vision and mission within the senior team, within a set of guiding principles which make sense for the organization. A good start point for the principles might be Deming's 14 points, or the principles underpinning the EFQM excellence model as these are both long-established and cohesive sets of principles.

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One key piece of thinking here is to develop a view of how you will recognise any improvements made by the approach adopted. This means developing measures and indicators that things are going in the right direction. These should be based on the desired future state and might include the following:

- ***External measures of business performance***: Ultimately this is what most organizations are interested in. Appropriate measures here might be market share, customer satisfaction, profit, etc.
- ***Internal measures of performance***: Things like cost of quality, employee satisfaction, process waste and cost will give an indication of what direct impact has been delivered on business processes.
- ***Measures of understanding and buy in***: It is important to keep taking the temperature of the organization in respect of the initiative, activity is important but so are attitudes; how do people feel about the progress etc. What is going well, and what needs action.

It is important that the measures are compatible with the behaviours that are associated with the new (desired) organizational culture and that potential unintended consequences are thought through, particularly if the measures are to be incentivised (not that this is a recommended course of action). It is also important to decide on the time periods over which measurement will occur. You will also need a blend of measures: Leading vs. lagging; For example customer satisfaction levels can indicate that there are likely to be higher sales in future. System vs. lower level; it is important to ensure the sub-systems are working together in the best interests of the company but also to break measures down to a level where they indicate what to do differently. For example high overall levels of scrap can only be tackled by establishing where in the company they are caused. Perception vs. results. How people feel is as important as the actual observed results.

Measurement and Incentives

Measurements and associated incentives are generally designed support the goals of the organization, and to promote behaviours which fit the company's principles. But, if not properly thought through they can have unintended consequences.

Aldred (2009) points to the targets for waiting times in accident and emergency units in British hospitals. This has led to some hospitals reclassifying waiting trollies as "beds with wheels" and other hospitals to request ambulances carrying patients to wait outside for a while to reduce the measured waiting time.

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It is probably worth noting that this is the point at which many commentators recommend setting up a steering committee. However, this is a risky strategy as (by implication) the steering committee will consist of members other than the board. As noted earlier, the senior team need to be directly involved in driving the approach, and it should be part of their day job. A steering committee may involve delegation which dilutes commitment and certainly implies that this is something outside the normal activities of the top team.

Remember also, that the organization is a system, and that the top level strategies need to recognise the inter-connectedness and look at systemic goals which will be addressed by systemic actions. A map of the processes which flow across the company to deliver the organizational goals is a useful thing at this stage.

11.3.3 ENGAGE THE WIDER ORGANIZATION

Once the strategic direction is agreed and clarified at senior levels it is time to spin out the ideas to the rest of the organization. What is required is enthusiastic and comprehensive communication. The most important rule of communication is that it is two-way; this is not simply an exercise in telling, it is also an exercise in listening. There are several sub-steps within this step:

- ***Launch the principles, vision and mission***: Be careful not to overplay this, it is easy to switch people off if it looks like this is 'the next big thing'. This is especially true for organizations suffering from an excess of historical initiatives; sometimes called 'initiative fatigue'. Ensure everyone hears about it at roughly the same time.
- ***Consult and integrate***: Seek the views of staff about what is excellent in the organization and what needs to be improved. Don't make the mistake of trying to create dissatisfaction with the status quo purely by denigrating the existing system; many people have many years invested in the current organization, allow them to guide you in what might need to be changed and what is definitely worth keeping. Take a short time to integrate these results with the original vision and mission – feedback where changes have been made and assumptions reinforced to show that you are listening. If there is a gross mismatch between the views of the leaders and those of the rest of the organization address them now openly and with candour.
- ***Deploy Hoshin Kanri and the catchball process***: To engage staff in the change rather than just involve them in delivering it the leaders must allow them to have a say in how the vision can be delivered. The Hoshin Kanri catchball process is the most effective way of doing this.

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- ***Diagnose the organization and conduct a gap analysis***: Using an appropriate tool (such as the EFQM assessment model), look at the current performance of the organization. Bear in mind how this compares to the vision. Establish where the vision requires only continuous improvement to achieve and where 'breakthrough' improvements in performance are required. Deployment of this diagnosis should follow similar patterns to the Hoshin Kanri deployment so that departments, sections and sub-sections can see what their key challenges are.

The key element of all these steps is the empowerment of the vast majority of the workforce and their active engagement in the decision making processes, not just in delivering the actions which come out of them.

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11.4 TAKE ACTION TO ACHIEVE TRANSFORMATION

11.4.1 DEVELOP IMPROVEMENT PROJECTS

Having established priorities from the activities in the previous section, the next step is to begin to work on the improvements. Again, we have some sub-steps to consider:

- ***Establish the improvement system***: Select a business wide approach to improvement, perhaps using DMAIC or PDSA. Establish the balance of full and part time resources to be involved in improvement. Establish fully trained and experienced coaches and mentors to provide support.
- ***Set up initial projects***: They must be clearly linked to business and customer priorities and to closing the gaps identified in the earlier analysis. Ensure that they are also in line with staff issues to further cement the idea that this is something that staff can own and influence.
- ***Identify and Train staff***: Avoid a 'sheep dip' approach to training all staff, this is never effective and absorbs huge amounts of resource. Train those immediately involved in projects and those who might be affected by them to an appropriate degree. Train on a just-in-time basis so that skills are used very soon after they are trained.
- ***Generate quick wins***: Although projects may be systemic and long term in nature try to find quick highly visible improvements which can establish the potential and usefulness of the overall project. Publicise these quick wins.
- ***Review projects***: Make sure that progress is reviewed regularly. Encourage reflection and self-assessment in the project teams and place emphasis on honest reporting rather than meeting goals. This is important at all times, but more so in the early phases when we are learning about the deployment and need to ensure the correct approach is being taken. Encourage 'double loop' learning where governing ideas as well as processes are challenged.
- ***Celebrate success and learn from projects***: On successful conclusion it is important to recognise the efforts of those involved and publicise not only the benefits but also the things that have been learned.
- ***Review the initiative and realign priorities***: on project completion it is important to update the higher level and re-assess where priorities now lie for the next set of improvement activities.

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Throughout this process the teams need to engage fully with local personnel (they must also form a substantial part of the team). Solutions without widespread support in the areas where they are implemented stand little chance of success, and solutions developed without the insight of local staff are unlikely to be optimal.

Involvement at Lakeside Engineered Systems Division: Aeroquip Group

The re-engineering of the business required everyone to be actively involved:

- All levels of the organization were involved in reviewing the processes (both before change and of the newly adopted procedures)
- In establishing manufacturing cells, the cells were designed by the cell members.
- Project members were encouraged and empowered to follow projects to a conclusion regardless of job description, demarcation lines, etc.).

Over a 4 year period on time delivery went from 76% to 96%; lead time reduced from 16 to 7 weeks and sales per full-time employee from £132,200 to £328,300.

Businessballs.com (2011)

As time goes by and successes multiply, begin to widen the basis of the initiative, training as you go.

11.4.2 TOOLS TO TRANSFORM

There are many books on tools and techniques to support quality. They are, of course, extremely important and are dealt with in some detail in the companion book to this on Bookboon.com "Six Sigma: Principles and Practice". This book is intended to deal with the principles and approaches to quality management rather than the detail of the tools and techniques so will not look at them in significant detail.

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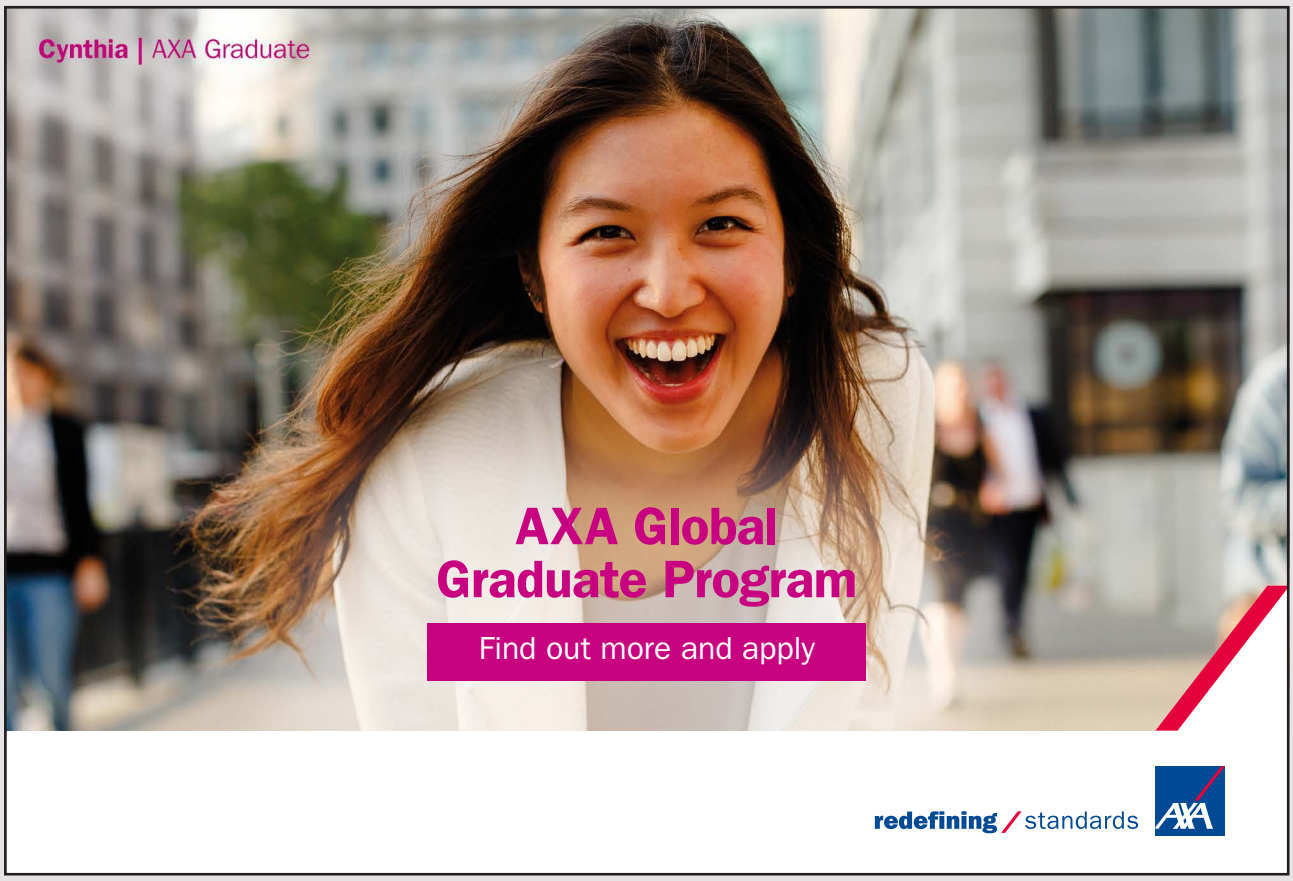
11.5 COMMUNICATE, REVIEW, DIAGNOSE AND REVITALISE

Communicate the successes and the learning from projects as widely as possible and as effectively as can be achieved. Review not only the success of the individual projects, but also the overall initiative. Again, you need to consider not just the actual results, but also perceptions. If the initiative is not at the front of people's minds, or worse, has a bad reputation, this can serve as a leading indicator of reduced results to come and is even more important than actual results in predicting the sustainability of the system. Apply the PDSA at the organizational level as well as in individual projects.

As initiatives get older they often lose their impact, and become 'wallpaper'. This is not entirely a bad thing, particularly if they are becoming absorbed into the culture. However, it may be appropriate to freshen things up occasionally by the use of some additional training or relaunch events.

Remember, this is a learning activity at all levels. Keep reviews open, honest and process focused in order to get the most out of them.



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11.6 CRITICAL SUCCESS FACTORS

There are innumerable texts on the factors which lead to success in deploying Quality Management, and consensus is pretty widespread. The following are a summary:

- ***Senior management commitment***: The most important success factor from almost all the research.
- ***Strategic alignment and customer focus***: This allows for the organization to derive maximum benefits from improvement activities by ensuring they are working on the things that matter most.
- ***Widespread engagement***: Put simply, the more people actively working on this the better.
- ***Good infrastructure and support***: Essentially resources need to be available in the right place, time and quality to allow for effective execution. This includes people, money, training, and expertise.
- ***Learning***: The whole system needs to focus on generating continual learning as well as continual improvement.
- ***Good measurement and recognition systems***: To establish success you need to measure, to maintain commitment you need to recognise effort and results. Note that recognition does not have to be monetary.
- ***Communication***: Is the lifeblood of any Quality Management system. Effective, two way dialogue allows the organization to evolve and priorities to be reviewed and addressed.

A Final Thought

"The significant problems we face cannot be solved at the same levels of thinking we were at when we created them"

– Albert Einstein

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