Integrated Performance Management: A Guide to Strategy Implementation

Performance at the Operational Level: Quality- and Time-Based Competition

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Performance from an Operations Perspective: A General Overview

In the previous chapter we looked at performance from a corporate and business unit perspective. Performance can also be approached from an operations perspective. There, one looks at how inputs such as people, materials and machines are transformed into outputs such as finished goods and satisfied customers. The key focus is the process of transformation.

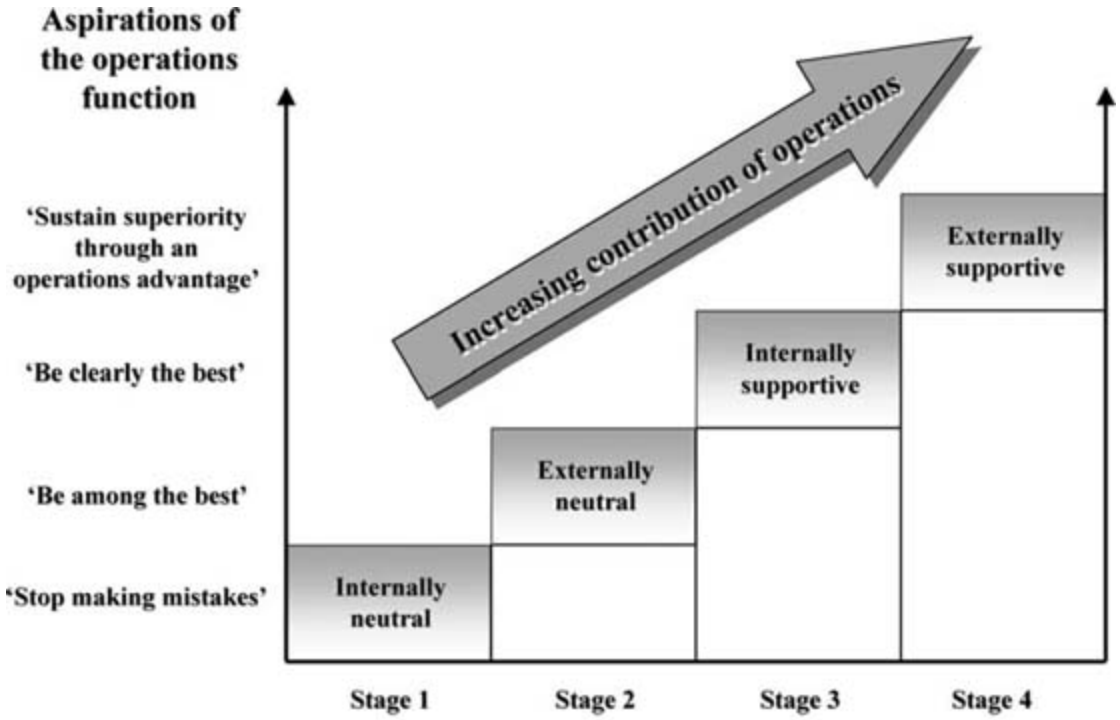
One example of a process transforming ‘goods’ is an assembly line of cars. A key issue in such an assembly line is the balancing of lines so that there is a smooth throughput with an adequate utilization of the work station. In an insurance company, the process transforms a request for underwriting into an insurance policy. The main challenge here is to keep the turnaround time between request and written policy low. In a hospital, patients are flowing from one department to another (such as the pre-operative care department, the operating theatre, intensive care and the post-operative care department), but not all patients follow the same sequence. The main task of the operations function here is to combine a smooth throughput with a high utilization of the medical equipment. Based on these examples, some fundamental differences between the transformation processes can be observed:

- The ‘subject’ of the transformation can be materials, such as in the example of the car, information, such as in the insurance company, or people such as in a hospital.
- The way the transformation is organized can be different. Cars are assembled using a product-line approach, while a hospital works rather as a job shop. Generally, processes can be organized in different ways: project, job shop, batch production, assembly line and continuous flow. There is an evolution from low volume/low standardization (often one of a kind) products to high volume/high standardization commodity products.
- The operations management function is different depending on the subject of transformation and the organization of the transformation process. The scheduling task is fundamentally different when people are involved than when machines and materials are involved.

In summary, measuring performance at an operational level requires making a distinction between manufacturing companies, service companies and information companies. Because of the particularity of the latter one, this chapter mainly focuses on manufacturing and service companies.

The operations function is not an isolated part of the company. As with many other functions, it must be linked to business strategy. Hayes and Wheelwright's (1984) four-stage model holds that the strategic contribution of an operations function can be judged by its aspirations (see Figure 4.1).

Figure 4.1 Different stages in the aspiration of the operations function



Source: Hayes and Wheelwright (1984: 8)

In the first stage, the contribution of operations is considered as a necessary evil, trying to avoid bigger mistakes. In a second stage, the operations function is looking at other companies and tries to adopt best practices from its competitors. In the internally supportive stage, the operations function is aiming at becoming one of the best in the market and further tries to integrate itself with the strategy of the firm. While in this stage, the operations function is rather supportive for the strategy; in the last stage, the operations function is providing the foundation for its future competitive success (see discussion in Slack et al., 1995: 49–52). In the third and fourth stage, firms are formulating an operations strategy as 'the total pattern of decisions and actions which set the role, objectives and activities of the operation so that they contribute to and support the organization's business strategy' (Slack et al., 1995: 83).

The operations function contributes and supports the organization's business strategy through five performance objectives:

- The quality objective—doing the things right;
- The dependability objective—doing things on time;
- The speed objective—doing things fast;
- The flexibility objective—changing what you do;
- The cost objective—doing things cheap (Slack et al., 1995: 53).

In this chapter we elaborate on these different performance objectives of the operations function. We regroup them into three categories: the quality objective, the time-based objective and the cost objective. Speed and flexibility are all aspects of what is called time-based competition. Dependability is closely linked to quality. The cost objective will only be discussed in relation to the other two performance objectives. However, costing methods (such as Activity-Based Costing) have played an important role in shaping work systems. That is why we focus very briefly on the role of Activity-Based Management in Chapter 7.

Quality-Based Competition

Some Definitions of Quality

Quality has been studied for years. The great Greek philosophers Socrates, Plato and Artistotle mention

'excellence' as the absolute ideal to strive for (Reeves and Bednar, 1994). Since then there have been many publications on quality in books, academic journals and trade journals, resulting in many different definitions of quality, which are not always consistent or coherent. In a review article on the definitions of quality, Reeves and Bednar (1994) recognize four categories, based on what concept is behind them:

- Quality is excellence;
- Quality is value;
- Quality is conformance to specification;
- Quality is meeting and exceeding customers' expectations.

Quality is Excellence

Although the real root of this category of 'quality' definition lies in Ancient Greece, it is now very popular again. For instance, the European Foundation for Quality Management (EFQM) has developed a framework for business excellence. It describes 'essence of excellence' as being when a company is aware of competition, survives in the long term through changing and improving, satisfies customers, shares knowledge and experiences, develops leadership and is aware that its people are its greatest asset (European Foundation for Quality Management, 1999a). Based on this description of excellence, one can conclude that a company must excel in everything it does, without knowing the limits. Excellence means that the sky is the limit. Although striving for excellence is always a good attitude in any firm, it gives only very limited guidance to managers on how to reach quality (Reeves and Bednar, 1994).

Quality is Value

From an economic point of view, value can be seen as the incorporation of features and benefits of products or services for the customer, as compared with the price (or cost) of obtaining this product or service. Feigenbaum (1951) introduced the idea that value must be included in any definition of quality:

Quality does not have the popular meaning of 'best' in any absolute sense. It means 'best for certain customer conditions'. These conditions are (a) the actual use and (b) the selling price of the product. Product quality cannot be thought of apart from the product cost.

(Feigenbaum, 1951: 14)

Value is a very popular managerial concept. For instance our definition of performance, outlined in Chapter 1, is based on the comparison of the value generated by the firm and the value expected by the stakeholders. In the same chapter value is defined in the Service Profit Chain as a comparison of the results the customers receive and their total costs, including the price and other costs the customers incur in acquiring services. Value is often a perception-based measure: customers and stakeholders perceive value.

Quality is Conformance to Specifications

While the previous definitions of quality are subjective, Shewhart (1931), and later Juran (1988), introduce a more objective way of looking at quality. This more engineering point of view includes two important steps. The first one is to translate the 'wants' of the customer into 'physical' characteristics of the manufactured product (Shewhart, 1931). Quality Function Deployment (QFD) has been proposed as a technique for translating customer requirements into the product design as well as in the design and operation of production systems (Evans and Dean, 2000: 98). QFD is successfully used by manufacturers of clothing, electronics, electrical appliances and construction equipment, and is increasingly used in the service sector.

The second step is to 'set up ways and means of obtaining a product which will differ from the arbitrarily set standards from these quality characteristics (Shewhart, 1931: 53—4). This gave birth to more statistically oriented techniques such as Statistical Process Control (SPC). The purpose of Statistical Process Control is to try to keep the variation of processes under control by detecting assignable causes (as opposed to common or unassignable causes) (Liberators, 2001). Such thinking has led to the still very popular Six Sigma programmes, originally developed by Motorola. The basic idea behind Six Sigma is to limit the number of

defects as much as possible. Six Sigma programmes have combined statistical and non-statistical methods in order to improve businesses (Pearson, 2001). The main distinctive feature in Six Sigma programmes is the focus on measurement, data-driven analysis and control. This kind of statistical thinking is extremely useful when a tangible product is produced. Conformance to specification is rather inappropriate in a high-contact service environment because it is very difficult (and in many cases impossible) to specify standards (Reeves and Bednar, 1994).

Quality is Meeting and Exceeding Customer Expectations

Quality defined as conformance to specifications is sometimes considered as a more inward-looking definition of quality. According to Berry, Parasuraman and Zeithaml (1988), this definition of quality is misleading because it is the customer who defines the specifications. Although Shewhart and Juran also recognized the importance of customer wants in defining quality, they gave no advice on how to assess these wants. As to Berry and his colleagues, customers assess service quality 'by comparing what they want or expect and what they actually get or perceive they are getting' (Berry et al., 1988: 37). So quality has something to do with expectations and performance as actually perceived by the customer. This definition of quality is based on the so-called 'Paradigm of Disconfirmation' (De Carvalho and Leite, 1999). A customer is only satisfied when the actual performance is equal or better than expected.1 Of course, an important question is to identify the components (called service quality dimensions) for which customers have expectations and perceive performance. (These service quality dimensions will be discussed later in this chapter.) In trying to explain the gap between customer expectations and customer performance, Parasuraman, Zeithaml and Berry (1985) came up with a 'gap model' consisting of four causes leading to the gap in expectations and performance.

- The gap between management perception of consumer expectations and expected service by the customer. For instance, a field service engineer sometimes knows very well what their customers want. This kind of information is not always fed back to the company. In the longer term this may lead to role conflict. Market research can help close this gap.
- The gap between management perception of consumer expectations and the translation of those perceptions into service quality specifications. The quality specifications (which can be set in quality systems such as ISO 9000 are not fine-tuned on the customer expectations. Quality Function Deployment can be very useful in closing this gap. Refer to Chapter 7 for more details on Quality Function Deployment (QFD).
- The gap between service quality specifications and the actual service delivery. Lack of resources can make it impossible for employees to work up to the quality specifications. Other factors contributing to the closing of this gap are teamwork, employee—job fit, technology—job fit, perceived control, supervisory control systems, role conflict and role ambiguity (Zeithaml et al., 1988).
- The gap between the actual service delivery and the way the organization communicates about it. External communication of what the customer can expect through advertising can be important in reducing this gap.

The gap model shows that quality, defined as meeting or exceeding expectations, is a complex construct which is difficult to operationalize and to measure because expectations and perceptions are not easy to measure.

Different Definitions of Quality: Summary

The different definitions of quality can be positioned in a historical perspective (Walburg, 1997). The conformance to specifications of Shewhart and others fits well in an industrial world where quality inspection was the main area of attention. The next era is that of quality assurance, where the customer comes into the story and where quality is expanded from the production function to all different functional areas in a company. Deming, Crosby, Juran and Feigenbaum are the protagonists of this stage.2 The last stage is that of Total Quality Management. The value-based definition can be positioned here, certainly when values of all different stakeholders are taken into account. Total Quality Management implies that quality is a matter for everyone involved with the company. Quality is completely integrated in the operational, tactical and strategic management. A last stage is that of continuous improving, innovating and learning in order to strive for excellence.

Quality in Manufacturing and Services

Based on the previous discussion, it also becomes clear that manufacturing companies and service firms (certainly those firms with a lot of interactions with customers) are confronted with different quality issues. For instance, quality in manufacturing revolves around the design of the tangible product and one of the big quality issues is the conformance of this product to the predetermined specifications. Quality control is an important tool in guaranteeing this conformance. One essential goal of quality control is to avoid what the customer perceives as non-conformance and errors. In the delivery of services where the customer is often present during the 'production', errors cannot be hidden. Moreover, an error in one aspect of service delivery can have a much larger impact on the perceived service quality than another one. This is especially the case when the transaction is not tangible.

In manufacturing, the following quality dimensions are recognized:

- Performance—a product's primary operating characteristics;
- Features—the 'bells and whistles' of a product;
- Reliability—the probability of a product's surviving over a specified period of time under stated conditions of use;
- Conformance—the degree to which physical and performance characteristics of a product match pre-established standards;
- Durability—the amount of use one gets from a product before it physically deteriorates or until replacement is necessary;
- Serviceability—the ability to repair a product quickly and easily;
- Aesthetics—how a product looks, feels, sounds, tastes and smells;
- Perceived quality—subjective assessment resulting from image, advertising or brand names (Garvin, 1984; Evans and Dean, 2000).

Several authors have tried to identify the service quality dimensions. Parasuraman and his colleagues (1985) originally listed ten determinants or dimensions of service quality (see Table 4.1). This list was made up as a result of focus group studies with service providers and customers. Later, they found a high degree of correlation between communication, competence, courtesy, credibility and security, and therefore merged them into one dimension, which they called 'assurance'. Similarly, they found a high correlation between access and understanding which they merged into 'empathy'. The researchers claimed that the dimensions are sufficiently generic that they could cover a wide spectrum of service sectors (Van Ossel, 1998). Using the expectation—performance gap and these dimensions, they developed an instrument to measure service quality, the so-called Servqual tool. Although a lot of critique has been formulated on this tool (Buttle, 1996), a wealth of empirical studies show that Servqual can be used in many different service situations such as health care, banks, and many others. However, the five basic dimensions are not always recognized.

Table 4.1 An overview of service quality dimensions

1. Reliability involves consistency of performance and dependability. It also means that the firm performs the service right first time and honours its promises. Specifically, it may involve:
   - accuracy in billing;
   - performing the service at the designated time.

2. Responsiveness concerns the willingness or readiness of employees to provide service. It may involve:

- mailing a transaction slip immediately;
- calling the customer back quickly;
- giving prompt service (e.g., setting up appointments quickly).

3. Competence means possession of the required skills and knowledge to perform the service. It involves:
   - knowledge and skill of the contact personnel;
   - knowledge and skill of operational support personnel;
   - research capability of the organization.

4. Access involves approachability and ease of contact. It may mean:
   - the service is easily accessible by telephone;
   - waiting time to receive service is not extensive;
   - convenient hours of operation and convenient location of service facility.

5. Courtesy involves politeness, respect, consideration and friendliness of contact personnel (including receptionists, telephone operators, etc.). It includes:
   - consideration for the consumers property;
   - clean and neat appearance of public contact personnel.

6. Communication means keeping customers informed in language they can understand and listening to them. It may mean that the company has to adjust its language for different customers. It may involve:
   - explaining the service itself and how much the service will cost;
   - explaining the trade-offs between service and cost;
   - assuring the consumer that a problem will be handled.

7. Credibility involves trustworthiness, believability and honesty. It involves having the customer's best interests at heart. Contributing to credibility are:
   - company name and reputation;
   - personal characteristics of the contact personnel;
   - the degree of hard sell involved in interactions with the customer.

8. Security is the freedom from danger, risk or doubt. It may involve:
   - physical safety;
   - financial security and confidentiality.

9. Understanding/knowing the customer involves making the effort to understand the customer's needs. It involves:
   - learning the customer's specific requirements;
   - providing individualized attention.

10. Tangibles include the physical evidence of the service:
    - physical facilities and appearance of personnel;
    - tools or equipment used to provide the service;
    - physical representations of the service, such as a plastic credit card.

Source: Buttle (1996)

Principles of Total Quality

As said before, Total Quality means that the value of all stakeholders involved in the company is maximized. 'Total Quality works across functions and departments, involves all employees, top to bottom, and extends backward and forward to include the supply chain and the customer chain' (Evans and Dean, 2000: 13). There are some fundamental principles underlying Total Quality, which can be found in many studies:

- Customer focus;
- Participation and teamwork;
- Continuous improvement and learning (Evans and Lindsay, 1999).

These three basic principles of TQ are further supported by an integrated organizational infrastructure, a set of management practices and a wide variety of tools and techniques. Important components of the organizational infrastructure are:

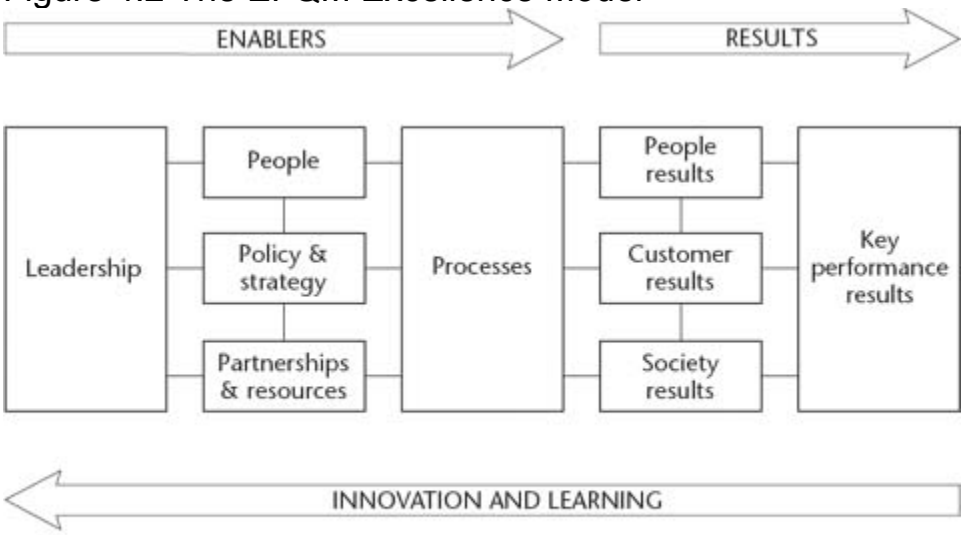
- Leadership;
- Strategic planning;
- Human resources management;
- Process management;
- Data and information management.

Many of these principles of Total Quality and components of organizational infrastructure can be found in the integrating frameworks for achieving Total Quality and Performance Excellence.

Frameworks for Achieving Total Quality and Performance Excellence

Totally in line with the 'quality is excellence' definition, the European Foundation for Quality Management (EFQM) was founded in 1988 by the presidents of 14 major European countries, with the endorsement of the European Commission. The main aim of EFQM was to apply principles of Total Quality Management in European business to make it more competitive (Jackson, 1999). Following the successes of the Deming Prize in Japan and the Malcolm Baldrige National Quality Award (MBNQA) in the USA, EFQM adopted the principle of self-assessment and introduced a European Quality Award (EQA). EFQM defined self-assessment as '… a comprehensive, systematic and regular review of an organization's activities and results referenced against the EFQM Excellence Model. The self-assessment process allows the organization to discern clearly its strengths and areas in which improvements can be made and culminates in planned improvement actions which are then monitored for progress' (European Foundation for Quality Management, 1994). The EFQM Excellence Model (Figure 4.2) provides a tried-and-tested framework, an accepted basis for evaluation and a means to facilitate comparisons both internally and externally.

Figure 4.2 The EFQM Excellence Model



Source: European Foundation for Quality Management (1999b)

The EFQM Excellence Model is based on nine criteria, grouped into two parts: enabler criteria and results criteria (see Table 4.2). The five enabler criteria are Leadership, Policy and Strategy, People, Partnerships and Resources, and Processes. Central to the use of the enablers in the EFQM Excellence Model is the RADAR approach. In this four-step approach an organization needs to determine the Results it is looking for, plan and develop sound Approaches to attain the results, Deploy the approaches in a proper way and finally Assess and Review the approaches. This is very similar to the Plan, Do, Check, Act cycle of Deming. The

four results criteria are Customer results, People results, Society results and Key performance results.

Table 4.2 A description of the nine criteria areas of EFQM

The Criteria	
Enablers	**Results**
1. Leadership **How** leaders develop and facilitate the achievement of the mission and vision, develop values required for long-term success and implement these via appropriate actions and behaviours, and are personally involved in ensuring that the organization's management system is developed and implemented.	**6. Customer results** **What** the organization is achieving in relation to its external customers.
2. Policy and strategy **How** the organization implements its mission and vision via a clear stakeholder-focused strategy, supported by relevant policies, plans, objectives, targets and processes.	**7. People results** What the organization is achieving in relation to its people.
3. People **How** the organization manages, develops and releases the knowledge and full potential of its people at an individual, team-based and organization-wide level, and plans these activities in order to support its policy and strategy and the effective operation of its processes.	**8. Society results** **What** the organization is achieving in relation to local, national and international society as appropriate.
4. Partnerships and resources **How** the organization plans and manages its external partnerships and internal resources in order to support its policy and strategy and the effective operation of its processes.	**9. Key performance results** **What** the organization is achieving in relation to its planned performance.
5. Processes **How** the organization designs, manages and improves its processes in order to support its policy and strategy and fully satisfy, and generate increasing value for, its customers and other stakeholders.	

Source: European Foundation for Quality Management (1999b)

In terms of the results, the questions of the EFQM Excellence Model aim at defining the organization's actual performance, the organization's performance against its own targets and, if possible, the performance compared to competitors and 'best in class' organizations (Porter and Tanner, 1996; European Foundation for Quality Management, 1999b).

There is a dynamic relationship between the enablers and the results: excellence in the enablers will be visible in the results. An organization using the scoring profile of the EFQM Excellence Model can earn up to 1,000 points distributed among the nine categories.

The EFQM Excellence Model is a non-prescriptive framework of criteria. In other words, it recognizes that there are many approaches to achieving excellence. In line with this observation that organizations can follow a different path to excellence, EFQM introduced in 2001 different levels of recognition of the efforts and

progress of organizations towards quality management. While before only the European and National Quality Awards were available, now organizations can apply for the 'Recognition of Achievement in Excellence' and the 'Recognition of Commitment in Excellence' (European Foundation for Quality Management, 2001a). The European Quality Award is the key stimulator of excellence for role model organizations. The Recognition of Achievement in Excellence is designed for organizations that aspire to become best in class. The application for this recognition scheme is shorter and the assessment is modified. Finally, the recognition of commitment is designed for organizations at the beginning of the path to excellence. The emphasis is on helping organizations to understand their current level of performance and to establish improvement priorities.

During the development of the EFQM Excellence Model, several questions were raised about the relationship of this model with other 'models' such as the Balanced Scorecard and ISO 9000. While the Balanced Scorecard is designed to communicate and assess strategic performance, the EFQM Excellence Model focuses on encouraging the adoption of good practice across all management activities of the organization (Lamotte and Carter, 2000).

A self-assessment by the EFQM Excellence Model seeks to establish how well an organization defines and manages the process of strategic planning. The Scorecard, on the other hand, tests the validity of the strategy and monitors the organization's performance against its delivery on regular and frequent basis.

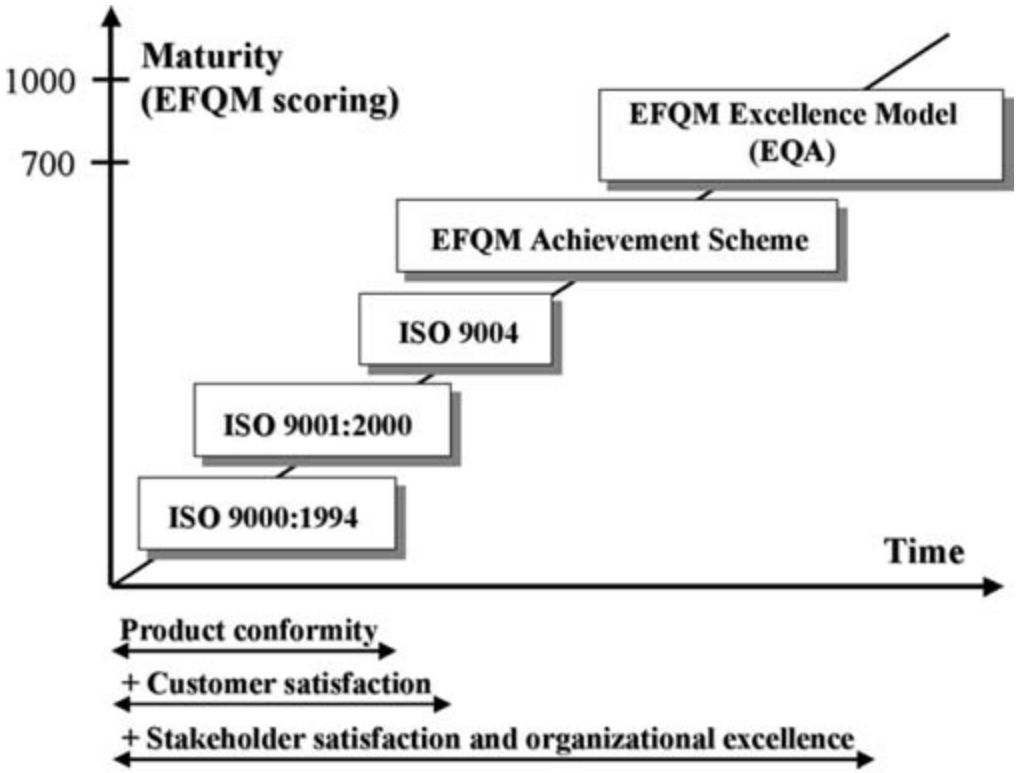
(Nilsson and Samuelsson, 2000: 2)

While self-assessment based on EFQM looks at the management of Total Quality, ISO asks more for a quality assurance assessment or audit. An audit confirms (or not) that the requirements in the standard are being met. A standard is a quality system standard that guides a company's performance of specified requirements in the areas of design/development, production, installation and service (Evans and Lindsay, 1999). It must be recognized that over the last 15 years, ISO has gradually become the de facto quality (system) standard worldwide. To stay competitive, organizations need ISO certification.

Traditionally, ISO is very much oriented on the process area of the EFQM Excellence Model. The major differences between ISO and EFQM is that the former is prescriptive and the latter is not. The openness of the EFQM Excellence Model introduces more room for creativity and its holistic approach makes it more complex. In contrast, ISO procedures can be deployed without the complexity of a holistic approach (European Foundation for Quality Management, 2001b). In business practice, EFQM and ISO are considered complementary, since they are both used as management tools. ISO enables better management of production processes, while the Excellence Model is used for self-assessments and long-term orientation.

The new ISO 9001:2000 includes some major new features also covered by the EFQM Excellence Model. These new features include customer feedback, business improvement, ideas from the Deming Cycle (Plan-Do-Check-Act) and new requirements for management when dealing with customers and suppliers (European Foundation for Quality Management, 2001b). As such, the new ISO 9001:2000 is going a step further towards the excellence idea. This is even more true for the ISO 9004:2000. It is considered as a guide for organizations that want to expand further and improve the quality system after implementing ISO 9001. It is possible to position ISO 9000, ISO 9001:2000 and EFQM as stages on the journey to excellence (see Figure 4.3).

Figure 4.3 EFQM and ISO 9001:2000 - Different stages on the journey to excellence



Source: European Foundation for Quality Management (2001b)

[Figure 4.3] shows where an organization stands in its journey to excellence. In a first phase, organizations tend to focus only on product conformity in order to obtain basic ISO certification (ISO 9001 version 1994). In the second phase, organizations start paying attention to customer satisfaction (ISO 9000 version 2000). The third phase sees organizations becoming mature enough to be interested in the EFQM methodology with its broader focus on customer and stakeholder satisfaction. The graph also shows that ISO versions are gradually moving up the scale. The new EFQM Recognition and Advice Scheme creates a new low-end emphasis for EFQM methodologies. The two methods are getting closer to one another. ISO 9004 looks certain to continue this trend by including self-assessment of quality and management systems. The range of methodologies is becoming more complete. Whatever the maturity of an organization, there will always be a logical next step for implementing excellence.

(European Foundation for Quality Management, 2001b: 4)

The different stages in Figure 4.3 can also be described using our different definitions of quality. The first stage is the ‘quality to conformance to specification’ stage where ISO 9001 is a useful tool to attain this kind of quality. The idea of ‘quality is meeting and exceeding customer expectations’ is the characteristic of the second stage. This is an important characteristic of the ISO 9001:2000. In the third stage satisfaction of all stakeholders is introduced. This is reflected in the ISO 9004 and the EFQM Recognition and Advice Scheme. Finally, the EFQM Excellence Model supports the achievement of quality as excellence. How organizations look at quality and which models they use depend on the maturity of this company on the journey to excellence.3

Time-Based Competition
Time-Based Competition: What's in a Name?

The expression ‘Time-Based Competition’ (TBC) was invented by George Stalk and his colleagues from the Boston Consulting Group. George Stalk and James Abegglen first observed the evolution of Just-In-Time (JIT) production systems in Japanese companies, such as Toyota (Stalk and Abegglen, 1985). They

learned how these JIT companies reduced throughput time in production and how they developed JIT to an organization-wide management philosophy. These JIT companies were the first time-based competitors of the world. Based on their observations, Stalk and Abegglen (1985) defined Time-Based Competition as 'the extension of JIT principles into every facet of value delivery cycle, from research and development through marketing and distribution'.

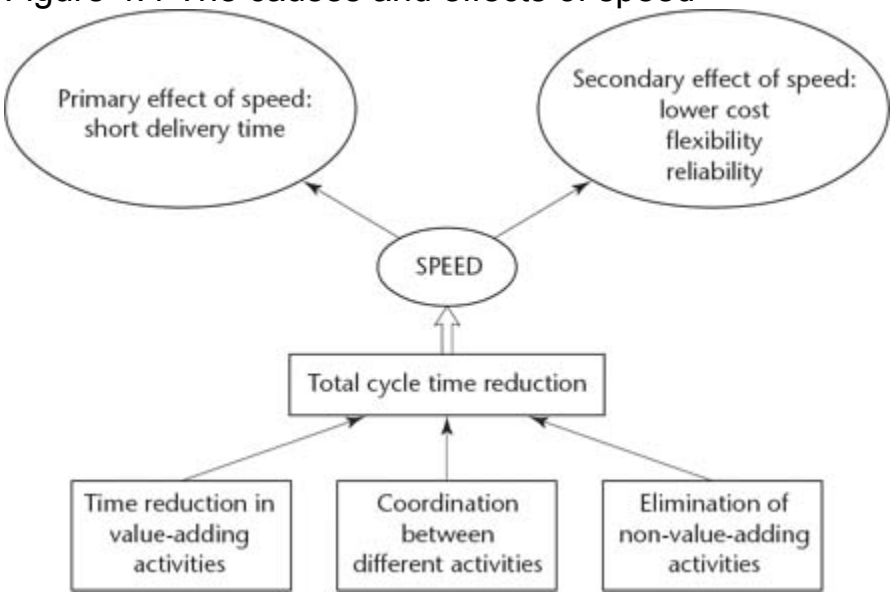
Both concepts, JIT and TBC, have the same goals: eliminate waste in the production or the service delivery process. Waste is anything that does not add value to a product or a service. In many instances, waste involves activities which do not contribute to the value of the company. Through the elimination of waste time, more time can be spent on value-added activities. While JIT looks more at the operations function, TBC considers the whole value chain and focuses on the total time required to produce and deliver products and services (Blackburn, 1991).

Principles of Time-Based Competition

The basic principle of Time-Based Competition is to react faster on changes in the environment and to be more flexible than competitors in order to grow faster. One of the key issues in Time-Based Competition is to reduce the development time of new products and services. A flexible operations process, a fast reaction and innovation are the key elements in order to attract profitable customers. The new company strategy is 'the highest value for the lowest cost in the shortest time'.

Time in itself is not necessarily the only driver for Time-Based Competition. Shorter lead times generate many secondary effects, such as higher efficiency, higher supplier reliability and flexibility. Figure 4.4 summarizes how total lead time can be reduced and why it should be reduced.

Figure 4.4 The causes and effects of speed



A first step in Time-Based Competition is to eliminate non-value-added activities. For example, one study found that for each dollar spent in the hospital, 60 cents are 'wasted' on non-value-added activities such as coordination, planning, communication and documentation. Another study found that barely 25 per cent of the total available time of a CT-scan in a hospital was used for investigations. The other 75 per cent of the time was spent on waiting for patients, set-up, etc. In the same way, one can wonder why a request for underwriting an insurance policy requires two or three weeks while no more than a couple of hours is needed to produce a written policy.

One of the major causes of the long lead times is the bad or difficult coordination between different activities. For instance, in the insurance example a request for underwriting is going through different workstations

such as distribution clerks, underwriting teams, rating agents and policy writers. The probability is high that one of the workstations is a bottleneck, slowing down the whole process. In a manufacturing company, the relationship between the R&D department and the production department is crucial in the time required to bring innovations to the market.

Finally, the value-added activities are not always performed in an efficient way. For example, sometimes work needs to be redone because the product does not satisfy the standards. It is quite clear that here quality and Total Quality are coming in. If the photos are not clear after a CT-scan, the procedure must be repeated, leading to a longer throughput for the patient and taking away time for other investigations.

Besides the primary effect of being faster, Time-Based Competition also generates secondary effects in costs and quality. This will be explored in the next section.

Quality, Time and Cost

Eliminating non-value-adding activities or preventing rework in order to work faster are strategies totally in line with quality management. There is a bi-directional relationship between speed and quality. Speed is a component of quality because it contributes to the satisfaction of customers; at the same time, quality is a necessary condition in order to produce or deliver goods or services quickly (Stalk and Hout, 1990). Becoming a time-based competitor is a strategy that goes arm in arm with Total Quality Management. This can be seen in Table 4.3 where a traditional company is compared with a time-based competitor. Based on these comparisons, it can be said that a time-based competitor is one of the ultimate stages on the path to excellence.

Table 4.3 Comparing a traditional company and a time-based competitor

Traditional companies	Time-based competitors
Improve one function a time.	Improve the whole system and focus on core activities.
Work in departments and batches.	Generate a continuous stream of work.
Eliminate bottlenecks to speed up work.	Evaluate the whole design of the system and the organization before speeding up work.
Invest to reduce cost.	Invest to reduce time.
Information is created and diffused by specialist.	Information is created and used by teams.
Managers build information bridges throughout the organization.	Multifunctional groups build their own sources of information to do the daily work.
Central handling, slow feedback.	Local handling and fast feedback.

Source: Stalk and Hout (1990)

In looking at the relationship between cost and quality, one must be aware of the ‘old’ misconception that improving quality is expensive (DeFeo, 2001). Of course engaging in activities such as self-assessment or introducing Six Sigma programmes costs money, without, at first glance, short-term benefits. The problem is that the cost of poor quality is often hidden and not quantified. As Feigenbaum states: ‘Quality costs mean the cost of delivering complete customer satisfaction through accounting for quality in a way that links quality and business improvement. It helps provide increased customer value capability.’ (Feigenbaum, 2001: 26)

The cost of quality has two primary components. The first component is the cost of quality disconnects. This includes internal and external failure costs. Internal failure costs are the result of unsatisfactory quality found before the delivery of a product or service to the customer, for example, the cost of rework. The external failure costs relate to the costs associated with customers being exposed to poor quality. The cost of customers who complain and ask for recovery is an example in this latter category (Evans and Lindsay, 1999). The second

component comprises the cost of quality investment, including prevention and assessment. Prevention costs are those that stop non-conforming products from occurring and reaching the customer. The salaries of people involved in quality planning is an example of a prevention cost. Appraisal costs are those associated with efforts to ensure conformance to requirements, for example the costs of inspection and testing (Evans and Lindsay, 1999).

It is important to measure failure cost (certainly when it becomes external) in the right way. These costs can lead to customer deficiencies and unsatisfied customers can become 'terrorists' for the company. In this case the tree of excellence will no longer have leaves. In contrast, an organization can show (just as the foliage of the tree) how well it performs by doing it right the first time and by avoiding external failures. This kind of image can attract new customers or make existing customers loyal. In other words, striving for excellence is not only a matter of cost, but also a matter of business.

Conclusion

We conclude by linking the many different concepts introduced in this chapter. The alert reader has discovered that at several points in this chapter, four stages on the path to excellence are recognized. Table 4.4 summarizes the characteristics of these four stages. In Chapter 7, we will use this four-stage approach to position different quality management tools and techniques. The core assumption is that each stage requires specific ways to deal with quality and that a firm needs to determine carefully at which stage it is positioned before engaging in the quality journey.

Table 4.4 Four stages in the journey to quality excellence

	Stage 1	Stage 2	Stage 3	Stage 4
Aspiration of the operations function	Internally neutral	Externally neutral	Internally supportive	Externally supportive
Definition of quality	Quality is conformance to specifications	Quality is meeting and exceeding customer expectations	Quality is value	Quality is excellence
The (self-) assessment framework	ISO 9001	ISO 9001:2000 and EFQM Commitment to Excellence Scheme	ISO 9004 and EFQM Achievement of Excellence Scheme	EFQM Quality Award Scheme
Strategy based on	Costs and quality, as defined in stage 1	Costs and quality, as defined in stages 1 and 2	Costs and quality, as defined in stage 3	Time and quality, as defined in stages 3 and 4

Notes

1 Service quality and customer satisfaction are very closely related concepts. In the literature both have been defined as the degree and direction of discrepancy between expectations and perceptions. The difference (suggested by some authors) is that satisfaction describes expectations as predictions made by customers while qualityviews expectations as desires or wants of consumers (Reeves and Bednar, 1994: 435).

2 Their key works are: Deming, W.E. (1986) Out of Crisis, MIT Center for Engineering Study, Cambridge, MA; Crosby, P.B. (1979) Quality is Free, McGraw-Hill, New York; Juran, J.M. and F.M. Gryna (1988) Juran's Quality Control Handbook, 4th edn, McGraw-Hill, New York; Feigenbaum, A.V. (1991) Total Quality Control, 3rd edn revised, McGraw-Hill, New York.

3 This maturity can be defined in terms of EFQM scoring on 1,000 points.

- excellence
- quality management
- quality specifications
- customers
- service quality
- six sigma
- self-assessment

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