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Total Quality Management - Aspects of Implementation and Performance

Investigations with a Focus on Small Organisations

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Abstract

Total Quality Management (TQM) has become a frequently used term in discussions concerning quality. The international and national competitive environment is in a process of constant change by the globalisation of markets and the increased interdependence of economic agents. This process of change has brought increased demands on the organisations' competitiveness and the customers have gained a central role in the organisations' focus. TQM is considered to be an important management philosophy, which supports the organisations in their efforts to obtain satisfied customers.

However, there exist extensive numbers of examples of failed or badly performed implementation processes of TQM. This is a problematic phenomenon, which negatively affects organisations, irrespective of size, in their development towards business excellence and ultimately survival in a competitive environment. Furthermore, diversity among researchers exists regarding the actual benefits of TQM. The issue regarding the relationship between successful TQM implementation and financial performance, when considering the incentives for the large organisational change a TQM implementation implies, is important.

The role and contribution, which small organisations make to the economy, has become widely recognised. As small organisations have been slow to adopt TQM, issues concerning the quality development of small organisations are of major importance.

This thesis presents results from two different research projects, described in five appended papers. The first project concerns the relationship between TQM implementation and financial performance within a Swedish context. The results, obtained by studying Swedish quality award recipients, indicate that organisations that have successfully implemented TQM perform better than the general mass of organisations, during a period following the award acknowledgment.

The second project concerns implementation and use of TQM in small organisations. In this project, two multiple-case studies have been conducted in order to describe experiences from implementing and working with TQM. These multiple-case studies have been conducted by studying quality award recipients among small organisations. The analysis of these organisations indicates that some of the core values of TQM, which are often described as the basis of the concept, are more adequate than others when initiating the quality development work. These

core values were leadership, everybody's commitment and customer focus. Furthermore, the problems related to the work with the core value process orientation were a distinct feature of the studied organisations. The results also point out how small TQM organisations organise their quality activities and what their actual quality related work constitutes. In addition, the studies also visualise the importance of committed management and co-workers in order to accomplish the substantial organisational change that is necessary in order to implement TQM. Important areas for facilitating the development of commitment among the actors involved in the change process are described. The findings also indicate that a development of TQM components supporting intangible factors, could further adapt the TQM concept to the small organisation context. The experiences from the successful implementation processes emerge in an overarching tentative implementation model consisting of three phases.

Sammanfattning

Förmågan att kunna anpassa sig efter nya och ökande kundkrav är vital för en organisations överlevnad och kunden har, i detta sammanhang, förvärvat en central roll i organisationernas fokus. Total Quality Management[1] (TQM), som ofta betraktas som en viktig ledningsfilosofi, bistår organisationer i deras ansträngningar att skapa nöjdare kunder, och har under det senaste årtiondet utgjort ett etablerat stöd för organisationers kvalitetsutveckling.

Användandet av TQM är dock inte problemfritt. Det är tämligen vanligt med misslyckade eller dåligt genomförda implementeringsansatser. Detta är problematiskt och påverkar organisationer negativt i deras strävan att utvecklas. Vidare är frågan hur småföretag kan lyckas med att implementera TQM angelägen då det bidrag och den roll som små organisationer utgör i ekonomiska sammanhang idag är allmänt erkänd.

TQM har varit relativt frekvent använt bland västvärldens organisationer men om man studerar forskning på området så ges en blandad bild av den faktiska nyttan. Frågan gällande TQM och lönsamhet är av stor vikt med tanke på den omfattande organisationsförändring en implementering av konceptet fordrar.

Den föreliggande avhandlingen presenterar resultat från två forskningsprojekt, beskrivna i fem bifogade artiklar. Det första projektet behandlar kopplingen mellan TQM och lönsamhet. Resultatet, som erhållits genom att studera svenska kvalitetsutmärkelsemottagare, indikerar att organisationer som lyckats implementera TQM påvisar en bättre lönsamhet än jämförbara genomsnittsföretag, under den studerade tidsperioden på tre år efter implementeringen.

Det andra projektet behandlar implementering och användning av TQM i små organisationer. Detta projekt har utgjorts av två multipla fallstudier som studerat små organisationer som erhålligt en kvalitetsutmärkelse. Studierna indikerar att vissa av de grundläggande värderingar, som utgör basen i TQM, lämpar sig bättre än andra när man skall starta införandet av TQM i en liten organisation. Dessa värderingar är ledarskap, allas delaktighet samt kundorientering. Vidare framgår att den grundläggande värderingen, processorientering, genomgående var problematisk för de små organisationerna.

[1] *En vanlig svensk benämning är även Offensiv Kvalitetsutveckling*

Resultaten visar även hur små organisationer organiserar sitt kvalitetsarbete och de beståndsdelar som ingår i deras kvalitetsarbete. Vidare understryks vikten av en engagerad ledning och engagerade medarbetare för att genomföra den omfattande organisationsförändring som en TQM implementering fordrar. Även viktiga aspekter för att utveckla ett sådant engagemang bland de involverade aktörerna presenteras.

Resultaten indikerar även ett behov av en vidare utveckling av arbetssätt och verktyg inom TQM konceptet, för att stärka de mer abstrakta och mjuka faktorerna, detta för att bättre anpassa konceptet till de små organisationernas situation. Med hjälp av erfarenheterna från de lyckade implementeringsprocesserna presenteras en övergripande tentativ implementeringsmodell bestående av tre faser för implementering av TQM i små organisationer.

Appended Papers

Paper 1 Hansson, J. & Eriksson, H. (2002). The impact of TQM on financial performance. *Measuring Business Excellence*, 6 (4), pp. 44-54.

Paper 2 Hansson, J. (2001). Implementation of Total Quality Management in small organisations: A case study in Sweden. *Total Quality Management,* 12 (7 & 8), pp. 988-994.

Paper 3 Hansson, J. & Klefsjö, B. (2003). A core value model for implementing Total Quality Management in small organisations. Accepted for publication in *The TQM Magazine*, 15 (2).

Paper 4 Hansson, J. Backlund, F. & Lycke, L. (2003). Managing commitment - increasing the odds for successful implementation of TQM, TPM or RCM. Accepted for publication in *International Journal of Quality & Reliability Management*, 20 (8).

Paper 5 Hansson, J. (2002). Sustaining quality management in small organisations - Experiences from quality award recipients. Submitted for publication in *International Small Business Journal*.

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APPENDED PAPERS

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APPENDICES

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1 Introduction and Background

In this chapter the background to the research area and the problem discussion are presented. The research questions, purpose, delimitations and the structure of the thesis are also described.

1.1 Quality Management, Performance Development, and Small Organisations

The use of quality management has become widespread among organisations during the last decades. The aims of the businesses may differ, but the importance of customers is a matter of common interest, and the ability of organisations[1] to adapt to new customer requirements on a global market is of vital importance for long-term success. During the past decades quality management has been recognised as a major edge for competitiveness and long-term profitability. The development of systems for controlling and managing quality has evolved rapidly. One example is the interest in the international standard ISO 9000 for quality systems where continuous large annual growth has increased the number of certificates awarded to approximately 510,000 in 2001[2]. Since the 1970s, simple inspection activities have been replaced or supplemented by quality control, quality assurance, and now many companies are working towards Total Quality Management (TQM) (Dale, 1999).

TQM is, compared to other concepts such as quality control or quality assurance, wider since it embraces the whole organisation instead of focusing on parts of the product. TQM has been acknowledged as an important subject in management theory and practice and has become a frequently used term in discussions concerning quality. The use of TQM among many western organisations has been relatively high during the 1990s, see, for example, Lawler et al. (1995), but there exists a diversity of opinion among researchers regarding the actual benefits of TQM. Research results that claim that there exists positive effect on financial performance can be found in e.g., Shetty (1993), Hendricks & Singhal (1997), Easton & Jarrell (1998), Handsfield et al. (1998), Samson &

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[1] The terms "organisation" and "company" are synonymously used in this thesis to describe a private or public owned producer of goods or services.

[2] The number of ISO 9000 certificates has increased from less than 50,000 in 1993 to approximately 510,000 in December 2001, see the ISO survey on "www.iso.org".

Terziovski (1999), Reed et al. (2000), Allen & Kilmann (2001) and Tena et al. (2001). However, Harari (1993), Eskildson (1994) and Bergquist & Ramsing (1999), for instance, express a more pessimistic view regarding the benefit of TQM investments.

The type of organisations that use TQM varies from large to small, private to public and from manufacturing to service organisations. According to Hodgetts (1996), all enterprises regardless of size and financial status, are involved in the quality revolution. In discussions regarding organisational size, the small organisations have gained increased interest and been widely recognised for the role and contribution they make to the economy (Holliday, 1995), at least since the Bolton Report (Bolton, 1971) on small firms. Politicians in many countries emphasise the importance of small organisations as a mechanism for job creation, innovation and the long-term development of economies (Storey, 1994). Also in Sweden small organisations have received increased attention, and the concern for research on small organisations has pervaded the Swedish academic community (Johannisson & Landström, 1999). Studies show that small organisations have generated an important, indeed dominant, portion of the new jobs in Sweden during the period 1985 to 1995 (Davidsson et al., 1994; Davidsson et al., 1996).

Quality management is considered to be as important for small organisations as it is for larger organisations. This is due to some of the general characteristics, such as their vulnerability to shifts in market trends. Many small organisations also depend on one or a few customer relations, which entails that a loss of a customer can bring the organisation into a crisis. The specific customer dependence context is further emphasised in a study by Storey (2002), who claims that small organisations experience vastly greater market and customer uncertainty than large organisations.

Increased customer demands, generated by the process of constant change of the international and national competitive environment, have not affected only large organisations. Small organisations, for example suppliers to large organisations, are experiencing increased quality demands on their products and services (Huxtable, 1995). The fact that many small companies have been competing directly with foreign firms for a long time, and that some have suffered the same consequences, e.g. market share decline, as large companies, while others have prospered in the competition, also supports the assumption of TQM's importance for small organisations.

Studies indicate that small organisations benefit from a successful implementation of TQM, see e.g. Moreno-Luzon (1993), Hendricks & Singhal (1999) and Lagrosen (2000). However, there are an extensive number of examples of failed or badly performed implementation processes of TQM (Brown et al., 1994; Eskildson, 1994). The relatively frequent occurrence of failed or badly performed implementation processes is a problematic phenomenon, which negatively affects organisations, irrespective of size, in their development towards business excellence and ultimately survival in a competitive environment.

Still, it is argued that the concepts and general techniques of TQM are the same for any business, large or small, see e.g. Ehresman (1995). But arguments are also raised referring to the fact that small organisations should not be considered as small big organisations (Welsh & White, 1981; Ghobadian & Gallear, 1997). In a small organisation, the manager and the owner is often the same person. Due to the manager's dominant position, the organisation depends more on the manager's interest and competence. Another common characteristic is lack of resources, which limits the number of feasible initiatives that a small organisation can implement. This could be one contributing cause to the fact that small organisations have been slow to adopt TQM (Ghobadian & Gallear, 1996).

1.2 Emerging Problems

The issue of the relationship between successful TQM implementation and financial performance is important, when considering the incentives for the large organisational change a TQM implementation implies. The main incitement for change is to improve, whether it is an improved management system or an improved customer satisfaction, all in most cases aiming at an increased performance. Most organisations start TQM implementation efforts in order to respond to changes in the competitive context that surrounds them, e.g. as a consequence of a discovered need to develop or as a reaction in order to survive. The question of TQM and financial performance has not before been under investigation in a Swedish context. Some international studies show a discrepancy regarding the relationship between TQM and financial performance. Hendricks & Singhal (1997) and Handsfield et al. (1998) argue, for example, that TQM investments result in an improved financial performance, while Harari (1993) and Eskildson (1994) claim that TQM

programs are ineffective. This discrepancy regarding research on TQM and financial performance indicates that further research is needed.

An implementation of TQM can be considered as a substantial organisational change, see e.g. Almaraz (1994) and McAdam & Bannister (2001). To succeed with such a change process, contextual aspects like organisational size need to be considered since business improvement approaches could be flawed in small organisations when they do not address the key features and constraints of that context (McAdam, 2002). Failed implementation initiatives, especially as extensive as a TQM implementation, result in financial losses and potential resistance towards change among the actors involved. It is therefore of importance that the implementation strategies used are well adapted, see e.g. Shin et al. (1998). Furthermore, in the discourse on successful organisational change, it is argued that intangible aspects such as involvement and understanding are of vital importance, see e.g. Eisenstat (1993) and Ford & Ford (1995). This calls for further investigation of how these intangible aspects can be addressed within the context of TQM implementation.

As many small organisations have been slow to implement TQM, see Ghobadian & Gallear (1996), today's TQM models and implementation strategies do not seem to have addressed the key characteristics of small organisations. Small organisations should not be regarded as small big organisations and their specific characteristics call for a more customized implementation approach. This means that there is a need for an implementation framework adapted to small organisations, see, for example, Yusof & Aspinwall (2000), and the area of TQM implementation in small organisations needs further scrutiny. This call for further investigation of how those small organisations that have succeeded with a TQM implementation have worked during the implementation process, and what experiences they have had. Another area of interest, derived from the discussion above, is how the quality development work is organised and its components within the context of small TQM organisations.

1.3 Research Questions

Based on the above discussion the following research questions have been identified:

General research questions irrespective of organisational size:

1. What are the effects of a successful implementation of TQM on the financial performance of companies?
2. What aspects are of importance for succeeding with a TQM implementation considering the required organisational change?

Research questions in the context of small organisations:

3. How have small organisations worked that have successfully implemented TQM and what problems have emerged during the implementation process?
4. How is quality management work organised and what are the TQM components in small organisations that have implemented TQM?

1.4 The Purpose of this Thesis

The two overall aims of this thesis are:

- To estimate the effects of a successful TQM implementation on financial performance development of companies.

  This will be accomplished by studying the development of financial performance indicators, by a quantitative methodological approach, in organisations that have successfully implemented TQM.

- To generate knowledge regarding small organisations' work towards TQM.

  This will be accomplished by attaining a better understanding of small organisations' work with TQM implementation, through studying, analysing and describing such implementation processes within a qualitative methodological approach.

Knowledge as a concept is with no further descriptions or analysis rather wide and intangible. Knowledge is in this study referred to as the information, understanding and skills that one gains through education or experience.

Total Quality Management refers to a management system consisting of values, techniques and tools, see Section 2.1.

Implementation means to make a philosophy, method, approach or tool commonly used within the organisation. Implementation is also concerned with the fact that the philosophy, method, approach or tool should permeate the whole organisation. For a deeper discussion regarding implementation, see Section 2.5

1.5 Delimitations

The author has, based upon the two overall aims, made the following delimitations of the research accounted for in this thesis:

- The quantitative study, with the objective of estimating the financial performance development for TQM organisations, is limited to comprise profit-seeking organisations in a Swedish context.
- The qualitative investigation in this thesis comprises Swedish organisations due to geographical and cultural considerations.

1.6 Thesis Structure

The research presented in this thesis can be divided into two overarching phases: (1) the Preparatory phase and (2) the Cogitating and Concluding phase. The Preparatory phase addresses the first three chapters and serves as a foundation for the Cogitating and Concluding phase. The final Cognitive and Concluding phase contains the analysis and conclusions of the appended papers and is presented in Chapters 4 and 5. The design of the thesis is shown in Figure 1-1.

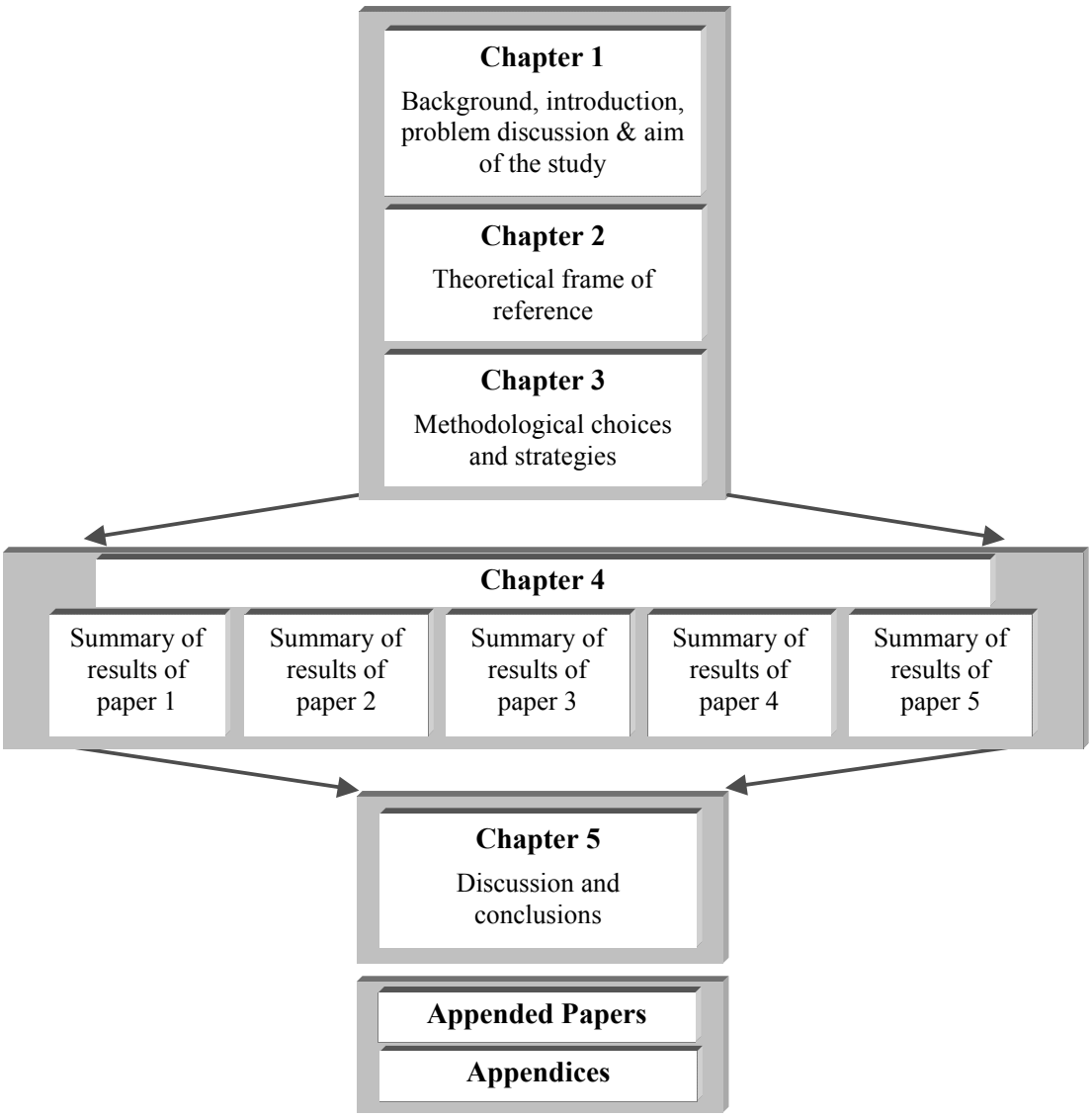

Figure 1-1 Design of the thesis.

The introduction describes the background to the initiation of the thesis and contains an overarching description of the problem area. The research questions and the aim of the study are also included in this chapter. In Chapter 2 the theoretical frame of reference is treated in order to describe on what theoretical platform the author has been operating. The following chapter describes the methodological choices and strategies that have been made by the author. In Section 4.1-4.5 the results of the appended papers are described and summarised. In Chapter 5, the general conclusions drawn from these results are discussed.

The way in which the different research questions are addressed in the papers is shown in Figure 1-2.

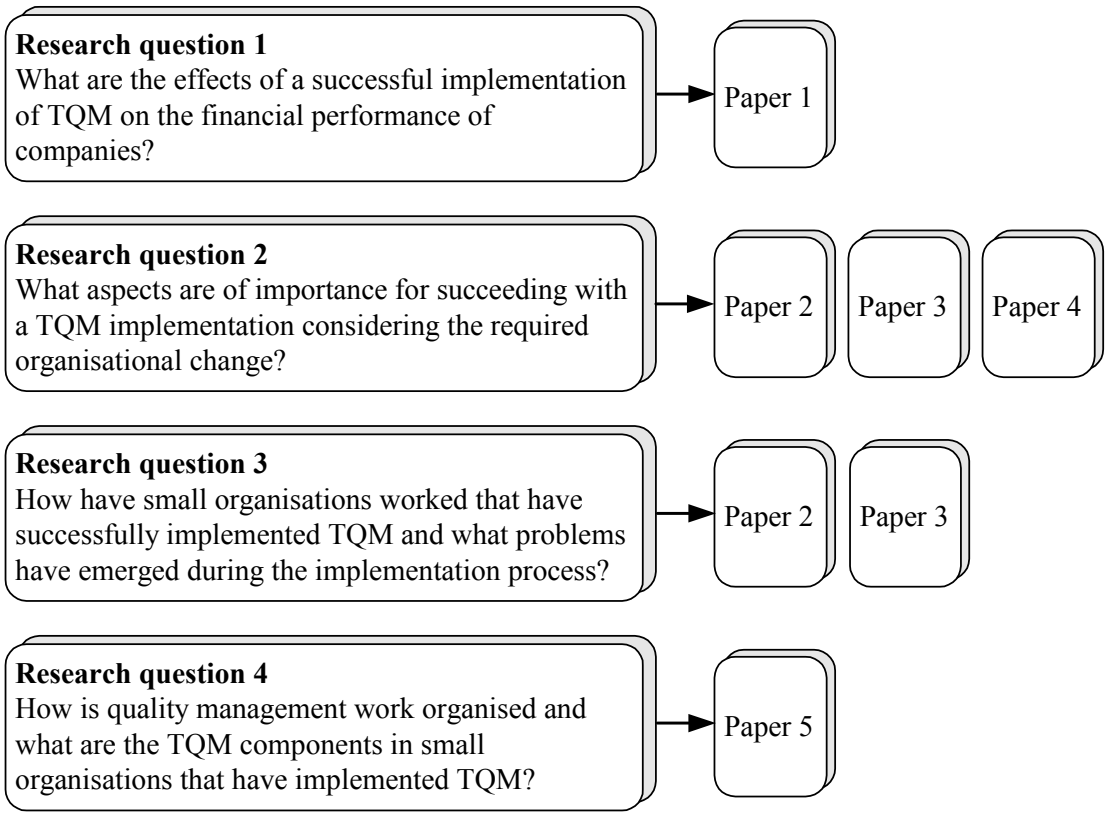

Figure 1-2 The four research questions and the way in which they are addressed in the appended papers.

2 The Research Area and Theoretical Context

Based on the discussed research questions and overall purposes, this thesis focuses mainly on the five concepts TQM, implementation, organisational change, performance and small organisations. Although the aim of this thesis does not include a formal analysis of these concepts, a general discussion will be held in order to outline the overarching research area within present research.

2.1 Total Quality Management

International research has many descriptions of the concept of TQM, but few clear definitions. Dale et al. (2001) describe TQM as an umbrella of concepts and ideas in various contexts related to the quality field. Furthermore, in Dale (1999), TQM is described as the mutual cooperation of everyone in an organisation and associated business processes, in order to produce products and services which meet, and hopefully exceed the needs and expectations of customers. Oakland (1989), describes TQM as an approach to improve competitiveness, efficiency and flexibility for a whole organisation. He continues with declaring that:

> *"For an organisation to be truly effective, each part of it must work properly together towards the same goals, recognising that each person and each activity affects and in turn is affected by each others… The methods and techniques used in TQM can be applied throughout any organisation".*
>
> (Oakland, 1989, p. 22-23)

Shiba et al. (1993) defines TQM as an evolving system, consisting of practices, tools, and training methods for managing organisations in a rapid changing context. According to the authors, the system provides customer satisfaction and improves the performance of organisations by e.g. eliminating product defects and speeding service delivery. Another definition, provided by Dahlgaard et al. (1999), describes TQM as a corporate culture that is characterised by increased customer satisfaction through continuous improvement, involving all employees in the organisation.

Garvin (1988) avoids the term TQM and directs the discussion towards Strategic Quality Management. The strategic approach towards quality is, according to Garvin (1988), more comprehensive than its predecessor's quality inspection, quality control and quality assurance, and can be seen more as an extension than a denial of them.

As the definitions of TQM vary, so does the interpretation of the fundamental constituents. Many authors within the TQM area consider values[3] to be elemental for the concept, see e.g. Oakland (1989), Kanji & Asher (1993), Lewis (1996) and Boaden (1997). However, the number of values, as well as the formulation, differs slightly between different authors. For example, Dahlgaard et al. (1999) state that TQM is characterised by five principles, the Malcolm Baldrige National Quality Award (NIST, 2001) is based on eleven core values and concepts, while Dale (1999) discusses eight key elements of TQM. Furthermore, Sila & Ebrahimpour (2002), found in their extensive theoretical investigation that the following factors were the most frequently addressed within TQM definitions: (A) Customer focus and satisfaction. (B) Employee training. (C) Leadership and top management commitment. (D) Teamwork. (E) Employee involvement. (F) Continuous improvement and innovation. (G) Quality information and performance measurements.

Still, there is a base of values, which seems to be common to most authors, consisting of the six values illustrated in Figure 2-1. These are also in agreement with the so called cornerstone model by Bergman & Klefsjö (2003).

For further discussion on TQM, the historical background and the constituents, see e.g. Hellsten (1997a), Kroslid (1999) and Park Dahlgaard (2001).

2.1.1 TQM as a System

Some authors have suggested a system approach to the concept of TQM, see e.g. Shiba et al. (1993), Dean & Bowen (1994) and Hellsten & Klefsjö (2000). Hellsten & Klefsjö (2000) declare that TQM not only consists of values, such as process focus, customer focus or everybody's commitment. The values are supported by techniques, such as process management, customer focused planning, or target-oriented groups, and tools, such as control charts, the quality house or Ishikawa diagrams, see

[3] *What are referred to as values here are sometimes also called core values (e.g. McAdam & Bannister, 2001), principles (e.g. ISO 9000:2000), or cornerstones (e.g. Bergman & Klefsjö, 2003).*

Figure 2-1. The choice of TQM core values is supported by the findings of Sila & Ebrahimpour (2002). For further discussion regarding the values of TQM, see e.g. Boaden (1997).

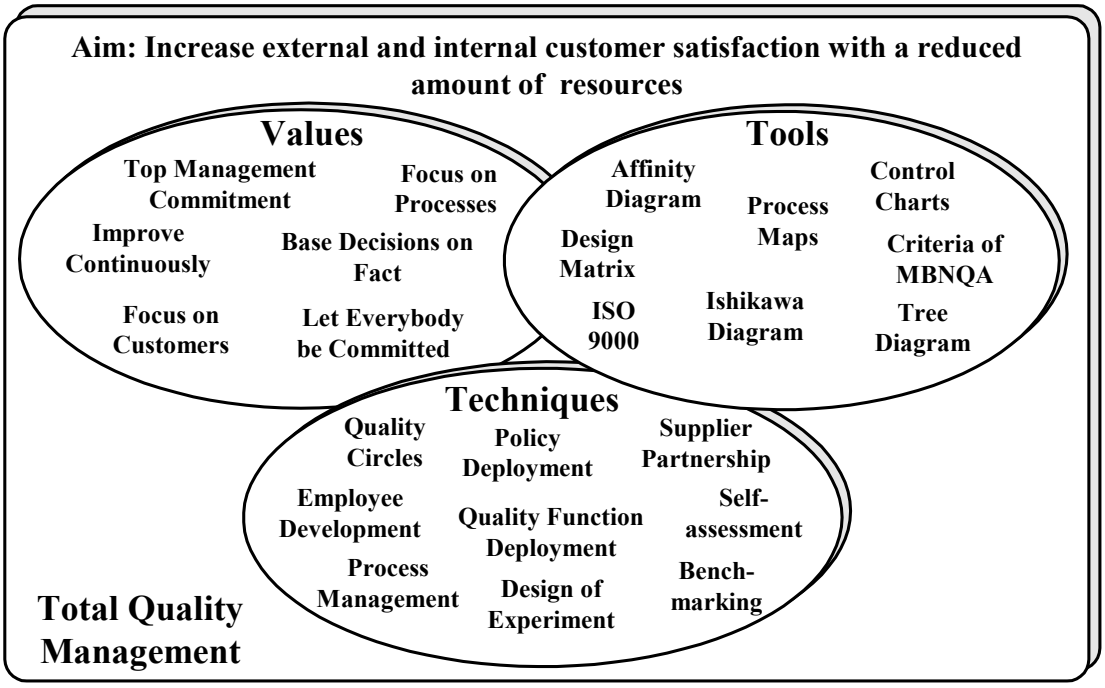

Figure 2-1 *TQM seen as a continuously evolving management system consisting of values, techniques, and tools. (After Hellsten & Klefsjö, 2000.)*

The discussion held by Hellsten & Klefsjö (2000) implies that TQM can be defined as a management system that consists of three units, a system equivalent to the definition that Deming (1994) uses, which means a network of dependent units with a joint goal. The three units are the core values, techniques and tools (Hellsten & Klefsjö, 2000). The goal of TQM is, according to Hellsten & Klefsjö (2000), "increased customer satisfaction with a reduced amount of resources". Increased profitability and decreased costs are results of an increasing external and internal customer satisfaction, and the work with continuous improvements. This implies that TQM is relevant in all fields of our society, not only in private companies but also in health care, schools, defence authorities or the church (Bergman & Klefsjö, 2003).

In this thesis the author will focus on the interpretation of TQM defined by Hellsten & Klefsjö (2000), see Figure 2-1. They define TQM as a continually changing management system:

2.2 Elucidation of the Core Values

A strategy for TQM in an organisation must be built on the management's continuous commitment to questions concerning quality. According to Bergman & Klefsjö (2003), the management must establish a quality policy and support quality activities economically, morally and by managing resources. But management should also set a good example by actively taking part in the practical work. If the management does not show, in actions, that quality is at least as important as, for example, costs and delivery time the co-operators will not do it either (Bergman & Klefsjö, 2003). S

The core values are important parts of this work. However, the use of core values for managing an organisational change is not unquestioned. For example, Senge (1995), discusses the question concerning the management's limited ability to change individual values and stresses that the change has to come from the inside out, rather from the outside in. The author of this thesis is however of the opinion that the management can stimulate the individual values by managing resources, supporting quality activities and by systematically working with techniques and tools that support the core values. Since the research in this thesis is based on the interpretation of TQM defined by Hellsten & Klefsjö (2000), the applied core values are selected from the same source. The following description of the core values is partly based on a compilation made by Hellsten (1997a).

Working with TQM and keeping up the quality improvements demands total commitment of the management (Dale et al., 1997; Abraham et al., 1999; Reed et al., 2000). The management must initiate planning for implementation and participate in the work including evaluation of processes and results. All senior leaders in the organisation must create a customer orientation and set clear and visible quality values. The importance of the role of senior managers as advocates, teachers and leaders cannot be overstated (Tenner & DeToro, 1992). These leaders must serve as role models throughout the organisation, thus reinforcing

the quality values at all levels in the organisation by choosing and applying appropriate techniques and tools.

Quality should be valued by the customers and should always be put in relation to their needs and expectations (Oakland, 1989; Tenner & DeToro, 1992; Shiba et al., 1993; Dahlgaard et al., 1994; Bergman & Klefsjö, 2003). T

This effort must be long-term and continuous since the quality of a product can be experienced as strongly weakened if a competitive product with better characteristics enters the market. To focus on the customer means, therefore, that one tries to find out the customers' needs and values by conducting market analyses and then trying to fulfil the market expectations while systematically developing and manufacturing the product.

Focusing on the customer does not only apply to the external customers. Every employee has customers within the organisation, internal customers, and in order to do a good job their needs also have to be fulfilled. In order to satisfy external customers, the internal customers also need to be satisfied (Oakland, 1989; Tenner & DeToro, 1992; Shiba et al., 1993; Dahlgaard et al., 1994; Bergman & Klefsjö, 2003).

that are well founded and to not allow random factors to be of decisive importance. This calls attention to the importance of knowledge regarding variation and ability to handle and control variation, see e.g. Deming (1994). The improvement program called Six Sigma[4], with origins from Motorola in the 1980s, is one approach for considering variation within organisations, see e.g. Harry (1994).

The majority of new products are unsuccessful on the market (Kotler, 1996). This underlines importance of that the production processes and the production developing processes are based on facts related to the customer's experiences plus customer's present and future needs

[4] *For further discussion regarding the Six Sigma concept in relation to TQM, see e.g. Klefsjö et al. (2001).*

(Bergman & Klefsjö, 2003). The different measurements required to obtain these facts can be classified as see e.g. Bergman & Klefsjö (1994) and Dahlgaard et al. (1994). When the organisation receives the described information it is in a position to quickly determine how well it is performing, compare its performance to that of competing or benchmarked organisations, and decide the action that is now convenient.

Much of the work within an organisation can be looked upon as a process, which means a repetitive sequence of activities (Bergman & Klefsjö, 2003). The goal of the process is to produce products or services, which should satisfy the customer. The corollary of focusing on processes is that the focus is not on results. Instead the result is the dependent variable. The result comes from whatever process is followed, process drives result (Shiba et al., 1993). The process generates data that indicates how well the process is satisfying its customers. This means that we should not look upon every single piece of data, for instance a customer complaint, as something unique but instead as a part of the statistics, which can give information about how well the process is working and how it can be improved (Bergman & Klefsjö, 2003). The process orientation and focus has become even more focused on in the currently dominating improvement program Six Sigma.

It is not enough for an organisation to do better than it did previously. The external demands an organisation faces are continuously increasing. Consequently, an organisation needs to continually try to improve the quality of its product and processes (Imai, 1997; Bergman & Klefsjö, 2003). The continuous improvement of the process leads to customer satisfaction, which results in an external quality improvement. The continuous improvement of the process also leads to fewer defects, which results in an internal quality improvement (Dahlgaard et al., 1994).

The Deming cycle, or the PDSA-cycle, is a model for process analysis and improvement and serves as a symbol for continuous improvement. The PDSA-cycle consists of the four phases; plan, do, study and act (Deming, 1994).

If the organisation's quality strategy should be successful, all of the organisation's employees should be engaged in the work of satisfying the customer with a continuously improved quality. Everybody's commitment means that continuous improvement should be practised everywhere in the processes and that the involvement of all employees at every level should be facilitated. This core value also includes suppliers, who over time will become partners by working with empowered employees to the benefit of the organisation (Tenner & DeToro, 1992; Bergman & Klefsjö, 1994). The work is based on the skills and participation of every employee and his or her understanding of what is required. Educating and training all employees provides the knowledge needed on the mission, vision, direction, and strategy of the organisation as well as the skills they need to secure quality improvement and resolve problems (Tenner & DeToro, 1992). Keywords for commitment are information, delegation and training (Wruck & Jensen, 1998; Bergman & Klefsjö, 2003).

2.3 Maturity Levels of TQM

If we consider TQM as a management system that can be implemented in an organisation, we must be able to form an opinion of different levels of adoption to the system. Lascelles & Dale (1991) describe six different levels of TQM adoption (or lack of it), which they have termed: 1 Uncommitted, 2 Drifters, 3 Tool-pushers, 4 Improvers, 5 Award winners and 6 World class, see Figure 2-2.

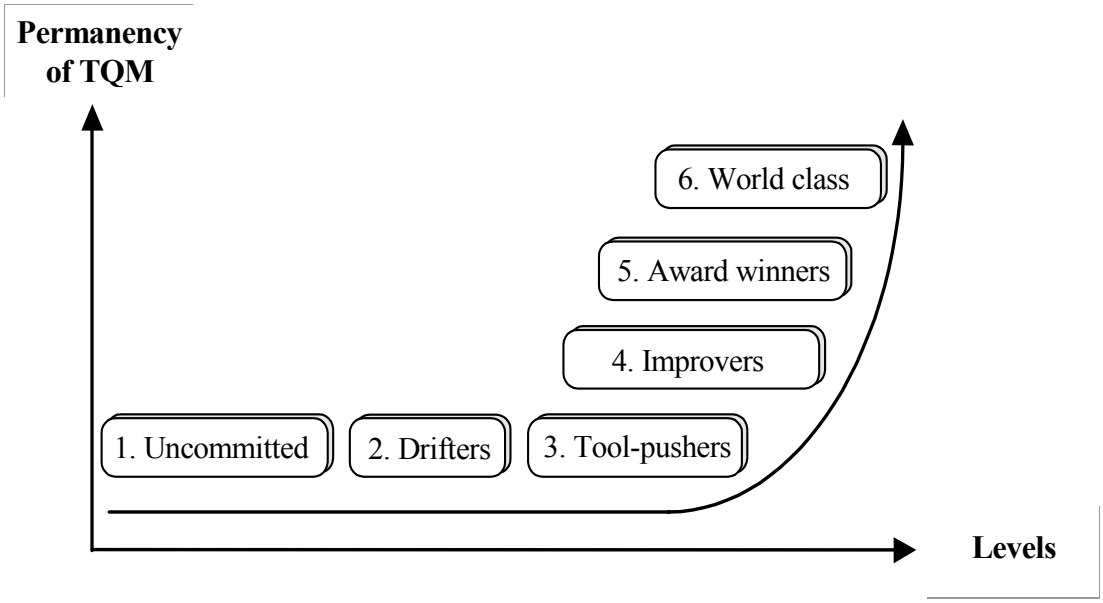

Figure 2-2 Levels of TQM adoption. (From Lascelles & Dale, 1991.)

These levels are not necessarily the stages through which organisations pass on their TQM journey; they are characteristics and behaviours which organisations display in relation to TQM (Dale, 1999). The levels described by Lascelles & Dale (1991) are intended to support organisations in identifying their weaknesses and addressing them, as a part of the continual challenge of continuous improvement throughout the organisation. The fifth level, which is the level that in this thesis defines a successful implementation of TQM, is termed "Award winners". According to Dale (1999), organisations at this level have reached a point in their TQM maturity where the kind of cultures, values, trust, capabilities, relationship and employee involvement in their business required to win such an award have been developed – a point at which quality improvement has become "Total" in nature. For a more detailed description of the different levels, see Dale (1999).

As discussed by Lascelles & Dale (1991) one level of TQM adoption is quality award winners. Quality awards have been established over the last decades in order to stimulate TQM work and by appointing award recipients honour them for good work. This is used as inspiration for others. Many organisations choose to work towards TQM by means of the award criteria, for instance, by taking part in a quality award process. The types of quality awards extend from international, national, regional, branch-wise and in-company quality awards. An example of an international quality award is the European Quality Award, see EFQM (1999), which was developed in order to sustain business excellence efforts among organisations within a European context. The Swedish

Quality Award, developed in order to sustain business excellence efforts among Swedish organisations, is one example of a national quality award, see SIQ (2002). For a more thorough discussion regarding national quality awards, see Chuan & Soon (2000).

The Swedish Quality Award process includes four steps, i.e. preparation, description, evaluation, and improvement, see SIQ (2002), and the organisation applying performs a self-assessment according to the criteria of the model. In Sweden there also exists a number of regional quality awards, see e.g. Hellsten (1997b), that mainly follow the same award process and use similar award criteria as those in the Swedish Quality Award.

The criteria in the quality awards conform to the major constituents of TQM and an organisation must undergo an effective quality improvement programme in order to receive such an award (Hendricks & Singhal, 1996). Quality awards are commonly accepted as proxies for successful TQM implementations (e.g. Hendricks & Singhal, 1997; 1999; Ghobadian & Gallear, 2001), and the following discussion regarding TQM and financial performance will describe some studies using that approach but also studies using alternative ways.

2.4 TQM and Financial Performance

Organisational performance is possibly the most widely used dependent variable in organisational research today. However, at the same time it remains one of the most vague and loosely defined constructs (Rogers & Wright, 1998). Performance is a multifaceted concept, which can be measured at a firm or system level. While company's performance has its standardised indicators, it is more difficult to select for performance indicators of a system of firms and people. This thesis sets out to study organisational performance with a specific focus on financial performance.

Previous research regarding TQM and performance, e.g. GAO (1991), has covered both soft and hard performance measurements, where hard measurements as accounting variables are in majority. However, one may argue whether financial figures are better at measuring the consequences of yesterday's decisions than they are at indicating tomorrow's performance, see e.g. Eccles (1995). The importance of soft performance measurements, as the organisations' intangible and intellectual aspects, cannot be neglected. Activities may, at times, lead to favourable outcomes on one performance dimension and unfavourable outcomes on

another performance dimension (Lumpkin & Dess, 1996). As an example, a heavy investment in the human resource management area could improve organisations' intangible and intellectual assets, but at the same time negatively affect financial result on a short-term perspective. Considering TQM, with its relatively extensive focus on intangible and intellectual aspects, one may argue that a study aiming at linking TQM to performance should include soft measurements. As McAdam & Bannister (2001) maintain "both hard and soft measures of performance are needed within the TQM framework".

In some studies of the relationship between TQM and financial performance, efforts have been made to overcome the potential bias that investments in intangible assets when implementing TQM could produce. This has been done by studying the financial performance development over long-range time periods and dividing the investigation into one implementation period and one post implementation period, see Hendricks & Singhal (1999). Examining performance from this point of view provides an estimate of the financial impact of TQM once the benefits of the implementation should be noticeable. Logically, the choice of performance measurements relies on the actual interest in what to examine. Furthermore, studying financial performance development in the context of TQM implementation necessitates a study of the impact of historical management decisions. Consequently, theoretical issues regarding financial performance and TQM investment will be the point of departure in the forthcoming discussion.

One approach to study the relationship between TQM implementation and financial performance development is to compare quality award recipients with different control companies, see e.g. Hendricks & Singhal (1997; 1999) and Wrolstad & Krueger (2001). The study by Hendricks & Singhal (1997) indicated that the companies included in their study outperformed the control companies on operating income-based measures. The financial performance indicators used in their study were: (A) Change in operating income, (B) Change in sales, (C) Change in return on assets, (D) Change in return on sales, (E) Change in total assets and (F) Change in number of employees. Their findings indicated that the quality award recipients outperformed the control companies during the post implementation period, i.e. after the companies had successfully implemented TQM. However, there was no significant difference between the quality award recipients and control companies during the implementation period.

Similar performance indicators as in the Hendricks & Singhal (1997) study were used by Easton & Jarrell (1998), i.e. net income, operating income, sales and inventory, but they based their selection of TQM organisations on subjective judgement derived from an empirical study. Their major finding was that the long-term performance of firms that implemented TQM is improved.

Another approach is to investigate the development of the share price on the stock market for quality award recipients. The U.S. National Institute of Standards and Technology (NIST) of the Department of Commerce yearly releases the results of a stock investment study involving a comparison of the stock performance of Baldrige Award winners and selected Baldrige applicants with the Standards and Poors (S&P) 500 index. In the latest stock investment study, a hypothetical sum was invested in each of the 1991-2000, publicly traded Baldrige Award recipient's common stock, in the year they applied for the award. 1,000 USD was invested in each company, and for subsidiaries[5] the same sum, multiplied by the percent of the whole company's employee base, the subunit represented at the time of its application, was invested. The same amount was invested in the Standard & Poor's (S&P) 500 index on the same day. Adjusting for stock splits, the value on December 3, 2001 was calculated. The findings are reported two ways: all publicly traded award recipients and only whole company award recipients. The 21 publicly traded award recipients, as a group, outperformed the S&P 500 by approximately 2.94 to 1, achieving a 323% return compared to a 110% return for the S&P 500. The group of three, publicly traded, whole company award recipients outperformed the S&P 500 by 4.45 to 1, achieving a 512% return compared to a 115% return for the S&P 500[6].

In a study by Hendricks & Singhal (2001), the authors found that U.S. award recipients significantly outperformed the control group firms in stock price performance with a mean value ranging from 38% to 46% depending on which control group was used.

However, one may argue how well the share price reflects actual financial performance. Serious criticism address the fact that the returns often are neither adjusted for market and industry factors, nor annualised (Przasnyski & Tai, 1999). Although, some stocks may have risen more

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[5] If a subunit was sold to another parent company, or if a company divested or merged, it was the subunit whose progress was followed, not the parent company's progress.

[6] The Baldrige Index Stock Study can be found at http://www.nist.gov/public_affairs/factsheet/stockstudy.htm.

than the market, their risk was also higher and the spectacular returns could have been due to a booming industry during the period of the study, see Przasnyski & Tai (1999).

2.5 Implementation and Organisational Change

The common standard dictionary definition of the term implementation is plainly "
. Based on that definition,
According to Pressman & Wildavsky (1973), implementation means to
Wheelen & Hunger (1992) defines implementation as "the
As a consequence one could view implementation as a
them. This means that implementation also can be considered as a form of organisational change. The above descriptions discuss implementation as a set of activities or a process. W
This is due to the fact that the subject in this case, i.e. TQM, is, according to the definition used in this thesis, a thorough management system that includes all parts of the organisation, and consequently is a process of activities needed.

There must be a starting point when implementing. If no action is started, implementation cannot take place. There must also be an endpoint. Implementation cannot succeed or fail without a goal against which to judge it (Pressman & Wildavsky, 1973).

> *"Implementation does not refer to creating the initial conditions. Legislation has to be passed and funds committed before implementation takes place to secure the predicted outcome. You can't finish what you haven't started. Lack of implementation should not refer to failure to get going but failure to follow through."*
>
> (Pressman & Wildavsky, 1973, p. xiv)

But planned change processes seldom turn out as intended, see e.g. Mintzberg (1979). Failure to implement may result either from overestimation of what can be accomplished or from underestimation of ability to implement. An organisation must secure a stable flow of

business so that it can allocate its time and resources (Pressman & Wildavsky, 1973).

2.5.1 What Initiates the Change Process

The ability for change and renewal is important and necessary in order for the organisations to maintain their long-term efficiency. A condition in this respect is that the change and renewal process brings improvements. Improvements demand changes but all changes do not bring improvements (Bruzelius & Skärvad, 2000). An important aspect that affects the nature of the change process is the question concerning what factors initiated the change process.

According to Killing & Fry (1986) different situations require different speed of change, goals of change and way of changing. The authors present three different causes for changing: (1) Anticipated change, which is a change process initiated due to a foreseen need for change. (2) Reactive change, which is a change process initiated due to a response to an experienced need for change. (3) Crisis, which is a change process, initiated due to the fact that the organisation's survival is at stake. In addition, Tichy (1983) describes four main causes for strategic change, namely environment, business relationships, technology, and people. Irrespectively of the reason an organisation chooses to conduct a TQM implementation, important aspects when performing such a comprehensive change is briefly discussed in the forthcoming sections.

2.5.2 Important Aspects on the Subject of Organisational Change

The different recommendations on how to succeed with organisational change are numerous in the management literature. To cover them all is beyond the scope of this section but an attempt is made to discuss some aspects of importance when considering this area.

One prerequisite for succeeding when i a management system, as TQM, in an organisation, . Implementation work can be seen as a transformation made by actors in a human activity system (Pidd, 1999), and could therefore be considered as a comprehensive organisational change. The management of change is in most cases viewed as a complex and difficult area, and many companies face major difficulties during implementation (Siegal et al., 1996). According to Beer et al. (1990) and Schaffer & Thomson (1992), most change programs do not work because they are guided by a theory of change that is fundamentally flawed. Also, many studies indicate that organisational and human issues, not technical areas, are the real barriers

to implementation success, see e.g. Gilmore (1998). A new organisation has to be implemented by means of systematic procedures based on properly chosen methods and models that are understood and accepted by all parties involved (Sandberg & Targama, 1998; Ljungström, 2000).

Consequently, as paying attention to organisational and human issues, another prerequisite for successful change is the willingness and ability of individual managers to adapt and transform, see e.g. Kotter (1996). This needs to be considered by affecting the behaviours, feelings and attitudes among the involved actors. The more different the new strategy is from the old, the greater the resistance to implementing it (Kotter, 1996). Senge (1990) discusses one important quality of leadership, the ability of building a shared vision in the organisation, see also Kotter (1996). Senge, 1990). Abrahamson (2000) found that d. The involved actors spoke about change programmes in irritated, often offensive language. According to Strebel (1996), problems with change resistance could be due to the fact that senior managers consistently misjudge the effect of the gap on their relationships with subordinates and on the effort required to win acceptance of change. Martin (1993) maintains that change managers need to understand the peculiar ways their companies provide an unfolding context for inertia since people are natural scientific and must see the reasons for change. Conclusively, the willingness to change among the involved actors, i.e. managers and employees, sets the outcomes of the change process. Different areas to consider, to instil willingness to change are, for example, communication (Eisenstat, 1993), empowerment (Pascale et al., 1997), rewards and recognition (Pettigrew, 1995), results and early wins (Beer et al., 1990), and leadership skills (Tichy, 1983).

It is also the belief of the author that change efforts must consider the context of the organisation since change will fail unless those identifying, recommending and managing the change process understand the organisation - ". The contextual aspect could be viewed as issues relating an organisation's culture, business environment and history.

2.5.3 TQM Implementation in the Organisational Development Context

To implement a management system, such as TQM, requires an extensive organisational change, provided that the organisation does not

unconsciously work according to the system. According to Thomsen et al. (1994), one important experience from the accomplishment of TQM is that there is a need for an increasing awareness of that TQM implementation is also a question of organisational development (OD). The authors also argue for improved knowledge among leaders concerning change management. OD is a discipline with many approaches, of which TQM overlaps some, see e.g. Grieves (2000b). According to Grieves (2000b), a series of transitional initiatives had emerged by the end of the twentieth century. These include TQM, the Excellence movement, culture management, business process reengineering, and downsizing. As a result, these change initiatives have tended to borrow fragments of the OD approach. This has had both positive and negative consequences (Grieves, 2000a). On the positive side, it has made aspects of OD more widely known. On the negative side it has tended to misunderstand and misapply much of the underpinning theory, methodology and intervention practices of OD. This has, according to Grieves (2000a), often resulted in radical authoritarianism or radical democratised programmed approaches, rather than culturally democratic or pluralistic approaches to change.

2.5.4 The Change Process - TQM Related Recommendations and Strategies

There has been much written concerning implementation of TQM. The books and articles extend from very tangible and detailed descriptions, see e.g. Deming (1988), Juran (1989)[7], Oakland (1989), Ehresman (1995) and Hodgetts (1996), to more abstract descriptions of the TQM concept, see, for example, Garvin (1988) and Dale (1999). The theory describes both obstacles for working towards TQM and several strategies for implementing the concept in an organisation.

The recognition of quality as a strategic issue in business planning is critical for a successful TQM implementation, see e.g. Shin et al. (1998). TQM implementation should be clearly aligned with the organisation's strategic priorities and goals and be planned properly (Kanji & Asher, 1993; Shin et al., 1998; Allen & Kilmann, 2001). T (Samson & Terziovski, 1999; Reed et al., 2000).

[7] *Although Deming and Juran do not use the term TQM, their works have subsequently been recognised as relevant to the development of the theory, see e.g. Boaden (1997).*

Failure of TQM implementation is, according to some authors, not due to flaws in TQM principles but in inadequate systems for executing TQM properly, implying the importance of tangible aspects, see e.g. Shin et al. (1998). However, Samson & Terziovski (1999) and Saad & Siha (2000) maintain that the reasons for failure in implementing TQM are mainly due to how it is implemented, i.e. the implementation phase. Shin et al., 1998). According to Oakland (1989), some of the obstacles to TQM implementation are that it can be seen as time-consuming, bureaucratic, formalistic, rigid and impersonal. Some of the resistance to TQM may be understood as typical resistance to any change. This may be more severe if the organisation is successful, if there is a particularly deep-seated culture, if there has been a great deal of change already, or if the change lacks legitimacy, education and communication. A well-defined implementation structure and clear resource allocation are therefore essential. The structures for reward systems, intrinsic as well as extrinsic, are also of importance (Allen & Kilmann, 2001; Bayo-Moriones & Ceiro, 2001).

Implementation of TQM is a complex process since all employees, starting with top management, need to accept a fundamental organisational change (Shin et al., 1998; Wruck & Jensen, 1998; McAdam & Bannister, 2001). The issue of management commitment is stated as a critical factor for successful TQM implementation (Oakland, 1989; Abraham et al., 1999; Macleod & Baxter, 2001). Tatikonda & Tatikonda (1996) and Bardoel & Sohal (1999) maintain that lack of management commitment is a major factor for unsuccessful TQM implementation. The management is not only obliged to be committed in order to change the organisation towards TQM, it is also imperative that the management ensures that the employees are permeated with the same quality commitment (Samson & Terziovski, 1999; Ghobadian & Gallear, 2001) and managers therefore need to focus on and work with the intangible aspects to a large extent. TQM applications across Europe and in the USA reveal that the tangible aspects, such as technology, structure and strategy, have a relatively small impact on TQM effectiveness compared to the largely hidden and intangible aspects such as values, attitudes and perceptions, see e.g. Samson & Terziovski (1999) and Saad & Siha (2000). The use of teamwork during the quality development process is therefore of major importance (Oakland, 1989; Reed et al., 2000). Reasons for failure in achieving employee participation are, for

example, lack of education and inadequate training.

(Newall & Dale, 1991; Reed et al., 2000).

Newall & Dale (1991) describe the results of a study of seven industrial organisations together with one organisation operating within the financial service sector. Despite the organisations' different interpretations and descriptions of the introduction and development of a quality improvement process, it is evident that they had, in fact, passed through the same basic stages, albeit under different names and in different sequences. These stages are summarised in Table 2-1, where a compilation of three different descriptions of the change process related to the implementation of TQM, by Oakland (1989), Newall & Dale (1991) and Spector & Beer (1994), together with the author's synthesis of the three strategies, is depicted.

Oakland (1989) states that by integrating TQM into the strategy of the business, organisations will avoid the problems of change programmes by concentrating on process alignment and recognising that people's roles and responsibilities must be related to the processes in which they work. Senior managers may begin the task of process alignment by a series of seven distinct but clearly overlapping steps. This recommended path develops a self-reinforcing cycle of commitment, communication, and culture change. The order of the steps is important because some of the activities will be inappropriate if started too early. In the introduction of total quality for managing change, timing can be critical.

Table 2-1 *Some different strategies for change realisation. The left column describes the author's synthesis of the three strategies described by Spector & Beer (1994), Newall & Dale (1991) and Oakland (1989).*

Synthesis of described activities	**Spector & Beer (1994)**	**Newall & Dale (1991)**	**Oakland (1989)**
Gain commitment to TQM among management & instil a willingness to change	Trigger change by external competitive pressure & clearly defined direction from management	Awareness, a realization in the organisation that a problem exists	Gain commitment to change by organising the top team
	Develop team agreement on & commitment to the belief that quality improvement is the key strategic task	Education & training, gaining total commitment of management team & developing TQM understanding	Develop a shared mission & vision of the business or of what change that is required
Strategic planning of implementation, team development, education & training	Create an organisation-wide change oversight team that promotes learning & systemic change	Consolidation of present quality strategies & initiatives enables a base from which the TQM process can be developed	Define measurable objectives, which must be agreed on as being indicators of success in terms of the mission
	Enable teams to analyse & take action through delegation, provision of skills & information	Problem identification & problem solving. Employee involvement is essential in this stage is	Develop the mission into its critical success factors to coerce & move it forward
Break down the planning into team improvement activities	Align measurement & information systems with cross-functional process approach	Implementation of quality improvement plans, which involves the introduction of the plans formulated at the problem solving stage	Break down the critical success factors into critical processes & gain process ownership
	Form teams around processes to be improved		Break down the critical processes into sub-processes & activities & form improvement teams around these
Assess & monitor the result in order to provide feedback	Re-align information & measurement systems, monitor continuously & review	Assessing the progress of the quality improvement process	Monitor & adjust the process alignment in response to difficulties in the change process

Conclusively, as Grieves (2000a) maintains, and what seems evident when comparing the constituents of Section 2.5.2 and Section 2.5.4, there

are many similarities between the recommendations for implementing TQM and the general theoretical foundation of organisational change. Reasons pointed out for problematic TQM implementations, e.g. that the intangible aspects, appear to be strongly related to the OD area. Consequently, implementation approaches including more intensive consideration of OD approaches seem to increase the possibility for success. Although, intangible aspects are considered within the TQM concept by e.g. the core values and the importance of these aspects are apparently implied by researchers within the TQM area, see e.g. Samson & Terziovski (1999) and Saad & Siha (2000). What seems to be a major reason for failed implementation initiatives is knowledge among practitioners of how to use the apparent focus on soft issues within TQM to overcome common change management problems.

2.6 Small Organisations

There are many ways of defining small organisations. This is due to their heterogeneity, with respect to the number of customers, the number of employees, the volume of production, and level of capitalisation as examples. Since there is no single uniform definition of a small organisation the opinion of where the line is drawn between small and large companies differs between countries and even between industries. The Bolton Committee provides an economic and a statistical definition of small organisations, see Bolton (1971). Their definition has, however, received major criticism; see e.g. Storey (1994). One criterion of the economic definition of small organisations is, for example, that its owners and part owners manage that small business in a personal way and not through a formal management structure. This is most likely incompatible with the Bolton reports statistical definition in which small organisations can have up to 200 employees (Storey, 1994).

According to Wiklund (1998) there are two different ways of defining small organisations. The first type of definitions could be labelled theoretical. Here, criteria for defining a small organisation would typically include small market share, personalised management, vulnerability to environmental conditions, and non-economic objectives of the manager. These types of definitions are theoretical in the sense that they, based on previous research, presume that small organisations are fundamentally different from large organisations concerning these dimensions. The second type of definitions could be labelled as quantitative. In this case, the size itself is the criterion for smallness, and quantitative size data regarding sales, employees or equity are usually used when classifying organisations as large or small. According to Julien

(1998), statistical measures as number of employees generates problems, such as what exactly an employee constitutes[8]. In Julien (1998), the following six characteristics were chosen to define the concept of small organisations: (1) Small size, quantitative elements as employees and turnover. (2) Management centralisation. (3) Low level of specialisation[9]. (4) An intuitive or informal strategy. (5) An uncomplicated or unorganised internal information system. (6) Simple external information system. These characteristics can all be viewed on a less-to-more continuum.

According to the European Commission, small and medium sized organisations have less than 250 employees. The European Commission divides the organisations into micro, with 0-9 employees, small, with 10-49 employees, and medium, with 50-249 employees (see 96/280/EC, 1996).

In this study, the quantitative definition suggested by the European Commission is adopted to define small organisations and to select the sample. Organisations between 10 and 49 employees are included in the study, which is equivalent to the European Commission's small enterprise sector. There are two major reasons for this. First, in this definition smallness is already operationalised and employment figures are easily available from data registers. Second, employment figures are frequently used for sample selection in other studies, which facilitates comparison with other studies. The organisation concept is in this thesis defined as a private business or business acting within the public sector and is seen as an open system[10]. This wide definition of the organisation concept is deliberately chosen in order to maximise the possibility to discover as many different characteristics of the studied phenomena (a successful implementation process) as possible. This effort to describe as many different natural cases of the phenomena as possible is further discussed in Section 3.4.

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[8] *Employees could mean permanent employees, part-time employees, seasonal employees, and so on (Julien, 1998).*

[9] *Low specialisation from the point of view of e.g. management and employees, where these elements are not, to the same extent as in larger organisations, specialised for a specific task.*

[10] *According to Buchanan (1979) an open system refers to an organisation's ability to adjust to changes in its surroundings. The open system theory has been criticised for being too general, see e.g. Tosi (1992).*

2.6.1 General Characteristics of Small Organisations

Small organisations as a group can be regarded as heterogeneous (Storey, 1994; Holliday, 1995; Bridge et al., 1998; Julien, 1998). Despite this heterogeneity, research within the small organisation sector tends to point out general characteristics that are often represented in the small organisation context. Storey (1994) maintains, for example, that many small organisations occupy 'niches'. They provide a highly specialised service or product, possibly in a geographically isolated area and they often do not perceive themselves to have clear competitors (Storey, 1994). This implies that they are vulnerable to shifts in market trends. Such organisations can find themselves frequently exposed if they do not continuously satisfy customer needs or adapt to shifting market trends. On the other hand, small business managers possibly have a more direct information exchange with customers, see e.g. Julien (1998), which could increase the possibility for satisfying customer needs.

According to Storey (2002), the management of small organisations exhibit a vastly greater range of aspirations than large organisations' managers. These aspirations include, for instance, survival, passing the business on to family, and lifestyle advancement. This contrast to larger organisations, which, disciplined by external shareholders, are required to achieve shareholder value.

Some apparent characteristics of small organisations are their limited resources and higher dependency on single products and single markets (Bridge et al., 1998; Westerberg, 1998). Resource constraints may, for example, prevent small firms from pursuing cost leadership or differentiation strategies (Porter, 1985). Many small organisations also depend on one or a few customer relations. To lose a customer can bring the organisation into a crisis. Although, compared to larger organisations, a small organisation is less sensitive with respect to the dependence on few customers, since they can compensate their weak power position in relation to the environment by flexible acting (Bohman & Boter, 1984). Still, one may argue that the number of customer relations is more dependent on in which business sector the organisation operates than the actual size of the organisation[11]. Another characteristic feature of small organisations is that the manager and the owner of the organisation are often the same person. This relationship implies that the manager perceives a strong solidarity with the organisation and the fact that the

[11] *A small organisation within e.g. the tourist service sector may, as an example, have many more customers than a large organisation operating as a subcontractor to another large organisation.*

manager's and organisation's goals or values often correspond, see e.g. Deeks (1976) and Bridge et al. (1998). Due to the manager's dominant position, the organisation depends on the manager's interest and competence. Also, an organisation's inner condition is partly formed by the structure of the organisation. A small organisation often lacks a formal structure, and the organic structure is more common (Ramström, 1971). The distance between the management and the staff is short and the vertical and horizontal division of labour is small compared to larger organisations (Bohman & Boter, 1984; Vossen, 1998). This implies that small business managers have a close enough relationship with employees to explain changes of direction as they occur, see e.g. Julien (1998).

These frequently mentioned characteristics within the research area of small organisation are, however, not statements free from criticism. An absence of criticism would, however, be remarkable since heterogeneity characterises the small organisations as a group. Harrison (1994) considers, for example, the conventional wisdom about the superiority of the small organisation in the age of flexibility as a major overhaul. This implies that the author of this thesis is aware of the dispersion of the small organisation nature and that the described characteristics are considered to be common for small organisations and not universal.

2.7 To Work with Quality Management in Small Organisations

Small organisations are believed to have an advantage over larger ones in implementation of TQM, due to their flexible organisational structure, innovation ability, lack of hierarchical positions, and strong organisational culture (Welsh & White, 1981; Haksever, 1996). Since the work with TQM and the maintenance of the quality improvements demands the total commitment of the management, the small organisation has an advantage in terms of that the organisation's management actions are very apparent (Ghobadian & Gallear, 1997).

The size of the workforce also affects the time it takes to introduce and establish the TQM system among the employees and also the costs for developing co-workers and implementing TQM.

(Lee & Oaks, 1995). In connection to the characteristics of small organisations one barrier for small organisations to implement

TQM i, which limits the feasible initiatives that a small organisation can implement. These different conditions between large and small companies are a problem since many advocates of TQM consider the concept as a fixed entity to be utilised by any organisation in any circumstance (Lawler, 1993). This tendency to adopt a universal approach to TQM indicates a need for adjustment of the TQM-work to a more customised approach for small organisations. The prospect of adapting the TQM system, where larger companies have met considerable difficulties, must prove daunting for small organisations where the lack of resources, if not the motivation, could easily impede the adoption of such a fundamental change (Lawler, 1993).

In the same way that the characteristics of the small organisation differ from large organisations, the small organisation's work with TQM varies. Many small organisations, which are suppliers to larger organisations, have implemented quality assurance systems such as ISO 9000 as a response to the increasing demands from the customers. Organisations without these demands and with weak quality approaches have, on the other hand, seldom adopted these kinds of standardised systems. For very small organisations, an implementation of such a quality system can be too demanding with respect to the organisations' resources, see Gustafsson et al. (2001).

Considering these differences, the author will try to elucidate some general characteristics that the work with the described core values of TQM indicate in the context of small organisations, see Figure 2-3. Due to the heterogeneity within the small organisation area, these characteristics may, however, be inadequate for some organisations.

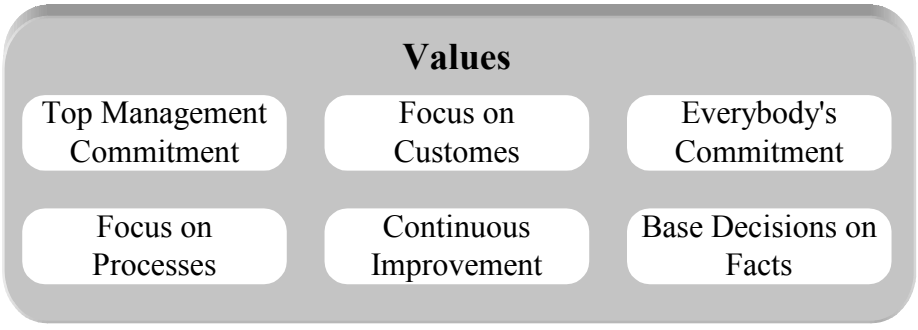


Figure 2-3 *ergman & Klefsjö (1994) and Hellsten & Klefsjö (2000).*

2.7.1 Focus on Customers

Many small organisations depend on one or a few customer relations (Bohman & Boter, 1984). This characteristic may make it easier to maintain and improve customer focus and to conduct customer research. The managers and employees of a small organisation usually have a close customer relationship (Haksever, 1996). This fact does unfortunately not guarantee an accurate assessment of the needs and expectations of the customers. However, it gives the organisation a better chance to discover the needs of the customer. The small organisation often has a greater knowledge about its customers and of the needs and expectations of the customers (Haksever, 1996). In small organisations employees tend to be closer to the organisation's products and customers, creating an increased sense of responsibility (Ghobadian & Gallear, 1996). Another strength in small organisations is that a larger percentage of the employees normally have a closer contact with customers, increasing the potential for the voice of the customer to permeate the organisation (Taylor & Adair, 1994). Since customer focus implies research to find out the customer needs, the directness and timeliness of the information flow from the customer to the organisation is another significant advantage a small organisation may have. A large organisation, for example, may have to rely on customer surveys done by a consulting firm, or another part of the organisation that conducts the survey (Haksever, 1996).

A characteristic that may have a negative influence on small organisations' conditions to work towards customer focus is their limited resources. Small organisations cannot be expected to be engaged in data collecting and processing with the same depth and breadth as large ones (Haksever, 1996). This may have a negative effect in consideration of customer data collection.

2.7.2 Base Decisions on Facts

To achieve customer satisfaction, decisions must be based on facts, and results must be measured. Fewer layers of management result in easier and less bureaucratic communication and co-ordination between staff, which makes the decision processes easier (Ghobadian & Gallear, 1996).

Small organisations cannot be expected to be engaged in data collection and processing with the same depth and breadth as large ones, because they usually don't have a staff with necessary knowledge to perform sophisticated statistical analysis (Haksever, 1996). The resources are more often focused to deal with the problems that continuously arise in the organisation's different processes. To obtain decision processes based

on facts, there is a need for specialist knowledge and technical expertise, and, according to Ghobadian & Gallear (1996), small organisations often suffer from this lack of expertise knowledge. To attain the knowledge needed to reach fact based decision processes requires training of personnel, and small organisations have a disadvantage in this area, which originates from lack of financial resources (Haksever, 1996).

2.7.3 Focus on Process

Small organisations have a natural tendency for cross-functional training because they have fewer layers of management and staff (Ghobadian & Gallear, 1996). This facilitates the employees to have greater knowledge about the process owners and in what way their work is a part of the resulting product or service. It is important that actions towards process orientation are supported with a distinct leadership. In a small organisation the management has a higher degree of visibility and can readily emphasise the importance of quality (Ghobadian & Gallear, 1996).

Resource paucity is an arguably serious disadvantage faced by small organisations (Ghobadian & Gallear, 1996). The small organisation may not have the kind of resources a larger organisation has to educate its employees on process orientation. This is further emphasised by Garvare (2002) who maintains that transfer of knowledge appears to be critical when introducing process management. On the other hand, resource paucity was not the salient problem when implementing process management in the small organisation context, according to the findings of Garvare (2002).

2.7.4 Continuous Improvement

In a small organisation, the employees usually have a very good sense of the overall profitability of the organisation. They are therefore committed to try to improve the business because they know it will directly affect them (Ghobadian & Gallear, 1996) .

Since, according to Ghobadian & Gallear (1996), resource paucity is a serious disadvantage for small organisations, the lack of resources may be an obstacle for the small organisation to work in the PDSA-cycle and carry out all the four required steps.

2.7.5 Everybody's Commitment

Small organisations have great potential for success in this area if the management believe in employee involvement and the value of employees as intelligent human beings (Haksever, 1996). Another advantage for small organisations is that the employees in a small organisation tend to be closer to the organisation's products and customers, which creates an increased sense of responsibility (Ghobadian & Gallear, 1996).

The management must be ready to implement changes proposed by their employees and also be willing to relinquish significant authority to improve quality and customer satisfaction. According to Haksever (1996), this kind of delegation usually is very difficult for managers of small organisations, since they usually assume that, as the representative or embodiment of the organisation, they alone should make the important decisions. There is also a risk that the owner or chief executive's personality may dominate the culture of the small organisation (Ghobadian & Gallear, 1996).

2.7.6 Top Management Commitment

Managing human resources can, for the small organisations in particular, be a source for developing a competitive advantage, since management often is close to the workforce and there is little functional differentiation. The necessary cultural change, implied by TQM, may be more easily realised in small organisations if the management espouse the vision and have the leadership skills to enthuse and gain the commitment of their workforce (Lee & Oaks, 1995). According to Ghobadian & Gallear (1997), the management of a small organisation enjoys a high degree of visibility and can easily emphasise the importance of quality. In a small organisation, communication between management and the employees is frequent and direct. As the size of the organisation increases, the directness and frequency of contact with the employees decreases as organisational layers and barriers of bureaucracy proliferate (Haksever, 1996). The organisational systems and structures are also generally simpler than in larger organisations, which can facilitate process improvements being envisaged and implemented in a holistic way (Lee & Oaks, 1995).

For a small organisation, the limited size of the management team means that individuals are often responsible for a number of different functions with little backup. The management is frequently busy with managing day-to-day activities and little time is left for activities perceived as

adjunct. In general, a short rather than long range management perspective dominates (Ghobadian & Gallear, 1996). According to Haksever (1996), the management in small organisations often lacks managerial skills and experience, which may prevent the management recognising the need for change or to understand how to implement the changes needed in the organisational structure and culture, including TQM.

The research conducted regarding TQM implementation in small organisations is far from as extensive as the general TQM implementation research. Still, Ghobadian & Gallear (1997) present ten key steps for implementing TQM in small organisations, see Table 2-2. The implementation steps are based on empirical material from four case studies. One of their conclusions is that there is support for the hypothesis that small organisations can readily adopt the TQM principles, although the implementation process needs some specific requirements. Huxtable (1995) also presents an implementation guide for the small business manager. His recommendation is based on consultant experiences within the area. A presentation of the two different recommendations for TQM implementation in small organisations together with the author's synthesis of the two strategies is presented in Table 2-2.

The main difference between the two implementation sequences is not regarding the actual sense of the steps, but more concerning the level of details they are described. The steps recommended by Huxtable (1995) are in fact including a few of the steps that are presented by Ghobadian & Gallear (1997). For example, the third activity described by Huxtable (1995), could be interpreted to correspond to step three, four, five and six of the description by Ghobadian & Gallear (1997).

Table 2-2 *A presentation of two different recommendations for TQM implementation in small organisations. The left column describes the author's synthesis of the two strategies described by Ghobadian & Gallear (1997) and Huxtable (1995).*

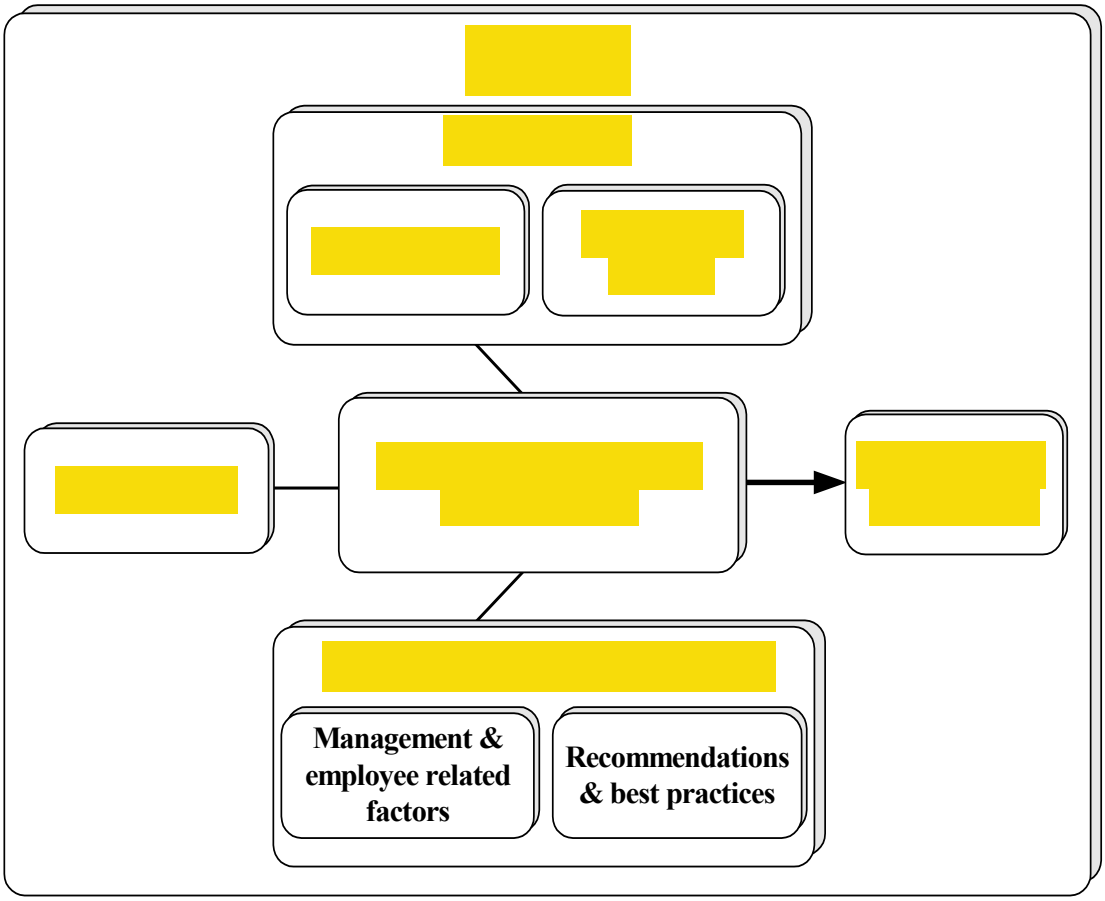
Synthesis of described activities	**Ghobadian & Gallear (1997)**	**Huxtable (1995)**
Visualise the need for TQM implementation & gain commitment & understanding among managers	Recognition of the need for the introduction of TQM	Develop understanding & commitment
	Developing understanding among management & supervisors	Get the management on board
Plan the implementation & provide requisite resources for educational & training efforts	Establish goals & objectives of the quality improvement process	Plan the implementation & train the workforce as a whole
	Plan the TQM implementation	
	Educate & train all employees	
	Create a systematic procedure	
Use teamwork approach for implementing according to previous planning	Align organisation & develop team spirit & teamwork	Gain & present quick wins & use a teamwork approach for conducting TQM activities
	Implement the TQM concepts	Sustain the commitment
Ensure continuous improvement by reviewing & monitoring	Monitor the implementation of the TQM concepts	Review & ensure continuous improvement
	Engage in continuous improvement by going back to step 3	

When studying the recommendations in Table 2-2, similarities with the constituents in Table 2-1 are evident. However, the components included in the first synthesis step are less specified towards groups of managers or management layers, which seems logical due to fewer management layers in small organisations than in larger organisations. The components of the second synthesis step in Table 2-2 also differ with respect to the focus on strategic planning compared to the second step in Table 2-1. Furthermore, the emphasise on organisational width of implementation initiatives in Table 2-1 is not as apparent in Table 2-2, which could be related to the large organisations' tendency to be more structured and divided into departments. The recommendations in Table 2-2 are further discussed and directed towards the small organisation context within the work of the

two included authors, see Ghobadian & Gallear (1997) and Huxtable (1995).

2.9 Emerging Frame of Reference

The present chapter intended to elucidate the major concepts at issue and describe aspects important of importance for successful implementation of TQM in general, but also with a specific focus on small organisations.



Important aspects when implementing TQM, i.e. a substantial organisational change, have been described with a focus on different strategies, recommendations and involved performers. The author of this thesis has also tried to view how the organisational context affects the consideration of these aspects and also briefly discuss how different organisation characteristics influence implementation efforts of TQM and some of its components.

3 Research Methodology

Research can be accomplished in many ways. In this chapter, aspects related to the research process of this thesis are described and discussed. A general description of available research methods is presented, underpinning a discussion of why some of these have been considered suitable for this specific research project.

3.1 Chosen Approach and Alternative Research Strategies

Just as there is a wide variety of views as to what research consists of, and great differences in actual practices as to what people research and how, there are alternative perspectives of what the process of undertaking research should look like (Blaxter et al., 1996). The mission of research is to generate knowledge. As a researcher one also gains knowledge during the path of reading, discussing and investigating. The research, and how it is conducted, is influenced by the researcher's epistemological standpoints. The different theoretical paradigms and perspectives of research that the researcher believes in, shapes how the researcher looks at the world and acts in it (Denzin & Lincoln, 1994). The choice of research approach is not only dependent on the researcher's epistemological position, but should also be based on the type of research questions we set out to illuminate (Holme & Solvang, 1991; Yin, 1994; Merriam, 1998).

The specified objective to investigate financial performance development for organisations that have successfully implemented TQM contains a research question of more exploratory nature. In this case a quantitative approach has been chosen, an archival study, which is in accordance with Yin (1994) who states that studies of, for example, "the outcomes of a particular managerial reorganisation" is more likely to favour survey or archival strategies.

The objective to generate knowledge regarding small organisations' work towards TQM implementation, by studying, analysing and describing such implementation processes, contains research questions of a descriptive nature. Therefore, the research design chosen is based on social, non-experimental, empirical and qualitative science. This

approach is in accordance with Merriam (1998) considering non-experimental, also called descriptive, research, as suitable when description and explanation are looked for. Qualitative research means different things when considering its complex historical field (Denzin & Lincoln, 2000). Nonetheless, an initial generic definition can be offered:

> *"Qualitative research is a situated activity that locates the observer in the world. It consists of a set of interpretive, material practices that make the world visible. These practices transform the world. They turn the world into a series of representations, including field notes, interviews, conversations, photographs, recordings and memos to the self. At this level, qualitative research involves an interpretive, naturalistic approach to the world. This means that the qualitative researchers study things in their natural settings, attempting to make sense of, or to interpret, phenomena in terms of the meanings people bring to them."*
>
> (Denzin & Lincoln, 2000, p. 3)

3.2 Induction, Deduction or Abduction

In discussions concerning methodological choices, one often distinguishes between induction and deduction. The fundamental idea of induction is the generation of general conclusions from the specific case (Molander, 1983). This causes a reduction of the underlying structure and only an outer, mechanical connection is obtained, which is the major weakness of induction (Alvesson & Sköldberg, 1994). The deduction methodology has a reverse approach and states the explanation of a specific case from a general rule. This also causes a reduction of the underlying structure and tendencies (Alvesson & Sköldberg, 1994). The abduction approach begins with rising from the surface empirical structures, to the profound theoretical structures, see Figure 3-1. The abduction can advantageously be distinguished from induction and deduction by going further than just the distillation of facts based on theory charged empirical material (Alvesson & Sköldberg, 1994).

In the quantitative part of this study, both deductive and inductive elements were used. Theory regarding the relationship between TQM implementation and financial performance served as a basis for developing, and testing, the hypothesis that TQM organisations[12] have a

[12] *TQM organisations refer to organisations that have successfully implemented TQM, see Section 3.3.1 for further details.*

better financial performance than non-TQM organisations. Then quality award recipients were studied in order to make generalisations and form theoretical propositions regarding the link between TQM and financial performance, see Figure 3-1. Here, the author's approach is displayed to the right besides the model from Alvesson and Sköldberg (1994).

In the qualitative part of the study, empirical regularities, such as the small organisations' problems with adopting TQM, have constituted basic reasons for initiating the research process. From these empirical regularities, theory that the author found as related and relevant has been examined. This first step of the research process involved an analysis of existing theory concerning TQM, small organisations, implementation and organisational change, and TQM in small organisations. The analysis of these theoretical areas aimed at creating a theoretical platform, from which the author could proceed in the forthcoming research steps. It also aimed at specifying the design of the case studies. Review of relevant literature facilitated focusing the study and is appropriate in the introductory stage of the research process (Patton, 1990). With the theoretical analysis, the author of this thesis sets out to find a way to gain profound understanding of established theories within the two areas of TQM and small organisations, with an emphasis on their interaction. An overarching description over the research approach is depicted in Figure 3-1. The approach used has similarities with abduction.

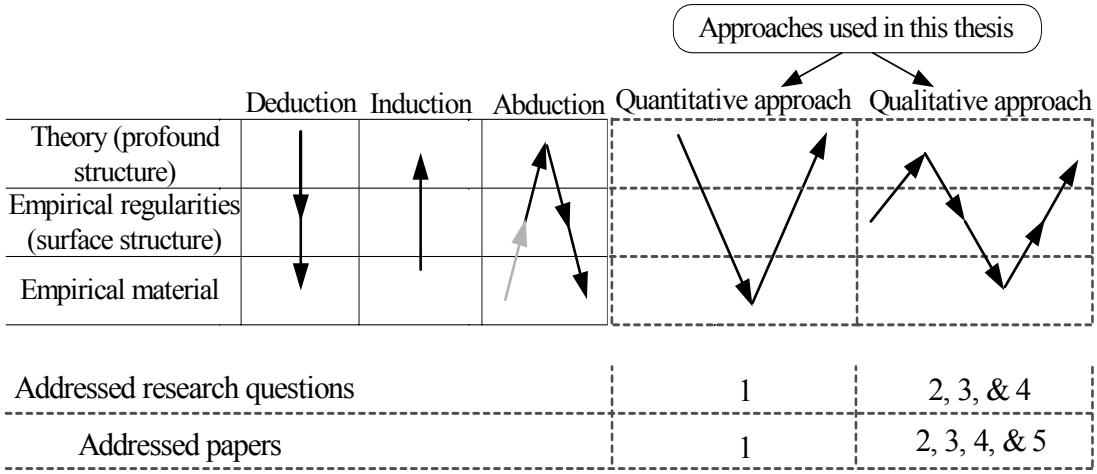


Figure 3-1 *The author's interpretation of the research approaches used in this study. The figure is inspired by Alvesson & Sköldberg (1994).*

3.3 The Quantitative Approach

A quantitative approach is chosen in order to address, the objective of investigating financial performance development for TQM organisations, and research question 1. Since financial performance development concerns historical development of accounting variables of TQM organisations, before and after they have successfully implemented TQM, numerical information is studied. Studying numerical information or other variables that are possible to grade is considered as a quantitative approach, see e.g. Holme & Solvang (1991).

3.3.1 Selection of Primary Data Sources

In the quantitative study, all Swedish companies that have either received the national, a regional or an in-company quality award were included. The regional and in-company quality awards in Sweden are to a large extent based on the Swedish Quality Award criteria. The information concerning which companies that had received a quality award in Sweden was collected from the Swedish Institute for Quality (SIQ), which is the organisation managing the Swedish Quality Award. Similar to Hendricks & Singhal (1997) and Ghobadian & Gallear (2001), this research project uses the receiving of a quality award as a proxy for a successful implementation of TQM. Another possible approach would have been a qualitative case study approach previously applied by e.g. McAdam & Bannister (2001). They used a questionnaire based on a framework developed by Hackman & Wageman (1995) in order to collect opinions among personnel regarding TQM constituents in an organisation. This alternative approach was considered inappropriate, mainly due to the subjective judgement by the employees of how well TQM was established.

The choice to use the reception of a quality award to define successful implementation of TQM is motivated by the following arguments:

- The quality award models we use require an extensive description and assessment of the applying organisation. The assessment is conducted by answering the questions in the award criteria and results in an evaluation document of between 30 to 60 pages.
- The evaluation document resulting from the assessment is thoroughly scrutinised by a group of, in general, 4-6 independent examiners that have received education and training for evaluating organisations towards the quality award model.

- All examiners make an individual evaluation. These individual evaluations constitute the basis in a consensus meeting where all examiners come to an agreement on how well the answers comply with the criteria. This agreement results in a total judgement of points for how well the organisation meets the terms of the award criteria.
- If the organisation reaches a sufficiently high level of points, the group of examiners conducts a site visit in order to confirm that the statements in the evaluation document are in accordance with reality. A judging committee that estimates whether the applying organisation can be considered as an ideal for other organisations, reaches the final verdict of how the organisation complies with the award criteria. To maintain credibility and the value of their awards, providers have strong incentives to give award to only those organisations that significantly improved quality (Hendricks & Singhal, 1997).

These four points together indicate that the award process is a long and laborious one that requires a lot of time and effort from all parties concerned. It should also be noted that it is an award and not a competition. If none of the applying organisations reaches a level that the judge committee considers sufficient for being classified as an ideal organisation, none of the organisations receives the award. This occurrence, when none of the applying organisations receives the award, has happened several times. Finally, award providers exclude financial performance in the selection of award recipients because of technical, fairness, and confidentiality considerations (Hendricks & Singhal, 1997).

Only companies that are profit-driven were included in the study, since non-profit organisations do not always strive to increase the financial performance due to other business incentives. A total number of twenty-one companies conformed to these criteria. In some cases a unit of a larger company had received a quality award. In these cases the total company was included in the study only if the unit that had received the award had 40% or more of the total number of employees of the company; a limitation set in order to include as many award recipients as possible without decreasing the reliability of the study. Seventeen companies conformed to the criteria described above. The exclusions that were made were due to the following reasons:

- Their foreign owner closed down one award recipient and the production was moved abroad.

- One award recipient presented the financial figures in a way that made equal comparisons impossible.
- Two award recipients constituted less than 40 % of the company that provided the financial figures.

To assess financial benefits of implementing TQM, it would be ideal to compare the actual companies' performance with the performance that would have been the case if the companies had not implemented TQM. Since it, in this study, was impossible to find or construct such ideal comparisons, two other comparisons were chosen.

First, all companies in the study were individually compared to respective branch index in order to make a valid comparison regarding the financial performance. Different branch indices for different sizes of companies regarding total number of employees were available through Statistics Sweden (SCB). Each company that had received a quality award was therefore separated into different sizes (based on the number of employees) and branches. Second, a comparison was performed with the award recipients' stated competitors, i.e. each award recipient was individually compared with one of its competitors. This comparison gives an idea how the quality award recipients have developed in relation to their competitors. Only one competitor was identified for each company that had received a quality award. In those cases, when a competitor could not be identified or the competitors to the company were a non-Swedish company, no competitor was included in the study. In those cases, when the award recipient stated that they had many competitors, the competitor that was closest in size was selected. These two comparisons give an indication of the benefit of a successful implementation of TQM.

3.3.2 Selection of Indicators

The following indicators were used in order to study the performance development for the companies included in the study: Percentage change in sales, Return on assets, Return on sales, Percentage change in total assets and Percentage change in number of employees. These indicators were chosen since they are generally accepted as financial performance indicators but also to facilitate comparison of the result with other studies, e.g. Hendricks & Singhal (1999).

A six-year period, divided into one implementation period and one post implementation period, was studied regarding these indicators. The implementation period was defined as starting four years before the

company received the quality award and ending two years before the award, see Figure 3-2. Since the applicants of the quality award start describing their activities and results approximately one year before the announcement of the recipient in order to hand in the application on time and give examiners and judges time to evaluate the application, it can be argued that the activities and results described in the application should be in place one year before the announcement of the recipient of the award. Hence it should be convenient to start the post implementation period one year before the announcement of the recipient of the award. Therefore, the post implementation period started one year before the award was received and ended one year after the award, see Figure 3-2.

As an example, the difference between the award recipients and the competitors for the indicator of percentage change in sales during the implementation period (i.e. three years) was calculated by, first, subtracting all the percentages changes in sales of the competitors from every single award recipient. Second, the median difference was calculated, based on the differences between the award recipients and the competitors for the indicator of change in sales for all of the three years in the implementation period. The same procedure was used for the other comparisons, indicators and periods.

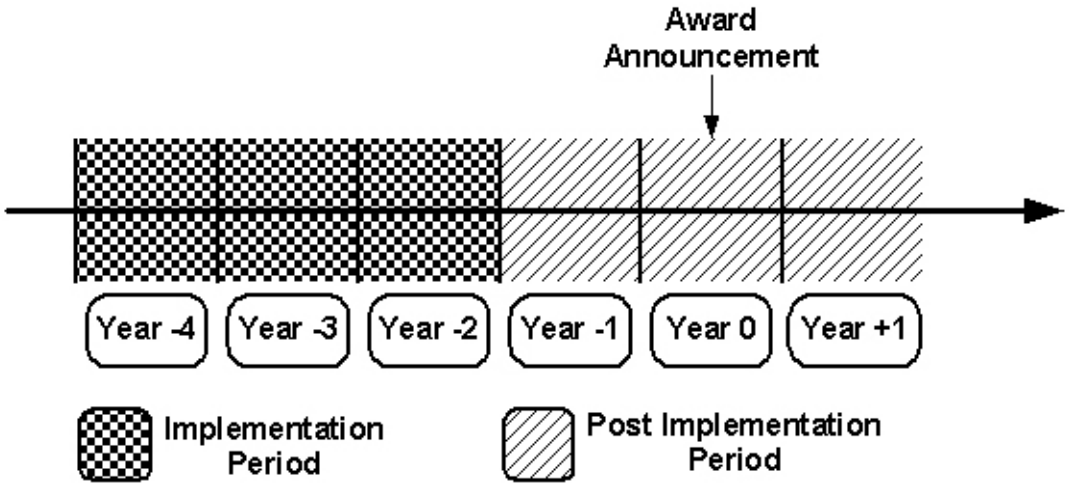


Figure 3-2 The years included in the implementation period and the post implementation period.

In the GAO study, see GAO (1991), the included companies improved their performance on average in about two and a half years from the time they adopted total quality management. Hence, after a three-year implementation period, the companies in this study should be able to show possible benefits with TQM regarding the studied indicators.

Change in operating income was not included as an indicator in the study, since some of the companies, both award recipients and their competitors, showed a negative operating income at some occasions. Due to the fact that it is impossible to calculate a change in operating income from a negative result, expressed in percentages, this indicator was excluded. If change in operating income, expressed in percentages, would be studied, and the companies that showed a negative operating income would be excluded on the occasions when they developed positively from a negative point of departure, the result from the operating income indicator would be biased. Since the number of companies included in our study is relatively few, the bias of excluding companies would therefore turn out to be severe for this study. However, return on sales, which was included in this study, is defined as operating income divided by sales. Hence, the change in operating income is, to some extent, reflected in this indicator.

The same problem of calculating change, expressed in percentages, with negative numbers as point of departure also concerned the indicators return on sales and return on assets. The annual change of these indicators was not calculated. Instead, the results (the actual "value" in return on sales and return on assets) for the competitor and the branch index were subtracted from the indicator of the particular award recipient. Thereafter, a median value of the differences was calculated. This procedure was used for all the years included in the study. The use of medians when comparing the performance indicators was based on the fact that the medians are more robust than average values due to problems concerning outliers, wide tails or different forms of skewness.

3.4 The Qualitative Approach

One aim of this thesis is to generate knowledge regarding small organisations' work towards TQM implementation, and qualitative case studies were selected to address this aim and research questions 2, 3 and 4. With a case study, we can better understand complex social phenomena (Yin, 1994), which the small organisations' work with TQM can be considered as. According to Yin (1994), case studies are far from being only an exploratory strategy. The case study can also be used for descriptive or explanatory purposes. The focus of the case study is on the process rather than the result, on the context rather than specific variables and on discoveries instead of proving casual connections (Merriam, 1998). A case study is considered to be an intensive and holistic description and analysis of a restricted phenomenon. The case study is particularistic, descriptive, and heuristic and relies to a high degree on

inductive argumentation (Merriam, 1998). The particularistic characteristic of the case study means that it focuses on a particular situation, occurrence, phenomenon or person. That the case study is descriptive means that the result of the studied phenomenon is comprehensive and substantial, while the heuristic characteristic implies that it can increase the readers' comprehension of the phenomena (Merriam, 1998).

3.4.1 Multiple or Single Case Design

A primary distinction in designing case studies is between single-case and multiple-case designs (Yin, 1994). The evidence from multiple-cases is often considered more compelling, and the overall study therefore regarded as being more robust than a single-case study (Herriot & Firestone, 1983). In a multiple-case study, one goal is to build a general explanation that fits each of the individual cases, even though the cases will vary in their details. The objective is analogous to multiple experiments (Yin, 1994). A fundamental reason for doing cross-case analysis is to deepen understanding and explanation (Miles & Huberman, 1984). Multiple cases not only pin down the specific conditions under which a finding will occur but also helps us form the more general categories of how those conditions may be related (Miles & Huberman, 1984). There is much potential for both greater explanatory power and greater generalizability in a multiple-case study than in a single-case study (Miles & Huberman, 1984). Since one part of the aim of the research presented in this thesis was to generate knowledge supporting small organisations' work towards TQM, the author wanted to be able to say more than "this is only valid for this specific case", which would be the result from a single case study. Therefore the multiple-case design was chosen.

3.4.2 Conducted Case Studies

Two multiple-case studies have been conducted to gather empirical data in order to address the aim "to generate knowledge supporting small organisations work towards TQM". These multiple-case studies will hereafter be designated "*Multiple-case study 1*" and "M*ultiple-case study 2*". *Multiple-case study 1* constitutes the empirical material that is used in papers 2, 3 and 4. *Multiple-case study 2* constitutes the empirical material that is used in paper 5.

Yin (1994) points out three topics that should be a formal part of any case study preparation: training, case study protocol and a pilot case study. The process of conducting the two multiple-case studies began with the

construction of a case study protocol (see appendix 1 and 2). With this protocol as a basis, a questionnaire was formulated and included in the protocol (see appendix 3 and 4). The case study questions and hypothesis were based on literature reviews and the described research questions (research questions 3 and 4). In *Multiple-case study 1* a pilot case study was conducted, but not in *Multiple-case study 2*, due to time- and financial-related factors.

3.4.3 Case Selection

Understanding the critical phenomena may depend on choosing the case well (Patton, 1990; Stake, 1994; Yin, 1994). The overall criterion for selecting the cases was that the organisations should have successfully implemented TQM. In order to maximise the possibility for discovering as many different characteristics of the phenomena as possible, it was important to find and choose as many different natural cases of the phenomena as possible, in as many different natural situations as possible (Eneroth, 1986). This resulted in that the included cases in the two multiple-case studies come from different contexts, and that there have been no efforts to create homogenous groups of cases in the two studies.

Any use of multiple-case study designs should follow a replication, not a sampling logic, and an investigator must choose each case carefully. The cases should serve in a manner similar to multiple experiments, with similar results (a literal replication) or contrasting results (a theoretical replication) predicted explicitly at the outset of the investigation (Yin, 1994). The organisations in the two multiple-case studies were chosen based upon their successful implementation of TQM, which in turn is defined as quality award recipients. The predicted result for the cases was that they should show similarities concerning the experiences and results of the investigation, a literal replication.

Multiple-Case Study 1

Multiple-case study 1 consisted of nine small organisations. In these case studies the attitudes held and approaches taken by the organisations were analysed. The selection criteria for the chosen organisations were to what extent the organisations had implemented TQM and that the numbers of employees within the organisations were equivalent to the used definition of small organisations. The chosen quantity of organisations was based on the actual amount of organisations, which fulfilled the selection criteria. All organisations that fulfilled the selection criteria were included in the multiple-case study. This selection was possible by studying small organisations, which had received national or regional quality awards in

Sweden. For a motivation of using the receiving of a quality award as a criterion for a successful implementation of TQM, see Section 3.3.1.

The organisations in this study vary from municipality-managed schools to privately owned manufacturing organisations. The varied population of organisations brings differences concerning the organisations' resource situations and ability to act independently during the implementation process. The choice of a varied population was made in order to maximise the possibility for discovering as many different characteristics of the phenomena as possible. For a brief overarching description of the organisations included, see Appendix 5. The nine organisations and the different quality awards that served as a basis for the selection of organisations are depicted in Table 3-1.

Table 3-1 The quality awards that have served as a basis for the selection of organisations and also the organisations selected for Multiple-case study 1.

Quality award	Studied organisation	The year the organisation received the award	Assessment model
Swedish Quality Award	• Bulten Automotive AB	1998	SIQ criteria
	• The Pulmonary Clinic at Linköping University Hospital	1996	
Quality Award in Northern Sweden	• Aesculapen Company Health service AB	1998	The Springboard criteria
	• Björknäs Dental Care Centre	1999	
Quality Award in Värmland	• Råtorp Nursery School	1999	SIQ criteria
Quality Award in Gävleborg	• Technical Education Program at Broman Upper Secondary School	1998	14 of the 29 SIQ criteria
Quality Award in Mälardalen	• Hällbyskolan	1998	16 of the 29 SIQ criteria
Quality Award on Gotland	• Visby Architect Group AB	1995	17 of the 29 SIQ criteria
	• Wisby Hotel	1997	

By studying the organisations' approaches, implementation phases, resource investments and competence investments, one may find the

specific characteristics of the implementation approach, needed for a successful implementation.

Multiple-Case Study 2

Multiple-case study 2 consisted of three small organisations. In this case study, approaches and tools used by small TQM organisations, and also how they were used, both from an organisational and an operational perspective, were analysed. The opinions among the actors involved in the quality work regarding the identified approaches and tools were also analysed. The selection criteria for the chosen organisations was that the organisations had implemented TQM, i.e. received a quality award, that a period of time had elapsed since they were considered to have implemented TQM, and that they operated in different business contexts. For geographical reasons we chose award winners of the Quality Award in Northern Sweden. Three organisations that fulfilled the selection criteria were included in the multiple-case study. For a brief overarching description of the organisations included, see Appendix 6. The three organisations and the used quality award is depicted in Table 3-2

Table 3-2 The selected case study organisations that were used in Multiple-case study 2.

Quality award	Studied organisation	The year the organisations received the award	Evaluation model
Quality Award in Northern Sweden	• Aesculapen Company Health service AB	1998	The Springboard criteria
	• Anderstorp Care Centre	1997	
	• Kablia AB	2001	

3.4.4 Unit of Analysis

Except for the single-case versus multiple-case design possibilities, one can also distinguish a case design separating and choosing between a holistic (single unit of analysis) and an embedded (multiple unit of analysis) case design, see Yin (1994).

For *Multiple-case study 1*, the overarching unit of analysis was the implementation process but there are sub-units that were investigated in order to reveal the main unit as realistically as possible. These sub-units are the experiences from the management and the experiences from the co-workers. Therefore, during the case studies, both management and co-workers were included, which indicates that the chosen research design is an embedded multiple-case design. The replication design does not

necessarily mean that each case study needs to be either holistic or embedded. The individual cases, within a multiple case study design may be either. When an embedded design is used, each individual case study may in fact include the collection and analysis of high quantitative data including the use of surveys within each case (Yin, 1994). During this study, all the cases followed the same procedure and design, which means that each individual case in the multiple-case design represented an embedded design. This unity between the individual cases was chosen in order to discover possible differences between the respondent groups, management and co-workers, as the co-workers may not share the management's experiences from an implementation process. The facilitation of cross-case analysis was also in mind when the decision concerning the unity between the cases was made.

For *Multiple-case study 2*, the overarching unit of analysis was the quality-related work within the organisation. Also here sub-units exist. The quality tools and approaches used can be viewed as sub-units, which also counts for the opinions among the actors involved in the quality work.

3.4.5 Sampling within the Case

For the case study, a demarcation of the unit of analysis is influenced by the researcher's philosophical and theoretical direction (Yin, 1994). This means that the author's previous knowledge, scientific position and pre-understanding, influence the chosen unit of analysis and its demarcations. The questions that were asked and documents that were collected during the multiple-case studies were therefore depending on these factors.

For *Multiple-case study 1*, the problems and experiences concerning the implementation of TQM in small organisations were in focus. For *Multiple-case study 2*, the approaches and tools that are used in small TQM organisations, and how they are used, from both an organisational and operational perspective, were in focus. These areas of interest comprised the foundation for the data collecting decisions that were made concerning the cases. There are several possible ways of collecting the data in a case study, see e.g. Yin (Yin, 1994). In the two multiple-case studies, three different data collection methods were chosen; interviews, documentation collection, and, to some extent, direct observation.

Interviewing has a wide variety of forms and multiplicity of uses. The most common type of interviewing is individual, face-to-face verbal interchange, but it can also take the form of face-to-face group

interviewing, mailed or self-administrated questionnaires, and telephone surveys (Fontana & Frey, 1994). The type of interview used in both multiple case studies was the face-to-face verbal interchange. This form was chosen since the author found it most convenient to confront the respondents in surroundings in which they would feel familiar. The questions were also of a nature that demanded a developed interaction between the respondent or respondents and the interviewer. On that basis, the telephone interview alternative was rejected. In most cases the respondent groups consisted of single individuals and in some they consisted of two or more persons. This difference was sometimes due to the fact that the respondents felt more comfortable not being alone and sometimes due to the fact that the interviews took valuable time from the organisation and that only one respondent for each respondent group were available. The questions that were asked during the interviews are presented in Appendix 2 and 4. The questions were mostly of an open-ended nature in which the key respondents were asked for facts on a matter as well as for the respondents' opinions about events. All interviews, except for two, were recorded with a microphone connected to a recordable MiniDisc player. In *Multiple-case study 1*, the author carefully wrote down the interview that was not recorded and the reason for writing instead of recording was that it was a desire of the respondent. Each interview took approximately 90 minutes. During *Multiple-case study 2*, a colleague took notes during all the interviews as a complement to the recording, and also in this study one respondent refused to be recorded.

Except for studies of preliterate societies, documentary information is likely to be relevant to every case study topic (Yin, 1994). One can distinguish between documents and records on the basis of whether the text was prepared to attest to some formal transaction (Lincoln & Guba, 1985). Records include marriage certificates, driving licences and so forth and documents include e.g. memos, letters, field notes and are prepared for personal rather than official reasons (Hodder, 1994). The documentary information has in both multiple-case studies mostly consisted of documents, such as public information concerning the organisations and newspaper articles. One great source of documentary information has been the evaluation documents that each organisation submits to the examiners involved in the quality award. These documents are the organisations' descriptions in answer to the criteria questions that are a part of each quality award evaluation model. The information is very thorough in its descriptions about the organisations' different approaches, methods, and results, related to the criteria in the quality models. All organisations studied in *Multiple-case study 2* shared this

information. Most organisations in *Multiple-case study 1*, but unfortunately not all, were willing to share this information. The minority of organisations that declined to distribute this sort of documentation chose to do so since it in some cases included confidential information. The author has in these cases tried to avoid any negative effect by studying these organisations' approaches and techniques more accurately by attending seminars and conferences, and documents from these events, where the organisations presented much of the non-confidential information.

By making a site visit to the case organisation, one is creating the opportunity for direct observations. The direct observation is not relevant though, if the phenomenon of interest is purely historic (Yin, 1994). With the successful implementation process as the phenomenon in *Multiple-case study 1*, and the award as the judgement factor, the author maintains that the phenomenon, i.e. the implementation process, ended the day the organisation received the quality award. The phenomenon may in fact have continued since continuous improvement is a constituent of TQM, i.e. you can always improve, also after the award declaration. The phenomenon may also have lost its meaning if the quality work in the organisation has decreased. Irrespective of these facts, the phenomenon was real and genuine until the award was received. This means that the phenomenon is purely historic since all organisations have received their award before the field visit. In spite of this fact, the author argues that the observations are relevant since they are a part of the creation of the author's comprehension and affects the ability to interpret the total quantity of information concerning the cases.

With the quality development work as the studied phenomenon in *Multiple-case study 2*, one may consider direct observation as relevant. But with a focus on the approaches and tools that are used in small TQM organisations, and how they are used, from both an organisational and operational perspective, the author's main data source were the interviews and the documentation. This was due to the fact that the experiences and opinions among the actors within the studied organisations were considered to be most important with regard to the purpose of *Multiple-case study 2.*

3.4.6 Interpretation and Analysis

> *"Confronted with a mountain of impressions, documents, and field notes, the qualitative researcher faces the difficult and challenging task of making sense of what has been learned. I call making sense of what has been learned the art of interpretation."*
>
> (Denzin, 1994, p. 500)

Data analysis consists of examining, categorising, tabulating, or otherwise recombining the evidence to address the initial propositions of a study (Yin, 1994). The analysing process is the differentiation of the global experience, the seeking of which features or relations that are "hidden" in the global apprehended entirety (Lantz, 1993). The author should in other words abstract the described global entity, by a process of reflection and cogitation. The global entity in the two multiple case studies is described by three sources of empirical data; interviews, documentary information and, to some extent, direct observation.

Yin (1994) mentions two different general analytic strategies. The first strategy relies on theoretical propositions and the second one is based on the development of a descriptive framework. The first and more preferred strategy is to follow the theoretical propositions that led to the case study. According to Yin (1994) there are several specific analytic strategies that can be used if a general strategy is given, and four strategies are mentioned as effective ways of laying the groundwork for high-quality case studies, see Table 3-3.

Table 3-3 Different strategies for analysing qualitative data. Inspired by Yin (1994).

Strategy	Analyse approach
Pattern-matching	Compares an empirical based pattern with a predicted one
Explanation-building	Building an explanation about the case by stipulating a set of casual links about it
Time-series analysis	Directly analogous to the time-series analysis conducted in experiments and quasi-experiments
Programme logic models	A combination of the pattern matching and the time-series analysis

Miles & Huberman (1984) consider analysis of qualitative data as consisting of three activities: data reduction, data display and conclusion drawing. The typical mode of data display in qualitative research has, according to Miles & Huberman (1984), been narrative text and they maintain that narrative text alone is an extremely weak and cumbersome form of display. On the other hand, Czarniawska (1999) argues for narrative knowledge as an attractive candidate for bridging the gap between theory and practice. Miles & Huberman (1984) also make a distinction between within-site analysis and cross–site analysis. There are many different tools described concerning the analysis process for the within-site and cross-site analysis, where some have similarities to the strategies described by Yin (1994).

The author's choices of analysis strategies and tools are partly inspired by Yin (1994), Miles & Huberman (1984) and Czarniawska (1999), but the pre-understanding and knowledge within the mind of the author has also affected these choices. In the two present multiple-case studies, narrative text is combined with different matrices. Pattern matching is also used to some extent, where the empirical patterns are compared with the theoretical framework and predicted outcome. The narrative is mainly based on the documentary information and the recorded interviews. The matrices are mainly based on the interviews and the within-case conclusions are based on all three sources of evidence.

3.5 Validity, Reliability and Generalizability

Although the concepts of reliability and validity are related in social science, they are related in an asymmetric manner. A test cannot be valid unless it is reliable, but it can be reliable without being valid (Potter, 1996). Traditional research argues that the only way to produce valid information is through the application of a rigorous research methodology, that is, one that follows a strict set of objective procedures that separate researchers from those researched (Kincheloe & McLaren, 1994). The present study can be reliable if the interviews, documentary information, the direct observations and financial performance studies lead to the same results when the study is repeated. But at the same time it is non-valid if the result incorrectly reflects the actual phenomenon or performance development. The following argumentation describes the author's efforts to accomplish the study as accurately as possible in relation to the two concepts validity and reliability.

3.5.1 Validity Regarding the Quantitative Study

The quantitative approach that was used does not reflect an ideal comparison between companies that have successfully implemented TQM (award recipients) with companies that have not (competitors). When looking at the comparison between the award recipients and their competitors, the quality work of the competitors is a possible bias. This is due to the fact that at least some of the competitors are known to have been working with TQM, although they have not got, or maybe not even applied for, any quality award. The same situation is also a possibility for the companies that constitute the branch indices.

For the branch indices, there was another problem that might have influenced the validity. For the years before 1996, the branch indices are based on random samples of companies. However, this concerns only manufacturing companies with fewer than 20 employees and service companies with fewer than 50 employees. This resulted in the fact that the competitors included in the branch indices for five of the award recipients, vary up to year 1996[13]. However, the negative effect of this is limited since the branch indices still should reflect the general picture.

3.5.2 Validity Regarding the Qualitative Approach

Validity in qualitative research has to do with description and explanation, and whether or not a given explanation fits a given description (Janesick, 1994). In other words, is the explanation credible? All knowledge and claims to knowledge are reflexive on the process, assumption, location, history and context of knowing and the knower (Altheide & Johnson, 1994). From this point of view, validity depends on the interpretive communities, or the audiences who may be other than researchers and academics, and the goals of the research. In other words, the validity will be quite different for different audiences. The forthcoming discussion shows which view of validity that has permeated the qualitative approach.

Yin (1994) discusses three different types of validity concepts in a case study; construct validity, internal validity and external validity, where the internal validity is a concern only for casual or explanatory case studies.

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[13] *In the first year of the comparison period all companies that constitute the branch indices are included, irrespectively of what year the comparison period began. But for quality award recipients with comparison periods starting earlier than 1996, the branch indices only constitute those that happened to be included in the random sample, for the years up to year 1996.*

Construct validity deals with establishing the correct operational measures for the concepts being studied (Yin, 1994). It is important for the researcher with a case study approach to describe the studied phenomena as correctly as possible, which implies that the researcher's comprehension and interpretation of the studied phenomena should be in accordance with the real phenomena. The use of multiple sources, the establishment of a chain of evidence and a review of the drafted case study report by key informants, are three available tactics to increase the construct validity (Yin, 1994). The use of multiple sources of evidence has in the two multiple-case studies been represented by interviews, documentation collection, and to a certain extent direct observation. All the within-case analysis and case descriptions that are presented are detailed, homogenous and frank in order to enable the reader to follow the chain of evidence. The key participants have reviewed the narrative that was based on the interviews and documentary information, in order to correct misinterpretations or careless mistakes.

3.5.3 External Validity and Generalizability Regarding the Qualitative Approach

The external validity problem is a major barrier in doing case studies. The external validity deals with the problem of knowing whether a study's findings are generalizable beyond the immediate case study (Yin, 1994). The external validity is the extent to which the results of the research project can be applied in other situations than the one surveyed (Merriam, 1998).

> *"Critics typically state that single cases offer a poor basis for generalisation. However, such critics are implicitly contrasting the situation to survey research, in which a "sample" (if selected correctly) readily generalises to a larger universe. This analogy to samples and universes is incorrect when dealing with case studies. This is because survey research relies on statistical generalisation, whereas case studies (as with experiments) rely on analytic generalisation. In analytical generalisation, the investigator is striving to generalise a particular set of result to some broader theory"*
>
> (Yin, 1994, p. 36)

Are the qualitative researchers limited to only describing the people or phenomenon observed, or can they generalize to a larger subgroup? The opinion within the qualitative research arena differs. From a scientific perspective, generalizability is only possible when the elements in the sample are representative of the population (Potter, 1996). On the

contrary, Yin (1994) argues that the sampling logic is inadequate for the multiple-case study design. Instead the replication logic, which is analogous to that used in multiple experiments, should be used. There are examples of qualitative researchers that do generalize, and those that do not.

Here the author of this thesis refers to the earlier discussion concerning the choice of multiple-case study design. The choice of case study design was based on the possibility to do a literal replication, which means if all cases turn out as predicted, the cases would have provided compelling support for the initial set of propositions. If the nine cases in *Multiple-case study 1* should be in accordance, and the three cases in *Multiple-case study 2* should be in accordance, the cases are sufficient replications to convince the reader of a general phenomenon. Furthermore, the cases are also compared with the theoretical findings in order to validate and develop them, in what is known as analytic generalisation (Yin, 1994).

3.5.4 Reliability Regarding the Quantitative Approach

In order to ensure the reliability of the quantitative study, all of the collected financial performance figures were studied and interpreted following the same procedure and norms. The material was also checked twice in order to eliminate any mistakes. For further methodological explanations that affect the reliability, see appended paper 1.

3.5.5 Reliability Regarding the Qualitative Approach

The goal of reliability is to minimize the errors and biases in a study. In a case study this means that another investigator should be able to carry out the same case, following exactly the same procedures and arrive at the same findings and conclusions. The case study protocol is an especially effective way of dealing with the overall problems of increasing the reliability of case studies (Yin, 1994).

In order to ensure the reliability of the multiple-case studies, case study protocols were developed (see appendix 1 & 3) and followed during all case studies. These documents describe the procedures and the general rules that are followed during the case studies and allow and facilitate the readers' possibility to follow the research process. The interview questionnaires (see appendix 2 & 4), the listed documentation and the recorded interviews would make it possible for another researcher to walk the same path during the data collecting phase. The description over how the data material was analysed also ensures the reliability in this study. Finally, all empirical raw material, i.e. the transcribed interviews, were

compiled in research reports, see Hansson (2001a) and Hansson & Palmberg (2003).

4 Summary of Research Results

This chapter summarises the results of all five appended papers. The reader is referred to the individual papers for a more detailed discussion regarding the results, and their relation to previously presented theory.

4.1 Summary of Results of Paper 1
"The impact of TQM on Financial Performance"

This paper, co-authored with Henrik Eriksson, aims at studying the effects of a successful implementation of TQM on financial performance of companies. More specifically, the paper describes whether companies in Sweden that have successfully implemented TQM have a better financial performance development than their stated competitors and median branch indices.

The comparison concerns the development of different financial performance indicators for 17 recipients of the Swedish Quality Award[14]. For further explanations regarding the sample of organisations and exclusions of observations, see Section 3.3 and Hansson & Eriksson (2002). The findings indicate that the financial performance, measured according to the stated indicators[15], develops more advantageously for companies that have successfully implemented TQM than their branch indices and stated competitors. The study of performance development is divided into one implementation period and one post implementation period. The implementation period starts four years before the announcement of the recipient of the award and ends two years before the announcement. The post implementation period starts one year before the award was received and ends one year after the award, see Figure 4-1.

The difference between the award recipients and the competitors for the indicators during the implementation period was calculated by, first, subtracting all competitors' values (for the three years) for each indicator from each single award recipient's indicator. Second, the median difference was calculated, based on the differences between the award

[14] *As described earlier within the frame of this thesis, quality award recipients are used to define organisations that successfully have implemented TQM.*
[15] *I.e. the indicators Percentage change in sales, Return on assets, Return on sales, Percentage change in total assets and Percentage change in number of employees.*

recipients and the competitors for the indicators for all of the three years in the implementation period. The same procedure was used for the other comparisons and periods.

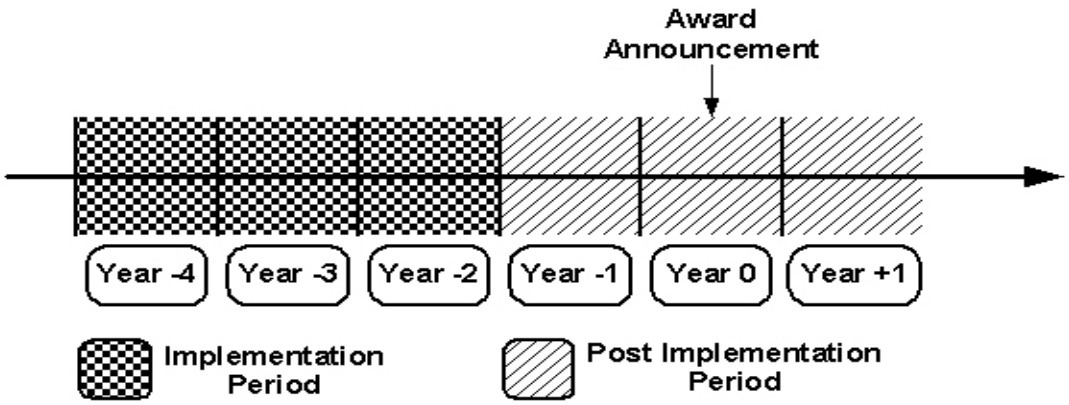

Figure 4-1 *The years included in the implementation period and the post implementation period. (From Hansson & Eriksson, 2002.)*

During the implementation period the award recipients did not necessarily perform better than their competitors and branch indices, see Figure 4-2.

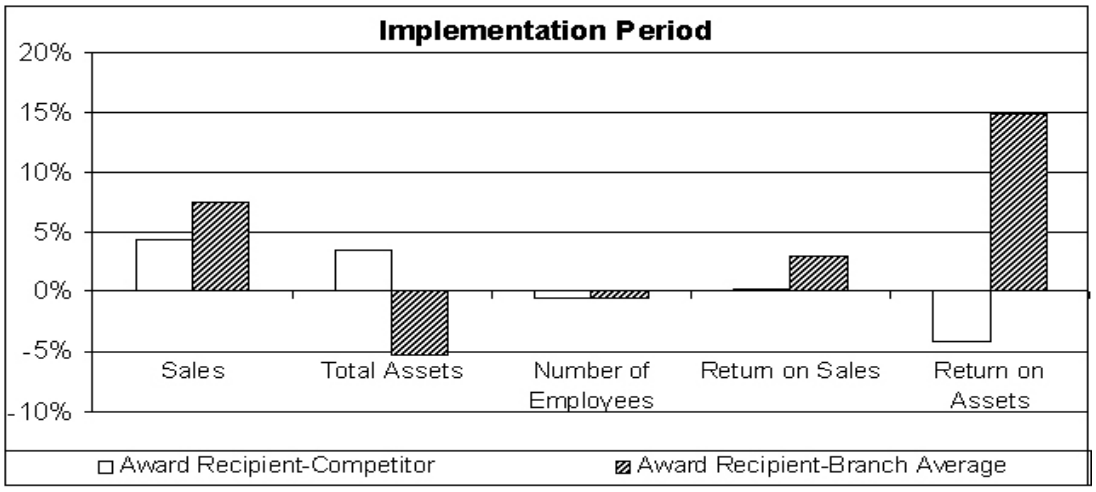

Figure 4-2 *The median value of the differences between the award recipients and the competitors, and between the award recipients and the branch indices of the indicators during the implementation period. A positive percentage means that the award recipients as a group outperforms their competitors or branch index. (From Hansson & Eriksson, 2002.)*

On the other hand, the award recipients performed better than their competitors and branch indices concerning all the studied indicators during the post implementation period, see Figure 4-3.

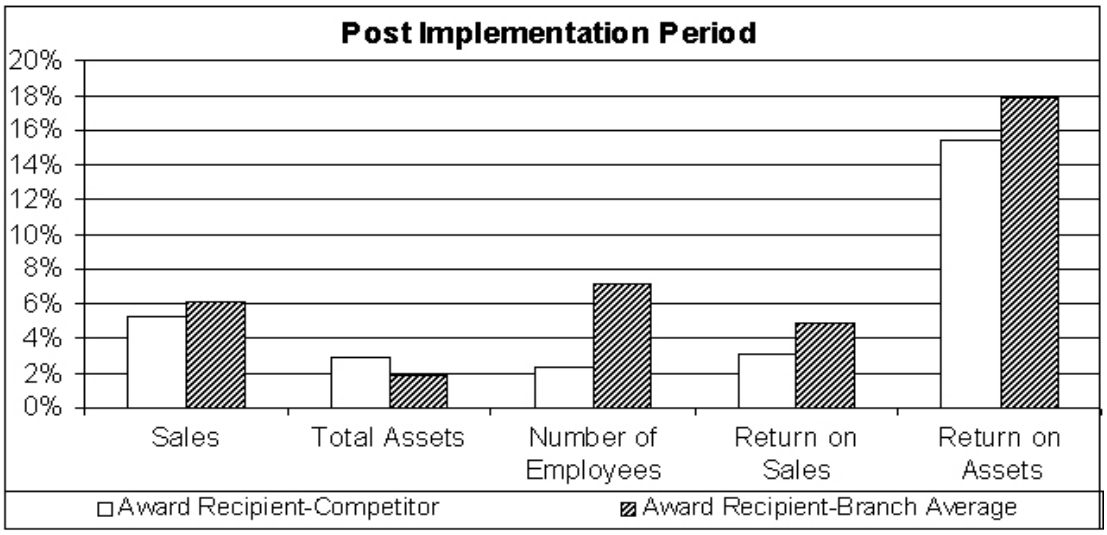

Figure 4-3 *The median value of the differences between the award recipients and the competitors and between the award recipients and the branch indices of the indicators during the post implementation period. A positive percentage means that the recipients as a group outperforms their competitors or branch index. (From Hansson & Eriksson, 2002.)*

As an example, the award recipients showed significantly higher return on assets than their competitors and the branch indices during the post implementation period of TQM. Table 4-1 shows non-parametric confidence intervals for the differences, at a 95 % confidence level, for the indicators presented in Figure 4-3.

Table 4-1 *Non-parametric confidence intervals with a 95 % confidence level for the indicators and the comparisons with the competitors (Comp.) and the branch indices (Index) during the post implementation period. (From Hansson & Eriksson, 2002.)*

Indicators	**Sales**		**Total Assets**		**Number of Employees**		**Return on Sales**		**Return on Assets**	
Comparison	**Comp.**	**Index**	**Comp.**	**Index**	**Comp.**	**Index**	**Comp.**	**Index**	**Comp.**	**Index**
Upper Limit	7,83	8,45	8,31	7,50	10,34	13,04	8,63	7,52	36,18	61,17
Lower Limit	-3,51	1,26	-8,55	-2,43	-6,31	3,33	-0,53	0,04	3,48	6,12

During the post implementation period, and for the comparison between the award recipients and the branch indices, there is significant difference, in the sense that the award recipients outperform the branch indices for the indicators of change in sales, number of employees, return on sales and return on assets. However, there is only a significant difference for the indicator of return on assets, when comparing the award recipients with the competitors during the post implementation period. This may be due to the fact that the competitors in several cases are working with TQM although they have not received a quality award. This comparison is therefore not perfect. On the other hand, one can argue that the comparison with the branch indices reflects the reality better than the comparison with the competitors, since the branch indices include many companies from that specific branch. The results indicate that the award recipients as a group outperform the branch index and their identified competitors on most of the studied indicators.

4.2 Summary of Results of Paper 2
"Implementation of Total Quality Management in Small Organisations: A Case Study in Sweden"

This paper presents the results of a multiple-case study of nine small organisations that have received a national or regional quality award in Sweden. The fact that the organisations have received a quality award is used as a proxy for a successful implementation of TQM. The objective was to increase the knowledge concerning small organisations' work towards TQM. The resulting data accounts for the comprehension and experience from the implementation processes within the organisations.

More specifically, the paper describes how small organisations that successfully implemented TQM have worked, and what problems that have emerged, during the implementation process. With the core values, techniques and tools as a basis, questions were generated with the aim of describing the organisations' quality development process, with a focus on their experience from that process. The two groups of respondents, i.e. management and employees, described the successful implementation process of TQM, and the pros and cons they could recollect of their quality journey, connected to their resource situation, knowledge situation and the theory of TQM. The comparison between the cases, referring to which core values that have been perceived, shows the similarities and differences between the cases. The major result is which of the six core values that permeate the organisations since it indicates both which core values the organisations mainly have been working with and which core

values that presumably are advantageous to focus on at the beginning of the implementation process. Two groups of core values could be identified from the study, namely one group permeating all organisations and one group permeating some organisations, see Figure 4-4.

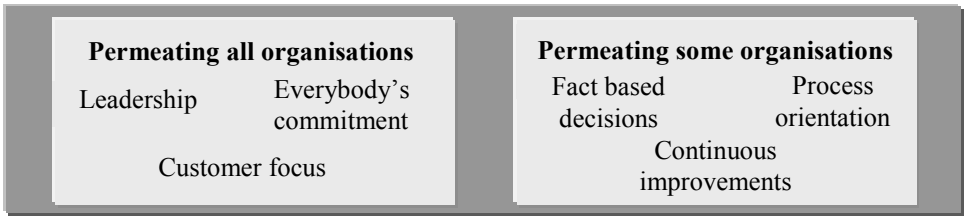

Figure 4-4 Two different groups of core values that were identified in the studied organisations. (From Hansson, 2001b.)

The similarities between the nine cases can best be described for the core values *leadership*, *everybody's commitment* and *customer focus*, see Figure 4-5. In all cases the respondents stated that these three core values should be among the first to be implemented among the six available[16]. For the remaining core values, no clear connection could be found between the different cases.

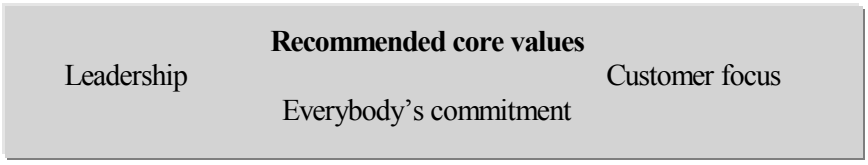

Figure 4-5 The three core values that are recommended to be among the first to be implemented. (From Hansson, 2001b.)

The experienced pros and cons in the organisations concerning the resource situation are divided into two aspects, the time and funds aspects. One could distinguish two common occurrences. Firstly, the available assets during the implementation process have not brought any distinctly stated obstacles for the organisations. This occurrence was mainly due to the managements' awareness of the importance of the quality development work. The knowledge situation in the studied cases has affected the implementation process both positively and negatively. The advantages concerning the actual knowledge situation during the implementation process can roughly be divided into three areas. Firstly, all organisations stressed the availability of education, as being the most important factor for the favourable knowledge situation. Secondly, the

[16] *The definition of TQM by Hellsten & Klefsjö (2000) was used and consequently the six core values described in their model, see Section 2.1.*

main part of the organisations stressed that the work in cross-functional teams affected the understanding of the TQM concept positively. Thirdly, many of the organisations experienced that people had a pre-understanding of some of the core values due to which line of business the organisation was operating in. The prevailing knowledge situation during the implementation process has in all cases brought obstacles concerning the core value process orientation and also the self-assessment process in connection with the quality award process. The importance of committed leadership and participation of the co-workers was found to be a considerable prerequisite for successful implementation. Another implication from this study was that work towards process orientation appeared as a significant problem area.

4.3 Summary of Results of Paper 3
"A Core Value Model for Implementing Total Quality Management in Small Organisations"

Co-authored with Bengt Klefsjö, this paper presents factors determined from a literature study to be important to succeed with the organisational change that TQM implementation implies. The paper also presents a multiple-case study of TQM implementation processes in nine small organisations with a focus on core value aspects[17]. Furthermore, aspects of importance for succeeding with a TQM implementation considering the required organisational change are described.

One significant similarity is that the three core values, committed leadership, everybody's commitment and customer orientation permeated all organisations at the time when they received the quality award. In a majority of the cases at least one of these three core values was partly evident in the organisation even before the formal quality development work started. The fact that all organisations had implemented these core values implies that they are both important and suitable to start with when implementing TQM. Comparing the empirical findings concerning the implementation and permeation of the core values with the theoretical frame of reference one could interpret three discernible phases in the change process. By combining the empirical regularities with these steps, an overarching model structure is obtained. The structure of the model, depicted in Figure 4-6, describes the three phases, where work with core values and activities interact and affect each other.

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[17] *The empirical foundation used consists of the same multiple-case study as in paper 2.*

Phase 1

Activities	Core values to develop
Establish a joint view of the need for changing and how to change	Committed leadership Everybody's commitment

Phase 2

Activities	Core values to develop
Establish a structure with cross-functional teams Educate and train for working towards the group objective	Everybody's commitment Customer orientation

Phase 3

Activities	Core values to develop
Work according to the structure Educate and train for further group objectives and continuously evaluate the change process	Process focus Fact based decisions Continuous improvements

Figure 4-6 The recommended overarching implementation model consisting of three different, partly overlapping, phases structured by the core values. (From Hansson & Klefsjö, 2003.)

This model implies that a TQM implementation in small organisations should start with the core values committed leadership, everybody's commitment and customer orientation. Activities in combination with working with core values demonstrate the authors' conclusions from successful implementation processes in the nine cases, compared and analysed with the theoretical base.

4.4 Summary of Results of Paper 4
"Managing Commitment - Increasing the Odds for Successful Implementation of TQM, TPM or RCM"

This paper, co-authored with Fredrik Backlund and Liselott Lycke, examines the implementation of TQM, TPM and RCM[18] by means of literature and case studies. The objective was to identify aspects of importance for succeeding with a TQM, TPM or RCM implementation considering the required organisational change and look for similarities between these change concepts.

The paper consists of two parts. The first part includes a comparative study of literature on TQM, TPM and RCM implementation, focusing on organisational change. The literature searches located a great deal of material, and approximately 25 to 30 papers on TQM, TPM and RCM were considered relevant and were compared, see Backlund & Hansson (2002). By means of affinity-diagram methodology, see for instance Bergman & Klefsjö (2003), the material on TQM, TPM and RCM was grouped into various subject categories. The study found several common categories of activities when implementing TQM and the maintenance methodologies, see Figure 4-7. These categories can be considered crucial to obtain management and employee commitment.

[18] *Total Productive Maintenance (TPM) and Reliability Centred Maintenance (RCM) are two maintenance methodologies.*

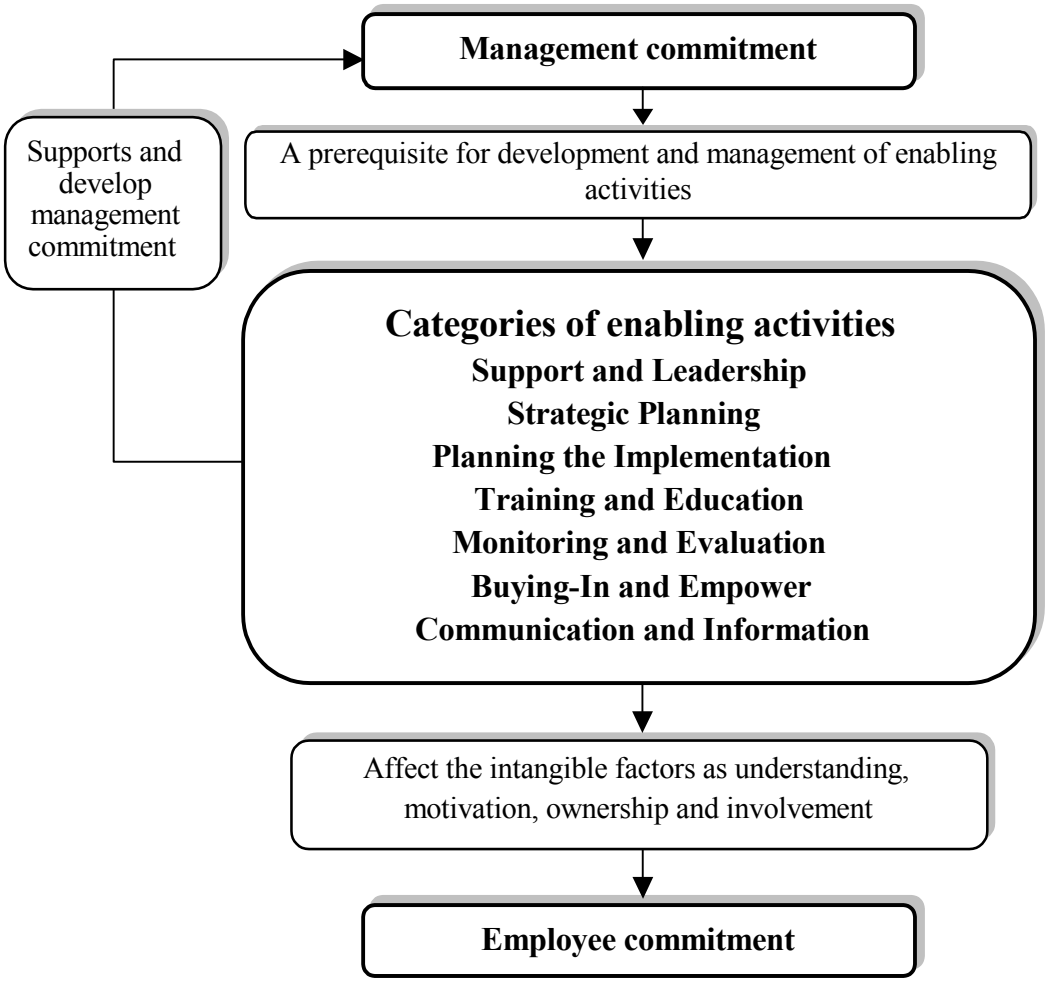

Figure 4-7 *Important categories in managing commitment according to the discussed literature review. (From Hansson et al., 2003.)*

The second part of the paper uses case studies on TQM, TPM and RCM implementation in order to validate the categories identified, and to yield recommendations on the handling of activities within these. The TQM case study, performed in 2000, is described in Section 3.4, designated as *Multiple-case study 1*. The TPM case study was conducted between 1995 and 1998 at a production unit with 320 employees in a Swedish company manufacturing mobile hydraulics. The unit was implementing TPM. The RCM case study was conducted between 1997 and 2002 at a Swedish hydropower company with approximately 400 employees. The main focus was planning and preparation for implementing RCM, based on two major pilot projects.

The structure of common categories identified, should facilitate management of intangible factors as understanding and motivation, and thereby promote commitment during implementation. The findings

implied that committed management, as a prerequisite, should focus on activities within the important categories: leadership and support, strategic planning, training and education, monitoring and evaluation, buying-in and empowerment, and information and communication. This should promote the employee commitment, which is essential for a successful implementation.

4.5 Summary of Results of Paper 5
"Sustaining Quality Management Implementation in Small Organisations- Experiences from Quality Award Recipients"

This paper focuses on small organisations that have successfully implemented TQM in the sense that they have received a quality award, and describes their quality related work. The objective was to describe how the quality management work is organised and the TQM components in small organisations that have implemented TQM. The study describes which approaches and tools that are used in small TQM organisations and how they are used, from both an organisational and operational perspective. The paper also describes the opinions among the actors involved in the quality work regarding the identified approaches and tools.

The multiple-case study that constitutes the basis for this paper has pointed out different approaches for quality development work among small organisations. In the TQM discourse, different statistical and process controlling approaches and tools, e.g. quality function deployment and control charts, are well represented. These types of TQM components were not apparent in the studied organisations. Instead, their TQM work consisted of, and were sustained by, approaches focusing on external and internal customers, where measurements of external customer satisfaction, and employee development, involvement and satisfaction, comprised common TQM components. This implies that a customised approach for TQM implementation in small organisations should turn the focus from extensive technical tools and approaches, to less complex methods[19], such as customer surveys and employee development approaches. Such a turn could consequently ease the negative effects of a higher unit cost of providing training for smaller organisations.

[19] *Methods refer here to approaches, techniques or tools.*

The study also indicated that small organisations could succeed with, and sustain, a TQM implementation without a thorough and formal organisational structure for quality. Instead, a more informal and all-involving approach could be suggested based on the findings. However, at the same time, apparent division of responsibilities for quality issues seem to be needed. Such an approach could be facilitated by the advantage that the management actions are very apparent in a small organisation context.

5 General Discussion and Conclusions

This chapter contains a supplementary discussion of the conclusions and implications of the findings of the present study. Also, the author's opinion of major strengths and weaknesses of the findings are discussed. The readers are referred to the appended papers for a more complete discussion of all the research results.

5.1 Introduction

This thesis has attempted to contribute to the understanding of performance and implementation aspects of TQM. More specifically the aims were to estimate the financial performance development of TQM organisations and to generate knowledge of small organisations' work towards TQM. Four research questions were formulated to address these aims, see Figure 5-1.

General research questions irrespective of organisational size

1. What are the effects of a successful implementation of TQM on the financial performance of companies?

2. What aspects are of importance for succeeding with a TQM implementation considering the required organisational change?

Research questions in the context of small organisations

3. How have small organisations worked that have successfully implemented TQM and what problems have emerged during the implementation process?

4. How is quality management work organised and what are the TQM components in small organisations that have implemented TQM?

Figure 5-1 The research questions formulated to address the aims of this thesis.

The following discussion will outline how the results derived from this study address these research questions, and at the same time integrate the findings into the theoretical context described within the frame of this thesis. Figure 5-2 describes in what way the different papers appended address the research questions, and how the research questions address the two purposes of this thesis.

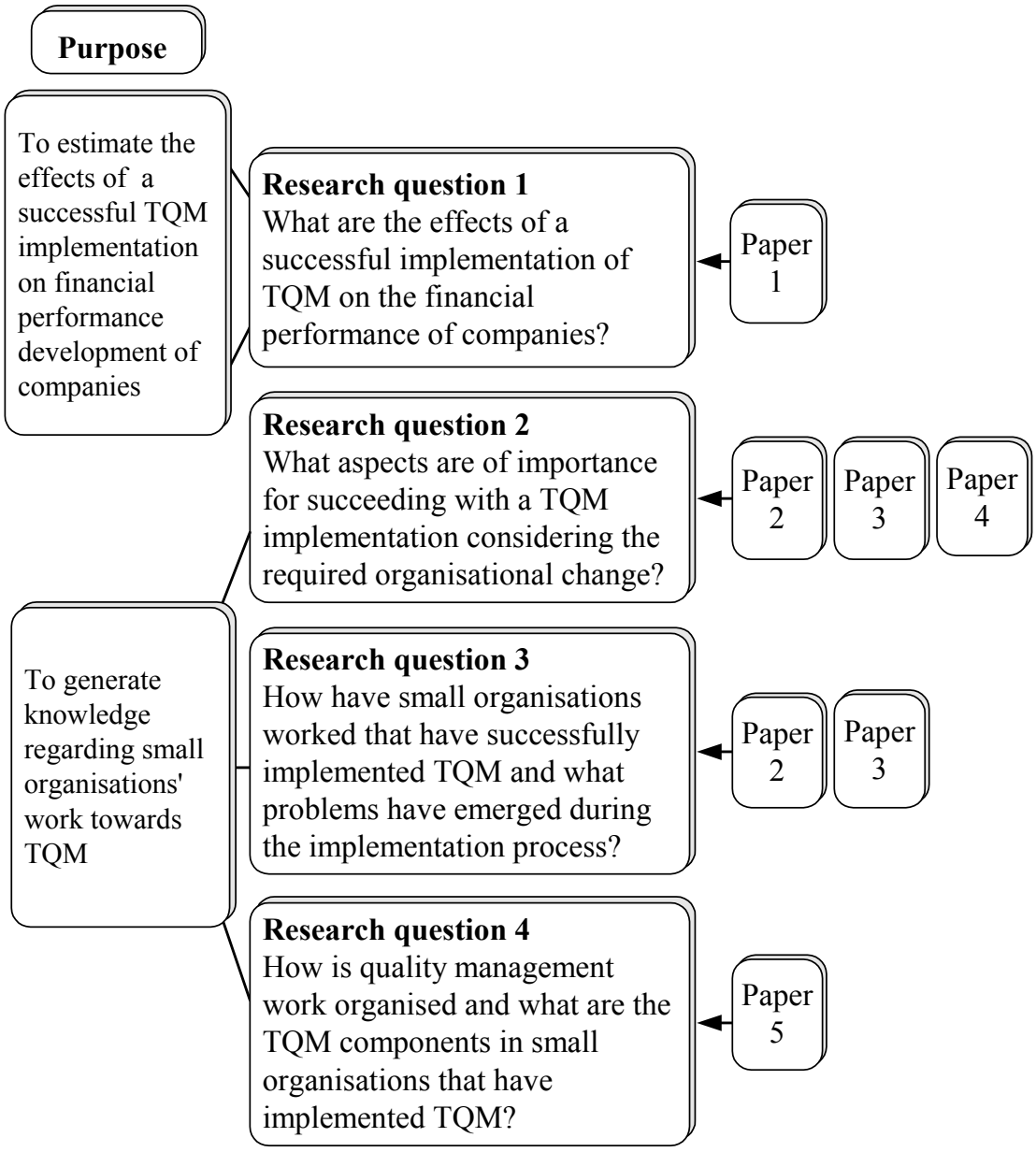

Figure 5-2 The four research questions and in what way the appended papers address them.

5.2 TQM and Financial Performance

In the study presented in paper 1, which aimed at investigating the performance development of organisations that have successfully implemented TQM, the results imply that the financial performance developed more advantageously for TQM organisations. As a clarification one may call attention to the fact that, according to the findings, the performance development was more advantageous only after the implementation, i.e. during the post implementation period. The positive trend was not as apparent when studying the differences between the quality award recipients and their stated competitors and median branch indices during the implementation period. This might be due to the fact that the implementation process requires financial resources, which subdue the possible gains of implementing the concept. However, during the post implementation period, and for the comparison between the award recipients and the branch indices, there are significant differences, in the sense that the award recipients outperform the branch indices for the indicators of change in sales, number of employees, return on sales and return on assets.

When discussing these results in relation to previous research on TQM and performance, both contradictions and confirmations are apparent. The findings support research conducted by e.g. Hendricks & Singhal (1997; 1999) and Wrolstad & Krueger (2001), whose results also imply that a successful TQM implementation correlates to an advantageous financial performance development. The findings by Hendricks & Singhal (1997; 1999) were based on data from an implementation period and a post implementation period, each consisting of five years. Their findings were to some extent more distinct regarding the difference between non-TQM organisations and TQM organisations, in the way that the numerical discrepancies were larger between the performance indicators when comparing the implementation and post implementation periods. This might be explained by the measurement timeframe being more extensive.

At the same time, the findings presented in this thesis are contrary to conclusions made by e.g. Eskildson (1994) and Bergquist & Ramsing (1999). Bergquist & Ramsing (1999) were not able to determine whether quality award recipients perform better than others. However, their study included a mix of quality award recipients from a five-year period between 1990 and 1995, and their financial performance indicators were derived from the same time frame. This means that there were no considerations of implementation and post implementation periods, which might be one reason for the contradictory result.

The findings derived from this study indicate that there is a link between successful TQM implementation and an advantageous financial performance development. This implies that TQM, as a means for systematic and holistic quality management efforts, should be profitable in the long run.

The strengths of the study presented in paper 1 are that all profit-seeking companies that received a quality award in Sweden up to 1999 are included[20] and the use of multiple control groups during the comparisons. A weakness is that some of the competitors in the study systematically work with TQM although they have not received a quality award. This results in that the comparison between quality award recipients and their stated competitors not perfectly reflects the difference between a TQM organisation and a competitor that has not implemented TQM. At the same time, the unsatisfactory reflection, to some extent, strengthens the indications when considering effects of successful TQM implementation since the "positive" difference probably would probably have been larger without any TQM permeated competitors.

5.3 Important Aspects for Succeeding with a TQM Implementation Considering the Required Organisational Change

The findings of papers 2, 3 and 4 reveal important aspects for succeeding with a TQM implementation. The importance of committed leadership and participation of the co-workers were found to be a significant prerequisite for successful implementation, which is in accordance with several other studies, see e.g. Eisenstat (1993), Bardoel & Sohal (1999), Saad & Siha (2000) and Aghazadeh (2002).

Furthermore, theoretical investigations implied that intangible factors, such as understanding, motivation, ownership and involvement were considered essential for promoting employee and management commitment, see e.g. Beer et al. (1990), Pettigrew & Whipp (1991) and Bate (1995). The discussed comparative study of literature on TQM, TPM and RCM implementation, focusing on organisational change found several common categories of activities when implementing TQM and the maintenance methodologies. The findings indicate that committed

[20] *All quality award recipients except for the four recipients that due to unreliable data were excluded, see Section 3.3.*

management, as a prerequisite, should focus on activities within the following categories: *leadership and support*, *strategic planning*, *training and education*, *monitoring and evaluation*, *buying-in and empowerment*, and *information and communication*. These categories can be considered crucial for affecting the intangible factors and in turn promoting management and employee commitment.

As a management system consisting of values, techniques and tools, TQM focuses to a large extent on matters related to organisational development. The core values focus on achieving commitment and other intangible factors such as involvement and active interest. However, implementation often fails due to, for example, lack of commitment. Consequently, intangible factors, even if taken into account of by TQM, are difficult to manage and handle. The intangible factors and the categories presented to handle them could hopefully support any effort towards implementing TQM.

This part of the study has, according to the present writer, both strengths and weaknesses. One weakness is the question of contextual aspects since these have been difficult to consider when analysing the findings. Contextual aspects, such as corporate culture, are important due to their influence on individual characteristics, such as attitudes and expectations. The contextual aspects may be considered to be unique to each organisation, due to, for example, historical events, type of business, and environment. Therefore, contextual issues were problematic to take into account in the studies. An organisation aiming at implementing TQM must naturally consider its context when making implementation efforts, but considering this is beyond the scope of this thesis. One of the major strengths is that the findings are based on several sources such as findings of a multiple-case study, and implications of comprehensive theoretical studies of the quality management and general change management discourse.

5.4 Small Organisations Work with TQM Implementation

Previous research has pointed out that there is a general need for a customised approach when implementing TQM in small organisations. The findings of papers 2 and 3 point to several aspects that might serve as a basis for such a customisation.

The implementation model in paper 3, described in Section 4.3, shows similarities with the synthesis of the two different recommendations presented in Table 2-2. These similarities mainly concern the different activities that might, by way of suggestion, be carried out when implementing TQM in the context of small organisations. These activities are, however, further complemented in the implementation model by recommendations for core value development. The core values leadership, everybody's commitment and customer focus were stated to be among the first to be implemented and that they in fact also permeated all of the studied organisations. The fact that all organisations had implemented these core values indicates that they are both important and suitable to start with when implementing TQM in the context of small organisations. According to Ghobadian & Gallear (1997), the small organisation's management enjoys a high degree of visibility that could facilitate the efforts to emphasise the importance of quality. The findings in this thesis give further support to their conclusions. The findings also support the results of Ghobadian & Gallear (1996) and Haksever (1996) regarding the implications that the size of small organisations effectively facilitates efforts toward everybody's commitment and customer focus.

Additionally, the study has indicated that there are significant problems related to implementing one core aspect of TQM, namely process orientation. The findings imply that these problems were related to the state of knowledge that existed during the implementation process. This is in accordance with e.g. Garvare (2002) whose findings indicate that knowledge transference is critical when introducing process management.

Referring to previously conducted research on small organisations and TQM, one common argument is that small organisations have fewer resources, see e.g. Ghobadian & Gallear (1996) and Haksever (1996), which negatively affects their conditions for a successful implementation. However, the findings of the present study do not point to resource paucity as an obstacle for small organisations' TQM efforts. This could mainly be explained by the fact that the management of the studied organisations considered quality such an important issue that the necessary resources were allocated. This further stresses the importance of leadership, understanding and participation by the management. The negative aspect to do with resources was lack of time, which in many cases was perceived as the major problem during the implementation process. The availability of training and education, and the approach of using cross-functional teams were stressed as important for the overall understanding of the concept and the reasons for change.

One strength of this study is that all small organisations that had received a national or a regional quality award in Sweden were included. As a result, all small organisations in Sweden that have successfully implemented TQM[21] are included. One weakness is, however, that the case studies, that constitute the basis for the findings were, due to the relatively large number of included organisations, on a fairly overarching level and there were few opportunities to make deeper studies of the underlying causes of the apparent structure of the empirical findings.

5.5 The Organisation Structure and Quality Components of Small TQM Organisations

The findings of paper 5 indicate what approaches and tools are mainly used in small TQM organisations and how they are used, from both an organisational and an operational perspective. The TQM work consisted of, and was sustained by, approaches focusing on external and internal customers, where measurements of external customer satisfaction, and employee development, involvement and satisfaction, comprised common TQM components.

In the TQM discourse, different statistical and process controlling approaches and tools, e.g. quality function deployment and control charts, are well represented. These types of TQM components were not apparent in the studied organisations. Instead, their TQM work consisted of, and was sustained by, approaches focusing on external and internal customers. This indicates that a customised approach to TQM implementation in small organisations should perhaps shift the focus from extensive technical tools and approaches, to less complex methods, such as customer surveys and employee development approaches. More complex methods often require extensive training and education to be implemented. As small organisations experience a higher unit cost for providing training, see Storey (2002), the use of more complex methods and tools, which are not experienced as useful and stimulating if the knowledge is insufficient, might be postponed to later phases of the TQM journey.

The findings also imply that small organisations might succeed with, and sustain, a TQM implementation without a thorough and formal organisational structure for quality. Instead, a more informal and all-involving approach could be suggested on the basis of the findings. Such

[21] *According to the definition used in Sections 3.3.1 and 3.4.3.*

an approach could be facilitated by the advantage that the distance between the management and the staff is short and the vertical and horizontal division of labour is small compared to larger organisations, see e.g. Bohman & Boter (1984) and Vossen (1998).

One weakness of this investigation is that the empirical base consists of a small number of organisations, all belonging to one Swedish region. This is, however, not merely a weakness. Since all the studied organisations operate in different lines of business, the findings that were common to all organisations tend to be more generally applicable. Furthermore, one of the included organisations operates more on a national than regional level since the main customers are situated in the central part of Sweden.

5.6 Final Discussion and Implications for Research

This study has shown that there is a relationship between successful TQM implementation and financial performance. The study also reveals that there are common features of the implementation processes of TQM in a small organisation context. However there are still several areas that require further investigation related to these findings.

5.6.1 TQM and Performance

TQM and financial performance development might be further studied by making a follow-up study of the companies included in the investigation, in order to study whether the advantageous financial performance also holds in a longer perspective. Advantageous financial performance might be considered a major incitement for commitment and motivation among employees and management. Since their motivation and commitment are vital areas for sustaining TQM, se e.g. Dale et al. (1997), maintained advantageous financial performance is of importance for the future progress of TQM. Furthermore one could include other organisations, e.g. companies that applied for the award and that reached a certain level in the assessment, in order to enlarge the empirical foundation and further outline how different levels of TQM adoption affect financial performance.

The present investigation of TQM implementation and financial performance development might also be complemented by studies designed to analyse more clearly the possible casual links leading to increased financial performance. The research conducted within the framework of this thesis used comparisons between examples of successful TQM implementations and two control groups (i.e.

competitors and branch indices), studied during two time periods, in order to analyse effects on financial performance. Since the investigation is divided into implementation and post implementation periods[22], and the positive divergence is consequently is more significant during the post implementation period, one might argue that the findings indicate links between successful TQM implementation and advantageous financial performance, see Figure 5-3.

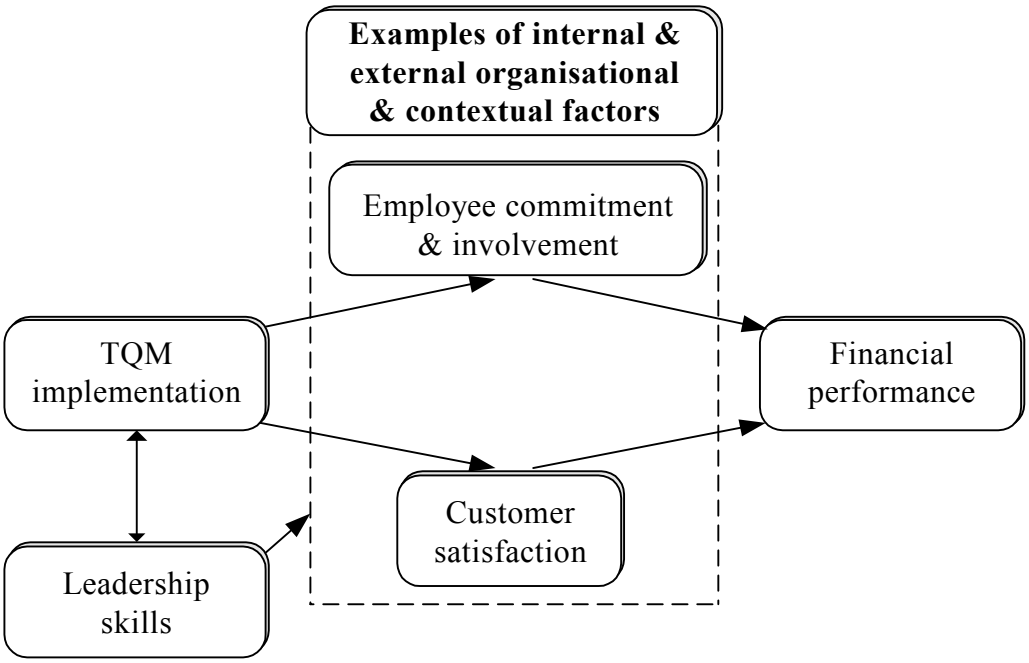

Figure 5-3 *One possible view of how successful TQM implementation could develop internal and external factors, which in turn have an impact on financial performance.*

Figure 5-3, visualises one view of how a successful TQM implementation affects internal and external organisational and contextual factors that in turn lead to improved financial performance. During previous discussions, see Section 5.2, one possible factor influencing the financial performance development during the implementation period is different implementation efforts. Since TQM implementation requires considerable resource investments, see e.g. Oakland (1989), Shin et al (1998) and Dale (1999), one might argue that possible benefits of the emerging TQM permeation (during the implementation period) are re-invested in further substantial implementation efforts. However, we do not know, by the findings of paper 1, if any benefits are really obtained during the implementation period or if potential benefits are of such significance that

[22] *This division is performed in order to more clearly relate the financial performance development to the successful implementation.*

they normalise the costs of implementation. Hence, one possibility is that the studied organisations perform better than the control groups used before the implementation efforts starts, and that the implementation investment decreases the level of profitability during the implementation period. Consequently, internal and external contextual and organisational factors, such as skilled management or employee involvement, prevailing within the organisation before the TQM implementation efforts were initiated, might have been one reason for better financial performance development after TQM implementation.

This possibility highlights the complexity of indicating causality between TQM implementation and financial performance development by the approach used to study this relationship. However, it is the author's belief that since TQM addresses management and employee aspects, an organisation that is already outstanding in these areas does not need substantial financial resources for implementation and consequently there would not have been any distinct differences between the financial performances during the implementation and post implementation periods. For further investigations, aiming at indicating casual links more clearly, studies examining when the principal implementation efforts starts, or exploring financial performance before implementation efforts are initiated, in combination with the approach used in this study, might be suggested. By, for instance, dividing the study into three periods, where a pre implementation period might be used in order to illuminate how the TQM organisation performed before the implementation efforts started, might address this problem, see Figure 5-4.

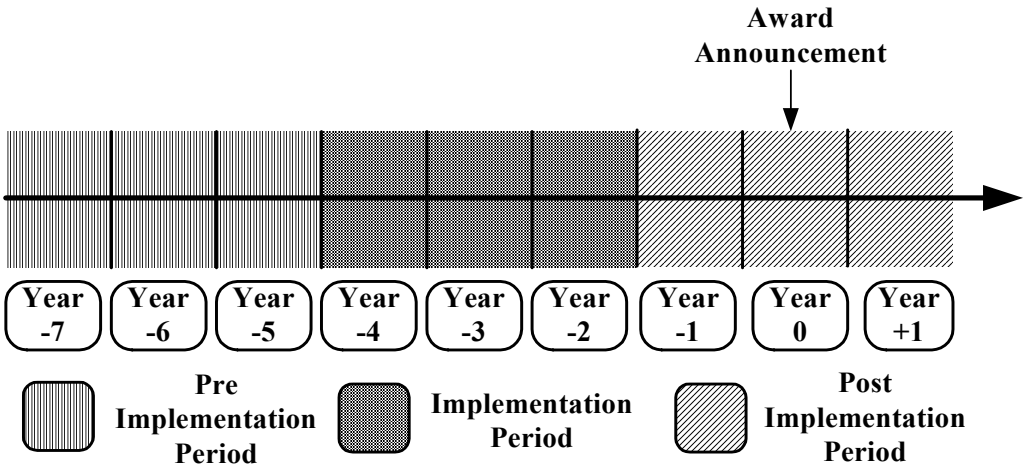

Figure 5-4 *A possible approach using three periods in order to explore more distinctively how TQM implementation affects financial performance.*

Additionally, an investigation aiming at exploring major TQM achievements, e.g. employee commitment, customer satisfaction or reduced amount of defects, among organisations that successfully implemented TQM, and studying their link to financial figures, could further explore the relationship between TQM and financial performance. Also, a study of the major areas of costs when implementing TQM compared with possible gains, and put in relation to financial performance development after implementation, will possibly add supplementary information important for facilitating the understanding of the relationship between TQM and financial performance.

Furthermore, investigations of the effect on more soft performance indicators, such as employee and customer satisfaction, would further complement the findings presented within the framework of this thesis. In addition, TQM implementation in the public sector or as support for societal development, see e.g. Rosenhoover (1996) and Fredriksson (2002), could be further analysed by studying such soft indicators, since financial performance is not sought for and is not as easily studied in these contexts.

5.6.2 TQM Implementation and Small Organisations

When considering the process of implementing TQM in small organisations, several interesting opportunities could be mentioned for expanding the findings of this study. One appealing approach would be to follow one or several organisations that intend to start a TQM implementation in order to follow the implementation process in a more detailed manner and without being forced to rely on historical and personal information. A major problem with such a study might be that the outcome of the implementation efforts is not necessarily successful, i.e. the researcher will not know at the beginning that such a study investigates a successful TQM implementation. If the studied organisations do not succeed in implementing, the findings may outline problems and reasons for failure although not as reliable implications for successful implementation as the findings could have resulted in if the organisations had succeeded in implementing TQM.

As implied by Storey (1994), the small organisation tends to have higher intra-organisational security in connection with higher inter-organisational insecurity. Since parts of the TQM concept deal with issues aiming at developing systematic approaches for e.g. increased knowledge of customers and competitors, an adoption of TQM should consequently ease the inter-organisational insecurity. The findings of the

research presented in this thesis indicate that successful implementation was highly dependent on intra-organisational factors such as management and employee commitment. Other implications of the findings are that intangible factors, in the intra-organisational area, are of major importance when implementing TQM in a small organisation context, see Figure 5-5.

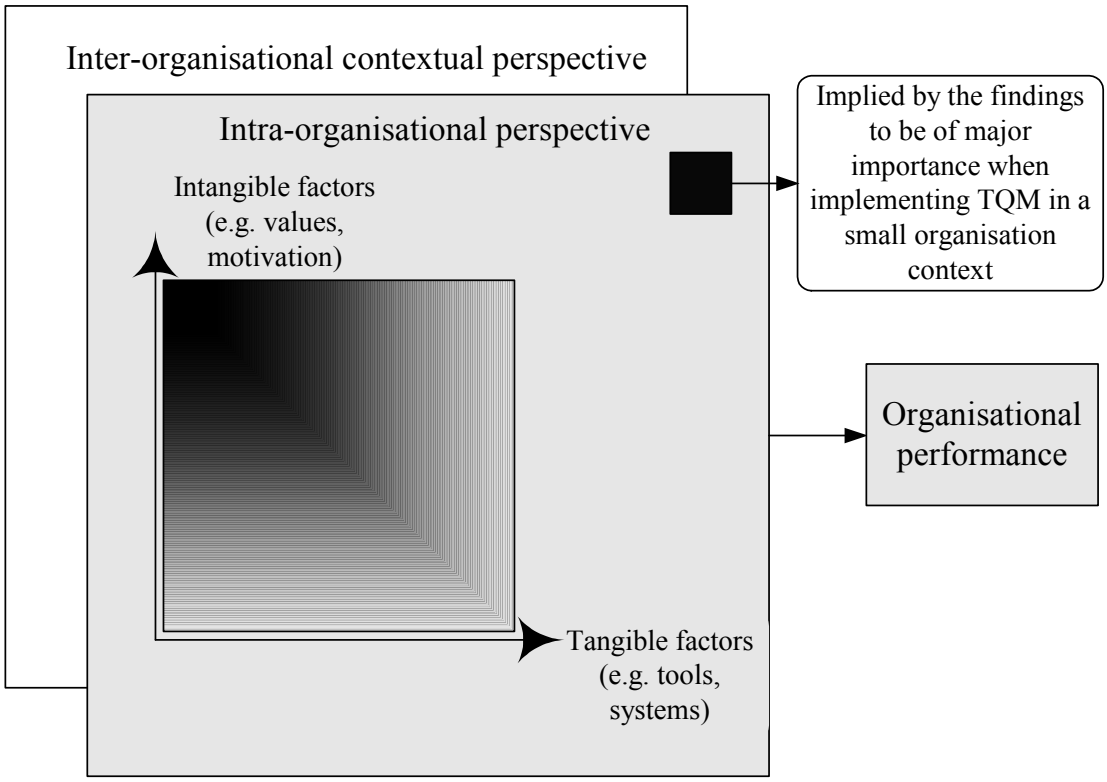

Figure 5-5 *The figure visualises that intangible factors within an intra-organisational perspective were found to be of major importance for succeeding with TQM implementation in a small organisation context.*

Several core values of TQM focus to a large extent on intangible factors related to e.g. committed employees and leadership issues. At the same time many of the concrete components, e.g. technologies and tools, are more focused on tangible factors, of which some are related to different statistical methodologies, which are not immediately accepted in a small organisation. A development of TQM components supporting intangible factors could further adapt the TQM concept to the small organisation context. By making studies, with an increased focus on how small TQM organisations address and develop intangible factors, and linking the findings to a further developed version of the implementation model presented in paper 3, an implementation model even more adapted to small organisations could be created.

On the other hand, although the small organisations studied have implemented TQM using values, technologies and tools with a focus on intangible factors, it is also very important to help small organisations to introduce and use different statistical methodologies to support and facilitate the handling and control of variation in different ways. An interesting area is therefore, how to support small organisations' use of statistical techniques and tools. Due to the knowledge and resource limitations, a network approach might be a solution.

Another approach might be to focus on a specific branch or sector in the small organisation context and thereby be able to build a more specific background of the small organisations' characteristics within the chosen frame. By making such a study the specific characteristics of the included small organisations could be more accurately put in relation to their implementation processes and consequently, an increased consideration of contextual issues might be obtained.

Furthermore, as TQM implementation calls for a substantial organisational change, an investigation aimed at combining TQM implementation theory and the organisational change management theory, based on both theoretical and empirical foundations, might increase the understanding of underlying factors of importance. Lack of knowledge among practitioners about how to use the apparent focus on soft issues within TQM to overcome common change management problems seems to be a major reason for failed implementation initiatives. As stated by Grieves (2000a), transitional initiatives, such as TQM, have tended to misunderstand and misapply much of the underpinning theory, methodology and intervention practices of organisational development theory. This has resulted in more radically programmed approaches rather than culturally democratic or pluralistic approaches to change. By bridging this gap, reasons for failed TQM implementation initiatives may be more easily understood.

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Paper 1

The Impact of TQM on Financial Performance

Hansson, J. & Eriksson, H. (2002).
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The impact of TQM on financial performance

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Abstract *The question of whether an adoption of total quality management (TQM) improves the financial performance has been discussed for several years. Various studies have been conducted to examine the impact of TQM on financial performance, but there is still disagreement concerning the effectiveness of TQM. This paper presents a study of Swedish quality award recipients, which are compared to branch indices and to identified competitors. The comparison concerns the development of different financial performance indicators. The study indicates that the award recipients as a group outperform the branch index and their identified competitors on most of the studied indicators.*

Keywords *Total quality management, Quality, Awards, Financial performance, Sweden*

Background

Total quality management (TQM) has been acknowledged as an important subject in management theory and practise during the last decades. The use of TQM among many western organisations has been relatively high during the 1990s, see for example, Lawler *et al.* (1995). However, the relationship between TQM practices and improved financial performance is discussed frequently in the TQM literature. Results have been published, which argue that TQM investments result in an improved financial performance, see, for instance, Shetty (1993), Hendricks and Singhal (1997), Easton and Jarrell (1998), Handsfield *et al.* (1998), Samson and Terziovski (1999), Reed *et al.* (2000), Allen and Kilmann (2001), Tena *et al.* (2001) and Wrolstad and Krueger (2001). Bergquist and Ramsing (1999) argue, on the other hand, that it is difficult to establish a relationship between TQM and the performance of the company. Results have also been published, presenting a more negative picture of TQM implementation benefits. Eskildson (1994) states, based on survey results, that many organisations do not succeed with their TQM efforts. The two main reasons are here argued to be vague definitions of TQM and inappropriate implementation. Also, Harari (1993) argues, based on own experience, that TQM programs are ineffective, and that at best one third of the TQM programs have achieved significant improvements.

The differentiation among research conducted, to outline financial benefits of TQM implementation, imply that the area needs further investigation. The approaches used to determine the benefits of TQM programs, and to find a relationship between TQM and the financial performance, also differ between the different studies. One approach to measure the effects of TQM investment on financial performance is to compare companies that have received a quality award against companies that have not received any quality award, see, for example, Hendricks and Singhal (1997). These two researchers use American companies in order to measure the effects of successful TQM implementations on financial performance. The approach to study the financial performance development of quality award recipients has not been used, according to extensive literature, on Swedish quality award recipients. Such a study would be a complement to earlier studies, also considering

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the facts that Sweden and the USA have different company cultures and that the award models are somewhat different.

As many still argue whether TQM programs are profitable, the purpose of this study is to form an opinion if companies in Sweden that successfully have implemented TQM have better financial performance development than median branch indices and their stated competitors.

Theory

TQM is frequently mentioned in discussions concerning quality and, according to Hodgetts (1996), all enterprises, regardless of size and financial status, are involved in the quality revolution. There exist many descriptions of the concept of TQM, but few clear definitions. For example, Oakland (1989), describes TQM as "an approach to improve competitiveness, efficiency and flexibility for a whole organisation". Dale (1994) and Huxtable (1995) describe TQM as an important management philosophy, which sustains the organisations in their efforts to obtain satisfied customers. Some argue that TQM is a management approach, while others state that TQM is a management system. In this article, the definition by Hellsten and Klefsjö (2000) is used. They define TQM as "a management system in continuous change, which is constituted of values, methodologies and tools, the aim of which is to increase external and internal customer satisfaction with a reduced amount of resources". For example, the core values of TQM are values such as customer orientation and committed leadership. Core values are also the basis of the quality award models. Self-assessment that is used when applying for an award can be seen as a methodology, and the criteria booklet of the Malcolm Baldrige National Quality Award and the Swedish Quality Award can be considered as examples of tools.

Lascelles and Dale (1991) identified six levels of adoption of TQM[1]. These levels are uncommitted, drifters, tool pushers, improvers, award winners and worldclass, see Figure 1.

It is argued by Lascelles and Dale (1991) that these levels are not necessarily the stages through which organisations pass on their TQM journey, rather they are characteristics and behaviors which organisations display in reaction to TQM. In level 5, award winners, the organisations have reached the stage of being able to compete for a quality award and some recipients of quality awards can be found in this level. At this stage the organisations have reached a point in their total quality maturity where they have developed the kind of cultures, values, trust, capabilities, relationships and employee involvement in the business that are required to receive a quality award (Lascelles and Dale, 1991). Ghobadian and Gallear (2001) use, among other criteria, the receiving of a quality award as a measurement for a successful implementation of TQM. Hendricks and Singhal (1997) also use the receiving of quality awards as a criterion for a successful implementation of TQM programs. According to Lascelles and Dale (1991), the last level, worldclass, which is only reached by a handful organisations, is characterized by the total integration of quality improvement and business strategy to creatively delight the customer.

There are many similarities between the existing national quality awards. Almost all of the existing national quality awards are carried out in the three evaluation dimensions of approaches, deployment and results, see Chuan and Soon (2000). The Swedish Quality Award model, which was inspired by the Malcolm Baldrige National Quality Award model, has many similarities with the latter. However, there are also differences between the two award models. For example, the Swedish Quality Award model puts more emphasis on the evaluation and improvement in all the criteria addressed and on the practice of TQM principles in all organisational activities. There is also relatively more emphasis on the organisation's impact on society, and on the organisation's commitment to the customers compared to most other national quality award models (Chuan and Soon, 2000).

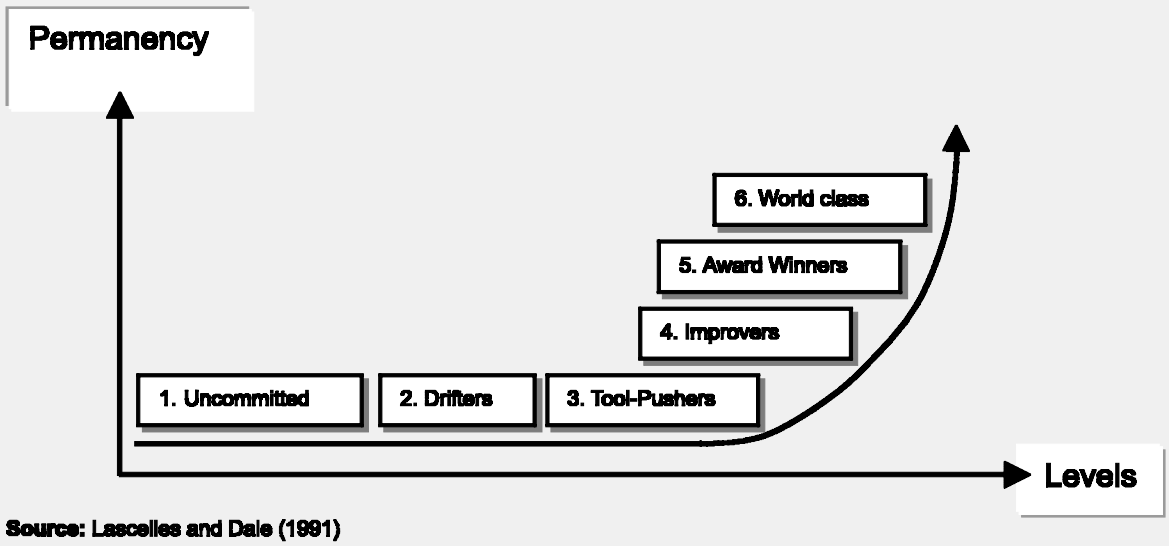
Performance can, as well as TQM, be defined in many different ways. The definition, provided by European Foundation for Quality Management (EFQM) (1999) is used is this article. EFQM (1999) defines performance as a measure of attainment achieved by an individual, team, organisation or process. There are many different indicators to measure the performance. This article sets out to measure TQM's impact on financial performance. In Hendricks and Singhal (1997), six indicators of the financial performance were used to illuminate the impact of TQM. These were change in operating income, change in sales, change in return on assets, change in return on sales, change in total assets and change in number of employees. Easton and Jarrell (1998) also use similar indicators, net income, operating income, sales and inventory, to evaluate the impact of TQM on financial performance.

Methodology

Definition of successful implementation of TQM

One of the first issues to be solved, when studying the impact of TQM on the financial performance, is what a successful implementation of TQM constitutes. Hackman and Wageman (1995) have, for example, provided a measuring framework, which can be used to test if TQM has been properly implemented. This framework was used in a qualitative study by McAdam and Bannister (2001) in order to determine if the framework of TQM was perceived to be implemented. Hendricks and Singhal (1997) and Ghobadian and Gallear (2001) use the receiving of a quality award as a criterion for a successful implementation of TQM. The same proxy was used in this study because the qualitative case study approach by McAdam and Bannister (2001) was

Figure 1 — The different levels of TQM adoption



Source: Lascelles and Dale (1991)

considered to be inappropriate due to the subjective judgement of what a successful implementation of TQM constitutes. Also, it was the intention to make a comparison with the results of this study with those of the Hendricks and Singhal (1997) study. Further, as shown in Figure 1, quality award recipients show a TQM maturity (Lascelles and Dale, 1991), and one can therefore argue that these companies have successfully implemented TQM.

Selection of companies

In this study, all Swedish companies that have either received the national, a regional or an in-company quality award were included. The regional and in-company quality awards are to a large extent based on the Swedish Quality Award criteria. The information about which companies that had received a quality award in Sweden was collected from the Swedish Institute for Quality (SIQ), which is the organisation managing the Swedish Quality Award. Only companies that are profit-driven were included in the study, because non-profit organisations do not always strive to increase the financial performance due to other business incentives. A total number of 21 companies conformed to these criteria. In some cases a unit of a larger company had received a quality award. In these cases the total company was included in the study if the unit that had received the award had 40 per cent or more of the total number of employees of the company. This limitation was set to get as many of the award recipients as possible included in the study and yet not decrease the reliability of the study. It can be argued that if 40 per cent of the company has implemented a TQM program, the rest of the company should to some extent also have been working with TQM. Further, since the authors wish to study the development of the financial performance after the award announcement, only companies that received an award in 1999 or before were included in the study (for quality award recipients later than 1999 no sufficient data are yet available). In total, 17 companies conformed to the above-described criteria. The exclusions that were made were due to the following reasons:

- One award recipient was closed down by their foreign owner and the production was moved abroad.
- One award recipient presented the financial figures in a way that made comparisons impossible.
- Two award recipients constituted less than 40 per cent of the company that provided the financial figures.

The companies that were included in the study came mainly from the manufacturing industry and had a relatively large number of employees (see Table I). The classification by the Commission of the European Communities regarding the size of companies was used (0-9 employees, 10-49 employees, 50-249 employees and 250 or more employees).

Table I — The table shows which year the companies in the study received the quality award, as well as type of business and the number of employees

	1994	1995	1996	1997	1998	1999	Total
Total number of companies	2	2	2	5	4	2	17
0-9 employees	–	1	–	–	–	–	1
10-49 employees	–	–	–	2	2	–	4
50-249 employees	–	–	1	1	1	2	5
250+ employees	2	1	1	2	1	–	7
Manufacturing industry	2	1	2	2	3	–	10
Service industry	–	1	–	3	1	2	7

Selection of comparisons

To assess the financial benefits of implementing TQM, it would be ideal to compare the actual companies' performance with the performance that would have been the case if the companies had not implemented TQM. Since it, in this study, was impossible find or construct such ideal comparisons, two other comparisons were chosen.

First, each company that had received a quality award in Sweden was individually compared to the respective branch index in order to make a valid comparison regarding financial performance. Different branch indices for different sizes of companies regarding total number of employees were available through Statistics Sweden (SCB). Each company that had received a quality award was, therefore, separated into different sizes (based on the number of employees) and branches.

Second, a comparison was performed with the award recipients' stated competitors, i.e. each award recipient was individually compared with one of its competitors. This comparison gives an idea how the quality recipients have developed in relation to their competitors. Only one competitor was identified for each company that had received a quality award. In those cases, when a competitor could not be identified or the competitors to the company were a non-Swedish company, no competitor was included in the study. In those cases, when the award recipient stated that they had many competitors, the competitor that was closest in size was selected. These two comparisons give an indication of the benefit of a successful implementation of TQM.

Selection of indicators

The five following indicators were used in order to study the performance development for the companies included in the study:

(1) Percentage change in sales.

(2) Return on assets, which is the result after financial income and financial costs divided by 0.7 multiplied by non-taxed reserves plus assets. This indicator is, according to Hendricks and Singhal (1997), an efficiency indicator, which is based on the assumption that implementing an effective TQM program increases revenues.

(3) Return on sales, which is the operating income divided by sales. This indicator is based on the assumption that an effective TQM program will increase revenues. Lemak and Reed (1997) discuss the advantage of using operating income instead of net income to ascertain the impact on financial performance of TQM. They state that operating income is a better measure of performance than net income since it is not greatly affected by accounting methods, tax strategies, or financial structure.

(4) Percentage change in total assets.

(5) Percentage change in number of employees. The opinions differ among TQM experts regarding what impact TQM has on this indicator, as well as change in total assets. Some claim that TQM requires investment in people and capital, resulting in an increase in employment and total assets. Others believe that TQM programs increase the effective productive capacity of the company because of process improvements and reduction in defects, rework, and waste among other things. This improvement could result in a decrease in employment and total assets (Hendricks and Singhal, 1997).

The indicators chosen and the approach for calculating and comparing them with the control groups differ to some extent compared to the study by Hendricks and Singhal (1997). Change in operating income was not included in our study, since some of the companies, both award recipients and their competitors, showed a negative operating income on some occasions. Owing to the fact that it is impossible to calculate a change in operating income from a negative result, expressed in percentages, this indicator was excluded. If change in operating income, expressed in percentages, were studied, and the companies that showed a negative operating income excluded on the occasions when they developed positively from a negative point of departure, the result from the operating income indicator would be biased. However, return on sales, which was included in this study, is defined as operating income divided by sales. Hence, the change in operating income is, to some extent, reflected in this indicator. Hendricks and Singhal (1997) excluded, when calculating the operating income, the years that the companies showed a negative operating income. However, one can argue that this gives a biased result. The number of companies included in our study is far less than in Hendricks and Singhal (1997), since the number of award recipients is much less in Sweden than in the USA, and the bias of excluding companies would therefore turn out to be even more severe for this study.

The same problem of calculating change, expressed in percentages, with negative numbers as departure also concerned the indicators return on sales and return on assets. The annual change of these indicators was not calculated. Instead, the results (the actual "value" in return on sales and return on assets) for the competitor and the branch index were subtracted from the indicator of the particular award recipient. Thereafter, a median value of the differences was calculated. This procedure was used for all the years included in the study.

The use of medians when comparing the performance indicators was based on the fact that the medians are more robust than average values to problems concerning outliers, wide tails or different forms of skewness.

The other indicators, change in sales, change in total assets and change in total numbers of employees were

calculated in the same way as by Hendricks and Singhal (1997). The change of these indicators for the competitor and branch index was subtracted from respective change of these indicators of the award recipient. Further, the median value of the difference between the award recipient and their stated competitor and branch index was calculated to give a general reflection of the development.

The indicators of the award recipients and respective competitor were found in annual reports available mainly from the companies and the Swedish Patent and Registration Office (PRV).

Selection of comparison periods

A six-year period, divided into one implementation period and one post implementation period, was studied regarding these indicators. The implementation period was defined as starting four years before the company received the quality award and ending two years before the award, see Figure 2. Since the applicants of the quality award start describing their activities and results approximately one year before the announcement of the recipient in order to hand in the application on time and give examiners and judges time to evaluate the application, it can be argued that the activities and results described in the application should be in place one year before the announcement of the recipient of the award. Hence it is most convenient to start the post implementation period one year before the announcement of the recipient of the award. The post implementation period started one year before the award was received and ended one year after the award, see Figure 2.

In the GAO (1991) study, 20 companies that were among the highest-scored applicants in 1988 and 1989 for the Malcolm Baldrige National Quality Award were evaluated. The companies in the GAO study realised the initial benefits with TQM after two and a half years. Hence, after a three-year implementation period, the companies in this study should be able to show possible benefits with TQM regarding the studied indicators. Also, the indicators were collected, if possible, after the post implementation period until year 2000, in order to see possible progress after the post implementation period (i.e. it is possible to study the development of the indicators after the post implementation period for the companies that received a quality award before 1999). This results in the fact that the development of the indicators can be presented up to two years after the award announcement.

Exclusions of observations

Some observations were excluded due to the following reasons:

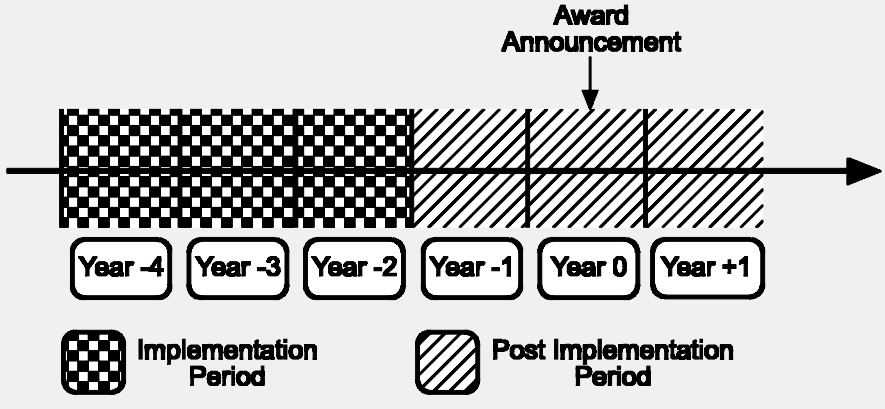
- Two quality award recipients of the year 1999 were excluded for the year after the post implementation period due to the fact that no current data were available.
- No Swedish competitor could be identified for four of the award recipients.
- No branch indices could be constructed for two of the award recipients within the insurance and real estate business.
- No branch indices were available between –5 and –4 for the indicators of number of employees and total assets.
- No branch indices were available for one award recipient for –4 and for one award recipient for –3, due to few companies in the branch indices.

Tables II and III present the number of comparisons made for the different indicators and for the different years.

Results

Two main types of results are presented below. First, the development of the indicators of the award recipients in comparison with the competitors and the branch indices is presented on an annual basis (see Figures 3-7). Second, the indicators of the award recipients in comparison with the competitors and the branch indices are presented as a median during the implementation period and the post implementation period (see Figures 8 and 9).

Figure 2 — The years included in the implementation period and the post implementation period



Annual comparisons

In Figures 3-5 the indicators, change in sales, change in total assets and change in numbers of employees are presented.

As shown in Figures 3-5 the award recipients outperform their competitors and branch indices for the indicators of change in sales, change in total assets and change in total number of employees for most of the studied years. The indicator, change in sales, shows the largest difference between the award recipients and the competitors and the branch indices. Also, between the year of the announcement and one year after the announcement ("0-1"), the award recipients outperform their competitors and branch indices for all three indicators.

In Figures 6 and 7 the return on sales and return on assets are presented.

The award recipients outperform their competitors and branch indices for most of the years, see Figures 6 and 7. A positive trend for the award recipients can also be identified for the indicator of return on assets in comparison with their competitors.

Table II — The number of comparisons performed for the different years for the indicators of return on assets and return on sales

Year	–4	–3	–2	–1	0	1	2
Award recipient – competitor							
Return on assets	13	13	13	13	13	13	12
Return on sales	13	13	13	13	13	13	12
Award recipient – branch index							
Return on assets	15	14	14	15	15	15	14
Return on sales	15	14	14	15	15	15	14

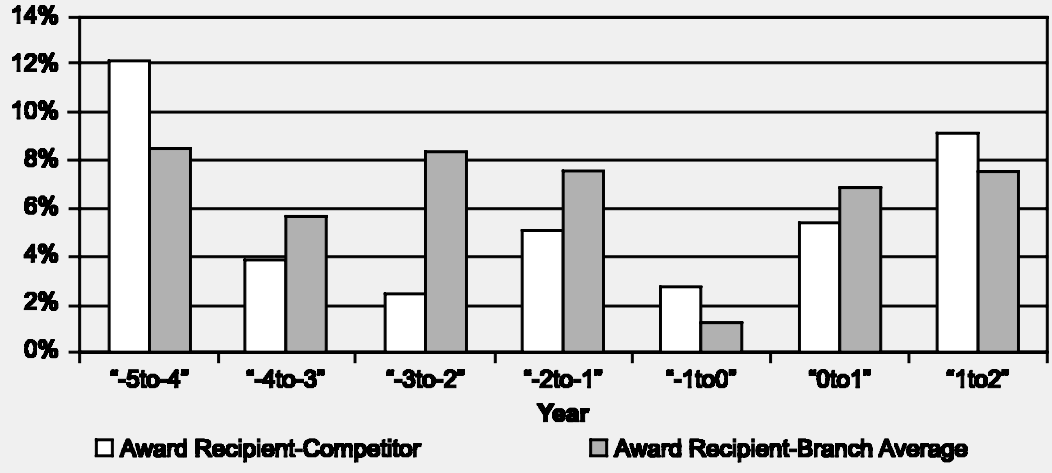
Period comparisons

Figures 8 and 9 present the median value of the indicators of the award recipients in comparison with the competitors, and the branch indices during the implementation period and post implementation period. As an example, the difference between the award recipients and the competitors for the indicators of percentage change in sales during the implementation period was calculated by, first, subtracting

Table III — The number of comparisons performed for the different years for the annual percentage change in number of employees, change in total assets and change in sales

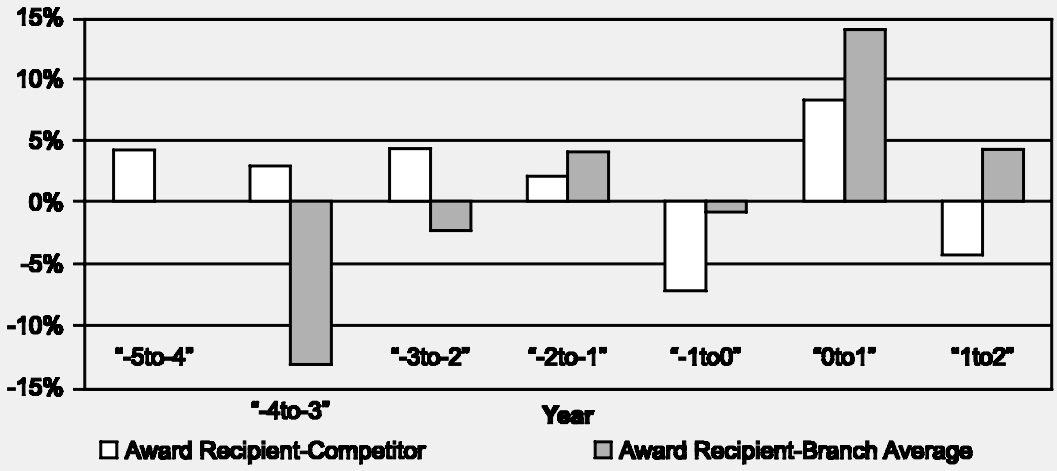
Year	–5 to –4	–4 to –3	–3 to –2	–2 to –1	–1 to 0	0 to 1	1 to 2
Award recipient – competitor							
Number of employees	10	12	13	13	13	13	12
Total assets	10	13	13	13	13	13	12
Sales	10	13	13	13	13	13	12
Award recipient – branch index							
Number of employees	–	14	13	14	15	15	14
Total assets	–	14	13	14	15	15	14
Sales	14	14	14	15	15	15	14

Figure 3 — Change in sales



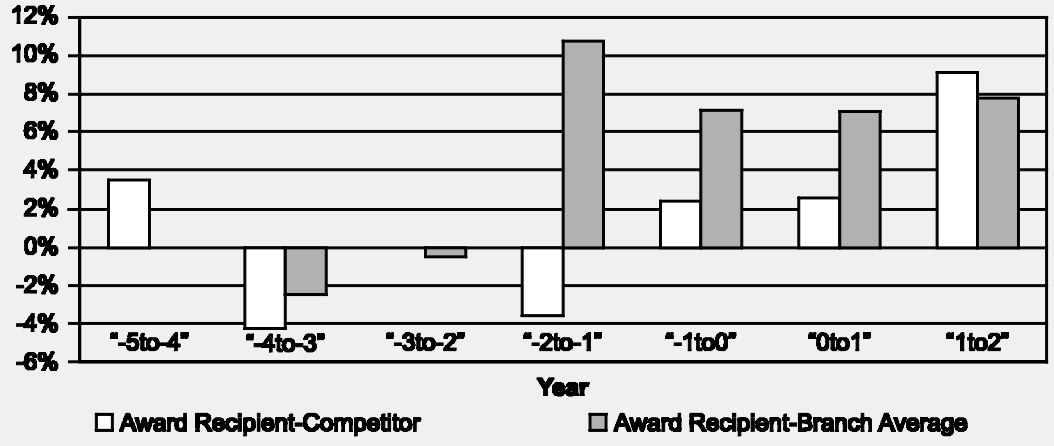
Note: The piles show the median differences of change in sales between the award recipients and the competitors, and between the award recipients and the branch indices, during different years. Zero indicates the year of the award announcement. A positive percentage means that the median award recipient outperforms its competitor or branch index

Figure 4 — Change in total assets



Note: The piles show the median differences of change in total assets between the award recipients and the competitors, and between the award recipients and the branch indices, during different years. Zero indicates the year of the award announcement. A positive percentage means that the median award recipient outperforms its competitor or branch index

Figure 5 — Change in number of employees



Note: The piles show the median differences of change in number of employees between the award recipients and the competitors, and between the award recipients and the branch indices, during different years. Zero indicates the year of the award announcement. A positive percentage means that the median award recipient outperforms its competitor or branch index

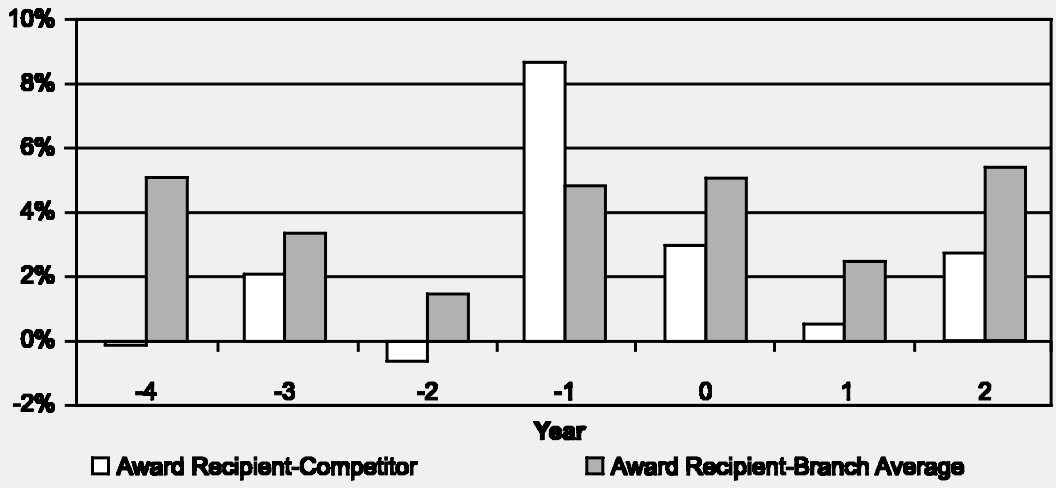
all the percentages changes in sales of the competitors from respective award recipients. Second, the median difference was calculated, including all the differences between the award recipients and the competitors for the indicator of change in sales for all of the years in the implementation period. This median difference is represented in the first pile from the left in Figure 8. The same procedure was used for the other comparisons, indicators and periods.

Figure 8 shows that the award recipients outperform both the competitors and the branch indices for the indicators of change in sales and return on sales during the implementation period. On the other hand, this is not the case for the other indicators.

To investigate the precision of the median values, reflected in Figure 8, confidence intervals, with a 95 per cent confidence level, were created. The confidence intervals are non-parametric, and accordingly not based on any distributional assumptions. These confidence intervals are presented in Table IV.

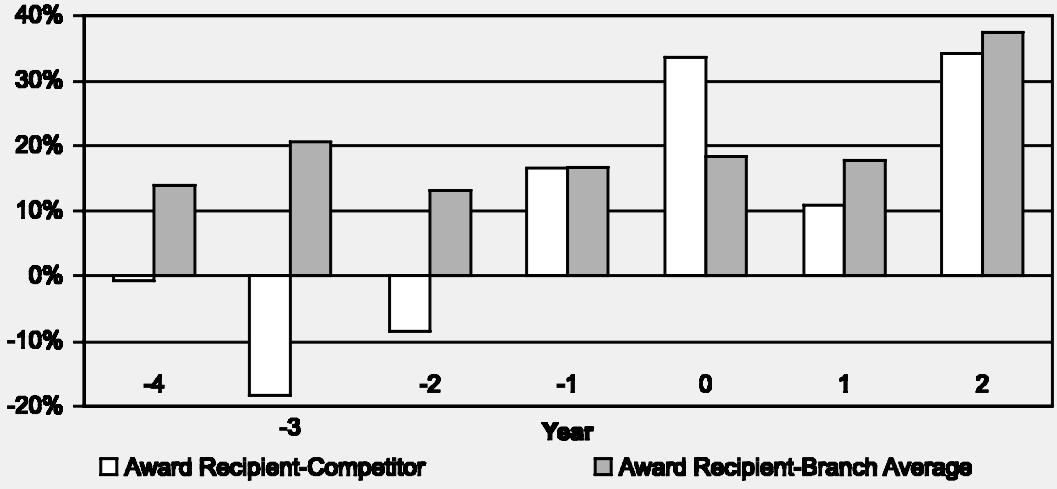
The wider confidence interval, the less accurate is the estimation of the median value. If the interval contains 0, a significant difference between the award recipients and the

Figure 6 — Return on sales



Note: The piles show the median differences between the award recipients and the competitors, and between the award recipients and the branch indices, during different years. Zero indicates the year of the award announcement. A positive percentage means that the median award recipient outperforms its competitor or branch index

Figure 7 — Return on assets



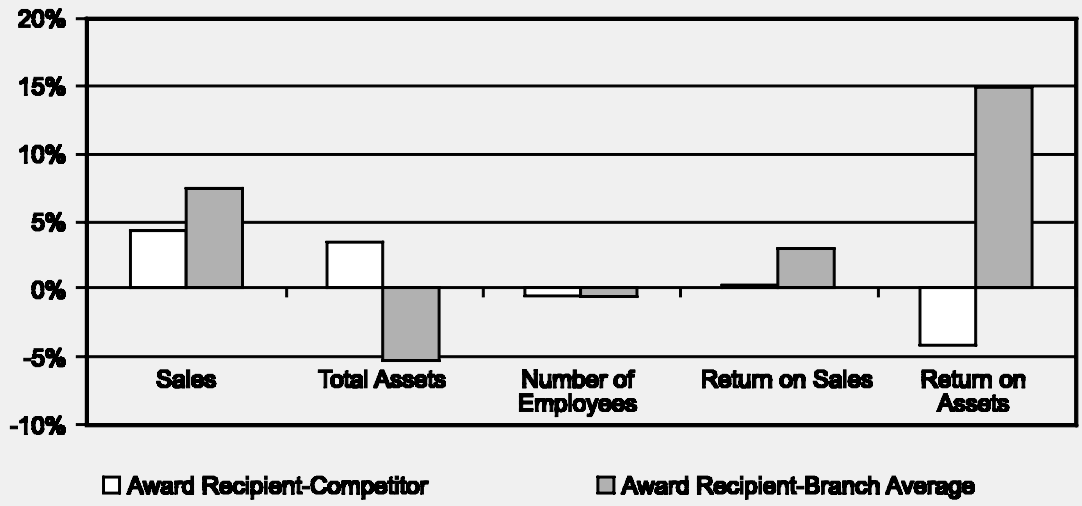
Note: The piles show the median differences of return on assets between the award recipients and the competitors, and between the award recipients and the branch indices, during different years. Zero indicates the year of the award announcement. A positive percentage means that the median award recipient outperforms its competitor or branch index

competitors, or between the award recipients and the branch indices cannot be shown. However, if the confidence interval does not contain 0, there is a significant difference between the award recipients and the competitors, or between the award recipients and the branch indices. Hence, for the indicator of change in sales, there is a significant difference, with a 95 per cent confidence level, between the award recipients and the competitors, and the branch indices, in that sense that the award recipients increase their sales more than the control groups during the implementation period. The same result is also shown for the indicators of return on sales and for the return on assets, when comparing the award recipients with the branch indices.

As shown in Figure 9, the award recipients outperform their competitors and branch indices for all the studied indicators during the post implementation period.

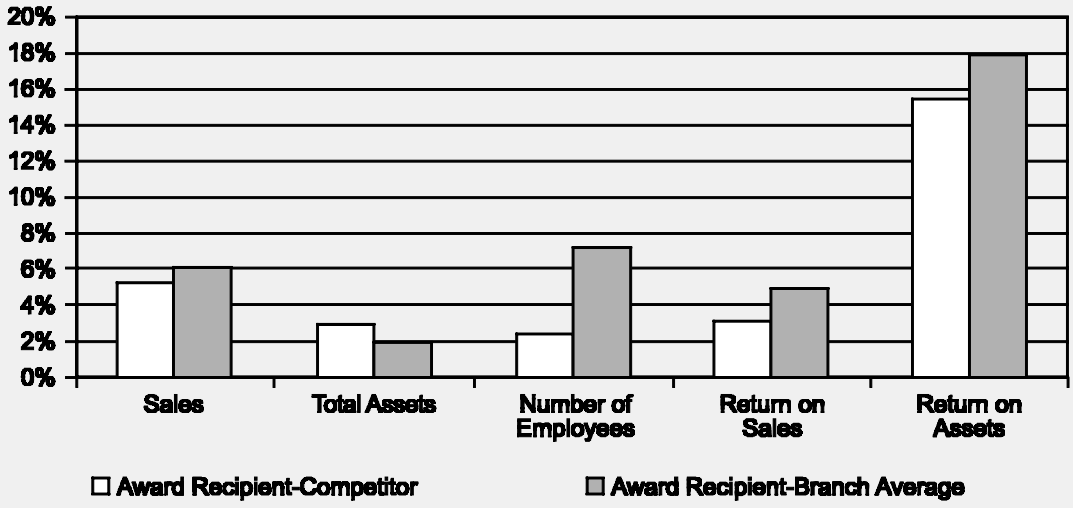
Table V shows the confidence intervals, at a 95 per cent confidence level, for the indicators presented in Figure 9.

Figure 8 — Implementation period



Note: The figure shows the median value of the differences between employees between the award recipients and the competitors, and between the award recipients and the branch indices of the indicators during the implementation period. A positive percentage means that the median award recipient outperforms its competitor or branch index

Figure 9 — Post implementation period



Note: The figure shows the median value of the differences between the award recipients and the competitors and between the award recipients and the branch indices during the post implementation period. A positive percentage means that the median award recipient outperforms its competitor or branch index

Table IV — The table shows the confidence intervals with a 95 per cent confidence level for the indicators and the comparisons with the competitors (comp.) and the branch indices (index) during the implementation period

Indicators	Sales		Total assets		Number of employees		Return on sales		Return on assets	
Comparison	Comp.	Index	Comp.	Index	Comp.	Index	Comp.	Index	Comp.	Index
Upper limit	8.64	10.30	5.50	3.66	2.75	1.8	4.47	7.25	24.85	28.02
Lower limit	1.38	2.53	–1.98	–20.37	–4.29	–6.67	–2.16	0.38	–24.08	1.28

Table V — The table shows the confidence intervals with a 95 per cent confidence level for the indicators and the comparisons with the competitors (comp.) and the branch indices (index) during the post implementation period

Indicators	Sales		Total assets		Number of employees		Return on sales		Return on assets	
Comparison	Comp.	Index	Comp.	Index	Comp.	Index	Comp.	Index	Comp.	Index
Upper limit	7.83	8.45	8.31	7.50	10.34	13.04	8.63	7.52	36.18	61.17
Lower limit	–3.51	1.26	–8.55	–2.43	–6.31	3.33	–0.53	0.04	3.48	6.12

During the post implementation period, and for the comparison between the award recipients and the branch indices, there is a significant difference, in that sense, that the award recipients outperform the branch indices for the indicators of change in sales, number of employees, return on sales and return on assets. However, there is only a significant difference for the indicator of return on assets, when comparing the award recipients with the competitors during the post implementation period. On the other hand, one can argue that the comparison with the branch indices reflects reality better than the comparison with the competitors, since the branch indices include many companies from that specific branch.

Discussion

One of the incentives with this study was to investigate the development of financial performance of quality award recipients compared to their stated competitors and median branch indices. Figures 8 and 9 show an improvement between the implementation period and the post implementation period for all of the studied indicators except for the indicator change in sales. However, the differences between the two periods are not that large. This could be due to the fact that quality award recipients might have been high performing companies even before the implementation of TQM.

This study does not reflect an ideal comparison between companies that have successfully implemented TQM (award recipients) with companies that have not (competitors). When looking at the comparison between the award recipients and their competitors, the quality work of the competitors is a possible bias. This is due to the fact that at least some of the companies are known to have been working with TQM, although they have not applied for any type of award. The same situation is also a possibility for the companies that constitute the branch indices.

The exclusions discussed in the methodological section might also have influenced the result of this study. Yet the exclusions are relatively small and should not have influenced the results to a large extent.

For the branch indices, there was another problem that might have had an influence. For manufacturing companies with fewer than 20 employees and service companies with fewer than 50 employees, for the years before 1996, the branch indices are based on random samples of companies. This results in the fact that the companies included in the branch indices vary up to 1996 for five of the award recipients[2]. However, according to the authors of this article, the negative effect of this is limited since the branch indices still should reflect the general picture.

Conclusion

During the implementation period the award recipients do not necessarily perform better than their competitors and the branch indices. On the other hand, the award recipients perform better than their competitors and branch indices on all studied indicators during the post implementation period. For example, the award recipients show a significantly higher return of assets than their competitors and the branch indices during the post implementation period of TQM. Also, the indicators, change in sales, number of employees, return on sales and the return on assets, show that the award recipients outperform the branch indices during the post implementation period. The findings indicate that the financial performance, measured by the stated indicators, become more advantageous for companies that have successfully implemented TQM, than their branch indices and stated competitors. ■

Notes

1. Lascelles and Dale (1991) use the term of total quality improvement (TQI) instead of total quality management (TQM). TQI is, according to the authors, an enabling mechanism based on continuous improvement that incorporates the strategic components that drive the entire business organisation. TQI are required to reach the vision of TQM.
2. In year –4 all companies that constitute the branch indices are included, but for the following years, up to year 1996, the branch indices only constitute those that happened to be included in the random sample. The minimum number of "–4 year companies" that constitute the branch indices is five since that is a requirement set by SCB to compute the median values.

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Paper 2

Implementation of Total Quality Management in Small Organisations: A Case Study in Sweden

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Implementation of total quality management in small organizations: A case study in Sweden

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ABSTRACT *Total quality management (TQM) is considered to be an important management philosophy, which sustains the organizations in their efforts towards quality improvement and satisfied customers. The fact that small organizations have been slow to implement TQM emphasizes the need for further investigation concerning why the small organizations have problems with implementing the TQM philosophy. This paper presents the results of a multiple case study of nine small organizations that have received a national or regional quality award in Sweden. The fact that the organizations have received a quality award is used as a standard for a successful implementation of TQM. The objective was to increase the knowledge concerning small organizations' work towards TQM. The main focus of the study was to analyse the difficulties related to the implementation of the core values, which usually comprise the basis of TQM. The resulting data account for the comprehension and experience from the implementation processes within the organizations. One implication from this study is the importance of a committed leadership and the participation of the co-workers. A significant problem area that appeared from the cases was difficulties for the organizations in working towards process orientation.*

Introduction

There has been widespread recognition of the role and contribution which small organizations make to the economy (Holliday, 1995). Politicians in many countries emphasize the importance of small organizations as a mechanism for job creation, innovation and the long-term development of economies (Storey, 1994). Also in Sweden small organizations have received greater attention and the interest and research concerning small organizations have increased during the past years (Johannisson & Landström, 1999). Studies show that small organizations have generated an important, indeed dominant, portion of the new jobs in Sweden during the period 1985-95 (Davidsson *et al.*, 1994, 1996).

The increased demands, generated by the process of constant change of the international and national competitive environment, have not just affected large organizations. Small organizations, for example as suppliers to large organizations, are experiencing increased demands concerning quality, productivity and flexibility of their products and services

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(Huxtable, 1995). It is generally accepted that quality is as important for small organizations as it is for larger organizations. This is due to some of the general characteristics, such as their vulnerability to shifts in market trends and their need continually to satisfy customer needs. According to Hodgetts (1996), all enterprises, regardless of size and financial status, are involved in the quality revolution. Total quality management (TQM) is frequently mentioned in discussions concerning quality and is considered to be an important management philosophy, which sustains organizations in their efforts to obtain satisfied customers (Dale, 1994; Huxtable, 1995). TQM is a wide concept since it embraces the whole organization and its processes instead of focusing on the product. It is also considered by many to be a holistic approach, which seeks to convert the culture and structure of the organization into a total commitment to quality (Barad, 1996). TQM is generally considered to be based on a number of core values such as customer focus, decisions based on facts, process orientation, continuous improvement, everybody's commitment and leadership; see Hellsten and Klefsjö (2000). Small organizations are considered to benefit from a successful implementation of TQM (Hendricks & Singhal, 1999; Lagrosen, 2000; Moreno-Luzon, 1993). One more reason for stressing the importance of small organizations' work towards TQM is that it is imperative that small businesses also adopt TQM to support the quality initiatives of large business (Yusof & Aspinwall, 2000).

Small organizations are believed to have an advantage over larger ones in implementation of TQM, due to their flexible organizational structure, innovation ability, lack of hierarchical positions and strong organizational culture (Haksever, 1996; Welsh & White, 1981). In spite of these advantages, small organizations have been slow to adopt TQM compared to large organizations (Ghobadian & Gallear, 1995). Voices are raised with arguments referring to the fact that small organizations should not be considered as small big organizations (Ghobadian & Gallear, 1997; Welsh & White, 1981). Research by, for example, North *et al.* (1998), indicates that large organizations' quality management strategies do not translate well into the small organization situation. This implies that the specific characteristics of small organizations call for a different implementation approach, and therefore increased knowledge concerning small organizations' work towards TQM is needed.

In this paper experiences from successful TQM implementation processes in nine small organizations in Sweden, which have all received a national or regional quality award, are described. The paper is divided into four sections. First, the concepts at issue in this paper, TQM, small organizations and implementation, are discussed and defined. Then the methodology used in the present study is described. After that the empirical findings are presented, and, finally, the analysis and the conclusions are discussed in the subsequent sections.

Definitions and descriptions of concepts used

Total quality management

International research has many descriptions of the concept of TQM, but few clear definitions. For example, Oakland (1989), describes TQM as "an approach to improve competitiveness, efficiency and flexibility for a whole organisation". Dahlgaard *et al.* (1995) provide two definitions of TQM. The first definition, which, according to them, is often deployed in Europe, is that "quality is a culture of the organisation and the culture is focused on customer satisfaction and continuous improvements". The second definition, which, according to Dahlgaard *et al.* (1995), is used in Japan, says that "TQM is a management philosophy that is characterised by the scientific base, systematic base and covers the whole organisation".

Garvin (1988) avoids the concept of TQM and directs the discussion towards strategic quality management. The strategic approach towards quality is, according to Garvin, more comprehensive than its predecessor's quality inspection, quality control and quality assurance and can be seen more as an extension than a denial of them. Hellsten and Klefsjö (2000) declare that "TQM is a management system in continuous change, which comprises values, techniques and tools and that the overall goal of the system is increased customer satisfaction with decreasing resources". In this paper, the definition by Hellsten and Klefsjö (2000) is used.

Implementation and organizational change

Implementing a management system, such as TQM, in most cases requires extensive change and development. There are many different descriptions, recommendations and approaches concerning how to accomplish and manage a change process; see, for example, Pressman and Wildavsky (1973), Tichy (1983), Beer *et al.* (1990), Senge (1990), Juran (1995), Kotter (1996), Hatch (1997), Grieves (2000) and Sandström (2000). Common features for all strategies, independent of which subject they refer to, are:

- Create awareness that change is necessary and needed.
- Create a common platform for the change process, achieve a common view of how it should be accomplished and authorize changes.
- Spread the platform and educate in order to realize the change process.

There are also common features for the majority of the strategies and these are, for example, the importance of monitoring and creating quick results in order to preserve the change process.

Small organizations

In this study, the quantitative definition suggested by the European Commission is adopted to define small organizations and to select the sample. Organizations with between 10 and 49 employees are included in the study, which is equivalent to the European Commission's small enterprise sector.

Methodology

Since the objective was to increase the knowledge concerning small organizations' work towards TQM, a multiple case study consisting of nine small organizations has been carried out. With a case study, we can understand complex social phenomena (Yin, 1994), such as small organizations' work with TQM. In these case studies the attitudes and approaches made by the organizations are analysed. The organizations used in the case study are all organizations in Sweden with between 10 and 49 employees, which have received a national or regional quality award.

The selected organizations show differences in several ways:

- The organizations are from both the public and private sector.
- Both the service sector and goods sector are represented.

This gives the possibility of finding as many different natural cases of the phenomena as possible, which is important in order to maximize the possibility for discovering as many different characteristics of the phenomena as possible (Eneroth, 1986). Three different data collecting methods have been chosen: interviews, documentation collection and, to a certain

extent, direct observation. The author's choices of analysis strategies and tools are partly inspired by Yin (1994), Miles and Huberman (1984) and Czarniawska (1999). The approach for the study consisted of tape-recorded interviews, one interview with the management group and one with two co-workers at the different case organizations. The questions that were asked during the interviews concerned the organizations' implementation processes, from the start of the quality development work to the point of receiving the award. The core values, techniques and tools, described in the TQM definition, served as areas on which the questions where based. With the core values, techniques and tools as a basis, questions were generated with the aim of describing the organization's quality development process, with a focus on their experience from that process. The two groups described the successful implementation process of TQM and the pros and cons they could recollect of their quality journey, connected to their resource situation, knowledge situation and the theory of TQM. The following empirical findings are described more thoroughly in Hansson (2001).

Empirical findings and analysis

Implemented core values

The comparison between the cases, referring to which core values were perceived, shows the similarities and differences between the cases. The principal result is not the fact that the different cases have core values that permeate the organization. Since the organizations have received a quality award and therefore are considered to have successfully implemented TQM, some of the core values are expected to permeate the organizations. The major result is instead *which* of the six core values permeate the organizations since it indicates both which core values the organizations mainly have been working with and which core values are presumably advantageous to focus on at the beginning of the implementation process. Two groups of core values can be identified, namely, one group permeating all organizations and one group permeating some organizations, see Fig. 1.

One significant similarity is that the three core values, *leadership*, *everybody's commitment* and *customer focus*, are permeating all organizations. The fact that all organizations had implemented these core values implies that they are both necessary and suitable for starting with when implementing TQM.

Problematic core values

During the implementation process, some of the core values were problematic to implement in the organizations. One significant similarity between the cases is the problem related to

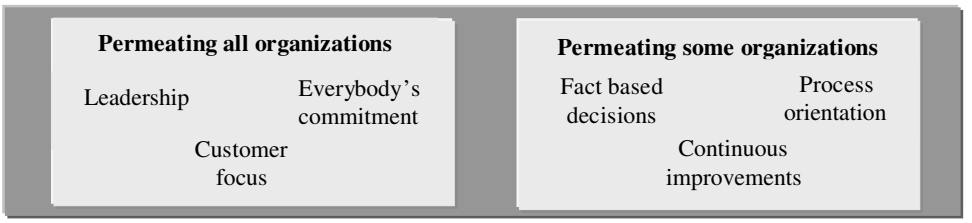

Figure 1. *Two different groups of core values.*

Table 1. *Problematic core values in the different cases*

	Problematic core values according to the management	Problematic core values according to the co-workers' representative
Råtorp Nursery School	Everybody's commitment Process orientation	Everybody's commitment Process orientation
Bulten Automotive AB	Process orientation	Process orientation
Broman Upper Secondary School	Process orientation	Process orientation
The Wisby Hotel	Process orientation	Everybody's commitment Process orientation
Visby Arkitektgrupp	Continuous improvement Process orientation	Continuous improvement Fact-based decisions
Aesculapen Company Health Service AB	Process orientation Continuous improvement	Process orientation
Björknäs Dental Care Centre	Process orientation	Process orientation Continuous improvements
Hällbyskolan	Process orientation Fact-based decisions	Fact-based decisions Process orientation
Pulmonary Clinic	Process orientation Fact-based decisions	Process orientation Fact-based decisions

the core value *process orientation*, see Table 1. All respondents in all cases, except one respondent in one case, describe process orientation as problematic. In all of the cases these problems with the process orientation concept were related to the prevailing knowledge situation. The branch that the organization belongs to can mainly explain the different result from the case where one respondent stated process orientation as non-problematic, since work with processes was a quite familiar activity according to the respondents.

Recommended succession when introducing the core values

The recommended succession for implementing the core values can be considered as subjective statements based on experiences from a successful implementation process. The similarities between the nine cases can best be described for the core values *leadership*, *everybody's commitment* and *customer focus*, see Fig. 2. In all cases the respondents stated that these three core values should be among the four first to be implemented among the six available. For the remaining core values the author cannot see any clear connection between the different cases.

Advantages and disadvantages with the resource situation

The experienced pros and cons in the organizations concerning the resource situation are divided into two aspects, the time and funds aspects. One could distinguish two common

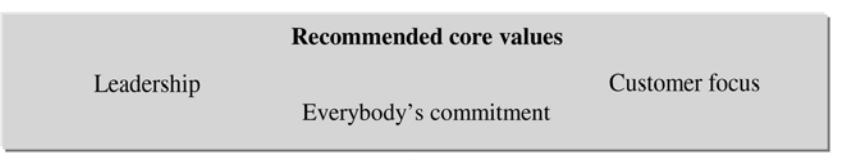

Figure 2. *The three core values that are recommended to be among the four first to be implemented.*

occurrences. Firstly, the available assets during the implementation process have not brought any distinct stated obstacles to the organizations. This occurrence is mainly due to the management's awareness of the importance of the quality development work. Secondly, the problematic factor during the implementation process has been the amount of available time.

Advantages and disadvantages with the knowledge situation

The knowledge situation in the cases studied has affected the implementation process both positively and negatively. The advantages concerning the actual knowledge situation during the implementation process can roughly be divided into three areas. Firstly, all organizations stressed the availability of education as being the most important factor for the favourable knowledge situation. Secondly, the main part of the organizations stressed that the work in cross-functional teams affected the understanding of the TQM concept positively. Thirdly, many of the organizations experienced that people had a pre-understanding for some of the core values due to which line of business the organization was in. The prevailing knowledge situation during the implementation process has in all cases brought obstacles concerning the core value *process orientation* and also the self-assessment process in connection with the quality award process. Here the unanimity is total.

Conclusion

The analysis of the cases has shown considerable similarities concerning the areas described between the different cases. This implies that many of the experiences concerning the implementation process of TQM are unanimous. This is, in the author's opinion, especially interesting concerning the recommended succession of the core values, the mentioned problematic core value and the effects of the knowledge and resource situation. The recommendations from this study concerning small organizations' work with implementing TQM is therefore to start with the core values *leadership*, *everybody's participation* and *customer orientation* and also to pay special attention to educational efforts concerning process orientation.

On a wider basis, the organizations were positively affected by the low number of employees in relation to the visibility of management actions, the extension of training and education, the ability to create a common view of the quality concept and apparent effects of the quality development work. In the some of the studied organizations with a joint ownership the employee participation and management commitment were particularly high.

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Paper 3

A Core Value Model for Implementing Total Quality Management in Small Organisations

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A core value model for implementing Total Quality Management in small organisations

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Abstract

Total Quality Management (TQM) has been recognised and used during the last decades by organisations all over the world to develop a quality focus and improve the organisational performance. In spite of this, TQM implementation is still problematic for many organisations. In this perspective important factors to succeed with the organisational change that TQM implementation implies will be discussed in this paper. We also present a multiple-case study of TQM implementation processes in small organisations with a focus on core value aspects. An overarching implementation model is presented based on the multiple-case study analysis and the theoretical frame. This model implies that the TQM implementation shall start with the core values committed leadership, everybody's commitment and customer orientation.

Background

The ability of organisations to adapt to new customer requirements on a global market is of vital importance for a long-term success. During the last decades, this has influenced many organisations to work with quality issues on a strategic level and Total Quality Management, TQM, has frequently been used as a management strategy to develop the organisations' quality strategies and initiatives.

However, many organisations do not realise that the implementation of TQM, in most cases, is a comprehensive organisational change. As a consequence, several organisations have not succeeded as expected (Eskildson, 1994). Based on these experiences, some authors have expressed a doubt whether implementation of TQM really is profitable.

Today, small organisations constitute a large part of the economy. However, small organisations have been slow to adopt and implement TQM (Lee & Oaks, 1995). There are several reasons for this. One barrier for small organisations is lack of resources, which limits the feasible initiatives that a small organisation can implement (Lee & Oaks, 1995). Another one is that most advocates of TQM consider the concept as a fixed entity to be utilised by any organisation in any circumstance (Lawler, 1993). This tendency to adopt a universal approach to TQM indicates a need for adjustment of the TQM-work to a more customised approach for small organisations. Since larger companies have met considerable difficulties, the prospect of adapting TQM, must be daunting for small organisations, where lack of resources, if not the motivation, could easily impede the adoption of such fundamental change (Huxtable, 1995).

On the other hand, several authors mean that small organisations also have advantages compared to large ones when implementing TQM. For example, Ahire & Golkar (1996) emphasise the larger flexibility, Taylor & Adair (1994) point at the more effective communication, Lee & Oaks (1995) state that small organisations have advantages when changing the organisational culture, and Brown (1993) means that management participation is more visible.

In this perspective it is of great interest to study small organisations, which successfully have implemented TQM, in order to find common experiences, which can constitute the base of an implementation model for small organisations.

In this paper important factors to succeed with the organisational change that TQM implementation implies will be discussed. We will also present a multiple-case study of TQM implementation processes in small organisations with a focus on core value aspects. An overarching implementation model is presented based on the study.

TQM, performance and profitability – arguments for and against

The relation between TQM on one hand and performance and profitability on the other has been discussed frequently during the last years. Several authors emphasise that a successful use of TQM is closely related to economic and performance success; see e.g. Moreno-Luzon (1993), Zairi et al. (1994), Hendricks & Singhal (1997), Lemak & Reed (1997), Easton & Jarrell (1998), Samson & Terziovski (1999) and Wrolstad & Krueger (2001).

However, some authors also question the actual benefits of implementing TQM. One of these is Harari (1997), who presents ten major reasons for the failure of TQM initiatives. Another one is, Eskildson (1994), who states, based on survey results that many organisations do not succeed with their TQM efforts. The two main reasons are here said to be vague definitions of TQM and inappropriate implementation. Pyzdek (1999) summarizes the criticism of TQM over years and adds some new own aspects.

One problem with this type of discussion is that the concept of TQM in the different investigations often is unclear, partly since the concept has evolved during the last decades, and partly because the authors use different, and sometimes vague, descriptions of what TQM really constitutes. For instance, Harari (1997) does not define TQM, but rather studies organisations, which claim they are working with TQM. A discussion about this problem can be found in e.g. Lindmark (1999).

Several authors use quality award criteria as a model of TQM and accordingly quality award reception as a measure of TQM maturity. For instance, the investigation by Hendricks & Singhal (1997) shows that American companies, which have received a quality award, similar to the Malcolm Baldrige National Quality Award (MBNQA), have considerably better financial results than a selected control group. A similar investigation related to Swedish quality award recipients is presented by Eriksson & Hansson (2002). Furthermore, Przasnyski & Tai (1999) studied the stock development for receivers of the MBNQA in the USA and surprisingly found that the award recipients' stocks as a group performed worse than similar firms in similar industries. This investigation might be compared to the so called NIST study in which the stock development for award recipients is compared to the Standard & Poor

(S&P) 500 index; see e.g. www.nist.gov. Here the award recipients outperform the S&P index; see also Helton (1995).

Some authors mean that it is not the concept of TQM, which fails, but the implementation process; see e.g. Becker (1993) and Shin et al. (1998). Our own experience supports that hypothesis. We strongly believe that much of the failures of TQM are related to bad implementation strategies and processes. Implementation work can be seen as a transformation made by actors in a human activity system (Pidd, 1999) and a TQM implementation could therefore be considered as a comprehensive organisational change. The process of change involved in integrating the TQM philosophy into an organisation is complex and wide ranging (Dale et al., 1997; Spector & Beer, 1994). The changes refer to, for instance, training, coaching and development of employees as well as changes in organisational structure, values, attitudes, management style and the adoption of new working practices (McNulty & Canty, 1995; Dale et al., 1997).

Altogether, this means, in our opinion, that TQM is proven to be profitable when implemented in a successful way, but also that there are problems with the implementation. This means, in turn, that there is a need for an increased focus on the area of organisational change related to TQM. In particular this holds for small organisations, which have specific characteristics calling for a tailored implementation process.

Theoretical frame of reference

Total Quality Management

Several attempts have been made to define TQM. Most of these definitions are, in our opinion, rather vague. We can often see formulations such as ”a way to…”, ”a philosophy for…”, ”a culture of…”, ”an approach for…”, ”a business strategy that…” and so on. Examples of such definitions can be found in e.g. Tenner & DeToro (1992), Oakland (1993), Dahlgaard et al. (1994) and Kanji (1995).

In recent years some TQM definitions based on a system view have been proposed; see e.g. Shiba et al. (1993), Dean & Bowen (1994) and Hellsten & Klefsjö (2000). In this paper we choose the definition by Hellsten & Klefsjö (2000). According to them, TQM can be defined as a management system, which consists of three interdependent units, namely core values, techniques and tools. The idea is that the core values must be supported by techniques, such as process management, benchmarking, customer focused planning, or improvement teams, and tools, such as control charts, the quality house or Ishikawa diagrams, in order to be part of a culture; see Figure 1. The goal of TQM is, according to Hellsten & Klefsjö (2000), increased customer satisfaction with a reduced amount of resources. Hellsten & Klefsjö (2000) argue that this system definition will facilitate for organisations to understand and implement TQM. The implementation work should begin with the acceptance of the core values that should characterize the culture of the organisation. The next step is to continuously choose techniques that are suitable as support for the selected values. Ultimately, suitable tools have to be identified and used in an efficient way in order to support the chosen techniques.

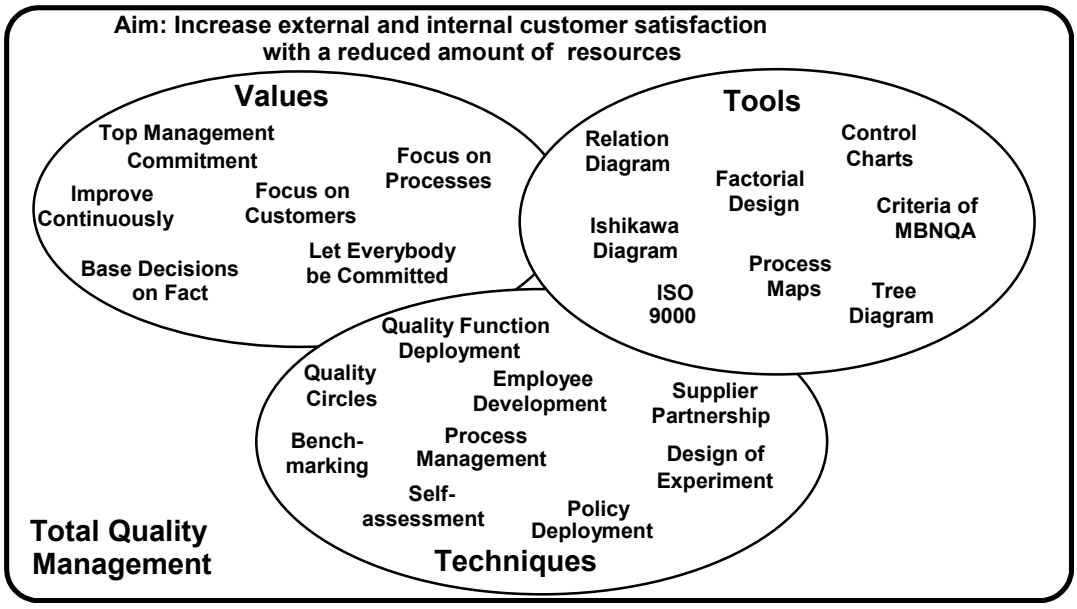

Figure 1. Total Quality Management (TQM) seen as a continuously evolving management system consisting of values, techniques and tools, the aim of which is to increase external and internal customer satisfaction with a reduced amount of resources. It is important to note, that the techniques and tools in the figure are just examples and not a complete list. In the same way the values may also vary a little between different organisations and over time. (From Hellsten & Klefsjö, 2000.)

The basis of TQM is the core values, which should establish the quality culture. Although the number of core values, and even the exact formulations, differs somewhat between different authors, those chosen for our discussion are (see Figure 1 and Bergman & Klefsjö, 2002):

- committed leadership
- improve continuously
- focus on customers
- focus on processes
- base decision on facts
- let everybody be committed

A strategy for TQM in an organisation must be built on the management's continuous commitment for questions concerning quality. The management must establish a quality policy and support quality activities morally and by providing resources (Bergman & Klefsjö, 2002). But management also have to set a good example by actively taking part in the practical work. If the management does not show, in actions, that quality is as least as important as, for example, costs and delivery time the co-operators will not do it either. Successful work towards TQM must be built with the management's continuous involvement as a basis. The core values are important parts of this work.

We want to mention that the use of core values for managing an organisational change is not unquestioned. For example, Senge (1995) discusses the question concerning the management's limited ability to change individual values and stresses that the change has to come from the inside out, rather from the outside in. However, we are of the opinion that the management can stimulate the individual values by managing recourses, supporting quality activities and by working with techniques and tools that support the core values.

Organisational change and implementation of TQM

Thomsen et al. (1994) state that one important experience from the accomplishment of TQM is that there is a need for an increasing awareness of the fact that TQM implementation also is a question of organisational development. They also argue for improved knowledge among leaders concerning change management. Organisational development is a discipline with many approaches, in which TQM is overlapping some; see for example Grieves (2000). In order to create a foundation for the case study and its analysis and the implementation model discussed in this paper, aspects from both the organisational development discipline and the TQM discipline will be briefly discussed from an implementation perspective. For more details, see Hansson (2001a).

One necessity to achieve a successful implementation is that the managers present, discuss and motivate why the TQM way of working is better than the present one (Sandberg, 1994). The new way of working in the organisation has to be implemented by means of systematic procedures based on properly chosen methodologies that are understood and accepted by all parties involved (Sandberg & Targama, 1998; Ljungström, 2000). Therefore, studying the process of implementation includes the setting of goals toward which the implementation is directed. Senge (1990) discusses one important quality of leadership, the ability of building a shared vision in the organisation. When there is a strong and common vision, and not only a desire in the top management, individuals are developing; see Senge (1990). Kotter (1996), and others, also emphasise the importance of a shared vision.

The change process – general recommendations and pitfalls

There are many different descriptions and recommendations concerning how to accomplish and manage a change process, for references see e.g. Hansson (2001a). A compilation and synthesis of three different strategies for change realisation, by Beer et al. (1990), Kotter (1996) and Juran (1995), is presented in Table I. Our synthesis of the described change strategies, presented in the left column, consists of five overarching recommendations for change realisation.

On the other hand, there are many possible causes for failure with organisational change. Problem areas are discussed by, for instance, Sandström (2000), Kotter (1996) and Pressman & Wildavsky (1973). All these authors mention the permeation of the vision, the lack of strong teams and lack of committed leadership as vital factors for the change process.

Table I. Some different strategies for change realisation. The left column describes our synthesis of the three strategies described by Beer et al. (1990), Kotter (1996) and Juran (1995).

Synthesis of the described activities	**Six steps described by Beer at al. (1990)**	**Eight steps described by Kotter (1996)**	**Seven steps described by Juran (1995)**
Establish a common view that the change is needed	Mobilize commitment to change though joint diagnosis of business problems	Establish a sense of urgency	Breakthrough in attitude concerning the necessary change
			The prospect of carrying out the change analysed
Create a shared vision for the change process and an organisational platform to accomplish it	Develop a shared vision of how to organise and manage for competitiveness	Creating the guiding coalition by putting together a group with enough power to lead the change	The creation of a steering part and an analysing part in order to obtain new and required knowledge
	Foster consensus for the new vision, competence to enact it, and cohesion to move it along	Develop a vision and strategy to help direct the change effort.	
Spread and communicate the change vision and create sufficient knowledge	Spread revitalisation to all departments without pushing it from the top	Communicating the change vision by using every vehicle possible	The creation of sufficient knowledge resulting in a breakthrough in knowledge
Facilitate the change process by removing obstacle in structures, policies, beliefs and habits	Institutionalise revitalization through formal policies, systems, and structures	Empowering broad based actions by getting rid of obstacles and by changing systems or structures	Create a social change in beliefs, habits etc.
The result is evaluated and adjustments are made in order to anchor the new approaches in the organisation	Monitor and adjust strategies in response to problems in the revitalisation process	Generating short terms wins by planning for visible improvements in performance, or wins	The previous steps bring a possibility to attain a breakthrough in results
		Consolidating gains and producing more change	The process is controlled in order to keep the change
		Anchoring the new approaches in the culture	

Implementation of TQM

Newall & Dale (1991) describe the results of a study performed at seven industrial organisations and one organisation within the financial service sector. Despite different interpretations and descriptions, it is evident that they had, in fact, passed through the same basic stages, although under different names and in somewhat different sequences.

Oakland (1993) states that by integrating TQM into the strategy of the business, organisations will avoid the problems of change programmes by concentrating on process alignment recognising that people's roles and responsibilities must be related to the processes in which they work.

According to Oakland (1993), some of the obstacles to TQM implementation are that it can be seen as time-consuming, bureaucratic, formalistic, rigid and impersonal. Some of the resistance to TQM is typical resistance to any change. This resistance may be more severe if the organisation is successful, if there is a particularly deep-seated culture, if there has been a great deal of change already, or if the change lacks legitimacy, training and communication.

Implementation of TQM in small organisations

There are many ways of defining small organisations. Some are based on e.g. sector, market share, owner-type and independency. However, most definitions are based on the number of employees. In this study, the classification by the European Commission is adopted (see e.g. Wilkes & Dale, 1998), which defines small organisations as the ones with between 10 and 49 employees. Employment figures are easily available from data registers and, furthermore, employment figures are frequently used for sample selection in other studies, which facilitates comparisons. With organisation we, in this paper, mean any private or public business.

The strategies and recommendations discussed earlier are mainly described in a large organisation's perspective. It is imperative that an implementation framework should be developed that 'fits the purpose' of small organisations and so paves the way for better TQM adoption in this particular sector (Yusof & Aspinwall, 2000).

Small organisations are believed to have an advantage over larger ones in implementation of TQM, due to their flexible organisational structure, innovation ability, lack of hierarchical positions, and strong organisational culture (Haksever, 1996). Since the work with TQM demands strong commitment of the management, the small organisation has the advantage that the management actions are very apparent (Ghobadian & Gallear, 1997). In a large organisation it is more difficult to demonstrate management commitment to the entire workforce. The size of the workforce also affects the time it takes to introduce and establish the TQM system among the employees and also the costs for developing co-workers and implementing TQM.

Furthermore, the manager and the owner of the organisation often is the same person. This means that the manager feels strong solidarity with the organisation, and that the manager's and the organisation's goals often correspond (Deeks, 1976). Due to the manager's dominant position, the organisation strongly depends on the manager's interest and competence.

Ghobadian & Gallear (1997) present ten key steps for implementing TQM in small organisations based on empirical material from four case studies, see Table II. One of their conclusions is that there is support for the hypothesis that small organisations can readily adopt the TQM principles, although the implementation process has some specific requirements. Also Huxtable (1995) presents an implementation guide for the small business manager with roughly the same steps. The main difference between the two implementation sequences is not the actual sense of the steps, but more at which detail level they are described.

Table II. A presentation of the different steps in a recommended plan for TQM implementation in small organisations. (From Ghobadian & Gallear, 1997.)

1	Recognition of the need for the introduction of TQM	**6**	Create a systematic procedure
2	Developing understanding among management and supervisors	**7**	Align organisation
3	Establish goals and objectives of the quality improvement process	**8**	Implement the TQM concepts
4	Plan the TQM implementation	**9**	Monitor the implementation of the TQM concepts
5	Educate and train all employees	**10**	Engage in continuous improvement by going back to step 3

Methodology

The objective of the research project behind this paper was to investigate core value aspects of TQM implementation processes in small businesses. A multiple case study of nine small organisations was carried out in order to study their TQM implementation processes. The organisations studied are all organisations in Sweden with 10-49 employees, which have received a national or regional quality award up to 1999. The selected organisations show differences in several ways:

- Both external and joint ownership structures are represented
- The organisations are from the private sector as well as from the public sector.
- Both the service sector and the manufacturing sector are represented.

This gives opportunities of finding as many different natural cases of the phenomenon as possible, which in turn is important in order to discover many different characteristics of the phenomenon (Eneroth, 1986).

Three different data collection methods have been chosen; interviews, documentation collection, and to a certain extent direct observations. The approach for each organisation consisted of tape-recorded interviews, one interview with the management group, and one interview with a co-worker representative. The questions asked during the interviews were related to the organisation's implementation process, from when the actual quality development work started to the point of receiving the award. The core values, techniques and tools, as described in the TQM definition by Hellsten & Klefsjö (2000), served as areas on which the questions were based. The two respondent groups described the successful implementation process of TQM and the pros and cons they could recollect of their quality journey, connected to their resource situation, knowledge situation and the theory of TQM.

First a within-case analysis was performed in which the core values, that were perceived as part of the culture, and the problematic core values were analysed for the different

management groups and the co-workers separately. Furthermore, the order in which the core values were recommended to be introduced, according to the two groups, was analysed. Then a cross-case analysis was performed leading to the empirical model discussed in the next section. For further methodological details, see Hansson (2001a, b).

Empirical findings and analysis

The comparison between the cases, referring to which core values the respondents considered permeating the organisation shows both similarities and differences, see Hansson (2001a). The major result is which of the six core values (see Figure 1) that permeates the organisations, since it indicates both which core values the organisations mainly have been working with and which core values that presumably are advantageous to focus on at the beginning of the implementation process. Two groups of core values could be identified in the analysis, one group considered permeating all organisations and one group permeating just some organisations.

One significant similarity is that the three core values, *committed leadership*, *everybody's commitment* and *customer orientation* are permeating all organisations at the time when they received the quality award. In a majority of the cases at least one of these three core values was partly permeating the organisation even before the formal quality development work started. The fact that all organisations had implemented these core values implies that they are both necessary and suitable to start with when implementing TQM.

During the implementation process, some of the core values were problematic to implement in the organisations. One similarity between the cases is the problems related to the core value *process focus*. All respondents in all cases, except one respondent in one organisation described process focus as problematic.

The similarities between the nine cases can best be described for the core values *committed leadership*, *everybody's commitment* and *customer orientation*. In all cases the respondents stated that these three core values should be among the first to be implemented among the six available. For the remaining core values it is difficult to see any clear connection between the different cases. Table III illustrates the respondents' recommendations concerning the succession for introducing the core values in the different organisations.

Tangible strategies and structures for the use of techniques and tools rarely occurred from the within-case analysis. This affects our possibility to formulate an implementation model with distinguished strategies, methods and activities. The area in which one could see evident structures and patterns was the work with and implementation of core values.

Table III. The recommended succession for introducing the core values in the different cases. Some organisations did not mention all the six values and in some cases two values were given the same order.

Organisation	Order suggested by management	Order suggested by co-workers representative
Råtorp Nursery School	1. Committed leadership 2. Everybody's commitment & Customer orientation 3. Continuous improvement 4. Process focus & Fact based decisions	1. Committed leadership 2. Everybody's commitment & Customer orientation 3. Continuous improvement 4. Process focus & Fact based decisions
Bulten Automotive AB	1. Customer orientation 2. Committed leadership 3. Everybody's commitment 4. Continuous improvement	1. Committed leadership 2. Everybody's commitment 3. Continuous improvement 4. Customer orientation
Broman Upper Secondary School	1. Committed leadership & Customer orientation 2. Everybody's commitment	1. Committed leadership 2. Everybody's commitment 3. Customer orientation
The Wisby Hotel	1. Committed leadership 2. Customer orientation 3. Process focus 4. Everybody's commitment 5. Fact based decisions 6. Continuous improvements	1. Committed leadership & Fact based decisions 2. Everybody's commitment 3. Customer orientation 4. Process focus 5. Continuous improvements
Visby Architect Group	1. Committed leadership & Everybody's commitment 2. Customer orientation & Process focus 3. Fact-based decisions & Continuous improvements	1. Committed leadership 2. Everybody's commitment 3. Customer orientation 4. Process focus
Aesculapen Company Health Service AB	1. Committed leadership 2. Everybody's commitment 3. Customer orientation 4. Process focus 5. Continuous improvements 6. Fact-based decisions	1. Everybody's commitment 2. Committed leadership 3. Customer orientation 4. Fact-based decisions 5. Continuous improvements & Process focus
Björknäs Dental Care Centre	1. Committed leadership 2. Everybody's commitment 3. Customer orientation 4. Fact-based decisions, Continuous improvements & Process focus	1. Committed leadership 2. Everybody's commitment 3. Customer orientation 4. Fact-based decisions, Continuous improvements & Process focus
Hällbyskolan	1. Committed leadership & Everybody's commitment 2. Customer orientation 3. Fact-based decisions, Process focus & Continuous improvements	1. Committed leadership & Everybody's commitment 2. Customer orientation 3. Fact-based decisions, Process focus & Continuous improvements
Pulmonary Clinic	1. Committed leadership 2. Everybody's commitment 3. Customer orientation & Process focus 4. Fact-based decisions & Continuous improvements	1. Committed leadership 2. Everybody's commitment 3. Customer orientation 4. Continuous improvements, Process focus & Fact-based decisions

The suggested model

Comparing the empirical findings concerning the implementation and permeation of the core values with the theoretical frame of reference one could interpret three discernible phases in the change process. By combining the empirical regularities with these steps, an overarching model structure is obtained. The model structure, depicted in Figure 2, describes the three phases, where work with core values and activities interact and affect each other. This means that the extent to which the described core values permeate the organisation affects the work with the activities at the same time as the activities positively affect the permeation of the core values. The three phases of the model in Figure 2 are shortly discussed below.

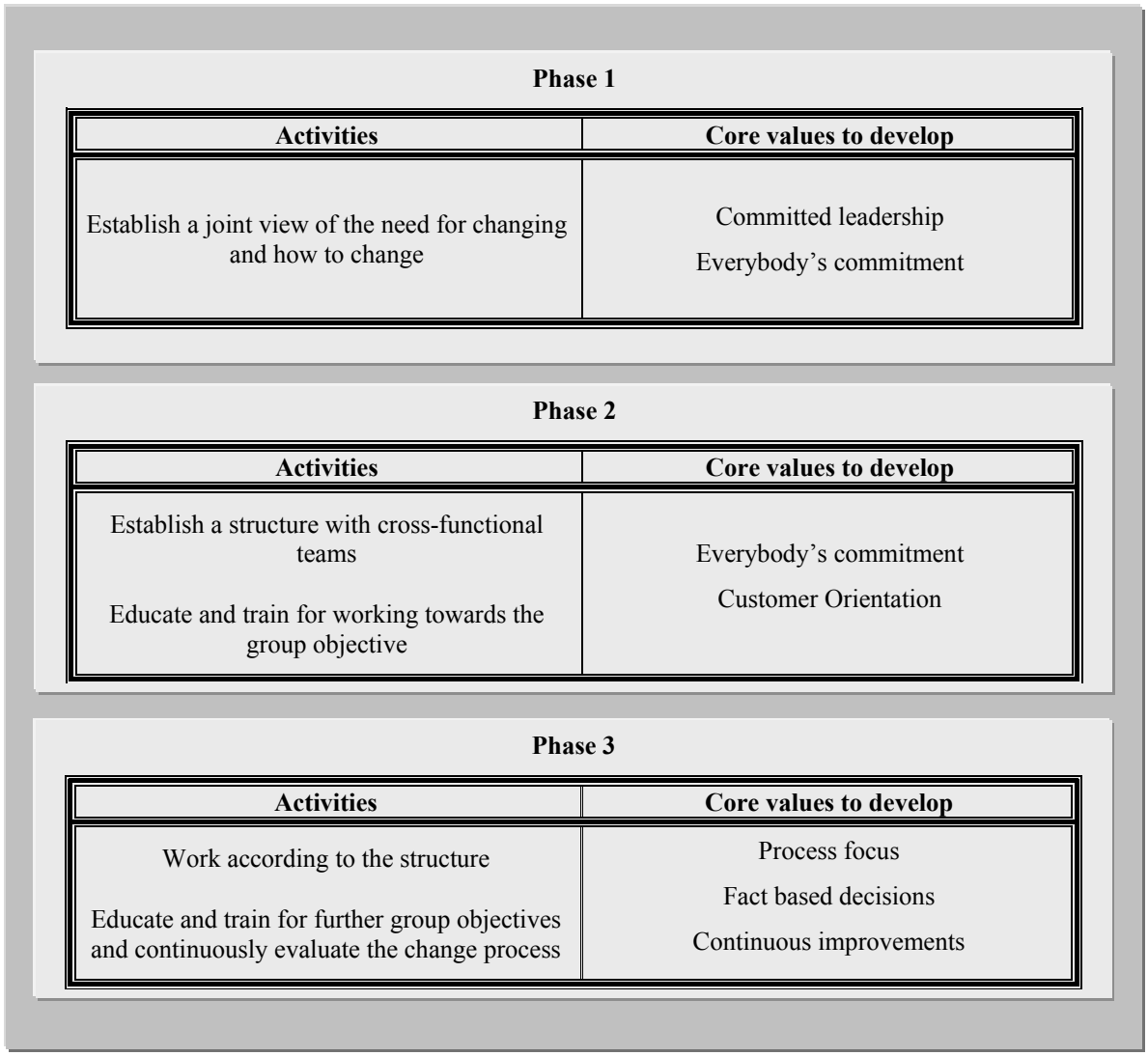

Figure 2. The recommended overarching implementation model consisting of three different partly overlapping phases structured by the core values. (See Hansson, 2001a.)

The first phase

When discussing the introduction of core values in relation to organisational change and TQM implementation in small organisations *committed leadership* is crucial. For most cases in this study *committed leadership* was a core value that to a great extent permeated the organisations even before the implementation process started. This emphasises that *committed*

leadership should be the first core value that needs to be addressed in an effort to implement TQM. This is also in agreement with the core value model discussed by Bergman & Klefsjö (2002); see also, for instance, Kotter (1996) and Spector & Beer (1994).

The main objective for the involvement of management in this phase is to establish a sense of urgency that the change is needed, i.e. a changed attitude among the staff concerning the necessary transformation; see Table I. This has, in the different cases, been attained by information and by involving the employees at an early stage, which stresses the importance of developing the core value *everybody's commitment*. The kind of information used has been dependent on the initial cause for the change. The management has in some way described the alarming situation that the organisation turned out to be in. In other cases, where an anticipated need of change was present, seminars introducing the quality concept have been used. Another objective for the management in this phase is to create funds for carrying out the change process. It can be external funds or resources taken from the budget. Concerning investments based on budget means, the establishment of a "change attitude" among the staff is of importance.

The second phase

When a positive sense and attitude towards the change process is established among the staff and a joint view of how to change is created, the next proposed stage is to establish a structure to work towards the joint view. If this view includes starting to work with a quality award model, cross-functional teams for the different criteria with continuous follow-ups are recommended. Otherwise, cross-functional teams working with techniques and tools supporting customer orientation are proposed. Training must take place before and during the work within the groups. For suitable techniques and tools*;* see for example Ehresman (1995). The core values that should be the main focus in this phase are *everybody's commitment* and *customer orientation*. Everybody's commitment was also pointed out in phase one as a condition for establishing a change attitude among the staff. In this phase this core value is mainly a part of the objective with the work with cross-functional teams, but also a necessary condition for that work to be fruitful. Since *process focus* has shown to be a complicated core value to embrace, the recommendation is also to begin some educational efforts with respect to this core value in this phase.

The third phase

In the third phase the organisation should continue to work according to the new structure. The different teams should work with the different assignments that involved different techniques and tools. Different tools and approaches that support the core values formally and informally are, for example, described in Ehresman (1995). Working with quality award criteria is a formal approach that supports the different core values (Hellsten & Klefsjö, 2000). Training is also here an important investment for the accomplishment of these activities. It is also important that the activities in phase two and three result in apparent gains, such as increased customer satisfaction, and that the educational efforts have evident pay-offs. These gains should be visualised in order to keep the inclination to change and further development among the employees consistent. The three core values that are recommended to be in focus during this phase are *process focus*, *fact based decisions* and *continuous improvements*.

Conclusions and discussion

The core value based model consisting of three phases in Figure 2 describes an overarching recommendation for how to implement TQM in a small organisation. Activities in combination with working with core values demonstrate the authors' conclusions from successful implementation processes in nine organisations compared and analysed with the theoretical base. The study also confirms the ideas by Hellsten & Klefsjö (2000) that it is important that suitable techniques and tools support the core values in order to establish a quality culture.

The described theoretical frame of reference, together with the empirical findings, creates a knowledge foundation that hopefully will facilitate the understanding of small organisations' implementation of TQM. We also want to say that although the study focused on small organisations, we strongly believe that the findings also are of value for larger organisations.

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Paper 4

Managing Commitment - Increasing the Odds for Successful Implementation of TQM, TPM or RCM

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Managing commitment: increasing the odds for successful implementation of TQM, TPM or RCM

Abstract: *Quality management, by means of Total Quality Management (TQM), is considered to foster organisational performance characterised by competitiveness and long-term profitability. Since the benefits of quality management cannot be achieved without the sustained performance of equipment affecting product quality, maintenance management has become important. This has led to the development of maintenance methodologies, such as Total Productive Maintenance (TPM) and Reliability Centred Maintenance (RCM). TQM, TPM and RCM implementation have, however, often failed or been poorly executed. This has affected organisations' performance and ultimately survival in a competitive environment. This paper includes a comparative study of literature on TQM, TPM and RCM implementation, focusing on organisational change. The study found several common categories of activities when implementing TQM and the maintenance methodologies. These categories can be considered crucial to obtain management and employee commitment. Case studies on TQM, TPM and RCM implementation are used to validate the categories identified, and to yield recommendations on the handling of activities within these.*

Introduction

Over the past few decades quality management has been recognised as giving the edge for competitiveness and long-term profitability. Total Quality Management (TQM), considered by many to be a holistic approach, seeks to convert the culture and structure of the organisation into a total commitment to quality (Barad, 1996). However, long-term profitability and competitiveness, by means of quality management, cannot be achieved without sustained equipment performance. Any corporation that uses complex facilities in producing products, realises that preventive maintenance plays a key role in their TQM approach (Smith et al., 1991; Ben-Daya & Duffuaa, 1995). Therefore, the quality of maintenance itself is important, since it affects equipment performance and consequently final product quality. This has led to the development of maintenance methods, such as Total Productive Maintenance (TPM) and Reliability Centred Maintenance (RCM). According to Smith et al. (1991) and Kelly (1992), TPM and RCM provide both effective and efficient maintenance in response to the needs of TQM. The many advantages and benefits generated when working with TQM, TPM or RCM are recognised by, for example, Nakajima (1989), Gotoh (1991), Smith (1993), Hendricks & Singhal (1997), Moubray (1997) and McAdam & Bannister (2001). This paper focuses on managing the implementation of TQM, TPM and RCM, as important components of both quality and maintenance management.

Several examples of failed or poorly implemented TQM, TPM and RCM exist in various lines of business and types of organisations; see Brown et al. (1994), Eskildson (1994), Hipkin & Lockett (1995), Bamber et al. (1999), Latino (1999) and Cooke (2000). The relatively frequent incidence of failed or poorly performing implementation is problematic, and adversely affects organisations striving for business excellence and survival in a competitive environment. Unsuccessful implementation may also discourage others from initiating similar implementation efforts. This paper focuses on the organisational change occurring during implementation, in particular, change related to obtaining employee and management commitment. Several papers on TQM, TPM and RCM implementation, e.g., Ryan (1992), Bamber et al. (1999) and Allen & Kilmann (2001), have recognised this to be vital.

Scrutinising the commitment aspect is important, as, according to Kanji & Asher (1993), changing things is much easier than changing people. This paper aims to facilitate commitment management during implementation. One way to do this is to compare experiences of obstacles and driving forces when implementing TQM, TPM and RCM. The comparison allows us to identify common categories pertaining to commitment which are crucial for successful implementation. Such extended knowledge should facilitate implementation of TQM, TPM and RCM, contributing to the successful implementation of quality and maintenance management efforts.

Core aspects of TQM, TPM and RCM

Using TQM, we can apply quality management holistically, encompassing all parts of the organisation. TQM embraces the whole organisation and all its processes, supporting efforts to create satisfied customers (Huxtable, 1995; Dale, 1999). Many writers, such as Garvin (1988), Oakland (1989), Dahlgaard et al. (1994) and Dale (1999) have examined TQM, mentioning issues such as management commitment, customer orientation, process focus and employee participation as important. In this paper we use Hellsten & Klefsjö's (2000) definition of TQM: a management system in continuous change, comprising values, techniques and tools, the overall goal of which is increased customer satisfaction with decreasing resources.

TPM and RCM can constitute important structures within maintenance management (Hipkin & DeCock, 2000), which itself can be defined as "all activities of the management that determine the maintenance objectives, strategies, and responsibilities…" (Swedish Standards Institute, 2001). TPM was developed for the manufacturing sector, while RCM was originally developed in the aircraft industry; both are now widely used in various industrial sectors. TPM focuses on integrating operators within maintenance work and on continuous and systematic improvement in order to maximise overall equipment effectiveness. The main goal is robust processes, i.e., processes free from disruption (Nakajima, 1988; Nakajima, 1989; Davis, 1997). However, while adequate for simple assets, TPM does not work for complicated physical assets. RCM is more directed towards technology and offers a sound basis for assessing maintenance requirements in this context (Geraghty, 1996). RCM can be described as a systematic approach for identifying effective and efficient preventive maintenance tasks, by means of function and risk analysis. For a more comprehensive description of RCM, see, for example, Smith (1993) and IEC60300-3-11 (1999).

Methodology

This paper examines the implementation of TQM, TPM and RCM by means of literature and case studies. The literature sources have been chosen so as to identify common experiences pertaining to organisational commitment – important for successful implementation. The case studies have been chosen so as to verify and develop the findings derived from the comparative literature study.

Description of the literature review and the development of common categories

The literature review surveyed a range of papers and books dealing with TQM, TPM and RCM implementation, collected over several years of research. The main databases used were *Academic Search Elite*, *Business Source Elite*, *EconLit* and *Emerald*, while the main keywords used were "TQM implementation," "TPM implementation," "RCM

implementation" and "RCM," combined in some searches with "organisational change." Since searches for "RCM implementation" generated so few hits, "RCM" was also searched for on its own. Papers of interest were also found by studying the reference lists in the literature sources consulted.

The literature searches located a great deal of material, and approximately 25 to 30 papers on TQM, TPM and RCM were considered relevant to this paper and were compared. By means of affinity-diagram methodology, see Bergman & Klefsjö (2002), the material on TQM, TPM and RCM was grouped into various subject categories. These were then compared and common categories were considered crucial. The complete comparative literature study can be found in Backlund & Hansson (2002). All the references used are not included in the current paper due to space limitations.

The case studies

Case studies were performed to obtain in-depth knowledge of the TQM, TPM and RCM implementation processes. Such an approach is appropriate when studying managerial processes, since the boundaries between the phenomena and their contexts are not obvious (Yin, 1994). In these cases, the phenomena are the implementation processes. Case studies allow us to gain a better understanding of complex social phenomena (Yin, 1994), such as organisations' implementation of TQM, TPM or RCM. The data collection methods used in the case studies were interviews, documentation collection, participant observation, direct observation and action research. These approaches are further discussed in Gummesson (1991), Denzin & Lincoln (1994) and McNiff (1995).

The TQM case study, performed in 2000, used interviews of management and employee representatives, documentation collection, and, to some extent, direct observation. The study covered all small organisations with 10–49 employees in Sweden that had received a quality award, indicating that they had successfully implemented TQM. Nine organisations, both public and private and in both the manufacturing and service sectors, met the requirements. Since the study concerned the implementation processes in the nine organisations, a multiple case study design was used. For a more comprehensive description of this case study, see Hansson (2001a; 2001b).

The TPM case study was conducted between 1995 and 1998 at a production unit with 320 employees in a Swedish company manufacturing mobile hydraulics. The unit was implementing TPM. The study used interviews, direct observation, documentation collection and action research. For a more comprehensive description of the case study, see Lycke (2000) and Lycke & Akersten (2000).

The RCM case study was conducted between 1997 and 2002 at a Swedish hydropower company with approximately 400 employees. The main focus was planning and preparation for implementing RCM, based on two major pilot projects. The study used interviews, direct observation, documentation collection and action research. For a more comprehensive description of the case study, see Backlund (1999; 2002).

As with the organisations described in the literature, the organisations examined in the case studies differed in terms of size and line of business. Similarities in, for example, size or basic character between the units of comparison is generally desirable in comparative case studies. However, for this paper the cases were not compared with each other, but with the theoretical findings in order to validate and develop them, in what is known as analytic generalisation

(Yin, 1994). In view of our aim, and in accordance with Eneroth (1986), we deemed it important to examine as many different cases in as many different settings as possible. This procedure permits the discovery of as many characteristics of the phenomena (i.e., the implementation processes) as possible.

Implications of the theoretical study

Management commitment is clearly a key factor which must be present before initiating an implementation process. The implementation of TQM, TPM and RCM generally require major resources, such as human resources and funds (Kelly, 1992; Shin et al., 1998; Latino, 1999). Since management is responsible for the availability of resources and the overall implementation approach, management commitment is a prerequisite. However, management commitment can decrease during the process, due to, for example:

- Unclear understanding of what is being done, and of the objectives and methodologies of the concept (Clark, 1991; Hipkin & Lockett, 1995).
- Perceived threats to supervisors' and managers' roles (Bardoel & Sohal, 1999).
- Failure to produce results quickly where management has little patience to await benefits and is looking for short-term returns on investment (Schawn & Khan, 1994; Laszlo, 1999). Withdrawal of management support may also occur when benefits cannot be identified or attributed to the concept implemented (Bowler & Leonard, 1994a).

Employee commitment is also necessary since employees actually execute the activities during the implementation. Employees' willingness to change can be affected negatively for various reasons, including:

- Demoralised staff may resist change due to, for example, fear of losing jobs (Hardwick & Winsor, 2001), status affected (McAdam & McGeough, 2000) or negative experience of earlier problematic change projects (Dale et al., 1997; Bardoel & Sohal, 1999; Hardwick & Winsor, 2002).
- Unwillingness to change due to stressful work conditions or not understanding the process, i.e., personnel are unable to see the benefits of the implementation (Karlsson & Ljungberg, 1995; Shin et al., 1998).
- Conservatism, or upholding existing practices, stemming from insufficient knowledge of the new working methods (Worledge, 1993; Bardoel & Sohal, 1999).

Uncommitted management and employees are obviously severe obstacles for managing an implementation. Difficulties obtaining commitment have to do with the characteristics of individuals, such as perceptions (Saad & Siha, 2000), attitudes (Tsang & Chan, 2000), expectations (Schawn & Khan, 1994) and values (Saad & Siha, 2000), that could obstruct acceptance of and motivation to work with an implementation. Intangible factors such as involvement, ownership and understanding are important in obtaining commitment, in that they affect behaviour characteristics (e.g. Saad & Siha, 2000; Ghobadian & Gallear, 2001; Hardwick & Winsor, 2001). The literature notes enabling activities that promote these intangibles, for example, information (Tsang & Chan, 2000), education (Bardoel & Sohal, 1999) and empowerment (Hardwick & Winsor, 2001). However, several authors point out the difficulty in managing intangible factors and stress the need for an approach or strategy (e.g. McAdam & Duffner, 1996; Hill & Collins, 2000; Hardwick & Winsor, 2002). An approach is needed that facilitates the management of commitment by identifying what, and how, various enabling activities promote intangible factors.

Categories important for managing commitment

As mentioned earlier, management commitment must permeate an organisation before implementation begins. The comparative literature study of TQM, TPM and RCM implementation led to identification of common activities that influence intangible factors. Using affinity diagram methodology, we identified several categories of activities common to TQM, TPM and RCM that affect commitment during the change process. The identified categories, considered to be important, are:

- *Support and leadership*, which implies making employees feel recognised, and visibly showing the significance of the implementation to motivate employees (Hartman, 1992; Allen & Kilmann, 2001). Management should also consider the work environment, i.e. whether employees have the time and resources for improvement efforts; this is fundamental for ensuring that employees willingly comply with the implementation (Shin et al., 1998; Latino, 1999; Cooke, 2000).
- *Strategic planning,* which implies activities which link TQM, TPM and RCM to the company mission, vision and defined business strategy, and strategic priorities and goals (e.g. Riis et al., 1997; Bardoel & Sohal, 1999). This gives a clear picture of how the improvement will benefit the organisation and promote desired achievements such as management and employee understanding.
- *Planning the implementation,* which implies developing a clear scope in order to identify obstacles and driving forces (e.g. Hartman, 1992; Hipkin & Lockett, 1995; Shin et al., 1998). This facilitates monitoring and follow-up, which promotes such desired achievements as management and employee understanding and involvement. It also implies activities which promote the participation of all concerned parties (e.g., front-line staff, unions, and management), usually by means of small teams, in goal setting, and identifying solutions (Kelly, 1992; Schawn & Khan, 1994; Abraham et al., 1999). The participation of employees promotes such desired achievements as involvement and ownership.
- *Buying-in and empowerment*, which implies such activities as selling the concept to each group, identifying what each group or level of employees and management want (e.g. Smith, 1993; Bamber et al., 1999; Allen & Kilmann, 2001). Buy-in activities promote such desired achievements as involvement and ownership, and facilitate the identification and control of expectations. Empowerment activities, such as sharing responsibility (Lewis, 1996), promote involvement, job satisfaction, independence and ownership among employees (Yamashina, 2000; Aghazadeh, 2002).
- *Training education*, which implies activities that develop employee competence, skills and knowledge (e.g. Nakajima, 1988; Thomas, 1994; Bardoel & Sohal, 1999). Training promotes employee belief that the company is investing in them; it also supports understanding and awareness.
- *Communication and information*, which implies open and meaningful communication about aims and goals, and about the concept and how it will affect employees personally (Abraham et al., 1999; Pintelon et al., 1999; Tsang & Chan, 2000). Information and communication promote such desired achievements as understanding and involvement.
- *Monitoring and evaluation*, which implies such activities as obtaining measurable and quantified results and objectives, so as to have a clear scope and focus, and continually monitoring and following through the process (e.g. Bowler & Leonard, 1994b; Wruck & Jensen, 1998; Bamber et al., 1999). This reveals progress and results that promote

management and employee involvement and understanding. Employees have to see how they can personally benefit from the change, while management must see how it benefits the company. Monitoring and evaluation yields feedback on results that promote creation of a motivated management which continuously provides resources and support for the implementation. Such management also motivates and engages employees as they experience progress (e.g. Karlsson & Ljungberg, 1995; Latino, 1999; Allen & Kilmann, 2001).

The theoretical knowledge gained from the literature study is presented in Figure 1 as a structure of categories; this presentation should facilitate understanding of how to manage commitment during the implementation processes. The activities undertaken within these categories do not only promote employee commitment during the change process; they also uphold and develop the management commitment that is a precondition for the activities undertaken.

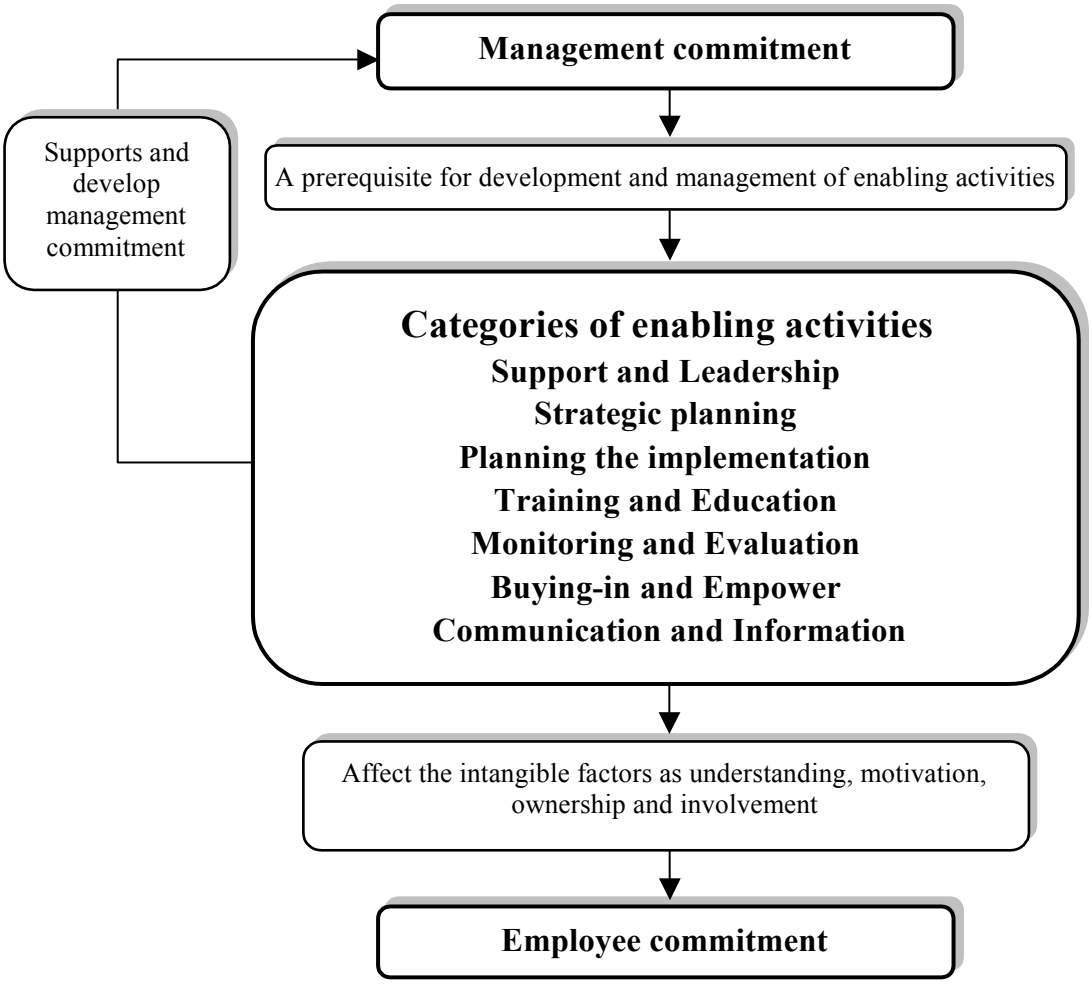

Figure 1. Important categories in managing commitment according to the discussed literature review

The figure depicts how management commitment – a prerequisite – affects the development and management of the categories of enabling activities, which are crucial for obtaining employee commitment. The performance of activities within each particular category promotes the achievement of intangible factors, such as understanding, involvement and

ownership. Since activities undertaken within the categories also support and sustain management commitment, Figure 1 depicts a feedback loop from the important categories.

Validation and recommendations based on the case studies

The categories found in the literature review were validated by the case studies. Some aspects of the implementation are highlighted, which leads to recommendations on how to manage the activities within the categories. Even if the recommendations are derived from a specific case study, it is the authors' opinion that the recommendations could be applicable for the implementation of TQM, TPM and RCM. Examples of aspects that confirm the literature findings, together with some recommendations, follow. As for the enabling activities based on the literature findings, some of the activities may be valid in several different categories.

Support and leadership

As stated in the literature, management support is a precondition for implementation. That is indeed true according to the case studies, as follows. In the TQM cases, employees perceived the organisations as permeated by management commitment – the driving force behind successful implementation. TPM was an initiative of a top manager, implying that TPM implementation received strong, continuous support from top management. Their involvement with the teams was important in motivating team members. During RCM implementation, middle management had to be committed to the process, to ensure sufficient personnel would be available. This was not the case until upper management formally announced that the process would continue full-scale.

Strategic planning

The use of strategic planning by the organisations studied incorporated several aspects and generated the following recommendations:

- *Involve the employees in the strategic planning process*. Involving employees in the development of strategies and goals related to TQM implementation promoted commitment, since it highlighted the concept and the implementation thus made more sense. The situation was similar in TPM implementation, where each team was supposed to formulate goals in line with company and TPM goals. Major implementation plans, with overarching goals and policies, were developed when implementing TPM throughout the organisation.

- *An overall maintenance management strategy*. This strategy was developed during RCM implementation, to guide upper management in implementing maintenance management. This served to promote upper management commitment to the RCM process.

Planning the implementation

Planning of the implementation, by the organisations studied, incorporated several aspects and generated the following recommendations:

- *Teambuilding, participation and a long-term approach*. The use of cross-functional teams for planning and implementing TQM promoted involvement throughout the organisation. Upper management clearly indicated that TPM should be implemented as part of a long-term strategy. A broad, long-term approach was also used when implementing RCM to involve as many of the employees as possible.

Buying-in and empowerment

The use of buying-in and empowerment by the organisations studied incorporated several aspects and generated the following recommendations:

- *Empowering the participants*. Delegating responsibility and empowering those involved in the changes brought about by TQM, created incentives for active participation. The situation was similar with TPM implementation, where upper management involved the employees in the planning process, as they wanted each team to decide by itself, so the teams would develop and mature.

- *Awareness of the customers in the implementation process*. Insufficient involvement of the personnel in charge of changes in the RCM programme resulted in lack of interest and comprehension of the analyses. Therefore, there was a focus on these internal customers in order to speed up the review procedure, and quickly creating visible results, which motivated management and employees.

Training and education

The use of training and education by the organisations studied incorporated several aspects and generated the following recommendations:

- *Include all employees and pay attention to process orientation.* Common to examples of successful TQM implementation was extensive training and education of all personnel. Process orientation proved difficult to comprehend, despite education, and needs special attention.

- *Overcome fear of job loss.* Some maintenance personnel felt TPM threatened their job security. Consequently, training focused on overcoming fear, so personnel would understand their importance to TPM implementation.

- *Co-ordinate training and education efforts*. If the interval between RCM training and practice was too long, people tended to forget what they had learnt, and some people were replaced. Additional training was therefore needed. It is thus important to co-ordinate training efforts.

Communication and information

The use of communication and information by the organisations studied incorporated several aspects and generated the following recommendations:

- *The need of an open atmosphere*. Communication without restraint was an important issue considering information and communication during the implementation of TQM. That facilitated for the detection of any obscurity or misunderstanding during the implementation process.

- *Involvement of the corporate communications department*. The importance of involving the corporate communications department in TPM implementation was recognised during implementation. Ensuring all affected employees received adequate information was vital.

- *The importance of informal communication*. Informal meetings of management and union representatives to discuss RCM were needed to complement formal communications, to generate increased interest and acceptance.

Monitoring and evaluation

Monitoring and evaluation by the organisations studied incorporated several aspects and generated the following recommendations:

- *The use of simple tools for quick feedback*. Regarding TQM, simple tools for monitoring matters such as customer satisfaction or the costs of poor quality generated feedback concerning the progress of implementation and highlighted positive effects. This stimulated employees and management to continue with the change process.

- *Visualise results*. To visualise the results and the continuous improvements during the implementation of TPM, boards were set up so the teams could describe their work in detail.

- *Scrutinise goals and aims to be monitored.* The number of goals and aims of RCM increased during implementation, which inhibited monitoring and evaluation. It was important to highlight the implementation goals to avoid overly complex and resource-intensive monitoring and evaluation and to build management and employee interest, motivation and support.

Discussion and conclusions

TQM, TPM or RCM implementation implies organisational change. It is imperative that management and employees are committed to implementation. Management must address intangible factors such as motivation, engagement and acceptance, in order to nurture a willingness to change. In the current literature on implementation of TQM, TPM or RCM, an overall approach regarding the management of intangible factors seems to be needed. The important categories identified in this paper should contribute to such an approach.

TQM, TPM and RCM differ concerning their focus on organisational matters. TQM core values, and to some extent TPM, focus on achieving commitment and other intangible factors such as involvement and engagement. However, implementation often fails due to, for example, lack of commitment. Intangible factors, even if taken account of by TQM and TPM, are difficult to manage and handle. When implementing RCM, there is an additional difficulty since the method itself ignores organisational matters, which is reflected by the rare occurrence of literature on RCM implementation. To handle commitment, we need to be aware of the importance and difficulty of handling intangible factors. Therefore, RCM implementation requires an organisational focus, especially since RCM is often introduced in times of the rationalisation (Moss, 1997) and changing of work routines (August, 1997), which affects job security. Since TQM, TPM and RCM implementation all require consideration of intangible factors, independent of any inherent organisational focus, successful implementation of, for example RCM, will facilitate implementation of the others.

Individual characteristics, such as attitudes and expectations, are also influenced by contextual aspects such as corporate culture (e.g. Kanji & Asher, 1993; McAdam & Duffner, 1996; Saad & Siha, 2000; Yamashina, 2000; Yusof & Aspinwall, 2000). The contextual aspects can be considered to be unique for each organisation, due to, for example, historical events, type of business, and environment. Therefore, contextual issues were not taken into account in the structure of important categories (see Figure 1). An organisation aiming to implement TQM, TPM and RCM must naturally consider their context when performing activities within important categories, but considering this is beyond the scope of this paper.

The aim of this paper was to compare TQM, TPM and RCM implementation in order to identify similarities in ways of managing commitment. The structure of common categories identified, should facilitate management of intangible factors, thereby promote commitment during implementation. As depicted in Figure 1, committed management, as a prerequisite, should focus on activities within these important categories: *leadership and support*, *strategic planning*, *training and education*, *monitoring and evaluation*, *buying-in and empowerment*, and *information and communication*. This should promote the employee commitment that is so essential to the successful implementation.

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Paper 5

Sustaining Quality Management in Small Organisations –
Experiences from Quality Award Recipients

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Sustaining Quality Management implementation in Small Organisations - Experiences from Quality Award Recipients

Abstract

While the interest in, and use of Total Quality Management (TQM) continuous to be high among large organisations, small organisations are still lacking behind considering such systematic and comprehensive quality efforts. As the specific characteristics of small organisations imply a need for a tailored approach when initiating such considerable organisational change efforts, further knowledge regarding quality management in the context of small organisations is needed. This paper is based on a multiple-case study and describes their quality related work of small organisations that have successfully implemented TQM to the extent that they have received a quality award. The paper focuses on how small TQM organisations organise their quality activities and the components of their quality related work. The TQM implementations were sustained by approaches focusing on external and internal customers, where measurements of external customer satisfaction, and employee development, involvement and satisfaction, comprised common TQM components. The empirical findings also indicate that small organisations can reach, and sustain, a successful TQM implementation without a thorough and formal organisational structure for quality.

Introduction

Quality management is considered to foster organisational performance characterised by competitiveness and long-term profitability. Today, all enterprises, regardless of size and financial status, are involved in the quality revolution, according to Hodgetts (1996). Small organisations, for example, as suppliers to large organisations, are experiencing increased demands concerning quality, productivity and flexibility of their products and services (Huxtable, 1995). It is often emphasised that quality is as important for small organisations as it is for larger ones. This is even more underlined by the recent version of ISO 9000: 2000.

Total Quality Management (TQM), can be viewed as a holistic approach, which seeks to convert the culture and structure of the organisation into a total commitment to quality. TQM is considered to be an important management philosophy, which sustains the organisations in their efforts to obtain satisfied customers (Dale, 1994; Huxtable, 1995). TQM could therefore be regarded as an extensive approach, supporting organisations' quality management efforts.

There is still a debate about TQM outcomes and the determinants of success or failure, see e.g. Eskildson (1994), Harari (1997) and Pyzdek (1999); although, research implies that small organisations benefit from a successful implementation of TQM (Moreno-Luzon, 1993; Hendricks & Singhal, 1999; Lagrosen, 2000).

However, small organisations have been slow to adopt and implement TQM (Lee & Oaks, 1995). One problem is that many organisations, large and small, do not realise that implementing TQM, in most cases, is a comprehensive organisational change. Another one, which might have caused problems for small organisations implementing TQM, is that most advocates of TQM consider the concept as a fixed entity to be utilised by any organisation in any circumstance (Lawler, 1993). Furthermore, lack of resources, if not motivation, could easily impede the adoption of such a fundamental change in a small organisation (Huxtable, 1995).

On the other hand, several authors mean that small organisations also have advantages compared to large ones when implementing TQM. For example, larger flexibility (Welsh & White, 1981; Haksever, 1996), easily adaptable to changing culture (Lee & Oaks, 1995), more effective communication (Taylor & Adair, 1994), stronger management participation (Brown, 1993), and fewer hierarchical positions (Welsh & White, 1981; Haksever, 1996), are emphasised. In spite of these advantages, research by e.g. Ghobadian & Gallear (1995) has shown that small organisations have been slow to adopt TQM compared to large organisations.

Research by e.g. North et al. (1998) indicates that large organisations' quality management strategies do not translate well into the small organisation's situation. This supports the discussion referring to the fact that small organisations should not be considered as "small big" organisations (Welsh & White, 1981; Ghobadian & Gallear, 1997; Storey, 2002). The tendency to adopt a universal approach to TQM indicates a need for adjustment of the TQM-work to a more customised approach for small organisations. Concisely, this implies that the specific characteristics of small organisations call for a different implementation approach. Therefore, increased knowledge concerning small organisations' work towards TQM is needed in order to facilitate small organisations' quality management efforts.

This paper aims at increasing the understanding of small organisations' quality management work, by examining former quality award winners. By a multiple-case study approach, components of quality related work and experiences from implementation processes are outlined, i.e. how the required organisational change has been accomplished and what elements have been implemented. As previous research related to small organisation emphasises management practices and attitudes as key elements in the TQM implementation, see e.g. Ghobadian & Gallear (1997), Taylor (1997) and van der Wiele & Brown (1998), outcomes due to changes in these management attributes after receiving a quality award, will also be discussed.

TQM in the context of small organisations

Theory regarding TQM

TQM is an umbrella of concepts and ideas in various contexts related to the quality field (Dale et al., 2001). This could be one of the reasons why many descriptions of TQM within literature appear, e.g. as a management philosophy, a management system, a business strategy, and so forth. The common view is that implementing TQM requires a movement towards preventing activities and an organisational culture based on values, such as customer focus and management commitment, see e.g. Garvin (1988) and Dale (1994). During the last few years some TQM definitions

based on a system view have been proposed; see e.g. Shiba et al. (1993), Dean & Bowen (1994) and Hellsten & Klefsjö (2000). According to Hellsten & Klefsjö (2000), TQM can be defined as a management system, which consists of three interdependent units, namely core values, techniques and tools, see Figure 1. The idea is that the core values must be continuously supported by techniques, such as process management, benchmarking, customer focused planning, or improvement teams, and tools, such as control charts, the quality house or Ishikawa diagrams, in order to be part of a culture. The definition provided by Hellsten & Klefsjö (2000) is used in this paper. The basis of TQM is the core values, which should establish the quality culture. Although the number of core values, and even the exact formulations, differ somewhat between different authors, the ones chosen for our discussion, see Figure 1 and Bergman & Klefsjö (2003), are:

- committed leadership
- focus on customers
- base decision on facts
- improve continuously
- focus on processes
- let everybody be committed

The chosen core values are supported by the findings of Sila & Ebrahimpour (2002), who, in their extensive theoretical investigation, found that customer focus and satisfaction, employee training, leadership and top management commitment, teamwork, employee involvement, continuous improvement and innovation, and quality information and performance measurements, were the most frequently covered TQM factors.

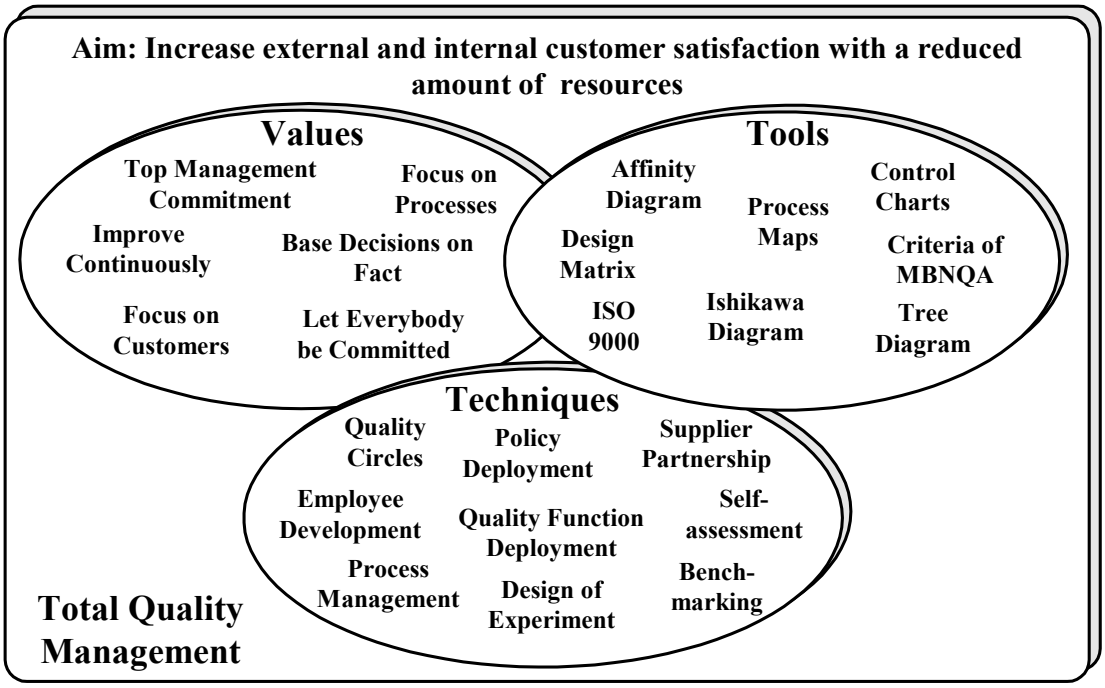

Figure 1. TQM seen as a continuously evolving management system consisting of values, techniques and tools, the aim of which is to increase external and internal customer satisfaction with a reduced amount of resources. It is important to note, that the techniques and tools in the figure are just examples and not a complete list. In the same way the values may also vary a little between different organisations and over time. (After Hellsten & Klefsjö, 2000.)

A strategy for TQM in an organisation must be built on the management's continuous commitment to questions concerning quality. The management must establish a quality policy and support quality activities morally and by providing resources (Bergman & Klefsjö, 2003). But management also has to set a good example by actively taking part in the practical work. If the management just "talk TQM" without "walking the talk" the organisation is not likely to exhibit the performance results (Allen & Kilmann, 2001). So if management does not show, in actions, that quality is as least as important as, for example, costs and delivery time the staff will not do it either. Successful work towards TQM must be built on the management's continuous involvement as a basis. Management must be clearly perceived to support TQM through communication, resource allocation and recognition (Abraham et al., 1999). The core values are important parts of this work.

Implementation of TQM in small organisations

As the theoretical discourse regarding TQM, its components and definitions, mainly progresses irrespective of organisational size, the implementation recommendations need to consider such fundamental contextual aspects. This is emphasised by the increasing number of theoretical contributions within the area of TQM implementation and small organisations, see e.g. Brown (1993), Huxtable (1995), Lee & Oaks (1995), Haksever (1996) Ghobadian & Gallear (1997), van der Wiele & Brown, (1998),Yusof & Aspinwall (2000) and Hansson (2001). Despite the increasing number of papers, it is frequently discussed that this theoretical base needs to be further developed.

Implementation of TQM could be regarded as a substantial organisational change and the process of change involved in integrating the TQM philosophy into an organisation is complex and wide ranging (Spector & Beer, 1994; Dale et al., 1997). To succeed with such a change process, contextual aspects like organisational size need to be considered since business improvement approaches could be flawed in small organisations when they do not address the key features and constraints of that context (McAdam, 2002). Although, many authors within the TQM implementation area stress that the reasons for failure in implementing TQM are mainly due to how it is implemented, i.e. the implementation process, and not its contents (Shin et al., 1998; Samson & Terziovski, 1999; Saad & Siha, 2000). Consequently the management of small organisations intending to implement TQM needs an approach better tailored to the small organisation context, and to centre the efforts to the change process.

Since small organisations can not be considered as scaled-down versions of large organisations (Storey, 2002) the specific characteristics of small organisations need to be further discussed. Although, the small organisation sector is heterogeneous in nature (Storey, 1994; North et al., 1998), thus making it complicated to generalise about the sector as a whole, some propositions of differences between large and small organisations can be found in previous research.

According to Storey (1994), the central distinction between large and small organisations is the small organisations' greater external uncertainty within their operating context and the greater internal consistency of their motivations and actions. Also, the management's role in the small organisations is considered to diverge from large organisations. Since the work with TQM demands total commitment of the

management, the small organisation has the advantage that the management's actions are very apparent (Ghobadian & Gallear, 1997). In a large organisation it is more difficult to demonstrate management commitment to the entire workforce. Furthermore, the manager and the owner of a small organisation are often the same person. This means that the manager feels strong solidarity toward the organisation, and that the manager's and the organisation's goals often correspond (Deeks, 1976). Due to the manager's dominant position, the organisation strongly depends on the manager's interest and competence. This further emphasises the importance of the management's devotion to the TQM investment when initiating such efforts.

Furthermore, compared to larger organisations, the small organisation is considered to be at a disadvantage in terms of financial and technical resources (Huxtable, 1995; Ghobadian & Gallear, 1996; van der Wiele & Brown, 1998; Neerland & Kvalfors, 2000). To attain knowledge needed to succeed with a TQM implementation, training and schooling of personnel is required, and small organisations are seriously disadvantaged in this area, due to a lack of financial resources (Haksever, 1996). In addition, Storey (2002) maintains that the unit cost of providing training for smaller organisations is higher than for larger organisations.

Another area of diversity is considered to be the structural level and management layers, which strongly correlate to flexibility (Hendricks & Singhal, 1999; Yusof & Aspinwall, 2000; Hamilton & Lawrence, 2001). As smaller organisations are considered to inherent more flexibility compared to larger ones, see e.g. Welsh & White (1981) and Haksever (1996), one could expect that smaller organisations experience less resistance to change and would require less expenditures to implement and maintain TQM. This could reduce the effects of the higher unit cost for training efforts considering TQM implementation.

In short, investigations and discussions about implementing and maintaining TQM in a small organisation context require a consideration of the specific characteristics.

Methodology

Since this study aims at increasing the knowledge about how small organisations implement and maintain TQM, a case study approach was chosen. With a case study, it is possible to better understand complex social phenomena (Yin, 1994). The focus of the case study is on the process rather than on the result, on the context rather than on specific variables and on discoveries instead of proving casual connections (Merriam, 1998). A case study approach is appropriate when studying managerial processes, since the boundaries between the phenomenon and its contexts are not clearly evident (Yin, 1994). The small organisations' work with TQM can be considered as such phenomena. There are many different ways to define small organisations, see e.g. Bolton (1971) and Storey (1994). In this study, organisations with between 10-49 employees were defined as small. The included cases were analysed by a cross-case comparison in order to find differences and common areas related to implementing and maintaining TQM programmes in an organisation. A fundamental reason for conducting a cross-case analysis is to deepen understanding and explanation (Miles & Huberman, 1994). The evidence from multiple cases is often considered more compelling, and the overall study therefore regarded as being more robust than a single-case study (Herriot & Gross, 1983). Multiple cases not only

pin down the specific conditions under which a finding will occur but also helps us form the more general categories of how those conditions may be related (Miles & Huberman, 1994).

Understanding the critical phenomena may depend on choosing the case well (Patton, 1990; Stake, 1994; Yin, 1994). The overall criterion for selecting the cases was that the organisations should have successfully implemented TQM. This selection was possible by studying small organisations that have received a quality award in Sweden. The use of quality awards to define a successful implementation of TQM is motivated by the thorough award procedure, underlined by for instance, that:

- The quality award model requires an extensive description and evaluation of the applying organisation.
- The descriptions, submitted in the award application, are thoroughly scrutinised by a group of independent examiners.
- If the organisation reaches a sufficiently high level of points, the group of examiners conducts a site visit in order to confirm that the statements in the evaluation documents are in accordance with reality.
- A judging committee estimates if the applying organisation can be considered as a good example for other organisations and reaches the final verdict of how the organisation complies with the award criteria.

Three organisations that fulfilled the criteria for the case selection process were chosen. They are described as cases *A*, *B* and *C* below. In order to maximise the possibility of discovering as many different characteristics of the phenomena as possible, it is important to find and chose as many different natural cases of the phenomena as possible, in as many different natural situations as possible (Eneroth, 1986). The chosen organisations ranged from one care centre from the public sector, one privately owned consultant company within the health service sector, and one privately owned manufacturing organisation within the telecom and data communication sector. The chosen organisations also differed regarding the period of time that had elapsed since they received the quality award. For case A five years had elapsed, for case B four years had elapsed, and for case C one year had elapsed. In order to consider and increase validity and reliability aspects a case study protocol was developed.

The data collection during the case studies consisted of documentation studies and interviews. The documentation consisted mainly of annual reports and the award application that each organisation submits to the examiners involved in the quality award process. At each case organisation the managing director or quality manager was interviewed, and one employee who has been and still is part of the quality development work but without formal authority. Approximately 50 questions were asked during each interview, the number differs due to the fact that there were follow-up questions to some of the answers. All interviews were recorded apart from one, due to a request by the respondent, but during that interview two interviewers were used so one person focused on the transcription. The questions were created with the following three overarching question areas as a basis:

1. How is the TQM work organised and what results have been accomplished?

2. What are the components of the TQM work and how have these components been implemented?

3. How are the TQM components used and what is the common apprehension about them?

Czarniawska (1999) argues for narrative knowledge as an attractive candidate for bridging the gap between theory and practice. Therefore, all interviews were transcribed and subsequently analysed by comparing the narratives in order to find regularities. Analysis was also performed by data reduction in order to sharpen, focus and organise the data, see Miles & Huberman (1994) The transcriptions can be found in Hansson & Palmberg (2003).

Empirical findings

Case A

Case A is a care centre with approximately 10 000 patients. The care centre belongs to the public sector, has about 35 employees, and had a turnover of approximately 1.8 million euro in 2001. Since 1994 the organisation has been working steadily with quality development. The staff participated in a TQM education in 1995, when the work with quality development had started. The personnel is focused on in the organisation due to the fact that that the business is based on the patients' confidence in the nursing staff. The organisation works continuously with competence development and goal orientation. The quality development work resulted in the organisation receiving the Quality Award in Northern Sweden in 1997.

Considering the way the TQM work is organised, there is no apparent formal structure. The management team works with ideas concerning quality but there is no formal quality manager or division. The employees participate in regular business development meetings in different groups and they are responsible for the more practical quality issues and development. The organisation has different alternating informal cross-functional teams that, among other issues, work with quality development. The organisation has worked for such a long time with quality development that it is a natural part of the day-to-day business. The chosen way of working functions well, especially the business development groups, which work better than the larger more formal groups they had before. The question regarding financial benefits from quality is, according to the manager, inappropriate since good quality repute has resulted in more customers, which in return increases the costs. The quality development work has also, among other non-financial benefits, resulted in increased employee and customer satisfaction along with shorter lead times. The number of employees reported sick is low and no one has been reported as full-time sick, which is unusual for the Swedish public sector.

The components of the quality development work within Case A are described in Table 1. The table also includes how the components have been implemented, who works with the components, and the experiences of working with them.

Table 1. The findings from Case A regarding the TQM components.

TQM components	Implementation approach	Experiences from implementation	Who does the work	The experiences from working
Surveys regarding both staff and customers	Identified needs and then developed them. Regional management initiated some surveys.	In the beginning there was some resistance among employees.	Mainly the administrative employees.	Positive experience that tendencies become visible.
Business development planning	Initiated from upper management but also a response to the growth of the organisation.	Nothing has been hard regarding implementation.	The management decides the areas and then all employees are involved.	Positive experience is that one can sit down in peace and quiet and discuss and develop.
Business development group meetings	Initiated by upper management.	Too much measuring and analysing at first but a customised approach made more sense.	All are involved in the business development groups. Different suggestions are discussed to reach consensus.	The business development groups are relevant but sometimes it is too much buzz.
Breakthrough approach (customised idealised design[1])	Initiated by management.	Met severe resistance among employees but the approach was customised based on the discussions.	Everyone is involved in the breakthrough approach.	The breakthrough approach works well.
Staff interviews & meetings	Initiated by management.	Nothing has been hard regarding implementation.	Everyone is involved.	Positive, sometimes conflicts but one is able to express one's opinion.
PDSA-cycle (Plan-Do-Study-Act)	A quality course created an interest.	Many took part in the course and the methodology was well established.	Used by the informal groups on a regular basis.	Positive experiences.

As revealed in Table 1, the management initiated many of the implementation efforts. In the cases when employees resisted change, discussions and meetings were held in order to motivate, which sometimes resulted in a customised approach based on suggestions from the employees. All employees have also participated in different quality courses, which further facilitated the implementation efforts. The fact that most TQM components involve all employees further strengthens the participation. As described in Table 1, the overall experience of using the components is positive.

Case B

Case B is a health service consultant that was established in 1976. The organisation merged with another business in 2001 and then doubled its staff to the present number of approximately 23. The employees are divided into three teams connected to three different business areas. Each team consists of experienced consultants such as doctors, company nurses, company physiotherapists, social scientists and graduate engineers. Through a partnership arrangement approximately half of the personnel is the largest joint owner. The organisation's team-based structure is also used in different improvement projects where cross-functional teams are created in order to

[1] Idealised Design methodology is a planning process that involves participants' understanding of their roles and responsibilities in the planning activity. Taught by Russell Ackoff and Jamshid Gharajedaghi of the Institute for Interactive Management.

reach the objective. The organisation's customers are mainly from a geographically restricted area. In 2001 the organisation had a turnover of approximately one million euro. The quality development work partly started when the organisation appointed a new managing director in 1993. At the same time the financial conditions for the organisation drastically changed when the subsidy to the business sector was withdrawn. The national economic recession and the change in financial conditions led to an income loss of about 30 to 40 %. The new managing director was very interested in the quality development area and initiated the process of change in order to respond to the altered conditions. This managing director left the organisation during the late 1990s, and after a few years with a part time manager, the organisation presently has a new managing director. The organisation has been working with quality development since 1994 and received the Quality Award in Northern Sweden in 1998.

There is no longer any formal quality manager and there is no quality department. The managing director has the overarching responsibility for quality related issues, but that is not evident since the former employee responsible for quality is still considered by many to have a kind of informal responsibility for the quality development. Furthermore there are several informal groups that work with quality development and the quality work is sustained by the former extensive implementation of TQM that permeates the organisation. The chosen method of organising functions acceptably. The quality development work has for instance resulted in increased operating income, turnover and number of customers. The satisfaction of the internal customers has not been measured recently.

The components of the quality development work, how they have been implemented, who works with the components, and the experiences of working with them are described in Table 2.

Table 2. The findings from Case B regarding the TQM components.

TQM components	Implementation approach	Experiences from implementation	Who does the work	The experiences from working
Customer cooperation & dialogues	A response to ISO 9000 and was further developed during the quality award process. The employees took part in a training course.	Interest, motivation and understanding for carrying them out facilitated while lack of time obstructed the implementation.	The persons responsible for customers, i.e. half of the personnel, conduct the customer dialogues.	The advantage is that one increases the knowledge about the customers when using the customer dialogues.
Follow-up of conducted training courses	The quality award process implied a follow-up of their training to the customers.	Lack of time and routines is a challenge. The easy part is realising that it is important.	Those that perform the training courses (the process owner) are responsible. All training is evaluated.	No negative feelings about assessing the training courses. The advantage is the increased quality.
Customer surveys regarding the patients	Based on discussions in connection to the quality award process the employees agreed that they should measure the patient satisfaction.	It was easy to understand and implement but a lack of structure has obstructed the use of the measurements.	The administrators mainly deal with the patient surveys, which are conducted approximately twice a year.	Positive to get feedback in order to improve. The unstructured approach is negative. The lack of time is negative.
Surveys regarding customer companies	Identified a need during the quality award process.	Has not been hard, maybe lack of precision in measuring and lack of time.	Those working with companies, the process owners, manage the customer company surveys.	Is important since knowledge is gained about what customers think about the services.
Employee meetings	They discovered a need for that approach.	The employee meetings were not problematic to implement.	Involve everyone. The manager of each business unit is responsible.	It is positive to meet and discuss, it is a prerequisite for cooperation.
Business development day	They discovered a need for that approach in discussions regarding the quality development work.	The business day approach has not been problematic to implement.	Responsibility of the management group. All employees are involved.	All employees gain knowledge about the organisation; it creates a feeling of community.
Business plan development	Has been used since the start of the business.	Regarded as common sense therefore easy to implement.	Those responsible for the finance & administration.	It is positive for the information permeation within the organisation.
Staff development meetings	It was identified as a need during the quality award process in order to improve.	Was lacking when they had a part time manager but are now functioning well.	The manager is responsible and all employees are involved.	Positive. The manager and each specific employee is updated.
Competence groups	The competence groups have developed over time and are partly a result of customer benchmarking.	Is common sense and therefore easy to motivate but the most problematic part is lack of time.	The competence groups are used once a month and all employees are involved.	One advantage is that the organisation's business improves.

As revealed in Table 2, many of the implementation efforts were initiated in response to an identified need during the quality award process, i.e. during the self-assessment process. All components were implemented before the organisation merged with the other organisation, i.e. at a time when the main staff were joint owners. These implementation efforts were mainly conducted by a teamwork approach, which was facilitated by the ownership structure at that time. As described in the table, the overall experience of using the components is positive.

Case C

Case C started in 1985 and is a manufacturing company within the telecom and data communication business. The organisation's core business is to manufacture versatile cables with very short delivery time. The organisation had 15 employees in 2001 and the business is driven with a strong focus on customer satisfaction. The company works with a horizontal organisation where all members of staff are responsible for the work from start to finish. In 2001 the organisation had a turnover of approximately 1.2 million euro. The organisation is certified according to the ISO 9001 standard and received the Quality Award in Northern Sweden in 2001.

The manager has the overarching responsibility regarding the quality development work and one administrating employee is responsible for the quality system. The organisation has a small quality group that works with formal quality issues but also informal groups that work with quality issues on a day-to-day basis. The chosen approach works well functioning but is weak in terms of documentation. That is however not considered to be a serious problem since, according to the respondents, how things are working is the important issue. The financial results have, according to the manager, been positively affected by the quality development work. Less than 1% of the personnel have reported sick. It is the opinion of the respondents that the quality award has strengthened the organisation's employees.

The TQM components, how they have been implemented, who works with the components, and the experiences of working with them are described in Table 3.

Table 3. The findings from Case C regarding the TQM components.

TQM components	Implementation approach	Experiences from implementation	Who does the work	The experiences from working
Quality award criteria	A teamwork approach. Management motivated the employees by visualising potential benefits and by instilling a sense of crisis.	The theoretical part was easy and the practical part hard.	Mainly the small quality group is involved. It is used on all processes in the organisation.	The experiences are positive. Better customer focus and employee participation are some of the results.
Measuring delivery precision	Everyone understood the value of precision in deliveries.	Easily implemented.	All employees are involved. One person has the overall responsibility.	Very positive, increased customer satisfaction and more profitable business.
Measuring reclaims	Everyone understood the value of satisfied customers. Positive development has been rewarded.	Easily implemented.	All employees do their own reclaim reports, but the manager administrates them.	Positive, satisfied employees, customers and increased profitability.
Meetings on weekly, monthly, quarterly and annual basis	Implemented continuously during a couple of years and using issues that deal with questions such as bonuses motivates the staff.	Easily implemented.	The manager initiates the meetings but other employees are also partly responsible. All employees participate.	One advantage is that the meetings are on a regular basis. The result is that the organisation has been more structured.
Bonus system	The organisation used to have a Christmas bonus but that was too irregular so the manager used his network of contacts and developed a new system.	Problem was to make the employees understand that there would be no bonus if the company did not perform well.	The bonus is delivered on a quarterly basis and the manager works with the bonus system.	Positive experiences, all employees are motivated to decrease the costs and increase the income.
The use the ISO 9000 standard	Participation on a voluntary basis in a regional project, which aimed to help organisations to get a certified system.	The hard part was the high bureaucracy. The system is customised for large organisations.	The manager and administrator work with it.	It is positive to have a quality system but it is too theoretical and bureaucratic.
Customer surveys	The quality award process identified a need. A group was assigned to create an inquiry, which all employees analysed.	The customer orientation within the organisation has facilitated the implementation.	One person is responsible for this tool.	The experiences are positive since the organisation receives feedback from the customers.
Staff meetings	Were unstructured but they have been formalised.	Easily implemented.	The manager talks to every employee.	Positive experiences.

The TQM components described in Table 3 were in most cases easily implemented and all employees were involved in working with many of the components. The quality award criteria are mentioned in the table as one component of TQM. One may however argue whether it should be accounted for since quality award recipients is a criterion for the selection of the cases. In this case it was accounted for since the respondents stated it as a component of their present TQM related work, used for self-assessment. The reasons for initiating the implementation efforts are diverse but the manager's quality focus has been an important underlying factor. These implementation efforts were conducted both by a teamwork approach and by the small quality group. As revealed in Table 3, the overall experience of using the components is positive.

Cross-case analysis

When considering the three different cases as three entities of empirical material, some differences and similarities appear.

As argued in the theoretical discussion, small organisations are considered to be at a disadvantage regarding financial conditions. Problems, when implementing and using the TQM components, related to lack of financial recourses couldn't be derived from the empirical material. This could partly be explained by the management's strong opinion that quality is a necessity for business survival, which meant that quality initiatives were allowed to cost, during, and after, the implementation process. The management's role in the development towards a TQM permeated organisation could in all cases be considered as essential.

The structural level in small organisations is also considered to diverge from large organisations. This could be confirmed by the findings in this study where there was no formal quality manager or quality department. However, a small group had the overarching responsibility for the quality related development in one organisation but there was no formal quality manager. This implies that the approach for organising TQM is adapted to the low level of structure and in turn increases the permeation of quality activities among all employees, instead of only being the concern of a specified unit.

A common argument in discussions relating to problems of implementing TQM in small organisations is that the concept of TQM is regarded as customized for large organisations. The small organisations that constitute the basis for this study are all quality award recipients, and therefore considered as examples of organisations that have successfully implemented TQM. Their approaches towards TQM could therefore be considered as tailored for the context of small organisations. One common TQM component is measurements of customer satisfaction. The studied organisations use surveys and dialogues in order to establish a picture of how well the customer needs are fulfilled. Another common TQM component is different approaches for considering the employee development, involvement and satisfaction within the organisations. Staff development meetings and different group meetings are the main approaches dealing with this component. Furthermore, meetings regarding the overall business development, involving all employees, is another component of the TQM related work. The most common view of the used components is that they are working well and there are few disadvantages. One may however argue if an organisation continues to use approaches that are considered to be problematic or inappropriate, but the empirical material further indicates in what specific way the approaches support and contribute to the organisations' quality efforts. The reasons and approaches to implement also show similarities between the cases. The main reasons for implementing have either been common need identification or a decision from management, two reasons that don't necessarily need to be separated. The common need identification mainly dealt with suggestions from participants in the quality development work, managers or employees, derived from exposed requirements during efforts to comply to the quality award criteria. Consequently, the quality award criteria constituted a large source for need identification.

Discussions and conclusions

The multiple-case study that constitutes the basis for this paper has pointed out different approaches for quality development work among small organisations. In the TQM discourse, different statistical and process controlling approaches and tools, e.g. quality function deployment and control charts, are well represented. These types of TQM components were not apparent in the studied organisations. Instead, their TQM implementations consisted of, and were sustained by, approaches focusing on external and internal customers, where measurements of external customer satisfaction, and employee development, involvement and satisfaction, comprised common TQM components. This indicates that a customised approach for TQM implementation in small organisations perhaps should turn the focus from extensive technical tools and approaches, to less difficult methods, such as surveys and employee development approaches. Such a turn might ease the negative effects of a higher unit cost of providing training for smaller organisations.

The study also indicated that small organisations could succeed with, and sustain, a TQM implementation without a thorough and formal organisational structure for quality. Instead, a more informal and all-involving approach could be suggested based on the findings, but at the same time, apparent responsibilities for quality issues seem to be needed. Such an approach could be facilitated by the advantage that the management actions are very apparent in a small organisation context. The quality related work in the organisations was characterised by all-embracing employee involvement and support from management.

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Appendix 1

Case Study Protocol

TQM Implementation in Small Organisations

APPENDIX 1

APPENDIX 1

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APPENDIX 1

1 Work Procedure – What to Do and Observe before the Interview Phase

1.1 Preliminary Schedule of Company Visits

1.1.1 Examination of advance information

An examination is described here of the advance information that may have been submitted and that may be suitable to study before the actual visit is made. This information can for example consist of common business information, their application form to the quality award process etc.

1.1.2 Verification of access

Here it is made sure that the "areas" that I am supposed to have access to are also accessible. In this case the matter is rather a verification that the areas of interrogation to be dealt with will be possible to answer, from the point of view of confidentiality.

1.1.3 Special documents

Here there is a review of the special documents that should be obtained during the company visit. These may be minutes of meetings, internal surveys, etc. Information that should be collected before the interviews are carried out are a map over the quality development work and if possible a list over core values that are permeating the organisation. This is performed in order to ensure and increase the pre-understanding of the organisation.

1.2 The properties of the questions and a description of the groupings of people to be interviewed

1.2.1 Facts about the questions and the choice of inquiry method

The chosen type of question is Non-Form Bound Standardised Inquiries (ISI). This choice has been made because the method is based on the idea that we must try to understand the informant's world in order to be able to understand the information given by the informant (Hörte, 1982). The drawback is that it is assumed that there is no order fixed in advance of the questions, which function equally well for each informant. Hence the order of the questions must be adapted to the informant's willingness to take up the different inquiry areas.

Another alternative is Form Bounded Standardised questions. This inquiry method assumes, among other things, that the questions are equally important to

each of the informants, and this is the main reason why this method is not used by the present writer.

The potential sources of information for the different questions are taken into consideration through each answer being followed by a list of probable sources of evidence, such as the name of the interviewee, documentation or observations.

1.2.2 Co-workers

The co-workers in the organisation are interviewed since their picture concerning the different question areas are assumed to be equally important to elucidate the problem areas as for the other groups of respondents. An alternative is to use a group interview or several focus groups with an explorative aim. This requires special demand on the interviewer in order to assure that no one is dominating the group and that the whole question area is covered. The number of respondents is set when the number of questions is set and the available interview time is decided.

1.2.3 Management and responsible quality managers

By interviewing the management and the responsible quality managers expects, the total need of information should be met, especially questions concerning strategies and different decisions that have been made during the quality development process.

1.3 Training of the person in charge of the pilot case

1.3.1 Aim of training and training areas

The objective of training before the actual interview is carried out is to refine the interview process that will be accomplished. Different training areas are:

- To keep the appointed time
- To create a comfortable relation and atmosphere
- To control the interview process without restraining it
- To practise the ability to ask follow-up questions

Here is the total expected interview situation recreated by conducting a test interview

1.3.2 The case study data base

Here the different kinds of information and documents are described in order to assure the reliability of the case studies. These different kinds of information sources are:

- Case study notes or records

- Case study documents
- Application forms
- Narratives

2 Case study records – to make and to take into consideration during the interview phase

2.1 General considerations about the questions

The questions that are described in the case study protocol are directed towards the interviewer in order to keep the focus on the question at issue. These questions can be of such kinds as: Who was mainly leading the quality development work?

2.2 Assumptions about different phases in the implementation process

If the implementation process is divided into the following phases:

- The preparation phase
- The implementation phase
- The reflection phase

The question areas can be connected to the implementation phases in the following order, see Table A.

Table A *The question areas connection to the assumed implementation phases*

Question areas	Implementation phases
The quality development work	The preparation phase and implementation phase
The implementation process	The implementation phase and the reflection phase
The resource situations affect	The implementation phase and the reflection phase
Characteristics of a functional implementation process	The preparation phase, implementation phase and the reflection phase

For the entire questionnaire, see Appendix 2.

Appendix 2

Interview Guide

Multiple-Case Study 1

APPENDIX 2

Has the question been dealt with	**1 Introduction**
	Introducing question:
	Can you tell me your name and your duties in the organisation?
	For how long have you been working in the organisation?
	Can you describe your role in the quality work, where role refers to your explicit role in the working group, but describe also if you have any implicit/informal position, and those of your duties that are linked to the quality work and your area of responsibility?
	2 The quality development work
	Describe in what way you first came in contact with work and work processes that you consider equal to quality development?
	When became the quality concept known to you as an important part of the organisation's business?
	Which was the first decision that was taken concerning the organisations quality development? (The management respondent)
	When did you experience that the organisation systematically started to work with quality development?
	When was it decided that you were going to apply for the quality award? (The management respondent)
	3 Characteristics of a functional implementation process
	3.1 Core values in the organisation
	Can you tell me what core values you think permeate you organisation? (Picture of core values used as an aid.)
	3.2 Questions asked for every stated core value
	How have you been working to implement the core value in the organisation i.e. which techniques and tools have you been using?
	Can you if possible, with this overarching map over your quality development process, point out when your organisation systematically started to work with this core value?
	Can, you if possible, state when you consider it as suitable to start to implement this core value in an organisation. Is it before any other core value, in the beginning-, middle- or at the end of the quality development process?
	How do you consider the organisation's prioritisation of this core value?
	Describe why you think that this core value is of importance for the organisation?

	4 The effects of the resource situation
	4.1 The effect of the knowledge level
	Which core values have you experienced to be most problematic to embrace and implement from a knowledge perspective?
	Which techniques have you experienced to be most problematic to embrace and implement from a knowledge perspective?
	Which tools have you experienced to be most problematic to embrace and implement from a knowledge perspective?
	Have lack of knowledge concerning some core values, techniques and tools brought obstacles concerning the ability to understand and work with them?
	Do you experience that the knowledge situation and knowledge level have been of great importance for your quality development process and if that is the case in what way?
	4.2 The effect of the resource situation
	Which core values have you experienced to be most problematic to embrace and implement when looking at the resource situation during the implementation process?
	Which techniques have you experienced to be most problematic to embrace and implement when looking at the resource situation during the implementation process?
	Which tools have you experienced to be most problematic to embrace and implement when looking at the resource situation during the implementation process?
	Do you experience that the capital resource situation has been of great importance for your quality development process and if that is the case in what way?
	5 Concluding questions
	5.1 The critical steps
	Have any of the core values, and in that case which, been especially problematic to implement and embrace in the organisation?
	Can you, if possible, rank the core values with respect to the how hard they have been to implement and embrace in the organisation?
	Of what kind, knowledge based, resource based or both, have these obstacles been?
	Would you do anything different if you had the possibility to go through the implementation process once again?

	5.2 An ideal succession
	Can you see any ideal succession for the implemented the core values when the objective is an implementation of TQM?
	Can you see any ideal succession for the implemented the techniques when the objective is an implementation of TQM
	Can you see any ideal succession for the implemented the tools when the objective is an implementation of TQM

Appendix 3

Case Study Protocol

Quality Work in Small TQM Organisations

APPENDIX 3

APPENDIX 3

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APPENDIX 3

1 Work Procedure – What to Do and Observe before the Interview Phase

1.1 Preliminary Schedule of Company Visits

1.1.1 Examination of advance information

An examination is described here of the advance information that may have been submitted and that may be suitable to study before the actual visit is made. This information may be their ordinary company information, their operations description, (KiN), etc.

1.1.2 Verification of admittance

Here it is made sure that the "areas" that I am supposed to have access to are also accessible. In this case the matter is rather a verification that the areas of interrogation to be dealt with will be possible to answer, from the point of view of confidentiality.

1.1.3 Special documents

Here there is a review of the special documents that should be obtained during the company visit. These may be minutes of meetings, internal surveys, etc. The information that should be obtained before the interviews are made is of a general nature and is related to their current quality work, what it consists of, how it is implemented and by whom. This is done in order for me to increase my preliminary knowledge of the organisation.

1.2 The properties of the questions and a description of the groupings of people to be interviewed

1.2.1 Facts about the questions and the choice of inquiry method

The chosen type of question is Non-Form Bound Standardised Inquiries (ISI). This choice has been made because the method is based on the idea that we must try to understand the informant's world in order to be able to understand the information given by the informant (Hörte, 1982). The drawback is that it is assumed that there is no order fixed in advance of the questions, which function equally well for each informant. Hence the order of the questions must be adapted to the informant's willingness to take up the different inquiry areas.

One alternative is Form Bound Standardised Inquiries. This inquiry method assumes, among other things, that the questions are equally important to each of the informants, and this is the main reason why this method is not used by the present writer.

The potential sources of information for the different questions are taken into consideration through each answer being followed by a list of probable sources of evidence, such as the name of the interviewee, documentation or observations.

The interviews are to be documented on audiocassettes.

1.2.2 Collaborators

The collaborators in the organisation are interviewed because their picture of the questions that are asked is considered just as important for shedding light on the problem area as that of the other groups to be interviewed. One alternative is to make a group interview by means of one or several focus groups for the purpose of exploration. This puts special demands on the interviewer, who, among other things, will have to see to it that one single person does not dominate the group, that those who are more reticent start communicating, and that the whole group participates, to make sure that the whole topic is covered (Fontana, A. & J. Frey, 1994).

1.2.3 People responsible for quality/The quality group/The management

Those who have been responsible and have worked operatively with the introduction of the quality work will be included in the investigation. Here too group interviews are an alternative, because those who are to be interviewed are assumed already to have some experience of working together in a group, which may result in the group being able to function with less inhibition. The number of interviewees is determined when the number of questions and the length of the interview have been decided on.

1.3 Training of the person in charge of the pilot case

1.3.1 The aim of the training and areas to train on

The aim of training before starting the interview is to refine the interview process that I will carry out. The areas to train on are: Keeping time, creating a pleasant atmosphere, guiding the process of inquiry without restricting it, training the ability to ask attendant questions.

1.3.2 The case study database

The information media to be documented are described here in order to improve the reliability of the pilot case. These media are:

- Pilot case notes
- Pilot case documents

- Recordings of the interviews

2 Case study records – to make and to take into consideration during the interview phase

2.1 General considerations about the questions

The questions in the case study record are addressed to the interviewer, so that he/she will be able to focus on what he/she is supposed to keep a check on. These questions may be for example: What does the current quality work look like? How long has it been going on? What types of instrument and working method are used?

2.2 Assumptions about the quality work

In order to create battery of question that is easy to follow and logical, the following division of inquiry areas is made:

- What does the quality work look like in an organisational perspective (is there a quality department or for example a person in charge of quality)?
- What does the quality work consist of (what working methods and instruments are used)?
- How are the working methods and instruments used in the organisation (individual work or for example interfunctional groups)?
- How does the staff experience the work with the given working methods and instruments, are any of the problematic, and, in that case, problematic in what respect?
- How does the staff experience the result of the work and what results have been obtained?

I then divide the present division into the areas shown in the table below:

Inquiry areas	Phases in the perspective of the case study organisation
2.4 The quality work in the organisation	**The preparatory phase and the introductory phase**
2.5 The components of the quality work	**The introductory phase and the operative phase**
2.6 How are the components used in the organisation	**The operative phase and the reflective phase**
2.7 The experiences of the distinction work and their effect on the quality work	**The reflective phase**
2.8 How is the work with the given components experiences and what is the result	**The reflective phase**

2.3 Introduction

A presentation of the informant and the interviewer. The aim of the introduction is to create harmony between the informant and the interviewer and to provide the necessary background information about the informant.

Introductory questions:
Can you tell me your name and your duties in the organisation?
How long have you worked in the organisation?
Have your duties changed since your were employed or are they the same as when you started?

Concluding questions:
Can you describe your role in the quality work, where role refers to your explicit role in the working group, but describe also if you have any implicit/informal position, and those of your duties that are linked to the quality work and your area of responsibility?

2.4 The quality work in the organisation

The aim is to get an overview of the organisation of the quality work.

Introductory questions:
Can you tell me what values you think permeate you organisation? (Picture of Values used as an aid.)
How is the quality work organised? Are there a quality department and a person in charge of quality, and how is it organised?

Are there any formal/informal groups working with quality issues/improvement issues and, if so, how are they organised?
How does the chosen type of organisation work?

2.5 The components of the quality work

2.5.1 What working methods and instruments are used in the organisation

The aim is to try to find out what working methods and instruments the organisation uses in its quality work.

Questions:
Can you describe what working methods and instruments you think your organisation is using in your quality work? (A document with definitions of working methods and instruments is used as an aid.)

Is there any working method or instrument that you have stopped using?

2.5.2 Questions on each working method and instrument

The aim is to try to find out how the organisation uses each working method and instrument.

Questions:
How have you gone about introducing the instrument/working method in the organisation?
What problems have you experienced in connection with the introduction of the instrument/working method? (Have the problems been change oriented or project oriented?)
What aspects of the introduction of the instrument/working method have you experienced as easy? (Have these aspects been change oriented or project oriented?)
How frequently do you use this instrument/working method?
Is it a suitable instrument/working method in your opinion?

2.6 How are the components used in the organisation

2.6.1 In what way are the working methods and the instruments used

The aim is to find out how the working methods and the instruments are used. Each question is asked for the respective working method and instrument that has been identified (to the extent that the informant has used the working method/instrument).

Questions:
Who are using this working method/instrument?
To what extent is the working method/instrument being used, in all processes or just some of them?
How is the work carried out: planning, implementation, follow-up routines and improvements?
Is the work individual or collective?
How do you feel that the work with this working method/instrument proceeds: advantages, drawbacks and problems, and in what way?
What is the result of the quality work that has been done (both subjective assessments and concrete variables)?

2.7 The effect of the distinction work on the quality work of the organisation

2.7.1 How have the experiences of the distinction work affected the way the organisation works with quality issues

The aim is to find out how the work with the quality distinction that the organisation has received has affected the way in which the organisation works with quality issues.

Questions:
What are your experiences of the quality distinction work, positive as well as negative ones?'
How have your experiences of the quality distinction work affected your quality work after you received the distinction?
How has the feedback report been generally used?
Have any specific working methods/instruments been initiated due to these experiences and/or the feedback report?

2.8 Reflections on the quality work

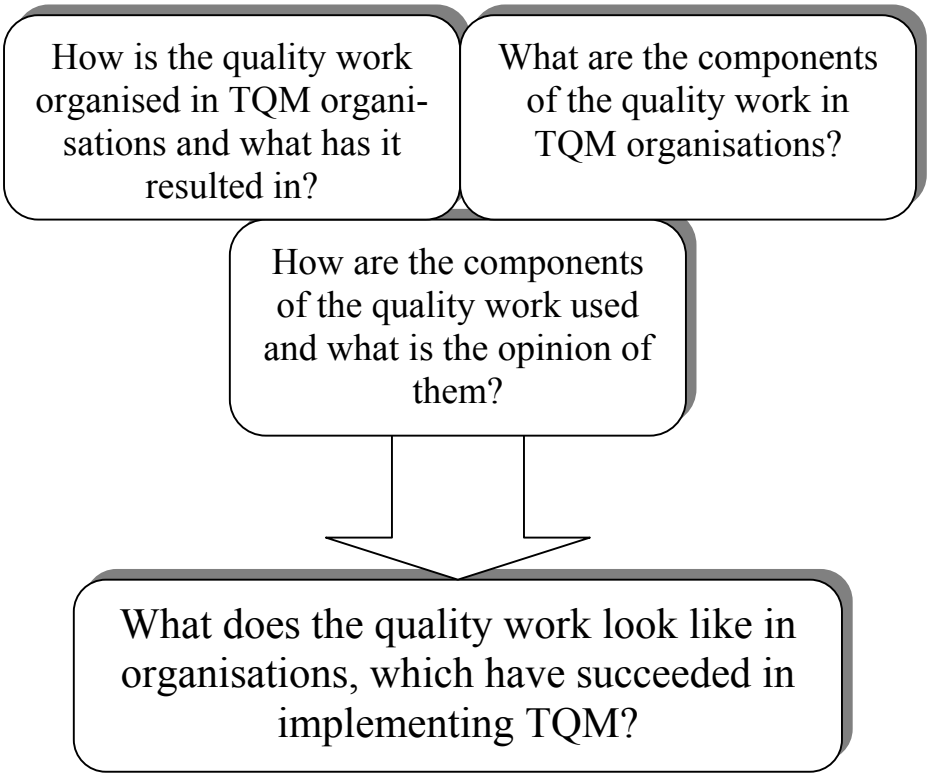
2.8.1 How is the work with the given components experienced and what is the result

The aim is to find out how the organisation experiences the result of the quality work and also to illustrate how the organisation thinks that the work with the given components has functioned.

Questions:
How have the profitability and other hard parameters been affected by the quality work, for example profit, turnover, number of customers, quality deficiency

costs, sick leaves, staff turnover, etc? If things have become worse, what are the reasons? (Both subjective assessments and concrete variables.)
How have soft parameters, such as internal and external customers' satisfaction and staff member participation been affected by the quality work? If things have become worse, what are the reasons? (Both subjective assessments and concrete variables.)

3 Problem formulations making up the basis of the areas investigated



Appendix 4

Interview Guide

Multiple-Case Study 2

APPENDIX 4

Has the question been dealt with	
	1 Introduction
	Can you tell me your name and your duties in the organisation?
	How long have you worked in the organisation?
	Can you describe your role in the quality work, where role refers to your explicit role in the working group, but describe also if you have any implicit/informal position, and those of your duties that are linked to the quality work and your area of responsibility?
	2 The quality work in the organisation
	Can you tell me what core values you think permeate you organisation? (Picture of core values used as an aid.)
	How is the quality work organised? Are there a quality department and a person in charge of quality, and how is it organised?
	Are there any formal/informal groups working with quality issues/improvement issues and, if so, how are they organised?
	How does the chosen type of organisation work?
	3 The components of the quality work
	3.1 What working methods and instruments are used in the organisation
	Can you describe what working methods and instruments you think your organisation is using in your quality work? (A document with definitions of working methods and instruments is used as an aid.)
	Is there any working method or instrument that you have stopped using?

	3.2 Questions on each working method and instrument
	How have you gone about introducing the instrument/working method in the organisation?
	What problems have you experienced in connection with the introduction of the instrument/working method? (Have the problems been change oriented or project oriented?)
	What aspects of the introduction of the instrument/working method have you experienced as easy? (Have these aspects been change oriented or project oriented?)
	How frequently do you use this instrument/working method?
	Is it a suitable instrument/working method in your opinion?
	4 How are the components used in the organisation
	4.1 In what way are the working methods and the instruments used
	Who are using this working method/instrument?
	To what extent is the working method/instrument being used, in all processes or just some of them?
	How is the work carried out: planning, implementation, follow-up routines and improvements?
	Is the work individual or collective?
	How do you feel that the work with this working method/instrument proceeds: advantages, drawbacks and problems, and in what way?
	What is the result of the quality work that has been done (both subjective assessments and concrete variables)?

	5 The effect of the distinction work on the quality work of the organisation
	5.1 How have the experiences of the distinction work affected the way the organisation works with quality issues
	What are your experiences of the quality distinction work, positive as well as negative ones?
	How have your experiences of the quality distinction work affected your quality work after you received the distinction?
	How has the feedback report been generally used?
	Have any specific working methods/instruments been initiated due to these experiences and/or the feedback report?
	6 Reflections on the quality work
	6.1 How is the result of the quality work experienced
	How have the profitability and other hard parameters been affected by the quality work, for example profit, turnover, number of customers, quality deficiency costs, sick leaves, staff turnover, etc? If things have become worse, what are the reasons? (Both subjective assessments and concrete variables.)
	How have soft parameters, such as internal and external customers' satisfaction and staff member participation been affected by the quality work? If things have become worse, what are the reasons? (Both subjective assessments and concrete variables.)

Appendix 5

Case Descriptions of Multiple-Case Study 1

APPENDIX 5

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APPENDIX 5

1 Brief History and Presentation of Bulten Automotive AB

Bulten Automotive AB was established 1992 but has a history going all the way back to 1898 when Gothenburg's Bolt and Rivet Factory was founded. Bulten Automotive AB is a part of the Bulten group, which just recently was taken over by Finnveden AB. The field of business is to buy, store and deliver fastening elements.

> *"Our business idea is to offer fastening elements and similar kinds of products at the best total cost to the Swedish vehicle industry and its system suppliers. As a logistic partner we have a comprehensive view of the business co-operation. Our goal is to jointly develop solutions with our partners in order to develop the optimal customer relation"*

In 1998 the organisation supplied about 24 employees with work and had a yearly turnover of approximately 110 MSEK, i.e. about 13 MUSD. In 1992 when Roger Strutz, the present manager, was appointed to manage the organisation the business soared. The turnover was multiplied in only a few years. Roger became the obvious centre for all activities and had to direct the staff in a great deal of common situations. Since the organisation consisted of a young staff with an average age of 31 years, questions concerning the way to manage the organisation arose. This resulted in a staff meeting in order to obtain a more formal structure of the business and a long-term strategy. A management council and a formal leadership were created and this sparked interest in quality development, on a deeper level. The organisation had in 1993 started to work with a quality system implementation in order to respond to customer demand of ISO 9000. Since 1995 the organisation has been working systematically with quality development, see Table 1-1.

Table 1-1 Important steps in the quality journey at Bulten Automotive AB.

The year of the activity	The activity at Bulten Automotive AB
1992	• The organisation is created
1993	• The quality system is developed
1994	• Certificated according to the ISO 9002 standard • The first customer satisfaction investigation is accomplished
1995	• The first investigation concerning the supplier satisfaction is conducted and a supplier handbook is developed together with Chalmers Institute of Technology • A new organisation structure, the council organisation is developed
1996	• The first co-worker satisfaction investigation is conducted. • The business starts to manage with the vision, goals and action plans as a basis
1997	• Process mappings of the organisation's main and support processes are conducted • The first annual report according to the criteria in USK is conducted
1998	• The organisation is certificated according to the QS 9000 standard. • The organisation receives the Swedish Quality Award

2 Brief History and Presentation of Råtorp Nursery School

Råtorp Nursery School is situated in a residential district in Karlstad, a town in central Sweden. The organisation is a part of the public sector in Karlstads municipal business and the business area is nursery for children between one and five years. The number of employees is 16 and the number of children placed at the nursery is 71. The organisation has a yearly turnover of approximately 5,1 MSEK, i.e. about 0,6 MUSD. The organisation's vision is:

> *"Our vision is the delighted school, which is founded on the behaviour between the children, the personnel, the parents and the involvement and positive attitude of the personnel. The most important things for us are that the personnel is involved and that the parents play a central role in our business"*

The organisation has been working with quality development since 1994 but a more systematic approach was introduced in connection with the work with the Good

Quality in the Nursery School model in 1997. In 1994 a project started called FIA (The Nursery School's Inner Work), which was a project concerning how the staff should approach each other, the customers and the children. The incentive for this project was a kick-off meeting where the management at Råtorp announced their interest in participation in that project. Another kick-off meeting for all personnel in the municipality took place in 1996 where the Good Quality in the Nursery School model was discussed. This is a municipal quality model, developed for nursery schools, and is based on the SIQ criteria. The manager at that time for Råtorp was also in this case very interested and appointed two co-workers for the pilot training courses. An overarching description over the organisation's quality development work is depicted in Table 1-2. The organisation participated in and received the Quality Award in Värmland during 1999.

Table 1-2 Important steps in the quality journey at Råtorp Nursery School.

The year of the activity	The activities at Råtorp Nursery School
1992	• The organisation is created
1994	• Work with FIA (Nursery School Inner Work), a project concerning how one behaves towards the customers and colleagues
1996	• A great kick-off meeting for all municipal employees concerning the quality development model "Good Quality" • The manager and one employee participate in a pilot training course concerning the Good Quality model.
1997	• The work with the Good Quality model starts, involving all departments in different work groups • The organisation receives the Good Quality award
1998	• The organisation works with and receives the Good Quality award a second time.
1999	• The organisation participates in the Quality in Värmland award and receives the award

3 Brief History and Presentation of the Technical Programme at Broman Upper Secondary School

The Technical Programme at Broman Upper Secondary School was started 1995 and is a technical upper secondary school education. The school is situated in Hudiksvall, a town in the eastern middle part of Sweden. The school has been divided into four different principal areas. The head of the Technical Programme, Bo Gullefors, is the principal for one of the four principal areas. This principal area has three different educational programmes, of which the Technical programme is one. The organisation

strives to put the students first. The parents' opinions are also taken into consideration. The vision for the Technical Programme is:

> *"To make the Technical Programme the most attractive mechanic education in the county on a level with leading industrial upper secondary schools"*

The basis for all work is the individual student and all work should be permeated by the attitude of putting the needs of the student first. The organisation connected to the Technical Programme supplied about 16 employees with work in 1998 and had a yearly turnover of about 8 MSEK, i.e. about 0,9 MUSD. Since 1995 the organisation has been working steadily with quality development, see Table 1-3.

Table 1-3 Important steps in the quality journey at the Technical Programme.

The year of the activity	The activity at the Technical Programme at Broman Upper Secondary School
1994	• Few students were applying for the programme • Work with changing and developing the programme and the name of the programme is changed from the *Industrial Programme* to the *Technical Programme*
1995	• The new Technical Programme has multiplied the numbers of students applying for the programme • The organisation participates in the test round for the Quality Award in Gävleborg • The first students attend to the new Technical Programme
1996	• The organisation participates in the Quality Award in Gävleborg
1997	• The organisation participates in the Quality Award in Gävleborg
1998	• The organisation participates in the Quality Award in Gävleborg • The organisation receives the Quality Award in Gävleborg

4 Brief history and Presentation of the Wisby Hotel

Two persons started the Wisby Hotel in 1991 after a three-year renovation. The hotel business was started in 1855 and some of the estates were built during the thirteenth century. The renovation had cost 240 MSEK, i.e. about 28 MUSD. The Hotel was under private direction for one and a half years until bankruptcy was declared. The Swedish bank, SE-Banken, took over the hotel in 1992. Today Capona, which is a Swedish hotel estate company, is the owner after some changes in the ownership structure. After the bankruptcy in 1992 the workforce was reduced from 48 to 28 permanent employed. The remaining employees were trained for six weeks in areas related to the hotel business. The hotel contains 134 rooms and has a total area of 6 917 square metres. In 1998, the hotel employed approximately 45 persons and had a

turnover of approximately 36 MSEK, i.e. about 4 MUSD. The Wisby Hotel's business concept is that:

> *"The Wisby Hotel should be a natural choice for residents that desire tradition and quality"*

The hotel has four guiding stars, flexibility, involvement, quality and tradition, which serve as a foundation for the work. It is the management's opinion that with hardware like the estate with its distinguished heritage, it is important to have software, i.e. human capital, of high quality. The organisation tried to measure the quality using inquiries and communication with the guests but a structure to the quality related work was missing. Since 1995 when the organisation was introduced to the Quality Award at Gotland the organisation has been working steadily with quality development, see Table 1-4.

Table 1-4 Important steps in the quality journey at the Wisby Hotel.

The year of the activity	The activity at the Wisby Hotel
1200	• Two of the estates that are a part of the present hotel estate are constructed
1855	• The hotel business is started in the building
1991	• The four guiding stars are established
1995	• The management group at the Wisby hotel is invited by Almi Företagspartner to seminars concerning the Quality Award at Gotland
1996	• The organisation participates in the Quality Award at Gotland
1997	• The organisation participates in the Quality Award at Gotland • The organisation receives the Quality Award at Gotland

5 Brief History and Presentation of Visby Arkitektgrupp

Three private persons started Visby Arkitektgrupp in 1980 and only two years later the number of employees had reached seven. The organisation was started with the primary condition of participation. All employees should be partners; own the same number of shares and be involved in the decision-making processes. This rule concerning partnership has some exceptions among employees that usually work with other assignments than architectural, such as administration. Although there are some exceptions from the partnership rule, all employees are more or less forced to actively participate in all decision-making processes. Today the organisation provides employment for ten persons. Visby Arkitektgrupp has its main office in Visby but also a newly established office in Stockholm. The office in Visby is characterised by

an open atmosphere and design since all employees work in the same large room. In 1997 the organisation had a yearly turnover of approximately 5 MSEK, i.e. about 0.6 MUSD. Visby Arkitektgrupp's business concept is:

> *"To help our customers create the working and living environment of the future with the best current methods in the most advantageous way for them"*

The organisation also has four operational concepts, which are:

1. To plan beautiful, functional, sustainable and well-constructed buildings of quality.
2. To offer a complete architectural service from an office in continuous development.
3. To have job satisfaction, enjoy life and have room for all personal development.
4. All staff are equal partners

The real quality development work started in connection with the building crisis in 1993. The competition became harder and the long-term projects, that were the normal working assignments, disappeared. The organisation has been working steadily with quality development, see Table 1-5, since 1993 when the organisation was introduced to the Quality Award at Gotland.

Table 1-5 Important steps in the quality journey at Visby Arkitektgrupp.

The year of the activity	The activity at the Visby Arkitektgrupp
1980	• The organisation is established
1993	• The organisation participates as an observer in the test round for the Quality Award at Gotland
1994	• The organisation participates in the Quality Award at Gotland
1995	• The organisation receives the Quality Award at Gotland
1996	• The organisation is responsible for the education programmes concerning quality at KTH-Visby academy.
1997	• The office in Stockholm is established • Jon Jonsson at Visby Arkitektgrupp is project leader for the Quality Award at Gotland • The organisation is nominated as the Swedish participant for the special round of the European Quality Award, especially designed for small and middle-sized enterprises.

6 Brief History and Presentation of Aesculapen Company Health Service AB

The Aesculapen Company Health Service AB was established in 1976 and is at present situated in Umeå, a town in the county of Västerbotten. The organisation is a knowledge and consultant company dealing with areas such as health, environment and development. The organisation has eleven employees that are divided into two teams. Each team consists of experienced consultants such as doctors, company nurses, company physiotherapists, social scientists and graduate engineers. The personnel are, through their partnership, the largest joint owner. The organisation's team-based structure is also used in different improvement projects where cross-functional teams are created in order to reach the objective. The organisation's customers are mainly from the Umeå area but also from other parts of the county. The organisation had a yearly turnover of approximately 7 MSEK, i.e. about 0.8 MUSD in 1998. Aesculapen Company Health Service AB's business concept is:

> *"To actively participate to make the customer organisations effective and attractive by supporting working life competence with profitable, preventive, urgent and supporting efforts"*

The quality development work partly started when the organisation appointed a new managing director in 1993. At the same time the economic conditions for the organisation drastically changed when the subsidy to the business sector was withdrawn. The national economic recession and the change in financial conditions led to an income loss of about 30 to 40 %. The new managing director was very interested in the quality development area and initiated the process of change in order to react to the altered conditions. The results of these quality development efforts are numerous. The ownership and the service production are today based on involved and responsible co-workers. The profitability of the organisation had increased and the turnover more than doubled in a market that has decreased by 30 %. The internal conditions in the organisation have been improved. The organisation has been working steadily with quality development since 1994 and the important steps in the organisation's quality development process are described in Table 1-6.

Table 1-6 Important steps in the quality journey at Aesculapen Company Health Service AB.

The year of the activity	The activity at Aesculapen Company Health Service AB
1976	• The organisation is established
1993	• The subsidy to the business sector was withdrawn • A new managing director is appointed • An inspection of the organisational structure is carried out
1994	• The organisation's quality development is formally started
1994-95	• The organisation participates in the development of a branch specific quality model
1995-96	• The organisation starts the development of a quality manual according to the branch specific quality model
1996	• The organisation decides to participate in the Quality Award in Northern Sweden process
1997	• The organisation participates in the Quality Award in Northern Sweden process
1997-98	• The co-workers become joint-owners
1998	• The organisation receives the Quality Award in Northern Sweden

7 Brief History and Presentation of Björknäs Dental Care Centre

Björknäs Dental Care Centre is a part of the county council in Norrbotten and is a dental care centre in the town of Boden. The town is situated in the northern part of Sweden, in the county of Norrbotten. The organisation sells dental services to children and adults. Approximately 75% of the business consists of adult dental services that are financed by patient fees. The clinic was started in 1982 and supplies 23 employees with work. The workforce is divided into nine teams with doctors, nurses and hygienists. The organisation had in 1998 a yearly turnover of approximately 8 MSEK, i.e. about 0.9 MUSD. Björknäs Dental Care Centre's business concept is:

> *"To offer individual and personal nursing that is characterised by a high standard of treatment, care, quality, competence and patient security. Our primary task is to aid the patients by preventing mouth and dental diseases"*

The organisation has for many years been working with quality development as a part of the strategic planning process. The basis for the development process is the dental service administration plan. All personnel participate in formulating the organisation's objectives and the planning of the strategic process.

There is no obvious initial cause for the start of the quality development process but in 1988 the management started a structured approach for the strategic planning process where all employees participated within cross-functional teams. Since 1989 the organisation has been working steadily with quality development, see Table 1-7.

Table 1-7 Important steps in the quality journey at Björknäs Dental Care Centre.

The year of the activity	The activity at Björknäs Dental Care Centre
1982	• The organisation is established
1988-89	• A structured approach for the strategic planning process and the team-based approach is established.
1992	• The management participates in a quality conference in Stockholm where the award for the quality model QUL is distributed.
1992-93	• The management starts to use personal development meetings with the individual employees.
1995	• The management group is informed of the Quality Award in Northern Sweden.
1996	• The organisation starts to use the Dental Association Quality Folder
1997	• The organisation starts to work with the Quality Award in Northern Sweden and makes an internal evaluation according to the criteria.
1999	• The organisation participates in and receives the Quality Award in Northern Sweden.

8 Brief History and Presentation of Hällbyskolan

Hällbyskolan was established in 1973 and is situated in Västerås, a town in the middle of Sweden. The organisation is a school with approximately 300 children from grades 1 to 6, 100 children in youth recreation activities and 50 children in kindergarten. The organisation is situated in a difficult area with a lot of unemployment, young families and immigrants. Almost 40 % of the children have their roots in a foreign country and this brings communication problems. The staff situation is advantageous, the personnel situation is stable and the majority have been working within the organisation for between 15 and 20 years. The environment in which the organisation operates calls for a high propensity for change and new ideas and experiences are continuously tried out. The organisation supplied about 48 people with work in 1998 and had a yearly turnover of about 22 MSEK, i.e. about 3 MUSD. The present

manager Ann-Kristin Jansson started in 1991, as the school's first own principal. The Hällbyskolan business concept is:

- *"To have a united staff that has the children in focus"*
- *"To have respect for each other and each others opinions"*
- *"To have a frank culture where everybody feels involved"*
- *"To have curious pupils with a desire to learn"*
- *"To have a school that children, parents and personal are proud of"*

The quality development work started before Ann-Kristin Jansson took over. There were already working conditions and working structures that can be classified within the quality concept even if they were not considered at that time as quality concept approaches. There was strong customer orientation and employee participation even before the quality development work started. This organisation culture was principally a result of the problematic environment in which the organisation operated. The more formal quality development work with different quality tools and models started after the appointment of the principal. Since 1994 the organisation has worked with the QUL quality model[1] and later on the Quality in Mälardalen model, see Table 1-8.

Table 1-8 Important steps in the quality journey at Hällbyskolan.

The year of the activity	The activity at Hällbyskolan
1973	• The organisation is established.
1980	• A new curriculum is adopted.
1990	• The organisation receives a local manager. Earlier the principal and director of studies were situated at the senior level school.
1991	• The organisation receives its own principal that becomes manager for all businesses in the school.
1993	• The organisation starts to work with a tool that indicates the physical and mental work environment and the relationship between the manager and the co-workers.
1994	• A new curriculum is adopted. • The organisation participates in the QUL quality award process.
1996	• The organisation participates in the QUL quality award process.
1998	• The organisation participates in and receives the Quality Award in Mälardalen.

[1] Landstingsförbundet (2000), *QUL (Quality Development & Management)*. Trycksaksbeställningen, Stockholm.

9 Brief History and Presentation of the Pulmonary Clinic

The Pulmonary Clinic was established in 1978 and is at present situated at Linköping University Hospital in Linköping, a town in the middle of Sweden. The clinic treats patients with diseases of the trachea, lungs and the pulmonary vesicle. The organisation has also, as a part of the University hospital, a responsibility for research and education within the subject field. The organisation is the county's only clinic for lung diseases and the regions university clinic within the same speciality. This implies a very small competition where approximately only 10 % of the business has competition. The market situation is consequently very advantageous. The organisation supplied about 45 employees with work in 1998 and had a yearly turnover of about 30 MSEK, i.e. about 4 MUSD. The Pulmonary Clinic business concept is:

> *"For the patient* ***Lungs Air and Life.*** *Therefore the staff must have* ***Knowledge and Empathy"***

The goals of the organisation are that the clinic should be the centre for nursing, research and education within the subject field lung medicine. The needs and expectations of the co-workers, patients and other customer categories should also be met by a systematic quality development. The strategy to reach these goals is by investing in cross-professional teams together with individual and strategic competence development in order to increase the ability to adopt new knowledge and new methods. The quality development work started in the early nineties. At that time a structured approach started for continuous improvement and customer orientation, see Table 1-9. The quality development work has developed to an integrated part of the daily activities. Creativity and formulation of new ideas characterise the organisation. The result of the quality development work is evident. Almost 100% of the customers are satisfied or more than satisfied. The waiting time for evaluation and treatment has been halved. The productivity per employee has increased by 20 % and the work satisfaction among the staff has increased by 100 % since the work started. The organisation received the Swedish Quality Award in 1996 after their first external revision, see Table 1-9.

Table 1-9 Important steps in the quality journey at the Pulmonary Clinic.

The year of the activity	The activity at the Pulmonary Clinic
1978	• The organisation is established.
1986	• There is a development towards more open nursing forms.
1992	• The organisation starts to use a structured method for continuous improvement and customer orientation.
1993	• The organisation starts to use the Swedish Quality Awards criteria internally, without any external interference. • All employees receive a quality education called "Quality to your service", which included problem description, problem analysis and cause and effects analysis.
1994	• The organisation has 95 % satisfied customers.
1995	• The diagnostic precision exceeds 90 %.
1996	• The organisation participates in the Swedish Quality Award process. • The organisation receives the Swedish Quality Award and is the first small organisation in Sweden to do so.

Appendix 6

Case Descriptions of Multiple-Case Study 2

APPENDIX 6

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APPENDIX 6

1 Case A

Case A is a care centre with approximately 10 000 patients. The care centre belongs to the public sector, has about 35 employees, and had a turnover of approximately 1.8 million euro in 2001. Since 1994 the organisation has been working steadily with quality development. The staff participated in a TQM education in 1995, when the work with quality development started. The personnel is the focus in the organisation due to the fact that that the business is based on the patients' confidence in the nursing staff. The organisation works continuously with competence development and goal orientation. The quality development work resulted in the organisation receiving a regional quality award in 1997.

Considering the way the TQM work is organised, there is no apparent formal structure. The management team works with ideas concerning quality but there is no formal quality manager or division. The employees participate in regular business development meetings in different groups and they are responsible for the more practical quality issues and development. The organisation has different alternating, informal cross-functional teams that, among other issues, work with quality development. The organisation has worked for such a long time with quality development that it is a natural part of the day-to-day business. The chosen way of working functions well, especially the business development groups, which work better than the larger more formal groups they had before. The question regarding financial benefits from quality is, according to the manager, inappropriate since good quality repute has resulted in more customers, which in return increases the costs. The quality development work has also, among other non-financial benefits, resulted in increased employee and customer satisfaction along with shorter lead times. The number of employees reported sick is low and no one has been reported to be full-time sick, which is unusual for the Swedish public sector.

2 Case B

Case B is a private health service consultant that was established in 1976. The organisation merged with another business in 2001 and then doubled its staff to the present number of approximately 23. The employees are divided into three teams connected to three different business areas. Each team consists of experienced consultants such as doctors, company nurses, company physiotherapists, social scientists and graduate engineers. Through a partnership arrangement approximately half of the personnel is the largest joint owner. The organisation's team-based structure is also used in different improvement projects where cross-functional teams are created in order to reach the objective. The organisation's customers are mainly from a geographically restricted area. In 2001 the organisation had a turnover of approximately 1.0 million euro. The quality development work partly started when the organisation appointed a new managing director in 1993. At the same time the economic conditions for the organisation drastically changed when the subsidy to the business sector was withdrawn. The national economic recession and the change in financial conditions led to an income loss of about 30 to 40 %. The new managing director was very interested in the quality development area and initiated the process of change in order to respond to the altered conditions. This managing director left the

organisation during the late 1990s and after a few years with a part time manager, the organisation presently has a new managing director. The organisation has been working with quality development since 1994 and received a regional quality award in 1998.

There is no longer any formal quality manager and there is no quality department. The managing director has the overarching responsibility for quality related issues, but that is not totally evident, since the former employee responsible for quality is still considered by many to have a kind of informal responsibility for the quality development. Furthermore, there are several informal groups that work with quality development and the quality work is sustained by the former extensive implementation of TQM that permeates the organisation. The chosen way method of organising functions acceptably. The quality development work has for instance resulted in increased operating income, turnover and number of customers. The satisfaction of the internal customers has not been measured recently.

3 Case C

Case C is a manufacturing company within the telecom and data communication business, which was established in 1985. The organisation's core business is to manufacture versatile cables with very short delivery time. The organisation had 15 employees in 2001 and the business is driven with a strong focus on customer satisfaction. The company works with a horizontal organisation where all members of staff are responsible for the work from start to finish. In 2001 the organisation had a turnover of approximately 1.2 million euro. The organisation is certified according to the ISO 9001 standard and received a regional quality award in 2001.

The manager has the overarching responsibility regarding the quality development work and one administrating employee is responsible for the quality system. The organisation has a small quality group that works with formal quality issues but also informal groups that work with quality issues on a day-to-day basis. The chosen approach functions well but is weak in documentation. That is however not considered to be a serious problem since, according to the respondents, how things are working is the important issue. The economic results have, according to the manager, been positively affected by the quality development work. Less than 1% of the organisation's personnel have reported sick. It is the opinion of the respondents that the quality award has strengthened the organisation's employees.