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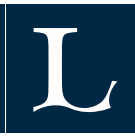

Experiences of Process Management

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ABSTRACT

Organisations in Sweden have been working with the methodology of process management since the end of the 1980s. Many organisations have tried implementing process management, but not all have succeeded. The purpose of this research is, through empirical research, to develop current knowledge and create a level of understanding of Process Management that could have practical implications for organisations considering launching a Process Management initiative. The aims of this thesis are to: (1) Describe experiences of companies that have worked to put a Process Management initiative into operation. (2) Identify and explain patterns of organisational characteristics when implementing and using process management.

The theoretical frame of reference, that supports the inquiries, is the system of Total Quality Management (TQM) that consists of values, methodologies and tools. The values, here called elements, of TQM have been used as a framework to investigate the work with Process Management as a methodology. A post-positivistic research approach has been used to perform case studies of ten Swedish organisations. The research strategy has been mainly qualitative and data has been collected through interviews and observations.

The findings suggest that there is no single answer to the question of what the transition from a functionally orientated into a process-orientated organisation looks like. However, an interesting aspect that emerges is that the investigated organisations have reached what have been identified as different stages of implementing their Process Management initiatives: Functions, Teams & Projects, and Processes. The investigated cases are distributed among all these three stages.

The analysis of the empirical material shows that interrelationships between elements of TQM are affected differently depending on the various approaches used in the Process Management initiatives of the investigated cases. The findings indicate that there are positive effects in several cases on several elements as a result of the Process Management initiative. However, there are also indications of risks of less positive consequences of the implementation. The results generally agree with those obtained in previous studies.

There is no *one* answer to how to work with Process Management. Every organisation should consider the goals they want to accomplish with a Process Management initiative. The way of working with Process Management can differ between organisations and should depend on the aims the organisation wants to accomplish.

When moving away from a functionally orientated organisation, it seems difficult to find a totally new way of organising. One possible interpretation is that the management models and the knowledge and understanding of how to manage organisations that we hold today are not enough to solve this dilemma.

SAMMANFATTNING

Organisationer i Sverige har använt sig av arbetssättet processledning sedan slutet av 1980-talet. Många organisationer har försökt implementera processledning men alla har inte lyckats. Syftet med den forskning som presenteras i denna uppsats är att, genom empiriska studier, utveckla kunskapen och förståelsen för processledning på ett sådant sätt att det kan ge konkreta bidrag till organisationer som överväger att använda arbetssättet processledning. Målen för denna uppsats är att: (1) beskriva erfarenheter från företag som har lyckats med att införa ett fungerande processorienterat arbetssätt. (2) Identifiera och förklara mönster i företagens beteende vid implementering och användning av processledning.

Den teoretiska referensram som har använts som ett stöd för undersökningen är offensiv kvalitetsutveckling (Total Quality Management, TQM), ett system som består av värderingar, arbetssätt och verktyg. Värderingarna inom offensiv kvalitetsutveckling, här kallade element, har använts som en utgångspunkt för att undersöka arbetssättet processledning. Ett postpositivistiskt angreppssätt har använts för att genomföra fallstudier av tio svenska organisationer. Forskningsstrategin har huvudsakligen varit kvalitativ, och data har samlats in via intervjuer och observationer.

Resultaten från undersökningen visar att det knappast finns ett enda svar på frågan om hur övergången från en linjeorganisation till en processorienterad organisation ser ut. En intressant aspekt är dock att de organisationer som studerats har uppnått tre olika nivåer av implementering: Funktioner, team och projekt samt processer. De undersökta fallen finns inom alla tre av dessa nivåer.

Analysen av det empiriska materialet visar att relationerna mellan olika element inom offensiv kvalitetsutveckling har påverkats olika beroende på hur processledning har införts i de studerade fallen. Resultaten indikerar positiva effekter på flera element i flera av fallen som ett resultat av införandet av processledning. Å andra sidan finns det också indikationer på risker för mindre positiva konsekvenser av att processledning implementeras. Resultaten överensstämmer till stora delar med vad som erhållits vid tidigare undersökningar.

Det finns inte *ett* svar på hur man ska arbeta med processledning. Varje organisation bör överväga vilka mål man vill uppnå med att införa processledning. Sättet att arbeta med processledning kan variera mellan organisationer och bör utformas med utgångspunkt i de mål som man vill uppnå.

När man lämnar en linjeorganisation tycks det vara svårt att hitta ett helt nytt sätt att organisera sig på. En möjlig tolkning av detta är att de ledningsmodeller samt den kunskap och förståelse om verksamhetsledning som vi har idag inte är tillräcklig för att lösa detta problem.

ACKNOWLEDGEMENT

The research in this thesis has been carried out at the Division of Quality and Environmental Management, Luleå University of Technology and at Agria Animal Insurance in Stockholm. There are a number of people who have contributed to make these studies possible and who have helped me in presenting these results.

To start with, I wish to thank my supervisor and co-author Rickard Garvare. I admire you for your knowledge and patience. I am very grateful for all your support. I would also like to thank Professor Bengt Klefsjö for hiring me as a first-year student and since then finding ways to keep me at the Division of Quality and Environmental Management. Thank you for sharing your experience and wisdom with me. At the Division I would also like to thank my colleagues, especially Gunvor Touma for your assistance.

I want to thank Agria Animal Insurance for the financial support. At Agria I would, like to thank Ann Horn for inspiration and for making this work possible. Further on, I wish to thank Mattias Wallman for our interesting discussions and teamwork. I also wish to thank the people working at Agria, especially those involved in the work with Process Management, for giving me inspiration, access and confidence to take part of your work. With the same reason, I would like to thank all the people of the organisations, which have participated in the studies that are described in this thesis.

Thanks also to Mats Westerberg for your valuable contributions during the so-called pie-seminar. Further on, I would like to thank Gary Watson for your help in improving the English of my thesis.

Finally, I wish to thank my friends and family for your love, support and encouragement. Thanks to the CEO of Videndus, Urban Hjelm, for your help to a friend in need. Foremost, I wish to thank my mother Margareta Palmberg for your inspiration and for being my number one supporter!

Stockholm, November 2005

Klara Palmberg

PREFACE

I would like to begin by describing the journey which has taken me through this process and which led to the results that will be presented in this thesis. By describing my experience relevant to this work it will be possible for you as a reader to understand the "lens" through which I am looking at the world. There is a reason why I am asking the particular research questions presented in Chapter 1, they did not come out of the blue. By reading about my background you will hopefully understand why I have chosen the paths I have taken.

Ever since I wrote my final essay in high school on the subject "Quality – what is that?"[1] I have had an interest in how organisations can work to satisfy their customers, get satisfied employees and achieve good results, and a desire to learn to know how organisations can accomplish this. Actually the interest began when, as a teenager, I accompanied my mother, Margareta Palmberg, to many conferences and listened to dinner discussions held at our home about quality improvement. To hear about the results people can accomplish using the thinking and tools from the area of Quality Technology and Management became a great source of inspiration for me. Before moving to Luleå for my M.Sc. studies, I worked for a year at a video production company, Videndus, documenting the results of improvement work in different organisation. That is where my "bank" of experiences of examples of excellence started to grow.

When I moved to Luleå in 2000 to study for my M.Sc. in Industrial Engineering & Management I contacted Bengt Klefsjö, Professor of Quality Technology and Management, and told him about my interest. Since 2001 I have been an assistant research fellow[2] at the Division of Quality and Environmental Management. My task has been to assist PhD students both with their fieldwork and taking care of the material gathered.

My first assignment as an assistant research fellow was to collate the answers from Rickard Garvare's mail survey directed to small and medium sized organisation to investigate to what extent they were working with Process Management, comprising about 500 answers. This study, together with another consisting of telephone interviews with 62 organisations from the respondents of the mail questionnaire, serves as the population from which we picked seven organisations to do site visits at, which will be presented in this thesis. The work with other researchers' case studies, such as Henrik Eriksson, Jonas Hansson and Rickard Garvare, has also been an extraordinary learning opportunity for me. To be able to experience field trips has given me insights into the do's and don'ts of interviews and observations. My cooperation with Rickard Garvare over so many years, since 2001 when he was a PhD student as I am now, has laid the ground for a good cooperation and today he is my supervisor.

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[1] 'Kvalitet – vad är det?' in Swedish
[2] 'Amanuens' in Swedish

Another opportunity to learn from excellent examples was the studies made by Jonas Hansson and Henrik Eriksson, who focused on best practice and provided good examples of organisations which have worked with Total Quality Management (TQM) in different ways. Being able to participate in parts of their work gave me many insights into how successful organisations use TQM in their work to improve and sustain their competitiveness. Even if my research focuses on Process Management, TQM is still a part of these successful organisations' quality strategies. In the study made by Jonas Hansson and in Henrik Eriksson's first study, my work was focused on transcribing the interviews. But nevertheless I learnt about these organisations and their successes and failures. Eriksson's second study was combined with one made by Garvare and myself. We had the common purpose of studying how organisations working with the criteria for the Swedish Quality Award were managing their quality efforts. This work resulted in the second appended paper in this thesis.

As a result of the contacts made during the field trips with Henrik Eriksson and Rickard Garvare (the second study described in this thesis, carried out in the spring of 2003) I was hired for a project at Agria Animal Insurances[3] during the summer of 2003. My assignment was to map and describe their improvement work within the organisation. The question from the start was whether co-ordination could be possible between the work with ISO 9001 and the criteria of the Swedish Quality Award at Agria, who were working with both. My work resulted in my M.Sc. thesis in 2004, and provided input for Agria's overall management system and laid the ground for appended Paper 3.

During the forth year of my M.Sc. studies, (2003 / 2004), I put my focus entirely on Quality Technology and Management. Taking classes in the subjects of Quality Function Deployment, Design of Experiment, Statistical Process Control and Six Sigma laid the ground for an understanding of both the "hard" parts of statistics and variation, as well as the "softer" parts of customer focus and leadership. As an employee at the department I have also had the opportunity to participate as an assessor[4] in the process of the Swedish Quality Award in 2003.

In the context of this thesis and the work presented here the most relevant experience was carrying out a project at the technical department of Skellefteå municipality where we, a project team of four students, mapped out all their processes. This gave me a close insight into the task of putting Process Management to work in practice and the obstacles that can occur. It also showed the power of gathering together people working in the same chain to look at the bigger picture and how they can put their focus on the customers and how to help each other.

In the summer of 2004 I did my M.Sc. thesis based on the work done at Agria in the previous summer and in September 2004 I started my PhD studies. The fall of 2004 was mostly devoted to PhD-courses such as Qualitative Methods, Philosophy of Science and Participatory Action Research. The courses have provided me with a

[3] The only organisation, so far, that has received the Swedish Quality Award twice, in 1999 and 2003.
[4] 'Examinator' in Swedish

foundation of research methodology: how to approach, position myself and to function in the world of research and science.

The spring of 2005 has mostly been spent at Agria in Stockholm, but with frequent trips to Luleå to participate in seminars of PhD courses in the history of the quality movement, to get an update on the research in the area, among other things and some teaching for M.Sc. students. During the spring term I have made several visits to Qulturum in Jönköping, which is a centre for improvement knowledge at Jönköping County Council. Qulturum is in the frontline as regards working with improvement and knowledge of systems[5]. These visits have provided both inspiration and perspective to my own knowledge.

In conjunction with the work of assembling and presenting the work of the three studies in this thesis and in the appended papers I have continued my research with further action research at Agria. This will hopefully result in further papers about how an organisation that is acknowledged as an example of excellence can keep on developing and improving further.

All these different experiences have contributed to my knowledge and experience base as a PhD student and have led me to the work that has been done and results in this thesis. The purpose of this work, as you will see, is to assemble knowledge from organisations that have worked to put a Process Management initiative into operation. The goal is to develop existing knowledge and understanding of Process Management and what it means for the overall management system in an organisation. There is also a personal purpose in the work, apart from deepening my knowledge in the area. Working with groups who are getting to know Process Management I have seen the enthusiasm among those who have suddenly understood their own place in a larger context. I have also seen the pieces fall into place for managers as to how to lead their organisation and how leaders get tools to lead their organisations. By describing the stories of the studied companies I hope that it will help more co-workers and managers to experience that.

[5] The Ministry of Finance presents the county council of Jönköping as "a precursor and a unique example of efficiency through system and process improvement work." (Cederqvist & Hjortendal Hellman, 2005) (My translation)

CONTENT

APPENDED PAPERS:

1 INTRODUCTION

In this chapter the background and problems identified are presented, together with the purpose and research questions of the thesis. Finally the delimitations and structure of this thesis are described.

1.1 Background

> Competition today is not just between organisations' products and services but between *how well organisations perform their work*.[1] (DeToro & McCabe, 1997)

According to DeToro & McCabe (1997); for organisations to remain competitive the *ways* they perform their work are equally important as the quality of the products and services they deliver. This directs attention towards *how* the results, the goods and services, are produced, i.e. a focus on the methodologies to manage the processes that deliver the results.

The basic idea of Process Management appears to be rather simple. Instead of working in, managing by and looking at vertical functions of an organisation, such as its marketing division, product development section or finance department (Figure 1a), the horizontal, value adding processes, which deliver the results that the customers request, are in focus (Figure 1b).

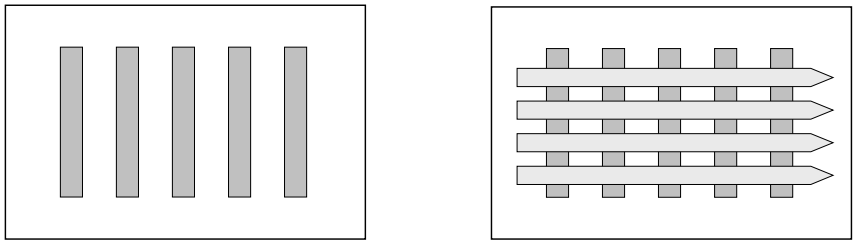

Figure 1.1 Traditionally organisation are managed through the functions that run vertically through the organisation, as in Figure 1.1a (to the left). It can be quite a fundamental change to start to manage the organisation according to the horizontal processes, as in Figure 1.1b (to the right), instead of the functions.

The concept of Process Management is not something entirely new. Shewhart (1931) was one of the first to argue for Process Control in favour of Product Control. During the 1970s, methodologies for working with processes were developed under labels such as Just In Time (JIT) and Lean Production (Schonberger, 1986). It was not enough to focus on the finished product, as in the era of inspection. There is also a need to address how these results are produced. There has been a shift in focus from

[1] My own italics in the last part of the sentence.

inspecting the input and output of the operations to looking at how the flows that form those outputs are designed and controlled, as stated in the initial quote.

During the 1980s and 1990s the scope of Process Control was expanded to encompass a corporate emphasis, including all functions of an organisation. A great deal of attention was focused on Business Process Re-engineering (BPR) as described by, for example, Hammer & Champy (1993). Most contemporary quality awards are based upon an approach that focuses on the process of the business organisation. ISO 9000 has undergone a major change and is now placing considerable emphasis on processes, see, for instance, Tsim et al. (2002). Hammer & Stanton (1999) argue, on the basis of a study of IBM and Microsoft among others, that for most companies there is no real alternative to shifting from a traditional business to a process enterprise. Based on a study of 92 European organisations, Pritchard & Armistead (1999) argue that the three main drivers for implementing Process Management are the need to improve responsiveness, the competitive threat and the need to improve quality.

Organisations in Sweden have been working explicitly with Process Management since the end of the 1980s. The methodology has been used in order to reduce lead-times and increase customer focus both inside and outside the organisation and this development can be attributed to escalating demands from customers regarding quality (Egnell, 1995).

Forsberg et al. (1999) found, based on a survey of the application of Process Management in Swedish organisations, that the introduction of Process Management gave positive effects in the following areas; common language, cooperation, customer orientation, cost, lead-time, learning abilities, holistic view and standardisation.

Findings similar to those of Forsberg et al. (1999) have also been reported by Garvare (2002). Telephone interviews with managers of 62 Swedish small and medium sized enterprises revealed that in their opinion the general response from the personnel when implementing Process Management had been positive or very positive. A majority of the respondents claimed that, since the introduction of Process Management their company had improved its financial result, recognized increased customer satisfaction, increased its customer base, become more efficient and had reached a higher level of delivery accuracy. Main problem areas due to the implementation of Process Management included bureaucratic documentation procedures and difficulties when trying to involve older personnel and middle managers. The respondents were asked about what they thought should have been done differently knowing what they now know about implementing Process Management within their organisation. The most common answer to this question was that the company should have worked harder and been more focused towards a predefined goal right from the start.

1.2 Problem discussion

DeToro & McCabe (1997) state that a change towards Process Management requires not just the use of a set of tools and techniques, but a change in management style and

way of thinking. According to Rentzhog (1996), the implementation of Process Management includes both structural and cultural changes to the organisation.

Zairi (1997) states, based on a literature review, that the word 'process' has become a part of everyday business language. Many organisations have tried implementing the methodology of Process Management, but not all have succeeded. In a study of quality award recipients in Sweden, Hansson (2003) found that many small organisations perceive work with Process Management to be problematic. Based on a survey of the application of the methodology in Swedish organisations, Forsberg et al. (1999) state that the expectations when implementing Process Management are unreasonably high. Implementing Process Management appears to be rather demanding: "In practice, however, the process approach seems difficult to understand and to put into action" (Rentzhog, 1996 p. 13).

In a mail survey of 1 500 Swedish small and medium sized enterprises about 30 percent of the organisations claimed that they were process-orientated (Garvare, 2002). After subsequent telephone interviews and site visits that number was decreased to about 10 percent. Two thirds of the companies that had claimed to be process-orientated could not, on closer examination, be categorised as process-orientated. One possible interpretation of this result is that it was somewhat fashionable to be working with Process Management. The question remains: why could they not make it work.

Through a literature review of the area, Hellström & Peterson (2005) conclude that the literature is foremost built on theoretical reasoning, resulting in a large number of checklists on how-to-do. Furthermore, they argue that there is a lack of empirical research of the effects of Process Management. Hellström & Peterson (2005) believe that "despite a decade of experience of practicing process-oriented management, certain fundamental problems still beset its successful application and causes practitioners concern". O'Neill & Sohal (1999) reach the same conclusion, and express the opinion in their literature review that more empirical research is necessary.

1.3 Purpose

The purpose of this research is, through empirical research, to develop current knowledge and create a level of understanding of Process Management that could have practical implications for organisations considering launching a Process Management initiative. An illustration of how this purpose is developed into aims and research questions and finally studies and papers, is found in Figure 1.2.

The aims of this thesis are to:

- Describe experiences of companies that have worked to put a Process Management initiative into operation.
- Identify and explain patterns of organisational characteristics when implementing and using Process Management.

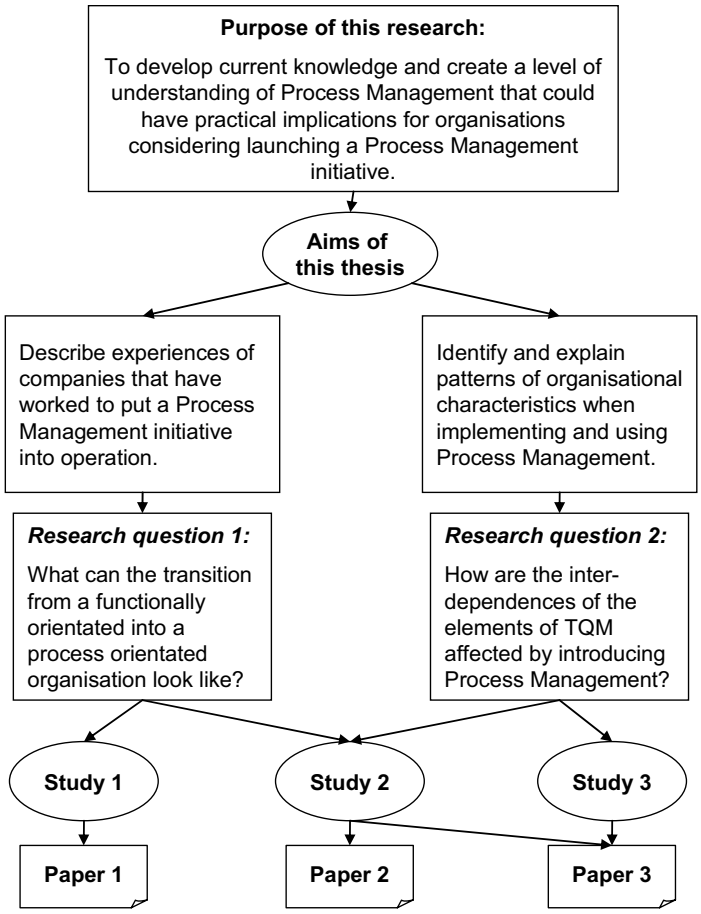

Figure 1.2 An illustration of the hierarchy of the research purpose, the aims of the thesis, the research questions posed and finally how the questions have been investigated in three studies that are presented in three papers.

1.4 Research questions

To be able to accomplish the purpose two main research questions have been formulated that will be investigated. The first question is:

> 1. What can the transition from a functionally orientated into a process-orientated organisation look like?

When trying to assemble experiences from organisations' transition towards Process Management in one way or another, the focus has been on why they have chosen to start such an initiative, how they have carried out the implementation and what it all has resulted in.

The second research question is:

> 2. How are the interdependences of the elements of TQM affected by introducing Process Management?

Process Management could be seen as a part of a greater system of elements that characterize organisations and together form Total Quality Management (TQM), see Chapter 2. Which effects on this system can be identified when introducing Process Management? How could these effects be understood and explained? What are the benefits and disadvantages of Process Management initiatives? What are the implications for organisations when considering launching a Process Management initiative?

1.5 Delimitations

This research does not aim to produce an instruction book of how to work with Process Management. The focus is not on the tools or categorisations of process types that can be used when working with the methodology of Process Management, see definitions of tools and methodologies in the theoretical frame of reference. However, tools might be mentioned when describing the Process Management initiatives of certain organisations.

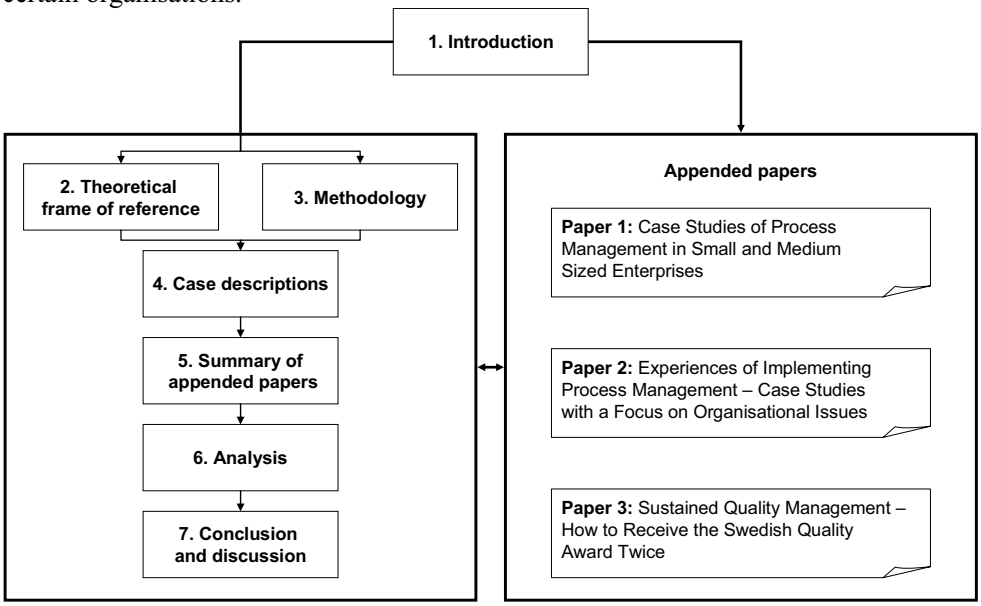

Figure 1.3 The structure of the thesis showing the chapters to the left and the appended papers to the right.

1.6 Structure

The structure of this thesis is described in Figure 1.3. The preface in the beginning of the thesis is an attempt to provide a picture of my background and pre-understanding

that together with the problem discussion in this chapter leads to my research questions. The theoretical frame of reference in Chapter 2 gives a short background of the areas of TQM and Process Management. The methodology in Chapter 3 describes the paradigm in which this work is performed and by which strategies. This all leads to the studies conducted as the foundation for this work. The descriptions of the cases that have been studied are presented in Chapter 4 and in Chapter 5 the appended papers are summarised. In Chapter 6 an analysis is done of the cases on the basis of the theoretical frame of reference. The thesis ends with Chapter 7 where conclusions are drawn, the research questions are answered and a discussion is held.

2 THEORETICAL FRAME OF REFERENCE

The central theme of this chapter is to provide a brief presentation of the research area and to define its boundaries. Although the purpose of this thesis does not include a formal analysis of theories, it seems necessary to introduce some general concepts and definitions within the theoretical framework of the research.

2.1 The development of the quality movement

The evolution of the quality movement could be portrayed in many ways. One common description is based on a single-path assumption consisting of four major steps: Quality Inspection, Quality Control, Quality Assurance and Total Quality Management (TQM), see Figure 2.1. Quality Inspection centres attention on checking that the manufactured products meet the specifications. Quality Control is characterised by identifying flaws in the process itself, which can then be corrected before too many products are produced that do not meet the specifications. Quality Assurance focuses on planning and preventing problems at the source before staring to manufacture products. TQM, also referred to as Quality Management, puts focus on continuous improvement both before and after the production. TQM could be seen as a management system the aim of which is to increase external and internal customer satisfaction with a reduced amount of resources, something which will be further developed in the next section. More detailed descriptions of this single-path assumption of the evolvement of the quality movement can be found in, for instance, Bergman & Klefsjö (2003), Dale (1999), Garvin (1988) and Sandholm (2000).

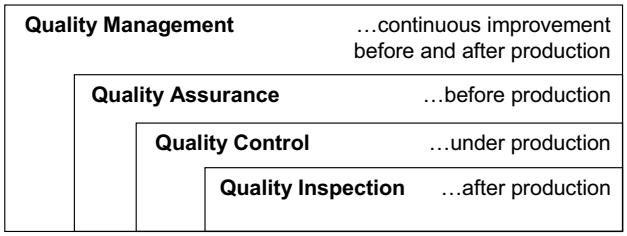

Figure 2.1 An illustration of the single-path assumption, described above, with the steps of Quality Inspection, Quality Control, Quality Assurance and Quality Management (Total Quality Management, TQM). (Bergman & Klefsjö, 2003)

Kroslid (1999) introduced a dual-path assumption describing two parallel schools, the Deterministic school of thought and the Continuous Improvement school of thought. The Deterministic school comprises the Quality Assurance standards movement and is generally characterised by Taylorism[2], standard development (i.e. ISO 9000) and the principle of zero defects. The Continuous Improvement school comprises the advocates of quality awards, such as the Malcolm Balridge National Quality Award, and is founded on a view of reality focusing on variation and seeking improvement

[2] Frederick W. Taylor, the father of Scientific Management, see Taylor (1911).

potentials in every aspect of work. According to Kroslid (1999), the two schools have co-existed for many years. Bergman & Klefsjö (2003) argue that the schools have been nearing each other in recent time regarding their view of Quality Management.

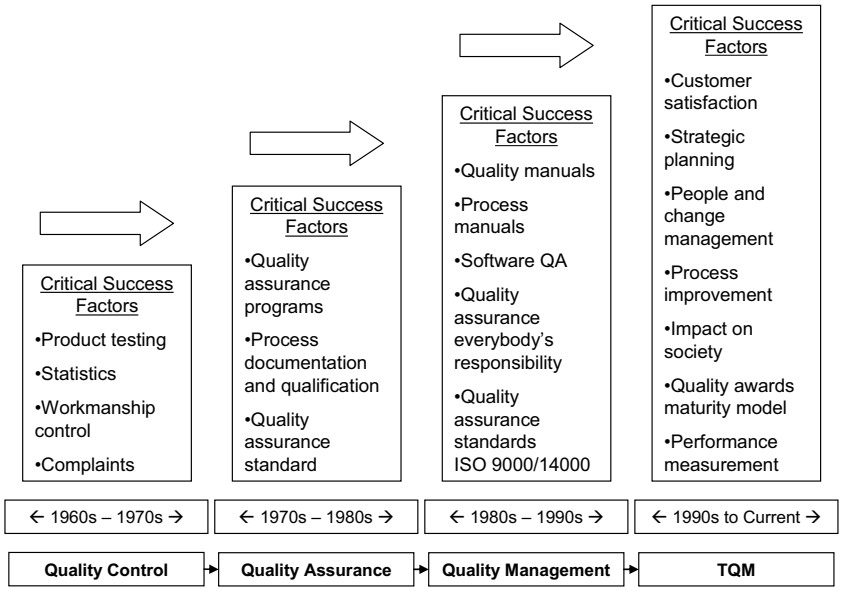

Figure 2.2 The evolution from Quality Control to Total Quality Management according to Zairi (2002).

A variation of the widespread single path assumption described above is presented by Zairi (2002), see Figure 2.2. This description focuses on critical success factors (methodologies and tools as some would call them) which have been the centre of attention during different stages of the quality movement evolution. It also separates the steps of Quality Management and TQM.

As seen in the different descriptions of the development of the quality movement, Total Quality Management (TQM) is viewed by many authors as the latest stage of the evolution, even though they do not agree on how the movement has evolved. In this thesis it is not relevant to take sides as to which of the paths is more accurate than the other. Nevertheless, TQM is the frame of reference and therefore it is very interesting to ask what TQM is? This is something that will be discussed in the following two sections.

2.2 The system of Total Quality Management

Zairi (2002, p. 1169) states that "TQM looks at quality as a long-term business strategy, which strives to provide products and/or services to satisfy fully both internal and external customers by meeting their explicit and implicit expectations".

Hellsten & Klefsjö (2000) define TQM as "a continuously evolving management system consisting of values, techniques and tools with the aim of increasing external and internal customer satisfaction with a reduced amount of resources", see Figure 2.3.

Central in both these definitions is the focus on customer satisfaction. Hellsten & Klefsjö (2000) add to this the three categories of "values, techniques and tools". The term values refers to "the guiding principles and/or behaviours that embody how your organisation and its people are expected to operate", NIST (2003). Technique is a term used to describe the "ways to work within the organisation to reach these values" (Hellsten & Klefsjö, 2000). The term "techniques" was later changed by Hellsten & Klefsjö, who now prefer the term "methodologies". The term methodologies will be used in this thesis. Tools refers to those "rather concrete and well-defined tools, which sometimes have a statistical basis, to support decision-making or facilitate analysis of data" (Hellsten & Klefsjö, 2000).

The values referred to by Hellsten & Klefsjö (2000) form a set of principles, which could be viewed as the basis of TQM. The areas that are presented, by Hellsten & Klefsjö (2000) and Bergman & Klefsjö (2003), as values of TQM will be mentioned as 'elements' of TQM in this thesis, see also Section 2.3.

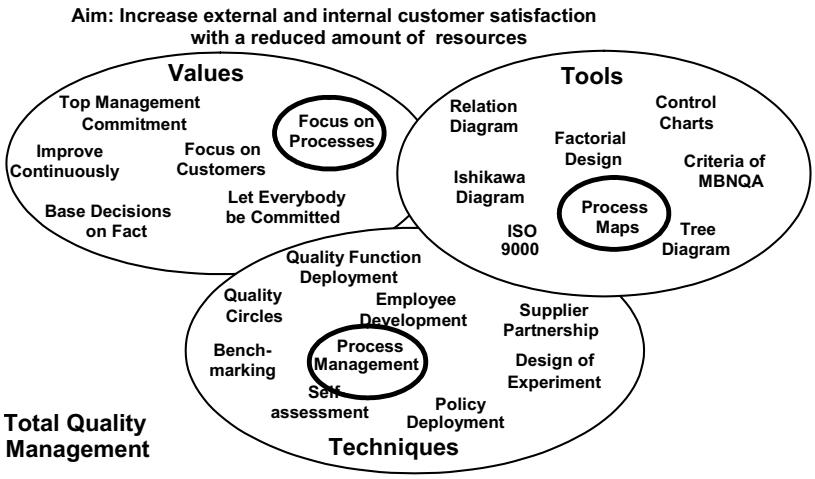

Figure 2.3 The system of TQM consisting of values, techniques and tools (Hellsten & Klefsjö, 2000). Svensson (2004) uses the term the TQM triad for this system. The circles highlighting the areas of processes are added by the author and will be discussed in Section 2.4.

Many authors have discussed the elements of TQM. Hellsten (1997) concludes that the correspondence between the sets of elements presented by most authors is fairly high. A recent comparison of elements of different frameworks for TQM has been presented by Rahman (2004), see Table 2.1. The elements mentioned there are consistent with

the core values of different quality awards like the Malcolm Balridge National Quality Award, the European Quality Award or the Swedish Quality Award, see, for instance, Hellsten & Klefsjö (2000). There is also a good agreement between the elements described by Rahman (2004) and the principles of ISO 9000:2000, see, for example, Isakson (2004).

Table 2.1 The elements of TQM in different frameworks, according to Rahman (2004).

Saraph et al. (1989)	Flynn et al. (1994)	Powell (1995)	Ahire et al. (1996)	Black & Porter (1996)	Dow et al. (1999)	Rahman (2001)
Top management leadership	Top management support	Committed leadership	Top management commitment	Corporate quality culture	Workforce commitment	Leadership
Role of quality department	Quality information	Adoption and communication of TQM	Supplier quality management	Strategic quality management	Shared vision	Information and analysis
Training	Process Management	Closer customer relationships	Supplier performance	Quality improvement measurement system	Customer focus	Strategy and planning
Product/service design	Product design	Closer supplier relationships	Customer focus	People and customer management	Use of teams	Employee empowerment &involvement
Supply quality management	Workforce management	Bench-marking	SPC usage	Operational quality planning	Personnel training	Employee training and development
Process Management	Supplier involvement	Increased training	Bench-marking	External interface management	Cooperative supplier relations	Customer management
Quality data and reporting	Customer involvement	Open organisation	Internal quality information usage	Suppliers partnership	Use of bench-marking	Customer satisfaction
Employee relations	Employee empower-ment	Employee involvement	Teamwork structures	Use of advanced manufacturing	Design quality management	
		Zero-defects mentality	Employee training	Customer satisfaction	Use of JIT principles	Process control
		Flexible manufacturing	Design quality management	Communication of improvement information		
		Process improvement measurement	Employee empowerment			

2.3 Values as elements of Total Quality Management

In Figure 2.3 TQM was described as a system consisting of values, techniques and tools. According to Bergman & Klefsjö (2003), "TQM is a constant endeavour to fulfil and preferably exceed, customers' needs and expectations at the lowest cost, by continuous improvement work, to which all involved are committed, focusing on the processes in the organisation". In Figure 2.4 the values of TQM are displayed

according to a model developed by Bergman & Klefsjö (2003). Note the connection to the values of Figure 2.3. Values of TQM are further discussed in, for example, Kennerfalk (1995), Hellsten (1997), Sila & Ebrahimpour (2002), Eriksson (2003) and Bergman & Klefsjö (2003).

In this thesis the values Bergman & Klefsjö (2003) present, will be mentioned as elements and will from here on be labelled: Customer focus, Leadership, Co-workership, Development and Improvement, Focus on processes and Decisions based on facts.[3] The concepts of these elements will be summarized below. The element of Focus on processes is a focal point for the research presented in this thesis, through the investigation of experiences of Process Management. Therefore, this element is presented, and further developed, in Section 2.4.

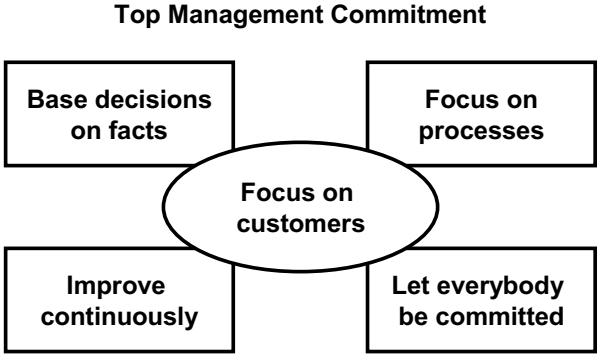

Figure 2.4 The values of TQM (Bergman & Klefsjö, 2003).

Customer focus

According to Bergman & Klefsjö (2003), quality has to be defined by the customer and the organisation has to find out the needs and expectations of the customer to be able to fulfil them. This focus has followed the later quality movement and Mizuno (1989, p. 3) expresses it as follows: "The basic goal… is to supply consumers with the products they want, in the amounts they want them, when, and, where they want them."

When talking about customers in the area of quality the terms of external and internal customers are sometimes used. In such cases the external customers are the ones that, for example, buy our products or use our services. Internal customers are by contrast individuals inside our organisation who proceed in the chain, receiving the output we produce.

The use of the expressions 'stakeholders' and 'interested parties', to broaden the term of customers, is increasing. Isaksson (2004) uses Freeman & Reed's (1983) definition

[3] These elements will be used in the analysis of the empirical data, see Chapter 6. A further description of the selection and the use of the elements is found in Section 3.2.3.

of a stakeholder as "any identifiable group or individual who can affect the achievement of an organization's objectives or who is affected by the achievement of an organisation's objectives." Foley et al. (2005) makes a distinction between stakeholders and interested parties, and has developed a theory based on the notion of Quality Management as a constrained optimisation made by a business enterprise, subject to meeting the needs and expectations of its stakeholders.

Leadership

An fundamental element of TQM is leadership or, as expressed by Bergman & Klefsjö (2003), 'Top management commitment'. Edwards Deming says that "It is management's job to direct the efforts of all the components towards the aim of the system" (Deming, 1994, p. 50). He also talks of the importance of psychology. "The most important act a manager can take is to understand what it is that is important to an individual" (Deming, 1994, p. 112).

Leaders should communicate, delegate responsibility, create possibilities for commitment and give opportunity for training. Dale (1999) states that it is the responsibility of the top management team to create the organisational environment, atmosphere, values and behaviour in which TQM can achieve its potential.

Co-workership

In the model presented in Figure 2.4 the value named 'Let everybody be committed' is one of six values of TQM. In this thesis this element is expressed by the term 'co-workership', the employees' counterpart to the role of leadership.

According to Bergman & Klefsjö (2003), an important means for quality improvement is to facilitate the value of 'let everybody be committed'. The employees have to feel involved, have to be committed to the aim of the organisation and have to take on responsibility to achieve that aim if the organisation is to be successful in the long run. But it should also be the responsibility of the co-workers to seize the opportunity to participate. Mizuno (1989, p. 17) puts it as "Quality Control cannot possibly be really effective unless everyone is involved".

Several authors describe a relationship between internal customer satisfaction (the employees) and external customer satisfaction, see, for example, Westlund & Löthgren (2001), Grønholdt & Martensen (2001) and Svensson (2004). Resent research also shows that employee commitment is closely related to lower sick-leaves; see Harnesk et al. (2004).

Development and improvement

The external demands for higher quality seem to be forever increasing and therefore development and improvement is necessary for most organisations, meaning, to never settle down but to continuously strive forward and search for better, more effective and efficient processes and constant improvements of goods and services.

Probably the best known tool for improvement in the field of continuous improvement is the Deming cycle, or Shewhart cycle for improvement, also called the wheel of Plan-Do-Study-Act, see, for example, Deming (1994) or Langley et al. (1996).

Juran (1995) proposes his trilogy that consists of Quality Planning, Quality Breakthrough and Quality Control and states:

> Control is a must for the short term, whereas breakthrough is not. In the absence of control, numerous sporadic troubles emerge and each gives immediate pain. However breakthrough is a must for the long run. In the absence of breakthrough, the rest of the world just walks away. (Juran, 1995, p.8).

Decisions based on facts

The element of basing decisions on facts is crucial to be able to improve in the right direction. Knowledge of variation, variation control and variation reduction are often important parts of fact based decisions. To have knowledge of variation and how to separate random causes of variation from systematic causes is also a central theme of Deming (1994).

On the subject of using facts, Mizuno (1989, p. 99) claims that "…unless there is a clear guidance on how to go about achieving these goals, they will either not be achieved or, even if they are achieved, it will not be clear how they were achieved and how the same happy results can be achieved again". This can be seen as the importance to document how we go about in managing our organisations and on what basis decisions are made.

2.4 Focus on processes

It is hardly controversial to claim that to focus on processes is a commonly accepted key element of TQM, see, for example, Rentzhog (1996). Deming promotes working with processes, for example through the use of process charts, because:

> Anyone on a job needs to understand in detail the work and needs of people that come after him in the flow diagram (catwalk) of the organisation. (Deming, 1994, p. 64).

A process definition

To start with, when talking about processes, it is appropriate to define the term. Although the field of organisational processes is a relatively new area of research, the literature is abundant. So is also the variety of definitions and terminology used within the area. In Swedish there is a saying "a loved child has many names"[4]. That is definitely the case when talking about process related phenomena and how to describe how organisations interpret and work with their processes in one way or another. To start with, the term 'process' has been defined in several ways. Some examples are:

[4] 'Kärt barn har många namn' in Swedish.

> A process is a bound group of interrelated work activities providing greater value than the inputs by means of one or more transformation. (Melan, 1992)
>
> A network of activities that are repeated in time, whose objective is to create value to external or internal customers. (Bergman & Klefsjö, 2003)
>
> Any activity or group of activities that takes an input, adds value to it, and provides an output to an internal or external customer. Processes use an organisation's resources to provide definitive results. (Harrington, 1991)

Isaksson (2004) presents a definition of processes which has been based on terminology provided by Egnell (1995) and Ljungberg & Larsson (2001). Isaksson's (2004, p. 20) definition includes the stakeholders :

> A process is a network of activities that by the use of resources, repeatedly converts an input to an output for stakeholders.

In this definition processes are described as 'networks of activities' in order to highlight the fact that they are not always linear, but could often have rather complex routes from input to output. The 'resources' can be equipment, personnel and capital. Processes need to be of a repeatable nature to enable improvement of the processes. In the concept of 'stakeholder' the customers are included. Isaksson (2004)

In my opinion the definition of a process provided by Isaksson (2004) succinctly summarises the essential aspects of the term and therefore, unless stated otherwise, it will be used in this thesis.

Process Management

In Figure 2.3 a model of the TQM system is presented. The terms connected to processes are highlighted in all the three categories as follows; values – focus on processes, techniques – Process Management, and tools – process maps. It is the methodology of Process Management that is investigated in this research. The term 'Process Management' used in this research is defined according to the definition provided by Egnell (1995) as:

> Process Management is a systematic methodology to organise, manage and continuously improve an organisation's processes.[5]

Process Management is, as the term itself indicates, a phenomenon about 'managing'. According to the definition, it is about managing an organisation's processes. This does not tell us in what ways these processes are managed, and different organisations choose different approaches.

The ways companies 'organise', or orientate, when working with Process Management differs considerably. In this thesis the expressions 'functionally orientated' and

[5] My own translation. In Swedish Egnell (1995) uses the term 'processledning'.

'process-orientated' are used to describe if the organisations has chosen to create an organisational structure according to the functions of the company or according to its processes, see also Figure 1.1a and Figure 1.1b. The term 'process-orientation' is further developed by Isaksson (2004) who, inspired by Forsberg (1998), Stigendal & Johansson (2003) and Ljungberg & Larsson (2001), states that:

> The level of process-orientation could vary from a functional organisation that has identified a few processes to a process organisation with a few or no functions. (Isaksson, 2004)

In this thesis a 'process organisation' refers to the structure that some organisations chose to create to manage their processes. This structure often consists of process owners, which is a term commonly used when discussing how to manage organisational processes. DeToro & McCabe (1997) state that the process owner should have the responsibility for optimising process efficiency. However, the role of a process owner in practice varies from organisation to organisation.

The term 'Process Management initiative' is used in this thesis to describe activities performed when organisations commence working with Process Management.

Tools for Process Management

Reconnecting to the TQM triad in Figure 2.3, there is a diverse set of tools available for working with the methodology of Process Management. Some tools mentioned by O'Neill & Sohal (1999) are: process visualisation, process mapping, and benchmarking.

When mapping processes many organisations sort them into categories of, for example, core processes, support processes and management processes. A process could also be broken down into sub-processes that can be further broken down into activities and tasks. For more detailed examinations of the categorization of processes see, for example, Melan (1992), Rentzhog (1996), DeToro & McCabe (1997) and Lind (2001).

The area of tools for Process Management will not be further discussed in this thesis. As stated in the delimitations in Chapter 1, this research does not focus on the tools or categorisations that are used for working with Process Management, although they might be mentioned when describing the Process Management initiatives of certain organisations.

Process focus and the elements of TQM

The different elements of TQM appear to be closely and mutually dependent on each other. The element of 'focus on processes' is interconnected with the other elements such as, for example (Rentzhog, 1996):

- Processes form the products or services that fulfil customer needs.
- Only acts that are repeated over time, in processes, can be improved.

A focus on how the tasks performed by each employee connect to the processes running throughout the company could provide an understanding of how each member of an organisation contributes to providing value for customers, which facilitates commitment.

2.5 Reflections regarding the theoretical frame of reference

There are certainly many areas of theory that it should be possible to include in a frame of reference for understanding the material, which has been collected during the studies presented later in this thesis. Such areas include, but are not limited to, Change Management, Organisational Development and Leadership. Nevertheless, I have chosen to limit my frame of reference to mainly include Total Quality Management (TQM), with a special focus on Process Management. Some consequences of this choice are that what has been sought after, in both the data collection and analysis, is limited by the theoretical frame chosen and will not include aspects and issues that other frameworks might have highlighted.

Results and implications of earlier research that have been presented in the area of Process Management could also have been a possible section of my theoretical frame of reference. I made a deliberate choice not to conduct a full literature review of the research area prior to my investigation. In Chapter 1 a short background to the development of Process Management was given in order to highlight why this research is so interesting to conduct. In that section some previous research results from other researchers were also presented. In addition, the two final chapters of the thesis include some examples of previous results of experiences of Process Management, examples of which are used to highlight some issues found in the studied cases.

3 METHODOLOGY

The purpose and research questions of this thesis are presented in the first chapter. In the previous chapter the theoretical frame of reference was laid out. The next step in the research process is to choose the methodologies through which the research questions will be examined. In this chapter the research approach and paradigm in which the research has been conducted will be presented. Furthermore, the research strategy and tools that have been used in the studies are discussed.

The reason for trying to explain the paradigm in which the research is done is that "different paradigms make different knowledge claims, with the result that criteria for what counts as significant knowledge vary from paradigm to paradigm", according to Lincoln and Guba (1985, p. 301). Gummesson (2003) agrees in that the researchers' pre-understanding and paradigm, experiences and research approach always directs the research. The preface of this thesis is an attempt to describe the pre-understanding and experiences that lay the ground for this research and in the next section the paradigm and research approach will be presented.

3.1 Research approach

Gustavsson (2003) talks about three different kinds of sciences:

- safe and exact science
- critical and deconstructive science
- empathic and interpreting science.

Exact and secure science is associated with positivism, objectivism and quantifications. Alvesson & Sköldberg (1994) presents a statement from Niels Bohr of the positivist view of science, that "the mission of science is to widen our experiences and reduce it to order". Gustavsson (2003) argues that in this approach the knowledge is out there and it is the mission of the scientist to develop and use exact methods to find, collect and reproduce it as well as possible. See also Table 3.2 how Lincoln & Guba (1995) define positivism, which can be related to the safe and exact science that Gustavsson describes. In connection to Table 3.2 there is also a discussion as to how the research presented in this thesis relates to the statements.

Critical and deconstructive science is, according to Gustavsson (2003, p. 14), "a process of continuous questioning, criticism and suggestions to new solutions"[6] to develop and improve the science. It is connected to postmodernism and discourse. This kind of science sets out to deconstruct and to show how science is fragmented rather than to give holistic descriptions.

Empathic and interpreting science argues that a deeper understanding, not general laws, is most important, Gustavsson (2003). Here Lincoln & Guba's (1985) concept of post-positivism is relevant. It is about interpretation and understanding rather than

[6] My translation to English.

casual connections and explanations. Lincoln & Guba (1985) present this as a new paradigm following positivism (the safe and exact science). A paradigm where the human is the most important instrument "because all instruments are value-based and interact with local values but only the human is in a position to identify and take into account (to some extent) those resulting biases" (Lincoln & Guba, 1985, p. 40).

The research that laid the ground for this thesis can be characterized as being primarily directed towards the empathic and interpreting science that is searching for understanding and knowledge. However, there is also an ambition to find patterns between the different cases. Section 3.3 will discuss the shift of my paradigm that has taken place during the studies.

Some authors like to connect these paradigms with quantitative and qualitative methodologies. Alvesson & Sköldberg (1994) categorise qualitative studies as setting off from the perspective of the object, where as the quantitative study to a greater degree sets off from the ideas of the researcher as to what dimensions and categories that should be the centre of attention. Johannessen & Tufte (2003) argue that the quantitative approach is inspired by the natural sciences. Furthermore, Johannessen & Tufte (2003) point out that questionnaires are a common illustration of a quantitative methodology. In a questionnaire, the researcher quantifies the coverage of a phenomenon.

An example of a qualitative methodology is in-depth interviews, according to Johannessen & Tufte (2003). They argue that qualitative approaches result in more detailed and nuanced information compared to quantitative approaches. Since the research questions posed in this research are asking for descriptions of the transition and understanding of interdependences, both the data collection and analysis have mainly been qualitative in character.

An alternative approach could have been to use more quantitative tools, like a survey, to ask the same set of questions, fewer in number, to a larger number of people. One example of a population to study could be employees at organisations working with Process Management. This would have resulted in a broader material, but as the purpose of my work is to get a deeper understanding the choices made seem reasonable.

3.2 Research Strategy

This thesis is based on three studies, Study 1, Study 2 and Study 3, which in turn are the foundation for the three appended papers, Paper 1, Paper 2 and Paper 3, see Figure 1.2. There are two research questions posed in Chapter 1:

> 1. What can the transition from a functionally orientated into a process-orientated organisation look like?
>
> 2. How are the interdependences of the elements of TQM affected by introducing Process Management?

According to Yin (1994), there are two questions that one should ask oneself when choosing a research strategy: Does the inquiry require control over behavioural events and does the inquiry focus on contemporary events? Yin (1994) presents the alternatives as: Experiment, Survey, Archival analysis, History and Case study.

In this research it is not possible to control all events, as the settings are currently active companies, which rules out Experiment as a strategy. The other issue that Yin (1994) stresses is the type of research question posed. These research questions both have a base in the previous research done in Garvare (2002), where a survey was already done. The purpose of this research is to go deeper than that survey, which had a broader approach. The purpose of the inquiry is to study how organisations are working with Process Management. The focus is on contemporary events, which rules out Archival analysis and History as approaches. This resulted in my choice of Case study as a research strategy. However, included in the data material there are some older documents, in Study 2 and Study 3 the descriptions of the organisations according to the SIQ Model for Performance Excellence a few years back been studied.

Yin (1994, p. 13) defines that "a case study is a empirical inquiry that (1) investigates a contemporary phenomenon within its real-life context, especially when (2) the boundaries are not clearly evident". This definition strengthens the suitability of choosing Case study as a research strategy, because the phenomenon of Process Management, from the viewpoint of the research questions posed, needs to be investigated in an organisational context.

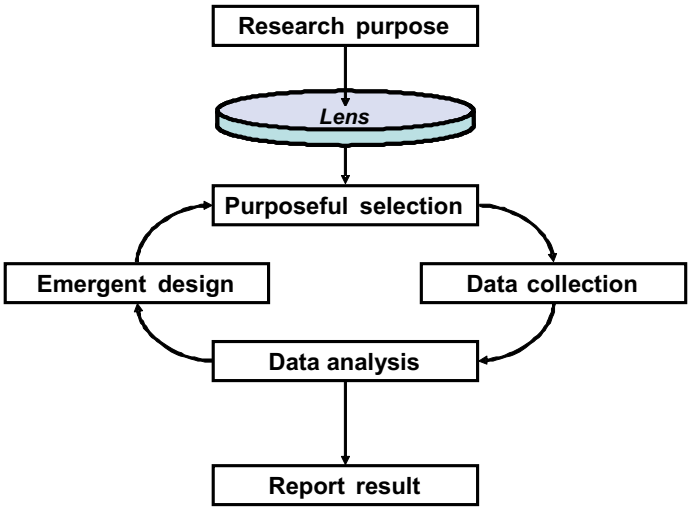

Figure 3.1 The research strategy will be presented using the structure of the model above, inspired by Lincoln & Guba (1985, p. 188). The three studies conducted will be seen as three laps of the circle in the model.

The next question is how to carry out the research strategy. In Figure 3.1 a model inspired by Lincoln & Guba (1985, p. 188) is presented to explain how this research has been performed. With the starting point in the research questions and the purpose posed in Chapter 1. The studies have been executed using the paradigm described in Section 3.1, and further developed in Section 3.3, as a lens when making choices and looking at the world. By use of this lens the units of analysis has been observed and decisions have been made which someone else, with another lens, may have made differently. See also the arguments as to why there is a need to explain my paradigm in the beginning of this chapter and the quote below:

> …a word or a phrase… has the meaning it does by being a choice made about it significance in a given context… and that choice is embedded in a particular logic or a conceptual lens, whether the researcher is aware of it or not. (Miles & Huberman, 1994, p. 57)

The purpose of the model in Figure 3.1 is to proceed through the circle of Purposeful selection of cases, Data collection and Data analysis as many times as needed to fulfil the purpose of the study. After every lap there should be an "evaluation" as to whether the purpose stated in the beginning of the study is fulfilled, or if there is a need for another selection of cases for further data collection and analysis. If that is the case, the design emerges for the next study required. My three studies represent three laps in the model.

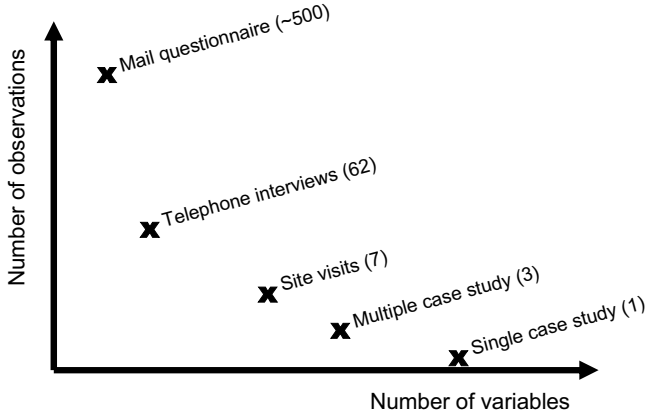

Figure 3.2 The vertical axis shows the number of cases investigated in the studies and the horizontal axis symbolises the number of questions or factors that were investigated.

The base for this research is the mainly quantitative studies made by Rickard Garvare, with my assistance, during 2000 and 2001, see Garvare (2001) and Garvare (2002). His studies aimed to discover the obstacles and possibilities when using Process Management in small and medium sized organisations, see Garvare (2002). A mail questionnaire was sent to 1500 organisations and telephone interviews were conducted with 62 managers from organisations participating in the mail questionnaire. The

results indicated that it could be interesting to compliment this study with a deeper examination of how organisations choose to work with Process Management and this is where my research sets off.

The development of the studies can be illustrated by the diagram in Figure 3.2. The two studies that Rickard Garvare conducted are mainly quantitative, looking at a few factors in a high number of cases. Those studies were made to get a wide picture of the use of Process Management in organisations. The three studies, Study 1, Study 2 and Study 3[7], that form the basis for my research aims to achieve a deeper understanding by a qualitative research approach. To investigate a smaller number of cases with a larger number of questions or factors to be observed. To get a richer picture when investigating the two research questions posed.

3.2.1 Purposeful selection

Study 1

The first selection of organisations at which to make site visits, Study 1, came from those organisations which claimed in a mail-questionnaire and during telephone interviews that they were actively working with Process Management, Garvare (2001). This strategic selection was done with the purpose of achieving a deeper understanding of how these organisations reflect on their work with Process Management. The selection was strategic in the sense that we had some knowledge of which organisations were using Process Management and the ways that they worked with the methodology. We chose those organisations who, in the previous studies, indicated that they were working actively with Process Management. The seven organisations chosen for the study will be given the names: Electro Inc., Industry Production Ltd., Education Inc. Process Equipment Ltd., Industrial Trading Corp., Boat Parts Inc. and Consulting Inc[8]. The study will be referred to as site visits.

Study 2

As to the next study, Study 2, the selection and execution of the case studies were made in collaboration with Henrik Eriksson, who at the time was examining organisations that were using the SIQ Model for Performance Excellence as a tool for quality improvement. He had, also by means of the telephone interviews, identified a number of organisations that were successful in their quality efforts. Together we choose three organisations to visit for further examination. The choice was made based on the following criteria (Eriksson & Garvare, 2005):

- The organisations should uphold systematic improvement work.
- The organisations should have used the SIQ Model for Performance Excellence in the application to the Swedish Quality Award.
- The organisation should not have gone through any major organisational changes subsequent to their most recent award process participation.

[7] See Figure 3.3 of when in time the studies have been carried out.
[8] The organisations are given assumed names.

For Study 2 these criteria were very appropriate. If these organisations carry out systematic work with the SIQ Model for Performance Excellence, that indicates a work with Process Management as this is a substantial part of these criteria. This is good because after Study 1 of organisations with a very varying level of work with Process Management we were interested in looking at organisations in the third stage, of three, in the identified model of Study 1, see Section 4.1.4. This level is in Paper 1 defined as:

> In these companies the process view had been gradually acknowledged by a majority of the employees, and the organisations had slowly become more process-orientated. Central organisational activities were mapped and defined in terms of processes and sub-processes. Process owners were appointed at high levels within the organisations. (Paper 1 by Garvare & Palmberg)

The three organisations that were selected for the multiple-case study in Study 2 were Logistics Inc., Energy Production Inc. and Agria Animal Insurances[9], referred to henceforth as Agria.

Both Study 1 and Study 2 uses a multiple-case strategy, using several cases in each study to get a more extensive picture of how the organisations have worked with Process Management. Yin (1994) categorises the multiple-case study strategy as more robust that the single-case study strategy, see further in Section 3.4.

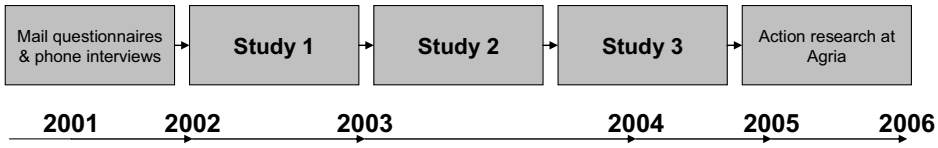

Figure 3.3 The three studies, that are presented in this thesis, have the input from the mail questionnaires and telephone interviews by Rickard Garvare. The three studies are followed by action research at Agria.

Study 3

As for Study 3, the single-case study of Agria, this grew from Study 2 where Agria was one of the three cases. During Study 2 a good relationship had been established and it resulted in the project of my M.Sc. thesis (Palmberg, 2004) and continued with the project which this licentiate thesis has been based on. The study of Agria can be categorised as a single-case study, where Agria is a extreme or unique case, see Yin (1994). The case is extreme or unique as Agria was acknowledged as excellent having been chosen twice as recipient of the Swedish Quality Award[10] and in Study 2 identified as a well established process-orientated company. Agria was in turn interested in a collaboration to get input for further development. When examining the

[9] The organisations are given assumed names, except from Agria, which has agreed to the use of their name.
[10] As the only organisation in Sweden, so far, that has received the Swedish Quality Award twice.

quality efforts of Agria a holistic design was used, as the interest lay is the global nature of their work with quality, see Yin (1994).

Selection of informants

In all of the three studies both managers and employees have been chosen as informants. The managers have foremost been those managers responsible for the Process Management initiative. The employees have been selected based on recommendation from the managers. This selection is a kind of triangulation. Johannessen & Tufte (2003) describes triangulation in the social sciences as looking at a phenomenon from different perspectives. If several sources of information, or several methodologies for data collection, show the same results, the trustworthiness of the results is strengthened, Johannessen & Tufte (2003). See further discussion in Section 3.4.

3.2.2 Data collection

Qualitative studies aim to acquire a lot of information from a small selection of cases or informants, Johannessen & Tufte (2003). Further on, Silverman (2001) describes four kinds of data material that can be qualitatively analysed: Observations, Interviews, Text or documents and Sound or picture recordings. The primary sources for data collection in these studies have been interviews and observations. This choice was made on the basis that we wanted to hear the "stories" of the organisations, and wanted to hear these stories from different angles. This rules out text or documents as sources of information as these stories are seldom written down. Sound or picture recordings are ruled out for reasons of practicality.

Before each study the organisations were contacted and agreed to participate in the study. A date was set for our visit and the organisation received information on the areas that would be investigated. The interviews were prepared through tests of the questions with our colleagues. In Study 1 and Study 2, where several organisations were visited, case study protocols were used to ensure that the same procedures were followed at all the organisations. This strengthens the reliability of the study, according to Yin (1994).

Study 1

At the site visits in Study 1 semi-structured interviews were made primarily with the persons, who had been the driving force of the initiative of working with Process Management. These persons were identified after the telephone interviews by in (Garvare, 2002). These interviews were also complemented with interviews with employees at the organisations to verify the stories of the managers, a sort of triangulation. During the first interview the managers enabled us to become familiar with the terminology of the organisations. This facilitated the interviews with the employees since we could use the terminology of the organisation to ask questions about their Process Management initiative.

To get an enhanced understanding of the organisations and their process efforts, observations were made through tours of the sites and opportunities to "small-talk"

with personnel. As Fontana & Frey (1994) describe it, it is important to adapt to the world of the people that are being interviewed in the study. The observations are a tool for that. In Study 1 the site visits were extended to half a day but they were complemented by the results from the previously performed questionnaires and telephone interviews.

Study 2

In Study 2 the same approach was used with semi-structured interviews with representatives from different hierarchical levels, both managers, managers responsible for the work with Process Management and employees, who had been involved in the work. In Study 2 the visits to the organisations were extended to one day, which gave more time to observe and understand the environment at the companies.

Structured interviews require a protocol of what questions to ask in used. Here I have described how we used 'semi-structured interviews', by which I mean that we had protocols, where we had stated what areas we wanted to investigate and wanted to ask questions about. The choice to use semi-structured interviews was made on the basis of making the analysis of and comparison between the approaches of the organisations' Process Management initiatives. The choice not to standardise the interviews in the studies was made because it often makes the interviewee more relaxed to be able to carry out the interview as a conversation rather than running through a long list of pre-set questions.

Study 3

Study 3 is based on the interviews made in Study 2 at Agria. These interviews, which were in a less structured way more like conversations, took place during the summer of 2003[11]. The results are also based on observations made up to the summer of 2005. Adler & Adler (1994) categorize different kinds of observations as:

- Entirely participant
- Participant as observer
- Observer as participant
- Entirely observer.

In Study 1 and Study 2 the observations can be categorized as belonging to the final group, since we as researchers did not intervene at all. However, in Study 3 my role has been as an Observer as participant and as time has passed the continued research is based on my role which has become closer and closer to that of a Participant as observer. According to Yin (1994), the advantage of being both a participant and observer is that it provides the researcher with access to events that otherwise would have been inaccessible. In Study 3 my role at Agria was to work in the project dealing with the question of integrating the ISO 9000 and the Swedish Quality Award documentation. That project did not explicitly aim to investigate how Agria worked

[11] When the work leading to the M.Sc. thesis was performed.

with Process Management. However, as the project proceeded, I gathered experiences, knowledge and understanding for the work with quality at Agria. It is a longitudinal study as it stretches over several years.

Documents from the companies were also collected during the visits to the organisations and analysed during all the three studies. The semi-structured interviews in Study 1 and Study 2 were recorded and transcribed. In Study 3 documentation was made through notes and material from the project. The recording and transcription of the interviews has strengthened the reliability of the first two studies, see further in Section 3.4. For an overview of the studies, see Table 3.1.

3.2.3 Data analysis

When conducting data analysis Yin (1994) suggests that there are two general strategies when approaching the material; relying on theoretical propositions and developing a case description. In this research both the strategies have been used. In Chapter 4 case descriptions are presented. The analysis presented in Chapter 6 is made on the basis of the case descriptions and with the framework from the theoretical frame of reference. The theoretical frame of reference is based on the aggregated result of my studies of literature in the area of quality over several years.

The transcripts of the interviews and notes from observations have been used for the case descriptions through text analysis. Coding has been used in the text analysis, with codes that evolved during the work. Miles & Huberman (1994) describe three kinds of coding: Descriptive, Interpretive and Patterns. The coding that has been used here in this thesis is a combination of these three kinds. These codes can be seen as themes that have evolved mutually with my deepened theoretical understanding. The codes have been used to build patterns and explanations in the material.

Study 1

For the analysis in Study 1, presented in Paper 1, the material from the previous mail questionnaire and telephone interviews from each organisation was compared with data collected during interviews and site visits. The main purpose of the site visits was to verify the data material that had been collected earlier. Study 1 seeks to contribute in describing and to some degree explaining the transition from a functionally orientated organisation towards a process-orientation. Case descriptions that were developed are presented in Paper 1 and Chapter 4. As a theoretical proposition, see (Yin, 1994), a model was found in Hertz et al. (2001) that was used in the analysis to describe the transition in the organisations. Hertz et al. (2001) had studied the use of Process Management at the Volvo Car Company.

Study 2

In Study 2 case descriptions were developed as a means of presenting the material for the readers in Paper 2, also presented in Chapter 4. Data from the interviews and observations from the three cases were coded using a combination of the three kinds of codes described earlier. The framework of Figure 1, in Paper 2, was used as codes to

analyze the material and to draw conclusions. Notice the correspondence to the theoretical frame of reference in this thesis.

Study 3

Paper 3 is based on the interviews in Study 2 at Agria and Study 3, the observations made as a participant in the work of the M.Sc. thesis (Palmberg, 2004). Here a framework similar to the theoretical frame of reference in the previous chapter was also used, but in this case to describe the case and the methodology and tools used by Agria in their work with quality. Conclusions are made to try to explain, from the description, why Agria has succeeded in their quality efforts.

Analysis for the thesis

The data material collected during the three different studies was read iteratively and repeatedly in order to find patterns and indications to answer the research questions. Descriptions and explanations were grouped using affinity diagrams to form the themes used to describe and sort the case presentations in Chapter 4. The material was then regrouped into a data matrix of the cases, using the themes as categories.

Figure 3.4 Affinity diagram of the themes for the analysis and conclusion, made on my kitchen door.

This matrix has laid the foundation for the case descriptions in Chapter 4, used to answer the first research question. These case descriptions are then used, together with the theoretical frame of reference (the theoretical proposition according to Yin, 1994), to find patterns for descriptions and explanations of what the transition from a functionally orientated into a process oriented organisation looks like and how the interdependencies of the elements of TQM are affected by introducing Process Management. This analysis is presented in Chapter 6.

Figure 3.5 The data matrix of the same information (post-its) as in the affinity diagram in Figure 3.4, regrouped with each organisation as a column and the themes for the case descriptions as rows.

The use of the theoretical frame of reference as a theoretical proposition to guide the analysis is a choice that has evolved during the work. In Paper 1 the framework of TQM (presented in Chapter 2) is not that visible. The analysis in Study 1 used, as stated above, the model from Hertz et al. (2001) as a theoretical proposition. In Study 2 the elements of TQM are visible in the framework in Figure 1 in Paper 2 that is used for the analysis. The same framework is, more or less, used in Paper 3.

The reason for the use of elements similar to the values of TQM according to Bergman & Klefsjö (2003) as a framework is that I have "grown up", through my courses the last three years at the Department of Quality- and Environmental Management, in the environment where these elements are *the* framework. Consciously or not, these elements are what I have been looking for when visiting the organisations and therefore it is natural to use them when analysing the material.

3.2.4 Emergent design

The design and methodology of the research performed has evolved along the path of the investigations, beginning with quantitatively focused surveys and questionnaires continuing via site visits and a multiple-case study into a single-case study at one of the organisations, see Figure 3.2. The description of the purposeful selection of the cases above explains the development of the studies, how the choices of the cases have emerged. After Study 1, I developed an interest for a deeper understanding of the companies in the identified "third stage" in the model developed, see Figure 5.1. With the deeper knowledge that followed Study 2 I found it interesting to follow one organisation close up in a longitudinal manner in Study 3. This is in line with what Rickard Garvare identified as suitable for further research in his doctorial thesis, see Garvare (2002). An overview of the strategies and choices of the studies is presented in Table 3.1.

Table 3.1 An overview of the three studies that lay the foundation for the research presented in this thesis. The description of each study includes the organisations studied, the selection of the cases, the duration of the study and the basis for the data collection.

Case organisation	Study 1	Study 2	Study 3
Electro Inc. **Industry Production Ltd.** **Education Inc.** **Process Equipment Ltd.** **Industrial Trading Corp** **Boat Parts Inc.** **Consulting Inc.**	**Site visits:** - Selection from Garvare (2002) - Half day visit - Two interviews per organisation - Observations - Documents - Mail questionnaires and telephone interviews		
Logistics Inc. **Energy Production Inc.** **Agria Animal Insurances**		**Multiple-case study:** - Selection on basis on the SIQ model - One day visit - Three interviews per organisation - Observations - Documents	
Agria Animal Insurances			**Single-case study:** - Selection from Study 2 - 2003 – 2005 - Observations as participant - Interviews - Documents

3.2.5 Presentation of the results

The results from the studies have been reported in Paper 1, Paper 2 and Paper 3, all appended. Results from all three studies are also presented in the next three chapters. In Chapter 4 the ten cases that has been investigated are described, in Chapter 5 the three appended papers are summarized, Chapter 6 presents an analysis on the basis of the theoretical frame of reference (the elements of TQM) and finally conclusions are drawn in Chapter 7.

3.3 A shift of paradigm

Table 3.2 presents how Lincoln & Guba (1985) categorise and define the positivist paradigm and the naturalist paradigm. The latter defines what Lincoln & Guba (1985) call the post-positivist paradigm. In the following text the research presented in this thesis will be positioned on the basis of each axiom in Table 3.2.

Table 3.2 Lincoln & Guba (1985, p. 37) present different axioms that characterise the two paradigms of positivism and naturalism. The latter defines what they call the post-positivistic paradigm.

Axioms About	Positivist Paradigm	Naturalist Paradigm
The nature of reality (Ontology)	Reality is single, tangible, and fragmentable.	Realities are multiple, constructed, and holistic.
The relationship of knower to the known (Epistemology)	Knower and known are independent, a dualism.	Knower and known are interactive, inseparable.
The possibility of generalization	Time- and context-free generalizations (nomothetic[12] statements) are possible.	Only time- and context-bound working hypotheses (ideographic[13] statements) are possible.
The possibility of causal linkages	There are real causes, temporal precedents to or simultaneous with their effects.	All entities are in a state of mutual simultaneous shaping, so that it is impossible to distinguish causes from effects.
The role of values	Inquiry is value-free.	Inquiry is value-bound.

The nature of reality

Regarding the nature of reality I do not claim that there is a single reality out there, where a fragment can be studied independently, as the positivistic paradigm argues, according to Lincoln & Guba (1985). The approach used in this work is holistic, in line with the view that the implementation and use of Process Management cannot be studied independently of other parameters.

In this respect, I have shifted from the left side of Table 3.2 to the right, as can be seen in the studies. The first study examines the visited organisations work towards Process Management from a quite narrow viewpoint, as an isolated phenomenon, while the second study looks at the organisations' work with Process Management from a wider perspective.

The wider perspective of Study 2 is accentuated by the work of Henrik Eriksson, who was working parallel with Study 2 (collecting data at the same visit to the organisation), and executed his study where he investigated the organisations' work with the SIQ Model for Performance Excellence, see Eriksson & Garvare (2005). His study covers how all of the elements of TQM had been affected when working with the SIQ Model for Performance Excellence, where Process Management is an essential part. As I participated in some of the interviews made by Henrik Eriksson and transcribed all of the interviews in his study, I naturally had access to his material too. This broadened my view of the organisations, even though it is not a part of my formal data collection.

[12] "Relating to or concerned with the study or discovery of the general laws underlying something" (Oxford English Dictionary Online, 050913)
[13] "Concerned with the individual, pertaining to or descriptive of single and unique facts and processes (opp. Nomothetic)" (Oxford English Dictionary Online, 050913)

In the third study, Agria and Agria's quality efforts are studied in a holistic way, where Process Management is a part of a greater system of approaches. In all the three studies the methodology of Process Management has been studied in the context of the organisations using the methodology.

The relationship of knower to the known

The same line of reasoning, that is used in the previous section about the ontology, can be used when it comes to the epistemology described by Lincoln & Guba (1985). The same transition, from the left to the right side of Table 3.2, has taken place.

The first study is trying to be rather non-interventionistic, where the knower and known are independent, according to Table 3.2. Adler & Adler (1994) describes non-interventionism as when the researcher is trying not to influence the object that is being studied. In the third study, on the other hand, observations have been conducted where my role has been as an observer as a participant, see Section 3.2.2. This is closer to the naturalist paradigm, where the knower and the known are interactive, according to Table 3.2.

The possibility of generalization

The discussion of the possibilities for generalization is one of the more delicate in the case of this research. Is the goal is to find general laws (as in the positivist paradigm), or is the search for a "working hypothesis" for the single-case. The discussion is delicate because being in a transition between different paradigms the standards for generalizations are dissimilar where in the positivist paradigm the generalizations aims to be time- and context-free. In the naturalist paradigm, the generalizations are *only* time- and context-bound.

The first research question searches for descriptions of how organisations have handled the transition towards Process Management. This is investigated in Study 1 and Study 2 and results in time- and context-bound descriptions of what the transitions looked like when we studied the organisations, presented in Chapter 4. When answering this question I am in the naturalist paradigm. But by trying to describe the time and the context (the organisations) of the transition I hope that you, as a reader, can choose whether the stories told and the lessons learned by the companies are valid or applicable in your own context.

The second research question is set to examine how the interdependences of the elements of TQM are affected by introducing Process Management. When carrying out the analysis on the basis of the theoretical frame of reference the aim has been to search for patterns that are not all context-bound. So, here I am moving back to the left, towards the positivist paradigm. Engineer as I am, raised in a positivistic paradigm, I strive for conclusions that can be applied in other contexts, at least as advice for other organisations.

> Prediction and control are unlikely outcomes although some level of understanding (verstehen) can be achieved. (Lincoln & Guba, 1985, p. 37)

The possibility of causal linkages

The question of possible causal linkages is closely connected to the previous question of generalizations and the dilemma is the same. In the first research question that is mainly answered in Study 1 and Study 2, the ambition is to describe the transition, not to explain it, which means that there is no search of causal linkage. As to the second question, to find the cause-effects linkages between the elements is not the aim, the purpose is rather to reach an understanding of how the interdependencies are effected by an introduction of Process Management.

My attitude has shifted in this area too, as being brought up in the natural sciences my mind is set to find causes for the things I see, but I am starting to recognise that this is not always the right way to go about things. Some things that we see can be the result of a combination of factors where the composition of these factors is the reason for the result. It is often a mutual shaping that is the key, not the individual factors.

The role of values

Regarding the role of values my standpoint is rather clear. The inquiries made in this thesis are value-bound. Lincoln & Guba (1985, p. 38) define value-bound in five ways:

- "Inquiries are influenced by *inquirer* values as expressed in the choice of problem, evaluand, or policy option, and in the framing, bounding, and focusing of that problem, evaluand, or policy option."
- Inquiry is influenced by the choice of the *paradigm* that guides the investigation into the problem.
- Inquiry is influenced by the choice of the *substantive theory* utilized to guide the collection and analysis of data and in the interpretation of findings.
- Inquiry is influenced by the values that inhere in the *context.*
- With the respect to corollaries 1 to 4 above, inquiry is either *value-resonant* (reinforcing or congruent) or *value-dissonant* (conflicting). Problem, evaluand, or policy option, paradigm, theory, *and* context must exhibit congruence (value-resonance) if the inquiry is to produce meaningful results."

Lincoln & Guba (1985) state above that the inquirer's values and paradigm guide the investigation of the problem. This is why I have tried to describe my pre-understanding in the Preface and the choice of paradigm in this section.

The purpose of describing the theoretical frame of reference in Chapter 2 is to make it clear what substantive theory is used. This because the framework of TQM has very much influenced the investigations and with another framework the questions, data collection and analysis probably would have been different. As to the relationship

between my values as an inquirer and the values of the context, the organisations that has been visited, it is quite congruent. This is the case as all of the organisations, more or less, "confess" to the system of TQM.

3.4 Validity and reliability

The validity of a study is a measure of how well the concepts that should be studied are being studied, according to Svensson (1996). Johannessen & Tufte (2003) define validity as how well the data represent the phenomenon that is being studied. To strengthen the validity Yin (1994) suggests, among other approaches, to use multiple sources of evidence.

The reliability is, as the name reveals, a measure of how reliable the data in a study is (Johannessen & Tufte, 2003). According to Yin (1994), one way to reach higher reliability is to maintain a chain of evidence. Adler & Adler (1994) argue the observations of different sites or over time strengthens the reliability of a study.

Multiple sources of evidence

Patton (1987) discussed four types of triangulation:

- Data triangulation – of data sources
- Investigator triangulation – among different evaluators
- Theory triangulation – of perspectives on the same data set
- Methodological triangulation – of methods

In this research the first and the last kind of triangulation have been used to strengthen the validity of the inquiry. In Study 1 and Study 2 a multiple-case study strategy has been used, which strengthens the robustness of the study, see Yin (1994). Furthermore, both managers and employees were interviewed in all the organisations, as different data sources.

For the data collection different methods have been used such as methodological triangulation, both interviews and observations have been conducted. The observations were foremost made to confirm the information from the interviews and to give a more vivid picture of the organisations.

It is important to make clear that many of the descriptions and conclusions presented in this thesis have been based on information provided by the participating organisations themselves. It was not until the spring and summer of 2005 that it was possible for me to get close enough to an organisation, Agria, to be able to develop a picture of the organisation that might complement the picture delivered by the management at these organisations. In many ways these two pictures correspond, the management's view and the observations made by the researcher, but not always. It has been useful in Study 3 to , investigate Agria up close up and get first hand observations of the work with Process Management in the organisation.

Maintain the chain of evidence

In this chapter the manner in which the studies have been executed and the analysis has been made is described. This is one way to make it possible for readers to judge if they think that the results of the studies are reliable. The next step to strengthen the reliability is the next chapter, where the empirical data that the analysis is based on, is presented. This makes it possible for each reader to do his or her own analysis and decide whether his or her conclusions correspond to mine. As a further effort to present the data in an open way quotes have been used to give as rich a picture of the cases as possible, which Adler & Adler (1994) argues strengthens the reliability. Furthermore, all the original data, in the form of transcribed interviews and notes from interviews and observations, are documented.

Observations on different sites and over time

According to Adler & Adler (1994), one way to increase reliability is to do the data collection over time and/or at different sites. In the first and second study data has been collected from seven sites respectively three different cases. The data collection of the third study was done over time and is still in progress. One step in the same direction for Study 2 is that in the summer of 2005 follow-up calls where made to the other two companies of the second study. (This was because of a presentation of Paper 2, and I was interested to see where they were today in their work with Process Management.)

4 CASE DESCRIPTIONS

In this chapter data from Study 1, Study 2 and Study 3 are presented as case studies of the ten organisations that have been examined. The organisations and their transformation from originally having been functionally orientated and then moving towards more process-orientated organisations, in one way or the other, are described.

When trying to gather together my experience of organisations working with Process Management the focus has been on why they have chosen to start such an initiative, how they have carried out the implementation and what it all has resulted in. How these questions have evolved is described in Section 3.2.3. All the organisations except Agria have been given assumed names.

4.1 Site visits

In 2001 and 2002, site visits were performed at seven organisations that had claimed, in the previous mail questionnaires or telephone interviews, to have implemented Process Management. In the following sections observations made during these site visits are presented, together with results from interviews and general information about the companies.

4.1.1 Electro Inc.

Electro Inc. was founded in 1975 and had at the time of the site visit about 45 employees. It produces and markets electrical equipment for industrial use. Main operations are in the Nordic countries and the Baltic States. At the time of the site visit, the company was certified according to ISO 9001:2000 and were also working to become certified according to ISO 14001.

Incitement and initiative

High stock costs and unsatisfactory delivery times were the two main incitements to improve. The manager at Electro Inc. who took the initiative to implement Process Management had attended a seminar about Process Management at one of the larger Swedish companies and saw great possibilities. After that he learnt how to go about implementation through courses and literature.

Implementation

A small pilot project of implementing Process Management was initiated by the manager, including parts of the production department. External consultants were used in the work. After a successful completion of the pilot project, Process Management was spread through the entire production department of the company.

Organisational structure

At the time of the study the production staff was working in cross functional teams. These teams were responsible for the production from order to delivery and they were only manufacturing on demand. At an early stage of the process-orientation "everybody had been doing everything", but after a while the testing personnel had left

the teams. They needed to focus on their own specific tasks to be able to function as specialists.

Results and consequences

> Because I am the driving force I only see the advantages. We have less in stock, we produce more money in the same physical space, and we have fewer employees, greater efficiency and a whole new delivery precision to the customer.
>
> *Manager, Electro Inc.*

The manager claimed that delivery precision had improved from 60 percent up to 95 percent within the first year after the initiative to implement Process Management had started. A downside of having a smaller stock was that the sales department felt insecure about not having products in stock. At the time of the study this problem was solved through having a small supply of standard products in stock and producing the rest on demand. The financial manager at Electro Inc. was very positive to the reduction in stock volume caused by the use of Process Management.

The senior manager at Electro Inc. argued that the understanding of customer needs among the personnel had increased through the work in cross functional teams. Now everyone helped each other out and the territorial thinking that had existed before between functions had reduced, according to the manager.

Some people had left the company since the re-organisation, but the manager claimed that this was because of a previously existing high turnover of staff. In the beginning of the implementation of Process Management there had been complaints about having to do less qualified tasks when working in teams where "everyone does everything".

4.1.2 Industry Production Ltd.

Industry Production Ltd. was founded in the early 1990s and had at the time of the study about 60 employees. It is a manufacturer of mechanical components mainly for the vehicle industry. The company is certified according to ISO 9001:1994, ISO 14001 and QS 9000.

Incitement and initiative

The work with Process Management was initiated by the company's largest customer, which was a large manufacturer of consumer products. This customer had insisted that Industry Production Ltd. be included in a supplier network in which strategies and methodologies had been developed and in which all their suppliers were supposed to participate.

Implementation

At the time of the site visit the work of implementing Process Management had just started and the company was following a three step model that had been provided by consultants within the supplier network. The first step of this model was to create order. One part of this was the development of improvement teams. Another part was to start measuring and to use the results as a fact base for decisions. The organisation

had used consultants to implement both their ISO systems and the quality system provided by the supplier network.

> It has worked out fine [to use external consultants] but with the classic mistake that the consultant should give feedback and not 'do the job'. When the consultant disappears the knowledge disappears. Sometimes when you don't really know what to do, it is easy to let the consultant do a little too much.
>
> *Manager, Industry Production Ltd.*

Organisational structure

The organisation of Industry Production Ltd. was noticeably production orientated. It had a functional hierarchy with a horizontal division of power between units such as finance, manufacturing, distribution, marketing and sales. As a complement to the functional structure several improvement teams had been created, and at the time of the visit they had just started their work. In this initial phase the manager was participating in all the improvement teams.

Results and consequences

Even though the company was not process-orientated it worked in an anecdotal way by studying and improving smaller processes, with a positive experience as a result:

> To identify and understand a problem, it is very beneficial to work with the process flow – what happens before and after the actual problem, to understand the entirety. If you try to work with just one piece it is easy to get lost.
>
> *Quality coordinator, Industry Production Ltd.*

The project to bring order in the factory seems to have created a lot of positive results. The quality manager stated:

> It is possible to work in an inefficient way for many years without recognising it. This can be compared with having all your cutlery in the same drawer in the kitchen – you would find things, but it would just take a little more time.
>
> *Quality coordinator, Industry Production Ltd.*

4.1.3 Education Inc.

Education Inc. is a privately owned Swedish school. It was founded in the 1990s and has about 25 employees. At the time of the site visit the company had no certified Quality Management system. As seen below, the Process Management initiative presented in the answers to the mail questionnaire and the telephone interview did not exist. As a result, the headings of incitement, implementation and organisational structure were not useful in this case.

Results and consequences

At the time of our study the organisation had a strong customer orientation and highly motivated personnel, determinedly striving to improve methodologies and procedures.

The planning horizon was long, cost pressures low and results were measured regularly. However, what had appeared to be a process-orientated organisation during the telephone interviews emerged during the site visit to be a vision in the mind of a few managers rather than an established way of working within the organisation. No attempt had been made to identify or map existing processes, and there was no written documentation about the horizontal organisation. All the things that were said to be "in the heads of all employees" regarding processes and division of responsibilities, turned out after a deeper enquiry to be very unclear and vague. Education Inc. was therefore classified as a functional orientated organisation with a narrow focus on production.

4.1.4 Process Equipment Ltd.

Process Equipment Ltd is a family owned sub-manufacturer of process equipment for industrial customers on the international market. The company, founded by an entrepreneur in the beginning of the 1970s, now had about 120 employees in Sweden and, in addition to this, 13 subsidiaries in the world. Research and development accounted for about 15 percent of total turnover. At the time of the site visit the company was certified according to both ISO 9001:2000 and ISO 14001:1996.

Incitement and initiative

Three years before the site visit was made a relative of the founder had been appointed CEO of the company. At this time the organisation was built on traditional functional departments and a hierarchical chain of command. According to the CEO there was a wide gap perceived between the product development and sales departments. People at the product development department had a high technical knowledge, but knew little about what the customers wanted. The sales people were in close contact with the customers, but lacked technical knowledge. There were also difficulties in the division of responsibilities between the different departments, see the quote below about the segment solution.

Implementation

The organisation used external consultants when working with the reorganisation. One of the key issues was the physical positioning of employees in the office. There was a re-organisation "to fit the flow", that according to the CEO was a major contributor to the success of the reorganisation.

The CEO was new at the job as the reorganisation began. He argued that this was a factor that facilitated the improvement work because the employees were expecting a change to come when he took up his position.

Organisational structure

At Process Equipment Ltd. the reorganisation had resulted in a matrix organisation with functional departments which were complemented by segment managers who allocated the project budgets. Each segment consisted of a specialist responsible for monitoring all products within the segment during their life cycle, from R&D to post-launch evaluation subsequent to market introduction. The project teams were cross functional and some were even cross national. In the new organisation department

managers were responsible for all production resources, and also for the personnel and budget of their department. For each project, financial resources were assigned to the head of the segment, who then ordered services from the different departments. The department managers then assigned priorities between the orders from the segments.

> Earlier there was a larger risk that things ended up 'between chairs' when the different departments had their own resources and nobody owned the product all the way through. Everyone did their part and nobody took care of the whole.
>
> *CEO, Process Equipment Ltd.*

Results and consequences

The CEO of Process Equipment Ltd. told us that it was hard to establish what would have happened if the company had not introduced Process Management. However, now the products were better tailored to the customers' needs and that distributors and subsidiaries were much more pleased with the company. This, he argued, was largely due to the appointment of the segment managers who in many cases came from industries where their customers were active. These segment managers also had a lasting responsibility for the products that had been missing before.

One of the employees that were interviewed expressed concern regarding when the functions and segments collide and the responsibility became unclear. "We intrude into each other's territories", she said. Information and communication were two factors she mentioned as being very important in order to make the matrix work.

As the CEO reflected on the implementation he said that he would do the same things again and work even harder to involve the employees in the change process if he had the opportunity to start again from the beginning.

> I suppose I was a little naïve and thought that if only I had figured it all out correctly, everything would work out. But I think that we should have had more training for the employees and should have put more emphasis on what, more exactly, we hoped to achieve and that it was necessary. I took it for granted that everyone understood.
>
> *CEO, Process Equipment Ltd.*

According to the CEO, there had been some initial insecurity among the personnel in the organisation when the reorganisation was presented and implemented. There were also some employees who had chosen to leave the company for different reasons.

4.1.5 Industrial Trading Corp.

Industrial Trading Corp. was founded in 1957 and at the time of the site visit it had about 30 employees. It is a trading company providing industrial customers with a variety of standardised and specially made products and components from manufacturers world-wide. Value is added by offering total solutions, specialist know-how, efficient logistical and IT systems, and a detailed quality assurance system. At the time of the visit the company was certified according to ISO 9002:1994 and QS 9000, and was also working to become certified according to ISO 14001. Since 1990

the organisation has been part of a trade group consisting of about 50 companies in the Nordic countries, the Baltic States, Germany, and Russia, focusing on import and sales of industrial product components in these countries.

Incitement and initiative

Despite the extra value added, by specialist know-how and by other complements offered by the company, most of the trading products have a very small earning per item. Cost pressure had always been high within the industry:

> In our area there are no profits in working with purchase or logistics as the value of every product is very low. Our opportunity lays in working with improvement of our processes.
>
> *CEO, Industrial Trading Corp.*

The CEO felt that there were gaps in the communication within the company, especially between the purchasing department and the sales department, which did not communicate well with each other. Lead times had to be cut and the stock levels had to be lowered. One suggestion that came up was to begin by merging purchasing and sales into one larger team. A short external management course on organisational change gave the CEO ideas on how to apply and implement the integration.

Implementation

The change towards Process Management had started several years prior to our site visit. At the time the purchasing department was to be integrated with the in-house sales department some of the functional managers in the company had begun to question the way the organisation was operating, and started to look at the flow of work and products through the different departments.

> The change process was difficult; it was chaos to start with. The management had it 'all worked out' when we started but the employees had not understood yet. People got concerned when they did not recognise the organisation.
>
> *CEO, Industrial Trading Corp.*

Organisational structure

At the time of the site visit a number of processes had already been mapped, but there had been no further integration of departments within the company. Process owners had been appointed among the functional managers to coordinate and drive the process development. These process owners had also been delegated responsibilities from the CEO for the personnel working within their process. During monthly meetings every department informed the others about the progress of their improvement projects.

The company had begun outsourcing its administration and computer support systems, reforming the organisation to only include core processes vital to fulfilling the mission of the company. According to the CEO, "Process Management is about understanding what we are doing and how we can do it better".

Results and consequences

Initial results of the restructuring were promising, with shorter lead times, more efficient distribution, and better forecasting of customer demand. The new organisation had therefore barely been given time to settle before the project continued to also include mapping and analysis of other parts of the company. Now difficulties started to emerge. Many of the employees said that they did not see the point in making further changes to the organisation. Two employees chose to leave the company due to the restructuring, and the rate of change was slowed down.

Several respondents at the organisation commented that the reorganisation has given them a broader, more holistic picture of the company, thereby increasing their motivation to take part in many daily routines. Every employee at the company now had a personal education plan. According to the CEO:

> A majority of the personnel now better understands what others want from them, both externally and internally. It used to be 'quality by accident', and then we started defining who the customers and stakeholders are. It is important that all the employees know who is doing what. If the sales people are producing many customer-orders but the warehouse is not able to provide the goods, there is a problem. There is a need for understanding between the departments about working towards the same goal.
>
> *CEO, Industrial Trading Corp.*

4.1.6 Boat Parts Inc.

Boat Parts Inc. was founded in the 1950s and had at the time of the Study 35 employees. It is a subcontractor in the boat industry and is certified according to ISO 9001:1994.

Eight years before the site visit a new CEO had been appointed. For a few years the business situation had been difficult with heavy costs and a decrease in sales. The primary focus had been on immediate improvement activities, short term problem solving and cost reduction.

Implementation and organisational structure

After about two years the new CEO had begun transforming the company, from a traditional functional organisation with several departments and a hierarchical chain of command, into a new process based organisation. A flatter team-orientated structure replaced the former top-down hierarchy. One level of authority was eliminated and the functional differentiation was minimised. During this organisational change a few of the middle-managers left the company.

Results and consequences

The interviewed manager claims that the new organisation required a radical shift in thinking among the personnel. Those who had been used to working according to the priorities and quotas set by the managers now had to think much more for themselves. Work design, product inspection, cost reduction and process improvement became the

responsibilities of job teams. Two remaining functional managers provided specialised skills in the areas of finance and human resources. The performance of the company increased considerably in terms of reduced lead times, less rework and higher flexibility. Under the strong leadership of the new CEO the company had moved towards a process-orientated organisation.

4.1.7 Consulting Inc.

Consulting Inc. was founded in the 1980s and had at the time of the study about 150 employees. It is working in the service industry and has no certified management system. Two years before the site visit was carried out business had been very good. The company had been growing rapidly in terms of sales and employees.

Incitement and implementation

To improve internal efficiency and customer focus the senior management team had decided to change the organisation from functional orientation to process-orientation. A person with long experience of implementing Process Management in other companies was employed as quality manager. In two months he had reworked the organisational chart into a process hierarchy with core processes, sub-processes, operational, supporting and management processes.

Results and consequences

After the reworked organisational chart was presented the commitment shown by top management began to decrease. The general business climate was deteriorating and the company was losing sales. For about half a year the implementation was halted due to indecisiveness by the senior management. After six months it was decided that the change towards Process Management should continue. The insecurity among the personnel resulted in considerable damage to the mandate for change. As a result of some promising results achieved by those parts of the organisation that were using Process Management, attitudes towards organisational change improved. At the time of the case study the reworked process based organisational chart had found widespread use in the company, and one of the key business processes was horizontally managed by an appointed process owner.

4.2 Multiple case study

A multiple case study was carried out during the spring of 2003 together with Rickard Garvare. We made telephone interviews and then visited the three organisations Logistics Inc., Energy Production Inc. and Agria for one day each, conducting three interviews at each organisation and making observations. The results from the visit at Agria are included in the single case study presented in Section 4.3.

4.2.1 Logistics Inc.

Logistics Inc. is owned by the companies whose products it is transporting. In 2003 the turnover was nearly 1700 million Euro and the company had about 400 employees in Sweden. In 1994 Logistics Inc. became the first organisation in its business area to receive an ISO 9001 certification. At the time of the study the company had a market share approaching 50 per cent.

Incitement and implementation

Already in 1994 the company had started working with the SIQ Model for Performance Excellence, which included parts of Process Management. In 1996 a new CEO was appointed who had previously been working with Process Management in other organisations.

> The new CEO was the catalyst [for Process Management], she brought the toolbox.
>
> *Process leader, Logistics Inc.*

The reorganisation that followed was initiated by a declining trend where a new owner demanded improved results. The reorganisation was done with the help of external consultants who worked with the top management team, but who also held workshops with middle management and employees on a team level. According to one of the process owners, the existence of slack in the organisation had been important since it had provided an opening for improvement work and learning.

Organisational structure

Since 1997 there had been a process organisation present in parallel with the old functional organisation. In the process organisation the process owners were working with different flows through the company and the functional managers were responsible for budgets and staff.

> 'Process owner' used to be a bit of an honorary title, with no large responsibilities, given to those who worked in the process and nobody was very engaged. These process owners did not have that much power; the power still lay within the functional organisation.
>
> *Process leader, Logistics Inc.*

In 2000 top management at the company came to the conclusion that it would be better to work the opposite way, and a new reorganisation was initiated. Two years later this reorganisation had lead to the following organisational structure: The head of the department was also the process owner; responsible for staff, budgets and process performance. One of the interviewees said that "it was new titles but no new people". This gave the process owners more responsibility, with higher demands from the top management. One positive factor of the reorganisation was the clarification of responsibilities:

> The organisation has given the responsibility to one person to avoid that work being done on many different parallel tracks with different agendas. … You do not [have to] discuss who should be doing what.
>
> *Process leader, Logistics Inc.*

Under each process owner there were now team leaders responsible for the personnel, and also a process leader who was responsible for the development of the processes. The process leaders acted as facilitators within the department and the groups when working with improvement. There was though some dissimilarity between the different departments which mainly depended on the size of the department.

To aid the process leader in the work with improvements there were also process improvement groups with employees from the different parts of the department. These groups were given some theoretical background in Process Management and they became a forum for improvement. The members had been recruited to the groups through recommendation or through application.

> There has to be someone who grabs hold of the ideas and makes them happen. Now we have the process improvement groups which do that.
>
> *Member of a process improvement group, Logistics Inc.*

Results and consequences

The process-orientation of the organisation had had several effects on the company. It was said that the strategic understanding of the business has increased because of the process approach. One of the employees described how, before the change, you could blame someone else when things went wrong, but how there now was a shared responsibility and also a much sharper economic control. The process-orientation had also increased the understanding between co-workers of different departments, and there was a desire to deepen that understanding by performing an ”internship” at other departments.

A majority of the employees found the work with Process Management to be a positive experience. However, the increased productivity control was causing additional stress for some staff. Furthermore, it was argued by the process leader that had become easier to drive improvement when working in a process organisation. However, according to one of the process owners, it had also become more difficult to develop engagement among employees.

One of the interviewees suspected that the organisation might be losing some of the horizontal, cross-company links when working with Process Management:

> There can be a bit of sub optimisation of the staff. The different business areas keep their own staff who can be working in conjunction with someone at a different business area.
>
> *Process leader, Logistics Inc.*

The reorganisation towards Process Management had led to very few changes at a team and team leader level of the company.

> This does not change our assignments. My group leader is still the same, and we didn’t used to see much of the management above him and we still don’t. […] We don’t notice that much difference, it doesn’t change our tasks.
>
> *Employee, Logistics Inc.*

4.2.2 Energy Production Inc.

Energy Production Inc. is owned by a larger European energy group. In 2003 the turnover for the company was 200 million Euro and it had about 100 employees. The

organisational unit described did not have its own production facility. This function was instead outsourced to different external suppliers.

Incitement and implementation

The process-orientation of the organisation started when one of the top managers attended a seminar about Process Management and found it to be interesting.

> We started working with Process Management because we wanted to develop the organisation, not because of [external] pressure or crisis.
>
> *Process owner, Energy Production Inc.*

In the middle of the 1990s the company started working with the SIQ Model for Performance Excellence. In 1999 a new CEO was appointed and the company went through a major reorganisation. This implementation of Process Management took place through seminars and workshops with all employees, assisted by external consultants. The process owners and process leaders, who all came from the old organisation, attended courses in Process Management, leadership and personal development.

Organisational structure

To start with there were process leaders appointed in the organisation, but soon they were renamed process owners. These persons were the old department managers who now got new titles and became responsible for the operations and performance of the processes of the company. New competence owners were appointed, responsible for the personnel.

> Some employees are working in three or four different processes with different process owners. Therefore it is important that the competence leader takes the overall responsibility for the individual.
>
> *Process owner, Energy Production Inc.*

After the reorganisation, the routine was that the process owners should categorize the competence they need for their processes and ordered this competence from the competence owners.

At the company there were now again process leaders, which reported to the process owner and were aided by improvement teams. The teams sometimes included representatives of the customers. The position of a process leader was not defined within the organisational chart of the company.

> It is a bit difficult to find the relationships between the different positions. […] The answer about our organisational structure depends on who you ask in the organisation.
>
> *Process owner, Energy Production Inc.*

Results and consequences

According to employee surveys, there had been an increase in well-being among the employees as a result of the work with Process Management.

> The work with Process Management could be a way to achieve everybody's commitment.
>
> *Process owner, Energy Production Inc.*

The new organisational structure had allowed a more effective use of the employees. The process-orientation had also given a better general picture. Both process owners and process leaders indicated that it was hard work to make the new organisational structure work. A frustration was mentioned, whereby some of the employees had wanted clearer instructions on what to do.

> There is no one telling you what to do when you get to work in the morning. […] In the beginning it was hard to know who to ask about what in the organisation.
>
> *Process leader, Energy Production Inc.*

A down side discussed by both the process owner and the process leader was sick leave due to stress caused by the larger responsibility put on each individual in the new organisation.

> Working in an organisation of Process Management demands a lot of the individual, to take own initiatives. There is no one telling you what to do. […] This way of working does not suit all people.
>
> *Process leader, Energy Production Inc.*

The process leader argued that the sick leave figures were clearly higher after the organisational restructuring than before.

4.3 Single case study

The gathering of material for the single case study started when Agria became one of the three organisations examined in the multiple case study in the spring of 2003. It continued with the project of the summer of 2003, see Palmberg (2004). The data presented here is also a result of the research project where I, as a PhD student, have had a part time position at Agria since the fall of 2004.

4.3.1 Agria

Agria is a wholly owned subsidiary of the Swedish insurance company Länsförsäkringar AB and has specialised in the provision of animal and crop insurance. Agria has about 150 employees, who together serve about 360,000 customers. The turnover in 2003 was about 90 million Euro and the market share about 60 per cent of the total market in the animal and crop insurance segment in Sweden. In 1998 Agria was the first insurance company in Sweden to receive an ISO 9001 certification.

Incitement and implementation

In 1992 a new CEO was appointed at the company. Three years later he set up a goal: The company should grow by 25 per cent while saving 25 per cent on total costs per item. As a part of the strategy to reach this goal, Agria began to work with the SIQ

Model for Performance Excellence. As a result Process Management became a part of the organisation's quality improvement efforts an overview of which is given below:

1995 The SIQ Model for Performance Excellence is studied by the CEO and presented to the top management group.

1996 Agria starts working with projects on process-orientation and implementation of structures for continuous improvement.

1998 ISO 9001 certification and first application for the Swedish Quality Award.

1999 Receives the Swedish Quality Award.

2000 Upgrades to ISO 9001:2000. ISO 14 001 certification.

2001 A new, process based, organisational structure is introduced.

2003 Is the first organisation, to receive the Swedish Quality Award for the second time.

Organisational structure

At Agria a matrix model has been used when organising for Process Management. Process owners have been working full time with improving the performance of the processes at the company. These process owners have all been recruited from within the organisation.

> There have not been any exact calculations on the profile for being a process owner; there is a slightly different focus in the different processes.
>
> *Former process owner, Agria*

The full time arrangement for process owners was a later development. In the beginning, all process owners worked part time with process manager matters and part time in their old position. The process owners then had a process developer at hand when working with specific problems. Later on this role disappeared.

There have been some different changes of direction on the way to the organisational structure present at the time of our study. Earlier on the owners of the core processes had been working full time with the processes, while the support process owners had been the old functional managers from the support departments, which had only been working part time with the management of their processes. In the fall of 2004 the five part-time support process owners were replaced by one full-time support process owner responsible for all the support processes.

> Those of us who work in the matrix are in control over it. But it can be a challenge to explain the structure for the employees. […] The picture of the organisational structure you get depends on who you ask.
>
> *Process owner, Agria*

In the other dimension of the matrix there were functional managers, who had the responsibility for the financial result and the employees. Team leaders, responsible for coaching of the employees, were placed below the functional managers.

> A team leader is working in the operations with a perspective of a couple months. My task as a process owner is to have a more strategic picture. I am responsible for the system, not the staff, and I have more of a development perspective.
>
> *Process owner, Agria*

The management at Agria has tried to take the organisational restructuring one step further and form mixed, autonomous teams. The idea has been to mix employees from different market areas and thereby have them to work in the same way. However, this idea turned out to be difficult to realise, and therefore the organisational structure went back to specialised teams. The employees had a need to be placed close to those working in the same area to be able to efficiently transfer knowledge.

> We were a mixed team with a combination between different competences. We did not connect or work across the boarders in those groups, so now we are back in our specialised teams. It is good because now my manager knows about the things I do.
>
> *Employee, Agria*

Results and consequences

Before the process-orientation the different market areas had been working in different ways. One of the biggest gains from the work with Process Management was, according to a former process owner, that a unified way of working at Agria was developed, a way of working that was not dependent on which market area you are looking at. The standardisation of work procedures has been an important contributor to cost savings. The goal of 25 per cent growth with 25 per cent cost reduction was reached in 1999, four years after it was set.

> Our work got more systematic, we documented what we were doing and structured it. We became clearer about all those unimportant things we were doing.
>
> *Former process owner, Agria*

One place where conflicts still occurred at the time of the case study was in the matrix where the process owner is responsible for how the operations are run and the functional manager is accountable for the result. However, at Agria many people described this as a dynamic which has been a positive development and contributed to the success.

> Process Management has made it clear what should be delivered to the customer. To produce what the customer wants you have to calculate the activities and processes you need to accomplish that. […] Customer focus has got a deeper meaning. It got obvious that my process delivered something directly to the customer.
>
> *Former process owner, Agria*

According to the interviewees, one downside with this way of working was the risk in the new structure that some individuals could take on more responsibility than they had time for. For a further description of Agria's quality efforts, see Paper 3.

5 SUMMARY OF APPENDED PAPERS

This chapter includes brief summaries of the three papers that are appended to the thesis. The focus in these summaries is on the background and purpose of the papers and the results and conclusions presented in them.

5.1 Paper 1: Case Studies of Process Management in Small and Medium Sized Enterprises

5.1.1 Background and purpose

In line with the increasing use of Process Management among organisations in general it is also becoming more common among many small companies. It could be argued that the pressure of adopting a process approach has increased with the updated ISO 9000:2000, which strongly promotes the adoption of a process approach.

Garvare (2001) presents, a mainly quantitative, study of Process Management in Swedish small and medium sized enterprises (SMEs). In this study experiences were examined through the use of 1,500 mailed questionnaires followed by telephone interviews with senior managers at 62 of the companies that had participated in the mail survey.

The purpose of this paper is to evaluate the results of implementing Process Management in SMEs through the analysis of results of site visits at five small Swedish enterprises. The seven organisations were chosen, taken from the 62 companies participating in the telephone survey, based on a preliminary analysis of the telephone interviews, their geographical location, and the aim to cover different business areas. At each of the organisations visited, interviews were made with both managers responsible for the work with Process Management and with employees involved in the process whose work was affected by the changes.

5.1.2 Results and conclusions

Our findings were that, in general, the companies studied had not changed directly from a functional orientated organisation to a process-orientated organisation. Instead, they were still in, or had recently passed through, an intermediate stage characterised by a team and project based organisation, where focus was shifted towards an emphasis on cost reduction. Transitions described by the case companies presented in this paper have been summarised schematically in a model with three different stages: starting with functions, continuing via teams and projects, and ending with processes, see Figure 5.1.

In all cases, the companies studied had originally been production orientated, using a functional approach mainly focusing on stability and control of products and activities. Cost pressure had generally been low with a stable environment and long planning horizons. In the manufacturing companies investigated, produced goods were often delivered to stock, and improvement efforts were primarily concentrated on enhancing

product quality. With the exception of the manufacturing process, process responsibility was generally not defined at this stage.

Due to various contextual changes, five of the seven companies had been forced into the second stage of the model. Focus then shifted towards improving internal efficiency and resource effectiveness regarding supplies and inventory levels, and the majority of the organisations became cost orientated. Even when the intention was to directly develop a horizontal and process based organisation, the companies often made a temporary transformation into an approach based on teams and projects, focusing on improving distribution and resource utilisation, and on minimising delivery times. Typically, a few administrational processes were briefly mapped at this stage, but process responsibilities were informal and at a low hierarchical level, and process performance was not measured. A majority of the employees had not obtained a clear process view of their organisation. During this stage one or a few key individuals became familiar with viewing the organisation in terms of horizontal processes.

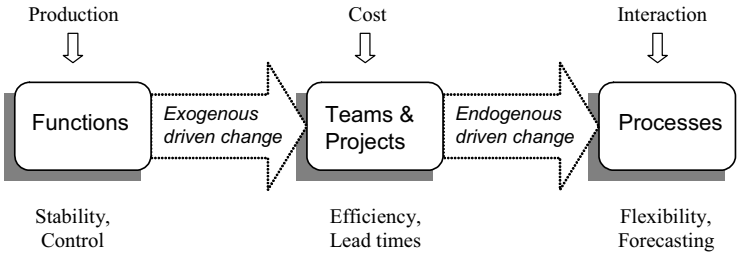

Figure 5.1 Stages of process implementation in small and medium sized enterprises studied. Idea and design inspired by Hertz et al. (2001).

One or two of the seven companies had, at the time of the case studies, progressed into the third stage of the model. In these companies the process view had been gradually accepted and understood by a majority of the employees, and the organisations had slowly become more process-orientated. Central organisational activities were mapped and defined in terms of processes and sub-processes. Process owners were appointed at high levels within the organisations. In one of these companies, process managers with responsibilities for day-to-day operations had been formally appointed. Cost pressures were still high, sometimes even higher than before, but the focus had shifted towards improving flexibility and process performance, and towards forecasting customer demands. A new horizontal structure was superimposed on the organisation, with frequent interactions between individuals at all levels in the company. Process performance was being constantly measured in processes with designated ownership. No external driver was identified between stage two and three, and the change was seen as endogenously driven. However, despite any transition towards Process Management the official organisational charts of all studied companies still reflected

the old functional organisation, with no clear identification of customers, suppliers, process owners or process managers.

A result that emerges from the case studies is that when changing from functional to process-orientation the enterprises studied pass through an intermediate state where the process view is gradually spread, accepted and understood within the company. A clear process view and understanding of the general methodology among a majority of the employees appears to be vital for the implementation of Process Management. In many of the enterprises studied, process owners were appointed from among the functional managers. Instead of completely rewriting the organisational chart the new process based organisation was superimposed on the old functional organisation.

Horizontal communication between departments seems to be problematic. A common way to solve this problem appears to be the merging of departments. During the case studies, a gap between the official emphasis placed on Process Management, and the actual level of process-orientation visible within many of the studied organisations, was observed.

5.2 Paper 2: Experiences of Implementing Process Management – Case Studies with a Focus on Organisational Issues

5.2.1 Background and purpose

Many companies express concerns regarding difficulties when implementing and maintaining a process approach in the organisation. After having analysed the seven cases in Study 1, see appended Paper 1, and having developed the three step model (Figure 5.1), it was found interesting to further study organisations that were identified as being at the third stage of the model. The purpose of this paper is to present results from the multiple case study of three organisations that have successfully implemented Process Management.

5.2.2 Results and conclusions

All the three companies examined have chosen to implement a matrix-organisation, saving parts of the old functional structure and then adding new positions to a process overlay superimposed on this structure. The companies have chosen different paths when implementing the process overlay. All three have used internal recruitment for the positions as process owners, but have given this position different status and responsibilities.

The relations between process managers and functional managers were found to be important in order to understand the process-orientation of the organisations. When well-established functional managers enter the role as process owners there is a risk that little really changes. On the other hand, there can also be difficulties when appointing others as process owners. Inexperienced managers can have troubles with legitimacy and authority towards the ‘old’ functional managers, leading to a situation

where the status of the process organisation becomes lower than that of the functional organisation.

It is widely accepted that being able to see your part in a greater whole is often a motivational factor for the individual. Working with process-orientation can, according to personnel at all the three organisations studied, be a way to create such a view and understanding. But if employees are having difficulties trying to understand the management structure of the new process organisation the effect can be the opposite.

It is noticeable in all three companies that the process organisation has created space and a forum for work with improvement and development. This has strengthened the organisations' capability for change. The act of implementing a process perspective and an understanding for the value adding processes within the organisation among the employees seems to facilitate the handling of complex relations in the organisations. However, the troubles in handling and understanding the matrix of responsibilities between the functional and the process parts of the organisation suggest that genuine systems thinking has not yet been achieved by any of the studied organisations.

The significance of leadership as a factor when implementing Process Management is illustrated by the fact that in all the three companies studied there has been, at least, one strongly motivated person high up in the hierarchy who has the organisation's attention for his or her ideas, and has thereby become the driving force for the implementation and organisational work with Process Management.

It is likely that customer focus has increased among the employees as a result of the process-orientation. However, an interesting strategic aspect that seems to emerge when working for a long time with Process Management is a tendency towards organisational introspection. This could also be a risk when implementing Process Management because of misdirected internal motivation.

There is a potential danger when working too hard on building a prominent Process Management structures within an organisation. A new hierarchical structure, going horizontally though the organisation instead of top-down, could then be created. It is therefore important to have a well-developed systems thinking, and to see the organisation as a whole, no matter the organisational structure.

In conclusion, this study indicates that the incitements, implementation methodologies and organisational structure can differ between companies working with Process Management, but still give similar results. It seems clear that the focus of attention should be on the flow between customer needs and customer satisfaction, and that this chain has to be recognized by all individuals within the organisation.

A question that arises is whether an organisation somehow has to organise follow-up of the processes or not? Do organisations need a process structure in order to fully

support the process view and a process-orientation approach? These questions merit further investigation.

5.3 Paper 3: Sustained Quality Management – How to Receive the Swedish Quality Award Twice

5.3.1 Background and purpose

In December 2003 Agria became the first company ever to receive the Swedish Quality Award twice, after receiving it first in 1999. This noticeable success was the result of a change process that had begun about ten years earlier. It was believed that a study of Agria could indicate some factors that are characteristic of successful TQM programmes, and hence be of general interest. The purpose of this paper is to describe how Agria has organised its work for Quality Management (for the full description of tools and methodologies see the appended paper).

5.3.2 Results and conclusions

In conclusion, it seems clear that nearly all of the managers at Agria have succeeded in focusing their leadership on values and visions rather than rules and regulations. The study has focused attention on joint leadership as an explanation for this achievement. Through the program for leadership development, managers at all levels have been able to give a collective, united message and to demonstrate the importance of the basic values. At Agria most managers share the belief that having everybody involved is a key to success.

Our contention is that the foremost factor contributing to the deep-rooted customer focus at Agria has been the recruitment policy, which strengthens the employees' commitment to the stated mission of the company, to *"Use expertise and commitment in order to develop and sell security for animals and people."* The fact that all employees can easily put themselves in the position of the customer with an animal in need of care has probably been the greatest contributory aspect of Agria's customer focus.

Process Management is a methodology in the work with continuous improvement at Agria. Top management has succeeded in building trust and dynamics between the process organisation and the functional organisation, something which is probably as difficult as it is important.

Goals are set and measured through the use of balanced scorecards. In addition to this a great number of production measurements are used. On the other hand, it was not always clear to the interviewees how these measurements have been selected to manage the operations leading towards the stated mission.

During the part of the study, where observations has been done as observer as a participant, we found that Agria has been working with operations improvement on three different levels, see Figure 5.2. The levels of improvement differ in the extent

and degree of systematisation and in the degree of maturity shown by the organisation in its work with quality-related issues.

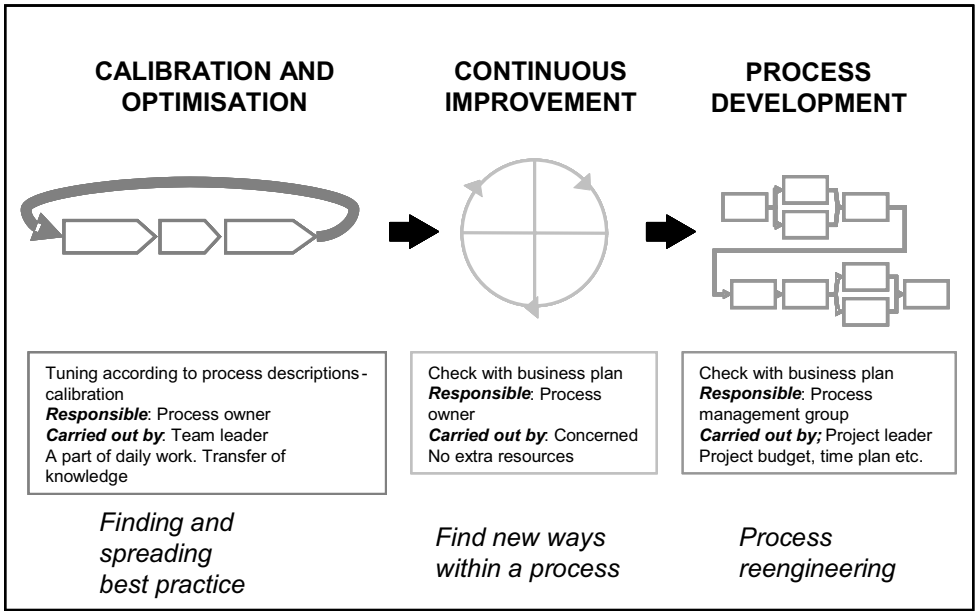

Figure 5.2. Levels of change and operations improvement. From Palmberg (2004).

The third level is *process development* – a discontinuous and often project-based approach with groups assigned to specific improvement tasks. It consists of knowledge of, and systems for, how to run larger development projects. This is the most extensive improvement level, where the problem to be solved requires a major work effort.

The middle level of this model is *continuous improvement* – to find new approaches on the basis of new ideas or indications of shifting trends in process performance. This is a structured way of working, with tools such as the wheel of improvement (PDSA: Plan – Do – Study – Act) and can often be found in organisations working consciously with TQM.

The first level has been called *calibration and optimisation*. Work on operations improvement at the first level is supposed to ensure that routines and process descriptions are followed as intended, that micro improvements of practice are made within current routines, and that best practice is developed and spread across the entire workplace. Team leaders are responsible for maintaining a climate, where ideas are shared among employees and where everyone continuously looks for possibilities of improvement by questioning present ways of working. When something comes up that implies a change of routines, it gets formalised as continuous improvement and is

transferred to the middle level of the model. If structural changes are needed, a project of process development is initiated (the third level of the model).

The approaches needed are dependent on the type of situation that arises. Therefore, it is important to be aware of the differences between the levels of operations improvement. Organisations should be able to gain from developing knowledge and methodologies regarding the different levels of improvement.

Agria has succeeded in deploying a number of basic quality related values that permeate through the organisation. On the basis of these values the company has developed and implemented methodologies and tools that support their striving for continuous improvement. Every organisation needs to find methodologies and tools that support its values when working at different levels of change. That is probably one of the most important explanations as to why Agria has succeeded so well – methodologies and tools have been selected by users on the basis of their view of what was needed, and have also been adjusted to fit the operations of the company. If an organisation can manage to implement values – and methodologies and tools supporting these values – sustainable Quality Management should be attainable.

6 ANALYSIS

The purpose of this chapter is to reflect on the cases presented in Chapter 4 and examine the strategies chosen for working with Process Management. This analysis is done using the system of elements of TQM described in the theoretical frame of reference in Chapter 2, the effects of which on this system can be identified when introducing Process Management. The aim of analysing how the organisations have acted in various situations and handled different issues is to highlight the opportunities, obstacles and risks of working with Process Management.

6.1 Customer focus

As stated by representatives in several of the organisations studied, Process Management has increased customer focus among many of their employees. For instance, one of the persons responsible for introducing Process Management at Agria said that:

> Process Management has made it clear what should be delivered to the customer. To produce what the customer wants you have to calculate the activities and processes you need to accomplish that. […] Customer focus has got a deeper meaning. It became obvious that my process delivered something directly to the customer.
>
> *Former process owner, Agria*

At Electro Inc. a tendency towards strengthened customer focus, as a result of introducing the cross functional teams that were responsible for the production from order to delivery, was detected. As the employees began to recognise their contribution to the total delivery, their understanding of the customer's needs also increased. The coordinator gave this example of how he experiences the difference:

> Now everyone knows that this project is to be delivered Tuesday next week and everyone helps out.
>
> *Coordinator, Electro Inc.*

At a number of the organisations visited it was found that as the flow that produces the value for the customer was identified through work with Process Management, in one way or another, the communication between departments was enhanced. With an organisational structure, such as the one shown in Figure 1a, it was found that barriers between departments could cause inefficiencies in horizontal communication within the company.

Before the work with Process Management started there had been a clear lack of communication between the sales and the production departments at both Process Equipment Ltd. and Industrial Trading Corp. At the time of the site visits both of these organisations claimed that the understanding between parts of their organisation had increased through the work with Process Management. It could be argued that if communication between sales and production departments is strengthened, the production department should, to a greater degree than before, be able to be receptive to expressions of customer needs and also to create and manufacture products that will

better satisfy these needs. Also the sales people should be able to acquire a deeper technical knowledge, making their communication with the customers easier and their comprehension of customer needs better.

This enhanced understanding between departments and within teams has most likely caused the increased customer focus of many employees because they see how their tasks relate to those of their colleagues and to the organisation as a whole. However, an interesting phenomenon, that seems to emerge in some of the cases when working with Process Management for a long time, is a tendency towards organisational introspection. As the focus on external and internal customer increases and everyone starts to recognize their colleagues' needs, there is a risk that the focus on the needs of the internal customers (the colleagues) exceeds the focus on needs of the external customer. The fulfilment of external needs should be the main point of attention, otherwise the Process Management probably will end up being inward-looking.

These results are in line with what Forsberg et al. (1999) state from a survey of application of Process Management in Swedish organisations. Their survey showed, as stated in Chapter 1, that the introduction of Process Management gave positive effects on both customer orientation, cooperation and gave a more holistic view of the organisation. Also in Garvare (2002), the results show that the customer focus has improved through increased customer satisfaction and customer base.

6.2 Leadership

Examination of the cases presented in Chapter 4 reveals a dilemma as to how to handle the relationship between a former, functional orientated organisation and a new process-orientated organisation. There are several different points of view on how to handle the question about organising according to the processes or the functions. Lee & Dale (1998), on the one hand, state that "true effectiveness requires cross-functional, process oriented management which is beyond the reach of most companies." On the other hand others, primarily managers, argue that organising based on the processes is not necessary, but that "thinking in processes" is enough to reach significant and positive bottom line effects. Among the ten cases presented in this thesis there were almost ten different solutions to the dilemma. Roughly the cases that were investigated can be grouped according to the three stages described in Figure 5.1;

1. Where no organisational change has been made and with a production orientation (Industry Production and Education Inc.)
2. Intentions were to directly develop a horizontal and process based organisation, but the companies often transited into an approach of teams and projects. Typically process responsibilities were informal and at a low hierarchical level. During this stage one or a few key individuals became familiar with viewing the organisation in terms of horizontal processes. (Electro Inc., Industrial Trading, Boat Parts Inc. and Consulting Inc.)
3. Where some kind of matrix-organisation, saving parts of the old functional structure and then adding new positions to a process overlay superimposed on this structure, is used to manage the organisation.

(Process Equipment Ltd., Logistics Inc., Energy Production Inc. and Agria).

The organisations that were at the third stage have chosen different paths when implementing the process overlay. All have used internal recruitment for the positions as process owners, but have given this position different status and different responsibilities. At the companies where the most significant results from the Process Management initiative were observed, there had been new roles as process leaders or process owners introduced within the organisation which were held by "up and coming" co-workers. This new management layer has complemented the functional managers and some organisations argued that since the introduction of process leaders/owners it had become easier to drive change (Logistics Inc.) and that there was a lasting responsibility (in the case of Process Equipment Ltd. for the products) that had previously been missing.

Industrial Trading Corp., Boat Parts Inc. and Consulting Inc. had also appointed some kind of process owners within their organisations. However, the appointments themselves did not change the way the organisations worked. These organisations have taken steps in the direction of Process Management but they are not yet considered to be at the third stage of the model.

In three of these matrix-orientated organisations the responsibility for personnel had been kept by functional managers (Agria, Logistics Inc. and Process Equipment Ltd.). However, at Energy Production Inc. a third layer of competence owners had been added. Arguably, the divided responsibility could be positive in terms of the leader's role in supporting the employees as individuals. If a process owner takes care of the performance and development of the process, then the other direction of the matrix should be able to focus on the employees. In the case of Energy Production Inc. the role of handling the employees had become even clearer through the introduction of competence owners.

The degree to which a re-organisation as a part of a Process Management initiative impacts on the employees could be questioned. At the ten cases studied the role of giving support as a leader has principally been kept by team leaders. This role had seldom been affected by the reorganisations, even though there had been changes of role names or titles. Daily support and direction were given to the employees by their immediate superior, regardless of organisational type. At Logistics Inc. the employee who was interviewed expressed the opinion that nothing had really changed at a team level, he still had the same person as his manager (group leader).

As stated earlier, renaming former functional managers as process owners does not in itself change the way people work. It is probably confusing for the employees if a top manager, as was the case in Education Inc., expresses the opinion that the organisation is process-orientated and nothing has really changed. In the organisations where the Process Management initiative had just begun and had not permeated the whole

organisation there arose confusion and insecurity among the employees when questions were posed about the processes.

One aspect of the transition from a function orientated to a process-orientated organisation is how the process owners have been appointed. When, as was the case in Logistics Inc. and Energy Production Inc., functional managers with a long history within the organisation enter the role as process owners, there is a risk that little really changes. On the other hand, there can also be difficulties when appointing other persons as process owners, as was the case at Agria and also initially at Logistics Inc. Inexperienced managers can have troubles with legitimacy and authority towards the 'old' functional managers, leading to a situation where the status of the process organisation becomes lower than that of the functional organisation. Hertz et al. (2001), which studied the introduction of a process model at Volvo Car Company, express the delicacy of a matrix organisation and the possible conflicts between the functional and process managers as:

> If the success of the Volvo process model is to any extent due to a cultural heritage from Sweden, it has probably more to do with Sweden's long tradition of foreign neutrality then to its Viking past. (Hertz et al., 2001, p. 141)

It should be emphasized, from the results, that there is a risk in working in the matrix form, a risk, which is connected to the question of perceived personal status of different roles. Working in a matrix, there will be areas in the organisation where the allocation of responsibility is not fully clear to everybody. On one hand it could be seen as a positive side to the matrix having a process owner, who has the lasting responsibility and opportunity to drive change. On the other hand, there will unavoidably be occasions when the responsibility of the process owner and that of the functional manager collide. This was illustrated by the employee at Process Equipment Ltd. stating: "one steps on each other's territories". Below a process owner at Agria explains how the employees look at the relationship between the functional organisation and the work with Process Management:

> It depends on whom you ask about the organisation. From some people you get the functional organisational chart and from others the process map. But it is in the relation between the functional and the process organisation that the dynamics occur that give the company lots of energy. But if you cannot separate the two parts of the matrix, the process-orientation will probably die out.
>
> *Process owner, Agria*

The process owner at Agria quoted above also stated that it is the culture and the basic values that make the relationship work and help to avoid conflicts. Another important part of the process-orientation, according to the process owner, is that everyone takes part in the business planning process and agrees on common goals for the organisation.

This tension between interests is seen by some as something rather negative that should be handled by formal rules and regulations and clearer division of responsibilities and authorities. Here a dilemma occurred at Agria because its top

management wanted the company to have a firmly value-based leadership. At the time of the case study, this problem was handled through the joint leadership program where all managers, in all directions of the matrix, meet together ten times a year to create a shared view of leadership. Some of the process owners are comfortable with this as their support and some are requesting clearer guidelines of authority.

6.3 Co-workership

When it comes to co-workership, the importance of building commitment and involvement among employees is often mentioned in the interviews. The process owner at Energy Production Inc. argues that Process Management builds commitment. At Industrial Trading the reorganisation towards process-orientation has given the co-workers a more holistic picture of the organisation which the manager claim leads to an increasing motivation. At Logistics Inc. the work with Process Management has resulted in an increased strategic understanding which in turn leads to a shared responsibility to do things right and on time, according to the managers. At Boat Parts Inc. the manager describes how the co-workers have been given greater responsibility to take initiatives and be self propelled. A similar scenario was described by both managers and employees at Energy Production Inc.

This increased enthusiasm among the co-workers created by the implementation of Process Management also had a negative side. Managers at Energy Production Inc. state that, in combination with an increase in well-being, the incidence of sick-leave has increased since the work with Process Management begun. At Agria similar worries are expressed that some individuals take on too much responsibility. A connection to the larger degree of customer focus, described above, can possibly be made – as the understanding of the customers' needs increases, the will to satisfy these needs will also increase. This, in combination with the lack of boundaries and limits set by managers, can also be seen as causing additional stress. At Energy Production Inc. some employees have requested clearer instructions on what to do.

Agria has for quite a few years been working with 'the ladder of initiatives' to build engagement among all co-workers, see Paper 3. This, together with the basic values of 'the five always', has resulted in a high commitment among the employees. However, as described, they have started to see that all individuals can not handle the job of prioritizing and the level of sick leave started to increase a couple of yeas ago. This resulted in the development of "the health game" which is an activity consisting of a set of hypothetical situations which each co-worker has to take a stand about. Grounded on the basic values such as *"Always make a little extra effort – to exceed customers' expectations"* and the ladder of initiatives, the employees have to decide how to act in a situation such as when you have promised a customer to give feedback on something and the time is approaching when you have to pick up your child from kindergarten. How should you act to be active and take initiative, in a sustainable way and always make a little extra effort? There are no right answers to the health game, but it is a tool whereby the co-workers actively have to relate to the basic values, the ladder which encourages initiative but also sustainable health. This has led to a

growing consciousness among the employees of the possible risk involved in being too committed.

6.4 Development and improvement and Decisions based on facts[14]

Both Process Equipment Ltd. and Logistics Inc. express how the work with process-orientation in general, and the appointment of segment managers and process owners in particular has increased the opportunities to work with improvement and development. At Logistics Inc. it is stated that it is now easier to drive improvement and that the process owner and the process improvement teams can have access to ideas that were not taken care of earlier.

To have knowledge of how things work today makes it easier to improve and develop an organisation or parts of it. It is important to have a starting point and a fact-base. Working with Process Management as a methodology and using tools like process charts is one way to accomplish this. At Industrial Production, one of the organisations that have not come so far with the work of implementing Process Management, the quality manager still expresses his belief in the positive effects of the methodology (also seen in Section 4.2.4):

> To identify and understand a problem, it is very beneficial to work with the process flow – what happened before and after the actual problem, to understand the entirety. If you try to work with just one piece it is easy to get lost.
>
> *Quality coordinator, Industry Production Ldt.*

In Paper 3 it was found that Agria was working with improvement and development at three different levels, see Figure 5.2. The levels of improvement differ in the extent and degree of systematisation. The levels are: Calibration and optimisation, Continuous improvement and Process development, see further description in Section 5.3.2. The two first levels can be categorised as what Melan (1995, p. 5) calls incremental improvement, which he defines as “simple low cost modifications”. The third level of the presented model can be compared to what Melan (1995, p. 5) calls breakthrough or re-engineering improvement, which is major changes to the work processes, often with the application of technology innovation”. Similarities between re-engineering and the third level of the model can also be seen in O’Neill & Sohal (1999, p. 577) who state that “the aim of BPR [Business process re-engineering] is to make discontinuous, major improvements”. Also, note the connection with Juran’s model of breakthrough and control, in Section 2.3. Here calibration and optimisation can be categorised as control, whereas process development could be defined as Breakthrough. These levels can be used to discuss development and improvement and the interdependencies to the other elements of TQM.

[14] During the examination of the cases the TQM elements of Development and Improvement and Decisions based on facts have been found to be closely linked to each other and therefore the analysis of these two elements is presented jointly in one section.

In the first level of calibration and optimization Agria's work with standardisation of their departments can be seen as an example. The purpose of this level of improvements is to ensure that routines and process descriptions are followed as intended, that micro improvements of practice are made within present routines, and that best practise is developed and spread across the whole workplace. The standardisation at Agria was set up to ensure that departments working with the same tasks worked using the same routines. This goes in line with the findings of Forsberg et al. (1999). There is a quote from the quality coordinator at Industry Production describing the importance of order, which can be established parallel with both calibration and also basing decisions on facts:

> It is possible to work in an inefficient way for many years without recognising it. This can be compared with having all you cutlery in the same drawer in the kitchen – you would find things, but it would just take a little more time.
>
> *Quality coordinator, Industry Production Ldt.*

The next level in the model shown in Figure 5.2 is Continuous improvement – to find new ways on the basis of new ideas or indications of shifting trends in process performance. At Agria, Process Management is an important component in working with improvement according to both observations and answers from interviews:

> The process-orientation gives the opportunity to discover bottlenecks in the operations and then to improve and develop the processes. It is also a help when prioritising among measures and of course it highlights the customer needs.
>
> *Process owner, Agria*

In the two first levels of improvement and development according to Figure 5.2, the element of basing decisions on facts is very important. Often the reason for working with improvement and development is measurements in the processes (hopefully) and, as stated in the theoretical frame of reference, it is important to know when there is variation in the processes (real cause) and when it is only natural variation that causes the measurement to vary. The use of facts is also important when deciding on what actions to take to improve the process.

In the third level of improvement, Process development – a discontinuous and often project-based approach with groups assigned to specific improvement tasks, the facts need to be complemented with creativity. To start with, there is a need for a fact based map of the process today. However to be able to re-engineer the process it is probably important to be creative and not only look at the currently available solutions.

When discussing development it is very interesting to note what has been observed at Agria recently. The organisation has a strong tendency for development, but there is a risk that the focus on improvement and development becomes too dominant. It has been observed and expressed by the co-workers at Agria that the administration of the newly developed software systems, for example, does not keep pace.. The organisation put too much emphasis on development so the administration lags behind.

7 CONCLUSIONS AND DISCUSSION

In this final chapter the intention is to draw conclusions on the basis of the purpose with the help of the research questions posed in the first chapter and to tie it all together. A suggestion of an approach for Process Management will be presented and a discussion of where Process Management can take us is held. Ideas for further research are presented and to conclude there is a reflection over the work with this thesis.

7.1 Reconnection to where we started

The purpose of this thesis is to develop current knowledge and create a level of understanding of Process Management that could have practical implications for organisations considering launching a Process Management initiative. Specific aims are to describe experiences of companies that have worked to put a Process Management initiative into operation and to identify and explain patterns of organisational characteristics when implementing and using Process Management.

Two research questions have been addressed:

> 1. What can the transition from a functionally orientated into a process-orientated organisation look like?
>
> 2. How are the interdependences of the elements of TQM affected by introducing Process Management?

The findings of the three studies presented in this thesis suggest that there is no single answer to the question of what the transition from a functionally orientated into a process-orientated organisation looks like. However, an interesting aspect that emerges is that the investigated organisations have reached what have been identified as different stages of implementing their Process Management initiatives, see the model presented in Figure 5.1. This model divides the transition into three stages, each with the focus on different things: Functions, Teams & Projects and Processes. The investigated cases can be categorised in all of these three stages.

The description of the cases, in Chapter 4, Paper 1 and Paper 2, has the objective of providing a picture of the organisations and their Process Management initiatives, which is rich enough to allow the reader to draw their own conclusions, and also for organisations, which are considering launching a Process Management initiative, to learn from the experiences of the organisations described.

Regarding the second research question, the analysis of the empirical material shows that the interrelationships between elements of TQM are affected differently by the various approaches used in the Process Management initiatives of the investigated cases. The findings indicate that there are positive effects in several cases on several elements as a result of the Process Management initiative. However, there are also indications of risks of less positive consequences of the implementation.

Working with Process Management has, according to the organisations, increased the customer focus among the employees and enhanced the understanding between departments. A possible, and somewhat less positive, consequence is if the focus on the need of the internal customers (the colleagues) exceeds the focus on need of the external customers.

Further on, the examination of the cases reveals a dilemma as to how to handle the relationship between a former, functionally orientated, organisation and a new, process-orientated, organisation. Several of the examined organisations used some kind of matrix-organisation, saving parts of the old functional structure and then adding new positions to a process overlay superimposed on this structure. Working in a matrix, there will sometimes be areas in the organisation where the allocation of responsibility is not fully clear to everybody. The degree to which a re-organisation, as a part of a Process Management initiative, impacts on the employees could be questioned. Daily support and direction were given to the employees by their immediate superior, regardless of organisational type.

Other positive effects, stated by the organisations, were the increased strategic understanding among employees, which in turn led to a shared responsibility for taking initiatives. An effect, which turned out to be mostly negative, was that as the understanding of the customers' needs increased, the will to satisfy these needs also increased. This, in combination with a lack of boundaries and limits set by managers, were found to be causing additional stress.

Finally, it was stated by several of the organisations that after the introduction of Process Management, in one way or another, it had became easier to drive improvement. The results generally agree with those obtained in previous studies.

For a more thorough description of how the interdependences of the elements of TQM have been affected, see Chapter 6, Paper 2 and Paper 3. The analysis of the second research question has been performed based on the theoretical frame of reference in Chapter 2 of the elements of TQM. The results generally agree with those obtained in previous studies, see Chapter 1.

7.2 A suggested approach for Process Management

In this section a suggestion of an approach for introducing Process Management is given, based on the ten cases and the Process Management initiatives that have been presented and analysed in previous chapters, and the knowledge and understanding of Process Management I have gained through this work. This section can be seen as an inspiration for organisations who are considering launching a Process Management initiative.

There are a number of factors worth noting. Findings from the site visits and case studies reveal that to start with, all top managers of the organisation have to agree on what result the organisation needs and what the desired effects of a Process Management initiative are. In contrast to this many organisations launch a sweeping

Process Management program without really approaching the questions of why they are doing it and what they want to accomplish. What is the effect to strive for?

It should be obvious that senior management have to reach consensus on what the purpose of a Process Management initiative is, before starting one. This is emphasised by Bohem & Phipps (1996), who, based on an investigation of the Process Management initiatives of Ford Motors Co. and Kraft Foods, state that "senior management must fully come to grips with the need for a new organisational philosophy". Their argumentation continues by describing that the "management must also fully embrace the implications of a more horizontal design". As stated in Chapter 1, Garvare (2002) also show results in the same line of reasoning as above. In the telephone interviews managers, working with Process Management, were asked what they thought should have been done differently, knowing what they know now. The answer was that the company should have worked harder and more focused towards a predefined goal already from the start.

What the opposite of management consensus can lead to is shown by Hertz et al. (2001), who investigated the implementation of Process Management at the Volvo Car Company in the 1990s. The first attempt to introduce processes at Volvo failed because of a lack of "buy-in" from the affected managers. They had not been involved in stating the aim for the process initiative and therefore, consciously or not, worked against the introduction of processes in the organisation. One possible conclusion is, according to Hertz et al. (2001) that a Process Management initiative is more likely to be successful if the management and the organisation have put emphasis on agreeing on and understanding the purpose and aim of the initiative. Similar results were obtained by Rentzhog (1996), who emphasises the creation of a shared vision for Process Management as a key issue for successful implementation.

As soon as the desired results and effects of implementing a Process Management initiative have been agreed upon, one arrives at the critical phase of deploying a strategy of implementation within the organisation.

In Chapter 6 suggestions were presented on how interrelationships between the elements of TQM are affected by a Process Management initiative. Many researchers would agree that to some extent all the elements of TQM are important, see, for example, Bergman & Klefsjö (2003). However, the analysis presented in Chapter 6 implicates that in different situations, depending on where the organisation has its greatest strength and challenges, emphasis should be put on different elements of TQM when the deployment is planned. An organisation and its leaders have to possess the ability to work with methodologies and tools supporting all the different elements of TQM. This underlines the importance of having the ability to choose when to focus on which element, as well as being able to make a judgement as to the situations in which a particular element should be focused on.

The organisation has to decide on how to deploy the methodology. On the basis of the discussion about the elements of TQM above, the organisation has to decide what

elements to focus on. A Process Management initiative could possibly look differently from the beginning if the focus is on involvement of the co-workers to reach higher customer focus or if the objective is to decrease lead times by basing decisions on facts.

In Paper 3 it is highlighted how the management at Agria shows the ability to select methodologies and tools that support the values and aims of the organisation. It is suggested that the success of Agria could be explained by the fact that the chosen methodologies and tools have also been adjusted to fit the organisation.

Perhaps not surprisingly, one conclusion from this research is that there is no "one size fits all" solution in how to succeed with a Process Management initiative. This finding is supported by Pritchard & Armistead (1999) who state that there is no one way of working with Process Management. Instead, the way to deploy Process Management within the organisation should be selected based on the results of the implementation that the top managers of the organisation have agreed to strive for. My findings show that the choice of how to deploy Process Management needs to be based on what elements the organisation needs to focus on and work with.

Finally, the organisation has to assess and review the work to assure that they are moving towards the stated aim of working with Process Management.

An implication of this discussion is that there is no *one* answer on how to work with Process Management. Every organisation should consider the goals they want to accomplish with a Process Management initiative before starting one. With the origin in that chosen purpose, the way of working with Process Management should be chosen. The ways of working with Process Management can differ between organisations and should depend on the aim the organisation want to accomplish.

7.3 Where can Process Management take us?

Looking at the organisations studied in the cases that have been categorised in the third stage of the model in Figure 5.1, they have all chosen some kind of matrix organisation to manage their operations. When moving away from a functionally oriented organisation it seems difficult to find a totally new way of organising. An illustration of this is the testing of multifunctional teams at Agria. These teams were changed back to specialised teams because the co-workers needed the expertise and knowledge from colleagues working with similar tasks. Another example is the testing personnel at Electro Inc. who first were included in the cross functional teams responsible for the order to delivery. After a while the testing personnel left the teams claiming that they needed to focus on their tasks to be able to function as specialists.

As stated by Harrington (1991), a vertically functioning organisation creates confident and strong groups that perform well as teams. The beneficial effects of a functional organisation could be an explanation for the choice of Agria and Electro Inc. and why the use of matrix organisations, combining a functional and a process organisation, is widespread in companies working with Process Management. At the Volvo Car

Company Hertz et al. (2001) also noted how they have matrixed a process structure onto the existing structure. Hertz et al. (2001, p. 140) state that "the superimposed process network requires skilful and personable process managers".

The pressures on organisations today are more and more complex. Examples of this are the rapid development of new technology and the need for higher levels of knowledge to improve products and services in many perspectives. At the same time the expectations from both customers and co-workers to become more involved and to receive greater, more frequent and faster responses on many things seem to increase. This creates a pressure for change. In my studies it seems as if one way of handling this is to create matrix organisations that should manage both the functions and the processes. With current knowledge of how to manage organisations it seems that many organisations find this way of organising to be the only possible way. Using the same line of reasoning, Braganza & Korac-Kakabadse (2000) state, based on in-depth action research in three service sector organisations, that "to prosper in the future organisations have to develop capabilities that enable them to manage atomistically, that is, within each function, and holistically, i.e., in a process manner".

However, many interviewees expressed difficulties with a matrix organisation in dealing with questions of responsibility, authority, relationships between positions and occasions when interests of the process organisation and the functional organisation collide. One possible thought could be that the management models and the knowledge and understanding of how to manage organisations that we have today, is not enough to solve these dilemmas?

One possible way of approaching this could be that we are currently in a stage of movement between paradigms[15] of management. Chalmers (1999, p. 106) presents Thomas Kuhn's ideas of paradigms and summarizes it in a scheme: Pre-knowledge – Normal knowledge – Crisis – Revolution – New normal knowledge – New crisis[16]. The frame of references in a paradigm provides the solutions and explanations for matters of the time it is developed in, until issues that that cannot be explained by the paradigm occurs. Then a crisis occurs and a revolution starts and a new paradigm of knowledge emerges. Harrington (1998, p.71) reflects in the same direction over the rise and fall of process reengineering[17] "Process reengineering challenges the organisation's paradigms, even its basic culture". The next question in line with this reasoning is what comes next, what is the new paradigm, where can Process Management take us?

The start of this shift might be the work and the thinking of organising work and development in processes. Many researchers in the field of Process Management have started to expand their thinking towards "system thinking". One example is Deming (1994, p. 50) that states that an organisation has to be managed as a system and that it "requires knowledge of the interrelationships between all the components within the

[15] Compare with the shift of paradigm in the methodology described in Section 3.3.
[16] 'Förkunskap – Normalvetenskap – Kris – Revolution – Ny normalvetenskap – Ny kris' in Swedish.
[17] A kind of Process Management, see also Figure 5.2.

system[18] and of the people that work in it". The area of system thinking is evolving and is characterised by; principles of complexity, emergent behaviour, co-evolution, self organisation, adaptability and simple rules, see, for example, Ackhoff (1999), Plsek (2000), Senge (1990), Schwarts & Ogilvy (1979) in Lincoln & Guba (1985) ans Stacey (2003). It is interesting to look further into the area of systems thinking to explore if it provides explanations and understanding for those things that seems difficult to handle when working with Process Management in a matrix organisation. If the area of system thinking can help us learn how to manage the system of an organisation.

7.4 Further research

Using the same line of reasoning as in Section 7.2 it could be interesting to look at organisations from the perspective of what results and effects they state that they want to accomplish with a Process Management initiative. On the basis of such information their selections of methodologies, deployment of the methodology and tools to achieve that result could be examined. This study should have the power to test the proposition that the success of a Process Management initiative is correlated with the correspondence between the choices and adjustments of the methodologies and tools used, and the purpose stated for the initiative.

Since the completion of the three studies presented in this thesis my research and data collection has continued. I have been doing action research at Agria, working with the development and improvement of their Process Management model. The project of following the progress and changes of what has become a quite established process based way of working at Agria has been and continues to be very interesting. There is a deeper level of understanding that could, possibly, only be reached through action research, where the researcher gets to become a part of the organisation studied, thereby gaining insights that an external person could not get. One option for further research should be to go deeper into the quality efforts of Agria and examine how they have evolved and what possibilities they have to further develop.

As implied in the previous section, one suggestion for further research should be to investigate whether system thinking provides useful explanations and understanding for those things that seems difficult to handle when working with Process Management in a matrix organisation. This would require extended knowledge of the area of systems thinking and its characteristics.

7.5 Final reflections

This work could continue forever. I have been working with this material for several years and I still find new angles that would be interesting to investigate. The learning process, as a PhD-student and as a person, and about Process Management, is continuously ongoing. There is still a great deal that I would like to explore, develop and write more about. But somewhere there is a need to stop and reflect, and that is

[18] Notice the correspondence to the second research question of this research.

what I have done with this thesis. I have learnt very much during this journey, both when collecting the material, when writing the articles and probably most of all when bringing it all together in this thesis. It is now that everything seems to fall into place, I can see what the questions that have been answered really are, how I position myself as a researcher, how the answers can be described and what lessons have been learnt, both in relation to Process Management and in my personal development. I have discovered and understood so many things during this work and my hope is that you as a reader have found some useful points and maybe even have gained a few new insights.

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PAPER 1:

CASE STUDIES OF PROCESS MANAGEMENT IN SMALL AND MEDIUM SIZED ENTERPRISES

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Case Studies of Process Management in Small and Medium Sized Enterprises

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ABSTRACT

This paper presents the results of case studies of process management in seven Swedish small and medium sized enterprises (SME). These studies are part of a larger research project aiming at describing experiences of introducing process management in SMEs. Our findings were that, in general, the studied companies had not changed directly from a functional orientated organisation to a process orientated organisation. Instead they were still in, or had recently passed through, an intermediate state characterised by a team and project based organisation where focus was shifted towards a cost reduction emphasis. The transitions described by the case companies have been summarised schematically in a model with three stages: starting with functions, continuing via teams and projects, and ending with processes.

Keywords: Process Management, Small and Medium Sized Enterprises, Case Studies

Introduction

Small and medium sized enterprises[1] (SME) account for a large proportion of the total business in most countries. Their importance as a major engine for innovation and creation of new jobs is often emphasized, see for example Storey (1994).

Quality related programmes developed with the large company in mind are increasingly being employed also in many small and medium sized enterprises. Process management is one of many methodologies within total quality management (TQM) that has found widespread use in recent years, see for example, DeToro & McCabe (1997) and Lee & Dale (1998). However, in a study of quality award winners, Hansson (2001) found process orientation to be problematic for small organisations. In several aspects, for example in terms of specialisation, formalisation and resources, small and medium sized organisations are not like the large ones (Storey, 1994; Ghobadian & Gallear, 1996). Much of the contemporary quality-related systems, methodologies and tools are therefore not necessarily the most suitable for small and medium sized organisations.

The new ISO 9000:2000 series of quality management system standards (CEN, 2000) strongly promotes the adoption of a process approach within the certified company (Garvare, 2000; Tsin et al., 2002). In the standard, the process approach is defined as "the application of a system of processes within an organisation, together with the identification and interactions of these processes, and their management". Organisations must recognise and establish processes together with their sequence and relations, monitor and analyse process perfor-

[1] In this paper small and medium sized enterprises are defined as privately owned companies with between 10 and 200 employees.

mance, and manage and control the processes in compliance with the requirements. It could be argued that the pressure on small and medium sized enterprises to adopt a process approach will probably increase due to the update of ISO 9000. Pritchard & Armistead (1999) state that lack of understanding of process management is the biggest difficulty for organisations in the initial stages of adopting a process approach. To aid the prevention of potential negative consequences, as well as to enhance the utilisation of potential benefits, experiences of introducing process management in small and medium sized enterprises have been investigated.

Process management

Modern quality management is based on the idea that to remain competitive an organisation has to ceaselessly upgrade the way it fulfils the true needs of its customers (Dale, 1999). It is not enough to focus on the finished products that customers receive. How these products are produced, i.e. the processes, also needs to be addressed. Strong competition and forever increasing customer demands lead to short product life cycles and rapidly changing product concepts. Combined with escalating complexity of products and processes this emphasises the importance of controlling and systematically managing the processes of an organisation.

Traditionally organisations have been managed vertically and hierarchically with a division of power between functional units. This could lead to ineffective addressing of many cross-functional issues and thereby sub-optimisation of the organisation. By using horizontal process management the organisation is viewed as a network of processes linked across the organisation. According to DeToro & McCabe (1997) policy and direction is still set from the top, but the right to examine and change methodologies and procedures is delegated to cross-functional work teams.

Empirical Studies

In Garvare (2001) a study of process management in Swedish small and medium sized enterprises is presented. Experiences have been examined through 1,500 mailed questionnaires, telephone interviews with 62 senior managers, and case studies at two of the participating companies. A presentation of the case studies, carried out during 2001, are included in this paper as Company F and G. Results of the investigation by Garvare (2001) revealed that at a majority of the studied organisations the general response from the personnel when implementing process management had been positive or very positive. Main problem areas included documentation procedures and involvement of middle managers. When the use of process management had been initiated from within the organisation rather than due to pressure caused by external actors, the implementation had more often been successful.

To further evaluate the results of implementing process management in small and medium sized enterprises, additional case studies have been performed at five of the companies participating in the telephone interviews of the study presented in Garvare (2001). These five case studies (Company A to E below) were carried out during 2002.

Company A

Company A was founded in 1975 and has about 45 employees. It produces and markets electrical equipment for industrial use. Main operations are in the Nordic countries and the Baltic States. The company is certified according to ISO 9001:2000 and is working to become certified according to ISO 14001 within a year.

In 1995 the company began its transition to process orientation. Two years later it became a member of a large international business group consisting of several companies, both large and small. While still an independent business unit, control over some functions has been transferred to other companies. Research and development is today mainly carried out in Germany, while production and marketing are located in Sweden.

Start and motives

About seven years before the case study was performed the production manager of Company A attended a lecture and learned about how a large Swedish company worked with process orientated systems in logistics, business and quality management. During this time the production department of Company A was mainly producing for in-company stock shelves. People at the sales department did not feel comfortable when having to sell products that were not already in stock. Despite this strategy delivery time continued to be high. There were quality problems and many products stayed unsold on the shelves, causing high costs to the company. The unsold goods were also tying up material needed for the production of new products that the customers where asking for, and the company had severe difficulties in trying to keep up with changes in customer demands. To stay competitive and remain in business the company was forced to cut lead times and lower costs by making more effective use of its premises.

Pilot project

After beginning to learn about this new process orientated way of working the production manager became very interested in the subject, attended courses and read literature. He presented the idea of a horizontal organisation for the management group, consisting of the functional managers and the CEO. A small-scale pilot project was initiated, involving a cross-functional team of about five people representing many of the departments of the company. The entire order process of a standard product, produced on regular basis, was selected as focal point for the project. This process was identified and mapped by the team, from customer order and construction, via production, to testing, packing and delivery. The team was then assigned the responsibility for managing and improving all the steps in the process. To avoid a potential large stock of unsold goods, production was strictly based on customer order. External suppliers closely related to the company were involved in evaluating the results of the pilot project. According to the production manager the approach tested in the pilot project was “a completely new way of working”.

The economy manager of Company A actively supported the pilot project, mainly because he saw advantages in not having a large stock tying up capital. The sales manager, and most of the people in the sales department, did not trust that the new system would be able to deliver products on time. Therefore they argued for having the goods on the shelves when the clients asked for it. Heavy resistance also came from the mechanics, fitters and production personnel. They were used to their old roles, and felt uncomfortable with having to do tasks that were perceived as less qualified, such as packaging or administration. According to the production manager the way employees looked at the status of different jobs was a crucial problem at this

stage of the implementation. “A fitter is a fitter and should not be packing products” was a usual reaction from the personnel. Many employees had the opinion that it was a waste of capacity if highly qualified people also did simpler tasks. Some felt threatened in their positions, mainly in the production department but also within administration and management, as some people might not be needed after a restructuring of the organisation.

Results

After the transition to team-based process management and customer ordered production delivery precision of the pilot process went up from 60 percent to 95 percent within the first year. In spite of the great potential shown by this result, people at the sales department were not convinced that the new approach would be beneficial to the company. They chose to focus on the 5 percent that were still not delivered on time, and continued to counteract all changes.

The outcome and repercussions of the pilot project resulted in a slow company-wide transition into an organisation where cross-functional process teams lead by coordinators are responsible for the operational management of all key business processes. The teams make and deliver all the products, both regular production of standard items and specialised production for certain customers. The teams are also responsible for measurements of product quality and delivery precision within their process. According to the production manager “this way of working makes our understanding of customer needs better.”

During the time of the study process management had been the established way of working within the company for more than two years, but there was still some resistance within the sales department, and a few employees had also chosen to leave the company as a result of the restructuring.

Product testing was one of the functions that had initially been incorporated within the process teams. Since the skill and knowledge of the product testing engineers was specialised it proved ineffective to have these persons work as parts of the process teams. After a few months it was therefore decided that a test function, serving all the other teams, should be re-established.

Working with ISO 9000:2000 was perceived by the managers as helpful in reorganising the company. The new standard required a structured processes approach. “Before the transition, the people working here had their jobs. Today we have separate roles, and different people with different knowledge to solve the assignments”, said the production manager. “Today the employees are looking beyond their original professions and are more actively trying to help each other out. It’s not perfect yet, but the territorial thinking between the departments is reducing”, the production manager said.

Company B

Company B was founded in the early 1990 and has about 60 employees. It is a manufacturer of mechanical components mainly for the vehicle industry. The company is certified according to ISO 9001:1994, ISO 14001 and QS 9000.

Company B is noticeably production orientated. It has a functional hierarchy with a horizontal division of power between units such as finance, manufacturing, distribution, marketing and sales. About one year before the case study was performed Company B became part of a small regional business network. Within this network a program for introducing a process

based way of working among the member companies was initiated. This program has been divided into three steps: measurement, in-house improvement, and teamwork & interaction. During the first step costs of poor quality and the general potential of improvement within the company is measured. In the second step pre-emptive maintenance and improvements based on the previously identified problems are carried out. This step is also intended to bring about a process view among the personnel with a clear notion of the internal value chain, its customers and suppliers. The third step includes improving the interaction and cooperation between the companies involved in the network. Autonomic teams systematically work to control and improve the processes, within the organisation but also within the entire network. The initiative to start this network and the three step program came from a relatively large company in the region which is a customer of Company B. During the time of the case study, Company B was at the first step of the program, and both managers and employees expressed high expectations on the network. Even though Company B is only at the beginning of implementing process management, advantages due to a higher commitment for quality among the personnel have been noticed by the managers.

Company C

Company C is a privately owned school. It was founded in the 1990s and has about 25 employees. The company has no certified quality management system.

During the time of the study the organisation had a strong customer orientation and highly motivated personnel, determinedly striving to improve methodologies and procedures. The planning horizon was long, cost pressures low and results were measured regularly. However, what had during the previously made telephone interviews appeared to be a process orientated organisation emerged during the case study to be a vision in the mind of a few managers rather than an established way of working within the organisation. No attempt had been made to identify or map existing processes, and there was no written documentation about the horizontal organisation. All the things that were said to be "within the heads of all employees" regarding processes and division of responsibilities, turned out after a deeper enquiry to be very unclear and vague. Company C was therefore classified as a functional orientated organisation with a narrow focus on production.

Company D

Company D is a family owned sub-manufacturer of process equipment for industrial customers on the international market. The company, founded by an entrepreneur in the beginning of the 1970s, now has about 120 employees. Research and development account for about 10 to 15 percent of total turnover. The company is certified according to ISO 9001:1994, and is working to become certified according to ISO 14001.

Start

Three years before the case study was performed a relative to the founder was appointed CEO of the company. At this time the organisation was built on traditional functional departments and a hierarchical chain of command. According to the CEO there was a wide gap perceived between the departments of product development and sales. People at the product development department had a high technical knowledge, but knew little about what the customers wanted. The sales people were in close contact with the customers, but lacked technical knowledge. There were also difficulties in dividing responsibilities between the different departments.

Reorganisation

The solution proposed by the new CEO to solve the gap dilemma was the implementation of several new cross-functional segments superimposed on the old functional departments. Each segment consists of a specialist responsible for monitoring all products within the segment during their life cycle, from R&D to post-launch evaluation subsequent to market introduction. The company sometimes develops products that are specially made for specific customers. In these cases the segment specialist involved also continues as contact person towards the particular customer. In the new organisation department managers are responsible for all production resources, and also for the personnel and economy of their department. For each project, resources in terms of money are assigned to the head of the segment, who orders services from the different departments. The department managers then make priorities between the orders from the segments.

During the implementation of the segments, there was also a general geographical reorganisation within the company office. All employees were moved in order to "fit the flow", i.e. to be placed in accordance with their position in the different processes. This was, according to all interviewed at Company D, a very beneficial part of the reorganisation.

Results

The general advantage of the new organisation was described by the CEO as "a lasting responsibility". Not only was someone watching over development projects during their whole sequence, but the segment specialists were also responsible for the entire processes within their segments. In the old days there was always a risk that things "fell between the chairs", i.e. that nobody considered themselves to be responsible for handling difficulties and solving problems that were not clearly within the sphere of a single department.

According to many of the respondents at Company D the new organisation has also resulted in a higher customer satisfaction. No specific disadvantage had been experienced due to the new organisation, apart from the few occasions when projects had been launched without a segment specialist assigned to them. In those cases things had rapidly became chaotic, where after someone had promptly been assigned as responsible for the project.

According to representatives of the personnel, there had been some initial insecurity among the employees when the reorganisation was launched. A few of the employees had also left the company due to the changes that had been introduced. Looking back the CEO said he should have put more emphasis on explaining his vision of segments, and the purpose of the reorganisation, already from the start.

Company E

Company E was founded in 1957 and has about 30 employees. It is a trading company providing industrial customers with a variety of standardised and specially made products and components from manufacturers world-wide. Value is added by offering total solutions, specialist know-how, efficient logistical and IT systems, and a detailed quality assurance system. The company is certified according to ISO 9002:1994 and QS 9000, and was during the time of the study working to become certified according to ISO 14001. Since 1990 the organisation has been part of a trade group consisting of about 50 companies in the Nordic countries, the Baltic States, Germany, and Russia, focusing on import and sales of industrial product components in these countries.

Despite the extra value added, by specialist know-how and by other complements offered by the company, most of the trading products have a very small earning per item. Cost pressure has always been high within the industry, and according to the CEO "the profit lays in working with your internal processes. Concentrating on the processes gives the company opportunities to rationalize, and also provides the employees with a clear view of where they are situated within the whole".

Start and motives

The change towards process management started several years ago when the buying department of Company E was to be integrated with the in-house sales department. Some of the functional managers in the company had begun to question the way the organisation was operating, and commenced looking at the flow of work and products through the different departments. They felt there were gaps in the communication within the company, especially between the buying department and the selling department which did not correspond well to each other. Lead times had to be cut and the stock levels had to be lowered. One suggestion that came up was to begin by merging buying and sales into one larger team. A short external management course on organisational change gave the CEO ideas on how to apply and implement the integration. The flow of work in the sales and buying departments had to be identified and mapped before the integration could be performed. Persons involved had to be informed and trained in their new and extended role as being both buyer and seller. When it was finally launched, the project of merging the two departments was already acknowledged by most employees, and also partly implemented on the managerial level of the organisation.

Results

Initial results of the restructuring were promising, with shorter lead times, more efficient distribution, and forecasting of customer demand. The new organisation was therefore barely given time to settle before the project continued to also include mapping and analysis of other parts of the company. Now difficulties started to emerge. Many of the employees said that they did not see the point in making further changes to the organisation. The management group had already been handling and working out ideas about the continued streamlining, while many of the employees felt uninformed, unsafe and threatened by the proposed additional reforms. Two employees chose to leave the company due to the restructuring, and the rate of change was slowed down.

At the time of the case study a number of new processes had already been mapped, but there had been no further integration of departments within the company. Process owners had been appointed among the functional managers to coordinate and drive the process development. These process owners had also been delegated responsibilities from the CEO for the personnel working within their process. During monthly meetings every department informed the others about the progress of their improvement projects.

In the forefront of the reorganising activities was the warehouse department, pushing its internal procedures and routines towards a structure of horizontal processes. The partly process orientated organisation has also given people at the warehouse a much higher status and better means of influencing their work situation.

The company has begun outsourcing its administration and computer support systems, reforming the organisation to only include core processes vital to fulfilling the mission of the

company. According to the CEO, "process management is about understanding what we are doing and how we can do it better."

Today measurements are used, more widely than before, as a tool for improvement. Organisational goals are set as a result of strategic planning by the management group. The group, consisting of the functional managers, collects the problems, chooses measures to control and decides who will be responsible for the follow-up. Eventually all functions will have to take part in setting their own goals.

Many of the respondents at Company E said the reorganisation has given them a broader, more holistic picture of the company, thereby increasing their motivation to take part in many daily routines. Every employee at the company now has a personal education plan. According to the CEO:

> "A majority of the personnel now better understands what others want from them, both externally and internally. It used to be 'quality by accident', and then we started defining who the customers and stakeholders are. It is important that all the employees know who is doing what. If the sales people are producing many customer-orders but the warehouse is not able to provide the goods, there is a problem. There is a need for understanding between the departments about working towards the same goal."

Company F

Company F was founded in the 1950s and has 35 employees. It is a subcontractor in the boat industry and is certified according to ISO 9001:1994.

Eight years before the case study a new CEO took over the leadership of the company. For a few years the business situation had been difficult with heavy expenses and a decrease in sales. The primary focus was on immediate improvement activities, short term problem solving and cost reduction. After about two years the new CEO began transforming the company, from a traditional functional organisation with several departments and a hierarchical chain of command, into a new process based organisation. A flatter team-oriented structure replaced the former top-down hierarchy. One level of authority was eliminated and the functional differentiation was minimised. During this organisational change a few of the middle-managers left the company.

The new organisation required a radical shift in thinking among the personnel. Those who had been used to work according to priorities and quotas set by the managers now had to think much more by them selves. Work design, product inspection, cost reduction and process improvement became the responsibilities of job teams. Two remaining functional managers provided specialised skills in the areas of finance and human resources. The performance of the company increased considerably in terms of reduced lead times, less rework and higher flexibility. Under the strong leadership of the new CEO the company had moved towards a process oriented organisation.

Company G

Company G was founded in the 1980s and has about 150 employees. It is working in the service industry and has no certified management system.

Two years before the case study was carried out business had been very good. The company had been growing rapidly in terms of sales and employees. To improve internal efficiency and

customer focus the senior management team decided to change the organisation from functional orientation to process management. A person with long experience of implementing process management in other companies was employed as quality manager. In two months he had reworked the organisational chart into a process hierarchy with core processes, sub-processes, operational, supporting and management processes. But the commitment shown by top management was decreasing. The general business climate was deteriorating and the company was losing sales. For about half a year the implementation was halted due to vacillation by the senior management. After six months it was decided that the change towards process management should continue. The insecurity among the personnel resulted in considerable damage to the mandate for change. Through some promising results achieved by the parts of the organisation that was using process management the opinion for organisational change improved. At the time of the case study the reworked process based organisational chart had found widespread use in the company, and one of the key business processes was horizontally managed by an appointed process owner.

Cross case analysis

Our findings were that, in general, the studied companies had not changed directly from a functional orientated organisation to a process orientated organisation. Instead they were still in, or had recently passed through, an intermediate state characterised by a team and project based organisation where focus were shifted towards a cost reduction emphasis. Transitions described by the case companies presented in this paper have been summarised schematically in a model with three different stages: starting with functions, continuing via teams and projects, and ending with processes, see Figure 1.

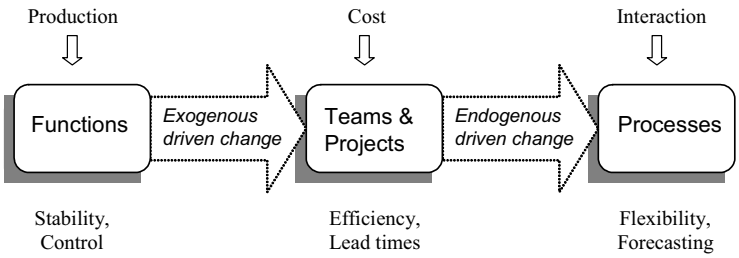

Figure 1 Stages of process implementation in studied small and medium sized enterprises. Idea and design inspired by Hertz et al. (2001).

In all seven cases, the studied companies had originally been production orientated, using a functional approach mainly focusing on stability and control of products and activities. Cost pressure had generally been low with a stable environment and long planning horizons. In the investigated manufacturing companies, produced goods were often delivered to stock, and improvement efforts were primarily concentrated on enhancing product quality. With the exception of the manufacturing process, process responsibility was generally not defined at this stage.

Due to various contextual changes, such as the entrance of a new top manager, or challenging competition leading to a decline in relative performance, five of the seven studied companies had been forced into the second stage of the model. Focus shifted towards improving internal efficiency and resource effectiveness regarding supplies and inventory levels, and a main part of the organisations became cost orientated. In manufacturing companies inventory levels of

both incoming and outgoing goods were lowered, and the planning horizon had to be shortened. Pressure was put on external suppliers to shorten their delivery times. In many of the companies the change was initiated by a manager or owner having discovered new ideas regarding organisational structure or improvement based on a process view. Even when intentions were to directly develop a horizontal and process based organisation, the companies often transited into an approach of teams and projects, focusing on improving distribution and resource utilisation, and on minimising delivery times. Typically, a few administrational processes were briefly mapped at this stage, but process responsibilities were informal and at a low hierarchical level, and process performance was not measured. A majority of the employees had not obtained a clear process view on their organisation. During this stage one or a few key individuals became familiar with viewing the organisation in terms of horizontal processes.

Four of the seven companies had, at the time of the case studies, progressed into the third stage of the model. In these companies the process view had been gradually acknowledged by a majority of the employees, and the organisations had slowly become more process orientated. Central organisational activities were mapped and defined in terms of processes and sub-processes. Process owners were appointed at high levels within the organisations. In one of these companies, process managers with responsibilities for day-to-day operations had been formally appointed. Cost pressures were still high, sometimes even higher than before, but the focus had shifted towards improving flexibility and process performance, and towards forecasting customer demands. A new horizontal structure was superimposed on the organisation, with frequent interactions between individuals at all positions of the company. Process performance was being continually measured in processes with designated ownership. No external driver was identified between stage two and three, and the change was seen as endogenously driven. However, despite any transition towards process management the official organisational charts of all studied companies still reflected the old functional organisation, with no clear identification of customers, suppliers, process owners or process managers.

Conclusions and discussion

Process management is one of many methodologies related to total quality management that is increasingly being employed in small and medium sized enterprises. The recent update of ISO 9000 appears to be one important explanation to the prevalent and rising interest in process management.

A result that emerges from the case studies is that when changing from functional to process orientation the studied enterprises pass through an intermediate state where the process view is gradually spread and acknowledged within the entire organisation. A clear process view and understanding of the general methodology among a majority of the employees appears to be vital for fully implementing process management. In many of the studied enterprises, process owners are appointed among the functional managers. Instead of completely rewriting the organisational chart the new process organisation is superimposed on the old functional organisation.

Horizontal communication between departments seems to be problematic in a majority of the studied enterprises, and the most common way to solve this problem appears to be the merging of departments. During the case studies, a gap between the official emphasis placed on process management, and the actual level of process orientation visible within many of the studied organisations, was observed.

This paper has highlighted a number of issues when introducing process management in small and medium sized enterprises, which may contribute towards a better understanding of the factors influencing the outcome of different implementation programmes.

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PAPER 2:

EXPERIENCES OF IMPLEMENTING PROCESS MANAGEMENT – CASE STUDIES WITH A FOCUS ON ORGANISATIONAL ISSUES

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Experiences of Implementing Process Management – Case Studies with a Focus on Organisational Issues

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ABSTRACT

This paper presents a multiple case study of three organisations that have successfully implemented process management, focusing on how they have handled management issues in the implementation of a process organisational structure. The organisations have been selected on the basis of having participated in the Swedish Quality Award process. The methodology employed for the study has been mainly qualitative, with semi-structured interviews and direct observations as primary tools for data collection. In addition, one of the organisations has been closely examined over a period of two years, where the researchers have carried out the study in the form of action research. One of the big organisational issues to handle is that it can be difficult to know how different roles in the process management structure relate to each other, none the less how the process organisation relates to a functional organisation which often exists in parallel. One general conclusion which can be drawn from these three cases is that the incitements, implementation methodologies and organisational structure can differ between organisations working with process management, but with the similar results.

1 INTRODUCTION

Process management is one of many methodologies within total quality management (TQM) that has found widespread use, see for example, DeToro & McCabe (1997) and Lee & Dale (1998). One of the reasons is that the ISO 9000:2000 series of quality management system standards (CEN, 2000) strongly promotes the adoption of a process approach within the certified company (Garvare, 2000; Tsin et al., 2002). In these standards, the process approach is defined as "the application of a system of processes within an organisation, together with the identification and interactions of these processes, and their management". This paper focuses on the management and organisational aspects of working with process orientation, how systems of processes are managed in the organisations. .

Even though process management is a common approach today many companies express concerns about problems with implementing and maintaining the process approach in the organisation. To aid the prevention of potential negative consequences, as well as to enhance the utilisation of potential benefits, experiences of introducing process management have been investigated in three organisation who have succeeded in implementing and maintaining a process management approach.

There are many different ways of describing TQM, see for example, Hellsten & Klefsjö (2000), EFQM (2005) and SIQ (2005). The analysis of organisational change presented in this article focuses primarily on the following seven aspects, illustrated in Figure 1:

Customer focus – Modern quality management is based on the idea that to remain competitive, an organisation has to ceaselessly upgrade the way it fulfils the true needs of its customers (Dale, 1999). The two 'customer' fields in Figure 1 represent the customer need and the point in time when that need is satisfied.

Process view – The three arrows between the customer need and the customer satisfaction illustrates the processes that produces value to the customers. It is not enough to focus on the complete products that customers receive. How these products are produced, i.e. the processes, also needs to be addressed.

Leadership – "It is management's job to direct the efforts of all the components towards the aim of the system" (Deming, 1994). Leadership supports the operations that take place in the processes by giving direction and groundwork such as, for example, long term stability and opportunity for competence development.

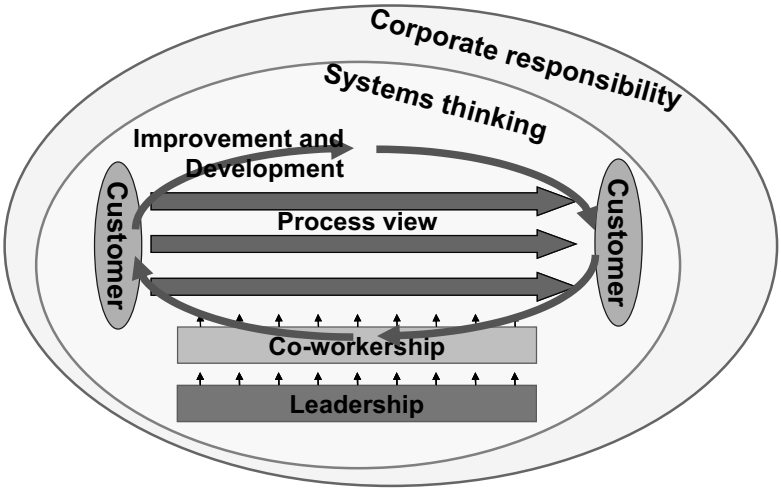

Figure 1. Frame of reference

Co-workership – To enable the processes to function there is a need for employees. People work better when they are motivated and can take part in planning and design of the work. Managers are responsible for giving employees the opportunity to take part in planning and structuring. But there is also an opposite responsibility of the individual employee to participate as active co-workers.

Improvement and Development – Strong competition and forever increasing customer demands lead to short product life cycles and rapidly changing product concepts. Combined with an escalating complexity of products and processes this emphasises the importance of improving and managing the processes of an organisation. "Breakthrough is a must for the long run. In the absence of Breakthrough, the rest of the world just walks away from the static company." (Juran, 1995). The arrows in Figure 1 that circle around the processes represent the change happening when working with improvement.

Systems thinking –"Manage the whole company as a system" (Deming, 1994). There is a need for looking at all the pieces in the figure as a whole. The systems view agitates that there are complex relations between different elements in an organisation and that these elements together form a complex adaptive system. Adaptive in the sense that these different elements change themselves, not always because of management initiatives. A system also shows emergent behaviour where continual creativity is a natural state. (Plsek & Greenhalgh, 2001).

Corporate responsibility – Not only can we today concern our selves with issues inside our organisation, we have to care about what is happening in the world outside. How are we influencing our surroundings, both in economical, ecological and social manners? The last circle in Figure 1 represents these surroundings to take into consideration.

2 METHODOLOGY

The paper presents a multiple case study of three organisations that have successfully implemented process management. The organisations have been selected on the basis of having participated in the Swedish Quality Award process: Company A, Company B, and Company C.

The methodology employed for the study has been mainly qualitative, with semi-structured interviews and direct observations as primary tools for data collection. The researcher interviewed employees at each organisation with different levels of responsibility. One group of respondents can be described as having had an overall responsibility for the organisation's implementation of process management. The other group consisted of those who had not had any overall responsibility for the implementation, but had instead been operationally involved. This was done to get different perspectives on the implementation, and to validate the results. All interviews have been recorded and documented. The seven aspects of TQM presented in Figure 1 have been used to analyse the data material.

In addition Company C has been closely examined over a period of over two years following the multiple-case study. For a period of three months in 2003 and now since September 2004 the author is partly positioned at the company, carrying out the study in the form of action research. In this part of the study she is actively participating in the improvement efforts performed at the company. This is important as it enables collection, analysis and validation of empirical material in a cyclic and iterative manner.

This project is closely connected with several other research projects about process management in SME's respectively effects of participating in Quality Award processes at Luleå University of Technology; see Garvare (2002) and Hansson & Eriksson (2002).

3 RESULTS

3.1 Company A

Company A is a logistic company owned by the organisations whose products they are transporting. In 2003 the turnaround was almost 1700 million Euro and they had about 400 employees in Sweden. The company was the first organisation in their branch of trade who received an ISO 9001 certification in 1994. They have a market share approaching 50 per cent.

Incitement and Implementation

Already in 1994 the company started working with the criteria of the Swedish Quality Award which includes parts of process management. In 1996 a new CEO was hired who had previously been working with process management in other organisations.

> The new CEO was the catalyst [for process management], she brought the toolbox.
>
> *Process leader, Company A*

The reorganisation that followed was initiated by a declining trend where a new owner demanded improved results. The reorganisation was done with the help of external consultants who worked with the top management team, but who also held workshops with middle management and employees on a team level. According to one of the process owners the existence of slack in the organisation has been important since it has provided an opening for improvement work and learning.

Organisational structure

Since 1997 there had been a process organisation present in parallel with the old functional organisation. In the process organisation the *process owners* was working with different flows through the company and the functional managers were responsible for budgets and staff.

> 'Process owner' used to be a bit of an honorary title, with no large responsibilities, given to those who worked in the process and was very engaged. These process owners did not have that much power; the power still lay within the functional organisation.
>
> *Process leader, Company A*

In 2000 top management at Company A reached to the conclusion that it would be better to work the opposite way, and a new reorganisation was initiated. Two years later this reorganisation had lead to the following organisational structure: The head of the department is also the *process owner*; responsible for staff, budgets and process performance. One of the interviewed said that "it was new titles but no new people". This gave the process owners more responsibility, with higher demand from the top management. One positive factor with the reorganisation was the clarification of the responsibilities:

> The organisation has given the responsibility to one person to avoid that work are made on many different parallel tracks with different agendas. … You do not [have to] discuss who should be doing what.
>
> *Process leader, Company A*

Under each process owner there are now *team leaders* responsible for the personnel, and also a *process leader* who is responsible for the development of the processes. The process leaders act as facilitators within the department and the groups when working with improvement. There are though some adjustments between the different departments that mainly depend on the size of the department.

To aid the process leader in the work with improvements there are also *process improvement groups* with employees from the different parts of the department. These groups are given some theory background of process management and they become a forum for improvement. The members have been recruited to the groups through recommendation or by application.

> There has to be someone who grab hold of the ideas and make them happen. Now we have the process improvement groups which do that.
>
> *Member of a process improvement group, Company A*

Effects

The process orientation of Company A has had several effects on the company:

The strategic understanding of the business has increased because of the process approach. One of the employees described how you, before the change, could blame someone else when things went wrong, but how there now was a shared responsibility and also a much sharper economic control. The process orientation had also increased the understanding between co-workers of different departments, and there was a desire to deepen that understanding by performing an 'internship' at other departments.

A majority of the employees found the work with process management to be a positive experience. But the increased productivity control was also causing additional stress for some of the employees.

It had become easier to drive improvement when working in a process organisation. However, according to one of the process owners, it had also become more difficult to build engagement among employees.

One of the interviewed suspected that the organisation might be losing some of the links across the company when working with process management:

> There can be a bit of sub optimisation of the staff. The different business areas keep their own staff who can be working parallel with someone at a different business area.
>
> *Process leader, Company A*

The reorganisation towards process management leads to very few changes at a team and team leader level of the company.

> This does not change our assignments. My group leader is still the same, and we neither did nor do we now see much of the management over him. […] We don't notice that much difference, it doesn't change our tasks.
>
> *Employee, Company A*

3.2 Company B

Company B is an energy producer owned by a larger European energy group. In 2003 the turnover for the company was 200 million Euro and they had about 100 employees.

Incitement and Implementation

The process orientation of the organisation at Company B started when one of the top managers attended a seminar about process management and found it to be interesting.

> We started working with process management because we wanted to develop the organisation, not because of [external] pressure or crisis.
>
> *Process owner, Company B*

In the middle of the 1990's the company took on working with the Swedish Quality Award. In 1999 a new CEO was appointed and the company went through a major

reorganisation. This implementation of process management took place through seminars and workshops with all employees, assisted by external consultants. The process owners and process leaders, who all came from the old organisation, attended courses in process management, leadership and personal development.

Structure

To start with there was *process leaders* appointed in the organisation, but soon they were renamed *process owners*. These persons were the old department managers whom got new titles and became responsible for the operations and performance of the processes of the company. New *competence owners* were appointed, responsible for the personnel.

> Some employees are working in three or four different processes with different process owners. Therefore it is important that the competence leader take the whole responsibility for the individual.
>
> *Process owner, Company B*

After the reorganisation the process owners categorize the competence they need for their processes and ordered this competence from the competence owners.

At Company B there were now again *process leaders*, which reported to the process owner and were aided by *improvement teams*. The teams sometimes included representatives of the customers. The position of a process leader was not defined within the organisational chart of the company.

> It is a bit difficult to find the relationships between the different positions. […] The answer about our organisational structure depends on who you ask in the organisation.
>
> *Process owner, Company B*

Effects

According to employee surveys there has been a raise in wellbeing among the employees as a result of the work with process management.

> The work with process management could be a way to achieve everybody's commitment.
>
> *Process owner, Company B*

The new organisational structure has allowed a more effective use of the employees. The process orientation has also given a better general picture. Both process owners and process leaders indicated that it was hard work to make the new organisational structure work. A frustration was mentioned, where some of the employees had wanted clearer commands on what to do.

> There is no one telling you what to do when you get to work in the morning. […] In the beginning it was hard to know who to ask about what in the organisation.
>
> *Process leader, Company B*

A down side discussed by both the process owner and the process leader is sick leave due to stress caused by the larger responsibility put on each individual in the new organisation.

> Working in an organisation of process management demands a lot of the individual, to take own initiatives. There is no one telling you what to do. […] This way of working does not suit all people.
>
> *Process leader, Company B*

The process leader argues that the sick leave numbers are clearly higher after the organisational restructuring than before.

3.3 Company C

Company C is a wholly owned subsidiary of a large Swedish insurance organisation. It has about 150 employees who together serve 360 000 customers. The turnover in 2003 was about 90 million Euro and the market share about 60 per cent. In 1998 Company C was the first insurance company in Sweden to receive an ISO 9001 certification.

Incitement and Implementation

In 1992 a new CEO was appointed at Company C. Three years later he set up a goal: The company shall grow 25 per cent while saving 25 per cent on total costs. As a part of its strategy to reach this goal Company C started to work with the Swedish Quality Award. As a result process management became a part of Company C's quality improvement efforts.

Structure

At Company C a matrix model has been used when organising for process management. *Process owners* have been working full time with improving the performance of the processes at the company. These process owners have all been recruited from within the organisation.

> There have not been any exact calculations on the profile for being a process owner; there is a slightly different focus in the different processes.
>
> *Former process owner, Company C*

The full time arrangement for process owners was a later development. In the beginning all process owners worked part time with the process manager matters and part time in their old setting. The process owners then had a *process developer* at hand when working with specific problems. Later on this role disappeared.

It has been some different turns on the way to the organisational structure present at the time of our study. Earlier on the owners of the core processes had been working full time with the processes, while the support process owners had been the old functional managers from the support departments, which had only been working part time with the management of their processes. In the fall of 2004 the five part time support process owners were replaced by one full time support process owner responsible for all the support processes.

> Those of us who work in the matrix are in control over it. But it can be a challenge to explain the structure for the employees. […] The organisational structure, it depends on who you ask what picture you will get.
>
> *Process owner, Company C*

In the other dimension of the matrix there were *functional managers* who had the responsibility for the result and the employees. *Team leaders*, responsible for coaching of the employees, were placed below the functional managers.

> A team leader is working in the operations with a perspective of a couple months. My task as a process owner is to have a more strategic picture. I am responsible for the system, not the staff, and I have more of a development perspective.
>
> *Process owner, Company C*

The management at Company C has tried to take the organisational restructuring one step further and form mixed, autonomous teams. The idea has been to mix employees from different market areas and thereby have them to work in the same way. However, this idea turned out to be difficult to realise, and therefore the organisational structure went back to specialised teams. The employees had a need to be placed close to those working in the same area to be able to efficiently transfer knowledge.

> We were mixed team with a combination between different competences. We did not connect or work across the boarders in those groups so now we are back in our specialised teams. It is good because now my manager knows about the things I do.
>
> *Employee, Company C*

Effects

Before the process orientation the different market areas had been working in different ways. One of the biggest gains of the work with process management was, according to a former process owner, that a unified way of working at Company C was developed, a way of working that was not dependant on which market area you are looking at. The standardisation of work procedures has been an important contributor to the cost savings. The goal of 25 per cent growth with 25 per cent cost reduction was reached in 1999, four years after it was set.

> Our work got more systematic, we documented what we were doing and structured it. It got obvious all those not important things we where doing.
>
> *Former process owner, Company C*

One place where conflicts still occured at the time of the study was in the matrix where the process owner is responsible for how the operations are run and the functional manager is accountable for the result. However, at Company C many people described this as a dynamic which has been a positive and contributing part in the success.

> Process management has made it clear what should be delivered to the customer. To produce what the customer wants you have to calculate the activities and processes you need to accomplish that. […] Customer focus has got a deeper meaning. It got obvious that my process delivered something directly to the customer.
>
> *Former process owner, Company C*

According to the interviewed there was a risk in the new structure that some individuals could take on too much responsibility, more than they had time for.

4 CROSS CASE ANALYSES

4.1 Customer focus

In Company C the customer focus has developed as a result of implementing process management. The focus on core business processes has made customer needs clearly visible to all employees inside the organisation. In Company A there seems to be a reinforcement of the internal customer concept. The mutual understanding between departments regarding internal customer needs has increased in Company A – what my co-workers need from me in order to do a better job. Regarding Company B there is any expressed changes in customer focus.

4.2 Process view

In all three organisations there has been an increase in the understanding of the chains of activities that run through the respective companies, from where the demand comes and to whom I deliver. In Company A and C the process orientation has also contributed to an increased standardisation of activities between departments that used to work with different routines.

As a next step there is now at Company C a work in progress with defining which activities, performed by the support departments, that belong to the support processes and which activities that are a parts of the core processes.

4.3 Leadership

All three companies have chosen to implement some kind of matrix-organisation, saving parts of the old functional structure and then adding new positions to a process overlay superimposed on this structure. The organisations have chosen different paths when implementing the process overlay. All three have used internal recruitment for the positions as process owners, but have given this position different status and responsibilities. Managers at all three companies agree on that it is important to separate the rows and columns of the matrix so that everyone within the organisation knows who is responsible for what. Apparently this has not been an easy task for any of the companies. In all three cases the managers themselves had gained a good overview of the organisation and were clear about the delegation of responsibilities. But two of the managers expressed that it was sometimes hard for the employees to see through the matrix organisation and separate the different management roles and responsibilities.

The role of giving support as a leader has principally been kept by team leaders or competence leaders, as was the case at Company B. This role had seldom been affected by the reorganisations, even though there had been change of role names or titles. Daily support and direction were given to the employees by their immediate superior regardless of organisational type.

Another side of the transitions from function orientated to a process orientated organisations have been the relations between process managers and functional managers. The different paths the companies have taken seem to have delivered different results. When, as was the case in Company A and B, functional managers with a long history within the organisation enter the role as process owners there is a risk that little really changes. On the other hand there can also be difficulties when appointing other persons as process owners, as was the case in Company C and also initially in Company A. Inexperienced managers can have troubles with legitimacy and authority towards the ‘old’ functional managers, leading to that the status of the process organisation becomes lower than that of the functional organisation. To try to prevent this, strong support has to be given from the top management

to the process owners so that they have the knowledge and authority to stand up to the functional managers.

Apart from these difficulties there also seems to be a strong positive dynamic inherited within the matrix relations of the functional orientated and the process orientated organisational structures. It was found that this dynamic could be seen as a result of tensions between the resources of the functional organisation (staff and budgets) and the demand on the operations from the process owner.

4.4 Co-workership

It is well known that being able to see your part in a greater whole is often a motivational factor for the individual. Working with process orientation can, according to personnel at all the three studied organisations, be a way to create such a view and understanding. But if employees are having difficulties trying to understand the managing structure of the new process organisation the effect can be the opposite. Tendencies of this kind can be observed in Company B, where a concern was expressed regarding whom to turn to with questions – who tells me what to do?

On the other hand, there appears to be great opportunities within the matrix organisations for those individuals who want to take own initiatives and responsibility. In all three organisations the process organisation is a place where those who want can take stronger control over their working situation by, for example, taking active part in different improvement teams. This is an opportunity where the management gives room for those who wants to participate.

> I think you got to be a person who wants changes, those who don't are not being bothered by the organisation. But I think everybody is interested, but the do not want to be the main character.
>
> *Member of a process improvement group, Company A*

4.5 Improvement and Development

It is visible in all three companies that the process organisation has given space and a forum for work with improvement and development. This has strengthened the organisations capability to change.

> There is always something that can be done better, but you need a pattern or a framework to follow when working with improvement. Process management is one example of a pattern.
>
> *Member of a process improvement group, Company A*

The persons appointed as facilitators, called process leaders in Company A and B and process owners in Company C, seemed to be full of initiatives and were those that really made things happen. In Company A and B there were process improvement teams and this also used to be the case in Company C. When the process owners took on full time those groups disappeared in Company C. The resulting situation at the time of this investigation was that the process owner had to 'run around' chasing people, resources and information needed in the work with the process. Often better, and sometimes faster, solutions are made when a group, with all the competence needed, get together compared if one individual should chase after it. This is the reason why such teams were on their way back at Company C.

4.6 Systems thinking

As described in the section about co-workership the ability to see the larger picture, a whole, has been strengthened through the work with process orientation in all three organisations. The process view is a good step on the way towards systems thinking. Also, the capability to change the emergent behaviour has been strengthened.

Having implemented a process perspective and an understanding for the value adding processes within the organisation among the employees seems to be facilitating when trying to handle complex relations in the organisations. However, the troubles in handling and understanding the matrix of responsibilities between the functional and the process parts of the organisation show that genuine systems thinking has not yet been reached by any of the studied organisations.

4.7 Corporate responsibility

The studied cases do not handle the subject of corporate responsibility to a great extent, but there was one thing mentioned at Company B and which were already in action at Company C: The process owner at Company B discussed the opportunity to maybe work closely with suppliers to teach them about process management to make their operations run smother. This was something Company C had adopted when creating a subsidiary that was working with teaching TQM to other organisations connected to Company C.

Corporate responsibility is both a way to make the own business run smother but also an approach to contribute to the society, to participate in this study is another, to help and inspire other organisation to work with process management. All these methods are based on the assumption that process management gives positive effects both for the individual, organisations and the society.

5 CONCLUSION AND DISCUSSION

In conclusion, this study indicates that the incitements, implementation methodologies and organisational structure can differ between companies working with process management, but still give similar results. It seems clear that the focus of attention should be on the flow between customer needs and customer satisfaction, and that this chain has to be recognized by all individuals within the organisation.

The significance of leadership as a factor when implementing process management is illustrated by the fact that in all the three studied companies there has been, at least, one strongly motivated person high up in the hierarchy who has the organisation's attention for his or her ides, and has thereby become the driving force for the implementation and organisational work with process management.

It is likely that customer focus has increased among the employees as a result of the process orientation. However, an interesting strategic aspect that seems to emerge when working for a long time with process management is a tendency of organisational introspective. When trying to exploit and further develop the process orientation of the company, it should be of importance not to loose customer focus to the benefit of internal development. The fulfilment of external needs has to be the centre of attention, or else the process management probably will end up being self-absorbing. This could also be a risk when implementing process management because of misdirected internal motivation. If the work does not first and foremost focus on customer needs but on how things are being done to be most comfortable for the organisation it self, customer focus is easily lost.

There is possibly also a danger if working too hard on building a prominent process management structures within an organisation. A new hierarchical structure, going horizontally though the organisation instead of top-down, could then be created. A further important consequence of this is to have a well developed systems thinking, to see the organisation as a whole no matter the organisational structure.

A question that arises is whether an organisation somehow has to organise following the processes or not? Do organisations need a process structure in order to fully support the process view and a process orientation approach? These questions merit further investigation.

There appears to be a conflict when the 'old' functional and more hierarchical structure, where you are told what to do, meets the 'new' process organisation where the individual has a larger responsibility for taking own initiatives. Further on it is questioned by the companies if it for those who like to take on challenges can be too many possibilities? Does this way of working not suite everybody or is it a question of the individual having the right support to handle the new responsibility?

A danger at Company C could be, according to some of the most recent interviews, that the process owners are not fully able to directly communicate about processes within the organisation. When talking to other employees they have started using other terms than the traditional ones to avoid distancing. Signs of this were also visible at the other two organisations, for example, the employees who did not notice that much of a difference in their daily work. There is a danger that process management becomes an issue only for top managers. Another aspect is if the employees experience trouble relating to the new management structure it can affect the ability in the organisation for the mangers to give direction on a more strategic level.

To take maximum advantage of the concept process management has to become an integral part of the organisation. All employees need to see the flow from customer demand to a satisfied customer and also to recognise their own part in that chain.

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PAPER 3:

SUSTAINED QUALITY MANAGEMENT – HOW TO RECEIVE THE SWEDISH QUALITY AWARD TWICE

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SUSTAINED QUALITY MANAGEMENT
- how to receive the Swedish quality award twice

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ABSTRACT
Purpose – This paper describes how Agria Animal Insurance Sweden (Agria) has organised its quality-related work through a sustained and systematic focus on basic elements of quality management such as Value focused leadership, Employee involvement, Process management and control, Customer focus and Continuous improvement.
Design/methodology/approach – The study has been based on interviews, document studies and action research. It is a single case study design with limited intentions of generalisation.
Findings – The analysis shows that the top management at Agria has been a strong driving force that has effectively united leaders at all levels as agents of change. Additional success factors have been the deployment of basic values, the "Five Always", and the value focused leadership. Further on the company has succeeded in creating a cultural basis and structures for systematic work with improvements.
Practical implications – A way to address corporate culture in order to open up for a climate of micro improvements of practice within present routines is illustrated in this paper.
Originality/value – Agria could be considered an example for others to study and get inspired by when working with quality-related issues.
Keywords – Quality Award, Process Management, Customer Focus, Corporate Culture
Paper category – Case study

INTRODUCTION
In December 2003 Agria became the first company ever to receive the Swedish Quality Award twice. This noticeable success was the result of a change process that begun about ten years ago. Why has Agria succeeded in implementing a Total Quality Management (TQM) programme that has been sustainable for such a long period of time? This question was the starting point of a research project that commenced in 2002 and is still in progress. The purpose of this paper is to describe how Agria has organised its work for quality management.

Concepts, such as TQM, process management and self-assessment, have been the subject of discussion among management academics for several years. There have been many reports of a positive relationship between the adoption of TQM and improved performance of organisations, see, for instance, Easton and Jarrel (1998), Hendricks and Singhal (1997) and Reed et al. (2000). However, despite the enthusiasm for TQM among organisations, the efforts of implementation have often faced unexpected problems. Many organisations have tried to implement these methodologies, but not all have succeeded, see, for instance, Dale et al. (1997), Edwards and Sohal (2003), Garvare (2002) and Haupt and Whiteman (2004).

According to Edwards and Sohal (2003), one of the criteria for the success of TQM programmes is the sustainability over time. Implementing TQM means a long-term commitment and a considerable investment of resources. A lasting positive outcome of such an investment should be of the highest importance to any organisation.

As stated by Eriksson (2004) a common proxy for a successful implementation of TQM is the reception of a quality award. Several case study findings indicate that if the goal is to get lasting results, it is not sufficient to participate in a quality award process only once. Instead one should participate in the process several times, with enough time in between the applications in order to complete as many as possible of the improvement projects resulting from the evaluations (Eriksson and Garvare, 2005). The fact that Agria has received the Swedish Quality Award twice led us to believe that a study of this organisation could indicate some factors that are characteristic of successful TQM programmes, and hence be of general interest.

RESEARCH METHODOLOGY

In 1999 Agria received the Swedish Quality Award for the first time. This was the reason for the researchers' awareness of the quality-related activities, which had taken place in the company, and also the origin of the first contact. The research question of interest in this project is why Agria has been able to successfully implement a TQM programme that has been sustainable over such a long period of time. There are several possible research strategies plausible for answering this question, such as, for instance, literature reviews, face-to-face interviews and mail surveys with questionnaires. Yin (2002) argues that the choice of research strategy should be based on the type of research question posed, the control an investigator has over the events, and the degree of focus on contemporary as opposed to historical events.

In this study the degree of control has been negligible. The purpose was to describe both contemporary and historical events, and the research question is "why" a certain implementation has worked so well. Therefore, the methodology employed for this study has been mainly qualitative, with semi-structured interviews, see Merriam (1994), and direct observations as primary tools for data collection. Over a period of two years, the researchers have visited the company several times and have conducted interviews with both managers and other employees. The focus of these interviews has been to get a deeper understanding of how the mechanisms behind the quality-related issues function in the organisation. The interviews were documented using tape recordings and notes made during the discussions. To gain further insights, relevant internal and external company documents and reports, such as annual reports, descriptions of the company on the basis of the criteria for the Swedish Quality Award, and feedback reports from the award process, have also been investigated.

For three months in 2003 one of the authors was positioned at Agria, carrying out the study in the form of action research; see, for example, Stinger (1999) for a description of this methodology. In this part of the study she participated actively in the improvement efforts performed at the company. This was important as it enabled collection, analysis and validation of empirical material in a cyclic and iterative manner. She also got the opportunity, in the fall of 2004, to take part in the training that is provided to all new employees at the company.

The data collected has been analysed repetitively in discussions in the research group, by looking for patterns in the material and by iterative testing of tentative hypotheses. The

presentation of the case study has been structured according to a set of management principles used in the analysis of the data material; Customer focus, Value focused leadership, Employee involvement, Process management and control and Continuous improvement.

COMPANY DESCRIPTION

Agria is a wholly owned subsidiary of the Swedish insurance company Länsförsäkringar AB and has specialised in the provision of animal and crop insurance. Länsförsäkringar AB and its subsidiaries are jointly owned by 24 mutual companies. Agria has about 150 employees, who together serve about 360,000 customers. The turnover in 2003 was about 90 million Euro and the market share about 60 per cent of the total market in the animal and crop insurance segment in Sweden.

Agria is divided into three business areas: Small Pets, Horses and Agriculture. In addition to these areas Agria also has a process organisation, see Figure 1. The core processes of Agria are: Sales, Underwriting and Claim handling. They are supported by a number of business support processes such as: Market support, Human Resource, Economy, Information Technology and Organisational Improvement. The purpose of the strategic processes; Business Analyses, Business Development and Business Planning, is to ensure the company's future development and results. The stated mission of the company is to *"use expertise and commitment in order to develop and sell security for animals and people"*.

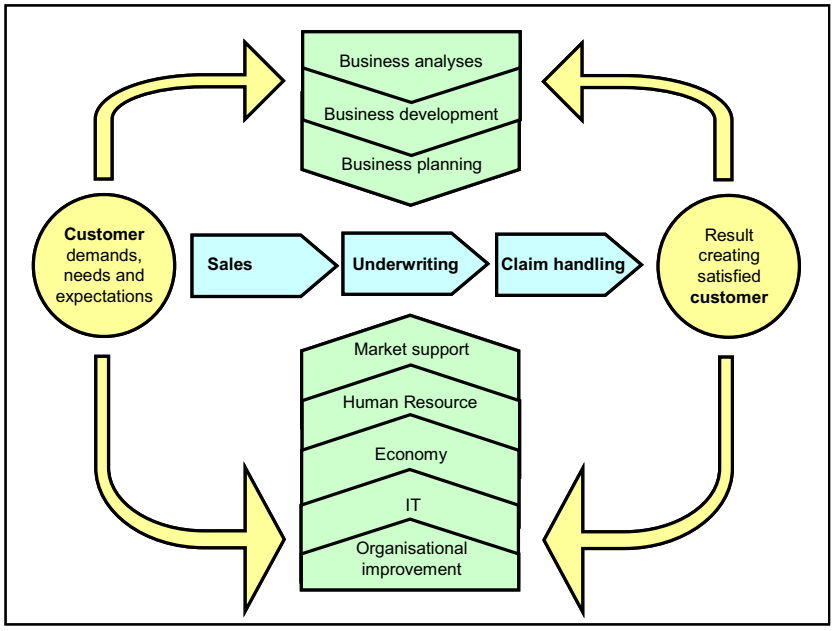

Figure 3. Agria's process map. The strategic processes at the top and the business support processes at the bottom give direction and support to the business processes, which are shown in the row in between, Agria (2004).

In 1998, Agria became the first Swedish insurance company to receive an ISO 9001 certification. The same year Agria participated in the Swedish Quality Award for the first

time, and one year later the award was received. Some of the milestones in Agria's work with quality are:

1995 The criteria of the Swedish Quality Award are studied by the CEO and presented to the top management group.

1996 Agria starts working with projects on process orientation and implementation of structures for continuous improvement.

1997 Agria's Satisfied Customer Index is launched.

1998 ISO 9001 certification and first application for the Swedish Quality Award.

1999 Receives the Swedish Quality Award.

2000 Upgrades to ISO 9001:2000. ISO 14 001 certification.

2001 A new, process based, organisational structure is introduced.

2002 Certified to Investor In People.

2003 Receives, as the first organisation, the Swedish Quality Award for the second time.

QUALITY MANAGEMENT PRINCIPLES AT AGRIA

According to the CEO a main reason, for him, to start the work on systematic quality improvement was curiosity. He points out that the company did not begin working with the criteria of the Swedish Quality Award because of external pressure, but because of an ambition among the top management group to improve productivity in operations and reduce operating costs per business item. In the mid-1990s they were looking for some kind of instrument that could help to strengthen and improve the whole organisation. Agria was looking for a new strategy of administration and came to the conclusion that this strategy should not only be about information technology but also about new ways to develop work procedures. They wanted to strengthen their improvement efforts and their ability to adjust to changing conditions.

At this time the CEO started reading the criteria of the Swedish Quality Award. They seemed to be able to fulfil the wish of something that could structure the wanted change of the company. "*In order not to scare the other people in the management I selected only smaller parts of all the criteria of the Swedish Quality Award to begin with"*, says the CEO. With the criteria of the Swedish Quality Award they started with the questions regarding business process management. Along with the work with the processes the focus on customers followed naturally, as the processes had their origin in customer demands. After a short period of time the project was enlarged to include all criteria of the award.

Customer focus

Agria has been recruiting on the basis of a recruitment policy involving that employees at the company should be animal owners. With a few exceptions everyone at Agria is, or has been, an animal owner. Several of the employees have a history of competing with their animals, or owning farms. This has ensured that many of the employees have an active interest in animals and also have extensive knowledge of animal care.

Agria has developed several policies and guidelines. One of them is the quality policy: *"Our customers are the ones who determine the quality of our work – everyone at Agria has*

customers. Our associates are the ones who create satisfied customers. Our aim of continued improvement is what increases our competitiveness." The quality policy has had strong implications for day-to-day operations at Agria. One of the employees described, for example, a situation where she had a system crash on her computer. At the same time there was some problem with the CEO's computer. Since the employee was in a position where she had a more direct customer contact her problems were prioritised by the computer support team.

Through cooperation with its customers Agria has actively strived to investigate their operations and to create products that are adapted to animal owners' demands and needs. Some of the tools used are:

- *Agria's Satisfied Customer Index* – Ten times a year Agria's customer service centre calls 450 customers to examine and investigate their views on Agria's operations. The result is presented to the employees as an index in internal newsletters and at monthly breakfast meetings.
- *Customer Suggestion System and Customer Complaints* – A collection of complaints, opinions and suggestions are gathered in a database. Through this database the organisation is able to learn from mistakes and receives input to improve its operations.
- *Representatives in Agria's Board* – Three out of twelve members of the board are representatives of animal owner organisations and one member is a representative of the veterinarians, Agria's most important group of suppliers. This, together with the use of product committees and a claims appeal committee, promotes close co-operation with animal organisations and the veterinarian society.

Value focused leadership

During the interviews the representatives of Agria's top management often expressed an ambition to spread certain values in the organisation. All new employees take part in five days of training, the "Agria school", concerning Agria's operations and values. It is spread over a month of time and is a complement to the training of each employee's own tasks. The new employees meet managers of the different business areas to learn about critical success factors in each area. In order to reach an understanding of process flows through Agria they also meet all the process owners. One and a half days are set aside for discussions of communication and also a day about the quality and environmental work at Agria. The training is followed up by regular developmental conversations each year. The competence level is determined on a four-graded scale, and if there is a discrepancy with the goals established, measures are taken to raise the competence level of the employee. The training of the new employees is centred on the quality policy and Agria's five basic values, "Agria's Five Always", that are repeated in different assignments:

- *Always make a little extra effort – to exceed customers' expectations.*
- *Always see possibilities – to help us succeed.*
- *Always improve skills – to work preventatively at all times*
- *Always act professionally – to help us attain long-term profitability*
- *Always show respect and trust – to help us create a good working climate.*

These basic values are supposed to facilitate work and increase the opportunities of attaining set goals. A business controller, who was responsible for the process connected to the Swedish Quality Award 2003 at Agria said, *"The only things you need to know at Agria are the Five Always, the quality policy and the ladder of initiatives* (described below)*, no rules. If you don't live up to the basic values then you are not considered for the salary audit and if*

you do something seriously in opposition to the values it can even be reason for notice of dismissal."

The basic values and the quality policy have been developed in the same way as many other things at Agria. The top management group creates a suggestion, which is presented to the employees at a breakfast meeting, a division conference or at the yearly company convention. The employees are encouraged to give feedback to the suggestion, which is then improved before implementation or establishment.

One example of how the values have been integrated in the training is in the "health game", which has been developed by employees at Agria to improve the awareness of health issues among the employees. The game is a set of different scenarios, where the participants have to take a stand. Each of these, in a group of five, gets a value to observe and then the group is appointed to bring out three different outcomes of the scenario: one outcome being full of initiative, one neutral and one passive outcome. This puts the employees in a situation where they have to take a stand in questions about, for example, sick-leave, stress, customer demands and balance between family and work – all with the basic values in mind.

The health game is supported by the "Ladder of initiatives", see Figure 2, another tool for value deployment. It consists of seven grades, starting with "you as a victim of the circumstances" and ending at the top where "you just go". Being at the top you take initiatives on your own and do not ask the management or co-workers about how to solve your problems. The ladder is a development from a three grade scale; being full of initiatives, neutral or passive. The ladder of initiatives is used in the regular conversations of personal development to discuss the employee's degree of involvement, where the employee is at present and where he or she would want to be in the future. Then a plan of actions is developed, with activities such as project participation or further education. The ladder of initiatives is also a part of daily discussions among employees. "Today I was low on the ladder; I didn't have the energy to take care of this or that", was, for example, heard from one of the employees during a coffee break.

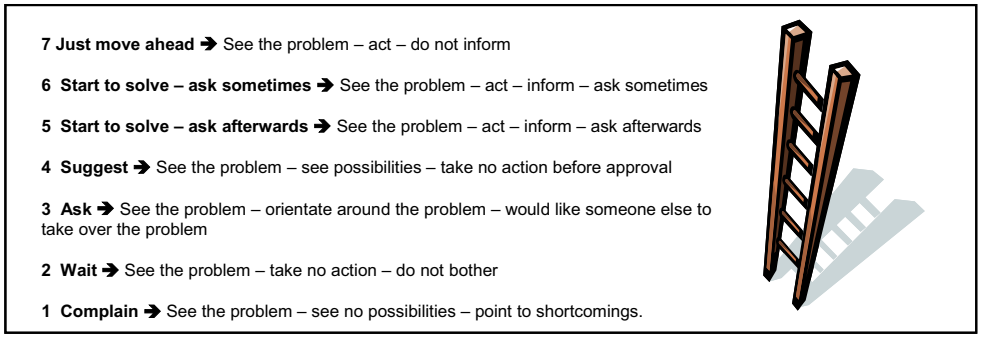

Figure 4. Agria's seven grades on the "Ladder of initiatives", Agria (2004).

All managers in Agria are supposed to spend 25 per cent of their time on improvement work, 25 per cent as specialists and 50 per cent as coaches. When working with improvement their mission is to create an understanding and willingness for change in the organisation. Managers range from team leaders, with responsibility for about ten employees, via process managers and business area managers to the CEO. One of the ways used to unite managers of

the organisation has been Agria's program for leadership development. One day per month all managers of the company get together and listen to speakers and work with cases. As a result, the managers have been able to send a uniform message to the organisation. To be unified as leaders was considered important by the CEO, especially since all people at Agria operate in an open office landscape. In this environment individual behaviour becomes visible and it gets very important as a manager to practise as s/he preaches, and also for all managers to preach the same message. The way the office has been designed helps to give each employee an overview of the company and to understand the relationships between different parts of Agria. It also encourages knowledge transfer and co-operation between disciplines and upholds flexibility as people are switching desks from day to day, even the CEO. The majority of the workplaces are placed in groups of desks in the office landscape, but there are also silent workplaces that can be used when needed.

Employee involvement

At Agria the employees are named associates. The top management group of the company has often highlighted the important role the employees have played in the organisation's striving for success. According to the CEO, "satisfied associates lead to satisfied customers". On this basis, the managers at Agria have worked with creating commitment and involvement from the employees. As a part of this work Agria has used the standards of Investors in People. This is a standard of working with commitment to ensure that everyone in the company develops, feels involved and understands the goals of the organisation. Three times a year a questionnaire is sent to all employees to further investigate how they feel about their work, the environment and the leadership at Agria. The results of this questionnaire are presented as an index of employee satisfaction.

An integral part of Agria's work with involving the employees is the business planning process; see illustration from Agria in Figure 3. A foundation for this process is the balanced scorecard, with Customer, Associate, Process and Economy as perspectives. The business planning is a two-year process. In the first year strategies, goals and action plans are developed. Feedback from the business excellence model process works as an input to the business planning process. The following year consists of realization, follow-up, analyses of the results and, when needed, adjustment of action plans, parallel with a new planning process.

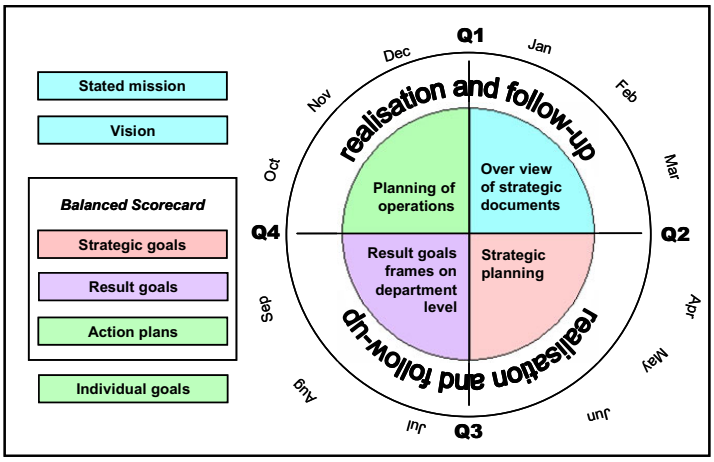

Figure 5. The Business Planning Process at Agria, Agria (2004).

Long and short-term goals for the company are established with involvement of all employees. The monthly breakfast meetings are an important place for discussions. It is also one of the occasions when the follow-up of the results takes place. The top management group develops a suggestion for strategic goals for the next period. These goals are then presented at a breakfast meeting, and during the second part of the meeting the employees split into multidisciplinary teams to discuss and develop the goals. The groups present their results on posters, which are displayed at the workplace. These posters are shown for a week and everyone is encouraged to give his or her opinion of the proposals. Opinions are given by putting a green mark for a positive reaction and a red mark for a negative reaction. Then the posters go back to the top management group for consideration and decisions.

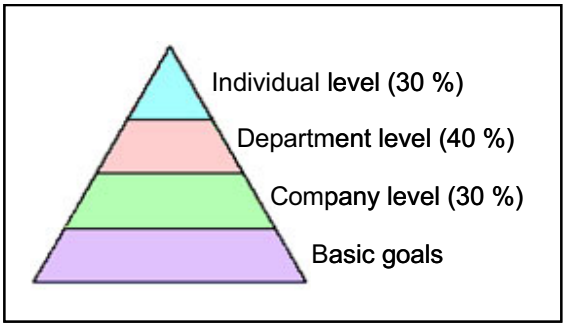

Figure 6. Agria's target related bonus system, the levels where the goals are set, Agria (2004).

As a part of the business planning process, everyone at Agria gets involved in breaking down the yearly result goals to process, department and individual levels. The goals become a basis for Agria's target-related bonus system, which can yield up to ten per cent of annual income. Targets are set on a company level, a department level and on an individual level, see Figure 4. The bonus system is thought to be a way of creating incentives to work in the desired behaviour and direction. One of the employees said, "the goals on the company level feel distant but the individual goals are easier, they are mostly production targets based on how you did last year and then you are expected to improve."

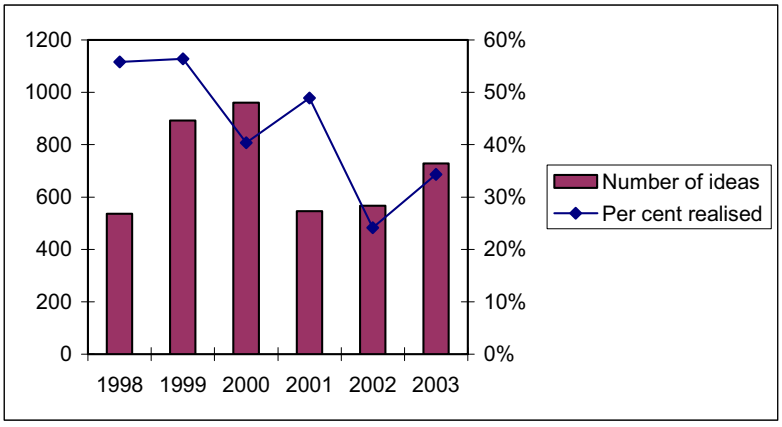

Figure 7. Statistics of Agria Online Ideas – Agria's suggestion system, Agria (2004).

One way for the employees to take initiatives is to make suggestions to Agria Online Ideas. Agria's suggestion system has been developed to store ideas in a database. Everyone is able to submit, monitor and send feedback on these suggestions. In the beginning, to encourage use of the system, goals were set in the bonus system for each employee to hand in at least a specified minimum of suggestions. At the time of the case study improvement suggestions had become a natural part of the daily work, see statistics in Figure 5. One employee stated, "if someone has an idea, it is natural to tell him or her to ´make a suggestion´ and everybody is aware of that." Suggestions span from preventive and developing to corrective actions.

Process management and control

According to one of the senior managers Agria has been working consciously with "the flow from customer demand to a satisfied customer" since 1995. In 2000 Agria did the first rework of the organisational chart towards a matrix-organisation. In 2002 a second reorganisation was made, resulting in the organisational structure that was present during the time of the study. The processes map of this organisation is found in Figure 1. A former process owner, now in another position, describes how the process orientation supported customer orientation: "It got clearer how my process delivered something directly to the customer. Another new thing is how the process spans over the whole company, with an evident flow through the departments."

All of the processes at Agria have process owners assigned to them, accountable for the performance of their process and for evaluating, developing and improving the process continuously on the basis of customer demands, needs and expectations. The business process owners do not take part in the daily operations, nor do they have responsibility for financial results or staff. All of the process owners report to the process management group, which consists of the process owners and the CEO. The process management group is responsible for giving priority of goals, resources and measures of congruence. To ensure that all employees really understand the process-based organisation, a part of the training of new employees is set aside to meet the process owners.

Parallel to the process organisation there is a traditional functional organisation present, with business area managers responsible for financial results. The business area managers are aided by team leaders with responsibility for the staff. One business process owner described the responsibility in this way: "The process begins at a customer need and continues to the veterinarian, I am responsible for that part. Then the matter comes in to Agria and the functional organisation has the responsibility but I am still responsible for the whole. As a process owner I have many interest groups to take into account. To be successful we cannot only work with the issues inside our office, our customers are outside the building." He went on to describe how the employees look at the process orientation: "It depends on whom you ask about the organisation. From some people you get the functional organisational chart and from others the process map. But it is in the relation between the functional and the process organisation that the dynamics occurs that gives the company lots of energy. But if you cannot separate the two parts of the matrix, the process orientation will probably die out." He stated that it is the culture and the basic values that make the relation work and help to avoid conflicts. Another important part of the process orientation, according to the process owner, is that everyone takes part in the business planning process and agrees on common goals for the organisation.

The goals are set and the results are measured through balanced scorecards and collected in an in-house developed data warehouse. Since 1998 Agria has been certified according to ISO

9001 and, since 2000, Agria also has been certified according to ISO 14001. The management system is looked upon as creating order among the processes.

Continuous improvement
To improve the company's operations Agria has used the criteria of the Swedish Quality Award (SIQ, 2004), a tool for customer orientated operational development, to evaluate its operations on a yearly basis since 1998, see result levels in Figure 6. As an output from the award process Agria each year receives a feedback report that gives input to the business planning process.

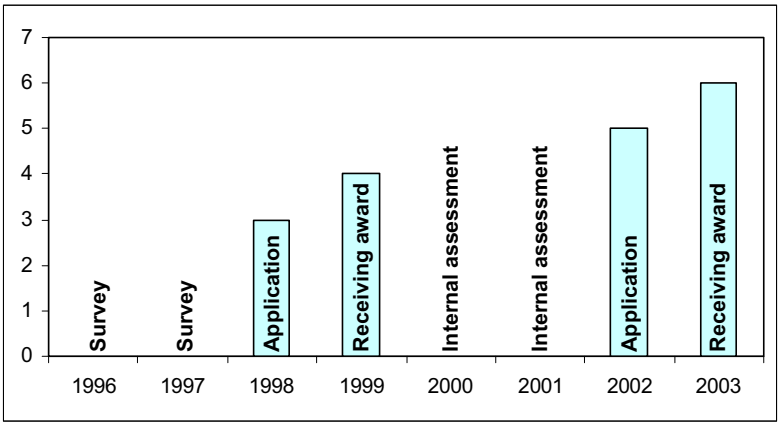

Figure 8. Agria's achieved levels in the Swedish Quality Award over time, from feedback reports (1998-1999 and 2002-2003). Each year the evaluation results in a final grade on a seven graded scale, see SIQ (2004) for further details. The different ways in which Agria has been working are also written in the diagram. The surveys in 1996 and 1997 were "light-versions" of the instrument, developed by a consultant. In 2000 and 2001 Agria used consultants to evaluate the company and to receive feedback.

By continuously working with the criteria of the Swedish Quality Award, and the phases surrounding it, the employees are included in the work with TQM. Employees work in project teams when creating the description of the company on the basis of the criteria. Anybody can be a part of these "writing teams" and the participants shift each year. One illustration of how the importance of the employees has been highlighted can be found at the times when Agria received the Swedish Quality Award. The celebrations included everyone at the company. In 1999 Agria was the first award receiving company to make arrangements to broadcast the award ceremony of the Swedish Quality Award, performed by His Majesty the King of Sweden, directly to the office making it possible for all employees to take part in the celebrations.

In Figure 7 an overview of Agria's different methodologies and tools is presented:

Daily operations
Results are measured as a part of daily operations. By evaluating the results it is possible to discover if a process meets preset standards, or to find trends that indicate that a change is needed.

Strategic processes

To be able to evaluate the results of the operations goals are regularly set up for comparison. This is done in the strategic processes, primarily in the business planning process, where the frames of the company are set and where the priorities of improvement projects are developed. The arrows from the strategic processes in Figure 7 represent directions given to other parts of the company.

Input to improvement

To be able to work with improvement of processes there has to be some kind of input of needs. One input could be an inconsistency or negative trend in the operations. At Agria input to improvement also comes from a number of other sources: the feedback report from the process of the Swedish Quality Award each year, audits of the ISO 9001 and ISO 14001 management system, employee suggestions, customer feedback, benchmarking and input from suppliers. The suggestion system has been developed as a means of distributing ideas and inputs further on to the different improvement and development processes.

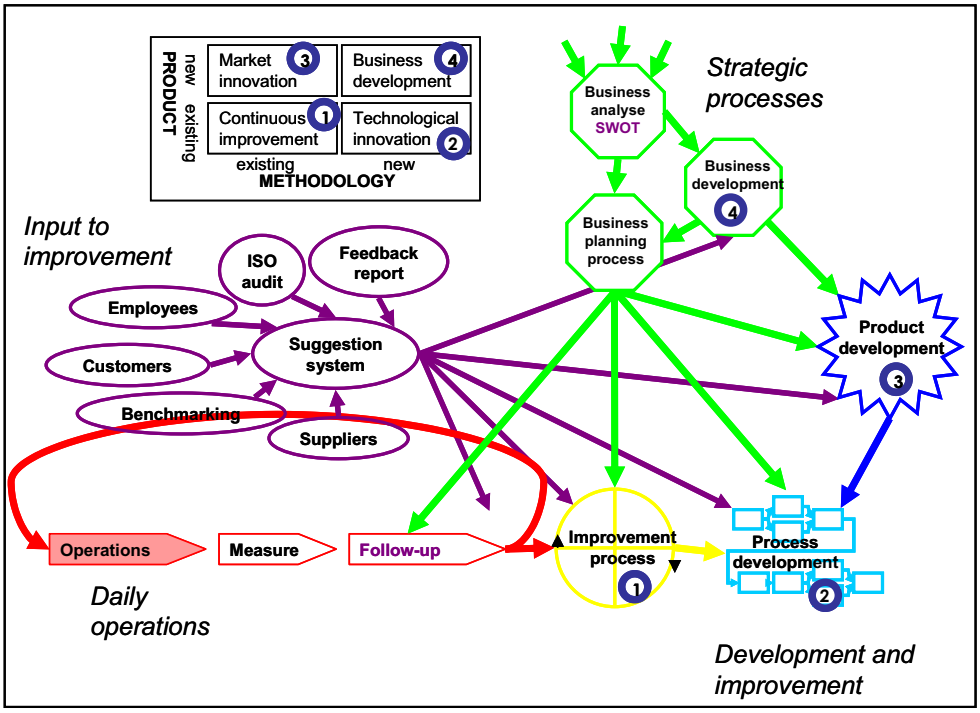

Figure 9. An overview of Agria's different methodologies and tools, from Palmberg (2004).

Development and improvement

To be successful in competitive environments, companies must work continuously on improving their processes to meet the ever-changing conditions. This work may consist of either big and extensive changes or small ones in day-to-day operations. The matrix in the upper left corner of Figure 7 describes different kinds of improvement going on at Agria, Horn (2003):

1. *Continuous improvement*
   If, on the basis of present routines and existing products, someone makes a change, it could be considered a continuous improvement. Something is done within existing frames, but in a new, and hopefully better, way.
2. *Technological innovation*
   Technological innovation is when making an improvement in the process but still with the same product or service as the output of the process. The purpose is to satisfy a known need with a new method. It is often a major change that requires budget and resources in the form of competence and a project team.
3. *Market innovation*
   Creating new products or services that can be delivered by the existing processes, in order to satisfy new customer needs, is called market innovation (in the matrix) or product development (in the figure). At Agria it is primarily in the product committees that the development of new products and services takes place, in close cooperation with customers and suppliers.
4. *Business development*
   Finding new areas that require new routines is called business development. The division Agria International is an example of this, working with spreading the way Agria operates on a franchise basis to insurance companies in other countries.

The different types of improvement of operations and processes, number 1 and 2 in Figure 7, are debated further in the conclusions and discussion.

CASE ANALYSIS

In a literature review by Edwards and Sohal (2003) some of the key issues concerning the implementation of TQM programmes are presented:

- Education and training of employees and not letting production demands undermine the benefits of training.
- Employee participation and positive view of the impact of TQM.
- The role of middle management in conveying messages to lower levels of the organisation.

The extensive training in the "Agria-School" of all new employees has ensured that everyone working at Agria is aware of, and understands, the basic values and principles of the organisation. The health game is another way of training, where employees, being away from their normal day-to-day operations, get time for reflection.

The top management of the company have been continuously working to include everyone in the quality-related work. At the monthly breakfast meetings all employees are encouraged to participate in the strategic development of the company. At Agria we found it to be widely believed that by involving employees and other interested parties in a relatively slow decision process the implementation period could be shortened.

By including the whole organisation in the work with TQM through the criteria of the Swedish Quality Award, through the business planning process and through other methodologies and tools described in the case study the top management group at Agria has been able to create strong driving forces for change.

The monthly meetings in Agria's program for leadership development bring managers together to discuss the messages that should be conveyed to lower levels of the organisation.

By including all managers; team leaders, process owners, business area managers and top managers, in the same group and working with the same issues concerning leadership, there are no formal leaders left out at Agria to criticise the work of "those upstairs". Instead managers at all levels have become agents of change.

In a longitudinal study of five large Australian organisations van der Wiele and Brown (2002) found a number of factors that had an impact on the development of quality management within these organisations. Some of these factors were found at Agria as:

- *The role of top management* – The charismatic and enthusiastic CEO could be described as a strong driving force and has effectively united the management team as agents of change. Another success factor connected to the role of top management is the deployment of the basic values, the "Five Always", at Agria. The role of the top management has been significant in the early stages of TQM implementation. As described by one of the top managers, *"If the CEO had left after the award of 1999, I'm not sure if the work would have continued like it has. But if he would leave now the work would probably keep on going."* The role of the top management has shifted, and now there are structures like the Agria-school or the business planning process that probably would sustain the values and methodologies after a change of CEO.

- *The driving force behind the quality management implementation over a long term* – A primary driving force behind the implementation of TQM at Agria has been the persistent will of the CEO and several others in the organisation not to become satisfied but to continuously strive to improve with new initiatives of change. According to the interviews, external pressure to implement TQM has been negligible.

- The phases connected to the Swedish Quality Award have been used as a *framework to direct and review* the quality management implementation process. *Audits and assessments* due to the ISO 9000 and ISO 14 000 certifications have also given inputs to the improvement work at the company.

van der Wiele and Brown (2002) conclude that every organisation *"needs to discover and work out for themselves how to apply the core principles behind such concepts in ways which are meaningful to their business operations."* That is probably one of the most important explanations to why Agria has succeeded so well. Methodologies and tools have been selected by their end users on the basis of their opinion of what was needed, and have also been adjusted to fit the operations of the company.

On the basis of a study of three Slovene companies, Ambroz (2004) concludes that corporate culture and self-image play important roles when implementing TQM. Through their value focused leadership the managers at Agria have effectively changed the norms and basic values of the organisation. The corporate culture has also been affected by the recruitment policy of the company, which has favoured applicants with a strong interest in animals and animal care.

The self-image of the company has been strengthened by the largely positive response that has been received from customers in the Agria Satisfied Customer Index. Of course the two quality awards have also had great impact on the self-image. Employees at all levels have been acknowledged for the success of the company. Improvements are described not as a result of work made by a few, but as a result of all efforts made by everyone in the organisation.

CONCLUSIONS AND DISCUSSION

In conclusion, it seems clear that nearly all of the managers at Agria have succeeded in focusing their leadership on values and visions rather than rules and regulations. The basic values, the "Five Always", are more than just words, they truly characterise operations at the company. The study has focused attention on joint leadership as an explanation to this achievement. Through the program for leadership development leaders at all levels have been able to give a collective, united message and to demonstrate the importance of the basic values. At Agria most leaders harbour the belief that having everybody involved is a key to success. This became evident in, for example, the business planning process with a high degree of involvement by employees at all levels of the company.

It is not uncommon for companies to have close cooperation with their customers or with the groups representing them. What could be more unusual are the extent, as well as the systematic way, in which, for example, the customer surveys of the Agria Satisfied Customer Index are being made. But our contention is that the foremost factor contributing to the deep-rooted customer focus at Agria has been the recruitment policy, which strengthens the employees' commitment to the stated mission of the company, to *"Use expertise and commitment in order to develop and sell security for animals and people."* The fact that all employees can easily put themselves in the position of the customer having an animal in need of care has probably been the greatest contributory aspect of Agria's customer focus.

Process management is a tool in the work with continuous improvement at Agria. *"The process orientation gives the opportunity to discover bottlenecks in the operations and them to improve and develop the processes. It is also a help when prioritising among measures and of course it highlights the customer needs"*, one of the process owners said. Top management at Agria has succeeded in building trust and dynamics between the process organisation and the functional organisation, something which is probably as difficult as it is important.

At Agria goals are set and measured through the use of balanced scorecards. Measurements have become a natural part of the job and the employees that are working directly with customers are measured daily and individually by the number of customer cases handled. In addition to this a great number of production measurements are used. On the other hand, it was not always clear to the interviewees how these measurements have been selected to manage the operations leading towards the stated mission. Therefore, this should be an important area to look further into for the company.

During the action research part of the study we found that Agria has been working with operations improvement on three different levels, see Figure 8. The levels of improvement differ in extent and degree of systematisation and in degrees of how mature the organisation has been in its work with quality-related issues.

The third level, which could be found in many companies today, is *process development* – a discontinuous and often project-based approach with groups assigned to specific improvement tasks. It consists of knowledge of, and systems for, how to run larger development projects. This is the most extensive improvement level, where the problem to be solved requires a major work effort. At Agria a project team is appointed by the process management group and a budget and time plan is developed. In order to harmonise improvements with the goals of the company, goals of each process development project are set based on the general business plan.

The middle level of this model is *continuous improvement* – to find new ways on the basis of new ideas or indications of shifting trends in process performance. This is a structured way of working, with tools such as the wheel of improvement (PDSA: Plan – Do – Study – Act), see Deming (1993), and can often be found in organisations working consciously with TQM. To improve continuously within the existing process map is an expected part of daily work for process owners at Agria. Employees that are affected by changes often assist the process owner in finding new solutions, or even become responsible for the change themselves. To ensure that improvements made are in line with the general goals of the company a comparison is made between the goals of the individual improvements and the goals set in the business plan.

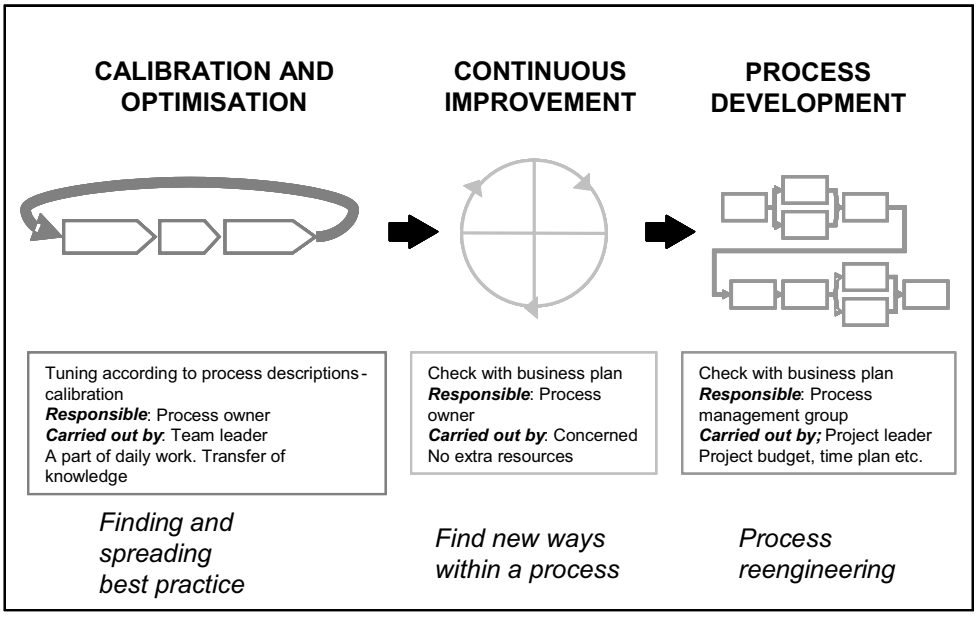

Figure 10. Levels of change and operations improvement. From Palmberg (2004).

The first level has been called *calibration and optimisation*. Work of operations improvement at the first level is supposed to ensure that routines and process descriptions are followed as intended, that micro improvements of practice are made within present routines, and that best practise is developed and spread across the entire workplace. Team leaders are responsible for upholding a climate, where ideas are shared among employees and where everyone relentlessly looks for possibilities of improvement by questioning present ways of working. When something comes up that implies a change of routines, it gets formalised as continuous improvement and is transferred to the middle level of the model. If structural changes are needed, a project of process development is initiated (the third level of the model).

The approaches needed are dependant on which type of situation that is present. Therefore it should be important to be aware of the differences between the levels of operations improvement. Organisations should be able to gain from developing knowledge and methodologies regarding the different levels of improvement. It may be argued that it could be fruitful to start with continuous improvement, the middle level, to find ways to handle creativity and

improvement suggestions in the daily work of developing the operations. Further on, when facing larger improvement needs, there is a demand for a more comprehensive approach, the third level. In the case of Agria a five step model with checkpoints for how to operate projects was developed. Having dealt with these two levels of change and improvement the company could proceed with working on the first level, calibration and optimisation. This first level is possibly the one with the highest requirements on employee involvement and corporate culture. When looking at continuous improvement and process development, Agria is in the frontline. Therefore, it is probably at the level of calibration and optimisation that the company has the highest potential of development.

It is significant that Agria has succeeded in deploying a number of basic quality-related values that leaven through the organisation. On the basis of these values the company has been able to develop and implement methodologies and tools that maintain the strive for improvement. Every organisation needs to find methodologies and tools that support its values when working at different levels of change. If an organisation can manage to combine values of continuous improvement, process management and customer focus with methodologies and tools that support these values, sustained quality management should be in reach.

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