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Master's Programme in Industrial Engineering and Management

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# **Total quality culture and success factors for cultural transformation**

Thesis submitted in partial fulfilment of the requirements for the degree of Master of Science (Technology)

Master's Thesis

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<p>Quality culture is proved to improve overall performance of a company. However, achieving it has appeared to be more challenging than thought. This study explores, what factors have an impact on organizational quality culture and how managers can lead cultural changes.</p> <p>Existing literature gave a reason to suspect that quality culture is impacted by the company's capability to understand and lead quality within its two different meanings: as conformance to specifications (small q) and as customer satisfaction (Big Q). A hypothesis was formed to test, whether or not small q-Big Q confusion has an impact on organizational quality culture.</p> <p>This study was conducted as a single case study. Five management team members were interviewed for it. Also, a quantitative comparison between white-collar employees and senior managers was carried out to understand better the practices the company had.</p> <p>The main results indicated that the hypothesis was supported. Quality management and ignorance of Big Q had an impact on organizational quality culture. Case company's culture was characterized by result orientation, internal focus, low cross-functional co-operation and firefighting. Financially the weaknesses arose from customer experience and variability in white-collar work. It was also found that the current practices were not in line with the company's differentiation strategy.</p> <p>As the result, the study identified how the case company can build better knowledge for quality management and provided concrete proposals how quality culture can be deepened. Overall the study provided a whole new approach to quality culture phenomenon. While quality culture has not been discussed similar way before, the study provided a good starting point for further research.</p>	
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<p>Laatukulttuurilla on osoittautunut olevan paljon myönteisiä vaikutuksia yrityksen suorituskykyyn. Sen aikaansaaminen on osoittautunut kuitenkin haasteelliseksi. Tässä tutkimuksessa pyritään selvittämään, mitkä tekijät vaikuttavat laatukulttuurin muodostumiseen ja kuinka kulttuurimuutosta voidaan johtaa.</p> <p>Tutkimusta varten tehty kirjallisuuskatsaus antoi syytä epäillä, että yrityksen laatukulttuurin muodostumiseen vaikuttaisi vahvasti se, kuinka laatua sen kahdessa merkityksessä vaatimustenmukaisuutena (small q) ja asiakastyytyväisyytenä (Big Q) ymmärretään ja johdetaan. Tutkimuksessa muodostettiin testattava hypoteesi, jossa oletettiin small q-Big Q sekaannuksen estävän yritystä muodostamasta kokonaisvaltaista laatukulttuuria.</p> <p>Tutkimus suoritettiin tapaustutkimuksena. Tutkimuksessa haastateltiin tutkittavan yrityksen viittä johtoryhmän edustajaa. Lisäksi tutkimus suoritti kvantitatiivisen vertailun yrityksen toimintatavoista toimihenkilöiden ja kaikkien johtoryhmän edustajien kesken.</p> <p>Tutkimuksen tärkeimpänä tuloksena oli hypoteesin paikkansapitävyys. Laatujohtamisella ja Big Q laiminlyömisellä oli vaikutus yrityksen laatukulttuuriin. Yrityksen kulttuuria kuvasti vahvasti tuloskeskittyneisyys, sisäänpäin suuntautuneisuus, matala yhteistyö tuloksikköiden välillä sekä reaktiivisuus. Yrityksen heikkoudet taloudellisesti liittyivät asiakkaisen palvelemiseen ja toimihenkilöiden työn virheettömyyteen. Lisäksi havaittiin, että nykyiset toimenpiteet laatuun eivät ole linjassa yrityksen differentioituvan strategian kanssa.</p> <p>Tutkimus tunnisti useita tekijöitä, joiden kautta yritys pystyisi rakentamaan vankempaa tietopohjaa laatujohtamiselle sekä tarjosi konkreettisia keinoja laatukulttuurin parantamiseksi. Kokonaisuudessaan tutkimus otti kokonaan uuden lähestymistavan laatukulttuuri-ilmiöön. Koska laatukulttuuria ei ole aikaisemmin käsitelty vastaavalla tavalla, tutkimus tarjosi myös hyvän alkupisteen syvempää jatkotutkimusta varten.</p>	
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# Table of Contents

<b>1</b>	<b>Introduction.....</b>	<b>1</b>
1.1	Background, research problem and motivation for research.....	1
1.2	Research questions.....	2
1.3	Context of the study and customer needs.....	4
1.4	Structure of the study.....	4
<b>2</b>	<b>Theoretical background .....</b>	<b>6</b>
2.1	Untangling the concept of quality.....	6
2.1.1	Historical background.....	6
2.1.2	Traditional definitions .....	8
2.1.3	Small q and Big Q.....	9
2.1.4	Total Quality Management.....	11
2.2	Defining organizational culture .....	14
2.2.1	Characteristics of culture and cultural dynamics .....	15
2.2.2	Observing the culture in organizations .....	16
2.3	Defining quality culture .....	17
2.3.1	Quality culture basic assumptions.....	18
2.3.2	Total quality culture - identifying the cultures of <i>small q</i> and <i>Big Q</i> .....	19
2.4	Managing cultural change .....	22
2.4.1	Requirements for purposeful action: know, can and want.....	23
2.4.2	Mechanisms for cultural change.....	24
2.4.3	TQM implementation: the critical success factors.....	25
2.5	Literature summary .....	31
<b>3</b>	<b>Research strategy.....</b>	<b>32</b>
3.1	Research design .....	32
3.2	Methods for data collection and sampling .....	36
3.2.1	Qualitative methods .....	37
3.2.2	Quantitative methods .....	38
3.3	Data analysis .....	39
3.3.1	Analyzing quantitative data .....	40
3.3.2	Analyzing qualitative data .....	41
3.4.	Validity and reliability.....	42
3.5	Evaluating the research process .....	44
<b>4</b>	<b>Findings .....</b>	<b>45</b>
4.1	Description of quality culture .....	46
4.1.1	Evaluating small q, Big Q and quality costs.....	52
4.1.2	Evaluating quality confusion and research hypothesis.....	56
4.2	Evaluation of success factors.....	58
4.3	Findings summary.....	68
<b>5</b>	<b>Discussion and recommendations.....</b>	<b>70</b>

**5.1 Improvement opportunities and strategic execution ..... 70**  
**5.2 Limitations ..... 81**  
**5.3 Opportunities for future research ..... 82**  
**6 References ..... 84**  
**Appendix 1: Interview protocol ..... 90**

## List of figures

Figure 1: Big and small quality relations (Lillrank, Small and Big Quality in Health Care, 2015) .....	11
Figure 2: Levels of culture (Schein, Organizational culture and leadership, 2004) .....	17
Figure 3: Total quality management basic assumptions (Kujala & Lillrank, 2004) .....	18
Figure 4: A model of TQC (Kanji & Hiroshi, Total quality culture, 1997) .....	19
Figure 5: Critical success factors for TQM implementation .....	26
Figure 6: Research Onion (Saunders; Lewis; & Thornhill, 2009) .....	33
Figure 7: Steps of deductive reasoning .....	34
Figure 8: Data collection methods for primary and secondary research questions .....	37
Figure 9: Thematic analysis process (Braun & Clarke, Thematic analysis, 2012) .....	41
Figure 10: Research process flow chart .....	45
Figure 11: Strong themes in corporate culture .....	47
Figure 12: Perceptions to management style .....	48
Figure 13: Perceptions to organizational performance .....	48
Figure 14: Time employees consumed on searching for information on weekly basis .....	52
Figure 15: Employee awareness of quality plans .....	60
Figure 16: Awareness of company priorities .....	60
Figure 17: Employees' perceptions to process management .....	62
Figure 18: Quality communication .....	65
Figure 19: Success factors and gaps in present state .....	69
Figure 20: Prerequisites for strategic execution .....	71

# 1 Introduction

## 1.1 Background, research problem and motivation for research

Quality is a very central concept to any company. Nobody willingly admits producing poor quality, even less the company's top management. Quality should be one of the top priorities and most promoted topics in any company disregarding the business. In fact, quality appears so obvious, it can be expected to be built-in in any corporate culture. However, that is not the case.

Quality related corporate culture has become an area of interest of many managers and academics. During the past years, managers have finally started to realize that organizational culture is something that can be impacted and shaped (Schein, 2004). Through increased research and knowledge, managers have become more capable of leading cultural changes instead of just waiting the changes to occur. However, a change engaged with quality, has appeared to be more challenging than just any change.

The crux of the matter seems to arise from quality management history and conceptual confusion of quality. Through the history, quality has been given many definitions. Little by little quality has *fallen from grace* and became a vague concept that is hard to rationally manage. Partly this has been a fault of Total Quality Management (TQM) literature, which has tried to include everything quality related under one concept (Lillrank, 2015). However, in reality, quality cannot be managed as generic element without a concrete meaning. Then managers don't even know, what to manage. It is assumable that the conceptual confusion of quality reflects to problems in *quality culture*, as comprehensive quality management and quality culture hold the same basic assumptions (Kujala & Lillrank, 2004). The problem must be approached through the definition of quality.

In current literature, the word "quality" holds two different meanings (Juran, 1998). The distracting concepts are *small q* and *Big Q*. By one definition, quality means conformance to specifications: expressing the relation of *ex ante* specifications and the anticipated outputs (referred as *small q*). By the other definition, quality is customer satisfaction: the relation between requirements and outcomes (referred as *Big Q*). There is a fundamental need to



place *small q* and *Big Q* as antipodal points. *Small q* and *Big Q* management act for different purposes, set different targets and use different methods. If they are confused or neglected, nothing good happens.

This study aims to provide new perspectives to *quality culture* discussion, as understanding of *small q* and *Big Q* in cultural context has remained rather shallow in existing literature. The main objective for this study is to investigate, whether or not the conceptual confusion of *small q* and *Big Q* has an impact on organizational *quality culture*. If yes, the logical next step is to find out how to overcome it.

While current literature has not conducted any similar studies, there exists no straightforward theoretical framework that could be utilized. A framework needs to be built on existing literature and theories. The study approaches the research problem by building knowledge on the factors that enable and counter cultural transformations. While literature has identified many mechanisms for cultural change, the study focuses on the ones that are recognized by most academics.

The study is conducted as a single case study. The main focus remains in the unique characteristics of culture and leadership practices the case company has. While *quality culture* is a new theme in the case company, the study also aims to provide motivation for making a change effort.

## **1.2 Research questions**

This study has one primary and one secondary research question.

The study focuses first on analyzing corporate culture in the case company. Regarding the present state, the study has two assumptions: (1) It is assumed that the concepts of *small q* and *Big Q* are not properly understood. It has resulted in situation, where purposeful quality management has not been possible. It has also prevented the company from developing a strong culture of quality. (2) It is also assumed that the struggles with quality culture are caused by *absence* of quality in the culture or by individual dominance of *small q* or *Big Q*. To be truly effective with quality management efforts, there needs to be strong presence of both, *small q* and *Big Q*. To analyze the culture, different forms of *cultures* must be identified:

1. If neither *small q* or *Big Q* appear strong in culture, there exists *absence of quality culture*
2. If features related to *small q* are dominant, there exists a *small q culture*
3. If features of *Big Q* are dominant, there exists a *Big Q culture*
4. If both *small q* and *Big Q* are present and strong, there exists a *Total Quality Culture (TQC)*

Based on the assumptions, a research hypothesis can be formed: the company has not developed a *total quality culture* as there exists a conceptual confusion between *small q* and *Big Q*. A primary research question is composed to respond the hypothesis:

RQ1: Does *small q* – *Big Q* confusion have an impact on quality culture in the case company?

A secondary research question is placed to study enabling factors and barriers for cultural transformation i.e. what is needed to achieve *total quality culture*? To study this, it is first required to prove the hypothesis true and point out the key gaps. A research question can be composed as following:

RQ2. What are the enabling factors for achieving a *total quality culture* in the case company?

A successful change is approached through the theory of *purposeful action*. A purposeful action arises in conditions where individuals *know*, *can* and *want* to do something. These conditions reflect back to the research hypothesis. If the hypothesis is true, there is no knowledge: the company cannot say it *knows*, what it is doing. Without knowledge, there is also no capability to do anything: probably the resources will be directed into wrong things. Individuals may also *know* what they are doing and have the right capabilities and resources to act, but if they don't *want* to do anything, nothing happens.

The basic setup for the study is deductive, as a hypothesis regarding *small q* and *Big Q* impact on quality culture is formed and to be tested. However, the hypothesis cannot be verified or falsified by quantitative testing or experimentation, while the ontologies and especially the epistemologies of the key issues are unclear. Accordingly, the method of inquiry is akin to explorative and inductive. The study must gather and rely on observable evidence that indicate something relevant about the hypothesis.

### **1.3 Context of the study and customer needs**

The customer of the study is a large industrial company focusing on engineering, industrial automation and manufacturing of heavy machinery. The scope of the study is limited to one of its local business units in Finland.

Quality related corporate culture has become an area of interest at the customer company, as awareness and understanding of the topic has increased during the past years. Local business unit (LBU) has identified that quality has not a strong place in corporate culture. When the corporation launched a quality initiative and campaign globally a few years back, LBU recognized an opportunity to make a change. The company now sees that top management has a critical role in successful implementation. Quality no more belongs to quality managers and specialists, rather it has become a responsibility of everyone in the organization.

The company had similar situation with safety about five years ago, when safety campaign was launched. Since then, safety has been communicated and supported actively by top management and several safety related actions have been implemented. As a result, safety achieved a stable place in corporate culture. Now the LBU wants to do the same transformation with quality. However, it has appeared to be tricky. The objective is to find out, why and how the company resists the change.

### **1.4 Structure of the study**

The thesis consists of six chapters. This first chapter introduces the research problem and presents the research questions.

Second chapter conducts a literature review and provides a theoretical background for the topic. The review is rather broad, as the topic is cross-sectional and amalgamates several academic disciplines.

Third chapter introduces the research strategy. The chapter describes the research design and methods for data collection and analysis. At the end of the chapter reliability, validity and the overall research process are evaluated.

Fourth chapter represents the findings of the empirical study. The chapter discusses the findings in two sections. The first section evaluates the hypothesis and answers the primary research question. The second section elaborates the secondary research question.

In the fifth chapter, the study provides improvement suggestions and discusses the strategic implementation. At the end of the chapter, limitations and opportunities for future research are identified.

Complete list of references is provided in chapter six.

## 2 Theoretical background

At the beginning of my thesis project Professor Paul Lillrank once said to me: “You cannot manage what you cannot measure, and you cannot measure what you cannot define”.

In order to manage *quality*, *organizational culture* and *quality culture*, one needs to be able to define them. In this chapter, a theoretical background for the study is provided. Some of the existing theories will be challenged, as conceptual contradictions still exist. This chapter is approached through concepts of *purposeful action* and *technology*. Purposeful action in organizations requires knowledge, which can be built through *technology*. Technology builds on three components: *ontology*, *epistemology* and *dynamics*: Ontology inquiring the essence of things: what the things are and what can be said to exist; epistemology inquiring what can be known about the phenomenon and how the phenomenon can be measured; and dynamics explaining how the phenomenon works.

This chapter comes in five parts. First part reviews the concept of quality and provides background details for the whole studied phenomenon. Second section proceeds to discuss organizational culture and how it appears in organizations. Third section merges these two topics and discusses *quality culture*. While the existing literature is very limited in the discussion of *total quality culture*, the framework for the study is justified. Fourth part reviews how cultural transformation can be managed. The final section provides a brief summary.

### 2.1 Untangling the concept of quality

#### 2.1.1 Historical background

The whole quality movement has a foundation in quality control and the statistical control of manufacturing processes (Kujala & Lillrank, 2004). Back in days, in 1930s, quality was about managing production processes in order to maintain desired, consistent level of outputs. Product quality was the one that grabbed the attention of American managers as Japanese products outranked with their superior reliability (Garvin, 1984). Production processes yet did not always work as planned and sometimes produced deficient products. This kind of variability, random deviations from expected, caused unnecessary waste, rework and costs

(Garvin, 1984). Quality management became an action to reduce it with standardization and control (Lillrank, 2015).

Managing variability has remained very central for quality management. Ability to deal with variability and uncertainty was seen critical skill for foreseeable future (Hopp & Spearman, 2011). In order to manage it, one needed to understand what caused it. The actual measurable deviation, *variation*, was caused by two reasons: *common causes* and *specific causes* (Hopp & Spearman, 2011). When production systems were operating as they were supposed, there existed random variation arising from common causes. This type of variation was part of a stable process, predictable and within acceptable limits (Hopp & Spearman, 2011). It was called random, as a process in its natural state, produced a number of outputs that deviated from targets and couldn't be fixed with immediate control (Hopp & Spearman, 2011). System redesign was needed to remove it. Additionally, there existed unpredictable variation that was caused by specific causes, discrete events or external disturbances (Lillrank, 2015). They were a signal of unstable process and needed local solutions to get fixed. Mixing up common and specific causes was avoided, as it led only to irrational action which didn't fix any issues. The method that was used to reveal the source of problem, whether it was common or specific, was known as statistical process control (SPC) (Hopp & Spearman, 2011). Common causes showed up with regularity, while specific appeared as trends or spikes.

The methods to control variability were adopted in USA during Second World War. Yet, it became soon realized that focusing on deviations was not enough. In 1950s the emphasis expanded outside manufacturing to include the entire production chain and to increase focus on customers. While manufacturing system were recognized as network of processes, through which the parts and information flowed, quality was not seen only in the end product (Hopp & Spearman, 2011). Also, variability was not anymore just a problem of products and individual processes. A *term flow variability* became to describe, how variability at one station impacted the behavior of other stations by means of another type of variability (Hopp & Spearman, 2011). Delivering poor quality to the next process was avoided as it led to problems and higher costs in later phases. Statistical quality control was replaced with quality assurance. However, after product types and customer options increased, quality

focus shifted to market and customer needs. It was no longer that obvious, what the customers wanted. Instead of being “a problem to-be-solved”, quality became a competitive opportunity (Juran, 1998). Understanding customer preferences and responding their needs were not achievable with standardization or subject to SPC. Quality became an ability to capture customer requirements and turning them into specifications.

### **2.1.2 Traditional definitions**

Considering the background, it is not surprising that the definitions of quality have varied widely. Garvin (1984) has summarized quality definitions throughout the history into five approaches: *transcendent* (Pirsig, 1974), *product-based* (Leffer, 1982), *user-based* (Juran, 1974), *manufacturing-based* (Crosby, 1979) and *value-based* (Broh, 1982) (Feigenbaum, 1983). Unfortunately, all of these definitions are more or less subject to debate.

*Transcendent* approach has discussed quality without a specific meaning. The approach says that quality cannot be defined. Quality takes almost platonic forms and is considered as something people learn to recognize when they see it (Garvin, 1984). The problem of this approach is that, when quality is not defined, it is very difficult to measure or manage it. *Product-based* approaches instead saw quality as precise and measurable. According to the definition, quality refers to the amounts of unpriced attributes contained in each unit of the priced attribute (Leffer, 1982). Meaning quality could be ranked according to the amount of desired attribute they possess. The problem is that the ranking is possible only if the attribute reflects customer preferences (Lancaster, 1979). On the other hand, quality gets also confused with quantity and price, as its assumed that higher quantity in some attribute represents better quality (Garvin, 1984) and hence is more expensive. Quality should not be confused with value. Quality is not value, rather an element in the value equation (Lillrank, 2015). *User-based* approach has been discussed by many authors such as Edwards (1968), Juran (1974) and Gilmore (1974). However, different authors discuss it slightly differently. Juran (1974) discussed it as “fitness for use” and referred it later as *Big Q*. Gilmore (1974) said quality was the degree to which a specific product satisfied the wants of a specific customer. Most recently this aspect is visible in personalization i.e. what is the fit between individual needs and tailored offerings. *User-based* approach recognizes that customer needs and wants are different, and what satisfies one customer, may not satisfy the other.

The definition of quality becomes idiosyncratic and highly subjective. *Manufacturing-based* quality was compatible with Crosby's (1979) "conformance to requirements" definition and Juran's (1974) "*small q*" concept. In this definition quality meant the degree to which an outcome conformed to its own specifications. The problem is that this definition assumes that products that conform, also satisfy customer needs. That is obviously not true. The definition cannot be used alone to describe quality. Finally, Garvin (1984) and Feigenbaum (1983) used *value-based* approach to define quality in terms of cost and price. Value perceived is determined in terms of the transaction; what is given and what is got. The definition is misleading, as it once again confused quality with price.

As a conclusion, it can be identified that the only decent definitions of quality reflect back to the Juran's (1974) definitions of *small q* and *Big Q*. It is not a surprise that these definitions are nowadays dominant in mainstream literature.

### **2.1.3 Small q and Big Q**

Quality is a two-folded concept. According to Juran (1998), *small q* and *Big Q* hold critical importance for quality management. Definition for each can be given as following:

- (1) "*Quality*" means those features of products, which meet customer needs and provide customer satisfaction. Quality is the relation between customer requirements and outcomes (known as *Big Q*). Quality orientates with income, as better quality and customer satisfaction aim to increase income.
- (2) "*Quality*" means freedom from deficiencies and errors that require doing work over again or that result in field failure. Quality is the relation between specifications and outputs (known as *small q* or *little q*). Quality orientates to costs as better quality usually costs less.

When explaining *small q*, it's fair to say quality is expected, not desired. *Small q* represents conformance quality. Its ontology is the relation between specifications and actual output (Lillrank, 2015). It describes how well a product, or a service has been produced to its own specifications, or how well a process operates. *Small q* is founded on the postulate that production systems should be able to do, what they are supposed to do (Lillrank, 2015). Requirements for excellence are known before, *ex ante*, the actual production. The epistemology of *small q* becomes quite straightforward: quality can be measured as a variation from specifications. Tolerances can be used to express how much deviation is acceptable. With products, it can be a physical measure. With services it is the level of abuse



a customer is willing to accept before walking away (Lillrank, 2018). A lot of variability indicates problems in *small q* management, in worst case it is a consequence of bad control (Hopp & Spearman, 2011).

*Small q* is about error-free execution and has nothing to do with other product and service attributes, such as functionality, grade and style. It is logically independent dimension (Lillrank, 2015). The approach is strongly visible in the SPC literature, where the main focus remains in processes rather than customer preferences. *Small q* is needed to manage production risks (Lillrank, 2015). When production systems have been designed, the daily management is about controlling and dealing with variability: how to detect, remove and avoid it. Mass production is not possible at the first place, if the outputs are something else than planned or designs are something that cannot be produced.

According to Crosby (1979) the standard for quality performance should be “zero defects”. When there are less variability and deficiencies, there are also less costs. *Small q*, indeed, links to costs rather than income, even deficiencies may have an effect on customer buying the product again (Juran, 1998). In a sense, *small q* is free. However, Crosby (1979) explained that it naturally costs companies to achieve quality. Yet, it costs even more when quality is not achieved. Juran (1998) and Crosby (1979) seem to agree that quality should arise from prevention, not detection. The deficiencies that occur prior the sales, increase the producer’s costs. Deficiencies that occur after, increase also customers’ costs.

While *small q* management can rely on SPC, Six Sigma and quality assurance, *Big Q* cannot. It needs to incorporate everything known to business administration. Juran (1998) argued that a true customer focus forces organization to revise their definitions of quality. When it is not exactly known, what the customer wants or what the output should look like, setting specifications becomes complex. Quality must be measured as *fitness for use*. *Big Q* ontology describes the relation between customer requirements and expectations and how they are fulfilled after experiencing the product or service (Lillrank, 2015). In common language it’s called customer satisfaction. Customer satisfaction is much more ambiguous concept than conformance to specifications. While *small q* is about execution, *Big Q* considers all, whatsoever, related to satisfaction. It can be influenced by many things, such as easiness of service, confidentiality, error-free execution, functionality, price, perceived

value and trade terms. *Big Q* major effect is in sales. Higher quality enables company to increase customer satisfaction, make products more sellable and increase the market share (Juran, 1998). Achieving higher quality usually requires investments, which why it usually costs more.

*Big Q* epistemology appears to as realm of human behavior (Lillrank, 2015). Customers' needs and wants are expressed in different ways at different times. Satisfaction can be known after, *ex post*, the deliverable has been used. The biggest challenge is requirement capture: understand customer needs and translate them into specifications. Therefore, *Big Q* deals with uncertainty; the way customer uses or experiences the deliverable is unpredictable. The concept of *Big Q* appears challenging in a sense that it is hard to define, what is considered as a quality problem. *Small q* case is clear, as specifications are set *ex ante*. If the execution does not conform the specified, there is a quality problem. In terms of *Big Q*, customers may not know, what they want, and in the end are not happy with the result. If customers cannot define their needs, garbage goes in and garbage comes out. Is it a quality problem or not? What if the customer fails to keep their part of the agreement and the service is not perceived enjoyable? Those cases can be solved as long as the scope and the requirements for suppliers are defined.

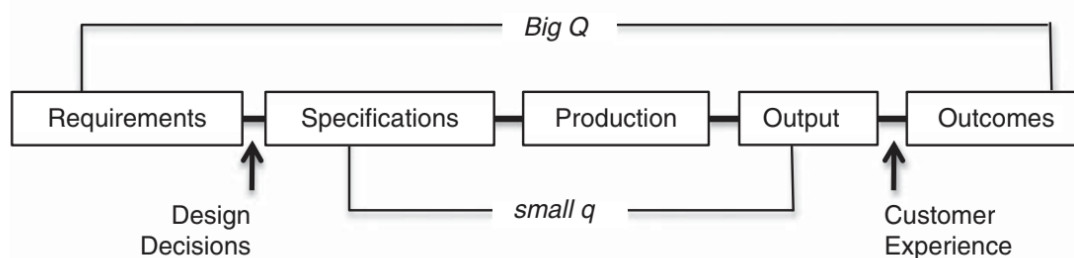


Figure 1: Big and small quality relations (Lillrank, Small and Big Quality in Health Care, 2015)

## 2.1.4 Total Quality Management

When the scope of quality expanded from *small q* to *Big Q*, the concept of TQM evolved through the works of Crosby (1979), Deming (1986), Feigenbaum (1983), Ishikawa (1972) and Juran (1988). TQM was recognized as a managerial approach with an envision of company aligning everything with quality. However, as the views to quality varied widely,

TQM never received consensus. Even these days TQM cannot be given an exact definition. According to Kujala & Lillrank (2004) most of the definitions just seem like a random collection of managerial approaches that have been erected upon statistical thinking. The research problem condenses to this cognizable issue: how do organizations manage something they cannot define?

While *small q* and *Big Q* are fundamentally different, everything quality related cannot be squeezed inside one concept. Quality management must set different targets for each. When customer satisfaction is achieved efficiently, with low costs and in conformance to requirements, there is something to call *total quality* (Kanji, 1990). Overall it makes sense that *total quality (management)* is the sum of *small q* and *Big Q*.

In contemporary literature, quality management leans on two major frameworks: (1) ISO 9000 quality standards and (2) quality award criteria (Kujala & Lillrank, 2004) such as Malcom Baldrige National Quality Award and European Quality Award. Nowadays ISO 9000 quality standards are consistent with the philosophy and practices of quality awards. It has been recognized that quality awards provide the most extensive methods and framework for approaching TQM discipline (Juran, 1996) (Ford & Evans, 2000). According to Kujala & Lillrank (2004) effective implementation of TQM requires consideration of the framework. The following management areas outline TQM scope and the means and methods by which total quality is accomplished. They reflect the current best understanding of management:

- *Customer focus*: Understanding and meeting customers' requirements and needs.
- *Leadership*: Establishing internal environment for employee involvement and alignment with business objectives.
- *Involvement of people*: Retaining and empowering competent employees, encouraging continuous enhancement of skills and celebrating achievements.
- *Process approach*: Improving performance with management and control of processes.
- *System approach to management*: Managing processes as one coherent system.
- *Continuous improvement*: Maintaining the level of performance, responding to changing conditions and identifying/creating new opportunities while sustaining an ongoing focus on improvement.
- *Factual approach to decision making*: Establishing an evidence-based decision-making process, identifying facts, examining causes and effects and considering consequences.

- *Mutually beneficial supplier relationships*: Managing relationships with partners and supporting involvement by providing feedback.

While current literature provides plenty of reasons, why organizations should implement TQM programs, it must be though acknowledged that the benefits arise from well managed *small q* and *Big Q*, not randomly through some general management philosophy. The benefits can be summarized into three things: better financial performance, delighted customer and empowered employees (Juran, 1998).

Customer delight might be the most obvious as organizations exist to serve customer needs. All companies say that are customer focused, however, they are not. Companies tend to focus on their internal operations and keep believing customer satisfaction means freedom from deficiencies and avoidance of dissatisfaction. However, that is not the meaning of *Big Q*. Customer satisfaction arises from features, which induce customers to buy a product, while customer dissatisfaction has an origin in deficiencies and explains why customers complain (Juran, 1998). The objective of *Big Q* is to make customers satisfied, no matter what; well, in the limits of profitability.

The benefits of better financial performance arise from increased profits i.e. increased sales and decreased costs. Higher income is usually achieved with satisfied customers, improved customer retention, and premium prices (Juran, 1998). Increasing income through quality improvements usually starts by setting new goals, such as new product features or shorter cycle times. Benefit for lower costs instead results from keeping the cost of poor quality as low as possible with minimal investments. Costs of poor quality appear as internal and external failure costs (Juran, 1998). Internal failure costs are those associated with nonconformities to meet explicit requirements. These costs relate to *small q* and would basically disappear, when there were no deficiencies and variability. They consist of scrap, rework, lost or missing information, failure investigations, downtime, delays, corrective actions, design changes or non-value activities (Juran, 1998). External failure costs associate with deficiencies that are found after the product has been delivered to customer. They also include lost opportunities for sales revenue, when customers are not satisfied, or company gets bad reputation for poor quality. External failure costs include warranties, returned material, rework on support operations and complaint adjustment.

Juran (1998) and many other authors (Adam;Hershauer;& Ruch, 1981) (Ishikawa, 1976) (Garvin, 1983) have recognized that achieving cost and sales benefits depend on one thing: empowered employees. Managers must realize that all action in organization cannot be predefined and controlled. Employees must be empowered to act according to common sense and make decisions independently, when there is no right answer or things go out of the scope of *small q*. It links directly to organizational culture, as what guides and drives action beyond control, is culture.

## 2.2 Defining organizational culture

Cultural change can be considered as the most effective way to implement quality practices, as it requires changes in beliefs and ways of working (Rad, 2006). Researchers seem to agree that culture guides the behavior in organization (Schein, 2004) (Sathe, 1983) (Bass, 1993) (Berger & Luckman, 1967) (Goffman, 1959) (Polanyi, 1958), even though culture itself is not recognized as a behavioral thing (Schein, 2004). Managers can control human behavior into some extent. *Per se, purposeful action* is about control and systematic conscious design. Managers can provide instructions and guidelines how to perform the job. Many of the standards and controls are taken for granted and part of culture. People do not even notice them. However, everything in organizations is not controllable. Managers cannot supervise everything and sometimes the provided instructions are not applicable. Culture is in charge of behavior, when things go beyond management. It provides a basis for something one may call “your own judgement”.

In current literature, culture is seen as an interdisciplinary phenomenon with contributions from psychology, sociology and anthropology (Lewis , 1998). The predominant theories of organizational culture are strongly influenced by the work of Edgar Schein. He defined culture of a group as (Schein, 1990):

*“a pattern of shared basic assumptions that was learned by a group as it solved its problems for external adoption and internal integration that has worked well enough to be considered valued and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems”.*

Schein (2004) argued that culture forms in two different ways. It can be either created by a *founder* who imposes his/her visions, goals, believes, values and assumptions about how

things should be or by a *new leader*, who challenges the founder's existing assumptions (Schein, 2004). The latter can be also called as emergent leadership, as it allows situational leadership to emerge beside the situational determinants (Yammarino & Bass, 1991) (Bass, 1990). In either case, only if the resulting behavior leads to success i.e. task can be completed, people feel good about it and wanted results are achieved, founder's or new leader's values will be reinforced and recognized as shared (Schein, 2004). When the reinforcement of successful beliefs continues, they become taken for granted and part of groups' and individuals' identities (Schein, 2004) (Bass, 1993). In social sciences and social psychology, the phenomenon is discussed as *collective identity* (Polletta & Jasper, 2001), where individuals create a sense of belonging to a group (Melucci, 1995).

### **2.2.1 Characteristics of culture and cultural dynamics**

Culture has four characteristics, which influence the way individuals behave in organizations: *structural stability*, *depth*, *breadth* and *integration* (Schein, 2004).

When something is "cultural", values or assumptions are not only shared, they also define the group (Schein, 2004). For example, people may use phrases "the way we do things around here" (Deal & Kennedy, 1982) or "this is how we think at Corporate X". Culture is hard to change mostly because members value the *stability* and meaningfulness the culture provides (Schein, 2004), but also because culture reflects behaviors and values that have worked in the past (Schwartz & Davis, 1981). Culture is also most of the time the *deepest* and the most unconscious part of the organization (Schein, 2004). It appears as a mechanism of social control by manipulating members into behaving and thinking in certain ways (Schwartz & Davis, 1981). Its *breadth* influences all aspects of the company (Schein, 2004). Most common mistake in culture definition, is to limit it to internal workings of a company. However, culture covers also mission, strategy and basic operational processes (Schein, 2004). Also, companies should not label things, such as formal *philosophies* or *values*, as manifestations of culture. They are not, if there is no stability (Schein, 2004). Finally, it can be recognized that culture *integrates* various elements into larger paradigm such as rituals, norms and behaviors. The need for integration arises from human need to make the environment sensible (Weick, 1995). Disorder and senselessness make people

distressed, thus they will develop more consistent and predictable views of how things are and how they should be (Schein, 2004).

Culture is a dynamic phenomenon (Schein, 2004). It surrounds individuals and teams, being constantly shaped by interactions and leadership behavior (Schein, 2004) (Bass, 1993). Existing organizational culture will set limits on the forms of leadership, which may emerge (Bass, 1985) (Schlesinger & Oshry). Trying to lead in a different manner or challenging the existing norms, will almost always result in resistance (Schwartz & Davis, 1981). However, if a group runs to adaptive difficulties in changing competitive environment, there becomes a point, where the validity of existing assumptions is set under debate. The norms and values that are not capable to lead the company into success, will be removed and replaced with new ones. Thus, culture is akin to evolution. There is constant trial and error, and survival of the fittest.

### **2.2.2 Observing the culture in organizations**

Schein (2004) explains that culture can be explored at three different levels. Levels represent the degree to which the cultural phenomenon is visible to observer. These levels are presented in Figure 2.

*Artifacts* are the surface of culture. Artifacts includes the parts of organization that people can see, hear and feel when they encounter a new group with an unfamiliar culture. Artifacts are visible, such as organization structure, dress code, incentives (Schein, 2004), heroes, myths (Ott, 1989), rituals, and various physical objects (Hatch, 1993).

*Espoused values* instead reflect, what the organization wishes ideally to be and the way it wants to present itself in public (Schein, 1996). Espoused values provide deeper understanding to organization operating principles. They include such elements as official objectives, declared norms and operating philosophies (Ehlers, 2009).

Tacit, *basic assumptions* are the essence of culture (Schein, 2004). They are the unconscious influencers, which tell the members how to perceive, think and feel (Schein, 2004). Basic assumptions are self-evident, and one can barely find variation within a social unit. Questioning basic assumptions is usually experienced as not-acceptable (Schein,

2004). For example, an organization may condemn a person who disputes and neglects safety in high-risk environments.

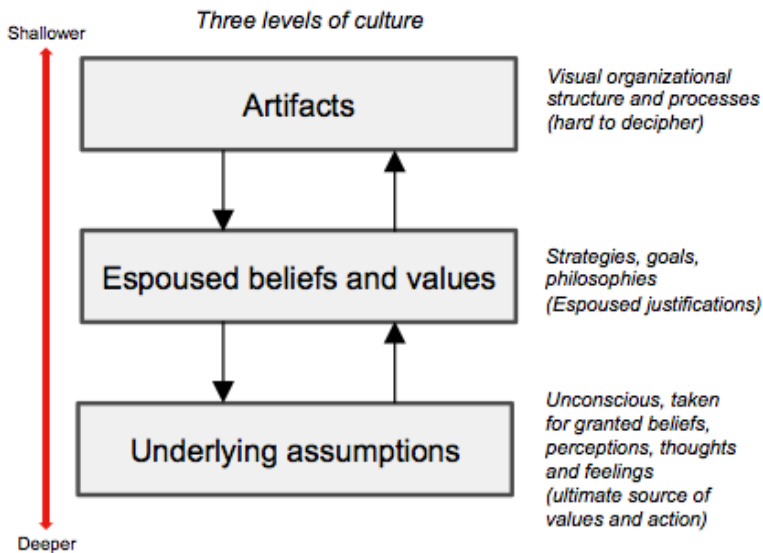


Figure 2: Levels of culture (Schein, *Organizational culture and leadership*, 2004)

Basic assumptions are the ones that set limits for human behavior. People may start to exaggerate safety and pay more attention to it than usual. They feel they are supposed to do so. In an analogous manner, quality can have a similar position. In these days, many organizations may declare that they are customer oriented. However, if that value is not taken for granted and stable, it does not have an impact on behavior. When it comes to this study, one must recognize that a quality conflict (small q – Big Q discrepancy) at the level of basic assumptions will also hamper everything else. It is important that leaders become conscious of the culture, in which they are embedded, otherwise the culture will manage them (Bass, 1993).

## 2.3 Defining quality culture

When quality is embedded in culture, there is something to call *quality culture*. Quality culture is not independent, it is part of organizational culture. It is a way of life, where organizational practices and behaviors reflect quality principles (Malhi, 2013) and quality is experienced as a personal value rather than bureaucratic edict. *Quality culture* conforms the same dynamics as any culture, it can be shaped a transformed. However, when



transforming *quality culture*, special attention must be paid to the content of quality management. Quality culture appears good, only if it fits the context, i.e. the objective conditions of the industry or business strategy (Schein, 2004). The better the quality culture fits, the better the performance becomes.

### 2.3.1 Quality culture basic assumptions

In order to have *quality culture*, certain basic assumptions need to be present. Kujala & Lillrank (2004) draw an important conclusion: while organizational culture is a collection of mutually compatible basic assumptions (Schein, 2004), TQM basic assumptions building up such a structure, form a quality culture. Therefore, *total quality management* is the foundation of *quality culture*. Based on Schein's (2004) initial list of basic assumptions in *organizational culture*, Kujala & Lillrank (2004) provided a theoretical background for basic assumptions in quality culture. These basic assumptions are presented in Figure 3. The basic assumptions have a base in TQM principles, ISO 9001:2000 and Malcom Baldrige Quality Award Criteria. The same core principles are still valid and applicable.

**Table 2** Total quality management basic assumptions (quality culture).

<p><b>1. Organization's mission and relationship to nature</b></p> <p>1.1. Proactive and harmonized relationship to the environment: An organization should continuously scan its external environment to proactively respond to the needs of external stakeholders, specifically those of the customer.</p> <p>1.2. Customer dominating in supplier chain relationship: An organization should respond to the needs of all stakeholders, but the customer has a dominant role and priority when setting organizational objectives. This also applies further down in the supplier chain, where an organization has a dominant role in relation to its suppliers/partners.</p>
<p><b>2. The nature of reality and truth</b></p> <p>2.1. Objective physical reality dominating: Scanning of internal processes and external environment produces context independent and objective information, which can be used as a basis for decision-making process. Objective physical reality is limited and shaped by quality ideology.</p> <p>2.2. Continuous improvement by analyzing objective facts: It is beneficial for an organization to continuously improve the organizational processes. This improvement should be based on the analysis of objective information.</p>
<p><b>3. The nature of human nature and relationship</b></p> <p>3.1. The basic nature of human good: All employees, by nature, have an endogenous will and motivation for good work; they are capable of improving themselves, and employees align their personal objectives to comply with those of the organization.</p> <p>3.2. Central role of senior management: Senior management has a key role in ensuring organizational effectiveness, and they have the legitimacy to set organizational objectives.</p> <p>3.3. Teamwork is more valuable than individualism: Teamwork across functional and legal boundaries of the organization is required to manage and improve organizational processes.</p>
<p><b>4. The nature of time and space</b></p> <p>4.1. Future orientation—time to wait for results: Organizational stakeholders prefer to have long-term relationships and they have the patience (and resources) to wait for results.</p> <p>4.2. Efficiency through planning and coordination: An organization is a set of interrelated parts and in order to improve overall effectiveness, activities should be carefully planned for coordination and alignment.</p>

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**Figure 3: Total quality management basic assumptions (Kujala & Lillrank, 2004)**

Kujala & Lillrank (2004) argued that while TQM implementation is related to discrepancies between the existing organizational culture and the ideal quality culture, cultural transformation will more likely to succeed, if the culture is compatible with values and basic assumptions proposed by the TQM discipline. There is a threat of failure, if quality management doesn't have a sound theoretical basis. Focusing on wrong things, makes management a random action without rationality. It leads to the idea that quality, as a two-folded concept, should be discussed in a similar way in cultural context.

### 2.3.2 Total quality culture - identifying the cultures of *small q* and *Big Q*

Existing literature has identified different forms of quality cultures based on their dominant features, such as *error detection culture* (Cameron & Sine, 1999) or *statistical control culture* (Garvin, 1988). Approach in this study is very different. While *total quality management* is the sum of *small q* and *Big Q*, there must exist forms of quality cultures that together create something to call *total quality culture*. Following the logic, *total quality culture* must be the sum of distinct *cultures of small q* and *Big Q*. Both of which shall hold critical importance for company's performance.

The term *total quality culture (TQC)* was presented first time by Kanji & Hiroshi (1997), based on TQM key principles and cultural comparison between UK and Japan industries. The key elements of TQC are presented in Figure 4. It appears TQC model complements *Big Q* key features with control aspects of *small q*. In this study TQC model will be used as reference.

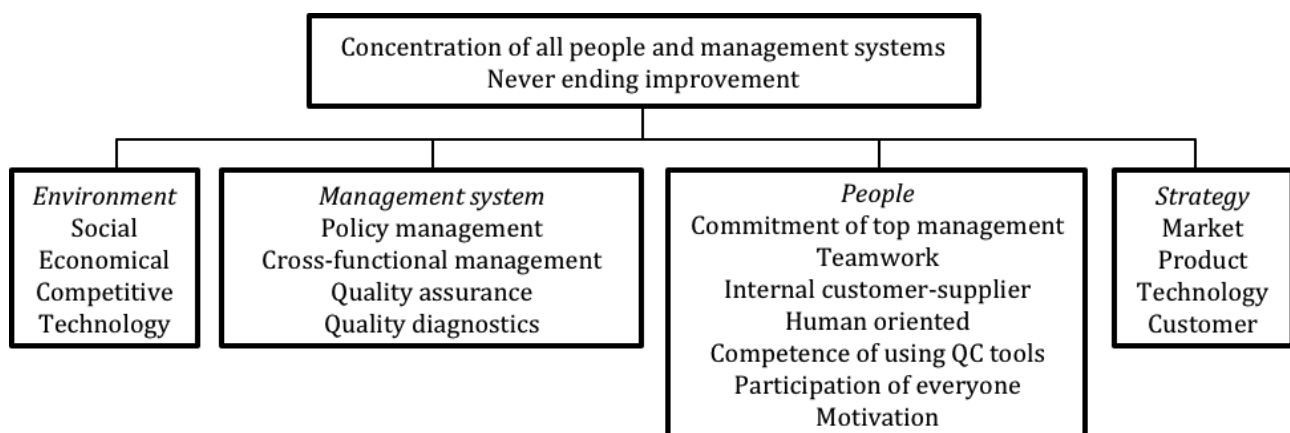


Figure 4: A model of TQC (Kanji & Hiroshi, Total quality culture, 1997)

Accordingly, this study identifies that *quality culture* can emerge in four forms: (1) *Absence of quality culture* (2) *small q culture only* (3) *Big Q culture only* (4) *total quality culture*.

(1) *Absence of quality culture* is used similarly to that of Cameron and Sine (1999). It describes a culture where neither *small q* or *Big Q cultures* appear strong. (2) *Small q culture only* is used to describe a culture in which *small q* appears strong and *Big Q* remains weak. (3) *Big Q culture only* in contrast is a culture with strong presence of *Big Q* and weak presence of *small q*. (4) *Total quality culture* describes a culture, where both *small q* and *Big Q cultures* are present and strong. There are, however, some boundary conditions. In this study, it assumed that *Big Q* is more favorable for success through increased revenue than *small q*. In contrast *small q* is more favorable for success through reduced costs. The features of *Big Q culture* that appear contradicting to *small q culture*, will be outranked in *total quality culture*. The characteristics of all four cultures are summarized in the Table 1 below.

**Table 1: Forms of quality cultures**

Absence of quality culture	Small q culture
<ul style="list-style-type: none"> <li>Quality is not visible or an organizational priority</li> <li>High cost of poor quality</li> <li>Low customer satisfaction</li> <li>Quality is not systematically measured</li> <li>Organization is not focused on customers or responsive to customers</li> </ul>	<ul style="list-style-type: none"> <li>Quality is technical</li> <li>Inward orientation: Quality as conformance to requirements, stability and control</li> <li>Low cost of (poor) quality</li> <li>Flaws in customer satisfaction</li> <li>Departments over business - thinking</li> <li>“Things-gone-wrong” and punishments</li> </ul>
Big Q culture	Total quality culture (TQC)
<ul style="list-style-type: none"> <li>Quality is strategic and creates competitive advantage</li> <li>Outward orientation: Quality as customer satisfaction</li> <li>High customer retention and satisfaction</li> <li>High cost of poor internal quality</li> <li>e.g.</li> </ul>	<ul style="list-style-type: none"> <li>Quality is technical and strategic</li> <li>High customer satisfaction</li> <li>Low costs of (poor) quality</li> <li>Quality belongs to everyone and is top a management priority</li> <li>Business over departments – thinking, good cross-functional co-operation</li> <li>“Things-gone-right” and rewarding</li> </ul>

The details of these distinct cultures appear quite straightforward. *Absence of quality culture* means that quality is not visible in an organization. Quality management has failed with both *small q* and *Big Q*. As a result, there is high cost of poor quality and low customer

satisfaction. The organization is not able to keep customers loyal, which also impacts on sales. This form of *quality culture* is assumed to be the least favorable for any organization. Absence of quality culture could be found for example in the Soviet Union and currently in some public organizations.

*Small q culture* appears in a company, which most likely has succeeded to manage *small q*, but not *Big Q*. *Small q culture* creates an inward focus, where conformance to requirements is the most valued priority. The company measures the success in terms of quality costs; especially internal and external failure costs. All sort of waste and rework is to be minimized. *Small q* culture drives towards efficiency, smooth processes, coordination and control, where the main target is to “do things right”, remove variability, and work in accordance to defined rules. It can be described as a culture of bureaucracy.

*Small q culture* is assumedly visible at manufacturing plants and in companies that require high reliability; such as air carrier’s technical departments or nuclear power plants. Deviations from targets may have catastrophic consequences. There are instructions and guidelines that must be strictly followed. People are rarely making exceptional actions. If there is no rule available, the option is either to follow the closest rule, or do nothing. So, there are risks, but only little uncertainty. This internal focus reflects also to customer satisfaction. Purpose of employee action is to satisfy supervisor rather than customer. It is considered that providing customers, what they specify, is enough. Delivering any extra is seen as an unnecessary cost. Because of this, it is likely that customer satisfaction has flaws and the company struggles keeping the customer loyal. There will be also high cost of lost business. Yet, in some cases, like in nuclear power plants, there are no customer satisfaction upsides. The lights are either on or off. While quality is seen rather as a technical issue than as a business issue, top management is likely to thrusts quality management to quality professionals (Juran, 1990).

*Big Q culture* is not as straightforward as *small q culture*. While some of the literature does not make a clear distinction between *Big Q* and *total quality* (Cameron & Sine, 1999) (Scott;Lundgren;& Thompson, 2011) (Scott;Lundgren;& Thompson, 2011) (Schonberger, 1995), in a cultural context the difference arises stronger. There is a grey area. What is *Big Q* is well managed and strong, but *small q* is not? Logically thinking, this kind of company

would emphasize customer satisfaction as top priority, but there would be lot of variability, as internal operations would be a chaos. Customers appear satisfied, even all the promises cannot be kept, like schedules. Managers aim to satisfy single customers with situation-specific actions, but when there is little *small q* management, things tend to get out of hand frequently. While customers are important, the producer must hustle and scramble. There will be a lot of uncertainty, waste and costs of poor quality, as things are not in control.

*Big Q culture* appears to be broader concept than *small q culture*. Customer satisfaction is not defined by company's internal standards. There isn't always a precise or right way to behave. While culture is about filling the gaps beyond the instructions and procedures, role of individual judgment grows with *Big Q* issues. In *Big Q culture*, it would be typical that a company pays more attention to satisfaction itself, rather than the way the satisfaction is achieved. Well, at least as long as the business stays profitable.

Achieving TQC requires that a company successfully manages both *small q* and *Big Q*. Quality is not only a technical problem, it is an element giving competitive advantage. A company with TQC manages to have high customer satisfaction and low costs of poor quality. This form of culture is expected to be the most favorable for any company.

In this study, it is assumed that the case company is not successfully managing both *small q* and *Big Q*. Therefore, there exists no *total quality culture*. If this assumption turns out true, the focus must be shifted to factors that may counter and support cultural transformation.

## **2.4 Managing cultural change**

In current literature, there exists many competing approaches to cultural change management. Writing about cultural change is actually a daunting task. As to cultural change, there is hardly a clear beginning, nor an end. Very often, cultural change is not visible to observers (Bass, 1993). Managers can hardly concretize, what the change is; and generally, after the change, individuals can barely recognize, what has changed. Even cultural change depends on many things and can happen through various mechanisms, the most critical element for achieving any desired change, is *purposeful action*. While success rarely happens randomly, achieving *total quality culture* requires an organization to make

rational decisions regarding quality. In other words, quality management must be *purposeful*: an activity that strives to organize things that will not happen spontaneously through evolution or collective action (Lillrank, 2018).

### **2.4.1 Requirements for purposeful action: know, can and want**

By definition, *purposeful action* means a specific style of behavior that is appropriate to achieve the given goals, within the defined limits by given conditions and constraints (Simon, 1972). Purposeful action is in battle with variability. When an activity has some purpose, there is a chance of making a mistake. To avoid mistakes, there must be control and knowledge of how the world works. Hackman & Oldman (1980) present that the behavioral prerequisites of purposeful action arise from the psychology of work. Before individuals can do anything purposeful, they must: *know, can* and *want*.

*Know what to do* means do people have an idea, what needs to be done in a particular context (Lillrank, 2018). If the context is very particular, then *know what to do* is delivered by the production control system. It is a question of cognitive control of behavior for attaining chosen goals. When knowledge is available, and something makes sense, people are more likely to act (Lillrank, 2018). *Know what to do* can refer to knowledge of results (Hackman & Oldham, 1976), logic of action or utility.

*Know* is preceding for *can*. If there is no knowledge, individuals or groups *cannot* do anything rational. *Can* refers to having the needed *social, technical* and *economic* resources, capabilities and conditions to act. *Can* does not consider only what is doable and technically possible, but also what is affordable and acceptable to do (Lillrank, 2018).

*Want* arises from the job characteristics theory: the work should be experienced as meaningful, valuable and important (Faturochman, 1997) (Hackman & Oldham, 1976). In human mind *want* is affective and deals with motivation, emotions, and preferences. It drives people to ask: do I want to do this? What is in it for me? In individual's point of view, work after all, is a transaction where a work is done against a reward. In the end, if there is no reward, there is no transaction. Individuals may also feel encouraged or prohibited or find there are risk of consequences. Both of those impact their motivation to act. In the matter of

culture, *want to do* has an interesting role. Individuals may want to do as they are told, or they might want to go even beyond that and contribute voluntarily to goals, objectives or the mission of the company - even when those were not specified tasks for them.

Faturochman (1997) argues that individual must experience all these psychological states and have the right resources, if desired outcomes are to emerge. If some resources are missing or some psychological state is not present or appears weak, several outcomes will be weakened as well. Looking at the *know*, *can* and *want* dimensions, a conclusion can be drawn: It is essential to find out, does the customer company have adequate knowledge to make the right decisions. Proving the research hypothesis true, fights against rational action. If knowledge of quality is bounded, there is a problem that will also resists cultural change. Fixing the problem requires not only building sound theoretical basis, but also change management and exploitation of mechanisms that contribute to cultural transformations.

#### **2.4.2 Mechanisms for cultural change**

Development of organizational culture is a slow process, which can occur through various mechanisms. According to Schein (2004) there are five of them: A) natural evolution, B) differentiation, C) guided evolution, D) managed change and E) mergers and acquisitions. The way the culture can and does change still depends on the state the company finds itself (Schein, 2004). It is common that mature organizations find less time to let the evolution occur naturally. Managers in those organizations want to manage cultural changes. That is the story behind this study as well.

Schein (2004) has used a term *managed cultural change*, when the culture is more or less forced through managerial actions. Leaders can impact on several factors in organizations. The ones that have an influence on culture, are identified as *primary* and *secondary mechanisms*. The primary mechanisms are visible artifacts of culture and they create the concept that typically is called as organizational *climate* (Schneider, 1990) (Ashkanasy; Wilderom; & Peterson, 2000). Schein (2004) has summarized the factors as following:

- 1) Object of management attention, things managers measure and control

- 2) Resource allocation, things in which managers invests
- 3) Role modeling, things managers teach and coach
- 4) Rewarding and status allocation, what things deserve to be rewarded
- 5) Recruitment and promotion, where new positions are needed

The secondary mechanisms are also called as “reinforcement mechanisms” as they work only if they are consistent with the primary mechanisms (Schein, 2004). Secondary mechanisms are also highly visible, but they might be difficult to interpret without insider knowledge of leaders’ actual behavior. The role of secondary mechanisms is significant in mature organizations. Secondary mechanisms consist of following:

- 6) Organizational design and structure
- 7) Systems and procedures
- 8) Design of physical spaces and buildings
- 9) Formal statements or organizational philosophies
- 10) Rituals and stories of important events and people

These primary and secondary mechanisms are not all-inclusive. Regarding *managed change*, literature has recognized many other critical things, such as: communication (Sathe, 1983) (Schein, 1988) (Kotter, 1995), provision of new direction through vision or justification of behavior (Sathe, 1983) (Kotter, 1995) and destruction of undesirable assumptions (Bass, 1993). However, there is no explicit, right answer how to make cultural transformations. The bottom line is that leaders must become aware of the elements their culture contains (Willcoxson & Millett, 2000) and try to figure out what is missing. Unfortunately, when it comes to *quality culture*, focus on above-mentioned change mechanisms is not enough. An organization must consider how to influence on quality cultures’ *basic assumptions* i.e. how to implement TQM.

### **2.4.3 TQM implementation: the critical success factors**

Several authors over the years have identified similar aspects critical for successful TQM implementation. Some of them are in line with Schein’s (2004) cultural change mechanisms. An extensive literature review was carried out to identify the key enabling elements. The



writings of quality gurus (Crosby, 1979) (Deming, 1986) (Juran, 1998) (Ishikawa, 1976) (Feigenbaum, 1983) (Garvin, 1988) and several others (Porter & Parker, 1993) (Saraph;Benson;& Schroeder, 1989) (Beer, 2003) (Malhi, 2013) (Kanji, 1990) (Leonard & Sasser, 1982) were considered in this review. The key findings are summarized in Figure 5 and explained below.

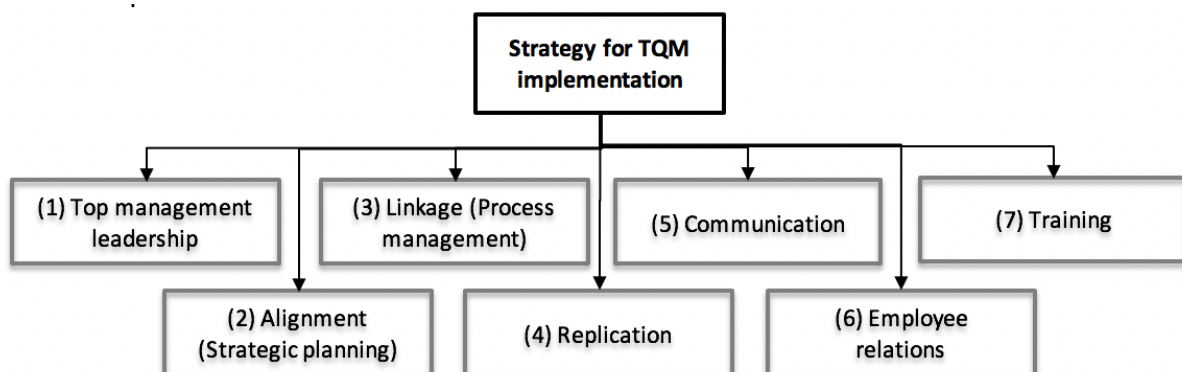


Figure 5: Critical success factors for TQM implementation

### (1) Top management leadership

The role of management tends to emerge no matter what organizational issue or phenomena is discussed. Porter & Parker (1993) argue that *management behavior* is the single most important factor for successful TQM implementation. Management behavior means a clear leadership, where senior management demonstrates their commitment, support, personal concern and participation to TQM (Leonard & Sasser, 1982) (Porter & Parker, 1993). Juran (1998) suggests that managers should take charge for managing quality and recognize that certain responsibilities are not delegable. In more concrete level desired managerial actions may include such actions as: setting quality programs and policies (Garvin, 1983) (Garvin, 1988) (Juran, 1998), specifying quality goals (Crosby, 1979), making comprehensive quality planning (Saraph;Benson;& Schroeder, 1989) and shaping employee attitudes for participation (Garvin, 1988) (Garvin, 1983).

Management's role is to build one unanimous voice and set quality as a key strategic issue (Porter & Parker, 1993) (Beer & Eisenstat, 2000). Unfortunately, far too many companies expect that preparing and distributing plans to selected number of managers would make

things change. Nothing could be further from the truth. If the management passively complies with some corporate quality policy and programs for political reasons, the efforts are more likely to fail and be ineffective (Beer, 2003). Likewise, top management should not see the effort just because every other company has done so.

Management involvement holds also several other issues. First, organizations must make sure, management understands and agrees the objectives and methodologies of TQM (Kanji, 1990) (Juran, 1998). Second, companies that view TQM as “optional extra” tend to fail in their transformation efforts (Porter & Parker, 1993). TQM should be seen as positive business strategy and managers must be willing to make upfront investments to it before the return can be seen (Porter & Parker, 1993). Third issue is management style. Especially Deming (1991) has pointed out many prevailing things that should be forgotten in order to break out the “management prison”. One of them is management by results. Management by result is action for outcome, not for cause. It is not rational, rather random, and does not lead into good results.

## **(2) Alignment (strategic planning)**

*Alignment* stands for strategic planning. Byrne (1996) has found business strategy to be the single most important management issue according to number of executives, consultants and professors. Companies need strategy to focus on the right issues. When strategy is correct, resources, goals and activities must be aligned with it (Juran, 1998). Juran (1986) and Monden (1982) have identified that companies failing in TQM implementation, have problems in some of the following areas: strategic goal setting, infrastructure and resource provision or upper management involvement on strategic planning.

These issues are quite straightforward. Organizations need resources to carry out plans and to meet the goals. Juran (1986) says the organization must make sure they reserve resource on right things that are in line with the company policies. Infrastructure refers to organizational structure that enables meeting the strategic quality needs. Issues may arise, if organization structure serves various local needs: divisions, functions, factories and quality is delegated to autonomous divisions (Juran, 1986). In goal setting, organization tend to perpetuate the sins of the past, as traditionally they base it heavily on past performance. If

managers have met the budget, wasteful processes are not challenged. Business plans should include new quality improvements, as quality is a moving target. Deming (1986) and Juran (1986) have warned about some pitfalls in goal setting. Especially numerical goals should be avoided, as it represents *management by results* (Deming, 1986). It is also important to separate the goals related to income and cost oriented quality (Juran, 1986) as those differ by their conceptual approaches.

The key points of alignment can be summarized as following (Crosby, 1979) (Juran, 1998) (Saraph e. al., 1989):

1. Create a clear vision, where the company is going and communicating it to everyone in the organization.
2. Define a strategy for implementation and provide definitions for key objectives. Specific objectives and requirements must be determined to realize the company vision.
3. Translate of the key objectives throughout the organization. Everyone must know their role for achieving the objectives.

### **(3) Linkage (process management)**

In common language *linkage* means process management. Process thinking is a crucial element for understanding, how the work is done in organizations. There exist linkages across the organization, as the business is very likely to have cross-functional structure. Process management and systems are the key part for total quality strategy (Porter & Parker, 1993). According to Juran (1998) the single most important word in the definition of process is “customer”. Customer sees the organization in terms of outputs of the processes. Customers do not care, how the company is organized. They care they delivered exactly what they are promised and according to all requirements that have been agreed upon (Juran, 1998). If a process is not producing value for the customer or the organization, it is producing waste. Porter & Parker (1993) have found that one of the most significant sources of difficulties in process management is the actual *management*. In usual case, there exists a lack of leadership and ownership outside the quality department.

The critical steps for process management are identified as following:

1. Identify and document organization’s key processes and communicate them to everyone.

2. Create necessary measurements, especially the ones that relate to customer satisfaction.
3. Manage the linkages by structural changes, assigning process owners and realigning authorities, responsibilities and accountabilities.

#### **(4) Replication**

Excellence or making a dramatic difference is not possible, if the company is not able to replicate its success (Juran, 1989). Juran (1998) argues that replication or successful ways of working should be forced through an organization for example with encouragement or obligations. Many successful companies have used passive systems for encouragement. These methods include e.g. rewarding and recognition shared widely throughout the organization (Juran, 1989). They indicate desired behavior; therefore, they accelerate and reinforces it (Malhi, 2013). An important concept to learn about replication is resistance to change. Juran (1998) calls it as “not-invented-here syndrome”. Every group recognizes themselves as special and show reluctance to do anything that is not invented by them (Kotter, 1995) (Schein, 2004) (Juran, 1989). For example, multiple functions, multiple levels in hierarchy or multiple product lines may conceal such an issue. Each function may attempt to optimize their own goals over the business goals. The levels in hierarchy allow people to have different responsibilities, experience and training. Multiple production lines form a large and complex system. Each production line differs in market, technology and restraints. Associated beliefs in uniqueness constitute a serious obstacle to unity of direction (Juran, 1986). In order to overcome these problems, the company must find a universal way of thinking. This way of thinking must fit all functions, levels and product lines.

#### **(5) Communication**

Communication is a way to raise the quality awareness and reinforce the essential messages. Communication should be viewed as ongoing process. What stands out in studies, are the specific characteristics of communications. Messages communicated, should be in line with organizational vision, goals and core values. The studies have found that communication should be also effective (Porter & Parker, 1993) i.e. regular and consistent. Executives should repeat the same message over again, and to be more convincing, act accordingly to it. The effectiveness is improved, if variety of media and channels are utilized (Porter & Parker, 1993) (Kotter, 1995).

## **(6) Employee relations**

Culture is something that concerns everyone in the organization. Involving employees is a key determinant for culture. Porter & Parker (1993) argue that unless everyone is involved, there is a major cost of lost opportunity. There are many views on how employees should participate. Garvin (1983; 1988) and Leonard & Sasser (1982) discuss the importance of involving employees at all levels and in all functions. Ishikawa (1976) argues employees should participate in quality problem solving while Anthony et al. (2002) advocate quality related decision making. Studying employee participation in TQM has revealed that the participation should be neither optional nor mandatory (Porter & Parker, 1993). When the participation was optional, there was a great loss of quality improvement opportunities. However, the mandatory aspect made employees unwilling to participate. The solution for participation was found to be a strong leadership, which motivated employees to participate (Porter & Parker, 1993). Condensing the economic nature of work, it's no surprise that rewarding and recognizing employee contributions becomes important for driving motivation. Both mechanisms, monetary and non-monetary, are seen necessary (Porter & Parker, 1993) (Adam;Hershauer;& Ruch, 1981).

## **(7) Training**

Many authors have recognized the significance of training for quality management implementation (Adam;Hershauer;& Ruch, 1981) (Crosby, 1979) (Deming, 1986) (Garvin, 1983) (Ishikawa, 1976) (Leonard & Sasser, 1982). Yet, different authors have emphasized slightly different things. In current literature researchers seem to at least agree that training should cover all employees in the organization, not only the ones whose title contains a word "quality". Just like communication, training should be an ongoing process (Porter & Parker, 1993). There might not be right answer on what should be trained. Instead it may be a question of fitness for use (Porter & Parker, 1993). For Average Joe, a general awareness training may be enough and sufficient. Then again, extensive training might be needed for managers to become sensitive for culture. The content can be roughly divided to strategic and tactical quality management (Juran, 1998). The strategic part includes e.g. quality culture, employee empowerment, customer focus, collaboration and rewarding. In contrast,

the tactical side includes e.g. quality process (improvement, planning, control), quality tools, cost of quality, inspection and statistical methods.

## **2.5 Literature summary**

The purpose of the literature review was to provide a framework of reference to a complex phenomenon called *total quality culture*. The fundamental obstacle in achieving quality culture is assumed to arise from conceptual confusion *small q* and *Big Q*, and neglect of one or both of them in quality management. From different forms of *quality cultures*, *total quality culture* is assumed to be the most favorable. It is a culture that reflects strong presence and management of *small q* and *Big Q*. *Total quality culture* cannot be formed without comprehensive quality management and necessary basic assumptions. In order to achieve it, companies must make rational decisions and act purposefully. Prerequisites for purposeful action arise in conditions, where individuals *know*, *can* and *want*. The identified success factors for cultural change and TQM implementation can be studied as mechanisms, which allow favorable conditions to emerge.

## 3 Research strategy

This chapter proceeds to describe research strategy and methods. The chapter consists of five sections. First, a framework for research design is presented and explained in detail. Second section justifies the methods for data collection and sampling. Third and fourth sections provide methods for data analysis and evaluate the reliability and validity of the study. The chapter is finalized with an overall review and evaluation of the research process. Findings of the empirical study are presented after this chapter.

### 3.1 Research design

This study uses “Research Onion” presented by Saunders, Lewis and Thornhill (2009) as a reference for making research design decisions. The onion approach describes the stages and decisions through which a researcher must pass when composing a sufficient methodology. The onion consists of six layers as described in Figure 6 below. The decisions made for this study are marked. Five first layers will be discussed next in this section. The most inner layer, data collection and analysis, is discussed in sections 3.2 and 3.3.

The first, uttermost, layer stands for the research philosophy. It outlines the underlying perceptions of the nature of knowledge and is used to explain the type of knowledge the study investigates (May, 2011). Philosophy represents the beliefs that are concerned with the studied reality (Bryman, 2012). Underlying assumptions of the research philosophy provide a justification for how the research should be undertaken (Flick, 2011), what kind of data should be gathered and how to transform things believed to things known, *doxa to episteme*. The research philosophy of this study appears a bit tricky. At the first glance the study is closest to interpretivism as the purpose of the study is to understand through subjective interpretation. The ontology states there is no single reality and the reality is created by individuals in groups. According to the philosophy epistemology, a researcher has an influence on the phenomena they study, as the reality can be interpreted in many ways. The philosophy aims to discover the underlying meaning of events and activities.

Nonetheless, Smircich (1983) and Saunders et al. (2009) have discussed the objectivism-subjectivism debate in the context of organizational culture. Subjectivism says culture “is”.

Culture used as a root metaphor shifts the focus to culture’s nonconcrete status and creates a greater ambiguity. It promotes culture through symbolic and expressive aspects in human consciousness. It leads to discuss culture as subjective experience. Objectivism instead, would say culture as something organization “has”, thereby creating a concrete structure. In this study, culture is assumed to be something that can be manipulated and changed. Therefore, it leans to objectivism. However, the objective of this study is to provide knowledge that is useful for achieving change. Pragmatic approach seems to fit for the purpose. The ontological reality is constantly debated and interpreted in the lights of usefulness in new situations. The reality builds on methods that solve the problems the best. However, in this case, the best methods can be validated in the precise context after a long period of time.

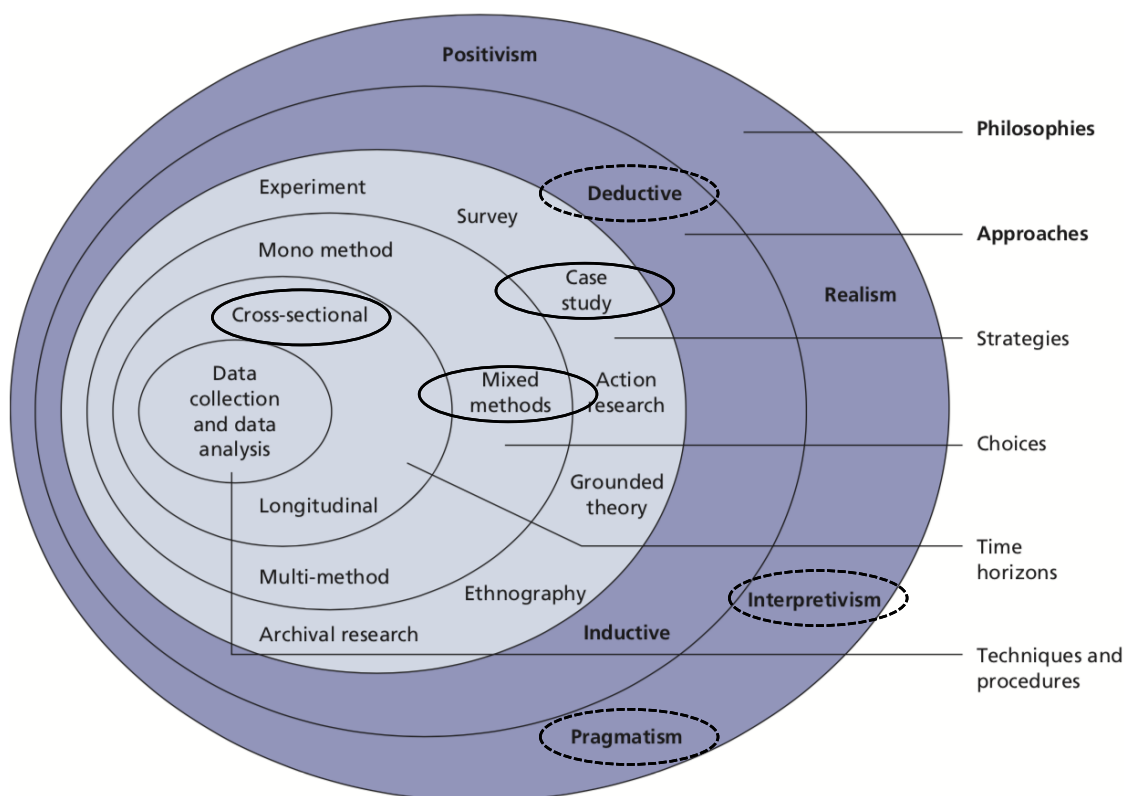


Figure 6: Research Onion (Saunders;Lewis;& Thornhill, 2009)

This research has deductive setup, as usually hypotheses are tested with deductive logic. However, the hypothesis cannot be tested with quantitative methods. The research becomes exploratory, where the focus remains on observable evidence for hypothesis



verification or falsification. Exploratory strategy is appropriate, when the setting is unique, and the purpose is to study a specific phenomenon in a specific context. Method is used, when the purpose is to gain new knowledge through observations rather than making general rules and specific conclusions. Exploratory study fits the research question, as there exists limited research on *total quality culture* and related success factors under *know*, *can* and *want* conditions. The purpose is to generate knowledge that solves problems particularly for the customer company. Also, organizational culture is something unique, the dynamics may differ by organization. Deductive reasoning consists of four elements: theory, hypothesis, observation and confirmation/rejection. The logic is described in Figure 7. Deductive reasoning starts by exploring the existing theories and setting a hypothesis.

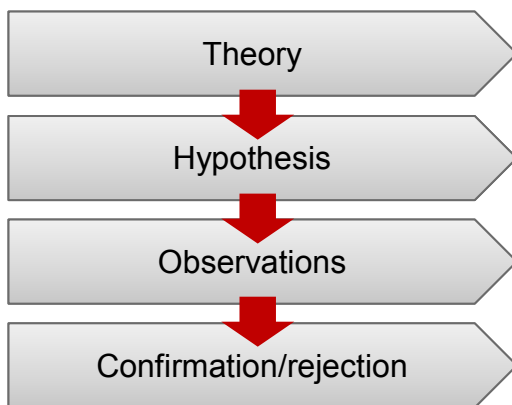


Figure 7: Steps of deductive reasoning

Based on the observations, the hypothesis either confirmed or rejected. The study leads on principles and results that are expected to be true and work in the studied context. While this is a case study, the same results may not be applicable to other organizations, if the conditions differ significantly. It must be pointed out that there exists no comprehensive theories of *small q* and *Big Q cultures* or those being tested before with deductive logic. To assess the hypothesis, logical thinking and observations must be used. Focus must be remained still on things that indicate rejection or support for the hypothesis.

Moving on with the onion layers, a single case study is selected. A case study method is suitable, when a researcher has a little control over the studied phenomenon or when there exist no clear boundaries between the phenomenon and the context (Yin, 2003). According to Morris and Wood (1991) a case study strategy fits well in studies where researcher aims to gain a rich understanding of the context of the research. It is appropriate for settings where the objective is to gain deep knowledge of a specific topic, like organizational culture. Yin (2008) has argued that case study should be the preferred strategy for studying phenomena in real-life contexts. Single case study is typical for unique or extreme cases. It provides an opportunity to observe and analyze rare phenomena (Saunders; Lewis; & Thornhill, 2009).

Case study method allows using multiple data collection techniques, also in combinations. This study is exploratory by its nature. It means it investigates a relatively unknown field in order to gain new insights. Exploratory studies are valuable, when the purpose is to find out “what is happening” (Robson, 2002) and to clarify the nature of the problem (Saunders;Lewis;& Thornhill, 2009). Exploratory study may set a hypothesis, but they are usually vague and ill-defined, like in this case. Even though this is a single case study, it is under the shadow of grounded theory. Grounded theory is used to generate a theory of social phenomena and understand action from the human agent point of view. It is very suitable for business and management issues (Saunders;Lewis;& Thornhill, 2009). As very little is known about the topic, the research may benefit from the grounded theory approach.

This study uses mixed methods in data collection. The term mixed methods are used in general to describe a research design where both qualitative and quantitative collection techniques are applied (Saunders;Lewis;& Thornhill, 2009). I use these methods parallel without combining them. As the research questions utilize both methods, the study can be called “integrated”. Qualitative research is useful when the purpose is to explore the “what” and “whys”. The method is appropriate in obtaining culturally specific information as it allows deeper level of understanding than quantitative methods (Saunders;Lewis;& Thornhill, 2009). It is generally used to study human behavior and provides a good basis for exploratory studies and new areas of research. Quantitative methods instead are useful method for large sampling sizes, where qualitative methods would appear impractical. Quantitative methods can be used for measuring behavior, attitudes, preferences and opinions of large number of subjects (McLeod, 2018). Into some extend, it is possible to assume a fixed and measurable reality when it comes to the secondary research question. There exist quite specific success elements described in the theoretical background.

Using mixed methods in this case can be justified in several ways. Yin (2006) argues that using different methods within the confines of a single research, can broaden and strengthen the study. It provides multiple angles and evidences for arguments. Bryman (2006) and Greene et al. (1989) have further argued that mixed methods may also: (1) complement or triangulate (results from one method may be corroborated, enhanced and clarified with results from another); (2) initiate (results from one method may discover new perspectives

of framework, paradox and contradiction or recast question to other method); and (3) expand (different methods allow extending the breadth and range of enquiry) (Greene;Caracelli;& Graham, 1989) (Bryman, 2006) other methods.

The second last layer of the *onion* explains the time horizon. A study can be cross-sectional or longitudinal depending on much time is spent for observing and studying the phenomenon. This study is cross-sectional, as it studies a particular phenomenon at particular time and the project is highly time constrained. In a case an actual cultural change process would be studied, the study would be longitudinal. According to Saunders et al. (2009) cross-sectional studies often utilize survey strategy, however, also qualitative methods may be used, if interviews are conducted over short period of time.

### **3.2 Methods for data collection and sampling**

Data collection and analysis depends on the selected methodological approach (Bryman, 2012). Considering the nature of the study, appropriate qualitative and quantitative methods need to be selected and targeted for right audience to assess the hypothesis and answer the research question. In usual case, hypotheses are tested with quantitative methods. However, as described earlier, the lack of similar studies with quantitative setting could lead to reliability problems. Also, *small q* and *Big Q* concepts cannot be asked directly, as the respondent may not be familiar with the theory. The conclusions must be drawn from the observations, how the respondents describe and perceive quality in the context. In addition, for example Schein (2004) has strongly argued that culture itself, is very hard to assess with quantitative methods such as questionnaires. Hence, the hypothesis here is assessed mostly with qualitative method and contrasted with the findings arising through exploratory process. Quantitative secondary data is used to support the findings. The secondary research question utilizes both qualitative and quantitative methods; for complementary reasons. The construction is displayed in Figure 8.

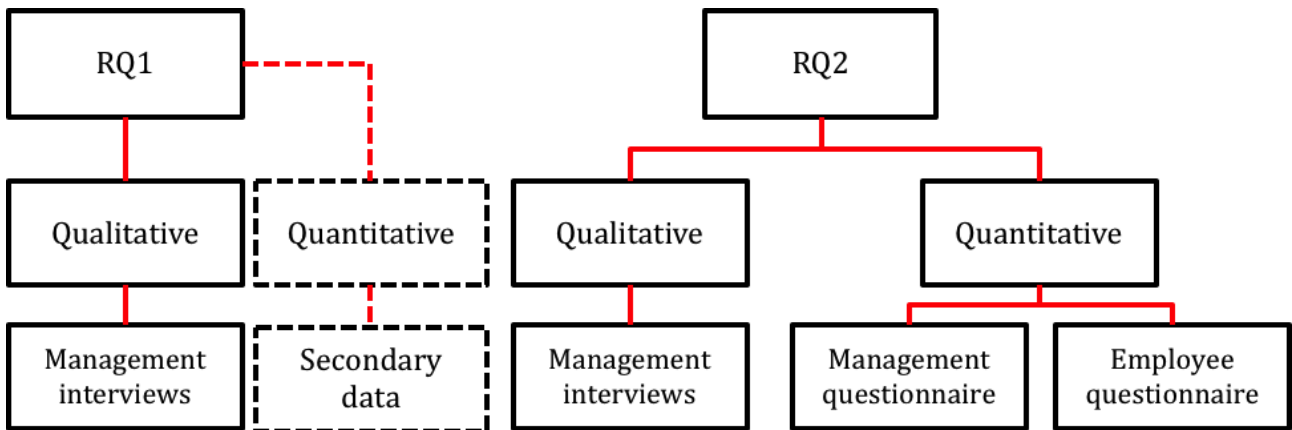


Figure 8: Data collection methods for primary and secondary research questions

Combination of research methods was seen critical, as the methods might complement one another and provide more validity for the results. The combination of methodologies in the study of same phenomenon is called *triangulation* (Saunders;Lewis;& Thornhill, 2009). In case studies, any mix of quantitative and qualitative methods can be used (Yin, 1994). Even many critical success factors are provided in existing literature some surprising aspects may arise through qualitative study that cannot be considered with quantitative methods. Also, the *know*, *can* and *want* conditions require deeper understanding that may be accessible only through interviews.

### 3.2.1 Qualitative methods

To deepen the understanding to the topic and different assumptions, interviews provide a sufficient method (Saunders;Lewis;& Thornhill, 2009). Saunders et al. (2009) explain that interviews can be used for both qualitative and quantitative purposes. In this case, the interviews are used for qualitative reasons. Interviews are also useful method especially when the study aims to understand meanings created by people (Hirsjärvi;Remes;& Sajavaara, 2000). The interviews in this study are called semi-structured. Semi-structured interviews mean that the interview situation is open and allows free discussion. However, as the purpose is to collect empirical data for the study, the interview focuses on particular issues. Specific themes are set to guide the conversation and open-ended questions are preferred over standardized interview (Eriksson & Kovalainen, 2008).

Interview sampling in this study is purposeful rather than random. Purposeful sampling means the informants are chosen, not picked randomly (Wengraf, 2003). Patton (1990) has argued that purposeful sampling is more suitable for qualitative research. In this study the sampling can be called *criterion sampling* (Patton, 1990), as people are chosen to fulfill certain criteria and to assure higher quality of the interviews. The sampling criteria was agreed to consider only senior management members for two reasons. First, the research problem deals with *managed cultural change*, in which obviously top management has a critical role. Secondly, it is considered that senior managers have a broad overall understanding of the things happening through the whole organization and an ability to answer all the relevant questions. A small number of informants have been chosen to provide the richest and deepest information of the phenomenon.

The details from data collection through interviews are summarized in Table 3. In total five interviews were conducted. The interviews took place between May 22<sup>nd</sup> and May 24<sup>th</sup>. All interviews were recorded to ensure the quality and accuracy in data transcribing. The transcribing and coding took place within one day after the interviews.

**Table 2: Data collection - interviews**

ID	Interview method	Position in	Duration
M1	face-to-face	BU management	1h 20min
M2	face-to-face	LBU management	1h 10min
M3	face-to-face	BU & LBU management	1h 10min
M4	face-to-face	LBU management	1h 10min
M5	face-to-face	LBU management	1h 15min

### 3.2.2 Quantitative methods

The success factors are rather straightforward to assess with the quantitative methods, while the elements are very specific. Questionnaires are chosen, as the sampling sizes are quite large. Questionnaires are suitable for measuring behavior, attitudes, preferences and opinions of large number of subjects (McLeod, 2018). Questionnaires can consist of either open or closed questions. As the purpose is to collect only quantitative data, closed questions are used. Closed questions allow responses, which fit into pre-defined categories.

This kind of data is called as nominal data (Saunders;Lewis;& Thornhill, 2009). The category may include alternatives from which to choose the answer from or provide ordinal data, which can be ranked (Berman Brown & Saunders, 2008). That means the alternatives may include options such as from strongly agree to strongly disagree (Saunders;Lewis;& Thornhill, 2009).

The questionnaires in this study have two samples separating senior management from employees for two reasons. First, some of the success factors are strongly management related and cannot be asked from employees, for example strategy and strategic planning related questions. Second, it was found important to compare management and employee perspectives. For example, managers might have corrupted vision of their managerial actions. The comparison is likely to reveal and break the illusions.

Questionnaires provide limited information as they lack details (Saunders;Lewis;& Thornhill, 2009). They simplify and compress the reality. As the responses are fixed, there is less scope to provide answers that reflect the real paradigms. Respondents may also lie due to *social desirability*, as most people want to express themselves in positive light and provide answers that are socially more acceptable (Frede;Lavrakas;Pierce;Thomas;& Gittleman, 2015). Anonymousness is a way to eliminate the threat, therefore the study does not collect any personal information.

The questionnaires were generated with an online survey tool and sent out to all senior managers and white-collar employees with an online link. The questionnaire was available from April 15<sup>th</sup> to April 31<sup>st</sup>. The questions collected only categorical data, mainly ordinal data. The questionnaire received in total 150 responses from white-collar employees and 24 from senior management. Response rates were 21% and 57%.

### **3.3 Data analysis**

The primary data analysis was influenced by two approaches. For quantitative data, methods presented by Saunders et. al (2009) were applied. *Thematic analysis* method (Braun & Clarke, 2012) was utilized to analyze qualitative data.

### 3.3.1 Analyzing quantitative data

Saunders et. al (2009) make a clear distinction between quantitative and qualitative analysis: Quantitative data as numerical and standardized results is conducted through the use of diagrams and statistics, while qualitative utilizes classification of non-standardized data and conducts the analysis through conceptualization. In a raw form, quantitative data usually conveys very little meaning to most people. The data must be processed to make more sense out of it. Quantitative techniques (i.e. descriptive statistics) include graphs, charts and statistics that allow better to summarize, visualize, describe and present the patterns, trends and connections. (Saunders;Lewis;& Thornhill, 2009). When the data is in categorical, numeric or visual format, it is less prone to interpretations (Antonius, 2003).

According to Saunders et. al (2009), the analysis starts from identification the data type, which in this case is categorical, nominal and ordinal data. The data layout was rather simple, as the survey tool used automatically provided the data in a table format with some relevant graphs. I processed the raw data in table format and analyzed it separately by each question and category.

The ordinal data was coded with numerical codes from 1 to 4 as Saunders et. al (2009) suggest. In the questionnaires 1 was standing for strongly agree, 2 for tentative agree, 3 for tentative disagree and 4 for strongly disagree. I classified and visualized both questionnaires (senior management and employees) in same manner to make the cross analysis easier and faster. Each question was coded and linked to relevant success factor to create an overall picture. For example, all questions related to training or communication were summarized and analyzed as their own entities. After coding and classification, the data was checked and cleansed. One question was excluded from the management survey analysis, as the question was noticed to be prone to misinterpretations.

The analysis itself was based on simple counts and comparisons of number of answers and calculated means and averages from the coded answers. All relevant questions were visualized to present the highest and lowest values or to detect the trends and proportions. Some of the answers were expanded or scaled to cover all employees in the organization for the result reporting. For example, evaluating the level of *small q* in terms of variability in

office, costs required upscaling the result to describe the reality and financial impact more appropriately.

### 3.3.2 Analyzing qualitative data

Thematic analysis (TA) fits well in qualitative data analysis. It is a method that identifies, organizes and finds patterns across the data set. In thematic analysis the purpose is to focus on the whole set of interviews rather than on single units of data. It allows a researcher to identify the common themes and repeated patterns in the data and aims to make sense of those commonalities. (Braun & Clarke, 2012) This study followed the TA steps in the analysis. The steps are described in Figure 9 below.



Figure 9: Thematic analysis process (Braun & Clarke, Thematic analysis, 2012)

I started the analysis by familiarizing myself with the data. I read through the interview transcripts and made some primary notes of things I found relevant for the research. After the first step, the data was coded. The coding principle used in this study, is called open coding. The purpose of open coding is to break down, conceptualize, compare and categorize the data (Strauss & Corbin, 1990). The data is given labels based on their relevance for the topic and theory. According to literature, the codes and categories should be a result of interpretation into what extent the theory fits the data, not how the data fits into predefined codes and categories (Strauss & Corbin, 1990). In this study, ATLAS.ti software was used. The second order coding generated a manageable 39 codes. After coding, some initial network maps were generated with the software to understand the relations between the codes.

The coding phase was followed by theme searching. In this phase, the codes were grouped under themes that were relevant for the research question and hypothesis. According to Braun and Clarke (2012) the search of themes should be an active process, which means that the themes should be generated or constructed rather than discovered. Moving on with



the analysis process, the themes were next revised. The purpose of revision was to revise the themes in relation to the codes. I checked that there was enough data to support a specific theme and that clear boundaries between different themes were drawn as Braun and Clarke (2012) suggested. All together I found the themes provided an overall “story” about the data.

### **3.4. Validity and reliability**

If the research is to have any value, it must provide reliable and valid results. There are many threats that can jeopardize either validity or reliability. Ensuring credibility, therefore, can be considered as the most important criteria of any academic research.

A research to provide reliable results, must yield consistent and repeatable findings. Saunders et al. (2009) define reliability under three conditions. First, the measures should yield the same result regardless the occasion. Second, similar observations should be captured by any other observer. And third, there should be transparency in how sense was made from the raw data. According to Robson (2002), there are five errors or biases that may threaten reliability: (1) participant error, (2) participant bias (3) response bias, (4) observer error and (5) observer bias. (1) Participant error refers to a situation in which the participants may generate different results at different times of the week. For example, in questionnaires, Robson (2002) finds it to matter, whether the questionnaire is sent out Friday afternoon or Monday morning. Thus, a “neutral” time should be selected. I tried to consider this in my research, as the questionnaire consisted of questions that are highly impacted by attitudes and feelings. I sent out the questionnaires on Tuesday afternoon.

(2) It is also possible that the interviewees or respondents answer in a way their bosses wanted them to answer. This phenomenon is called a participant bias. Robson (2002) recognizes that the phenomenon is a particular problem in organizations, where employees feel insecurity under authoritarian management. To avoid the threat, anonymity should be emphasized. I wrote a short description of the survey and a cover letter, in both of which anonymousness was highlighted. I also polished and reviewed the questions several times, so that they were as neutral as possible. However, this was not the only participant bias that threatened my study.

I recognized already during the research planning that the management interviews contained the highest risk for reliability. A person in a top management position may think he/she needs to reply in a certain, expected manner. For example, a manager may be reluctant to bring up issues or tell his/her real thoughts, as he/she would be judged as a leader. I started each interview by telling the interviewee that the interview was strictly confidential and no names will be included in the report. I also utilized a good practice to make the interviewees relaxed, after I found the first interview was a great success in terms of frankness. I basically told this to the other interviewees. Not the content of course, but the fact that we had a great conversation due to the sincerity and lack of fear saying the “wrong things”. I created a feeling that the interview situation was safe, and interviewees were encouraged to talk their feelings as other people has done the same. I found it to work very well.

Even I managed to create a safe interview atmosphere, I found in some interviews (3) a response bias to be present. Response bias recognizes that the respondent might be sensitive to some topics and therefore hesitate or avoid providing more information (Saunders;Lewis;& Thornhill, 2009). During one interview, the interviewee said something that he/she instantly regretted. The interviewee exclaimed: “Please, do not write that down!”. I understood it was a sensitive topic that might have been unspoken for long. I reacted with humor and calming comments to break the ice, and actually managed to continue the discussion for more information. Being neutral and emphasizing anonymousness are the first steps to minimize the threat. However, personally I found discretion to be very important.

(4) An observer error exists when multiple researchers are doing the research (Robson, 2002). There are then multiple methods and ways of asking and setting the questions. It might then threaten the reliability, as the answers may reflect the way the question were asked. In this study observer error is basically non-existent. I still paid proper attention to ask the questions the same way in each interviewee. (5) In interpretivist research, researcher’s own values in research and results should be considered. Intended or not, a researcher tends to show his/her feelings and values during the interview process. It is visible for example through body language, tone of voice and reactions (Robson, 2002). I created an interview protocol, which was followed in each interview. It assured each interview was executed in the same manner. The protocol can be found in Appendix 1.

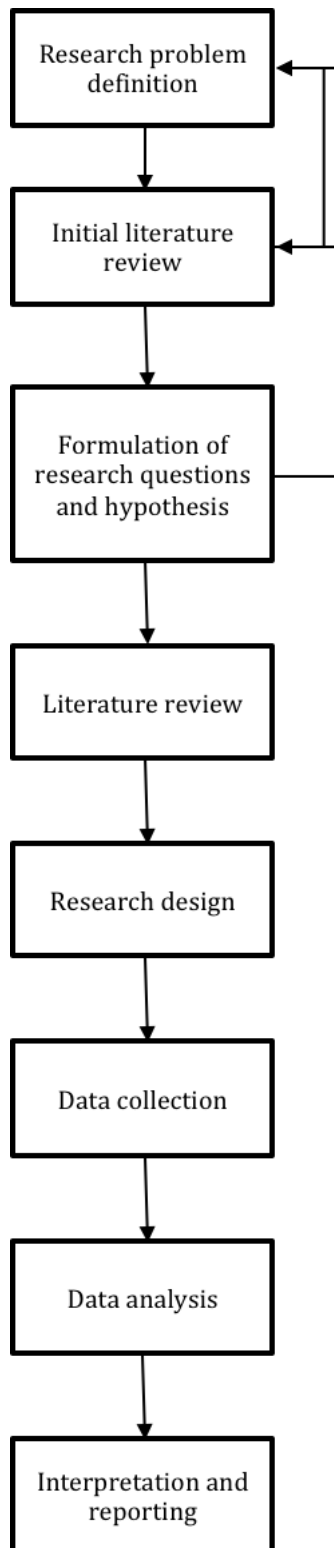
Research validity concerns, whether or not the findings measure what they are supposed to measure (Saunders;Lewis;& Thornhill, 2009). There are two broad types of validity, which should be considered: internal and external validity. Internal validity deals with causal relationship between two variables. A change in a dependent variable may not be caused by independent variable, but a confounding variable. One must be sure that a change in Y causes a change in X. I have ensured interval validity by triangulating the data sources. External validity refers to generalizability. It concerns the degree to which the study results are generalizable. In other words, are the findings applicable to other research settings. Saunders et al. (2009) claim this to be a particular worry in case studies or studies with a small number of organizations, as a theory that fits to other situations may not be created. This study, after all, is exploratory case study. Differing from straightforward deductive studies, there is no need to claim that the results are generalizable to all contexts.

### **3.5 Evaluating the research process**

The beginning of this research process was sluggish and required multiple iterations to build a common understanding of the research problem. A major problem was inadequate literature of the phenomenon interesting the customer company. The research problem was formulated couple of times, while there existed varying opinions on what should be studied and what can be studied within the limits of academic requirements. However, finally with the help of Prof. Lillrank, the research oriented to take more radical approach, where a hypothesis was formulated, and research questions were reduced from three to two.

Before designing the research, an extensive literature review was carried out. To answer the research question, theories from organizational culture and quality management literature needed to be synthesized. The literature review was narrative and provided a theoretical framework for recognizing success factors and four alternative forms of quality cultures. Based on the literature review and problem setting, appropriate research strategy was designed to answer the best the problem.

Data collection started right after the research design completion. Study groups were defined already in problem definition, so the data collection was a matter of sending the questionnaires and booking the interviews. However, during the data collection period, I



received a few unexpected emails concerning my topic. They were sent by white-collar employees as an impulse caused by the questionnaire. What was surprising, the emails did not contain any feedback about the survey itself. Instead they were rather in-depth descriptions of current quality management issues. I decided to utilize the data, as I saw an opportunity to complement or initiate the existing data. It was clear that a few emails wouldn't provide any generalizable result. However, as a manifestation level, the data appeared at least interesting to disclose.

The analysis itself turned out to be slightly more challenging than expected. Not because the results were unclear or unreliable, but because my position as detached researcher was challenged. The fact that I had worked in the same company and talked to many coworkers with differing opinions about the topic and especially about the theory, created a bias. I was, however, prepared for this, as I had discussed with Prof. Lillrank a few weeks earlier. Thus, I was very confident with the chosen theoretical approach and did not let the pressure to impact the analysis or the work. Another challenge with the analysis was amount of data. In this case, maybe slightly too much data was gathered for the requirements of one thesis. The data was rarefied couple of times, just to pick out the most substantial findings for the reporting phase.

Figure 10:  
Research process flow chart

## 4 Findings

In this fourth chapter the findings of empirical research are presented. The findings are discussed in two sections to make clear distinction between primary and secondary research questions. The first section focuses on describing the quality culture in the customer company. The overlaps between quantitative and qualitative data are identified and discussed as strong organizational elements. At the end of the first section, the *small q* and *Big Q* will be evaluated to answer the RQ1. Secondary data (quality cost data and customer complaint cases) is utilized to complement and support the interpretation. In the second section, findings related to success factors and RQ2 are presented. At the end of this chapter, the elements resisting cultural change are identified.

### 4.1 Description of quality culture

The interviews provided interesting data regarding overall organizational culture and practices. However, the data that was not relevant to total quality culture and this study, was segregated. There were several evidences supporting the idea that quality was not yet a strong part of the organization – or at least it had a very narrow scope. The analysis gave an initial impression that quality was perceived as extra work. The company was satisfied with quality, as long as it didn't cause problems, or as long as the overall financial situation was good. There was no sense of urgency to make changes, as the benefits of driving for better quality were not seen and understood. Quality was described in the following ways:

*“The overall financial situation of our business is so good that there is no driving force to do anything for quality. -- Honestly, I feel quality is not valued at the moment.” - M1*

*“Can one sense quality? – No. At least it does not go through the whole organization. Quality is definitely not a visible theme.” – M2*

*“Quality has not been given attention, as it has not been critical.” – M3*

There was a clear difference how quality and safety were discussed. Interviewees recognized that quality was not on the same cultural level:

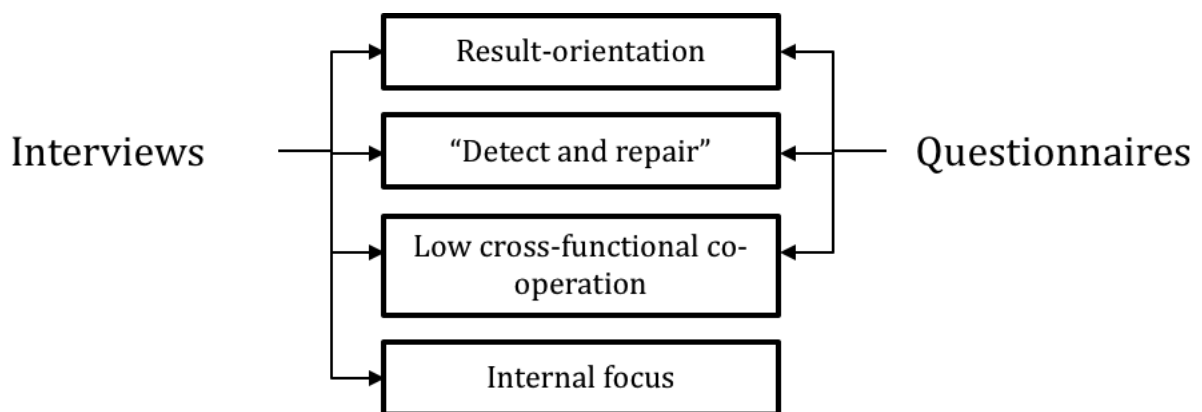
*“Safety is more visible in the organization. If there is a problem, the management will be informed immediately. We do not have the same kind of criticality for quality.” -M2*

*“We are continuously in reactive mode. It is definitely a cultural thing. -- With safety, same kind of reactivity does not exist. More attention has been paid to safety. Quality has not been given the same attention.” - M4*

Also, one employee manifested the following in his/her email:

*“Occupational safety culture is very open. If there is an accident, it will be communicated straight out to everyone. From my perspective, quality problems are kept as a secret and people do not want to talk about them. – I think our management should start to communicate more openly about quality problems we actually have.”  
- Employee1*

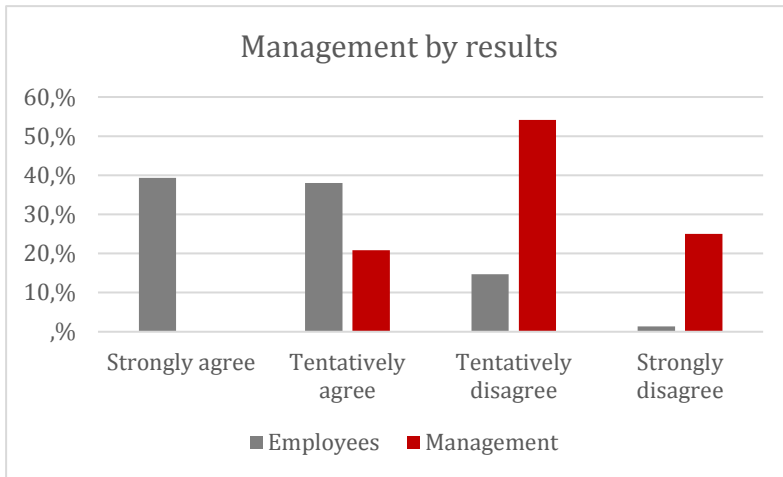
Overall four themes were found to be strong in the organizational culture: result-orientation, “detect and repair”, low cross-functional co-operation and internal focus. Three of them were detectable in qualitative and quantitative data as described in Figure 11.



**Figure 11: Strong themes in corporate culture**

The company was found to be highly cost-oriented. Four out of five managers described financials to have a strong influence on management style. One manager described that back in history, the situation may have required this type of management. But as the years passed and the situation improved, the same management style still remained. This manager found cost-orientation to be their “truest and deepest corporate culture”. It was surprising that the cost-orientation was not always discussed as it was an issue. One interviewee described it in a following way:

*“Managers’ cost-orientation is “approved”. It has been like that for so long that it’s like a norm here.” – M1*

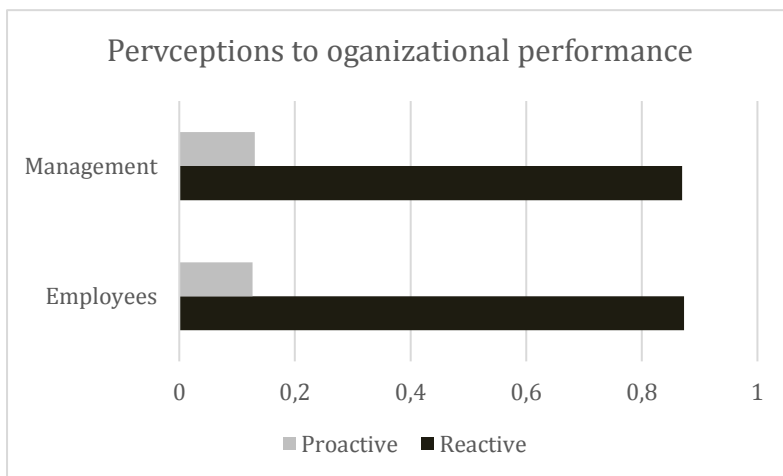


**Figure 12: Perceptions to management style**

The organization was perceived highly result-oriented among the employees.

One of the interviewees told that the financial orientation has outranked quality. In several cases, quality was compromised over short-term financial success. The other interviewee described that the organization was not given enough opportunities to focus on quality, as the financial KPIs always defeated. The survey data supported these findings. Overwhelming 77% employees perceived the management was highly orientated to manage by results.

employees perceived the management was highly orientated to manage by results.



**Figure 13: Perceptions to organizational performance.**

The reactivity was observable in survey data. Over 85% of managers and employees declared the organization focusing on fixing issues rather than being proactive and making improvements.

The next visible element could be called as “detect and repair” as it portrayed a firefighting mode the company was stuck with. The company was currently consuming its time on efforts to fix problems and maintaining the current level of performance. Some of the managers found the current state quite unstable, and improvement to be impossible as long as the base was not fixed.

However, the company was found to be flexible, efficient and good at repairing arising problems. There was no specific reason for firefighting. Couple of managers explained the issues with insufficient knowledge of customer needs and information sharing. There had been a lot of fixing as the products were not suitable for use. There were also problems with product quality and schedules. A sense of urgency had pushed the company to launch unfinished products. Some products were even delivered, even though the quality was

known to be poor. One manager mentioned that processes or ways of working were not clearly defined, which is why it was not understood what the “normal state” was. Their only quality objective at the moment was to define and visualize the processes.

The third strong theme was low cross-functional co-operation, which could be compressed as “departments over LBU business”. It was agreed that LPGs focused on maximizing their own goals. Thereby, quality management was also mainly LPG specific. One of the managers described:

*“Quality outside LPG boundaries does not exist. We do not have a common quality management. Well basically it is just certificates. Common frameworks are not used.”*  
-M5

Into some extent, all managers found the silos were sort of a good thing for the separate businesses. There was no agreement into what extent there should be more co-operation, even though there were several issues recognized. Information and knowledge sharing were seen disrupted by the structure. Not only from LPG to another but also from Local Sales Unit (LSU) to LBU. M3 described that the customer voice got lost easily because of the structure. More transparency and co-operation were needed, if the company wanted to become more customer oriented. The LPGs had identified a need to hear the voice of LSU better. One of the LPGs had deployed a database, where they documented any feedback, positive or negative coming from the LSU. The feedback was reviewed for any concrete actions. The other two LPGs had just recently started to follow this practice by building up their own similar databases. Sharing competence and resources was another issue. The LPGs utilized their own talents to improve their own individual businesses. They were not utilized for common good:

*“We definitely haven’t managed to utilize all of our knowledge, competence and talent. The silos are the barrier.”* -M4

*“We should take bigger, process wide initiatives. Currently our quality improvement projects are LPG specific. The steps we can take now are just too small.”* – M1

The survey data supported the finding of low cross-functional co-operation. It was found that good practices were difficult to share due to strong orientation to separated businesses.



75% of managers and 83% of employees agreed that common practices were difficult to develop due to the organizational structure.

As the fourth element, it was quite evident that the company had a high internal orientation. All interviewees told that the company valued people with engineering background and technical abilities. The company had emphasized product quality for long. Product quality and reliability were the elements that separated this company from its competitors. Those had a significant importance for brand and how, the company was identified on markets. As a detriment, other dimensions of quality were ignored for long. Almost all managers confessed quality was not an element creating competitive advantage. However, an opportunity to improve was recognized. The following was manifested:

*“With current results, quality is not a competitive advantage - If we exclude product quality of course.” -M5*

*“Our company is in the center of everything, not the customer. We don't know, how to create competitive advantage with quality. I see there is an opportunity, if we orientate to deliver something more than required -- or focus on process quality and customer experience.” -M1*

One of the elements explaining internal orientation, was organization structure. In the customer company LSU was separated from the LBU. These two units had different roles as one of the interviewees explained: *“LSU knows the customer, LBU knows the products.”*  
-M1

The internal focus had impacted on how quality was managed. One manager described that the company had usually hired quality managers inside the house – especially people with strong technical abilities. When there were no talent or knowledge coming from outside, there were lost opportunities and resistance to change. The quality management had remained tactical and focused on product conformance, as it had worked through the history. Some of the interviewees were not fully satisfied with the level of quality management. Mostly the problems were related to the quality management scope:

*“The role of quality manager is to take care of the routines and ensure our quality management system fulfills the requirements. That is the minimum effort. The role could be revised. – There is a problem, though. There are not enough competence*

*or people who could manage both roles: the areas of technical quality and customer satisfaction.” –M4*

*“Our quality managers or quality engineers do not have strategic approach to quality. I feel their objective is just to maintain the certificates. This is a problem. They should have a stronger competence and connection to our business.” -M1*

One of the LPG managers did not find a problem in their quality management approach. But in their case, the quality manager had an exceptional role taking care of technical and strategic quality. They had developed a strategy with quality ambition, and in which improvement of customer experience was included. One month after the interviews I found one other LPG had assigned a person to be responsible for customer feedback. At some level, the customer company had recognized a need for changing their traditional approach to quality. There was some pressure that forced the organization to change, as the global quality campaign was launched and a global managerial position for customer satisfaction was opened in autumn. Two of the managers had a strong view that the customer experience needed to be improved. They recognized that the strategic business threat could emerge outside product quality.

All in all, the culture reflected elements mainly from *small q culture*. *Total quality culture* and *Big Q culture* were present only on a verbal level, no concrete actions or behavior reflected it. Company had strong inward orientation, low-cross functional co-operation and they consumed time on detecting and repairing problems. Quality appeared to be top management priority by obligation, not by choice. The low criticality had impacted on quality management. Overall there was no clear quality strategy to be described, nor quality was viewed *as a strategy*. Slightly more emphasis was on *small q culture*, especially when it came to product conformance quality. It seemed *small q* focus on quality management had an impact on the existing quality culture. However, a need for change was detected. The company had an urge to expand the quality management towards customer satisfaction and for more fuzziier things; the company wanted to understand and serve the customers better. How this could be done, was not still clear even for the managers.

### 4.1.1 Evaluating small q, Big Q and quality costs

Literature on organizational culture seldom revolves around costs and cash. However, as attitudes and behavior reflect to performance and results, so does the culture. I saw the financials to be an evidence for indicating the level of *small q* in the customer company. If everything worked as planned and the output always matched the requirements, there would be little variation and no or minimal costs of poor quality. Issues with *small q* appear as increase in costs. In the literature review, I recognized internal and external failure costs. Obviously, I had limited information available and appeared very difficult to measure all of the total cost components. I had an opportunity to evaluate cost related to warranties, scrapped material, customer complaints solving, information searching and error fixing.

The secondary data provided directly some of those listed above. In the survey, I was able to evaluate information searching and error fixing. I asked how much time employees usually spend on them. I scaled the number to match the total number of employees and multiplied the time with hourly labor cost to get a rough estimate.

The survey revealed that in information work, great amount of time was used in error fixing and information searching. On weekly basis, over 80% of employees reported to spend at least 30 minutes of their work time on searching for information. Most of the employees reported to spend 60-120 minutes (27,7%) or more than 120 minutes (27,0%).

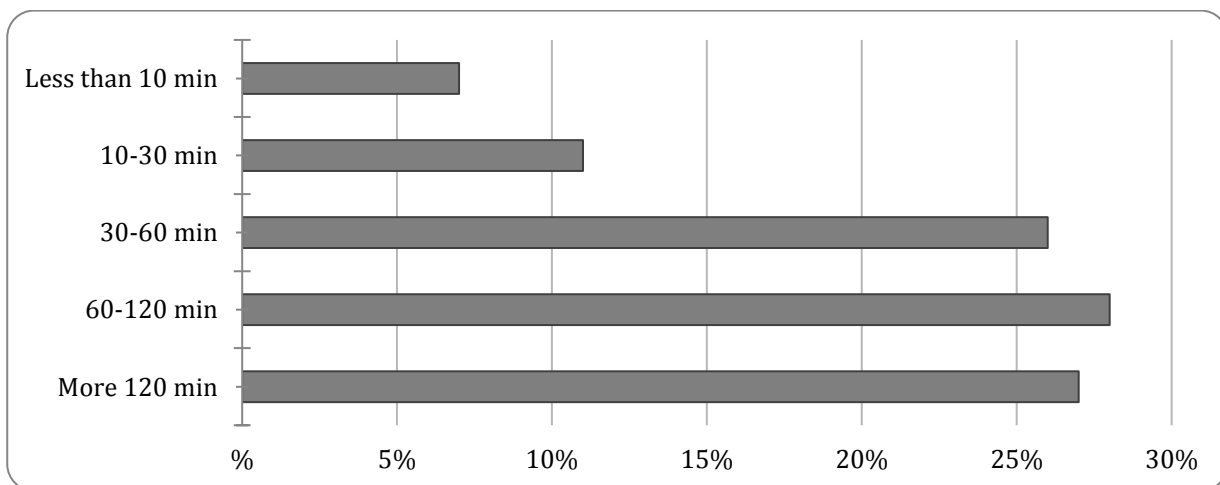


Figure 14: Time employees consumed on searching for information on weekly basis

Based on the number of white-collar employees and hourly labor cost, the annual cost average was calculated as 3,19MEUR. The minimum and maximum costs ranged from 2,33MEUR to 4,05MEUR. The estimated costs appeared rather high. A few months earlier, another internal study regarding information management was conducted in the case company. This other survey provided similar findings, which gave supporting evidence that the guesstimate was approximately correct. The average time spent was 80 minutes per week. Hypothetically, if the company managed to reduce the time, for example by 10 minutes, it would already mean 400kEUR annual savings.

Error fixing provided similar findings. However, the distribution was slightly different. 91% employees reported to spend at least 30 minutes weekly on fixing their own or someone else's errors. By far the most employees (36%) reported to spend more than 120 minutes. The minimum and maximum were calculated between 120 and 180 minutes. In reality, the maximum could be a lot higher than that. The annual average cost was estimated as 3,38MEUR. The result somewhat reflects there exists a lot of variation and there is room to improve *small q* also outside production environment.

The secondary data revealed trends in other quality costs. During the past three years, the warranty costs have been one of the biggest expenditures. Still in both LPGs, the warranty trends have declined. In LPG1, the monthly average costs have decreased from 151kEUR to 102kEUR. In LPG2, the costs were significantly higher. Probably explained by higher annual production volume. The average costs have decreased from 316kEUR to 220kEUR. While the annual costs appear once again rather high, the company has managed to keep the costs below the target, which was <1% of revenue. Scrapped material consisted mostly of defective components. The annual costs showed high variation. Especially in year 2017, both LPGs had a high peak, and the trend line inclined. The monthly cost average had changed from 38kEUR to 80kEUR in LPG1, and from 33kEUR to 87kEUR in LPG2. A surprising cost factor revealed to be customer issue resolution. The resolution caused around 1.3MEUR costs in LPG1 and 2.8MEUR costs in LPG2 each year. The trendline has remained unchanged.

The costs of poor quality indicated that the production quality costs were somewhat on target. There were still rather high costs present in office environment. Probably the

orientation to products had drawn all the attention to efficient manufacturing. It appears rational to direct the resources on issues that contain the highest costs. In this case improving information work quality, information searching and issue resolution.

There are still the other side of quality, Big Q, which also contains costs of poor quality. In that case the “costs” appear as loss of business. Unfortunately, Big Q costs could not be evaluated, as there was no financial data available. The interviews revealed the company had overall insufficient measures for customer satisfaction and how the satisfaction or dissatisfaction impacted on sales. Basically, they did not measure it at all. They also did not measure customer loyalty (percentage of repeated business). The level of Big Q was evaluated based on observations and secondary data on customer complaints. One interviewee told to know cases where customer surveys have been sent to those customers, who are known to be satisfied and are expected to give good feedback. The results were not always reliable. For this reason, I rather describe a few examples and rely on the interview data.

I found cases, when customers were not satisfied despite the products conformed their specifications. These cases indicated dissatisfaction to lead times, issue resolution, logistics, billing and documentation, trade terms and fitness for use. Some customers even complained about the “product orientation”, meaning the case company did not have ability to manage complex solutions, as people were capable to understand the products, but not the big picture. The customers also regularly complained about the poor communication. In this case it appeared as easiness of service. It was either hard for customers to find right contacts, or on the other side, the company did not communicate about delays in schedule or problems in deliveries. All five interviewees also denoted there was severe problems with customer communication. In some cases, customer needed to wait long for the response and in worst cases, they were not contacted back at all.

Of the many issues listed above, the ones that hold the greatest criticality to Big Q, should be identified. Issue resolution is definitely one of them. In present state, customer issues were not solved in decent time frames. Customers needed to wait for weeks before getting responses for their issues. Sometimes the issue needed to be fixed several times, as it wasn't corrected the first time. One interviewee described that customer feedback was

usually experienced as distraction. The cases were just handled and buried. The data regarding customer dissatisfaction received through different channels was not systematically utilized to improve the business. When the critical issues would be identified and fixed, there would be also less cases to solve.

Another critical issue was fitness for use. Fitness for use was not always an issue of inappropriate specification given by customer, even the information flow between LSU and LBU was not seamless. Sometimes it was known in advance that the specification the customer provided did not work in the context. However, the company delivered it anyway, even they already know it wouldn't work:

*“In our world, we do not have the right mindset. We should put more effort on understanding the customer and be more proactive. If the customer does not know how to give the right specifications or has specified incorrectly, we should help them. Usually, we just don't want to see the effort. As a result, the customer is delivered something, we already know won't work.” -M1*

*“You can still hear some engineers here saying the customers are stupid, and they don't know how to use the products. – we have problems in understanding the customer. We may deliver the product on time and assemble it, and then realize it doesn't fit for the purpose. Usually we need to pay the price, because it's our fault.” -M3*

Organization structure was one part of this issue. LBU was usually very far from the customer. The information was not always transparent, and the customer needs were not always interpreted and transcribed correctly:

*“There are cases when we sell the customer something they don't need or something that doesn't fit the purpose. There might be missing and incorrect information, or our inability to decode the specifications.” -M4*

Overall the level of *Big Q culture* appeared relatively low in the case company. However, it was not surprising, as the Big Q major effect is in sales, and the organization structure was what it was. The visibility and collaboration between the units could still be improved to be able to serve better the customer. Also, all *Big Q* improvements are not directly a responsibility of sales. The organization structure separating LSU and LBU had created a situation, where the quality management scope was unclear. While some interviewees

emphasized *small q* approach, all interviewees still had an urge to be more customer oriented. This issue reflected to quality management and how quality was discussed.

#### **4.1.2 Evaluating quality confusion and research hypothesis**

Even though the case company had strong internal focus, they did not have a common approach to quality management. The interviewees had very differing views on quality, and maybe because of that, quality management appeared quite heterogeneous. Some interviewees discussed the customer aspect of quality, while the others saw that quality as conformance to requirements. The following was manifested:

*“Quality means that we deliver customers, what they have asked and what we have promised. Some people say that you need to be able to exceed the customer expectations. I don’t agree with this.” -M2*

*“Customer satisfaction consists of reliability and ability to fulfill customer needs. Quality and reliability are not the same thing. You need to have some wow factor. Currently we don’t have it.” - M5*

One interviewee still described the current customer orientation to be quite minimal. The talk and actions in the organization did not always match. Many people talked about customer satisfaction, but the discussion was limited to product quality and reliability. This interviewee recognized that superior customer experience may require some small extra, which the customer cannot put into a specification. This small extra may bring also extra costs, but to be truly customer focused, it was needed:

*“For example, the LSU had an own small inventory, so that they are able to serve critical customers faster. In LBU, any additional costs are avoided. The culture is not orientated to satisfy the customer, the current effort is minimal.” -M1*

There was no comprehensive approach to quality. The scope of quality management seemed to be the biggest issue. While one department had rather extensive approach to quality, the others were focusing on tactical aspects. The corrupted discussion resulted in a situation, where each LPG focused on their own businesses and managed the things they found important. The quality confusion provided an opportunity for every LPG to maximize their own goals rather than the common business. One manager summarized the situation quite well, pretty much in line with the hypothesis setting:

*“Quality is very vague. It is very difficult to say what it means. I have recognized that people talk about different things. It has created a situation, where everyone just sees their own objectives. We do not have unanimous approach to manage it. Quality is not clear, neither the areas where we should focus.” – M1*

Beyond the low criticality, and “nothing needs to be done” attitude, each manager had their own idea on things to be done. These ideas optimized individual business, but resisted customer orientation and *Big Q culture*. The steps those individual LPGs could take, were too small alone to achieve financial success. On the other hand, the benefits and purpose for greater achievement were not transparent and understood. Quality needed to be on “acceptable level”. Everything beyond that was seen as extra work. This resisted the strategic approach, where quality was seen as a revenue driver. Quality management was revolved around things that were easy to grasp, not things that were logical based on assessment of the situation. Product quality had critical importance for the brand, however, in terms of costs, there were also other things that required attention.

As the final observation, it must be mentioned that the case company’s business strategy followed a positioning of differentiation strategy rather than cost-leadership. Theoretically, the strategic actions in differentiation strategy should build on value added by the uniqueness of a product or service that allows the firm to charge a premium price (Porter M. , 1985). Its advantage is a better opportunity to develop customer loyalty. The differentiation can be built on many things such as product features or customer service. In contrast, in low-cost strategy the criticality lies in labor productivity, material costs, high yield and low wastage (Porter M. , 1985). In this study, products were not the company’s problem. However, it was found that the things customer complained about, mirrored to variables that differentiation strategy finds important: post-purchase service, availability, lead-time, ability to manage complexities and ease of doing business. Quality should actually be a very critical part of the business strategy implementation. However, it appears to be not. This linkage to strategic management appears very interesting, as it indicates that the quality management is not in line with corporate strategy.

Overall it appeared that the research hypothesis was supported. There was no *total quality culture*, and management confusion existed between *small q* and *Big Q*. For the primary research question “Does *small q* – *Big Q* confusion have an impact on quality culture in the



case company?”, the answer is yes. Quality management emphasized *small q* and neglected *Big Q*. There existed a *small q culture*, not *total quality culture*.

## **4.2 Evaluation of success factors**

The previous declaration provides evidences that the company’s quality culture is distracted by inadequate management approach. While the knowledge appears incoherent, the resources might have been directed to wrong things. The purpose of this section is to evaluate the success factors and identify the critical gaps. The success factors are discussed one by one. Both qualitative and quantitative data will be presented, as to my fortune, the interview data provided complementary findings to questionnaires.

### **Top management leadership**

Overall management participation and motivation was evaluated to be good. 96% of top managers expressed their commitment to change the quality culture. Employees had also very strong perceptions of management commitment to contribute, show example and pay attention on both, customer satisfaction and conformance quality. The responses with different elements held all 76-83% employee support. With a small exception, 27% of employees perceived management did not control enough, how the tasks were performed or intervene in practices that threatened quality. Both study groups were asked, how the global quality campaign has changed management focus and priorities. Surprisingly 35% of employees did not have awareness of quality campaign purpose and objectives. However, it was clear that the campaign had increased management focus on quality issues. The increase was between 17% and 28% perceived by both study groups. Management agreed customer experience to be a priority with 96% confidence. Conformance quality received 83% confidence. What stood out, was employee perceptions to priorities. Customer satisfaction was significantly higher than orientation to conformance quality, almost twice higher. Overall 35% of white-collar employees felt conformance quality was not a management priority.

The interview data revealed some supporting evidence. First, when managers discussed quality, it usually orientated to a term “superior customer experience” or product quality. The former is actually global initiative, and therefore it has been communicated vigorously.

However, there still existed no concrete actions locally. Conformance quality in terms of processes was rarely discussed. Three interviewees still expressed some operational and process issues. Second observation indicated that quality was not entirely a top management priority. Top managers were asked to describe the current priorities and focus areas. The responses were quite similar emphasizing availability, profitable growth, safety and product quality. Otherwise quality was not described as a critical element, partly because the financial situation was good, and the costs of quality had a declining trend:

*“The way we manage things depends on the depth of the crisis. For example, a threat of bankruptcy. It has an impact, what kind of actions we make. With quality, we do not have a crisis. -- Statistically there has not been such a change that quality should be current” -M3*

According to another interviewee, the low criticality may have impacted the approach and management. Though, there were no ignorance. Even though the management showed commitment in the survey, there was some contradictions on “want to do” dimension. The contradictions arose through social and economic logics. Some of the interviewees found very little personal benefit and did not find there was any special encouragement to drive the campaign more forcefully:

“I don’t see any personal benefit to participate, because quality is not appreciated in this organization.” -M1

Overall all of the managers had quite uniform vision of having a role in quality management and changing the quality culture. They had participated in several ways: specified quality goals, got involved in quality planning, set priorities, made investment decisions, communicated about quality and strived to show example. Some customer cases were also reported directly to the managers. The implementation of the plan was in most cases seen as a responsibility of quality manager.

### **Alignment (strategic planning)**

Strategic planning section was not directly comparable with the study groups. On management perspective the question was, what role quality had in corporate strategy, while on employee perspective it was a matter of participation and awareness. Management data

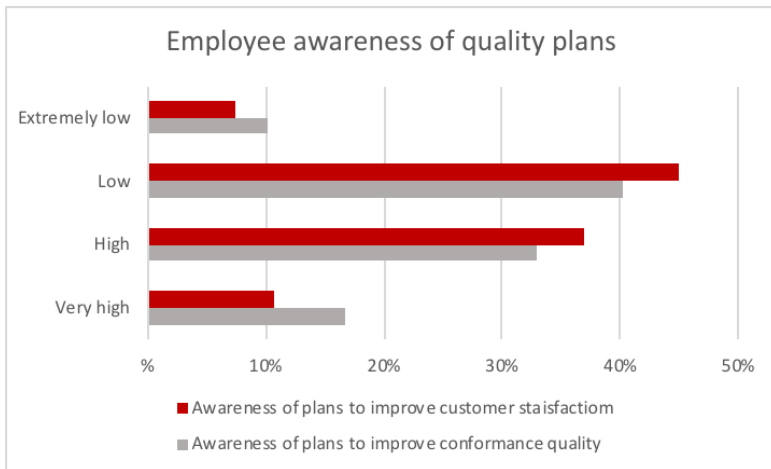


Figure 15: Employee awareness of quality plans

While management had 71% to 79% understanding and awareness of the plans (among different variables), employees had 50% to 48%. It was surprising though that only 17% of management had a strong understanding on how the conformance quality will be improved. In contrast 29% had a strong awareness of customer satisfaction related improvements. Overall only 21% of managers strongly agreed with the clarity of the objectives.

gave strong confidence (92%) that quality had a place in corporate strategy. However, the survey data did not tell anything more about this place. Overall there existed some confusion regarding what the concrete plans were for improving quality in the organization. It was not surprising that management confusion reflected to employees.

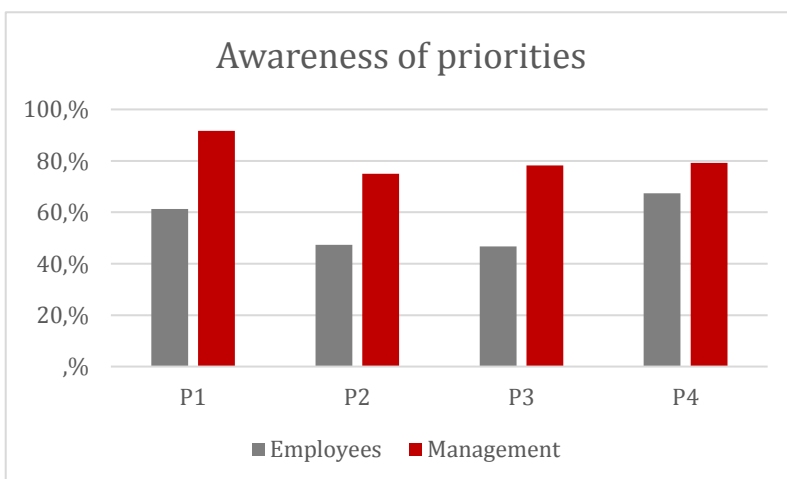


Figure 16: Awareness of company priorities

Probability of placing the order correct was only 43% among managers and 9% of employees.

Both study groups were asked to rank the company's four priorities in a correct order. Management showed significantly stronger awareness of the priorities. The stumbling blocks for both study groups appeared to be priorities 2 and 3, standing for quality and customer delivery. Most of the employees (>50%) placed these priorities in wrong order.

There data provided some evidence indicating a shortage in knowledge. The company seemed to focus on customer complaints resolution rather than utilizing good practices and

things contributing to customer retention. None of the managers thought there was a strong understanding on things affecting customer satisfaction. In contrast, 17% strongly agreed to have knowledge on things influencing customer dissatisfaction.

Interview data complemented also the other findings. One of the interviewees pointed out that quality had a place in each LPG strategy. However, it was there as a “mandatory” element, with no clear actions or plans. On LBU level quality strategy did not exist. Quality initiative to improve customer experience was implemented on BU level. One of the LPGs had an impressive quality ambition and specific improvement actions. The other two were either nonspecific or had a small-scale quality scope.

At the end, four out of five managers still emphasized the importance of strategic planning in creating quality culture. There was evidence that the current model lacked concreteness and clear steps. The interviewees desired long-term goals and clear short-term objectives. Clear roles (who was responsible for what) was also seen important. While most of the planning was internally focused, the interviews also revealed there was currently no strategic approach to manage supplier quality, even though issues with suppliers were recognized. Two managers desired some sort of supplier quality program. Some suppliers were let go too easy.

Finally, after discussing the objectives, quality measures became a topic. Proper measures were needed to track the progress. The company did not currently have proper measures for quality. Because of that, the company had limited knowledge on how to do purposeful actions. All five managers confessed, the customer feedback or satisfaction data was not systematically utilized. The company focused on solving problems, rather than utilizing the information for strategic purposes. The following was manifested:

*“We measure customer satisfaction with CCRP and NPS surveys. It is still a bit unclear what is the actual benefit of it.” -M3*

*“Measuring quality is a clear challenge. We do not have sufficient measures for customer satisfaction. – We cannot utilize CCRP enough. It just doesn’t work. There are too many cases, and the backlog is huge.” -M5*

*“It is hard to do actions, when we don’t have any measures.” -M1*

## Process management

Process management was one of the areas, where significant problems were identified. Understanding the essence of process management was not a problem, as all managers and 91% employees found to understand the meaning and purpose of it. However, both employees and managers seemed to agree with certain weaknesses. Figure 17 below presents the weakest elements employees perceived. Process roles and responsibilities had an average 2.6, which was the highest in this section. Only one third (36%) of employees found the process roles and responsibilities to be clear and properly defined. Only 4% strongly agreed. There was a great difference to management, as 67% of managers saw the process roles were clear. The second matter was process descriptions. 60% of employees found them too complex and not easy to understand, the survey gave an average of 2,6. In contrast, 63% of managers tentatively agreed and 0% strongly agreed the descriptions were all right. Management's average was still quite close, being 2,4. The processes relate directly to *can do* –dimension. If the processes are not clear and understood, there is lack of capability to improve or do the right things.

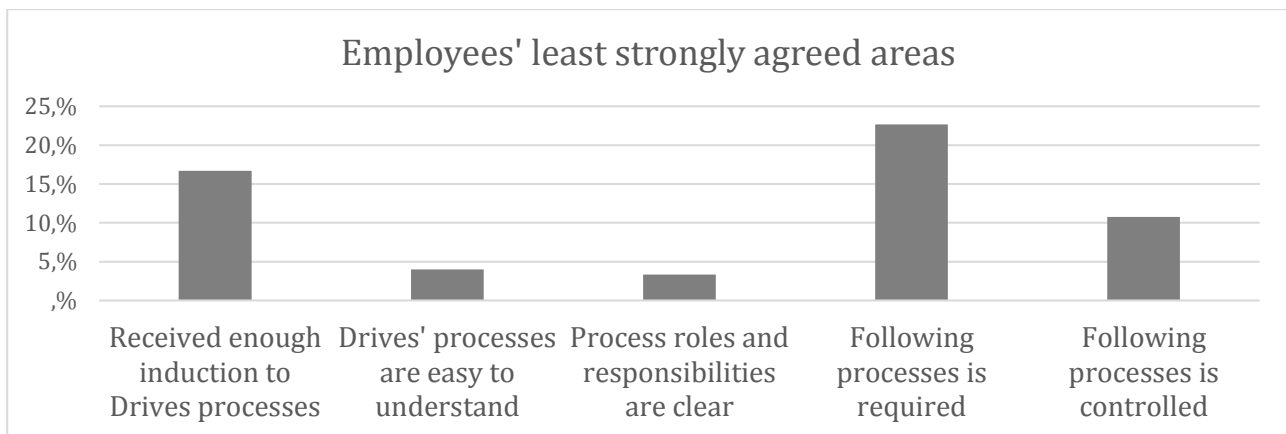


Figure 17: Employees' perceptions to process management

There was a great difference between management and employees on how the processes were controlled. 83% of managers told they monitor and intervene actively when it comes to working according to the processes. The survey gave an average 1,9. However, 60% of employees told the processes are not monitored, even though 61% of employees told to follow processes actively in their daily work. Process control received also average of 2,6

from employees, which was significantly higher. Overall, the employees were quite positive about the processes. From all employees, 73% felt processes were beneficial and helped in daily work. However, still half of the employees perceived they didn't have enough knowledge and capabilities to improve the processes related to their own work. Finally, both sides declared the business was currently managed through functions rather than processes. 67% of managers and 71% of employees found the organization was not process driven.

The interview data revealed some complementary aspects to process management. Processes were seen positive, in a sense that they helped to perform the job and provided the "can do" aspect. But negative in a sense that there was too much emphasis on following and working according to the processes. As a result, some problems remained unspoken. It supported the *small q* culture interpretation; the processes were emphasized in a sense they must be conformed to, but without considering how they deliver value to customer. The culture thereby emphasized control and supervision rather than empowerment and discovery. It can be argued that into what extent in information work the processes should be controlled. Emphasizing control in environment, which requires using own judgement and intelligence, may drive down motivation.

*"We do not have enough competence in process quality and process management. Many of our quality managers and engineers think that quality is achieved through processes. Making quality happen means that people use their common sense, not only follow processes that are controlled by managers." -M1*

*"I feel some people in our organization have lost the sense of reality. They think that focusing only on processes will lead to good results. Those help to perform the job but are not the most important thing for "making quality happen". We should focus on people. In the worst case, those process descriptions have a negative effect. There are too many of them and they are disorganized." – Employee2 (received via email during data collection)*

As the second thing, it was found that the processes did not have sufficient measures and there was no visibility to costs of poor process quality. Interviewees expressed that there should be more operational measures that indicated the costs, when something went wrong in the process. The measuring was found challenging:

*“Currently we do not have proper visibility to quality costs in our internal processes. We do have ideal processes, but there is a lot of bungling, which disrupts the visibility.” -M3*

### **Co-operation and replication**

Chosen approach to replication was to measure, how well the different LPGs shared good practices and co-operated to achieve higher level of performance. What Juran called “not invented here -syndrome”, was visible in the data. None of the managers strongly agreed that the co-operation was good. The average for co-operation between LPGs was 2.95, which indicated there was really poor co-operation among employees. Employees also felt good practices were difficult to share from LPG to another. The average was as high as 3.1. However, only 15% of employees and 20% of managers strongly agreed that the businesses were so different common practices cannot be created. Overall the results were slightly differing between employees and management, as management seemed to be slightly more optimistic about the level of co-operation.

Interview discussion supported the findings. A strong focus on individual businesses was a roadblock for knowledge and competence sharing. Interviewees found the competence and knowledge were not shared at their full potential. Sometimes the good practices were rejected, as they were not invented in the same LPG:

*“I remember when one LPG started to collect feedback from LSU. The system was shared to the other LPGs, but the reaction was not positive. It was seen as extra work. It took 2 years to deploy the system in other LPGs. Any External feedback is perceived as distraction.” -M1*

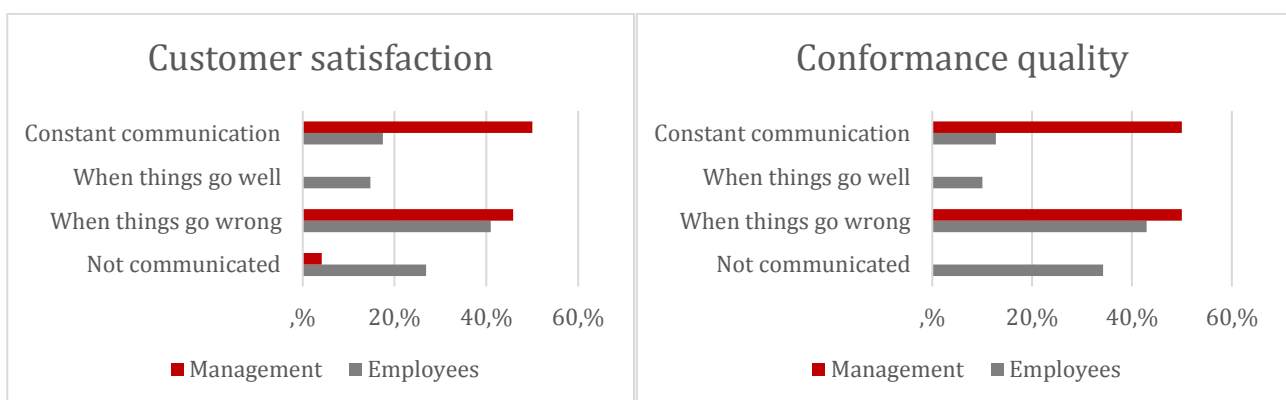
Separated businesses were not always seen as an issue. One manager flipped the coin and argued that the separated businesses were good in a sense that the problems were not spread across the whole organization.

### **Communication**

Managers and employees showed clear disagreements on each measured communication area. The questionnaire included questions about customer satisfaction, quality targets, expectations, priorities, success cases and frequency of communication. The data indicated that management had significantly higher perceptions of their communication, than it

actually was experiences. For example, as much as 83% of managers perceived they have communicated clearly quality objectives to all employees. In contrast 55% of employees felt the objectives were communicated clearly, those of which only 13% strongly agreed. Conformance quality appeared slightly weaker than that of customer satisfaction. The difference was 11% points. Communication of success cases appeared the weakest in the survey. The average among employees was extremely high 2,9. Only 5% of employees were fully satisfied with the level management communicated accomplishments. Surprisingly 42% of managers confessed not to communicate enough about accomplishments.

The frequency of communication provided interesting findings. I found that the organization did not communicate enough about quality, and the communication was focused on “things gone wrong”. There was a great difference how management and employees perceived the communication. Only one manager confessed he/she did not communicate about quality. Still 27% (34%) of employees felt management never communicated about customer satisfaction (conformance quality). Only 17% (13%) of employees perceived management communication of customer satisfaction (conformance quality) was constant. Most employees perceived that management focused only on errors. In contrast 50% of managers told their communication was frequently focused on both errors and success. The other 50% was oriented only to “things gone wrong”. Overall conformance quality was a less communicated topic than customer satisfaction.



**Figure 18: Quality communication**  
**Management communication focuses on things-gone-wrong. Great share of employees perceive quality was not communicated at all.**



Interview data strongly supported the finding that quality has not been communicated well in the organization:

*“How we have communicated or interpreted quality has changed lately. However, we still have not communicated enough about it. - M5*

*“In LPGs, we should communicate more. The current state is unstable. It is the reason why we haven’t communicated. When we fix that, we have more time to focus on the quality campaign. But yes, I admit there is no communication.” -M2*

*“Communication of quality is not similar to that of safety. There is no obsession or making a loud noise. We basically just try to cut the corners.” -M3*

One of the managers had an interesting opinion regarding quality and communication. According to him/her, quality should be “branded”, for example by utilizing the “make quality happen” campaign. Through the brand, it should be made visible to the employees, what the company was currently doing and what were the priorities.

### **Employee participation**

Employee motivation and management effort to engage employees provided very positive findings. By exception, employees felt very motivated and encouraged to participate in quality improvements. 83% even found participation to provide some sort of personal benefit. 93% of employees felt they were allowed and encouraged to suggest improvements. Also 87% found management to create positive pressure on participation. The only negative findings were related to rewarding and achievement recognition. 67% of employees felt the rewarding was not sufficient and 44% found the organization was not receptive to new ideas. Over half of employees told they were not given enough resources (like time) to participate in quality improvements.

The interviews complemented the findings. Management found employee engagement to be important for the quality movement. One LPG had launched a race between department teams. Each employee was expected to make two continuous improvement suggestions. When the whole team achieved the objective, the team was rewarded. The managers also recognized that there were maybe not enough opportunities for employees to have an influence; with safety, there was e.g. a hazard observation tool.

## Training

Survey data revealed that there was a significant difference between employee and management quality training. Overwhelming 92% of managers responded to have been trained for quality. Instead 51% percent of employees had participated in some sort of quality training during the past 3 years. In addition, almost one third of employees perceived the training was not useful. It was not surprising that 75% of managers thought employees needed more quality training. Questionnaires showed a clear evidence that more training was needed. 95% of managers would provide more quality training in the organization. In contrast 79% of employees expressed their need and motivation to participate, if training was available. It was also found that 18% of employees were not even aware, what kind of quality training there was currently available. Finally, it was asked, what kind of training was needed. I found the need for product and process related quality training was greater than training for customer satisfaction or customer knowledge. 70% of managers and 61% employees would increase product/process (customer satisfaction and knowledge) related quality training, while 56% or mangers and 51% of employees would increase training on customers. The survey collected also ideas, in what other training employees would like to participate. The responses varied from lean and KPI training to general training. There were also additional free responses for process training. Some of the employees also wished more practical training, like how to consider quality in daily work and what are the concrete tools that can be utilized.

Interviews provided somewhat supporting evidence. Three interviewees mentioned that more training was needed. According to one manager, other companies have invested a lot more in employee training and the level of training in this company was bad compared to similar companies. Right now, there wasn't training available for everyone at all levels. One other manager had similar thoughts:

*"Know-how in this company is inadequate. We should have training available for everyone. We must develop employee's competence. Training is one way to do this. -- For example, in safety, there has been a lot of training. Quality training does not have a clear roadmap." -M1*

### 4.3 Findings summary

All in all, this chapter gave an overall glance at the constraints of quality management in the case company. The root cause of quality management issues arose from the conceptual quality confusion. The research hypothesis was supported; small q – Big Q confusion was the reason for struggles and insufficient quality culture. Quality management had emphasized *small q*, which also impacted the quality culture. Managers in the case company acted as satisfiers, who looked for satisfactory solutions rather than optimal ones. Utility was irrelevant, as quality was not critical, and the financial performance was good. The resources were directed to things that benefitted one profit center (LPG), not the whole company. As quality was not a genuine priority, employees were not given enough time and opportunities to participate. Assessment of quality culture indicated there was no special motivation among managers to make any change. It was enough that quality was at “acceptable level”. The ongoing changes were seen as a mandatory part of the job, not a preference. There was no personal interest to see any extra effort.

The findings regarding the secondary research question revealed several areas for improvement. It was obvious that all behavioral prerequisites for purposeful action were not in place and this distracted quality culture development. Mostly the problems were related to *know* and *want* dimensions. There was not enough knowledge to do the right things or motivation to do anything. Regards to the success factors, qualitative and quantitative data turned out to support and complement one other. There were no significant contradictions detected. Each identified success factor had some shortcomings. The most evident weaknesses are summarized in Figure 19.

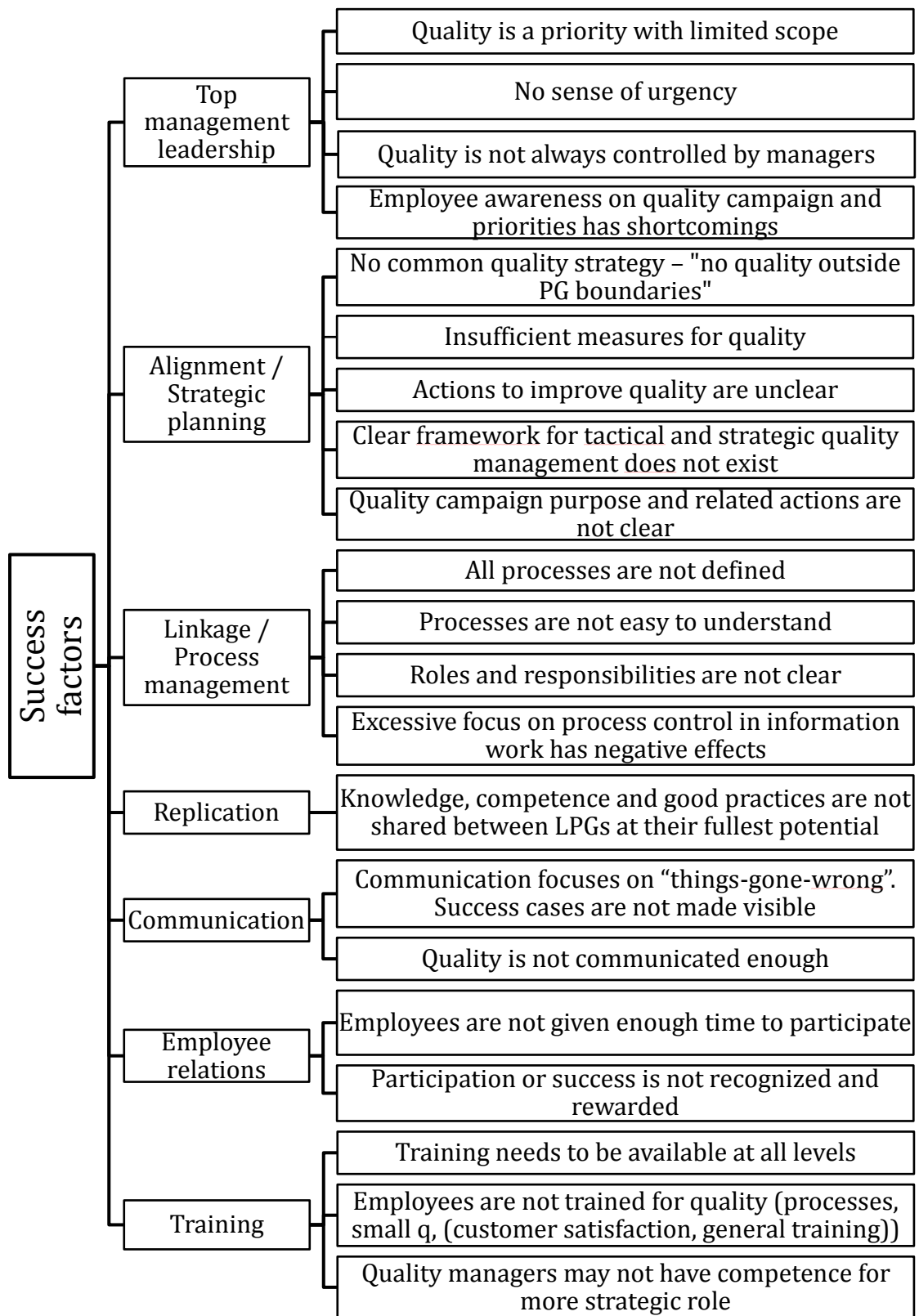


Figure 19: Success factors and gaps in present state

## 5 Discussion and recommendations

This study was motivated by a need to better understand the quality culture and managed cultural change. My objective was to study the assumptions and behaviors, which in existing reality resisted the transformation. Literature review recognized small q - Big Q confusion to be the fountainhead of quality management issues. While total quality management basic assumptions were converging with quality culture, the same confusion resisted a cultural change towards *total quality culture*. A hypothesis was formed. Out of the many forms of quality cultures, *total quality culture* was recognized as the desired state, as in this culture, the orientation to both *small q* and *Big Q* was strongly present. It strived for customer loyalty with minimal quality costs.

Proving the hypothesis indicated the case company needed more knowledge to direct the resources accordingly. The success factors act as mechanisms which enable a cultural change and may help in building the prerequisites for purposeful action. The study evaluated the success factors frequently observed in literature. Deprivations on each were identified. The purpose of this chapter is to discuss the issue at hand and provide recommendations for bridging the critical gaps.

This chapter is the final chapter of the thesis. It builds on three parts. First, the improvement opportunities are recognized and discussed along with potential strategic execution. Second section proceeds to discuss the limitations of the study. The thesis is finalized by recognizing the opportunities for future research.

### 5.1 Improvement opportunities and strategic execution

The purpose of quality management has changed during the past decades. While some companies have managed to take comprehensive approach to quality, the others have failed in it. The way the management approaches quality, has an impact on the quality culture. The culture cannot change, if management has limited perception of quality. Likewise, there cannot be companywide quality culture, if there is not common quality management. In this case, the issues were found in both. There exists a corrupted approach to quality and the company has shortcomings in common quality management. The focus shouldn't be on

things that are *believed* to be important - instead on things that are proven to be rational and build strategic capabilities in the long run. Unrealistic expectations are shortcut to unhappiness. Obviously, there are differences between the LPGs, which sets some specific requirements and focus areas for each. However, to succeed as a company, there needs to be something in common.

Just like the antecedents for rational action, the strategic execution for change builds on three components: know, can and want. Without each of them, the change is not possible. One can argue, which of these three components represents the first step. In my opinion, *know what to do* is the first. In a way, it reflects to the other two dimensions. I cannot direct my resources correctly, if I don't know what I am doing. Also, my feelings of "wanting to do something" may depend on the knowledge I have. If I mistakenly believe the utility is low and nothing needs to be done, I bet my motivation to make any changes is pretty low.



Figure 20: Prerequisites for strategic execution

In this case company, the first step is to start by building the knowledge and consensus on how *small q* and *Big Q* are managed. What the company is currently doing, is focusing on *small q*. Senior managers talk about customer satisfaction, but the action is missing. There are many ways to approach the issue. While the culture is proved to be cost-oriented, the money will talk most likely at this point. According to *Big Q* approach, all costs would disappear if everything was perfect (Juran, 1998). This includes the quality costs outside production and costs of losing business due to customer dissatisfaction. While sweet amount of money is tied to information searching, error fixing and issue resolution, the company should focus on these issues. There is no reason to create separate solutions in each LPG. For example, the company should definitely develop a common system to ease the information searching or create a common process for customer issue resolution. The process itself can be common, even the LPGs had their own specific issues to tackle with. Error fixing in the office can be partly fixed by increasing the capabilities. In terms of *small q*, relevant focus area arises from errors and costs caused by lack of control and poor

specifications. So, as long as the error fixing is caused by something that is controllable and detectable, it can be fixed. Variation in office environment that is assignable to a specific cause, is under quality control and *small q*. For example, if the variation is caused by employees, who don't follow processes, there should be more control. However, at present the data revealed the processes are not clear to employees. It would be nonsense to control something that is not well-defined or understood. This issue will be discussed later on.

Whether it was about product quality, process quality or customer satisfaction, clear quality strategies should be established to respond the issues in *small q and Big Q*. According to Juran (1998) the strategies for each should be separated, as they approach quality in different manners. However, to avoid confusion, there is a clear difference between *quality strategy* and *quality as a strategy*. Quality strategy defines the methods, practices and tools that shall be used to achieve quality. Quality as a strategy provides a way to deliver value. Big Q represents the latter. The strategy for *small q* should include things that are controllable for example in terms of product quality, process quality or supplier quality. Big Q strategy instead should focus on things that increase value and sales.

At present state, the operational quality was less clear than the one focusing on strategic aspects. The logic for action is very likely to be distracted, if there is no clarity. In the case company it led to situation, where each LPG focused on things that were easy to grasp and drove their own interests. I suggest common strategic frameworks to be established. Each LPG can apply the frameworks in a way that meets their needs. The framework provides preconditions for managers to talk about the same things and avoid quality confusion. The strategy should build on small, concrete steps that are easy to translate to wider audience (Juran, 1998). For example, while processes are not entirely controllable at the moment, the strategy should include an action for process definition. The fact that management paid less attention to conformance quality will be most likely explained by lower awareness of the objectives and plans. How can the management lead something they are not familiar and confident with? Awareness of plans must be increased. I would also recommend considering organizational structure in terms of quality management. When the management is fragmented, there is no force to drive bigger organizational changes, just ones that focus on

one LPG. There could be some point of having centralized quality management with LPG specific responsibilities.

The findings indicated limited quality management scope, which is why the case company should expand their focus to become truly customer oriented. While two of the LPGs had already established some sort of strategic role, the LBU and the one remaining LPG should do this as well. A council should be established to focus on issues that extend outside the scope of *small q* and quality control. The focus areas emerge from things, when small *q*, conforming products or services, are not enough to keep the customers satisfied. Like identified, the problems in case company were caused by issue resolution, lead times, poor communication and fitness for use. Some of these issues can be fixed by improving the communication with LSU. In addition, LPGs should gather feedback and arrange regular meetings with LSU to solve critical cases and develop the business together. Likewise, the customer feedback should be utilized more. There was great amount of data available in CCRP and NPS databases. Both the positive and negative feedback should be revised for improvement. While there was a huge backlog on CCRP cases, which caused a mode of handling and burying the cases, the company should reserve more resources. When the company slowly gets out of its “detect and repair” mode, these resources can be released for other tasks.

On the other hand, the case company should build measures for customer loyalty and satisfaction. The economic perspective of quality should be made more transparent. According to Juran (1998), the measure that matters, is the one that indicates how much sales the company is losing because of customer dissatisfaction. A desired relationship for any company is to achieve customer loyalty; a state in which the customer is crying (for example because of high price) but still paying (as the experience outranks any competitor). The measure for customer loyalty could be a percentage of repeated business. While there are no measures available, the company may not see the benefit. This refers to the cultural aspect that change won't occur, as the new methods are not proven to be successful (Schein, 2004). If we knew that there was financial benefit in focusing on customer, we would have greater sense of urgency. In this case the case company could benchmark similar industrial companies to build the knowledge on what is achievable with expanded quality



management scope. In literature for example Roland et al. (2002), have found that revenue emphasis on quality management has a positive impact on financial performance and customer relationship performance. It also had one-year-ahead positive impact on ROA and stock returns (Roland;Moorman;& Dickson, 2002). To be clear, revenue emphasis was a term used for approach emphasizing *Big Q* aspects.

As a summary, *know* dimension requires the following actions:

1. Build mutual conceptual understanding of quality among top management
  - Consider possibility for changing organizational structure. Instead of having fragmented quality management, revise opportunity for centralized quality team solving also bigger organizational quality problems.
2. Expand the scope of quality management
  - Recruit or train extant employees for strategic role covering Big Q issues in LBU or open quality manager position in LSU.
  - Develop a strategic model for quality management (how it applies to suppliers, product, processes and customers) and agree on targets
  - Establish metrics for customer satisfaction and loyalty (e.g. repeated purchase rate (RPR), first contact resolution (FTR) or customer effort score (CES)).
  - Focus on the issues with highest costs of poor quality (based on established metrics)
  - Utilize customer feedback (received through CCRP and NPS) for strategic purposes. Focus on most repeated issues: issue resolution, customer contacting, lead times, fitness for use (in other cases than conformance)
3. Improve co-operation and communication between LSU and LPGs/LBU.
  - Gather and utilize feedback from LSU
  - Establish a quality council including people from LSU, to solve the critical customer issues and to define actions for improving customer satisfaction
4. Refine/develop a clear quality strategy for conformance quality and communicate it to managers and employees
  - Provide common framework for all LPGs and put it into practice in all LPGs

- Select the focus areas (highest costs): product quality (warranties), information searching and white-collar productivity

5. Increase management (and employee) awareness on quality plans

The second step is to focus on *want to do* dimension. It is crucial to evaluate the motivation and take the appropriate action, before making investments on capabilities. Training for quality for example is useless to arrange, if nobody is willing to participate or do anything. Both managers and employees felt confident about participating and did not see any direct risks to act. On technical aspect, there is no problem. The biggest motivational issues arose from social and economic dimensions. The solution is to provide social and economic incentives, and perhaps also set obligations. To increase employees' sense of economic benefit, an easy solution would be to provide financial reward for any quality achievement or initiative. The company has already an initiative protocol, which provides also an opportunity to acknowledge quality initiatives. The other way is to focus on non-financial rewards, such as the sense of doing the right thing, responsibility and recognition. The data indicated employees felt the communication focused on "things-gone-wrong". It is the exact opposite of achievement recognition. It embraces failures. Considering that there is too little communication in the first place, my suggestion is to increase the communication on all aspects. Special emphasis should be given to things-gone-right communication. The communication should not be limited to one LPG. There should be also companywide communication to enable the sharing of good practices.

The study found the organization to be result-oriented. Management literature doesn't necessarily see management by objectives (MBO) as a negative thing. Well-implemented MBO can lead to higher sales rates and productivity (Rodgers & Hunter, 1991). However, especially Deming is known for opposing this management style (Deming, 1986) (Walton, 1986). Deming (1986) argued that focusing on targets, encourages employees to utilize any means to achieve those targets. It basically means more variation and poor conformance quality. Instead, the systems should be understood, and the best practices defined for achieving the wanted results (Deming, 1986). Otherwise, the *know what to do* aspect is not there. The focus on results may also have a social impact on employees, if the management sends a signal that all that matters is money. The data (and also my personal experience)

shows that management focuses on financial performance in their monthly communication. My suggestion is to shift the management focus. What management talks and signals tells the employees what is important (Schein, 2004). Obviously, the best thing for total quality culture, is to signal that quality is important. I suggest reserving less time for financials in monthly team meetings and put that time for quality. The management could bring up for example critical quality cases, quality observations, customer feedback, lessons learned and good practices from other LPGs. The purpose of it is to also make the employees more aware of quality through concrete things.

On the other side, a great number of employees felt the organization was not receptive to new ideas. This is actually very tricky problem. It is easy to recommend individuals to be more open and less negative to other perspectives. In reality it is much more complicated than that, because it challenges the basic assumptions of culture, which are very difficult to change. Instead, I suggest focusing on social incentives, which can be used to increase employee engagement. This could include for example job enrichment or enlargement. Good practices can be shared through talented individuals, who work as internal consultants for other LPGs. At the same time, it might untangle the organizational complexity. Job enrichments is unavoidable, if the company expands the quality management scope without new recruitments. Another option is to set obligations. Quality should be made a responsibility of everyone. In one LPG they had set an obligation for every employee to make two continuous improvement suggestions. This practice was very similar to that of safety. Every employee must make three safety observations each year. This was also tied to employee scorecards. I suggest launching a similar tool for quality to maximize employee participation. Of course, each employee could participate at their own level. The quality observations could be for example anything from continuous improvement suggestions to observing variation in process and making corrective actions. As discussed in literature, the best solution is not to have something either voluntary or compulsory (Porter & Parker, 1993). Instead, something in between that sets realistic targets for each employee. The best solution would tie the target achievement in scorecards.

On top management side, the economic incentive is one of the hardest to tackle. If senior managers do not have the sense of urgency and motivation, then how can the employees

have it. In the end, it is about leadership and followership; employees follow the example of a leader. Literature provides very little, almost none, examples for practices increasing senior management commitment from bottom-up. The focus is on employees and how the managers can make employees more motivated. The same practices do not necessarily work vice versa. As the management seems to be interested in financial aspect of performance, my suggestion is to make the management more aware of the financial profits and costs related to quality. What kind of measures are needed, are represented earlier. I would also increase management awareness on quality issues and involve management in critical cases. Some of the motivational issues may arise from poor understanding of the situation. Similar to existing safety incident reporting, the company could start to communicate about critical quality incidents and their root causes each month.

One of the interviewees told that the current situation with operations (especially R&D and suppliers related) has serious room for improvement. According to this manager, to make the co-operation work between LPGs, requires a dictator and strict command. Currently there was no dictator, so the problems remained. It seemed that some obligations are needed for top management as well. Needless to say, defining obligations for senior management is the responsibility of person with the highest command. The LPGs are very isolated, and that doesn't make it any easier to solve issues that actually require co-operation. There could be common objectives outlined in quality strategy to strive common targets besides the individual ones.

As a summary, *want to do* dimension requires the following actions:

Increase economic incentives:

1. Increase quality communication in LPGs and across the LBU
  - Recognize and communicate especially achievements and things-gone-right
2. Reward teams for achieving quality targets
  - E.g. practice implemented in one LPG for continuous improvement
3. Communicate less about financial performance, more about quality (for example in monthly team/department meetings)

- Bring up e.g. critical quality cases, quality observations and customer feedback. Make things concrete.
4. Increase top management awareness for financial benefits and escalate critical quality cases

Increase social incentives:

5. Increase encouragement and sense of recognition with job enrichment and enlargement. Utilize talents across LPG boundaries as internal consultants.
6. Set obligations by launching “quality observations” for employees (set the target in scorecards as an economic incentive)
7. Set common quality objectives and make LPG co-operation an obligation

The final step in strategic execution is to ensure capabilities and resources for action. Capabilities and resources should be deployed for required need. In this study, the needs arise mainly from technical aspects such as process management and training. What can be done, depends on the resources and capabilities the employees and managers can access. It was obvious that there was not enough training available for employees at all levels. A basic requirement is general quality training. Juran (1998) suggest, the employees should be made aware why quality is needed, what it means in this specific environment and how individuals can utilize concepts and techniques in daily work. In some cases, the data indicated that management emphasized customer focus in their communication, yet, employees had higher need for operational quality training. The reason for this, might be the fact that management felt less confident and aware of plans regarding operational quality. Especially everything outside product quality appeared fuzzy.

The training was not relevant only for employees. If the quality management scope is to be expanded by utilizing current human resources, appropriate training should be provided. According to the data, the company did not have adequate capabilities for strategic quality management. Strategic quality training should cover e.g. the following subjects: deployment of strategic metrics and goals, deployment of strategic quality plan, business process understanding and quality culture (Juran, 1998).

The second technical issue was process management. Findings indicated that processes were not properly defined, easy to understand and had unclear roles and responsibilities. Just like instructions, process descriptions provide employees a guideline on how to perform the job. Thereby process management links to capability. Hence, it is hard to demand conformance or control processes, when the processes are not found understandable or defined clearly. Making the processes understandable may be a question of training. The findings showed that employees were not properly familiarized with the company's processes. I suggest the company to provide process training for employees; especially about the company-specific processes (need for general process training was extremely low).

When it comes to processes, variation and control become a relevant topic. Variation comes in many forms: customers place orders when they want, and supplier deliver wrongs parts at wrong time. Control is required to replace "wrongs" with "rights" (Lillrank, 2018). However, it must be well-thought, into what extent control is required. It can be seen negative, especially when the control and standards are meaningless bureaucracy. Yet, creativity can appear at the top of things only if the base is standardized (Lillrank, 2018). In the case company, employees perceived that the processes were not controlled. This is no doubt a problem, as it allows variation to occur. More attention must be paid to process control also in white-collar work. However, this cannot be done before the processes are identified, communicated and have proper measures. Even after that, management cannot assume quality culture is just about following processes. There must be room for own judgement and discovery.

Final limitation was found to be time. Employees reported not to have enough time to participate. If quality was made a priority, prioritizing would probably make room for quality as something else must be relinquished. The question in this case what activities the employees should get involved with. While culture is not about behavior itself (Schein, 2004), rather the assumptions that drive to behave in certain ways, I would utilize the limited time for employee training as a commitment and need for it existed. On the other hand, based on the interview findings, employees may hold an assumption that quality means extra work. If

this assumption exists, it must be removed. The communication and training should emphasize that quality is natural part of the work.

*Can do* was not only a matter of technical capabilities. Social limitations, what is acceptable to do, existed in forms of collaboration. The case company has a strong silo structure, which limits the employee's chance to participate something outside his/her own department or sharing the good practices. Barriers to cross-functional co-operation must be eliminated. This can be done by increasing vertical communication and enabling talent and knowledge utilization across the organizational boundaries. The company should also recognize and map the areas, in which common projects or process wide initiatives are possible to be implemented.

Finally, the company should revise the things that are affordable to do. Quality does not always require investing financial assets. For example, white-collar productivity can be improved with training. Yet, some things found in this study may require so; for example, systems facilitating information searching, customer issue resolution and customer communication. Usually these systems pay back after long period of time. The company is highly recommended to explore the opportunities regarding these issues. Estimates provided in this study, can be used as estimates in NPV investment calculations.

As a summary, *can to do* dimension requires the following actions:

1. Increase general quality awareness:
  - e.g. foundations and principles of quality, definition of quality, quality process (plan, control, improve), customer focus, quality measures and rewarding
2. Provide strategic quality training for selected managers
3. Create preconditions for process management
  - Define all managed process, assign roles, communicate them and make sure employees are familiarized with them
  - Define responsibilities and control processes conformance also in white-collar work
4. Provide employees quality training or self-study material

- Provide especially company-specific process training
  - Encourage employees to invest spare time on training
5. Explore investment opportunities for improving customer interface and facilitating information finding

## 5.2 Limitations

Four limitations stand out in this research: Timing, generalizability of the results, research biases and replication. First of all, as recognized in Chapter 3, this study was cross-sectional and took place within short period of time. The time frame sets limitations to things observed at place and understanding any similar transformations or events in past. Having as broad scope as phenomenon involving the whole organization makes it impossible to observe all relevant incidents during a short period of time. Especially in cultural transformations, the validity of results can be confirmed after a long period of time. Longitudinal study could naturally provide more reliable results, as the change process itself can be observed.

Second limitation arises from the nature of the study. Findings in this specific context are unique; the organizational culture and success factors shall behave differently in other companies. The generalizability limitations stretch across subjects, settings and time (Saunders;Lewis;& Thornhill, 2009). This means that the findings might be different and not generalizable to other people than those in the study. In a single case study like this, the results and recommendations might not also work in other environments and contexts. It is also possible that the responses differ across time of the day or week.

Case studies usually relies on subjective data, like statements and observations (Saunders;Lewis;& Thornhill, 2009). The data will thereby vary at different times, as human feelings and opinions tend to change. The third limitation associates with the errors and biases recognized earlier in chapter 3. The observations are drawn from five interviews. It is possible that interviewees might have be unwilling to disclose certain information. Also, the low number of respondents might feel like a threat for anonymity. The informants were assured that no names or any identifiers will be published. In a context like this, where the social interactions are the core of the research, these limitations are hardly avoided.



Final limitation is replication. Like most single case studies, this research is difficult to replicate. Cultural context is always unique. Also, as the time goes by, the culture may reflect different characteristics. The research setting would not be the same in any other time or context.

### **5.3 Opportunities for future research**

The thesis provided some opportunities for future research. Even existing literature provided quite comprehensive overview to cultural change mechanisms, the ones that relate to quality culture are quite hard unequivocally to define. This thesis studied the ones that were regularly observed in literature. It is still possible that some other factors may play a critical part for quality culture. In future, the success factors could be studied more extensively. There are also a lot of overlapping between the organizational culture change mechanisms and quality culture success factors. The same things are discussed in literature with different terminology. The quality culture success factors could be built and arranged under the same concepts to avoid confusions.

The concept of quality culture is well discussed in literature, however, the forms the different forms of culture are less agreed. While there exist several definitions and attempts to explain quality in organizations, the ones that are in line with the two-folded nature of quality are missing. The concept of *total quality culture* should be studied and discussed along with the concepts of *small q culture* and *Big Q culture*. Some of the current literature still confuses Big Q with TQM. There is clear distinction between *small q* and *Big Q* concepts, which why they should be placed on antipodal points. These two concepts with two different ontologies form the entity called TQM. How these two concepts behave in cultural context, should be further studied. The forms provided in this thesis are formed theoretically and not tested empirically. The future studies have an opportunity to define and solidify these concepts.

Literature recognized that culture has a remarkable impact on company's success. In this study, it was assumed that *Big Q* culture was more beneficial for profits through sales than *small q* culture. Longitudinal studies could be conducted to compare the forms of quality cultures and their impacts on company's financial success. Cultural studies usually benefit and provide more reliable results, if the study is conducted over long period of time.

Longitudinal studies could be utilized also to detect the transformation process from one form of culture to another.

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# Appendix 1: Interview protocol

## Before interview

- Introducing myself and the thesis topic.
- Describing the structure and duration of the interview.
  - The interview consists of 3 parts. Each part is approx. 30 min.
- Asking permission to record. Emphasizing the anonymity and trust between the interviewer and interviewee.

## Part 1: Current quality culture

1. Describe the current priorities for the organization. Where does the management focus right now?
2. How would you describe the current corporate culture? What things are important for the organization? Has something changed?
3. How would you describe quality in current culture? How can you sense it?
4. What does quality culture say to you? How would you see it in this organization? What do you think the benefits are?
5. What does quality mean to you? How quality is achieved in this organization?
6. What are the things done for conformance in products and processes?
7. What things are done to achieve customer satisfaction?
  - a. Why customers choose to buy from this company? What are the reasons customers run away?
  - b. Are there contradictions between customer requirements and customer satisfaction? Is there anything that could be improved?

## Part 2: Personal questions

8. What is your role in quality management? How are you involved?
9. Explore the purposeful action: know, can and want.

## Part 3: Success factors for cultural change

10. What things you think are critical for achieving a cultural transformation?
  - a. Mirror these factors to current quality practices, how well these factors are present?
11. What do you think are the barriers to achieve cultural change? Is there anything in current culture that may resist cultural change?

Is there anything else you would like to bring up?

## After interview

- Thank the interviewee for the session
- Ask if they are available for supplementary interviews
- Give your contact details for arising questions
- Transcribe and code the answers