Differences Between Chinese and French Companies Regarding Total Quality Management—A Case Study of JKKR Co. Ltd and Veolia Water Group

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Abstract

There is a research about the essences and processes of Total Quality Management (TQM) implementation and its effects on organization performance. The results from the research report indicate that the adoption of TQM in China is extensive (Yusuf, Gunasekaran & Guo, 2007). Although many Chinese manufacturing firms began to implement TQM from 1978 onwards, China still lacks effective TQM systems and applications at the business level (Zhao, 1995). TQM is an effective method to improve business performance. It is expected that quality management will help quality people in manufacturing firms and industries, not only in China but also in other developing countries.

This thesis aims to identify differences between Chinese and French companies regarding three of five cornerstones of TQM. They are customer focus, process focus and continuous improvement. The aim is to explain why differences exist and also examine how the companies are performing in TQM aspects as well.

In this thesis the authors follow a research design and collect data from interviews and documentation to provide the theoretical framework and obtain empirical evidence for the thesis.

Based on the findings, the authors compared the two companies regarding the three cornerstones. The reasons why there are the differences between the two companies are mainly social policies and the companies’ development stages.

From the study, the authors raised some new ideas of cornerstones. Compared with Gauttam (2010), who gave an idea of The Four Pillars of TQM, the authors think that the processes are as significant as the customers. Thus, the authors made a new theory model to state their understanding of the relationship between TQM cornerstones, which is a contribution to theoretical framework.

Keywords:
Total quality management, cornerstones (customer focus, process management, continuous improvement), management system, management approach, customer relationship.
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1 INTRODUCTION

In this chapter the authors will deal with the background and purpose of this thesis: In addition, the research questions will be presented to illustrate their main focus as well as the importance of their research.

1.1 Background

Total quality management (TQM) is a management system for a customer-focused organization that involves all staffs in quality improvement work. Most companies use TQM to improve customer value and increase sales and profits from goods and services. Different companies manage with different tools, but they usually include similar steps for achieving company goals, called 5 cornerstones. The cornerstones should be supported and integrated with suitable methodologies and tools.

Listed below is some literature containing interesting comparisons of companies in different countries regarding TQM:

In France, many companies are frustrated with their efforts to improve quality through TQM, because these companies have only focused on financial measures instead of quality measures (Torbica & Stroh, 1999). Recently, other studies also observed the failure of TQM. These failures are due to the “too much-too soon” effort without proper foundation and focus (Culp et al., 1993). Therefore, construction companies need to understand how to successfully implement TQM.

Through validating direct and indirect relationships in top management commitment, Human resources (HR) focuses on TQM practices, employee satisfaction, and employee loyalty. The article’s research objective is to isolate critical TQM practices that could enhance employee satisfaction. Improved employee satisfaction can lead to higher levels of employee loyalty. (Kaynak, 2003)

Many writers seek to learn from other systems how to improve their own; this is also the initial motivation of this thesis. The most significant reason is to do comparison.
Many would say that comparisons are the essence of all social enquiries or even of logical enquiry in general.

One reason for carrying out this research is that the authors want to help improve JKKR in China; another reason is that the authors are interested in quality management and want to study how it can be implemented in practice. Meanwhile, the method of comparison is clear and fast and thus, the authors chose Veolia as the comparison group.

In this thesis, the authors decided to focus the research on two companies that contribute to water management, but operate with completely different business models and management. The two companies are Inner Mongolia JKKR Environmental Protection and Technology Limited Company, and Veolia Water Group from France.

1.2 Purpose

This thesis aims to identify differences between Chinese and French companies regarding three of five cornerstones of TQM, which are focus on customers, focus on processes and continuous improvement. We also want to explain why these differences exist as well as examine how the companies are performing in a TQM aspect.

1.3 Disposition of the thesis

This thesis consists of six chapters. The presentation of each chapter together with their component elements and objectives are listed below in figure 1 and figure 2:
Figure 1: Structure of this thesis, own design. Source: Shao & Yang.

Specifically, the authors made figure 2 for chapters three to six to more distinctly show the structure of the thesis.
Figure 2: Structure of this thesis. Source: Andersson, Hellberg, Shao & Yang.
2 METHODOLOGY

In this chapter the authors will present the methodology approach, research design and data processing from data collection to analysis. Furthermore, the authors will discuss the reliability and validity and significantly illustrate the methodological limitations in this part.

In order to get the information that the authors needed, they started by developing the questions. The questions that the authors asked mainly concern the three chosen cornerstones. For example, in the customer aspect, the authors asked about the client base of the companies, how the companies do in terms of focusing on customers and about the customers’ feedback of products and services; in the process aspect, the authors asked what the company’s process model is and how they manage sewage treatment; in the continuous improvement aspect, the questions are about what the company has done to improve continuously and how the continuous improvement helps the management (see appendix 1).

To get information, interview and documentation are the two main methods that have been used.

2.1 Methodology approach

2.1.1 Choice of companies

The two companies chosen in this study met two requirements:

- The companies are from different countries, preferably from different continents
- The companies operate in the same business

JKKR Co., Ltd is a Chinese company that mainly treat sewage, while Veolia Water Group is French company also is responsible for water treatment. These two companies correspond with the requirements that the authors decided upon.
2.1.2 Choice of comparison

There are two basic ways to organise a comparison (Walk, 1998):

- In text-by-text, you discuss all of A, then all of B.
- In point-by-point, you alternate points about A with comparable points about B.

The text-by-text way is used when you think B extends A. If you see A and B engaged in debate, the point-by-point can be used.

In this study, the authors focused on the two companies equally. Within every cornerstone, the study is following the point-by-point method. The authors found points that exist in both companies, described those and then compared the two companies.

2.1.3 Qualitative and quantitative study

The research approach is divided into two types: qualitative and quantitative. According to Denzin (2000), qualitative research is a type of scientific research in a naturalistic setting by an individual in addition to describing context using models and data. Generally speaking, scientific research includes an investigation that: (Patton, 2002)

- Asks for answers to a question
- Systematically uses a predefined series of processes to answer the question
- Collects evidence
- Produces findings that were not decided ahead of time
- Produces findings that are applicable beyond the immediate boundaries of the study

Specifically, qualitative research is effective in getting culture specific information about the values, opinions, behaviours, and social backgrounds of particular groups.

The strength of qualitative research is that qualitative descriptions can play an important role in suggesting possible relationships, causes, effects and dynamic
processes. Qualitative research has an ability to provide complicated text descriptions of how people experience a given research issue. Also, qualitative research adds flesh and blood to social analysis. (Hughes, 1997)

According to Houman (2006), the three most common qualitative methods are:

- Depth interviews
- Focus groups
- Participant observation

The data types these three methods yield are field notes, audio (and sometimes video) recordings, and transcripts.

In other words, compared with the quantitative approach, the qualitative approach is preferable due to the following reasons: (Hair et al., 2003)

- Events can be understood properly only if seen in context. Thus, researchers using the qualitative approach immerse themselves in the setting.
- The contexts of investigation are natural. Nothing is predefined or taken for granted.
- Qualitative research is an interactive process.
- Researchers using the qualitative approach notice the experience as a whole, not as a separate variable.
- The purpose of qualitative research is to understand experience as unified.

Because the study is mainly discussing the differences that arise by comparing the two companies and analysing the reasons for the differences, the authors chose to implement qualitative research on the study.

This thesis follows the three qualitative methods of Houman (2006) that were mentioned earlier. Information was gathered from JKKR by depth interview, and the whole thesis focuses on and analyses the two companies. The qualitative research provides a good method to analyse the relationships, causes and effects (Hughes,
With the qualitative research, it is easy to analyse the relationship the two companies have with the cornerstones of TQM, the differences between the two companies when implementing cornerstones, and the causes and effects to the companies due to the differences.

In conclusion, based on research questions, expected outcome and the fundamental comparisons mentioned above, the research approach is qualitative research, since the authors need qualitative tools to analyse. Also, in-depth interviews and documentations are conducted.

2.2 Research design

There is a six-step of research design (Blumberg, 2005):
1. Development of theoretical framework
2. Selection of cases and design of data collection
3. Writing individual case reports
4. Drawing cross-case conclusions
5. Bringing cross-case conclusions to stand on the theoretical framework
6. Summary reporting

This thesis follows Blumberg’s six steps without modification:
Step one: chapter three focuses on the development of theoretical framework, which mainly concerns cornerstones of TQM.
Step two: the authors selected JKKR and Veolia as two cases. Searching for information on the companies and interviewing were two ways of data collection.
Step three: chapter four consists of empirical study, which deals with respective company’s background and interview data.
Step four: the discussion part is a preparation for the drawing of cross-case conclusions that compares the two companies in regards of cornerstones from a TQM perspective and finds the reasons for the differences.
Step five: chapter six is the conclusion part; the main conclusion stands on the theoretical framework and is aimed at perfection of the theory based on this thesis.
Step six: it is included in the conclusion.
2.3 Data collection

The authors wanted to collect the data that described what the companies have done to implement the cornerstones of TQM. Interviewing is a fast and direct way to obtain the wanted information. Through documentation, the authors could find former investigations and studies of the companies. Thus, the authors decided the ways of gathering data would be through interviews and documentation.

In order to achieve the requirement of purpose, stable and broad data was needed to form the theoretical framework. Then contextual evidence could be used to test the theoretical framework. After comparing the essence of different pieces of evidences and requirements, the authors chose a combination of interviews and documentation. The authors used documentation as a basis for the conduction of interviews, and used interview information to test the documentation. The data collection process is designed as illustrated in figure 3.

![Figure 3: Data collection process, own design. Source: Shao & Yang.](image)

The documentation and interviews were collected at the same time. They both had an influence on each other.

2.3.1 Documentation collection

The authors found much of the companies’ information on the internet, and the annual reports published by the companies’ official websites in the past few years. Also,
documentation was selected in the forms of internet web pages, articles and books. The authors chose Google Scholar as the main database to search for articles, using keywords such as “implementation of TQM”, “Comparison of Chinese and international companies”, “Chinese company implementing quality management”, etc. The authors focused most on implementation of TQM and international comparisons of companies. The authors read the keywords of articles first to decide which articles were relevant and should be read. Then, a great deal of scientific articles was chosen, as well as books, to collect enough data for the theoretical framework. Furthermore, the authors designed the questionnaire for one of the companies based on the preliminary research.

2.3.2 Interview collection

Through the chief executive officer, Mr. Li, the authors were connected with general manager Wang, who is in charge of quality management. Manager Wang accepted to be interviewed through both e-mail and telephone. Through in-depth interview the authors obtained facts as well as personal ideas from the respondents.

The respondents

The interviews connected to this thesis are divided into two stages. The first is interviews via e-mail. In this stage, the authors wrote the general questions related to quality management, and the company interviewee responded in text. After reading the responses, the authors prepared detailed questions based on the preliminary answers that make up the second stage.

Interviewee 1: Chief Executive Officer
Interviewee 2: Assistant to General Manager,
    General Manager of Marketing Department

Since the interview data are all in Chinese, the authors sent it back to the interviewees after translating it to English so that there would be no misunderstandings.
2.3.3 Data classification

After obtaining the data from documentation and interviews, the authors divided it according to theoretical framework, which means the data is separated into three parts: focusing on customers, focusing on processes and continuous improvement. This is the main classification of data. Also, the authors summarised the problems currently existing in the companies.

2.4 Reliability and Validity

As defined by Yin (2009), validity is “the ability of an instrument to measure exactly what it is supposed to measure”. And according to Yin (2009), reliability applies to the uniformity of findings when using the same research techniques repeatedly.

In this thesis, the authors found large amounts of relevant information in the form of articles and books, and obtained information from interviews and websites. The authors performed their own sequence of data collection, in which documentation is reviewed to strengthen the interview data. Then, the authors applied the collected data on the thesis.

Furthermore, since the thesis aims to analyse and compare two companies, the interview method could guarantee a large amount of information. Since the interviews of JKKR are in Chinese, the authors sent the translated interview in text to the company and got confirmation from them. The company said that the translations are all correctly interpreted. Therefore, the research method chosen was validated with the empirical findings.

2.5 Methodological limitations

One limitation is that only three of five cornerstones of TQM are mentioned, which results in insufficiencies in the study, because there would be other connections between the two that are not mentioned and the three that are discussed in the thesis. Continuing to study the companies is a direct way to solve this problem. In practice, it
means to continue interviewing and collect information concerning the other two cornerstone within the two companies and then integrate all five cornerstones.

The lack of information about the companies is another limitation. Since the authors have not worked in either company, regardless of any interviews or information released by officials, there is always some internal information that is hard for outsiders to understand. The information about Veolia is from the official website and articles instead of interviews, which is also a big limitation of this study. To solve these two problems, searching for great amounts of information is an efficient way. That information includes former our articles about the companies that our chose. By combining the information we get with that of former studies, we could have a better and more accurate understanding of the companies.
3. THEORETICAL FRAMEWORK

This chapter is divided into three parts to serve the framework of the whole thesis clearly and logically. Through specific analysis of generic quality, the quality dimensions and cornerstones of TQM respectively the authors will build a clear theory structure of this thesis for the readers.

3.1 The Generic Quality

There are numerous definitions of the concept of quality. The international standard for quality systems, ISO 9000:2000, defines quality as “the degree to which a set of inherent characteristics fulfills the requirements”. Quality is also defined as follows: “the lack of quality is the losses a product imparts to the society from the time the product is shipped” (Taguchi, 1979). Others describe quality as “Conformance to requirements” (Crosby, 1979), “Fitness for use” (Juran, 1951) and “quality should be aimed at the needs of customer, present and future” (Deming, 1986) In order to describe quality more extensively, Bergman and Klefsjö (2003) suggested the definition in their book, as “the quality of a product is its ability to satisfy, and preferably exceed, the needs and expectations of the customers”.

Garvin discussed the quality concept and identified five approaches: transcendent, product-based, user-based, manufacturing-based and value-based. (Garvin, 1984)

1. Transcendent approach: when it comes to transcendental view, people would say, “I can’t define it, but I know it when I see it.”
2. The product-based approach: quality is completely measurable and objectively based on individual taste and preference.
3. The user-based approach: the product they choose is based on the quality. The higher quality the product is of, the more the customers will prefer it.
4. The manufacturing-based approach: excellent quality is not necessary for anyone, but the organization. Quality in this approach concerns technology; improved quality will render the benefit of less defective goods.
The value-based approach: quality is related to cost and price, and normally the customer’s purchase decision is based on quality at an acceptable price. So, it is of importance to achieve a balance between quality and price.

The authors found some significant theories of TQM from different researchers. TQM is a holistic approach that stresses all aspects of an organization and not used for a short-term goal. The purpose is to primarily transform the organization by forward changes in practices, structures, and systems. (IBM Open Pages Operational Risk Management, 2011)

According to Rouse (2005), TQM is a structured and comprehensive approach to organizational management. Current focus is on e-business; in this situation TQM is based on quality management from customers. Additionally, TQM processes are divided into four steps: plan, do, check, and act (the PDCA cycle). The authors will provide detailed explanation about the PDCA cycle in the theory and empirical studies parts.

Gauttam (2010) raised an idea of The Four Pillars of TQM. The four pillars represent satisfying the customer, system processes, improvement tools and people. In Gauttams opinion, satisfying the customer is vital because without it, TQM would have no object.

\[ \text{Figure 4: The proposed 4-pillar model (Gauttam, 2010).} \]
3.2 The Cornerstones of TQM

As defined by Bergman and Klefsjö (2003):

*TQM is a management system in continuous development covering values, methodologies and tools. The target is to achieve more satisfied customers using less resource. TQM is based on a continuous improvement works in processes of the whole organization, and all employees are allowed and stimulated to participate.*

A successful task with quality improvements can be built upon top management commitment. This should depend on the following values that the scientific community agrees constitute the basis in TQM.

![Cornerstones of TQM](image)

*Figure 5: The values of cornerstones, which is the basis of TQM (Bergman & Klefsjö, 2003).*

It is important that all these values interrelate. TQM can be interpreted as a management system made up of values, methodologies and tangible tools. The authors have chosen three of these cornerstones, namely, focus on customers, focus on processes and continuous improvement, because there are more interview data and information in these three aspects. Below, the authors are going to go deep into the meaning of the three different cornerstones (Bergman & Klefsjö, 2003).
3.2.1 Focus on customers

Focus on customers is an approach for identifying products and services, quality characteristics and performance measures in the market. Quality aspect begins and ends with the satisfaction of customer demands. The organization should understand the current and future customer needs, and formulate product strategy based on consumer needs (Bergman & Klefsjö, 2003).

Focusing on customers implies achieving more satisfaction of customer demands and striving for to exceed customer expectations in the development and manufacturing of the product. Also, this is recognized as the key factor to improve quality. An important component in this method is that the company should do good research and obtain understanding of their customers’ needs and expectations. This process is providing more opportunities to obtain information about customer requests. By following up previous analysis of the corresponding customers, it is beneficial to target offers of new relevant products (Bergman & Klefsjö, 2003).

The principle of focusing on customers typically leads to making sure that the objectives of the organization is combined with customer requests and expectations, measuring customer satisfaction and taking actions based on these results, ensuring a balanced approach between satisfying customers and other stakeholders (Quality Management Principles, 2012).

As Robert (1992) said, the driving force for quality improvement begins with the customer perspective. Generally, the customer of an organization could be easily identified: the customer is the client for whom the service is rendered and from whom revenue is collected.

According to Robert (1992), a balance must exist between the needs of internal customers and external customers. Internal customers are those individuals inside the organization, as well as stakeholders or the beneficiaries of some departments’ tasks in the company. Personnel, processes and products within the organization are all
internal customers. External customers are those targets purchasing products or receiving services outside the organization; e.g. principals, retailers, end users, etc.

The customer is critical to determine the level of quality, so it is important in TQM, to achieve internal and external customer satisfaction (Robert, 1992). Furthermore, as defined by Jensen (1994), customer focused approach helps prevent the company from becoming disconnected and inwardly focused.

3.2.2 Focus on processes

Management requires focus on the actual process of TQM. The purpose of process management is to ensure that products continue to satisfy customer demands, and to ensure that all kinds of products are available in all markets. The processes are supporting an organization includes its people, their relationships, resources and tools.

In addition, identifying the process suppliers is another important part, as is to give clear signals about what is needed during the process, as is to minimise resources and to satisfy customers (Bergman & Klefsjö, 2003).

![Diagram showing process flow](image)

*Figure 6: A process is a sequence of interrelated activities that are repeated over time. It transforms certain resources into results that should satisfy the customers of the process with the smallest possible resource consumption.*

Processes are often differentiated into the following three types (see Egnell 1994, and Figure 7):
Main processes: sometimes, these are referred to as “operative processes” and “core processes”. The task is to fulfil the requirements of the external customers and to improve the organization’s products. These processes have external customers. Examples of main processes are product development and distribution.

Support processes: tasks are to provide resources for the core processes. These processes have internal customers. Examples of support processes are maintenance and information processes.

Management processes: tasks are to make decisions on the targets and strategies of the organization, and to implement improvements in the other organizational processes. These processes also have internal customers. Examples of management processes are processes for targeting and strategic planning.

Figure 7: An illustration of the processes in an organization, based on their respective task (Egnell, 1994).

Benner and Tushman (2003) used to develop a contingency view of process management’s influence on both technological innovation and organizational adaptation. According to them, process management is based on a view of an organization, which is a system of interlinked processes, and involves concerted
efforts processes. Process management does a great effort to improve manufacturing efficiency.


According to Franks (2009), process management could be viewed as a dependent quality management practice that is influenced on the quality levers of supplier focus, teamwork, and learning. Baker and Maddux (2005) emphasised that process management requires knowledgeable individuals who are able to manage in the increasingly complex process oriented environment.

3.2.3 Continuous improvement

The basic role of continuous improvement is that there is always a way to get improved products, processes and methodology by using less resources. The reason why continuous improvement exists is because new technological solutions appear and new types of business activities are created due to external customers’ demands. In a successful quality strategy, continuous improvement can be seen as an important element. Continuous improvement benefits all customers, employees and the company.

In order to get better improvement, companies should admit when they have made any mistake. Only if the company dares to make mistakes, they can learn something from it and correct the mistakes. Then, they are able to improve (Bergman & Klefsjö, 2003).

The PDCA cycle is a cycle for solving problems in continuous improvement work presented by Deming.
According to Deming (1986), Planning includes: identifying the project, appointing the improvement team, conducting problem analysis, looking for causes of problems and evaluating the result. Doing refers to taking steps. Checking, or studying means measuring and evaluating the results. The last one is acting, which means to make the improved quality level permanent.

Shortell, Bennett & Byck (1998) mentioned impacts of continuous quality improvement (CQI) in their article. According to them, CQI is a philosophy of continuous improvement of the processes associated with providing goods or services that meets or exceeds customer expectations.

There are three types of quality problems that need to be improved: overuse, underuse and misuse. Chassin (1991) explained the three problems. Overuse occurs when the risks outweigh the benefits. Underuse is the failure to provide services when the benefits exceed the risks. Misuse happens when an appropriate service is selected but is poorly provided.

In addition, O’Brien (1995) thought there are four interrelated dimensions that cause the success of CQI, which are strategic, cultural, technical and structural. The strategic dimension emphasizes the conditions and processes and providing the
greatest opportunity for improvement. The *cultural* dimension presents underlying beliefs, values, norms and behaviours of an organization. The *technical* dimension refers to training and information support system issues. The *structural* dimension is related to promoting and broadcasting the best practices throughout the whole organization.

Powell (1995) mentioned process improvement in his article. He said process improvement reduced waste and cycle times in all areas through cross-department process analysis. He also thought that TQM performance is positively associated with process improvement.

### 3.2.4 Summary

I In order to have a clear review of the authors’ different points of the cornerstones of TQM, a summary is listed here. The table is divided in to three parts, focus on customers, focus on processes and continuous improvement, which are shown in the first line. The second line contains the authors’ names, and the third line contains the authors’ points.

| Focus on customers | Bergman & Klefšjö (2003) | 1. Identifying product/services, quality characteristics and performance measures in the market.  
2. Formulating product strategy based on customer demands.  
3. The company should make good research of customers’ needs. |
|---|---|---|
| | Robert (1992) | 1. It is the driving force for quality improvement  
2. Balancing between the needs of internal and external customers, achieving internal and external customer satisfaction |
| | Michael (1994) | 1. Helping prevent the company from becoming disconnected and inwardly focused |
| Focus on process | Bergman & | 1. Ensuring products continually satisfy customer demands.  
2. Including main process, support processes and |
<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Cornerstone</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3. Including mapping processes and improving processes.</td>
</tr>
<tr>
<td>Franks (2009)</td>
<td>1. It is a dependent quality management practice.</td>
</tr>
<tr>
<td></td>
<td>2. It has influence on quality levels of supplier focus, teamwork and learning.</td>
</tr>
<tr>
<td><strong>Continuous improvement</strong></td>
<td><strong>Bergman &amp; Klefsjö (2003)</strong></td>
</tr>
<tr>
<td></td>
<td>1. There is always a way to get improved products, processes and methodology by using less resources.</td>
</tr>
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<td></td>
<td>2. Companies should admit mistakes.</td>
</tr>
<tr>
<td>Shortell, Bennett &amp; Byck (1998)</td>
<td>1. Aimed at providing goods and services to meet or exceed customer expectations</td>
</tr>
<tr>
<td>Chassin (1991)</td>
<td>1. Problems that need to be minimised: overuse, underuse and misuse.</td>
</tr>
<tr>
<td>Powell (1995)</td>
<td>1. Reduce waste and cycle time in all areas through cross-department process analysis.</td>
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<tr>
<td></td>
<td>2. TQM performance positively associated with process improvement.</td>
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*Table 1: Summary of former authors’ opinions of three of five cornerstones. Source: Shao & Yang.*
3.3 International comparisons of TQM

A research by Yusuf, Gunasekaran & Guo (2007) about the essences and processes of TQM implementation and its effects on organization performance, especially, identifies a series of concepts within TQM. And the significant benefits of implementing TQM processes could help organizations to continuously improve, not only in product or service quality but also in integrated company management. The result from the article report indicates that the adoption of TQM in China is extensive. TQM could positively impact firm performances depending on the degree of implementation.

Although many Chinese manufacturing firms began to implement TQM, starting in 1978 and onwards, China still lacks effective TQM systems and application at the business level. Some basic quality principles and modern quality management methods have not been widely used by Chinese manufacturing companies. (Zhao, 1995) The current situation of TQM implementation in Chinese manufacturing companies still remains unclear. Thus, due to lack of empirical studies in the TQM field, it’s difficult for Chinese manufacturing firms to obtain sufficient information to support their TQM implementation practical work. As a consequence, many Chinese companies have experienced difficulties and failures in implementing TQM (Zhang, 1999).

TQM practices in Japanese-owned manufacturing firms in China are significantly related to the organizations performance. The studies are summarized as follows: TQM practices of employee involvement through total commitment to improve customer satisfaction in Japanese-owned manufacturers in China is positively related to internal performance such as reducing cost, improving employee satisfaction and increasing profitability (Mashahiro & Yoshida, 2005).

As Yu (1998) said, a Japanese quality management delegation led by Ishikawa in 1978 stimulated Chinese people to learn modern quality control methods. Additionally, they realized that Chinese industries needed to improve the quality of goods and services to become competitive in international commercial markets.
TQM is an effective method to improve business performance. It’s expected that quality management will help improve the quality of manufacturing firms and industries, not only in China but also in other developing countries.
4. EMPIRICAL STUDY

This chapter concerns information and data obtained from the interviewed company, JKKR, and Veolia. This part mainly contains two sections, respectively the background of JKKR and Veolia and the interview information. The authors collected material from interviews and other available information on JKKR and Veolia.

4.1 JKKR Ltd. Company

4.1.1 Background of JKKR Co., Ltd

JKKR is relying on China Academy of Engineering Physics, talented personnel from Inner Mongolia University and Chinese defence technology. Based on professional water pollution treatment work, JKKR specializes in a type of high-concentration refractory organic wastewater treatment in industrial areas, municipal sewage treatment, water reclamation, advanced membrane materials production, membrane separation technology, sterilization technology and manufacturing equipment for production of dairy products, drinks and food, engineering design and development of water environmental protection, and water pollution treatment. JKKR strives to offer full integration solution for water treatment projects around the world, and personalised continual service.

The systematic core technology and equipment manufacturing not only undertake all kinds of engineering design programs, but also help meet different levels of customer needs in water treatment projects.

The company claims to have a harmonious and brave management teamwork. There are more than 30 people including academics from CAS (Chinese Academy of Sciences) and CAE (Chinese Academy of Engineering), professors, researchers, senior engineers and other technical experts. They provide continuous technical support to the company technological equipment. Furthermore, they are involved in different kinds of water treatment projects both domestic and foreign, not only do they need to overcome many current shortages, but also add some design ideas and
engineering construction experience and to form independent intellectual property rights. At the same time, the company also aims to create an operation model abroad.

4.1.2 Focus on customers at JKKR Co., Ltd

4.1.2.1 Client base of JKKR

According to the interview information from manager Wang, their client bases include public water treatment constructions and different engineering companies. As manager Wang said, business development is inseparable from customer demand. Therefore, paying great attention to the customer is one of the core elements in corporate development. At the same time, the company ought to form customer focus management principles to satisfy all customer needs through technology, products, consultation, management and engineering to better serve the customers.

4.1.2.2 Relevant planning concerning focus on customers in the company.

Communication with customers is an important tool in customer focus for JKKR. They are thus able to become aware of, collect and manage customer input. Meanwhile, they are constantly improving and enhancing the service quality.

To achieve customer focus, the marketing department draws up plans. These concern understanding of product information, engineering consulting service contracts and agreement processing. In addition, they receive and process customers’ feedback, and are responsible for the measurement of customer satisfaction. Any concerned department are instructed to assist the marketing department to perfect customer service work.

For the technical department, the marketing department carries out quality improvement measures on engineering consulting services (Interviewee, manager Wang).
4.1.2.3 Increasing customer satisfaction in JKKR

The company helps their customers understand their information and products. At the same time, through marketing research, the company becomes aware of customer satisfaction and relevant needs in engineering project consulting. Then, according to the company’s abilities and the review comments, the company sign contracts with customers.

In JKKR, the marketing department sets up a customer database. They take notes about valuable information when customers call. Also, they collect customer feedback to learn about implementation results from engineering consulting service projects, such as customer complaints, transfer customer opinions to relevant departments in the company, etc.

In addition, the marketing department is instructed to work together with engineers and other government officials to solve the customers’ different problems.

4.1.2.4 Growing problems in JKKR

Concerning customer management, as the company is in the initial stage it still lacks deep knowledge of the water affairs market development. Therefore, they do not fully understand everything about customer needs and project development rules. In the next phase of development, the company should take actions to attract more potential customers, e.g. partake in exhibitions, demonstration of projects, etc. (Interviewee, manager Wang).

4.1.3 Focus on processes at JKKR Co., Ltd

Currently, many enterprises are using process measure models to manage their company. According to manager Wang, JKKR also has a measure model based on the PDCA cycle.
4.1.4 Continuous improvement at JKKR Co., Ltd

JKKR has its own strategy for continuous improvement, aimed at: checking $\rightarrow$ internal audit $\rightarrow$ management review $\rightarrow$ data/information analysis $\rightarrow$ corrective action $\rightarrow$ preventive measure.

The purpose of the strategy is to reduce mistakes and raise quality in project processing by taking effective corrective action and finally achieving continuous improvement.

There are four situations where corrective actions are needed. The first situation is in the process of design and development. When a low-quality practice is discovered, the manager of engineering and technology together with the person in charge analyses the causes, taking appropriate corrective actions to cope with the situation. Then, administration and planning department will track and verify its validity and record the result. The second situation is if a low-quality practice or product is discovered by
the internal audit. The audit team will pass on the discovery, which is analysed by the responsible department. The responsible department than assigns the corrective action and implements it. After the action is checked, the audit team will track and verify. The third situation starts with customers’ complaints. When the market department has verified it, they confirm and report to the responsible department. Through the corrective action, they find the facts and feedback the information to the customers. The fourth situation is simply any situation requiring corrective action not covered by the first three. The corrective actions are similar to those mentioned above.

The strategy states that if a corrective action requires massive resources, then the management representative should report to the general manager, who will evaluate the demand of corrective action and decide if the plan should be carried out. In addition, if the corrective action hasn’t achieved the expected results, or, if so, only to a limited extent, the management representative organizes related persons to reanalyse the causes, to take appropriate and reasonable corrective actions, determine which department is responsible and set a deadline for the corrections.

4.1.5 Problems occurring in JKKR Co., Ltd

There are currently two main problems in JKKR. The first is limitations in human resources. Since the company is located in Inner Mongolia, attraction of top professional and technical personnel is difficult. The second problem is that because JKKR is a new company, several demonstration projects need to be carried out urgently.

4.2 Veolia Water Group

4.2.1 Background of Veolia Water Group

Veolia was established in the 14th of December 1853, providing service to local public authorities and industrial companies. Since 2005, Veolia Environment is split into four groups: Veolia Water, Veolia Environment service, Veolia Energy and Veolia
Transport (Veolia official website, 2012). This thesis discusses the quality management in Veolia Water Group only.

Veolia is represented in 67 countries, has 11 research centres and has approximately 80,000 employees. Veolia provides services on following aspects: water treatment, water distribution, wastewater collection, wastewater treatment, reuse and reclamation, biosolids, residuals management and asset management.

Veolia described themselves in the official website as “A Global, Decentralized Organization”. “Think globally, act locally” is their motto for their organization culture. Veolia has five fundamental values, which are customer focus, responsibility, innovation, performance and teamwork. Veolia pursues sustainable development, under which all employees share the basic values (Veolia official website, 2012).

4.2.2 Focus on customers at Veolia Water Group

4.2.2.1 Client base of Veolia Water Group

The client base of Veolia consists of one hundred million people. The company created a series of customer service commitments, called “More than Water”, which is a process being gradually implemented across their global operations.

“More than Water” reflects three values - availability, information and helping when needed - that meet the customers’ major expectations. Their 10 “More than Water” commitments cover information, response times on customer demands (new connections, billing, water quality, etc.), emergency technical service, help managing water usage and the promotion of practices to save water in homes (Veolia official report, 2009).

4.2.2.2 Relevant planning about customer focus in Veolia

Many Customer Service Centres were built by Veolia in France. This way, customers could obtain bill information, change a service, and find out about water quality and
the services without leaving home. CSC:s (Communication System Centres) also allow customers to get in touch with the company’s water operators at any time in an event of emergency.

Websites play an increasingly central role in connecting Veolia with their customers. Veolia claims that the websites are striving to find better ways to meet their customers’ two main requests, which are:

- Access to personalized information in France (water price and quality in their district).
- The ability to transact most of their business with their water operator - new connections, service cancellation, bill payment, requests for information - online.

Additionally, Veolia claims to offer customers effective solutions to manage their own water usage. Their distant and constantly updated metering is an example of innovative technology providing their customers with new services, such as daily water use monitoring on the Web (Veolia official report, 2009).

4.2.2.3 Increasing customer satisfaction in Veolia

Veolia claims they conduct regular customer satisfaction surveys. Each year the company surveys nearly 50,000 customers, to find out how they rate their service quality and learn about their health and environmental concerns, consumption patterns, etc. The results of these surveys provide information to their action plans and enable the company to continuously improve their service quality (Veolia official report, 2009).

4.2.2.4 Growing problems in Veolia

Veolia claims that the companies’ satisfaction surveys show that customers want even clearer, more detailed information about water service and quality. To meet this request, they strive to offer the customers more and increasingly targeted communication resources and tools (Veolia official report, 2009).
4.2.3 Focus on processes at Veolia Water Group

Veolia has an operation plan, which is divided into sixteen parts. It was first used in Canada, but after several years, Veolia spread this mechanism to all of its European branches.

The Operation Plan is a document to outline the policies, processes and procedures for the overall quality management of the drinking water system. It is a documentation of the Quality Management System (QMS) as well.

Here is a list of the parts and introduction of some parts in detail:

**Part 1: Quality Management System (Policy)**
This QMS is a system for establishing policies and objectives, and for to achieve those objectives and assist in the direction and control of Veolia in regard of quality. The QMS needs to be reviewed annually to make sure that the policies and procedures are currently correct. The review involves QMS Representatives; the owners; the Operating Authority and operators of the system.

**Part 2: Commitments and Endorsement**
Veolia supports the implementation, maintenance and continuous improvement of drinking water for the water supply system. The QMS endorsed by the owners (representative and the Mayor and Clerk administrator), and the Operating Authority top management (represented by the project manager of Veolia) calculate the need for supporting the provision of sufficient resources to implement, maintain and continuously improve the QMS.

**Part 3: Designated QMS Representative**
The QMS representative is the Project Manager/Overall Responsible Operator, who is responsible for establishing, implementing and maintaining the policies, processes and procedures required.

**Part 4: Documents and Records Control System**
The process here is in place for controlling and managing the documents, which ensures that the documents are applied in accordance with legislation and regulations and changes in operations.

**Part 5-8: Risk Assessment; Organizational Structure; Roles, Responsibilities and Authorities; and Personnel Coverage.**

**Part 9: Communications**

The project manager needs to ensure that the owners are provided with a current copy of the operation plan. The communications take place regularly during the annual reports or in separate meetings arranged if necessary.

Besides, potential changes, management reviews and other relevant information could include audit reviews, risk assessment changes and provision for infrastructure information. The project manager is to communicate the procedure of this information to the owners.

**Part 10: Essential Supplies and Services**

Essential supplies and services are purchased by the Operating Authority on behalf of the owners under the direction of the Project Manager (Veolia Water Operational Plan, 2009).

The next six parts are *Review and Provision of Infrastructure; Infrastructure Maintenance, Rehabilitation and Renewal; Sampling, Testing and Monitoring; Measurement and Recording Equipment Calibration and Maintenance; Internal Audits; Management Review.*

These are also six steps for continuous improvement, which will be discussed later.

**4.2.4 Continuous improvement at Veolia Water Group**

In order to manage the water cycle in a sustainable way, Veolia has a four-way sustainable management system that is mentioned in the report “our solution for sustainable development”. The first is *protection and monitoring the water resource,*
the second is *optimised long-term withdrawal policy*, the third is *development of alternative water resources*, and the last one is *continuous improvement of the performance of wastewater treatment services* (Veolia official report, 2009).

Veolia also implemented an Environmental Management System by using a hundred indicators to assess its environmental impact and continuously improve its performance in its domain.

The last six parts of Veolia's operation plan, listed below, can be seen as six steps for continuous improvement.

**Step 1: Review and Provision of Infrastructure**

In this step, a summary report is needed. It is used to review and update the Operating Authority infrastructure and related programs. The report is meant to cover the infrastructure and the water system infrastructure necessary to operate and maintain the system including buildings, workspace, associated utilities, process equipment, supporting services, vehicles, distribution system and elevated storage.

The results of the infrastructure review are to be considered at the time for deficiencies and whether actions are required.

**Step 2: Infrastructure Maintenance, Rehabilitation and Renewal**

The Operating Authority maintains a documented summary of the Operating Authority’s infrastructure maintenance, rehabilitation, and renewal programs for the water treatment and distribution system.

The summary is communicated to the owners every year and presented to the local council and committee. Any employee will initiate the Maintenance Request System by filling in a maintenance request form. Then, the maintenance manager or the project manager will assess it.

**Step 3: Sampling, Testing and Monitoring**
Sampling and monitoring are used in operating the water treatment facilities. Test results are to be reported to the Operating Authority.

**Step 4: Measurement and Recording Equipment Calibration and Maintenance**

**Step 5: Internal Audits**
Internal Audit procedure has been established by the Operating Authority. The procedure is aimed at assessing the conformity of QMS with its requirements of standard.

**Step 6: Management Review**
The intent is to provide a structured mechanism for the top management to perform an annual review of prescribed topics covering compliance, consumer, performance, and audit information based on the Quality Management System.

According to Veolia, they believe that the Operating Authority shall strive to continuously improve the effectiveness of its Quality Management System by using the correct actions.

They believe that an efficient way to improve the effectiveness of the QMS is by having a third party review the operations plan.

In addition, on-going annual Management Reviews and resulting corrective actions will be the basis for the further improvement (Veolia Water Operational Plan, 2009).

**4.2.5 Problems in Veolia Water Group**

There are some problems in Veolia. The first one is water pressure. Water pressure is not constant. From experience, the company has found that many issues related to water pressure are caused by the plumbing and pipe work on their own property. Then, some common complaints by their customers consist of leaks and bursts. Furthermore, there are some water problems in homes. And there are some common issues including frozen pipes and leaking pipes.
5. ANALYSIS

In this chapter, the authors will present the fundamental discussion of the research objectives including the differences between the two companies. This chapter is divided into two parts, each containing detailed comparisons and analysis. The second part analyses the causes of these differences.

5.1 The differences between the two companies regarding the cornerstone of TQM

According to the empirical studies in the previous chapter, here follows detailed explanations related to the three perspectives focused on this thesis.

5.1.1 Focus on customers

5.1.1.1 Basic concepts in focusing on customers in the two companies

In this approach, the two companies both have their own strategies to meet different kinds of customer needs. JKKR has a strong client base in enterprises, engineering companies and the public sector. They have a Customer Focus Management Principle to better serve the customers in different aspects. Like Veolia, JKKR has set up a number of customer service commitments called “More than Water”. This service commitment consists of three values: availability, information and helping when needed. In general, they both regard customers as the core element in corporate development.

5.1.1.2 Relevant planning about focusing on customers in the two companies

There is one thing in common between the two companies in this aspect: to continuously improve and enhance the service quality, to truly become customer-oriented. In addition, the two companies respective duties to meet customer requests. But there are still some differences in their planning processes. JKKR focuses more
on direct communication with customers, and to really try to understand and manage customer input. Veolia pays more attention to increasing the customer satisfaction by conducting satisfaction surveys. These could help the company consider customers’ needs and expectations.

5.1.1.3 Increasing customer satisfaction in the two companies

There is an example of Veolia being innovative in customer service. It is their distant and continuously updated metering. This new technology could provide many customers with new services. JKKR does not have these innovative capabilities in this aspect.

The marketing department of JKKR is communicating with customer communication and customer service. The department could get more understanding about products and services via customers’ feedback by setting up customer databases to understand implementation results from engineering consulting services in the company. Meanwhile, the marketing department should cooperate with government officials to solve the customers’ different problems.

5.1.1.4 Growing customer requirements and problems in the two companies

Due to being in an early stage of development, JKKR does not have the ability to fully understand all of the current customer requirements. They also lack some deep knowledge of water affairs in developing markets. In this situation, the company should take some measures to remove insufficiencies, e.g. by doing exhibitions. Being a well developed company, Veolia has specific goals for customer relationships. For example, the company is looking for different ways to satisfy customers’ major expectations and improve service quality.

From the interview in the previous chapter, the authors found some shortcomings related to customer relationships in JKKR. Because they are in a developing stage, they also need to improve their business processes. Certainly, there are effects caused
by these problems. JKKR doesn’t have a large enough client volume in the market. This has an effect on the company’s performance and profit. Therefore, in this aspect, JKKR could learn from the experience of Veolia in customer relationship management.

5.1.1.5 Growing customer demand

To meet growing demands, Veolia is continuously offering customers targeted communication resources and tools. These actions help Veolia get more development opportunities. JKKR could probably get some inspiration from Veolia’s experience in this aspect.

5.1.2 Focus on processes

Below is JKKR’s process measure model of quality management system. It is from the empirical study part 4.1.3.

*Figure 10: Process Measure Model of quality management system. Source: Shao & Yang. Based on interviews of JKKR.*
Below is the operation plan of Veolia.

Figure 11: Operation Plan of Veolia. Source: Shao & Yang.

5.1.2.1 Quality Management System

These two models are both based on Quality Management System. In theory, JKKR:s quality management includes management responsibility, resource requirement, product realization and measurement, analysis and improvement. For Veolia, the QMS is used for establishing policies, objectives, and controlling Veolia in regards of quality.

5.1.2.2 Processes and continuous improvement

There is always a way to improve products, processes and methodology as Bergman and Klefsjö (2003) said in the theory part. And the two companies are quite familiar in this area.

In JKKR, according to the Process Measure Model, the final purpose of running of the process is to improve continuously. In Veolia, the first ten steps are used to improve continuously as well. Thus, the relationship between process and continuous improvement can be seen as equal in JKKR and Veolia.
According to the authors, the relationship between processes and continuous improvement is that the processes are used to achieve continuous improvement. When running processes, the group finds errors and, by correcting these, improves the processes.

5.1.2.3 Model relation

As Bergman and Klefsjö (2003) said in the book, process management is used in order to ensure that products continue to satisfy the customer’s demands.

JKKR’s model is mostly related to customers while Veolia’s is related to commitments, representation and suppliers as well.

In JKKR, customers’ requirements are the initial motivators of the process. The processes start with the customers’ requirements, and then lead to production. After the product is finished, it’s aimed at satisfying the customers. Veolia does not mention customers in the operation plan, but they have a strict internal process checking to ensure the quality of each link in the chain.

Compared to JKKR, Veolia’s internal process checking helps to improve the quality of products. The more products of high quality, the more the customers are satisfied with the products. Although Veolia does not mention customers in the operation plan, the whole plan leads to the increase of customer satisfaction.

Thus, both companies’ focus on process is ultimately used to satisfy customers, which corresponds with Bergman and Klefsjö’s point of view.

5.1.3 Continuous improvement

Besides the fact that the two companies both use processes to help improving continuously, which is mentioned in part 5.1.2.2, there are two other similarities between them.
5.1.3.1 Continuous improvement strategy

Based on the interviews of JKKR, their continuous improvement strategy can be seen in the following figure.

![Continuous improvement strategy of JKKR](image)

*Figure 12: Continuous improvement strategy of JKKR. Source: Shao & Yang.*

Veolia also has a six-step continuous improvement strategy

![Six-steps continuous improvement strategy of VEOLIA](image)

*Figure 13: Six-steps continuous improvement strategy of VEOLIA. Source: Shao & Yang.*

The continuous improvement strategy of JKKR is aimed at preventing and reducing mistakes, and thereby improves the processes. Meanwhile, the six-step continuous improvement system of Veolia leads to the taking of the correct actions to improve the effectiveness of the Quality Management System.
The third step of Veolia’s strategy, sampling, testing and monitoring, is the equivalent of the checking part of JKKR’s strategy. Thus, the two companies both have checking, internal audits and management review parts. However, JKKR focuses more on what they should do after they find mistakes, as they show in the last two steps: corrective action and preventive measure. Meanwhile Veolia pays more attention to checking in the process, which means they check the tools before and after they are used. Veolia also tries to prevent mistakes in the process, rather than waiting for mistakes to happen.

The advantage of JKKR’s strategy is that it is easy to correct mistakes and save the time and manpower needed to check regularly. On the other hand, though Veolia’s six-step system is very time consuming and labour intensive, the regular checking helps to prevent mistakes before they occur. This is a way to decrease the number of defective goods and services, and thus increase the corporate image and customer satisfaction.

5.1.3.2 The officials responsible for continuous improvement

Bergman and Klefsjö (2003) think that companies should admit their mistakes. Therefore, the authors made a comparison of what the two companies intend to do if they find mistakes.

Regarding the responsible officials, JKKR assumed four situations that name four groups as responsible for analysing mistakes and taking actions; the engineering manager, the audit group, the marketing department and management representatives.

Veolia claims that after they have found mistakes, they document them in operation plan. They also find it useful to have a third party review the documents.

JKKR splits the responsibility to each department, which are in charge of their own links in the chain, analysing the causes of the mistakes and deciding upon the corrective actions. Oppositely, Veolia engages a third party, and the benefit from this is that they can get an external point of view.
The authors think that using a third party to check if the mistakes are corrected is a good tool, but its feasibility is based on the number of employees. If the company is a small one, as JKKR, it’s not feasible to implement.

5.2 *The causes of the differences*

5.2.1 Social policies of China and France

Since the companies are operating in different societies, the differences in policies have great effects on the companies. The environmental policies have effect on environmental-protection products. If the country has strict laws about protecting water environment, companies that produce wastewater will buy more and better equipment to treat it. Thus, those companies selling water-protection products will get better profit. In other words, this kind of companies will get less profit in less law-strict countries.

5.2.1.1 Policies related to corporations.

The aggregate direction of current environment policies is benefiting the development of JKKR.

There are several policies that have an impact on the company related to environmental protection in Inner Mongolia.


In 29th of June 2011, the State Council released Order 21 of The State Council Opinions on Further Promotion of Inner Mongolia for Faster and Better Eco-social Development (2011).

These policies all encourage companies to protect the environment in China. With the help of these policies, JKKR developed smoothly. All they have to heed is that if they want to engage in environmental protection work, the proper licence is needed.

In France, the policies related to environmental protection constitute ISO 14001, which is known as the Environment Management System.

5.2.1.2 Comparison of the environmental policies of China and France

With the rapid speed of economic development, the overall strength of China has improved a lot, but the environment becomes more and more pressured. From the data, the loss of total value occupies 3 percent of GNF due to pollution annually.

China began to pay attention to environmental protection in the 1970’s, but this was not formalised in law until 1979.

France formally adopted environmental policies in 1972. The direction of the development of polices ranges from remedy to prevention. They insist that protection of the environment is not only an environmental necessity but also important for the economy.

Compared to French environmental policies, the formation and development of the Chinese policies are behind. Furthermore, the effect of environmental policies in China is not as obvious as it is in France. Thus, the Chinese environment level is far from the French.

This situation has resulted in a low awareness of environmental protection in China. Therefore, the companies related to environmental protection become less focused,
and smaller as well. On the other hand, France has a high awareness of environmental protection. Every social class is focusing on the environment. China also involves environment in the education, but the object is only to encourage students. Oppositely, France treats protection as compulsory. These factors create an excellent situation for these kinds of French companies.

5.2.2 Companies’ development stage

In the interview of JKKR, they said the key problem is that JKKR is now in its beginning period, all the management tools are still be tried and tested before they can be implemented.

Veolia’s six-step system is very time consuming and labour intensive while JKKR focuses on correction of mistakes after they are made. The reason why JKKR cannot use Veolia’s method is because JKKR is a recently founded company and they don’t have enough employees to check each step in the processes.

Veolia is a mature company, so they have the ability to let a third party to check the operation plan, which is also connected to the company’s scale. JKKR is a rather new company with limited resources, which leads to less investment in quality management.

In the focusing on customers’ aspect, many companies in China do not have an explicit concept to better serve the customer, and learn how to operate with the customer in the centre. JKKR has realised the importance of customer-orientation, but since JKKR is in the initial stage of development, the company does not have enough experience in customer relationship. These problems could lead to small client volumes in the market, and also directly have an effect on the company performance and profit. Because of the long history of Veolia, the company is good at managing customer relationships. Their effective management approach is helpful and important for customers’ development work.
6. CONCLUSION

In this chapter, the authors will mainly summarise the findings from the thesis and answer the question of purpose for the thesis.

6.1 The differences between the two companies

Chapter five discussed many differences between JKKR and Veolia.

In focusing on customers, the differences are:
- Relevant planning for focusing on customers: Veolia uses clear management responsibility; JKKR learns how to optimize their website to find better ways to meet the customers’ needs.
- Increasing customer satisfaction: Veolia is innovative in customer service, with a distant and continuously updated metering; JKKR’s marketing department could improve their cooperation with government bureaus and officials to solve the customers’ different problems.
- Growing customer requirement and problems: Veolia has specific goals for customer relationships; JKKR is a newly formed company and does not have enough shares in the market.
- Growing customer demand: Veolia is continuously offering customers’ targeted communication resources and tools to meet the growing demands; JKKR is not.

In focusing on processes, the differences are:
- Model relation: Veolia’s processes are related to commitments, representatives and suppliers; JKKR’s are mostly related to the customer.
- Process relation: Veolia makes their plans in order to increase customer satisfaction; JKKR’s customer requirements are the initial motivation for the processes.

In continuous improvement, the differences are:
- Continuous improvement strategy:
a) Veolia’s strategy is aimed at taking correct actions to improve the effectiveness of the Quality Management System; JKKR: is aimed at preventing and reducing mistakes and improving strategies.

b) Veolia’s strategy is very time consuming and labour intensive; JKKR: strategy makes it easy to correct mistakes just after they are detected, but it also do less to prevent errors to start with.

- The official responsible for continuous improvement:
  Veolia uses a third party to review the documents, which give the benefit of viewing it from an external angle; due to the number of employees, JKKR splits the responsibility to each department, who are in charge with their own processes, to analyse the reasons for the mistakes.

### 6.2 The causes of the differences

There are two main causes for the differences between the two companies. They are social policies and the companies’ respective development stage.

France has strict environment policies and the people have a high awareness of environment protection. Comparatively, the Chinese policy is behind, and the effects of environment policies are not as obvious in France.

The environment policies and their effect on people have a direct connection to water treatment companies. Only a country with a deep awareness of water could help to increase the performance of concerned companies. That’s a reason why Veolia is more accomplished compared to JKKR.

The difference in development stage between the companies is another reason for differing performance.

JKKR is a newly formed company, which requires all management tools be tried before being implemented. JKKR:’s development stage also means it has fewer employees, which prevents them from having a process checking mechanism as Veolia does. The development stage also causes limited resources, which leads to less
investment in quality management, less experience in customer relationships and a smaller client base.

Veolia is a mature company that is able to have a third party checking the process plans. Because of their long experience, the company is good at managing customer relationship. The company also has the advantages of scientific innovations and low costs of new materials.

6.3 New theory model

Figure 14: New theory model: relationship between customers, processes and continuous improvement. Source: Shao & Yang.

In Bergman & Klefsjö’s (2003) model, the values of cornerstones (see figure 5), show the relationships of the five cornerstones of TQM. In their opinion, focus on customers is the base of focusing on processes and continuous improvement. The four-pillar model (Gauttam, 2010) also emphasizes focus on customers (see figure 4). Satisfying the customer is important because without it, TQM would have no object.

Both models consider the customers the vital part, but the authors raise the position of process management, and think that processes are as important as customers.

Based on the discussion, the authors make a new theory model of their own design. This model is based on the relationship between customers, processes and continuous improvement.
improvement. The basic structure of the new cornerstone model uses JKKR:s process measure model (see figure 9) as its basis. This is “customer-process-customer”.

The customer’s requirement is important to the process, but it can also be of great significance to use processes as a starting point for describing business models. The customers provide their requirements, leading to processes, and then process management enables production. The company will check the process in each link in the chain to reduce or avoid mistakes. The processes are then repeated until they yield a satisfying result. The company thereby improve the processes. After the customer has obtained the product or service, they will return feedback to company, which will help the company to continuously improve the processes.

This new theory model specifically emphasizes the relationship between suppliers and processes, and between processes and customers. These relationships are based on the premise that “the process is a sequence of interrelated activities”, which was shown in figure 6. The authors make some changes.

![Diagram](image)

*Figure 15: New relationship between supplier, process and customer. Source: Shao & Yang.*

The original model is a unidirectional model. It goes from supplier to company, and from company to customer. The original model mainly focuses on the three types of processes: core processes; support processes; and management process, which are aimed at satisfying external and internal customers.
In the new relationship model, it is important for the company to collect feedback from the customer, as is providing feedback to suppliers.

Feedback shows what customers think when they get the product. It is an authentic and direct way to improve products and services. To get knowledge of quality and results of engineering consulting service projects in the company, the marketing department of JKKR is in charge with collecting customer response, e.g. complaints. This way, the company is transferring the customers’ opinions to relevant departments within the company, and are better able to satisfy customer requests.

After the company gets the feedback from the customers, they will improve their processes. Suppliers have the responsibility to provide equipment, manpower and material to the processes. Thus, the company should provide feedback to acquire more appropriate equipment and material, and improve the manpower to help perfect the process management of the company.
7. FURTHER RESEARCH

Further research should be the other two cornerstones’, who are to base decisions on fact and committed leadership, relationship with the three that have been discussed in this thesis that is based on the case study. Since the data of Veolia are mostly from documentation from the Internet, the authenticity remains to be proven.
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Interviewed people:

ZhanSheng Li, chief executive officer, JIUEKANGRUI Co., Ltd, interviewed 2012-05-13, during 3 hours.
Appendix 1 Interview questionnaire

Customer aspects

1. What is your corporate client base?
2. Is your company following the principle of customer focus? And how do you do it?
3. Do you have any questionnaires to your customers? How is their feedback?
4. Can you provide related data of customers’ number trend chart, better in the 2010-2012?

Process method

1. Many companies have process measure model. Do you have any familiar management method when you manage the resource or project?
2. What is your specific step system of managing the sewage treatment factory?

Continuous improvement

1. In order to minimize the vulnerability management and increase the efficiency of management, some companies keep improving their management methods. What have your company done to improve the efficiency of management? Can you give some examples?
2. How is the continuous improvement help with the management?

Other questions:

1. What are the problems in your corporate management up to now?
2. Is the social policies do any help to your corporate management? Or become a barrier to your management? Can you give the examples (which policy, help or block)?
Appendix 2 Examples of JKKR LTD. Company products

The worldwide top water treatment devices  Water desalination system

Microwave Ultraviolet Rays Sterilization-  Pipe direct drinking water equipment
Equipment
Appendix 3 Examples of Veolia Water Group products

Recycling: Western corridor recycled water project.

Water treatment: Abstract, treat, supply, collect, recycle, release into the natural environment: step by step, follow all the stages of a water service.

Water distribution: Rehabilitate facilities and bring water quality up to international standards.

Industrial process water: Veolia took responsibility for the water supply and the wastewater treatment of the Montataire site.