The Implementation of Quality Management In the Chinese Candle Manufacturing Industry

---- A Potential Supplier Survey for the Candleshopdublin

Xiaoming CHEN

Portobello College

(Validated by the University of Wales, Cardiff)

Table of Contents

List of Tables/Illustrations

Acknowledgements

I would like to express my gratitude to all those who gave me the possibility to complete this dissertation.

At the very first, I'm honored to express my deepest gratitude to my dedicated supervisor, Mr. Enda Murphy, with whose capable guidance I could have worked out this dissertation. He has offered me valuable ideas, stimulating suggestions and encouragement. I'm very much obliged to his efforts of helping me complete the dissertation.

I'm also extremely grateful to my course director, Ms. Brid Lane, who helped me to clearly define my research topic at the very beginning. I could not have made it without her precious support and encouragement.

My special thanks to Mr. Peter Flood, whose profound knowledge on candle business has guided me into the world of candle and candle industry.

I am deeply indebted to Mr. Patrick Norton, who was so kind as to look closely at the final version of the thesis for English style and grammar, correcting both and offering suggestions for improvement, even when he was nearly over-loaded by his own job.

I am also very grateful to the firms who facilitated and participated in the survey, and the employees of these firms who made a great effort to complete the questionnaires.

Especially, I would like to give my special thanks to my beloved wife Meimei Zheng whose patient love enabled me to complete this work.

Xiaoming Chen

September 2008

Abstract

This study is part of the potential supplier evaluation for the Candleshopdublin. In order to obtain an insight of the current status of quality management implementation and practices in Chinese candle manufacturing industry, the author looked into the literature of development of quality management in China, the argument around ISO 9000 quality management system, together with the current candle industry. Then a survey was conducted via emails among Chinese candle manufacturers. The survey was conducted via questionnaires designed with open questions demanding descriptive answers, which focus on different aspects of quality management implementation. The qualitative data contained in the questionnaires sent back were justified and interpreted into quantitative data, which were then coded and analysed. The analysis of the data indicates the low level of quality management implementation in Chinese candle manufacturing industry, and lack of understanding of quality management among Chinese candle manufacturers. Suggestions are made at the end both for Chinese candle manufacturers, and for business buyers who are searching for potential candle suppliers in China.

KEY WORDS: Candle industry; Quality management; ISO 9000 series; Supplier survey; Global sourcing; China

1. Introduction

Total Quality Management (TQM) is recognized as one of the most competitive weapons in the global market (Beskese & Cebeci, 2001; Deming, 1982). Nowadays many Chinese companies have obtained ISO 9000 certification, including many candle manufacturers. However, as Chin *et al.* (2002) and Quazi et al (2002) argued, holding ISO 9000 certification does not have any significant relationship with the improvement of business results nor other quality practices. Quality management in China included only the quality inspection of products in most enterprises (Zhang, 2000).

Little research has been conducted on the quality management issues in candle manufacturing industry in China. In the year of 2004, a batch of candles made by a Chinese company was found without wicks after they were delivered to a buyer in Ireland. This incident led the author to conduct a research to find out the situation of quality management in Chinese candle manufacturing industry. Therefore the topic of the research was chosen:

> ***What's the current status of quality management implementation in the Chinese candle manufacturing industry?***

Based on the result of the review on ISO 9000, the history of the development of quality management in China, as well as the review on the candle industry, a survey was conducted with a questionnaire designed by the author. Quantitative data converted from qualitative data from questionnaires were coded and analysed. The result of the analysis showed a comparatively low level of quality management

implementation and lack of understanding of quality management in the Chinese manufacturing industry. At the end of the report, some recommendations were made for Chinese candle manufacturers and business that are trying to purchase candle products from China.

2. Background

The Candleshopdublin is a candle wholesaler and retailer in Dublin, Ireland. Its candle products come in hundreds of fragrances, styles and sizes, including tapers, votives, pillars, container candles, tealights, liturgical candles, outdoor candles, floating candles, novelty candles, utility candles, and birthday candles. Among them, votives, container candles and pillars are currently the most popular types of candles. Candle purchasers view candles as an appropriate gift for the holidays, as a house warming gift, a hostess/dinner party gift, a thank you or as adult birthday gifts.

Most products in the Candleshopdublin are imported from Germany, Luxemburg, Italy and other EU states. The management of the Candleshopdublin noticed since years ago about the price difference of candle products between Euro Zone and China, and had been thinking to purchase from China for more profit margin. However, the main channel for them to obtain access to the Chinese candle manufacturers is through websites such as Globalsources, Made in china.com, and Alibaba.

Between 2004 and 2005, the Candleshopdublin got in tough with a Chinese candle manufacturer through an intermediate. And it placed an order afterward. However, when the candles are delivered to the company, it was found that there was no wick in some of the candles. The Candleshopdublin launched a complaint to the Chinese company. However, in one stage, it was found that the Chinese company had been officially unregistered and vanished. After consulting with solicitor, the Candleshopdublin was told that the cost to launch an international law case will be

millions and will last a few years and probably without any promised outcome. Hence, it had no choice but to bear the loss itself.

Even after this unhappy episode with the Chinese company, the management still considers purchasing from China as a possible way to improve competitive advantage and profitability. They are still confident about the competitive advantage of price against quality of Chinese candles. But lessoned are learned after paying price. After the incident, they are becoming more cautious from the lesson learned. They are looking for lower price with good quality, but not poor quality. The searching of potential Chinese suppliers is to be conducted in a more systematic way, with more concerns on the quality competitiveness.

3. Literature Review

3.1 Literature Introduction

In this chapter, the literature on ISO 9000 is reviewed, together with controversy around it. Then the development of quality management in China is reviewed with ideas of different researchers in the literature.

3.2 ISO 9000 and Company Performance

About ISO 9000

The International Standardization Organization (ISO) published the first edition of ISO 9000 series in 1987. ISO 9000 standard series include a family of standards, attempting to guarantee product quality via an adequate management on resources and processes. ISO 9000 includes standards “ISO 9000:2000, Quality management systems – Fundamentals and Vocabulary”, “ISO 9001:2000 Quality management systems – Requirements”, and “ISO 9004:2000 Quality management systems - Guidelines for performance improvements”.

There are many more standards in the ISO 9000 family, many of which do not even carry "ISO 900x" numbers. For example, some standards in the 10,000 range are often considered part of the 9000 family: “ISO 10012:2003 Measurement management systems -- Requirements for measurement processes and measuring equipment” discusses the management of measurement system, which for most organizations is just one element of a complete management system.

These standards define the criteria for quality evaluation and the guidelines for the implementation of related tools and methodologies (ISO 9000:2000, 2000; ISO 9001:2000, 2000; ISO 9004:2000, 2000).

ISO 9000 standards represent a benchmark of quality management for companies in its whole. They are focused on the related processes, rather than product or service quality, by specifying requirements on the implementation of processes and interactions between processes. The extension of the application field originates from the awareness by companies that quality is a strategic variable to be planned and managed through the whole network of the value-chain (Romano & Vinelli, 2001).

A company or organization that has been independently audited by third party and certified to be in conformance with ISO 9001 may publicly state that it is "ISO 9001 certified" or "ISO 9001 registered". Since ISO 9001 is a quality management standard rather than a product standard, certification to an ISO 9000 standard does not guarantee any quality of end products and services. The certification certifies that requirements about quality management in ISO 9001 are being followed. Sometimes an ISO 9000 certificate is compulsory to obtain access to some customers.

The application of ISO 9000 in business is considered to be one of the most important phenomena in quality management development and globalization in recent times (Dick, 2000). The ISO 9000 series of quality standards have been available in the marketplace for nearly two decades. They serve as guidelines for any organization

willing to establish or improve its implementation of quality management system. Usually, when a company obtains the ISO 9001: 2000 certificate, its business partners will be more confident in its quality management system (Stevenson & Barnes, 2001). Over the past decade, the ISO 9000 standard series have literally become an international benchmark in the arena of quality management.

The ISO 9000 standard proved to be extremely useful in establishing guidelines for standardizing processes (Viadiu & Fransi, 2005). Meeting the ISO standard provides assurance that the product or service has been produced according to certain specifications and that any potential errors have been detected and eliminated.

According to the latest statistics released in ISO (2006), up to the end of December 2006, 897,866 ISO 9001:2000 certificates had been issued in 170 countries and economies. The 2006 total represents an increase of 123 999 (16 percent) over 2005, when the total was 773, 867 in 161 countries and economies. The 2006 total represents an increase of 730 742 – 5.4 times higher than in 2002, when the world total was 167,124 in 133 countries and economies. Such an impressive number does indeed make ISO 9000 a universal and significant phenomenon. Figure 1 shows the development and growth of ISO 9000 certifications worldwide from 2000 to 2006.

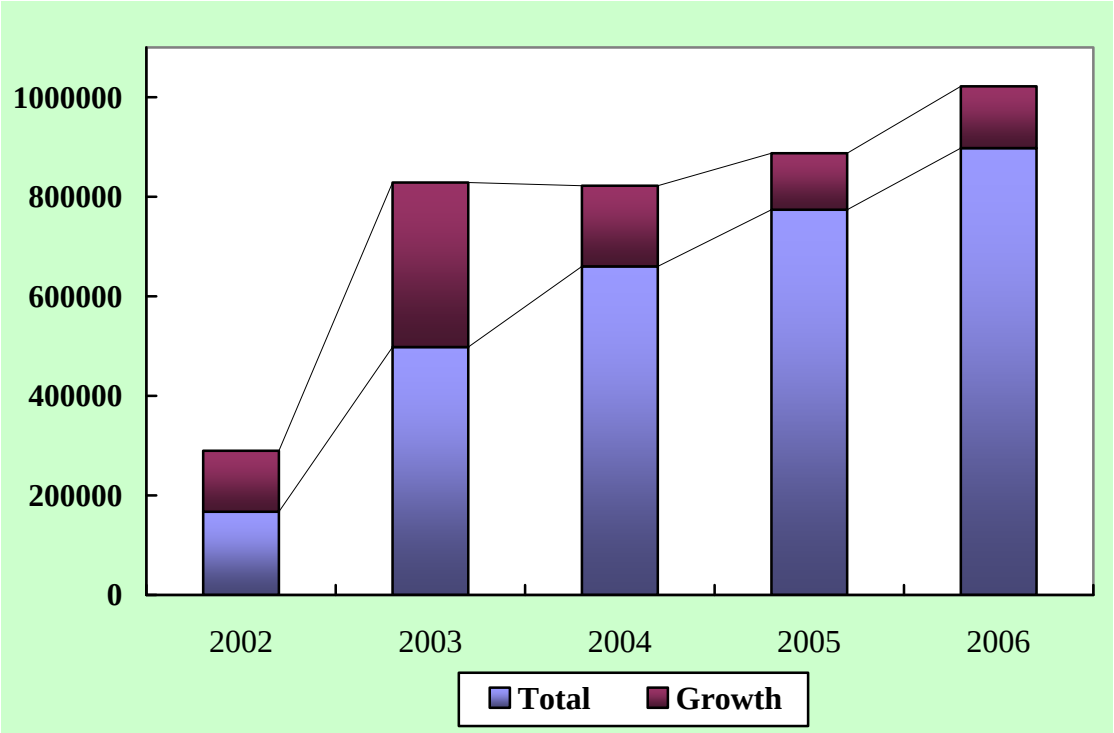

Figure 2: ISO 9001: 2000 Certifications and Growth 2002-2006
Source: ISO (2006)

The top ten countries for ISO certificates in 2006 represent about 69 per cent of the overall certificates in the world (Figure 3). The top position is held by China, which is ever more imposing as emerging country in the global market. China is a curious case, since the growth in the number of certified companies there has been spectacular, possibly due to the fact that, apart from its spectacular economic growth, its production is export-orientated and its companies need the certificate to introduce their products into overseas markets (Martínez-Costa & Martínez-Lorente, 2007).

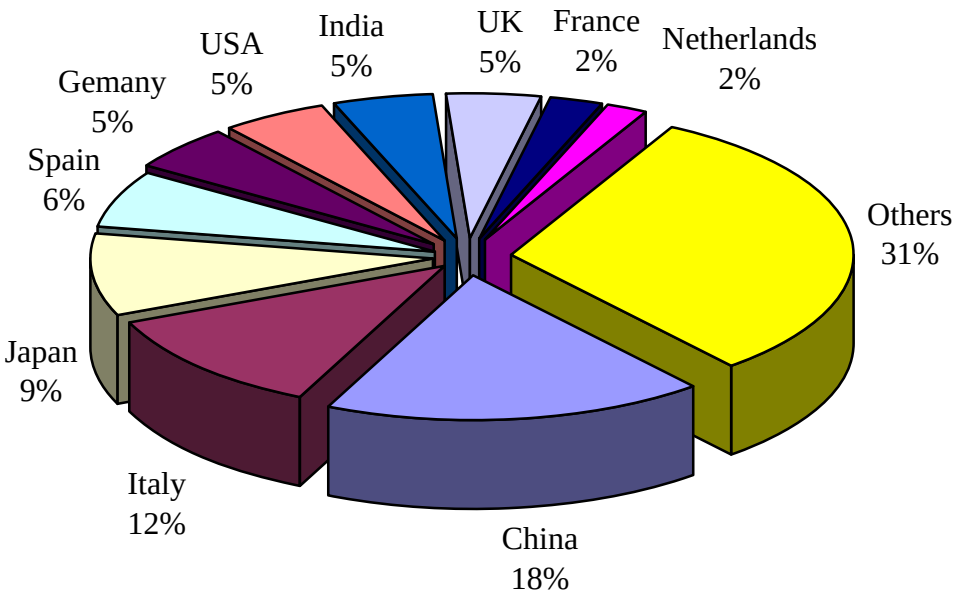

Figure 4: Share of ISO 9000 Certificates in 2006
Source: ISO (2006)

The expansion of the ISO 9000 certification is one of the phenomena in the increasingly competitive global economy. The rapid adoption of ISO 9000 certification by manufacturing firms in developed and developing countries could be partially due to a widespread belief in the market about the business benefits of ISO 9000 certification, or the demand for a “quality label” from the market (Martínez-Costa & Martínez-Lorente, 2003). However, there could be cases that some firms truly comply with the ISO 9000 standards with great efforts while others may only do the necessary minimum in order to get through the audit requirements (Yeung & Mok, 2005).The current version of ISO 9001 – 2000 version provides the requirements for a quality management system, which is a framework for an organization to control its processes in order to achieve objectives including customer satisfaction, regulatory compliance and continual improvement. Organizations that implement the standard can choose to

have their quality management system independently certified as conforming to the requirements of ISO 9001, as means of increasing the confidence of their business partners, customers and regulators in their products and services.

Debates Surrounding ISO 9000

There has been considerable debate in the literature as to whether ISO 9000 has a positive impact. There are many scholarly works reporting the relationship between ISO 9000 certification and firm's financial performance.

It is widely acknowledged that proper quality management improves business, often having a positive effect on investment, market share, sales growth, sales margins, competitive advantage, and avoidance of litigation (Dalgleish, 2005; Barnes, 2000).

Some studies (Curkovic & Handfield, 1996; Ebrahimpour *et al.*, 1997; Terziovski *et al.*, 1997; Uzumeri, 1997; Brown *et al.*, 1998; Anderson *et al.*, 1999; Curkovic & Pagell, 1999; Lee & Palmer, 1999; Hughes *et al.*, 2000) indicate that ISO 9000 is a good marketing tool. Indeed, some companies enter the ISO 9001 certification as a marketing tool.

Barnes (2000) says "ISO 9000 guidelines provide a comprehensive model for quality management systems that can make any company competitive.". Barnes (2000) also cites a survey by Lloyd's Register Quality Assurance which indicated that ISO 9000 increased net profit, and another by Deloitte-Touche which reported that the costs of

registration were recovered in three years.

Some scholars, such as Highlands (1995), Elmuti (1996), Simmons & White (1999), Docking & Dowen (1999), Najmi & Kehoe (2000), Pheng & Alfelor (2000), Yahya & Goh (2001); Beirao & Sarsfield (2002), Nicolau & Sellers (2002), Terziovskil *et al.* (2003), Sharma (2005), Corbett *et al.* (2005), Koc (2007), Sacchetti (2007), Zaramdini (2007), Jang & Lin (2008) and Yeung & Mok (2008) argued that the ISO 9000 certification has a positive effect on firm's performance.

Highlands (1995) and Elmuti (1996) claimed that productivity, quality of product, and quality of work life improved due to ISO 9000 certification.

Simmons & White (1999) reported a positive association between ISO 9000 certification and financial performance in the US electronic and other electrical equipment and components industrial sector.

Docking & Dowen (1999), Beirao & Sarsfield (2002) and Nicolau & Sellers (2002) found a positive effect in the stock markets of the USA, Portugal and Spain.

Najmi & Kehoe (2000) and Pheng & Alfelor (2000) argued that the performance of firms could be improved by searching for compliance with ISO 9000 and before the formulation and implementation of a strategy of Total Quality Management (TQM).

Terziovski *et al.* (2003) found a significantly positive relationship between the motives

of managers in adopting ISO 9000 and business performance in their surveys of 400 companies in Australia.

Two recent papers using longitudinal analysis and financial data are Corbett *et al.* (2005) and Sharma (2005). They have found positive results of ISO 9000 implementation. Corbett *et al.* (2005) have found that a firms' decision to seek their first ISO 9000 certification is indeed followed by significant abnormal improvements in financial performance. They compared certified firms and not-certified firms before and after certification and they measured financial performance using different measures. Sharma (2005) also compared both kinds of firms before and after certification and used profit margin, sales growth and earnings per share as measures of financial performance.

Based on a survey of 106 Turkish small and medium-size firms, Koc (2007) found that ISO 9000 certified firms benefited from improvement in performance through customer satisfaction and enhancement in competitive priorities in terms of delivery performance, product quality and flexibilities.

Sacchetti (2007) found that that ISO Quality Management System is a powerful instrument for improving performance and increasing customer satisfaction.

Zaramdini (2007) suggest that the certified firms have adopted the right approach when seeking ISO 9000 certification because they have focused on the potential internal benefits. The ISO 9000 certification can help them in achieving their quality targets.

Jang & Lin (2008) confirm that making efforts to implement ISO 9000 will increase market share, thus providing companies with a competitive edge.

Yeung & Mok (2008) suggest that the implementation of ISO was able to improve firms' productivity in the form of a wholly disembodied shift of the production frontier.

Many other studies, such as Elmuti (1996); McAdam & McKeown (1999); Huarng *et al.* (1999); Lipovatz *et al.* (1999); Arauz & Suzuki (2004); Casadesús & Karapetrovic (2005); Briscoe *et al.* (2005) have also demonstrated the benefits of implementing ISO 9000. These studies have claimed that the implementation of ISO 9000 standards has brought the improvement of operational and business performance to companies.

Despite of all the benefits that ISO 9000 can bring to companies, motivation for ISO 9000 certification and the quality culture of the organization are often considered as important factors.

1. Some studies suggest that the most outstanding reason for implementing ISO 9000 is that customers prefer to buy from suppliers that are ISO certified (Carlsson & Carlsson, 1996; Rao *et al.*, 1997; Jones *et al.*, 1997; Casadesús *et al.*, 1998, 1999; Huarng *et al.*, 1999; Acharya & Ray, 2000; Yahya & Goh,

2001; Najmi & Kehoe, 2001; Terziovski *et al.*, 2003; Martínez-Costa & Martínez-Lorente, 2004, Bhuiyan & Alam, 2005). Other studies, however, show that internal motives are the most important consideration in certification (Idris *et al.*, 1996; Najmi & Kehoe, 2001; Gotzamani & Tsiotras, 2002).Concerning business impacts of certification, it is reasonable to assume that the benefits of ISO 9000 will improve as internal motivations increase. Indeed, these motivations reflect coherence between the standard's proposals and organizational needs, thereby encouraging greater mobilization in favor of ISO 9000. Some studies suggest that the positive effects of certification are related to management's willingness to make ISO 9000 a genuine tool for improving quality practices (Gotzamani & Tsiotras, 2002; Douglas *et al.*, 1999; Withers & Ebrahinpour, 2000; Poksinska *et al.*, 2002; Llopis & Tarì 2003). This link between expectations about the efficiency of some practices or behaviors and individuals' mobilization has been demonstrated by organizational and psycho-cognitive studies (Bandura, 1986; Chinander, 2001). From this perspective, the more management believes that ISO 9000 will meet internal organizational requirements such as rigor of quality practices or control of employee behavior, the more management should be inclined to support the system and improve its efficiency.

Obtaining ISO certification does not automatically lead to improvements in the processes of organizations. The literature reveals that organizations that pursue ISO 9000 certification willingly are more likely to report improved organizational

performance than those that only obtain ISO 9000 certification under customer pressure (Lee, 1995; Jones *et al.*, 1997; Douglas *et al.*, 1999; van der Wiele *et al.*, 2000; Singels *et al.*, 2001; Yahya & Goh, 2001; Llopis & Tarí, 2003; Terziovski *et al.*, 2003; Park *et al.*, 2007).

A growing number of researchers argue that the ISO 9000 series, being a paper-driven process of limited value, does not really have an impact on firm performance and that ISO 9000 certification is just another marketing cue (Curkovic and Handfield, 1996; Uzumeri, 1997; Terziovski *et al.*, 1997; Curkovic & Pagell, 1999).

Binney (1992) conducted a qualitative study on the implementation of ISO 9000 quality certification systems. He comments on his findings:

ISO 9000 confirms that a company has an effective quality management system. It does not guarantee that the goods and services the company produces are of quality; that depends on whether the systems serve the interests of customers and are supported by a quality culture.

Binney's qualitative findings imply that a company may be certified to ISO 9000 and still provide poor quality products and services and not necessarily increase its market share, improve the motivation of its staff, or reduce its costs.

When the goal of ISO 9000 certification was achieved, managers tended to revert to their traditional practices. That is, no permanent change in attitude and behavior had

been achieved. Managers were found to revert to “fire-fighting” rather than planning and engaging their workforce in preventive actions and continuous improvement. They were more concerned about following the rules of the ISO 9000 standard than satisfying customer needs (Bredrup, 1995; Brown, 1995; Terziovski *et al.*, 1997; van der Wiele *et al.*, 2005).

One of the common criticisms of ISO 9001 is the amount of money, time and paperwork required for registration. According to Barnes (2000), "Opponents claim that it is only for documentation. Proponents believe that if a company has documented its quality systems, then most of the paperwork has already been completed."

Getting an ISO certification is expensive and time-consuming. What's more, doing so requires codifying nearly every aspect of business operations -- something that runs counter to the style of a fast-moving entrepreneurial organization. But if you don't go through the process, you often can't work for big companies.

Another problem reported is the competition among the numerous certifying bodies, leading to a softer approach to the defects noticed in the operation of the quality management system of a firm.

Some scholars question the motivation in pursuing ISO 9000 mainly a result of customer pressure (Terziovski *et al.*, 2003; Martínez-Costa & Martínez-Lorente, 2003).

ISO 9000 proponents frequently argue that ISO 9000 fails when top management only

wants the certificate and does not really use ISO to improve the system. The issue is that ISO 9000 is ineffective in making companies put high-performing quality systems in place. Companies either care about quality and benefit from that approach, or they do not care about quality and suffer from that approach.

Some firms experienced difficulties in conducting internal quality audits and, subsequently, in taking the required corrective actions (Ebrahimpour *et al.*, 1997).

Rao *et al.* (1997), Terziovski *et al.* (2003) and Naveh & Marcus (2005) have indicated that while implementing the ISO 9000 standards led to improved operational performance, it did not give rise to better business performance.

Although many scholars reported an improvement in quality control, productivity and customer satisfaction, they also pointed to the high costs of implementation, and of providing the documentation required by the ISO (Quazi & Padibjo, 1998; Juran, 1999).

The implementation of ISO 9000 may improve procedural productivity and quality control over products, but may not lead to an expansion of market share nor an improvement in cost efficiency (Terziovski *et al.*, 2003).

Corrigan (1994), Stephens (1994) and Lima *et al.* (2000) found that the implementation of ISO 9000 standards did not result in improved productivity, quality, or profitability.

Beattie and Sohal (1999) showed that a mere four percent of the 50 Australian firms reported an improvement in their profitability after the ISO certification.

Sun & Cheng (2002) and Thomas & Webb (2003) even questioned the cost-effectiveness and feasibility of implementing ISO 9000 in small-to-medium size companies in the manufacturing sector.

Shams-ur (2001) found insignificant differences in self-rated performance between small- and medium-sized firms with and without ISO 9000 certification in Australia.

The contention that ISO 9000 registration improves performance is refuted as a cause-and-effect relationship, and the study speculates that companies that are high-performing tend to adopt the standard at a higher rate than lower-performing companies, thus giving the deceptive appearance that ISO 9000 registration is correlated to better performance.

Heras *et al.* (2002) carried out a study which starts by acknowledging that it is widely documented and clearly proven that ISO 9000-registered companies outperform non-ISO 9000 registered companies. The study sets out to determine if ISO 9000 is the cause for the better performance. The study examined 800 companies in Spain. Some of the companies were registered, some were in the process of becoming registered and some never became registered. The profitability and sales performance in these companies was analyzed before and after registration during a five-year period.

The study confirms that ISO 9000-registered companies perform better than nonregistered companies. The main finding, though, is that registered companies had the same performance before and after the registration. In short, the study clearly finds that ISO 9000 registration had no affect on sales and profitability performance. Registered companies performed better than nonregistered companies, but they were performing at the same higher level before their ISO 9000 registration.

Viadiu & Fransi (2005) point out that certification has a negative effect on company results. Singels *et al.* (2001) find that certified companies had worse average cost savings, rate of sales growth, rate of market share growth and rate of net benefit growth when compared with non-certified companies.

Wayhan *et al.* (2002) showed that ISO 9000 certification failed to improve financial growth or profitability. Yet, they found a positive association between ISO 9000 certification and return on assets.

Martínez-Costa & Martínez-Lorente (2003) did not find clear evidence to support that ISO 9000 certification could be positively valued by the market.

Based on a sample of more than 2,700 US firms in the electronics industry, Morris (2006) argued that there is no link between ISO 9000 certification and financial performance.

Batchelor (1992) found that the benefits of certification were mainly procedural

efficiency and error rate, but not related to increase in market share, staff motivation, or cost.

Brown (1994) found that managers went back to “fire fighting” after ISO 9000 certification.

Several other studies have shown that implementing ISO 9001 does not appear to have led to improved financial performance of organizations. For example, Terziovski *et al.* (1997) found that ISO 9000 certification does not have a significantly positive relationship with organizational performance.

Quazi et al (2002) argue that the ISO certification does not affect quality management practices and quality results of firms.

In 2002, ISO's own journal, ISO Management Systems, published a study that tracked the effects of ISO 9000 certification on public companies over a 10-year period. The authors concluded that firms that were certified tended to do better than firms that were not. But they also wrote that certification "is more often a necessary condition to maintain current [financial] performance rather than a sure-fire way to improve performance." A 2002 study by the journal *Total Quality Management* was more pointed, finding that "ISO 9000 certification has a very limited impact on financial performance, as measured by return on assets; however, this effect dissipates quickly over time."

The standard is seen as especially prone to failure when a company is interested in certification before quality. Certifications are in fact often based on customer contractual requirements rather than a desire to actually improve quality. Certification by an independent auditor is often seen as the problem area, and according to Barnes (2002), "it has become a vehicle to increase consulting services." In fact, ISO itself advises that ISO 9001 can be implemented without certification, simply for the quality benefits that can be achieved. A company can choose whether to get the certification.

According to Seddon (2000), ISO 9001 promotes specification, control, and procedures rather than understanding and improvement. Wade (2002) argues that ISO 9000 is effective as a guideline, but that promoting it as a standard "helps to mislead companies into thinking that certification means better quality, [undermining] the need for an organization to set its own quality standards." Wade's argument is that total, blind reliance on the specifications of ISO 9001 does not guarantee a successful quality system.

The motivation for ISO 9000 implementation is often claimed to be a significant factor for business success. Empirical evidence shows that the motivation for undertaking ISO 9000 certification is often external reasons (such as, marketing advantages, customer expectation and competitive pressures), instead of internal reasons (such as improving the quality of products and services (Breka, 1994; Ho, 1994; LRQA, 1993). However, more recent research indicates that manager's motivation for seeking ISO

9000 certification has shifted significantly from external to internal reasons. For example, market related reasons for certification do not rank high as motivators to gain ISO 9000 certification (Breka, 1994; Feng, 2000; Gotzamani & Tsiotras, 2002). Companies which seek ISO 9000 certification for external reasons are likely to fail or gain fewer benefits because of their narrow focus.

Boiral & Roy (2007) point out that the nature and intensity of motivations behind a decision to adopt the ISO 9000 standard play a key role in the success of the implementation process and the emergence of organizational problems arising from certification.

Terziovski *et al.* (2003) state that whether or not ISO 9000 is beneficial is likely to be the major determinant of the degree to which managers will embrace or reject ISO 9000 certification in the twenty-first century.

Feng *et al.* (2008) states that companies that seek certification to improve their quality of products and services tend to gain greater benefits from the ISO certification process.

Viadiu & Fransi (2005) indicate that the companies that obtain the greatest benefits from the project are those that regard certification as just one more step towards Total Quality Management.

The analysis of the literature shows that the effect of ISO 9000 on company results is

not clear. Using different methodologies, some researchers have found positive results but others have found negative ones. The balance appears to be more inclined towards the positive effect hypothesis. To conclude, ISO 9000 certification can deliver business benefit, but should be seen to be part of an overall continuous improvement process rather than an end in itself.

3.3 Quality Management in China

TQM is recognized as one of the most competitive weapons in the global market (Beskese and Cebeci, 2001; Deming, 1982). Chinese firms are making great effort in implementing quality management in order to gain global competitiveness.

As Juran (1990a, 1990b) argued, quality management has a long history in China. In the past, China had a good reputation for the quality of her silks, porcelain, and architectural work (Needham, 1983). However, this traditional Chinese quality control practices focused on craftsmanship, experience and attitudes, and may not be effective and efficient enough for contemporary industrial production systems.

The adoption of Chinese quality management is closely related to Chinese economic system reforms (Schell, 1994). Since the founding of the People's Republic of China in 1949, quality management has been making great progress. In 1957, the first research group of quality management in China under the Chinese Academy of Sciences was established. It started to introduce statistical process control into Chinese industrial enterprises. Liu (1994) believes that only in 1957 modern quality control concepts and approaches were first introduced into China. At that time, statistical process control was not really integrated into management systems as a compositive part of quality management. It was regarded as something to be respected as a new invention but kept at a distance from managerial application (Liu, 1994). Until then, inspection was the

primary way to control the product quality, and this was carried out by specially trained inspectors, who alone are responsible for quality.

In 1978, China implemented major economic reforms to create an “open door” policy (Davies, 1995) to encourage the inflow of foreign investment and the establishment of businesses. The economic and industrial reforms involved the incorporation of new managerial techniques including *Total Quality Management*. This was planned to address the problem of poor production quality. The reform was intended to prepare China for entering the global market (Tseng *et al.*, 1999). Since that period the country has experienced rapid growth. After that, many Chinese firms were exposed to quality related technology and management know-how as well as international quality standards and practices (Lee *et al.*, 2000).

Since China instituted an open-door policy in 1978, its economic has experienced continual rapid growth. The World Bank reports GDP growth rates approaching 10+ percent per year. However, at the same time, China is confronted with many problems. Relatively low product quality is one of the best recognized and most serious problems.

Chin et al (2001) argue that the Chinese Government has played a directive role in shaping the context and institutional structure of Chinese enterprises and affecting the quality transformation efforts throughout the country. On 31 August 1979, the China Association for Quality Control (CAQC) was established to co-operate with

governmental departments to promote quality management in the country. On 5 September, 2001, CAQC was renamed as China Association for Quality (CAQ).

The economic achievement of China during the last two decades has been impressive. The manufacturing industry has made the most significant contribution to the spectacular economic growth in China (Lee and Yu, 1997). Manufacturers in the developed nations provide high quality products at reasonably low prices, while manufacturers in other developing countries' are seriously challenging Chinese companies by producing similar products at a less cost. At the same time consumers are paying more and more attention to product quality nowadays. All these elements are pushing Chinese firms to improve quality management practices to enhance the quality of their products.

The level of awareness of *Total Quality Management* has increased considerably over the past few years. Although many Chinese manufacturing companies began to implement total quality control from 1978, China still lacks effective quality management systems and application at the enterprise level. Some basic quality principles and modern quality management methods have not been widely used by Chinese manufacturing enterprises (Zhao *et al.*, 1995). Although great efforts have been made by the Chinese government to stimulate companies to implement TQM and improve product quality, there has not been satisfactory progress. The country's product quality as a whole is still at a relatively low level (Zhang, 1998). A number of quality management problems still remain unsolved.

Quality management in that period was characterized as inspection quality control. Many measures have been adopted by the Chinese government so as to stimulate enterprises to strengthen quality management, implement TQM, and improve product and service quality. In order to encourage Chinese manufacturing enterprises to emphasize quality management, implement TQM, and improve product quality, the Chinese government launched the Excellent Quality Product Prize nation-wide in 1979. Although the efforts to promote the practice of statistical process control were not stopped, the method was not widely implemented. Quality management included only the quality inspection of products in most enterprises (Zhang, 2000). Only quality inspection departments were in charge of product quality. When product quality was found to be substandard, inspection was transferred back to its previous department (Liu, 1994).

In order to encourage China's companies to strengthen quality management, implement TQM, and improve product and service quality, the activity of the quality certification was introduced. China adopted the ISO 9000 series of 1987 for its own national standards with conversion made for technical contents and the coding system. The converted ISO 9000 standards had some problems because of their non-conformity and were completely revised in equivalence to the ISO 9000 in October 1992 (Liu, 1994). In 1992, the first Chinese ISO 9000 certificate was awarded by the first China accreditation institute – the Shanghai Accreditation Center (Sun, 2000). From then on, ISO 9000 series accreditation was gradually implemented across the whole country.

Although the activity of the quality certification has been carefully implemented in China, it also poses some problems. The state supervision and inspection in the first quarter of 1996 showed that the sample conformity rate was only 76.5 per cent for the 17 kinds of products sampled for inspections from 16 companies which have ISO 9000 certification.

> *These inspections found that some certification bodies audited quality systems poorly and that some registered enterprises had not established their quality systems effectively. Consequently, product quality in these companies did not improve and receiving quality certification tended to be a mere formality.*
>
> -- Zhang, 2000

After China became a member of the World Trade Organization (WTO) in December 2001, it became obvious that all Chinese firms, including the state-owned and those collectively owned, would have to adapt to a new competitive environment. Quality improvement has often received the highest priority consideration.

To meet the new requirements of a market-driven economy, Chin *et al.* (2001) believe that Chinese firms need to transform themselves into ones that are consistent with the *Total Quality Management* paradigm. For example, Chinese firms should shift their emphasis from inspection to process quality. However, as Pun (2001) argues, making such a transformation to TQM is never easy for Chinese companies because it often demands not just a change of techniques, but also a change of corporate cultures, systems and practices.

However, the improvement on product quality was notable for the last decade. The state supervision and inspection in the first half year of 2008 showed that the sample conformity rate was 98.3 per cent for the 11396 kinds of products sampled from 10395 companies all over the country.

So far little research has been conducted in the area of China's quality management internationally. Therefore, it is very difficult for people outside China to obtain relevant information on China's quality management issues.

4. Industrial Review

4.1 Industry Review Introduction

In this chapter, the global and Chinese candle industry will be examined. Then a review on anti-dumping decisions made by several countries against candles originating in China will be conducted.

4.2 Candle Manufacturing Industry

Despite the march of technology pushing fragrant options for air care, there is still exceptional power in putting a flame to a simple wick. Candles have held their own in the global air care market against competition from sprays, electronic devices and passive delivery systems. According to Euromonitor International, the global air care market has been the most dynamic sector in the household care arena since 2001. In 2006, revenues from air care products had increased by more than 35%, reaching $7 billion, and the global air care market is expected to grow to $7.6 billion by 2011.

The global yearly sales value of wax products amounts to more than USD 10 billion now; the total market consumption volume and growth level are comparatively steady; the annual sales value in European market is more than USD 5 billion, while USD 3 billion in USA market. About 70% families consume candles, so the market demand is quite steady.

The candle competition in the current international market can be divided into two kinds generally: large European and American candle manufacturers led by Blyth Inc and Yankee Candle, and domestic newly-risen manufacturers led by Qingdao Kingking. As the candle industry is a typical labor-intensive industry, China candle manufacturing industry is highly competitive in the world in recent years thanks to low labor cost and rich paraffin resources.

At a 2006 value of $606 million, candles are the fourth largest global home air care category. Yet, of the seven air care categories considered by Euromonitor, candles had, by far, the largest growth at 13% from 2004–05. About 70% families consume candles. The market demand is quite steady.

The global candle industry in the current international market can be divided into 3 groups generally: large American candle manufacturers led by Blyth Inc and Yankee Candle, large European candle manufacturers led by Bolsius and Asian newly-risen manufacturers. As the candle industry is a typical labor-intensive industry, China candle manufacturing industry is highly competitive in the world in recent years thanks to low labor cost and rich paraffin resources. Currently, the Chinese candle export value accounts for about 5% in the world. Along with the further improvement of competition advantage of Chinese manufacturers, Chinese candle manufacturing industry will have larger development space.

Company	Country	Main Products	Sales Value
Blyth, inc	USA	Scented candle, odorless candle, family decoration	US$985 million
Yankee Candle	USA	Scented candle	US$ 601 million
Bolsius	Germany	Dine candle, rod candle, tea candle, scented candle	US$136 million
Lancaster Colony	USA	Candle and glass products	US$169 million
S.C.Johnson & Son	USA	Scented candle & air purification candle	US$121 million
Qingdao Kingking	China	New material technique candle and related techniques	US$50 million

Table 1: Main Candle Manufacturers Worldwide 2006
Source: research in china

Currently, the candle export value is USD 685 million in China, accounting for about 5% in the world. As far as the USA concerned, there are more than 400 large candle manufacturers there, and 90% candles are made in the USA. Along with the further improvement of competition advantage of Chinese manufacturers, China's candle manufacturing industry will have larger development space.

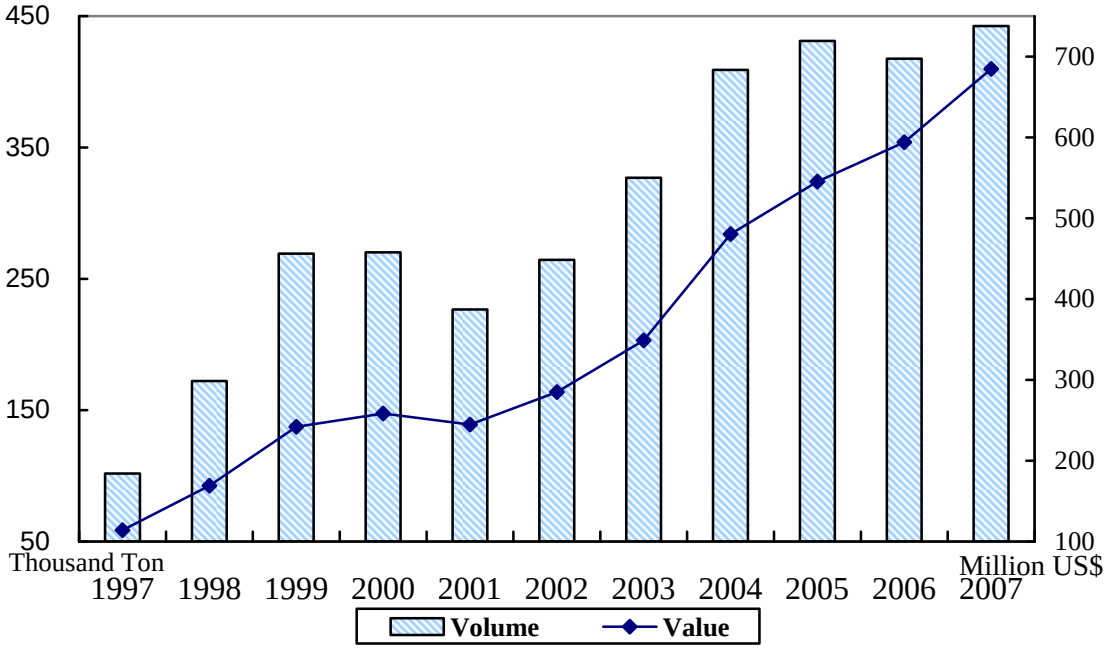

Figure 5: Export of China's Candle Products 1997-2007

Source: Cheminfo

> *Candles remain extremely popular in 2007, though growth in this mature category has slowed since its heyday. Scented candles in glass containers continue to dominate the market, with niches for tins, especially in travel sizes, pillars and tapers, as well as a few specialty shapes. Within the container niche, the trend is toward a sleeker look, more suited to blending with formal or contemporary decor as well as traditional homes.*
>
> --Schwartz, 2007

4.3 Anti-Dumping against Chinese Candles

Dumping and anti-dumping issue has been an argument between Chinese candle industry and candle industry in other countries. Anti-dumping tariffs have troubled Chinese candle manufacturers for years.

Mexico

On 19 Jun 1992, an investigation against candles originating in China was launched in Mexico. And the decision to apply 103% anti-dumping duty was made on 19 August the following year.

The application of 103% anti-dumping duty was reviewed twice on 19 Oct 1999 and 2 March 2005, and the decision was to remain the 103% duty.

The third review on the 103% duty against candles originating in China was conducted on 5 September last year. And the final result is to be revealed yet.

USA

In 1985, when the U.S. candle industry first experienced a flood of inexpensive imports from the People's Republic of China, the Nation Candle Association (NCA) filed an antidumping petition with the U.S. Department of Commerce and the International Trade Commission. The action resulted in a 54.21% antidumping duty on Chinese petroleum wax candles.

In 2003, he National Candle Association petitioned for an administrative review of an antidumping duty order covering candle imports from China for the period of 2001 - 2002. The Commerce Department action came as the result of the administrative review. The new duty was first set at 95.95 percent, effective March 15, 2004. The rate

was then recalculated to 108.3 percent, effective April 19, following the discovery of ministerial errors in calculating the duty rate.

The new 108.3 percent anti-dumping duty affects all Chinese exporters and covers scented and unscented dinner candles (tapers, spirals and straight-sided), rounds, columns, votives, wax-filled containers, and pillars. Birthday and novelty candles are not covered by the order.

On 6 October 2006, The U.S. Department of Commerce ruled that candles containing any amount of petroleum wax – including candles containing 50 percent or more vegetable-based waxes – are subject to the existing 108.3% duty margin on petroleum wax candles made in China. Hence the 108.3% duty on candles from china extended to blended wax candles.

The decision was made in response to a petition filed in 2004 by the National Candle Association (NCA), asking the Commerce Department to determine whether the blended wax candles were circumventing the existing antidumping duty order on petroleum wax (paraffin) candles from China.

EU

Since the USA has checked imports by implementing high punitive tariff duties of Chinese candles from 2003, the Chinese exporters switched their sales to European Union.

In the period of 2002 to 2006, the market share of Chinese imports of the European candle market almost doubled and reached about 40% today, and the share of European producers has declined by roughly the same amount (ECI, 2008).

On 16 February 2008, the European Commission launched an anti-dumping investigation against candles originating in China. The investigation was to address complaint lodged on 3 January 2008 by some main European candle producers, alleging that imports of certain candles originating in China are being dumped and are thereby causing material injury to the European candle manufacturing industry. Usually the European Commission comes to a decision within 9 months after initiation.

5. Methodology

5.1 Methodology Introduction

A research methodology defines what the activity of research is, how to proceed, how to measure progress, and what constitutes success.

In this chapter, readers will read the research methodology, including the author's research philosophy, the research strategy adopted and the reason, the instruments of data collection, the rational of the choice, the limitation of the research, as well as some potential problems on practice.

5.2 Research Philosophy

Easterby-Smith et al (1997) identify three reasons why the exploration of philosophy may be significant with particular reference to research methodology:

Firstly, it can help the researcher to refine and specify the research methods to be used in a study, that is, to clarify the overall research strategy to be used. This would include the type of evidence gathered and its origin, the way in which such evidence is interpreted, and how it helps to answer the research questions posed.

Secondly, knowledge of research philosophy will enable and assist the researcher to evaluate different methodologies and methods and avoid inappropriate use and unnecessary work by identifying the limitations of particular approaches at an early stage.

Thirdly, it may help the researcher to be creative and innovative in either selection or adaptation of methods that were previously outside his or her experience.

In the year of 2004, a batch of candles manufactured by a Chinese company was found without wicks after they were delivered to a business buyer in Ireland. When the buyer was trying to contact the Chinese company to fix the problem, he found that the company had just vanished and he had to bear the economic loss himself. The accident drove the author to conduct an investigation into the implementation of quality management in Chinese candle manufacturing industry.

This study explores the situation of quality management implementation in the candle manufacturing industry in China by analysing results of Chinese candle manufacturers. The author starts the research by conducting a review into literature about quality management in China and the issues around the international quality management standard ISO 9000, following with a research into the candle industry. Since there is litter research conducted on quality management in Chinese candle manufacturing industry, the author reckons, the study will be better conducted as an inductive study rather than a deductive study. By interpreting data collected from Chinese candle manufacturers, a picture of the quality management implementation in candle manufacturing industry in China can be drawn. Due to the possible casual and catering attitude of Chinese companies caused by the culture, the interpreting of the information sent back by candle manufacturers is of crucial importance and difficulties. The philosophy of the research falls between positivist and post-positivist: the data

collected from Chinese candle manufacturers are explored in depth from a qualitative perspective, and then the results are analyzed in a quantitative approach.

5.3 Research Strategy

The proposed research is about the implementation of quality management in candle manufacturing industry in China. The topic covers two different areas: quality management and candle manufacturing industry. Hence, the researcher starts the research by conducting reviews on the two areas respectively: the development of quality management in China, and the current state of Chinese candle industry. At the same time, the issues around the international quality management standard ISO 9000 are reviewed as well.

In order to obtain insight into China's quality management issues in candle manufacturing industry, however, it is necessary to collect primary data directly from Chinese candle manufacturing companies. Sending out survey questionnaires directly to candle manufacturers in China is felt the most appropriate way. At the same time, however, the reality that companies are generally reluctant to respond to survey questionnaires is recognized by the author. Companies being surveyed are motivated to respond by the fact that the survey may be followed by a business order as the proposed research is being conducted not only as part of dissertation research, but also as a busy preliminary survey that are designed to find competent suppliers for the Candle Shop Dublin. Hence questionnaires were designed to collect qualitative data

from candle manufacturers and the data collected were interpreted and transferred into quantitative data for the purpose of analyzing.

5.4 Data Collection Instruments

Data were collected by the use of survey questionnaires. On the basis of the results of reviewing quality management literature, ISO 9000, and Chinese candle industry, the author developed a survey questionnaire according to the author's own experience as an ISO 9000 internal auditor of quality management system with reference to Ford Q1 2002 Manufacturing Site Assessment Evaluation Matrix, Nissan Supplier Evaluation Form, Dell Supplier Survey Form and Supplier Audit Form used by Fuyao Glass Industry Group, the fourth largest glass manufacturer in the world. The questionnaire includes different aspects of quality management implementation.

Questionnaires were sent out via emails to 107 candle manufactures in China, which were chosen from the list obtained from the website of China Candle Association. 32 questionnaires were sent back, 26 of which are eligible. The total response rate is 24.3 percent.

The contents filled in questionnaires by candle manufactures in China might be different from the reality for some different reasons. In other words, the answer might not reflect the reality. In order to minimize such a problem, a further descriptive answer for each question is demanded in questionnaires. Hence, the questionnaires were designed as formal business questionnaires with many open questions. The

rational is that by assessing descriptive answers given by candle manufactures, the author will be able to justify the reliability of the answer. From the author's experience as an internal auditor of quality management system, it is reckoned that sometimes a Chinese company will tend to answer a question in a way that they think will benefit the company, no matter what the reality is. For example, when being asked "Is there a quality management system set up in your company", a company might answer "yes" even if they don't even know the basis concept of quality management system. But by asking them to give a framework of their quality management system, even if they answer "yes", it is possible to tell from their descriptive answer that the answer should actually be "no".

5.5 Data Analysis Procedures

The questionnaires sent back were organized and interpreted. The answer to each question was justified and catalogued according to the detailed description demanded in the questionnaires. The interpretation of answers was of crucial importance, which was done mainly through the understanding of descriptive details given in the questionnaires. Then the interpreted data were coded and analyzed. Statistical analysis was done with SPSS software version 13.0.

5.6 Limitations of Methodology

The real motivation why the companies answered the questionnaires may twist the objectiveness and reliabilities of the answers they gave.

The way of interpreting the answers in the questionnaires might be arguable.

At the same time, there might be ambiguity for Chinese company when understanding and answering the questions in the questionnaires.

6. Findings

6.1 Findings Introduction

The answers to every question from every questionnaire that are sent back by Chinese candle manufacturers are analysed to identify their reliability according to the descriptive details attached. Then the data are coded and analysed in SPSS. Some interesting findings about the situation of quality management in Chinese candle industry are shown in the rest of this chapter. In order to better understand the findings, they are organized into different areas.

6.2 Company Scales, Ownership and Quality Management

In China, only companies with no less than 2000 employees are large scale companies (National Bureau of Statistics of China *et al.,* 2003). The research shows that 80 percent of the ISO 9000 registered candle manufacturers are large scale companies. My findings show that all companies with more than 500 employees are ISO 9000 registered. All foreign-owned or joint-ventured companies are ISO 9000 registered, while only 20 per cent of private owned candle manufacturers are ISO 9000 registered. As a whole, 50 per cent of companies responded are ISO 9000 registered.

As argued in the review of literature in the previous chapter, the competence of the quality management system of a company should not be judged only by a piece of paper of ISO 9000 registration. It is possible that a company “bought” that piece of paper even if its quality management system does not conform to ISO 9001 standard

requirements. A company without ISO 9000 registration could have an effective quality management system in place to ensure the quality of its products. A look into its quality management system is necessary. After analyzing and interpreting the answers given by all responding companies, it is found that some of the companies do not have any quality management system established at all. For some companies, the operation of a company, either exporting company or not, is just like running a family business.

6.3 Quality Policy and Quality Objectives

Quality policy and quality objectives are the direction and target of development for a company. Hence quality policy and quality objectives are supposed to be defined as a way that can be followed and targeted by all staff as a guideline. It should be more than oral words that means nothing. However, as can be seen from the data collected, quality policy in most companies is actually a pure slogan. And for some, quality objectives are just immeasurable aims.

A notable finding about quality policy and quality objectives is that some companies fail to define the quality policy and quality objectives. Lack of clearly defined quality policy and quality objectives exists most among small scale, private-owned companies.

Among all responding companies, large scale companies tend to have a clearly defined quality policy in order to guide their quality management activities. The researcher also

notices that quality objectives are set reasonably and monitored effectively by some large scale candle manufacturers.

6.4 Usage of Statistical Data

According to ISO 9000, the decision making on quality management issues (and other business issues as well) should be based on facts. The facts come from the collection and recording of statistical data. The application of statistical control is crucial for many aspects of quality management, for example, to measure the effectiveness and efficiency of each process, to monitor process capability, to direct continual improvement and to ensure the focus on customers, etc. Among all figures, product defect rate might be one of the biggest concerns for both supplier companies and customer companies. However, one of the ISO 9000 registered companies can not provide the figures of the current and historical defect rate. The survey shows that only about half of the companies are collecting and using statistical data for quality management purposes. Some small scale companies seem to consider the collecting of production and quality data as unnecessary and time wasting.

6.5 Overall Quality Control

ISO 9000 registered or not, 38 percent of the candle manufacturers are thought not to conduct appropriate and/or necessary controls on product quality. The conclusion was derived from the descriptive statements given on the product quality control inside the company, including all activities from designing to delivery. In order to ensure high

and stable product quality, appropriate and sufficient controls should be put on all activities inside and outside the company, when product quality may be affected. This includes all activities from the purchasing of material to the delivery to customers. The interpretation of answers from candle manufactures shows that most companies are concerned about the control of product quality when the products are being produced online. Online inspection and final inspection compose the main part of the control on quality for many companies. Not enough attention is being put on control of material used for production, when there are new products being developed, and when products have left the company and before they are delivered to customers. For international trades, the controls on the shipment and delivery of goods are essential and important. The survey shows that a notable portion of companies give only limited attention to the controls on transportation and delivery.

6.6 Management of Equipment and Tools

The maintenance of equipment and tools that are directly used for manufacturing and inspecting is crucial to ensure product quality and quality stabilities. However, according to the survey, 54 percent of the candle makers in China cannot provide evidence of appropriate maintenance of their main equipment and tools. In other words, the status of manufacturing and inspecting equipment and tools in these companies may be out of control, may deteriorate and may not be capable of functioning properly.

6.7 Management on Suppliers

Burning candles may cause fire hazard and be the cause of deterioration in health if their ingredients are not controlled and monitored. The material used for candles should be carefully selected. The main materials for the candle manufacturing industry are wax, wicks, fragrance and colorants. The composition of these four materials should be designed and tested thoroughly. The incapability of candle containers may cause fire hazard as well. Despite all of these considerations, more than three quarters of candle manufacturers being surveyed do not have appropriate procedures to put sufficient control on their suppliers of main production material.

6.8 Quality on Delivery and Transportation

Compared to other operations like production, candle manufacturers in China are paying much less attention to the delivery and transportation of products. This is possible because most candle products are easy to deliver. However, given the facts that candle dyes can be affected by heat, light, fragrance and other agents in a candle and that the harmless reactions can alter a candle's color over a period of time (6 months in some situations), a certain degree of control should be put on candle delivery and transportation.

According to the answers given in the survey, nearly half of the companies do not have an action plan in place to address overseas claims and complaints. For these companies,

there will be no guideline for actions when oversea claims arise. In this case, the overseas customers' interest might not be fully addressed.

6.9 Continual Improvement

Continual improvement is one of the eight quality management principles defined in ISO 9000. This will be achieved only through certain mechanism, for example, through the use and extension of correction actions and preventive actions. Experience and lessons learned from routine workload or customer feedback should be recorded and applied to the business and production operation in the future. However, from the result of the survey, continual improvement is not likely to be achieved by existing quality procedures or routines in most of the companies being surveyed. The answers to this question in the questionnaire show that the realization of continual improvement is not achieved via systematic guidelines in most companies, but via some random or casual activities.

6.10 Shifting of Production to Outside China

During the research, one of the unexpected findings is the increasing number of overseas subsidiaries built up by Chinese candle manufacturing companies. Some Chinese candle manufacturers are setting up production base in other Asian countries, among which Vietnam is the most favorite host country. One of the companies surveyed allocates more than two thirds of production to its Vietnam subsidiary,

whereas less than one third goes to its parent company in China. This movement is likely to be the trend among the candle manufacturing industry in China.

7. Discussion

7.1 Discussion Introduction

Based on the findings obtained via the analysis, further discussions on some aspects of quality management are conducted in this chapter. The applications of some of the findings are given as well.

7.2 ISO 9000 Registration vs. Quality Management Competence

ISO 9000 certification is not sufficient for a company to improve quality level (Sun, 2000). The system of quality certification was set up to ensure the conformity of a company's quality management system with requirements for specific standards. Nevertheless, this is not the case in Chinese candle manufacturing industry. ISO 9000 certification does not necessarily mean a high degree of product quality, or the implementation of a high level of quality management system. Though the findings I discussed in the last chapter, some ISO 9000 registered candle manufacturers lack some important components in their quality management system that are crucial in order to obtain ISO 9000 registration. This fact is not rare in the quality management certification field in China.

The findings indicate an existing contradiction between ISO 9000 registration and poor quality management implementation, which agrees with the studies conducted by Chin *et al.* (2002) and Quazi et al (2002).

When judging the effectiveness and efficiency of a quality management system of a candle manufacturing companies in China, an ISO 9000 certificate may be necessary but never sufficient. Some companies tend to establish a quality management system only for the purpose of getting the piece of paper as a marketing tool. Sometimes ISO 9000 certificate is compulsory to gain access to some customers. To get the piece of paper to get the bid of customer orders could be the main motivation for them to establish a quality management system, rather than to improve their effectiveness and efficiency of the operation of quality management activities, and to improve customer satisfaction.

However, as the survey reveals that companies with ISO 9000 certification show more competence on nearly all aspects of quality management than companies without ISO 9000 certification, it is reasonable to believe that ISO 9000 registered candle manufacturers tend to be more capable of supplying quality products reliably, and can better meet and even exceed customer expectations.

7.3 Company Scales vs. Quality Management

In China, larger companies tend to have more competent quality management system. They are more willing to pay expensive bills in the consultation, registration and the cost of the annual renewal of the quality management system. Due to the comparatively larger scale of material demands from production, they are less reluctant to put more efforts on sub-supplier management, and also have more influence on their

suppliers. The larger amount of equipment and tools requires systematic control, which pushes large companies to set up a systematic maintenance system for equipment and tools used for both manufacturing and inspection. It tends to be easier for a large company to build up business relationship with overseas customers. Also, they have advantage of being able to learn new advanced technologies and management concepts, either actively or passively. Standardized management is more likely to be found in a large company than in a smaller company.

Based on the results of the research, large scale candle manufacturers tend to have more effective management procedures on most aspects of quality management. They are more likely to be ISO 9000 registered, which indicates they taken the initiative to set up a quality management system to guide their quality management activities. Long-term business plans are more likely to be found in large-scale companies. They usually have clearly defined quality policy written in their quality manual. They also set feasible quality objectives, and define measurable metrics to monitor the realization of those objectives. Large scale companies are more likely to set up an appropriate systematic mechanism to maintain their equipment, tools and gauges to minimize the variety of quality during production and inspection.

7.4 Ownership vs. Quality Management

According to analysis of the survey, private-owned companies have lower level of quality management competence than joint-ventured companies. The survey shows

that the majority of private-owned candle manufactures surveyed are not small companies or family companies. Most of them have more than 200 employees. Even so, they are still less competent on nearly every area of quality management when compared to joint-ventured companies. The stronger overseas liaison of joint-ventured companies may be a stimulus of improvement of quality management.

The international joint-venture and foreign-owned companies have similar competence on quality management as large scale companies, no matter they are large, medium or small in scale. International joint-venture and foreign-owned companies tend to have more access to up-to-date quality management concepts. And their adoption of quality management practice is more likely for the purpose of pursuing cost deduction, performance improvement and customer satisfaction.

7.5 Quality Policy and Quality Objectives

According to ISO 9000: 2000, a company shall ensure that the quality policy:

a) is appropriate to the purpose of the organization,

b) includes a commitment to comply with requirements and continually improve the effectiveness of the quality management system,

c) provides a framework for establishing and reviewing quality objectives,

d) is communicated and understood within the organization, and

e) is reviewed for continuing suitability.

Quality objectives, including those needed to meet requirements for product, should be established at relevant functions and levels within the organization. The quality

objectives shall be measurable and consistent with the quality policy.

Quality policy for a company is its guideline for its quality commitment, while quality objectives are set as aims for quality management activities. However, when the quality policy is not clearly defined to be followed in practice and quality objectives are not measurable in a company, it will be of no help for its quality management implementation. There are chances that companies sets their quality policy and quality objectives in flowery words simply for the purpose of pleasing their potential clients.

7.6 Management of Equipment and Tools

According to ISO 9000: 2000, companies shall plan and carry out production and service provision under controlled conditions, including the use of suitable equipment, and the availability and use of monitoring and measuring devices. Companies shall determine the monitoring and measurement to be undertaken and the monitoring and measuring devices needed to provide evidence of conformity of product to determined requirements.

Companies shall establish processes to ensure that monitoring and measurement can be carried out and are carried out in a manner that is consistent with the monitoring and measurement requirements.

The machines, equipment and tools are of crucial importance to ensure the process capability, which eventually ensures product quality. When the machines, equipment

and tools malfunction, the quality of products will be varied in a wide range and poor quality products are inevitable. Hence, the stability of product quality relies on the systematic maintenance of all crucial machines, equipment and tools that are used for production, inspection and test. Appropriate maintenance does not necessarily bring good quality, but good quality depends on proper systematic maintenance.

The research shows only a small implementation of management on equipment and tools among the candle manufacturing industry. The quality of candles is subject to the status of equipment/tools besides the material they use. No inspection, neither online inspection nor final inspection can make up the incompetence of production equipment or/and tools. When the status of equipment and tools is not monitored and maintained, the quality of a candle can possibly vary a lot and consistent product quality can not be ensured. The poor maintenance of equipment and tools among Chinese candle manufacturers indicates little insurance on the quality of candle products.

7.7 Overseas Claims

Overseas claiming is always difficult and costly. However, it is not avoidable because it is difficult and expensive. Therefore terms about overseas claims are always one of the most important parts of contracts in the international business arena. Some of the candle manufacturers do have in place action plans for customer complaints, but the plans are basically made to address complaints from domestic customers, and are practically not applicable to complaints from overseas customers. However, when no

applicable action procedures are available, overseas claims/complaints are more likely to be delayed or even ignored. This is never what overseas business buyers want. As revealed in the literature, the main portion of candles that are manufactured in China are exported to other countries, mainly EU states and the US, where the demand for a guideline to address overseas claims/complaints should be included into the quality management system. Included in these should be: the identification of the nature of claims/complaints, the communication required, the identification of problem, the development of solution, the following up of solution, the accumulation of lessons learned, etc.

7.8 Continual Improvement

Companies shall continually improve the effectiveness of the quality management system through the use of the quality policy, quality objectives, audit results, analysis of data, corrective and preventive actions and management review (ISO 9000: 2000).

Since continual improvement relies on little instruction and guideline for implementation in most candle manufacturing companies in China, it is difficult for them to achieve continual improvement. The realization of continual improvement can only be achieved by an effective and efficient process, involving application of statistical data, clear action plans against complaints from inside and outside the company, and the systematic integration of knowledge, experience and lessons. The quality management and quality performance in a company tends to be obstructed at

the same level without progress when it does not implement continual improvement effectively. The low level of implementation of continual improvement in the Chinese candle manufacturing industry indicates the lack of full understanding of quality management principles.

7.9 Overseas Production

The shift of production from the parent company in China to overseas subsidiaries is nothing uncommon over the past number of years. Due to the anti-dumping duty set by the US and Mexico against candles originating in China, manufactures in China have been looking for a way out. Changing export countries is one way. The sharp increase of the candle trade between China and EU since 2004 is partly caused by the US anti-dumping decision against Chinese candles. Changing the place of production by setting up subsidiaries in another country is apparently considered as another solution to bypass anti-dumping tariffs set by those countries.

8. Conclusions

Although there are some positive aspects to the current quality movement in China, the current level of understanding and implementation of quality management in most Chinese candle manufacturers need improving, and more efforts are to be made to further improve their quality performances.

Although great efforts have been made by the Chinese government to stimulate enterprises to emphasize quality management and improve product quality, the effects of these quality management efforts are not as expected. Governments are not the manufacturers of products and they can only play a guiding and supporting role in shaping the context and institutional structure surrounding companies, and in creating the environment that stimulates companies to gain competitive advantage. Ultimately, governments cannot create competitive industries; only companies themselves can do that. The Chinese candle industry has been booming. Most of candles produced in China are exported to other countries. The huge profit stimulated the fast development of the industry.

Many firms in this survey are ISO 9000 registered companies. In fact, some of them are the contract suppliers of the products of some famous global brands, which are recognized for the high level of their quality. Although great efforts have been made by the Chinese government, big progress in candle industry has not been achieved. Without considering the ISO certification, the different aspects of quality management are not being implemented well enough to ensure product quality and customer

satisfaction. In a word, the level of quality management implementation in Chinese candle manufacturing industry as a whole is relatively low. Many quality management problems still remain unsolved in the industry.

In Chinese candle industry, the implementation of quality management is not high on the agenda. Some large scale companies and international joint-venture/foreign-owned companies are ISO 9000 registered companies. But many other companies are much less aware of the importance of quality management.

Getting an ISO 9000 certificate is not compulsory. However for a company, a reliable quality management system and the implement of it effectively and efficiently is significant to ensure candle product quality. Although the export of Chinese candles is increasing sharply every year, the Chinese candle manufacturing industry has been cornered a few times by anti-dumping tariffs set by various countries. Price is one reason for some countries to say “no” to made-in-China candles. Quality may be another one, if Chinese candle manufacturers are not willing to take more efforts on their quality management implementation.

Chinese candle manufacturers should take the major responsibility for product quality. In order to improve product quality and obtain competitive advantages, they should establish quality policy and quality objectives, continually implement TQM, establish effective quality systems, innovate production equipment, and strengthen process management.

9. Recommendations

9.1 Recommendations Introduction

In this chapter, recommendations for candle manufacturers in China, for overseas candle buyers, and for the Candleshopdublin are given respectively.

9.2 Recommendations for Candle Manufacturers in China

As the research shows a lack of full understanding of quality management and the poor implementation of quality management in the Chinese candle manufacturing industry, the following recommendations are made for manufacturers in China if they are to better compete in the global dynamic international environment:

1. Improve the level of understanding of quality management

Improving the level of the understanding of quality management demands endeavours of every single company, the whole industry and the whole country. The purpose is to build up a suitable and encouraging environment for the further development of quality management in China. During the last two decades, the Chinese government has made great progress on improving the understanding of quality management in the country. More work, however, is to be done, especially among the candle manufacturing industry. The government should stimulate candle manufacturers, and the candle manufacturing companies should stimulate their employees to raise their understanding of quality management concepts, approaches and requirements. Appropriate corporate cultures should be encouraged.

2. Enhance training and education on quality management

Candle manufacturing companies should set up a system to make sure all new employees are trained about the basic quality management concepts. Further up-to-date training and education should be offered to senior staff, junior staff and professionals to assist them to fully understand quality management principles and operation. Knowledge management could be considered.

9.3 Recommendations for Overseas Candle Buyers

As “Made-In-China” products are becoming more and more welcome among consumers and businesses all over the world due to their price-to-quality competence, competent Chinese suppliers are being sought by companies from all over the world. However, as potential foreign customers, a lot of barriers exist including cultural difference, lack of knowledge on foreign industry, etc. The risk of loss is a big concern.

According to the result of the research, the following recommendation for overseas companies who are looking for potential candle suppliers from China:

1. Choose from large scale companies, international joint-venture or foreign-owned companies

As discussed in the last two chapters, large scale candle manufacturing companies and international joint-venture/foreign-owned candle manufacturing companies tend to be

more competent on nearly all aspects of quality management. As they implement more effective and more efficient quality management system, they are more likely to be capable of supplying products with stable and reliable quality. When the product quality becomes a main concern, a supplier with a competent quality management system to ensure product quality and customer focus is a good choice for buyers.

2. Choose from ISO 9000 registered companies

An ISO certification does not ensure product quality. But according to the data collected for the research, a Chinese ISO registered company usually implements quality management system more effective and efficiently. It is usually more competent to offer stable products of good quality.

3. Purchase from an alternative country

The survey in the research reveals the trend of Chinese candle manufactures to shift production to other Asian countries such as Vietnam to react to anti-dumping decisions made by various countries. Purchasing from Vietnam may be an alternative solution. Or even purchasing from an overseas subsidiary of a Chinese candle manufacturing company is considerable.

4. Site visits are encouraged

If possible, site visits are encouraged. By personally visiting potential suppliers on site, a better and clearer picture can be drawn about the companies. Fraud happens all the time in international trade. What is there might not be the same as what is said. Site

visits will help to obtain more reliable primary information about the potential suppliers.

9.4 Recommendations for the Candleshopdublin

According to the competitiveness of quality management of the companies shown in the survey, without balancing other elements, the following three companies are recommended for further consideration:

1. Qingdao Kingking A.C. Co., Ltd.

Brief company profile:

- ✧ Large scale
- ✧ Listed on Shenzhen Stock Exchange, ISO 9000 registered
- ✧ Subsidiaries in Vietnam and Korea
- ✧ One of the most important suppliers for 26 of “Fortune Top 500 enterprises” such as Wal-Mart, Ikea and Carrefour.
- ✧ Awarded the following titles:

  China Famous Brand

  China Export Famous Brand

  State Key High-tech Enterprise

Main competence shown in the survey:

- ✧ Quality policy is appropriate
- ✧ Quality objectives are measurable and consistent with quality policy
- ✧ Statistical data are being collected and used for continual improvement;
- ✧ Appropriate management and control are being put on equipment and tools that are used for production, measurement and test;

- ✧ Specific procedure is in place in order to manage and evaluate suppliers;
- ✧ Guidelines for corrective and preventive actions are sufficient.

2. MeiTong Home Group

Brief Company Profile:

- ✧ Large scale
- ✧ International joint-venture
- ✧ ISO 9000 registered
- ✧ Supplier of Ikea, Target and Auchan
- ✧ Awarded “the best product manufacture” by American buyers
- ✧ Subsidiary in Vietnam

Main competence shown in the survey:

- ✧ Quality objectives are measurable and consistent with quality policy, and are being monitored;
- ✧ Statistical data are being collected for the purpose of monitoring and improving;
- ✧ Suppliers are being controlled according to supplier management procedure
- ✧ Specific procedure is in place in order to manage and evaluate suppliers;
- ✧ Guidelines for corrective and preventive actions;
- ✧ A procedure is prepared to address customer complaints.

3. Dalian Talent Gift Co., Ltd.

Brief Company Profile:

- ✧ One of the largest candle manufacturers in China
- ✧ ISO 9000 registered
- ✧ Supplier of Wal-Mart, Ikea and Metro
- ✧ Awarded as “Excellent Supplier” by IKEA
- ✧ Products followed Germany RAL product standard

Main competence shown in the survey:

- ✧ Reasonable quality policy and quality objectives
- ✧ Application of statistical data;
- ✧ Appropriate quality control on delivery and transportation;
- ✧ Guidelines for corrective and preventive actions are in place.

9.5 Areas for Further Research

From the findings of this research, some further researches can be conducted, such as:

Supplier management approach in Chinese candle industry;

SPC application in Chinese candle industry;

Issues about overseas claims against Chinese candles;

Equipment and tools maintenance programs of Chinese candle industry.

10. Bibliography

Acharya, U.H., Ray, S. (2000), "ISO 9000 certification in Indian industries: a survey", *Total Quality Management*, Vol. 11 No.3, pp.261-6.

Anderson, S.W., Daly, J.D., Johnson, M. (1999), "Why firms seek ISO 9000 certification: regulatory compliance or competitive advantage?", *Production and Operations Management*, Vol. 8 No.1, pp.28-43.

Arauz, R., Suzuki, H. (2004), "ISO 9000 performance in Japanese industries", *Total Quality Management and Business Excellence*, Vol. 15 No.1, pp.3-33.

Batchelor, C. (1992), "Badges of “quality", Financial Time, September 1.

Bandura, A. (1986). *Social Foundations of Thought and Action: A Social Cognitive Theory*, Prentice-Hall, Englewood Cliffs, NJ, .

Barnes, F. (2000), "Good Business Sense Is the Key to Confronting ISO 9000", *Review of Business*, Spring.

Beattie, K.R., Sohal, A.S. (1999), "Implementing ISO 9000: a study of its benefits among Australian organizations", *Total Quality Management*, Vol. 10 No.1, pp.95-106.

Beirao, G., Sarsfield, C. (2002), "The reaction of the Portuguese stock market to ISO 9000 certification", *Total Quality Management*, Vol. 13 No.4, pp.465-74.

Beskese, A. and Cebeci, U. (2001), “Total Quality Management and ISO 9000 applications in Turkey”, *The TQM Magazine*, Vol. 13 No. 1, pp. 67-73.

Bhuiyan, N., Alam, N. (2005), "An investigation into issues related to the latest version of ISO 9000", *Total Quality Management and Business Excellence*, Vol. 16 No.2, pp.199-213.

Binney, G. (1992). *Making Quality Work: Lessons from Europe's Leading Companies*. The Economist Intelligence Unit, London, Management Guides.

Boiral, O. & Roy, M.J. (2007). “I ISO 9000: integration rationales and organizational impacts”. *International Journal of Operations & Production Management*, Vol. 27 No. 2, pp. 226-247.

Bredrup, H. (1995), "Standard illusions: ISO 9000 as an alibi for quality", *European Quality*, Vol. 1 No.5, pp.41-51.

Breka, J. (1994), "Study finds gains with ISO 9000 registration increase over time", *Quality Progress*, May, pp.18-20.

Briscoe, J.A., Fawcett, S.E., Todd, R.H. (2005), "The implementation and impact of

ISO 9000 among small manufacturing enterprises", *Journal of Small Business Management*, Vol. 43 No.3, pp.309-30.

Brown, A. (1994), "*The quality management research unit industry experience with ISO 9000*", Proceeding of 2nd National Research Conference on Quality Management, Monash. Mt Eliza Business School, Australia, .

Brown, A. (1995), "*Industry experience with ISO 9000*", paper presented at the 2nd National Research Conference on Quality Management, Monash, Mt Eliza Business School, Melbourne.

Brown, A., Van der Wiele, T., Loughton, K. (1998), "Smaller enterprises' experiences with ISO 9000", *International Journal of Quality & Reliability Management*, Vol. 15 No.3, pp.273-85.

Carlsson, M., Carlsson, D. (1996), "Experiences of implementing ISO 9000 in Swedish industry", *International Journal of Quality & Reliability Management*, Vol. 13 No.7, pp.36-48.

Casadesús, M., Giménez, G., Martí, R. (1998), "La normative de aseguramiento dela calidad ISO 9000 en Cataluña: expectativas y efectos. Estudio empírico", Proceeding of the VIII National Congress of ACEDE, Las Palmas de Gran Canaria, September, .

Casadesús, M., Karapetrovic, S. (2005), "Has ISO 9000 lost some of its lustre? A longitudinal impact study", *International Journal of Operations & Production Management*, Vol. 25 No.6, pp.580-96.

Chin, K.S., Pun, K.F. and Hua, H.M. (2001), “Consolidation of China’s quality transformation efforts; a review”, *International Journal of Quality & Reliability Management*, Vol. 18 No. 8, pp. 836-53.

Chin, K.S., Sun, H., Xu, Y. and Hua, H. (2002), “A comparative study of quality management practices in Hong Kong and Shanghai manufacturing industries”, *International Journal of Management*, Vol. 19 No. 4, pp. 576-81.

Chinander, K.D. (2001), "Aligning accountability and awareness for environmental performance in operations", *Production and Operation Management*, Vol. 10 No.3, pp.276-91.

Corbett, C.J., Montes-Sancho, M.J., Kirsch, D.A. (2005), "The financial impact of ISO 9000 certification in the United States: an empirical analysis", *Management Science*, Vol. 51 No.7, pp.1046-59.

Corrigan, J. (1994), "Is ISO 9000 the path to TQM?", *Quality Progress*, Vol. 27 No.5, pp.33-6.

Curkovic, S., Handfield, R.B. (1996), "Use of ISO 9000 and Baldrige Award criteria in

supplier quality evaluation", *International Journal of Purchasing & Materials Management*, Spring, pp.2-11.

Curkovic, S., Pagell, M. (1999), "A critical examination of the ability of ISO 9000 certification to lead to a competitive advantage", *Journal of Quality Management*, Vol. 4 No.1, pp.51-67.

Dalgleish, S. (2005), "Probing the Limits: ISO 9001 Proves Ineffective", *Quality Magazine*. 1 April.

Davies, H. (1995), *China Business; Context and Issues,* Longman, Hong Kong.

Deming, W.E. (1982), *Quality, Productivity and Competitive Position. MIT Center for Advanced Engineering Study,* Cambridge, MA.

Dick, G.P.M. (2000), "ISO 9000 certification benefits, reality or myth?", *The TQM Magazine*, Vol. 12 No.6, pp.365-71.

Docking, D.S., Dowen, R. (1999), "Market interpretation of ISO 9000 registration", T*he Journal of Financial Research*, Vol. 22 No.2, pp.147-60.

Douglas, A., Kirk, D., Brennan, C., Ingram, A. (1999). "Maximizing the benefits of ISO 9000 imple-mentation". *Total Quality Management*, Vol. 10 No.4, pp.507-13.

Easterby-Smith, M. et al (1997). *Management Research: an Introduction*. London, Sage.

Ebrahimpour, M., Withers, B., Hikmet, N. (1997), "Experiences of US and foreign-owned firms: a new perspective on ISO 9000 implementation", *International Journal of Production Research*, Vol. 37 No.2, pp.567-76.

Elmuti, D. (1996), "World class standards for global competitiveness: an overview of ISO 9000", *Industrial Management*, September/October, pp.5-9.

Feng, M. (2000), "*A Study of ISO 9000 and other Quality Related Practices in Australian Manufacturing and Service Companies*", Department of Mechanical and Manufacturing Engineering, The University of Melbourne, Melbourne.

Gotzamani, K.D., Tsiotras, G.D. (2002), "The true motives behind ISO 9000 certification", *International Journal of Quality & Reliability Management*, Vol. 19 No.2, pp.151-69.

Heras I.; Dick G.P.M. & Casadesús M. (2002), “ISO 9000 registration's impact on sales and profitability: A longitudinal analysis of performance before and after accreditation”, *International Journal of Quality & Reliability Management*, Vol 19 (6), pp. 774-791.

Highlands, R. (1995), "ISO 9000 grows-but is it useful", *Electric Business Buyer*, Vol.

21 pp.20.

Ho, S. (1994), "Is the ISO 9000 series for *Total Quality Management*", *International Journal of Quality & Reliability Management*, Vol. 11 No.9, pp.74-89.

Huarng, F., Horng, C., Chen, C. (1999), "A study of ISO 9000 process, motivation and performance", *Total Quality Management*, Vol. 10 No.7, pp.1009-25.

Hughes, T., Williams, T., Ryall, P. (2000), "It is not what you achieve, it is the way you achieve it", *Total Quality Management*, Vol. 11 No.3, pp.329-40.

Idris, M.A., McEwan, W., Belavendram, N. (1996), "The adoption of ISO 9000 and *Total Quality Management* in Malaysia", *The TQM Magazine*, Vol. 8 No.5, pp.65-8.

International Standards Office(ISO) (2006), "*ISO Survey 2006*", Geneva: ISO.

ISO 9000:2000 (2000), "*Quality Management Systems – Fundamentals and Vocabulary*", Geneva: ISO.

ISO 9001:2000 (2000), "*Quality Management Systems – Requirements*", Geneva: ISO.

ISO 9004:2000 (2000), "*Quality Management Systems – Guidelines for Performance Improvements*", Geneva: ISO.

Jang W.Y. & Lin C.I. (2008). "An integrated framework for ISO 9000 motivation, depth of ISO implementation and firm performance". *Journal of Manufacturing Technology Management*, Vol. 19 No. 2, pp. 194-216.

Jones, R., Arndt, G., Kustin, R. (1997), "ISO 9000 among Australian companies: impact of time and reasons for seeking certification on perceptions of benefits received", *International Journal of Quality & Reliability Management*, Vol. 14 No.7, pp.650-60.

Juran, J.M. (1990a), ``China's ancient history of managing for quality - part 1", *Quality Progress*, July, pp. 31-5.

Juran, J.M. (1990b), "China's ancient history of managing for quality: part 2", *Quality Progres*s, pp. 25-30.

Juran, J.M. (1999), "Commentary", *Quality Progress*, No.June, pp.30.

Koc, T. (2007), "The impact of ISO 9000 quality management systems on manufacturing", *Journal of Materials Processing Technology*, Vol. 186 pp.207-13.

Lee, C.Y. and Yu, Q. (1997), ``*Quality management in China*", Proceedings of 1997 Midwest Decision Sciences Institute Annual Meeting. Indianapolis, IN, pp. 212-14.

Lee, C.Y. and Zhou, X. (2000), "Quality management and manufacturing strategies in

China", *International Journal of Quality & Reliability Management*, Vol. 17 No. 8, pp. 876-99.

Lee, K.S., Palmer, E. (1999), "An empirical examination of ISO 9000-registered companies in New Zealand", *Total Quality Management*, Vol. 10 No.6, pp.887-99.

Lee, T. (1995), "The experience of implementing ISO 9000 in Hong Kong", *Asia Pacific Journal of Quality Management*, Vol. 4 No.4, pp.6-16.

Lima, M., Resende, M., Hasenclever, L. (2000), "Quality certification and performance of Brazilian firms: an empirical study", *International Journal of Production Economics*, Vol. 66 No.2, pp.143-7.

Lipovatz, D., Stenos, F., Vaka, A. (1999), "Implementation of ISO 9000 quality systems in Greek enterprises", *International Journal of Quality & Reliability Management*, Vol. 16 No.6, pp.534-51.

Liu, Y.Z. (1994), ``TQM in the socialist market economy of China", *Asia Pacific Journal of Quality Management*, No. 3, pp. 36-44.

Llopis, J., Tarí, J.J. (2003), "The importance of internal aspects in quality improvement", *International Journal of Quality & Reliability Management*, Vol. 20 No.3, pp.304-24.

LRQA (1993), *Setting Standards for Better Business: Report of Survey Findings*, Lloyd's Register Quality Assurance, London, pp.1-10.

Martínez-Costa, M., Martínez-Lorente, A.R. (2003), "Effects of ISO 9000 certification on firms' performance: a vision from the market", *TQM and Business Excellence*, Vol. 14 No.10, pp.1179-91.

Martínez-Costa, M., Martínez-Lorente, A.R. (2004), "ISO 9000 as a tool for TQM: a Spanish case study", *The Quality Management Journal*, Vol. 11 No.4, pp.20-30.

Martínez-Costa, M. & Martínez-Lorente A.R. (2007). "A triple analysis of ISO 9000 effects on company performance". *International Journal of Productivity and Performance Management*, Vol. 5/6 No. 2, pp. 484-499.

McAdam, R., McKeown, M. (1999), "Life after ISO 9000: an analysis of the impact of ISO 9000 and *Total Quality Management* on small business in Northern Ireland", *Total Quality Management*, Vol. 10 No.2, pp.229-41.

Morris, P.W. (2006), "ISO 9000 and financial performance in the electronic industry", *The Journal of American Academy of Business*, Vol. 8 No.2, pp.227-34.

Najmi, M., Kehoe, D.F. (2000), "An integrated framework for post-ISO 9000 quality development", *International Journey of Quality & Reliability Management*, Vol. 17

No.3, pp.226-58.

Najmi, M., Kehoe, D.F. (2001), "The role of performance measurement systems in promoting quality development beyond ISO 9000", *International Journal of Operations & Production Management*, Vol. 21 No.1/2, pp.159-72.

National Bureau of Statistics of China, *et al.* (2003), "*Definition of Medium and Small Scale Enterprises*". February.

Naveh, E., Marcus, A. (2005), "Achieving competitive advantage through implementing a replicable management standard: installing and using ISO 9000", *Journal of Operations Management*, Vol. 24 No.1, pp.1-26.

Needham, J. (1983), *Science and Civilization in China*, Cambridge University Press. Cambridge.

Nicolau, J.L., Sellers, R. (2002), "The stock market's reaction to quality certification: empirical evidence from Spain", *European Journal of Operational Research*, Vol. 142 No.3, pp.632-41.

Park, D.J., Kim, H.G., Kang, B.H., Jung, H.S. (2007), "Business values of ISO 9000:2000 to Korean shipbuilding machinery manufacturing enterprises", *International Journal of Quality & Reliability Management*, Vol. 24 No.1, pp.32-48.

Pheng, L.S., Alfelor, W.M. (2000), "Cross-cultural influences on quality management systems: two case studies", *Work Study*, Vol. 49 No.4, pp.134-44.

Ping, X. (1992), "*ownship Enterprise Quality Management"*(in Chinese), Agriculture Publishing House. Beijing.

Poksinska, B., Dahlgaard, J., Antoni, M. (2002), "The state of ISO 9000 certification: a study of Swedish organizations", *The TQM Magazine*, Vol. 14 No.5, pp.297-306.

Providence Business News (2000), "Reasons Why Companies Should Have ISO Certification", *Providence Business News*, 28 August.

Pun, K.P. (2001), "Cultural influences on *Total Quality Management* adoption in Chinese enterprises: an empirical case study", *Total Quality Management*, Vol. 12, pp. 323-42.

Quazi, H.A., Hong, C.W. and Meng, C.T. (2002), "Impact of ISO 9000 certification on quality management practices: a comparative study", *Total Quality Management*, Vol. 13 No. 1, pp. 53-67.

Quazi, H.A., Padibjo, S.R. (1998), "A journey toward *Total Quality Management* through ISO 9000 certification: a study on small- and medium-sized enterprises in Singapore", *International Journal of Quality & Reliability Management*, Vol. 15

pp.489-508.

Rao, S.S., Ragu-Nathan, T.S., Solis, L.E. (1997), "Does ISO 9000 have an effect on quality management practices? An international empirical study", *Total Quality Management*, Vol. 8 No.6, pp.335-46.

Romano, P., Vinelli, A. (2001), "Quality management in a supply chain perspective. Strategic and operative choices in a textile-apparel network", *International Journal of Operations & Production Management*, Vol. 21 pp.446-60.

Sacchetti L. (2007). "ISO quality as a driver of continuous improvement". *Performance Measurement and Metrics*, Vol. 8 No. 2, pp. 88-97.

Schell, O. (1994), *Mandate of Heaven*. Little Brown and Co.. London.

Schwartz, Meredith (2007), "*Made In China - Recalls of products made in China are rocking the toy business. Could gifts be next?"*, Gifts & Decorative Accessories.

Seddon, J. (2000), "*A Brief History of ISO 9000: Where did we go wrong*?", Chapter one of "The Case Against ISO 9000", 2nd ed., Oak Tree Press.

Shamas-ur, R. (2001), "A comparative study of TQM practice and organizational performance of SMEs with and without ISO 9000 certification", *International Journal of Quality & Reliability Management*, Vol. 18 No.1, pp.35-49.

Sharma, D. (2005), "The association between ISO 9000 certification and financial performance", *The International Journal of Accounting*, Vol. 40 No.2, pp.151-72.

Simmons, B.L., White, M.A. (1999), "The relationship between ISO 9000 and business performance: does registration really matter?", *Journal of Managerial Issues*, Vol. 11 No.3, pp.330-43.

Singels, J., Ruël, G., van de Water, H. (2001), "ISO 9000 series – certification and performance", *International Journal of Quality & Reliability Management*, Vol. 18 No.1, pp.62-75.

Stephens, K.S. (1994), "ISO 9000 and total quality", *Quality Management Journal*, Fall, pp.57-71.

Stevenson, T.H., Barnes, F.C. (2001), "Fourteen years of ISO 9000: impact, criticisms, costs, and benefits", *Business Horizons*, No.May-June, pp.45-51.

Sun, H. (2000), "A comparison of quality management practices in Shanghai and Norwegian manufacturing companies", *International Journal of Quality & Reliability Management*. Vol. 17 No. 6, pp. 636-66.

Sun, H., Cheng, T.K. (2002), "Comparing reasons, practices and effects of ISO 9000

certification and TQM implementation in Norwegian SMEs and large firms", *International Small Business Journal*, Vol. 20 pp.421-42.

Terziovski, M., Power, D., Sohal, A.S. (2003), "The longitudinal effects of the ISO 9000 certification process on business performance", *European Journal of Operational Research*, Vol. 146 No.3, pp.580-95.

Terziovski, M., Samson, D., Dow, D. (1997), "The business value of quality management systems certification – evidence from Australia and New Zealand", *Journal of Operations Management*, Vol. 15 No.1, pp.1-18.

Thomas, A.J., Webb, D. (2003), "Quality systems implementation in Welsh small- to medium-sized enterprises: a global comparison and a model for change", *Journal of Engineering Manufacturing*, Vol. 217 No.4, pp.573-9.

Tseng, H.C., Ip, W.H. and Ng, K.C. (1999), "A model for the integrated manufacturing system implementation in China: a case study", *Journal of Engineering and Technology Management*, Vol. 16, pp. 83-101.

Uzumeri, M.V. (1997), "ISO 9000 and other metastrands: principles for management practice?", *Academy of Management Executive*, Vol. 11 No.1, pp.21-36.

van der Wiele, T., Dale, B., Williams, R. (2000), "Business improvement through quality management system", *Management Decision*, Vol. 38 No.1, pp.19-23.

van der Wiele, T., Iwaarden, J.V., Williams, R., Dale, B. (2005), "Perceptions about the ISO 9000 (2000) quality system standard revision and its value: the Dutch experience", *International Journal of Quality & Reliability Management*, Vol. 22 No.2/3, pp.101-20.

Viadiu F. M. & Fransi, E.C. (2005), "A study of the ISO 9000 certification process: consultant profiles and company behavior", *Managing Service Quality*, Vol. 15 No. 3, pp. 290-305.

Wade, J. (2002), "Is ISO 9000 really a standard?", *ISO Management Systems*. May-June.

Wayhan, V.B., Kirche, E.T., Khumawala, B.M. (2002), "ISO 9000 certification: the financial performance implications", *Total Quality Management*, Vol. 13 pp.217-31.

Withers, B., Ebrahinpour, M. (2000). "Does ISO 9000 certification affect the dimensions of quality used for competitive advantage?", *European Management Journal*, Vol. 18 No.4, pp.431-43.

Yahya, S., Goh, W. (2001), "The implementation of an ISO 9000 quality system", *International Journal of Quality & Reliability Management*, Vol. 18 No.9, pp.941-66.

Yeung G. & Mok V. (2008), "ISO 9000 certification and technical efficiency of foreign-financed manufacturing firms in southern China", *Journal of Economic Studies*, Vol. 35 No. 5, pp. 385-404.

Zaramdini W. (2007), "An empirical study of the motives and benefits of ISO 9000 certification: the UAE experience", *International Journal of Quality & Reliability Management*, Vol. 24 No. 5, pp. 472-491.

Zhang, Z.H. (1998), "State supervision and inspection of product quality in China", *Quality Progress*, Vol. 31 No. 12, pp. 53-7.

Zhang, Z.H.(2000),"Quality management approach in China", *The TQM Magazine*. Vol. 12 (2), pp. 92-104.

Zhao, X.D., Young, S. and Zhang, J.C. (1995), "A survey of quality issues among Chinese executives and workers"', *Production and Inventory Management First Quarter*, pp. 44-8.

Association of European Candle Manufacturers	http://www.europecandles.com/
British Candlemakers Federation	http://www.britishcandlemakers.org/
China Candle Association	http://www.chinacandle.org/
China Chemical Information Net	http://www.cheminfo.gov.cn/
International Guild of Candle Artisans (IGCA)	http://www.igca.net/
Latin American Candle Association (ALAFAVE)	http://www.alafave.org/
National Candle Association (NCA)	http://www.candles.org/
Research in China	http://www.researchinchina.com/

11. Appendices

Appendix A: Questionnaire

公司名称					
地　　址				邮编	
联 系 人		职务			
电　　话		传真		E-mail	

1. 公司概况

所有制类型		厂房面积	
主 营 业 务			
第三方认证情况			
员 工 总 数		检验人员数量	
厂　　能			
主 要 客 户			
主要出口客户			
生 产 时 间	每周 _____天 _____班 _____小时制		
其它相关信息			

2. 请附贵公司的组织机构图。

(注：可另附文档)

3. 如果可能的话，请给出贵公司当前的质量方针和质量目标。

Appendix A: Questionnaire

4. 请给出贵公司质量管理体系（如果有的话）的框架。

-- Con't

5. 如果可能的话 ,请给出贵公司过去三年的质量绩效的统计数据及当前生产不合格率。

6. 请描述贵公司是如何控制产品质量的。

7. 请简单描述贵公司的新产品开发过程流程。

8. 请列出所有用于生产、试验与检验蜡烛产品的主要设备和工装清单以及其维护状态。

9. 请给出贵公司分供方管理的框架。

Appendix A: Questionnaire

10.请描述贵公司是如何控制运输过程中的产品质量。

11.请描述贵公司是如何确保质量管理各主要方面的持续改进的。

Appendix B: Questionnaire (English Translation)

Company Name					
Address					
Contact			Title		
Tel		Fax		E-mail	

1. Company Overview

Type of ownership		Total plant area	
Main business			
Third-party Certification			
Number of employees		Number of inspectors	
Production capacity			
Major customers			
Major overseas customers			
Work schedule	Hours_____ Shifts_____ Days Work__		
Other Information			

2. Please enclose an organizational structure chart of your company.

3. Please specify the quality policy and quality objectives of your company, if possible.

4. Please specify the framework of the quality management system (if any) in your company.

Appendix B: Questionnaire (English Translation)-- Con't

5. Please give the statistical data of quality performance for the last three years and current production defect rate of your company, if possible.

6. Please illustrate how product quality is being controlled in your company.

7. Please illustrate briefly the process of new product development in your company.

8. Please list the main equipment and tools that are used to manufacture, test and inspect candle products in your company, as well as their status of maintenance.

9. Please give the framework of sub-supplier management in your company.

10. What controls are put on the delivery and transportation of products in your company? Please specify.

11. Please specify how continual improvement on main aspects of quality management activities is achieved in your company.