ISO9000 and TQM for Business Excellence

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ABSTRACT
There has been a major emphasis for manufacturing firms in Australia and New Zealand to seek certification to the International Quality Standards ISO 9000. These have been rapidly accepted as a standard for documenting processes and procedures. ISO 9000 is a process that typically shifts an organisation’s culture to allow successful Total Quality Management (TQM) implementation. Researchers found that companies that implement ISO9000 and TQM at the same time and in an integrated manner might expect to have advantages in product quality, delivery, productivity and customer satisfaction. ISO9000 certification is only the beginning of a continuous improvement process rather than the end and could be a useful stepping stone for TQM. ISO 9000 can be an excellent start to TQM, if it is interpreted in a way that encourages the company to start on the process of continual improvement by team work of all people working in the company.

Keywords: ISO 9000, TQM, Business Excellence

1.0 Introduction

International organisation of standards (ISO), a global federation of 130 national standards bodies, seeks to promote standardization and the development of related activities worldwide in order to facilitate the international exchange of goods and services, and cooperation in the sphere of intellectual, scientific, technological and economic activities. The ISO 9000 standard series is now widely accepted as a minimum standard for a quality system for companies (Marquardt, 1992) The possession of a certification to ISO 9000 has become a decisive competitiveness factor in the international market. Business relationships are increasingly influenced by the possession of an ISO 9000 certificate which proves to have an important advertising effect. Additionally the consequent application of a ISO 9000 system can have a significant cost reduction effect which results in performance improvement (Berry, 1991).

The number of companies with ISO 9000 certification has increased exponentially in the last ten years. However, the issue of what benefits the certified companies are able to derive from the certification is a general concern. As a quality assurance management model, ISO 9000 only prescribes the minimum requirements of certification. The company does not have to aim for excellence.

The objective of the paper is to make a critical review in order to
• identify the reasons for organisations to seek ISO 9000 certification
• identify the benefits of ISO 9000 certification
• identify the problems in the implementation of ISO9000
• to examine the factors for implementing TQM from ISO9000

The research is based on literature review involving books, journals, reports as well as interview with several quality personnel in companies.

2.0 Reasons for ISO 9000 certification and the benefits

Researchers have been concerned with the investigation of the principal reasons which lead companies to enter the certification process and the difficulties experienced and the benefits emerging from the certification.

Dale and Duncalf studied the quality assurance practices of 110 UK manufacturing companies, comparing the results of large and small business (Dale and Duncalf, 1984). Taylor examined organisational differences in ISO 9000 implementation practices of 682 enterprises in Ireland focusing on the impact of management commitment (Taylor, 1995). Carlsson and Carlson examined the experiences of implementing ISO 9000 in Swedish industry mainly from an organisational perspective as a change
process. (Carlsson and Carlsson, 1996). ISO 9000 is said to provide certain benefits for organisations that can be divided into internal and external benefits. Internal benefits are related to the internal functioning of the organisations (Singels et. al., 2000). These are, for example, increase in productivity, improvement in efficiency, reduction in cost and waste, better management control, clearly-defined organisational task structure and responsibilities, support in quality management and increase in personnel motivation. External benefits are benefits for the organisation in relation to its environment. Examples of external benefits are: competitive advantage, increase in sales and market share, possibility of entering new markets, keeping customer relations, finding new customers, increased customer satisfaction, and increase in company reliability and reputation.

Reasons for certification are usually classified into two main groups: market-related reasons and reasons related to the improvement of internal procedures (Lipovatz et al, 1999). Market related reasons were the most important factor for seeking certification for 16 out of 20 small and medium-sized companies interviewed by Rayner and Porter (Rayner and Porter, 1991). Also in a survey concerning the Swedish industry, the most important motivation for firms for pursuing certification was to “use it as a step towards TQM”. Tsiostras and Gotzamani reported that companies’ quality policy and internal organisational improvement were the main motivating factors for the 84 Greek enterprises investigated, while the improvement of competitiveness was a less important factor (Tsiostras and Gotzamani, 1996).

The most important motivation for Swedish firms for pursuing certification was to “use it as a step towards achieving TQM” (Carlsson and Carlsson, 1996). Lee (1998) states the reasons for ISO 9000 certification as: the customer demanded the firm to become certified to ISO 9000, the firm considered that it had to be ISO9000 certified in order to stay in business, the firm wanted to use ISO 9000 to improve the management system.

The benefits of globally accepted uniform standards are recognised by businesses and governments throughout the world. The major benefits experienced by manufacturers implementing ISO 9000 include increased productivity, quality improvement, efficiency, customer satisfaction, and eventually the competitive edge that can lead to a greater market share (Elmuti, 1996). Terziovski et al. (1997) concluded that where ISO 9000 certification is implemented effectively, it may act as a foundation on which to build a quality organisation.

### 3.0 Problems with ISO9000

Besides all the benefits, which can be gained by gaining an ISO certification, there are also some disadvantages, which results from ISO certification. Some disadvantages which can be found in the literature are: extra costs for achieving ISO certification, increase in paper workload, no attention for development of personnel, little attention for the support functions in an organisation. (Singels et al., 2001). Furthermore, ISO certification may discourage creative thinking in an organisation, because employees are forced to work following well-described procedure and rules. Critics tend to say that ISO certification involves a lot of extra costs, and seems not to result in benefits. Jones et al. (1997) think that gaining an ISO certificate is an “hollow achievement”. Meegan and Taylor (1997) note that European companies are too much preoccupied with registration to ISO 9000; too often European companies see the registration not as a means but as an end in itself. They are of the opinion that ISO 9000 certification in isolation is of limited value (Meegan and Taylor, 1997). A question therefore arises if ISO certification really generates all the stated benefits, and results in an improvement of the performance of organisations.

### 4.0 ISO 9000 and TQM

Oakland and Mortiboy (1991) debate regarding ISO 9000’s place in the quality improvement process and its position with regard to TQM, when they proposed that a quality assurance system was one of the three major components of TQM. Ho (1994) on the other hand, saw ISO 9000 more as a vehicle to help implement TQM. Binney (1992) disagreed, stating that ISO 9000 was not the way to begin a TQM program. Why was this debate causing such interest among academics and quality practitioners? The main reason was that in order to compete in world markets organizations had to go beyond ISO 9000 and implement TQM. ISO 9000 was not TQM. Therefore, that standard was considered by many to be stepping-stone towards TQM.
A problem came up was that for many companies achieving ISO 9000 was considered as having quality, which is definitely not the case. Sun’s (1999) international survey of 600 companies from 20 countries found that implementing ISO 9000 alone did not contribute much to quality improvement, while a combination of ISO 9000 and TQM contributed the most. Gotzamani and Tsiotras[2001] had pointed out ISO 9000 as the first step to TQM for which there are no clear requirements and directions. On the other hand, companies focus mainly on quick and simple certification with no real commitment to quality. Over the years, some companies have made the transition from ISO9000, some did not make any attempt and many others tried and failed. A survey of ISO 9000 certified organizations by Taylor (1995) found that 32 percent had also implemented TQM but 24 percent regarded ISO 9000 as the end of their quality journey. From a research study by Magd and Curry (2003), they have recognized that the emphasis on quality has led organisations to adopt TQM. Moreover, organizations and customers have demanded external recognition of quality, which has in turn provided the impetus for the International Organisation for Standards (ISO) development of the ISO series. ISO 9000 represents a trend in quality management, which cannot be ignored in today’s business environment. In fact, those companies wishing to remain competitive and improve their quality systems are recommended the use of ISO 9000 as a foundation for a much broader system of TQM. This is based on the fact that ISO 9000 is an important part of TQM, and the implementation of both approaches together will lead to organizational success and competitive advantage. It is clear that both approaches tend to complement each other. ISO 9000 can be implemented first to create stability and consistency in the organisation’s work, then the implementation of TQM can enhance employee motivation and operational efficiency, and achieve overall organizational success and performance.

Companies applying TQM together with the ISO9000 standards did not share positive results (Martinez-Lorento and Martinez-Costa, 2004). This fact leads to the consideration that, despite the beliefs about ISO9000 as a good first step in the way of implementing TQM, once implemented, some of the ISO9000 principles are contradictory with TQM philosophy. The study concludes that when ISO9000and TQM are applied simultaneously, the resultant benefits to the company are not better than those experienced if either system were applied in isolation. Heras et. Al (2002), in another study concluded that, although the performance of certified companies was superior to that of non-certified ones, the authors found no evidence of improved performance after registration in the 400 firms studied. These findings lead them to believe that the superior performance of the certified firms is due to firms with superior performance having a greater propensity to pursue ISO 9000 registration. This evidence cast doubt on the inference drawn in some of the literature that suggests ISO9000 accreditation leads to business performance improvement. The evidence indicates that the direction of causality is that firms with superior performance are more likely to have certification, not that certified firms are more likely to have superior performance.

The development of a strong quality culture should precede ISO certification. Yet results also show that ISO certification can promote this culture. Motivation for seeking certification would determine which comes first; the quality culture or ISO9000 certification. ISO9000 certification can deliver significant business benefits if it is implemented as part of a continuous improvement strategy (Terziovski and Power, 2007). ISO9000 standards are partially related to the implementation of TQM and the improvement of business performance. The recommendation is that ISO9000 should be incorporated with the philosophy and methods of TQM (Sun, 2000).

5.0 Case Study

In order to explore the effectiveness of ISO 9000 in implementing TQM, personal interviews were conducted with a few companies certified to ISO 9000. Six of the companies are mentioned here. For their confidentiality, these firms are identified as Company A, Company B, Company C, Company D, Company E and Company F. A summary of the background of the companies is given below.

Company A is a specialist for stainless steel and aluminum fabrication and respected worldwide for its pioneering work in the design, development and manufacture of Recompression Chambers. Established in 1973, Company A has built a reputation based on superior design, quality and customer service. They have to date manufactured over 140 Recompression Chamber Systems distributed world-wide and also excel in their ongoing maintenance of recompression chamber systems and logistic support. Outside the marine sphere projects include stainless steel and aluminum pressure vessels, precision welding, stainless
steel wine tanks, stainless steel crusher grabs, antennae and RF Systems, a wide range of rail locomotive components, architectural items such as building facades and handrails.

Company B specializes in material handling and lifting equipment. With their cutting edge technology from around the world, they can provide a well-engineered and cost effective solution. For more than 20 years, Company B has designed, manufactured, supplied and serviced a wide range of material handling, lifting and customized engineering equipment. This company has three major divisions, they are namely: General Sales, Service and Major Projects. They design and manufacture material handling equipment in compliance with ISO 9001. Company C is an ISO 9001 accredited company that specializes in the design, manufacture and importation of large/multi-screen video display, audio, audio-visual, lighting control and AV control systems.

Company D produces speciality chemicals for paper, water treatment in mining and other chemical products. The purpose of the program is to save money, improve product and improve service. The manufacturing plant has achieved certification to ISO9001. There are set objectives for TQM and monthly meetings are held with customer satisfaction committee. Executives from various departments are involved in this committee. Company E produces pattern glass for shower screens, office partitioning etc. There are 40 sites throughout Australia. 90% of the raw material is recycled glass. The plant is accredited to ISO9002. Quality is defined by customer requirement. The purpose of quality management is to use long term continuous improvement. ISO9002 does not guarantee business success or product excellence. It is recognised as a part of the whole package. The top management commitment is identified by the CEO making presentations to various plants around the country about visions and missions. Company F produces aluminium and magnesium based chemicals for water treatment and for use in pharmaceutical industry. It has been actively involved in TQM for about five years. It is accredited to ISO 9002 that involves external and internal audit. It is continuously pushing for improvement. The company first went in for TQM and then went for ISO9000 three years later. The long term plan is to keep keep up the continuous improvement, improve the process and reduce waste. The CEO is the one who is giving push to the whole process.

The following observations were made after the interview and discussion with the companies.

- There are more and more companies in Australia seeking for the certification to ISO 9000 in order to survive.
- Conformance to the requirements only should improve the ability of the company to manage its activities.
- In order to get the maximum benefits of the certification, further steps must be taken. TQM is one of the most useful steps found.
- More training and explanation were required to implement the ISO together with TQM. It takes time to implement ISO 9000 with TQM. It involves a change of management attitude over many months.
- The success of a quality system is directly related to the consistency and intensity of top management commitment.
- Commitment to quality must be earned and it will only happen when the workforce witnesses management setting the example.
- Employees should be rewarded on accomplishments rather than seniority, longevity or a subjective standard.
- To ensure continued business success, every company should have processes in place to constantly monitor and update its knowledge of its customer wants, needs and level of satisfaction.
- ISO 9000 could be a useful stepping stone for TQM. It does create a path with requirements, processes, procedures and communication with potential of continuous improvement.
- ISO 9000 only provides short-term advantage while TQM has a longer-term effect on quality management.
- ISO 9000 is the launching pad and is an essential feature for a majority of firms implementing TQM.
- ISO certification is not the end, it is only the start of the company’s quality journey.
6.0 Conclusions

It has been recognized that the emphasis on quality has led organizations to adopt TQM. Moreover, organizations and customers have demanded external recognition of quality, which has in turn provided the momentum for the International Organisation for Standardization (ISO) development of the ISO 9000 series. ISO 9000 represents a trend in quality management, which cannot be ignored in today’s business environment. In fact, those companies wishing to remain competitive and improve their quality systems are recommended the use of ISO 9000 as a foundation for a much broader system of TQM. This is based on the fact that ISO 9000 is an important part of TQM, and the implementation of both approaches together will lead to organizational success and competitive advantage. It is clear that both approaches tend to complement each other. ISO 9000 can be implemented first to create stability and consistency in the organisation’s work, then the implementation of TQM can enhance employee motivation and operational efficiency, and achieve overall organizational success and performance. On the other hand, it appears that some managers have misunderstood the role of ISO9000 certification. One possible explanation for this misunderstanding is that managers fail to distinguish between conformance and performance specification. These organizations seek certification because of pressure from their customers and government policy. The quality of their products and services may improve in the short term, however, they are unlikely to improve and sustain their organizational performance. In these cases, ISO 9000 certification is a hollow achievement in the long run.

Researchers found that companies that implement ISO9000 and TQM at the same time and in an integrated manner might expect to have advantages in product quality, delivery, productivity and customer satisfaction. ISO9000 certification is only the beginning of a continuous improvement process rather than the end and could be a useful stepping stone for TQM. ISO 9000 can be an excellent start to TQM, if it is interpreted in a way that encourages the company to start on the process of continual improvement by team work of all people working in the company.

References


Authors’ Backgrounds

Dr. Maruf Hasan lectures in operations and quality management at the School of Mechanical and Manufacturing Engineering of the University of New South Wales, Sydney in Australia. He has published papers in international journals and presented papers on quality and operations management in international conferences. He is also a consultant to the industry in the area of manufacturing and quality management.

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