COMPARISON OF PERFORMANCE LEVEL – BEFORE AND AFTER ISO-9000 CERTIFICATION

H.S.Sagar, Arvind Bhardwaj and Anish Sachdeva
Regional Engineering College
Jalandhar
India

Abstract ISO 9000 certification is a fairly recent phenomenon. Such standards were published for the first time in 1987. Because of its increasingly widespread acceptance, ISO 9000 is becoming on important factor in international trade, almost an imperative for the companies that export to the European Union, where in many cases buyers expressly require ISO 9000 certification. In other words, ISO 9000 certification is becoming a critical factor for manufacturing and service companies in India and in other countries around the world. But is this popularity due to the fact that certification can, effectively, contribute to improving firm's performances or is it merely a fashion that will by overtaken by new development? Does certification really offers a tool that can reinforce competitiveness? Which performances are most affected by it? Can certification be used as a means to effect improvements by any type of firm? Does it have different effects depending on the size of firm itself, on the sector on the level of exportation of the firm?This paper addresses the questions taken up through analysis of data collected by means of a survey based on Indian ISO certified companies and intends to examine and discuss the results that concern for operational performance areas.

INTRODUCTION

The International Organization for Standardization 9000, called ISO 9000, can be defined as a set of international standards based on quality management and quality assurance. IS0 9000 originated in Europe in 1979 and was established in 1987 as an internationally accepted standard. It is having a major impact on international trade.

Although ISO 9000 does not deal with product quality directly, it is meant to create continuous control through procedures and documentation for producing higher quality products and a smoother running operation. ISO 9000 standards provide assurance that a certified company has a quality system in place. This assurance is provided primarily through a system of internal and external audits. The term "ISO 9000" normally refers to a set of related standards including ISO 9000, 9001, 9002, 9003 and 9004.

ISO 9000 standards can be applied to different organizations and industries of all types and sizes. The standards require the following:

1. A standard language for documenting quality practices.
2. A system to track and manage evidence that these practices are instituted throughout the organization and
3. A third party auditing model to review, certify and maintain certification of the organizations.

ISO 9000 is important for several reasons. First of all, customers should be a company's first priority. Customers should be assured quality products. ISO 9000 is also important because it gives organizations some guidance on how to manage for quality. Certification allows organizations to remain competitive and distinguish themselves from other competitors. For example, if two suppliers are trying to land the same contract, the one with ISO 9000 certification has a substantial competitive edge. Furthermore, the European Union and other countries have required organizations to comply with ISO 9000 in order for their products to be imported into that particular country. In other words, ISO 9000 can be a barrier to entry in Europe. As previously mentioned, ISO 9000 is important due to the increase in international trade and the attention to quality issues. ISO 9000 has become a tool to ensure cross-border quality. Organizations need to comply with ISO 9000 not only to improve internal operational efficiencies but also to increase productivity and reduce costs.

In addition to defining a quality system, an organization needs to define a quality plan for its various development efforts. This plan relates the quality metrics to the specific activities of testing and validation and in most cases would specify document control and configuration management. A particularly interesting item in the ISO 9000 guidelines covers contract review. Contract review is concerned with contract requirements between a purchaser and

supplier, contingencies and risks, and handling discrepancies between the contract and the delivered product.

The ISO itself doesn't certify organizations. Instead, independent certification bodies (like TUV, KPMG, BIS, EAQA etc.) in the various member countries perform the audits, or accredit certification agencies. And certification is not a one-time process. Re-certification is required at regular intervals to assure that organizations maintain the standards.

LITERATURE REVIEW

Research on ISO 9000 certification has been carried out from many different perspectives and in such a wide, multidisciplinary debate, it is still possible to identify two very frequently discussed topics

1. The role played by ISO 9000 and the quality awards (Malcolm Baldrige Award, Deming Prize, and the European Quality Award in achieving TQM

2. The effects of registration on both operations and performances

Some authors have carried out comparative analysis between quality awards and ISO 9000, highlighting diversity, overlap, and complementary features. Others, however, maintain that certification can offer a basis from which a firm can start along the path that will lead to TQM. On the other had, critics claim that the process of attaining ISO 9000 is little more than a paper exercise that adds to bureaucratic waste and has little relation to TQM.

As to the studies on the impact of certification on operations and performances, it has been possible to identify three types of attitudes among authors.

Some, with a more skeptical attitude toward the benefits that certification is likely to offer, have highlighted the negative aspects of registration (Avery 1994 ; R.Brown 1994)

1. Others, who are somewhat more confident about the benefits of certification, have said that it will have many positive consequences, and certification can be useful of firms in a wide range of situations (Bondinson 1991 ; Wolak 1994)

2. Those with a more realistic view, who have highlighted both the difficulties and costs of certification and the opportunities that, under certain conditions, it can offer firms who are seeking competitive advantage (HO 1994; Ebrahmpour, Withers and Hikmet 1997; Erland Ghosh 1997; Yung 1997)

A great deal of research has shown that the benefits of ISO 9000 registration are mainly felt at the shop floor level (Ebrahmpour, Withers and Hikmet 1997; Yung 1997; Wolak 1994). Among the internal benefits identified in these studies , the most important are : better documentation , greater quality awareness, positive cultural change, increased operational efficiency/productivity, enhanced inter company communication, and reduced discard/ reprocessing costs.

A 1994 study conducted by the Australian Manufacturing Council (AMC) on a sample of 1300 manufacturing sites (Tarziovski, Samson and Dow 1997) found that mangers of certified companies, particularly those operating in the export market, agreed that certification increases customer's perception of product quality. This perception can often be crucial for winning new customs, for maintaining customer confidence, and for penetrating international markets. According to Rajeev et al. (1997) such optimism is due to the fact that companies often feel that ISO 9000 registration makes their customers perceive a much higher quality of the products even though, in reality, this may not be true.

The question of the impact of certification on various cost indicators has also been taken up by many researchers (Rajeev et al. 1997) and it is clear that the firms are interested in knowing whether the costs entailed in obtaining certication certification visits, consultants, training, inspections, and so on are recovered through the benefits that accrue (increased sales, improved efficiency of workers, and so on). Usually, small firms consider that the costs of certification are very high. With regard to the other items included in costs.

The relationship between ISO-9000 and TQM is estabilished by many authors(R.S.Dalu and S.G.Deshmukh 2000; TQM center 1996) and brings out the step in successful implementation of TQM. The survey carried out by the writers show that companies are using different approaches to achieve TQM. One most commonly used approach is ISO 9000 series registration. This certification act as a bridge between the traditional management of companies and a more sophisticated one and play a catalytic role in the adoption of new management tools. The department of Trade and Industry (1995) commented. "The ISO standard is viewed as good foundation on which to build".

In spite of success stories of TQM, still the concept has not been readily adopted by companies. The main reasons for low use of TQM in companies are cost constraint, lack of resources, lack of information on TQM, lower level of awareness and understanding.(Taylor 1995)

According to the Survey of Quality Consultancy Scheme Client (Javier Garza and Marisa Gomez 1996), researchers contacted and surveyed more than 2,300 firms and found the following**:**

1. Eighty nine percent (89%) reported a greater operational efficiency,
2. Forty eight percent (48%) reported increased profitability,
3. Seventy six percent (76%) reported improvement in marketing and
4. Twenty six percent (26%) reported an increase in export sales.

ISO 9000 certification can also benefit a company by allowing it to enter new markets that were previously closed to them. For example, in Europe purchasers of industrial products are requiring ISO 9000 compliance from its suppliers, and practically every industry prefers ISO certified suppliers. It has been said that the first question companies will ask their suppliers is whether they are ISO 9000 certified.

Companies may also benefit from an increase in savings of money. Many companies require quality audits, which tend to take much time and are expensive. Companies who are ISO 9000 certified reduce and almost eliminate the need for these quality audits. This, in turn, saves the company money. For this reason, the company can allocate time and resources otherwise used on these quality audits to improve other areas.

Another benefit for the companies is that even before certification, a company begins to analyze its existing quality systems. Pre-preparation for certification allows the company the opportunity to standardize and document its procedures. This standard information can then be communicated to all areas of the company, conveying information in which the company can improve.

METHODOLOGY

It is too costly and time consuming to collect information from each industry. So a structured questionnaire survey and open interviews were used as techniques for data collection. The questionnaire was divided into five sections

1) The company's background characteristics i.e. size of the org, (no of the employees), type of product, annual turnover, certification norm (ISO-9001, 9002, 9003) and motivating factors for getting certification.
2) The impact of certification on quality aspect of the production system
3) Impact of certification on external quality performance
4) Impact of certification on cost and productivity aspect of the system
5) Effect of certification on time performance.

A random sample of 60 ISO-9000 certified companies were selected and the questionnaire was sent to them. Twenty-six responses were obtained. Details of these industries are given in table.

Table 1

Sr. No.	Employee range	No. of Industries
1	1 to 100	3
2	101 to 200	7
3	201 to 300	11
4	301 to 500	3
5	501 to 1000	2

Table 2

Sr. no.	Certification Norm	No. of industries
1	ISO-9001	4
2	ISO-9002	21
3	ISO-9003	1

Impact on quality performance

Various performance indicators for quality in production system were considered like change in rejection level scenario at various stages of production after getting certification, Time spent in rewording of defectives after certification, the commitment towards TQM and the attitude of workers towards the quality system. Analysis of the change between pre and post certification performances on quality in production revealed that a large majority of the firms had improved their performance. The results of the survey were.

1) Majority (around 77%) of the firms assumes that the certification had resulted in margined reduction of rejection level both at work in progress and final inspection stage. Only a small no. of companies (19%) reported significant improvement at all.
2) The time spent in reworking of defective had been reduced marginally by 69% of the companies only 11% of the companies reported significant reduction.
3) 92% of the ISO certified companies were planning to implement TQM and all believes that the ISO certification lead to create conducive environment for TQM.
4) Almost all the companies were satisfied with the attitude of the workers towards certification.

Impact on external quality performance

Four indicators of external quality were considered

1) Total value of sales accepted by customers without inspection at entry
2) Reduction in complaints of customer after certification
3) Rejection of material by customer after certification
4) Percentage increase in exports w.r.t. total sales after getting certification

The first and fourth indicators are sign of the trust customer have in the products of their supplier. The other two are typical indicators of external quality.

A small no of companies (only 19%) had improved their performance significantly as for as products acceptance without inspection is concerned and almost similar (nearly 23%) no of companies had reported increase in exports.

But the certification has a positive effect on external quality about 77% companies reported significant reduction in complaints and rejection of materials by customers.

Effect on cost and Productivity

In order to analyze the indicators of the costs and productivity that are associated with internal and external episodes of quality were asked to give their comments and following results on the following: -

1) 69% of the companies reported significant reduction in costs incurred because of external defects (customer complaints) after certification
2) 73% of the companies reported significant reduction in costs incurred because of defectives (material replacement) within firm's turnover after getting certification. And a similar no reported significant reduction in costs of prevention, reinspection and reprocessing w.r.t total production costs.
3) Most of the companies assume that the certification very little impact on productivity enhancement and it resulted in significant overburdening of documentation.
4) Flexibility for adapting to changes in processed had been only marginally affected.

Impact on Time performance

The following four performance indicators were used in order to analyze the effect of certification on time and it was found: -

1) All the ISO-9001 critical companies had marginally reduced the time to launch a new product. Because time to market is an indicator of design performance, so analysis of this performance indicator was limited to only ISO-9001 certified companies, as this is the only one ISO-9000 series that contains specific requirements regarding design.

Three more performance indicators used for measuring time performance were

1) Percentage of orders delivered on time
2) Average delivery lead-time, from receiving the customer order to delivery to the customer.
3) Production throughput time, from taking raw materials from stores to sending the product to the warehouse.

As far as the performance of the companies is concerned on the basis of these three indicators. Almost all the companies reported only marginal improvements and there is no significant change.

CONCLUSION

This study on a sample of ISO-9000 certified Indian companies has highlighted how, in the certified companies, both internal and external quality performances improve and associated costs fall. It also affects productivity but only to a limited extent. There was also some improvement, through less marked, in time performances. Thus certification has a direct and important impact on the quality at the level of the production process and consequently both on product conformance and on quality as perceived by the customer. There is no increase in prevention and maintenance, with the ISO-9000 pay little attention to.

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