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ISO 9000 is not an economic disease

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Introduction

The ISO 9000 series of standards was written to provide guidelines to assist organisations in implementing and operating a Quality Management System (QMS). With hundreds of thousands of certified companies around the world, ISO 9000 has become the most widely accepted and sought-after quality management system. The reasons behind the popularity of the standards are not really comprehensible. While there is considerable publication activity in the area, mainly on the implementation and benefits of the standards, the research community seldom asks explicitly why the management standards have been a success. The most logical answer to this question would be that companies choose the standards because of the many benefits they bring. However, from the beginning ISO 9000 generated contradictory opinions and assessments, and there is general confusion and uncertainty regarding the effectiveness of the standard and its long-term contribution to the organisations. In fact, two different and to a large degree conflicting views have been revealed about the effectiveness of quality management systems (QMSs). The arguments of advocates and opponents of the standard are supported by contradictory research outcomes within this area. While some studies indicate only the marketing contribution (e.g. Lloyds Register Quality Assurance, 1994; Quazi and Padibjo, 1998; Buttle, 1997), others emphasise especially the improvements in the organisation (e.g. Brown *et al.*, 1998; Rayner and Porter, 1991; Terziovski *et al.*, 1997).

The advocates of ISO 9000 claim substantial benefits from the system and often call it the entry key to TQM. They emphasise that ISO 9000 offers a shift in quality thinking from final inspection to more modern quality approaches such as process management, system approach, customer focus, and continual improvement. ISO 9000 is considered to be an effective tool for providing controls to ensure quality of production and delivery, and to reduce waste, downtime, and labour inefficiency. The major benefits experienced by organisations implementing ISO 9000 include increased productivity and efficiency, quality improvement, greater customer

satisfaction, increased awareness and commitment of employees, and a competitive edge that can lead to a greater market share (e.g. Gotzamani and Tsiotras, 2001; McLachlan, 1996; Williams, 1997; Quazi and Padibjo, 1998).

The opponents maintain that the standardisers have ignored the contemporary research on organisations and that the standard is based on management principles, which are out-of-date. The standard, for example, is driven by documentation and not organisational behaviour. Furthermore, it is questioned if the standard is at all capable of improving the quality (Zuckerman, 1994; Sanders, 1994; Singels et al., 2001). Seddon (1997) called the standard an “economical disease” and stated that ISO 9000 encourages organisations to act in ways that make things worse for their customers, and is a step backward rather than forward.

Using the different research strategies and integrating the results from other related studies, this paper was able to provide a more comprehensive picture on ISO 9000 and QMS and to explain the conditions under which ISO 9000 is likely to have positive effects on organisational performance and employee development.

Methodology

The results and reflections presented in this paper follow from five years research on ISO 9000. The research project consisted of three main stages: 1. survey on ISO 9000 and ISO 14000 implementation and operation, 2. case studies on ISO 9001:2000 certified companies and 3. survey of auditing practices. For an overview of the research designs and their relation to research questions see Table 1.

Table 1. An overview of research designs

	Description	Data collection	To investigate
Stage 1	initial survey on ISO 9000 and ISO 14000	postal questionnaire	<ul style="list-style-type: none"> ▪ motivation ▪ implementation factors ▪ benefits
Stage 2	case studies on ISO 9001:2000 certified companies	<ul style="list-style-type: none"> ▪ document studies ▪ interviews ▪ questionnaire 	<ul style="list-style-type: none"> ▪ practices of implementing ▪ practices of operating ▪ conditions for and barriers to success ▪ influence on working conditions ▪ benefits
Stage 3	survey on auditing practices	postal questionnaire	<ul style="list-style-type: none"> ▪ auditing practices ▪ auditor' role ▪ benefits of auditing

Stage1: Initial survey on ISO 9000 and ISO 14000

The questionnaire used in this stage was part of a global survey on ISO 9000 and ISO 14000 standards. The same survey was used to explore the state of ISO 9000 and ISO 14000 certification in the USA, Canada, Japan, Taiwan, Australia, France, Korea and Hong Kong. In each country, the survey was administered by local researchers. The same questionnaire form was used in all countries, translated by the local partner.

The questionnaire consisted of 16 questions about basic organisational data, motivation, benefits and implementation factors. Most questions were measured on a Likert scale with five points: 1 (very low), 2 (low), 3 (medium), 4 (high), 5 (very high).

The questionnaire form was sent to 268 companies all over Sweden at the end of October 2000. It was decided to choose every tenth certified company from a Swedish

ISO 9000/14000 database irrespective of its size, nature of business, certification date, etc. Of the 268 questionnaires mailed, 142 were returned by respondents, resulting in a response rate of 53%. For more details of the survey methodology see Poksinska et al. (2002) and Poksinska et al. (2003)

Stage2: Case studies on ISO 9001:2000 certified companies

The case study approach included three organizations where ISO 9001:2000 was implemented. The settings of the case study organizations are presented in Table 2.

Table 2. Settings of the case study organizations

	Nature of business	No. of employees	Implementation process started	Certification date
Case 1	Transforming and selling by-products	ca. 45	1996	02.06.05
Case 2	Manufacturing devices for a cleaner production environment	ca. 65	2000	02.01.15
Case 3	Developing IT- and communication systems	ca. 45	1995	96.04.01 (ISO 9001:1994) 02.01.29 (ISO 9001:2000)

In all three cases, the same process of data collection was applied. The methodological approach of the case studies was based on Porrás and Robertson's model (Porrás and Robertson, 1992), which was used as a framework for collecting and analyzing data. The aim of using this model in the data collection process was not to prove the causal relationship between the three sets of variables, but to structure and systematize the huge number of variables and contextual factors. The data collection methods included interviews, a questionnaire survey of all employees and document studies, and were organized in this way so they offered multiple data sources. More detailed description of the methodology of the case studies may be found in Poksinska (2006b)

Stage3: Survey on auditing practices

The case studies were important in relation to the emergence of the new research questions. Several findings indicated that certification organisations may have a substantial role for the effectiveness of quality management systems. The decision was made to focus on studying certification organisations and the auditing process in the last stage of the project. Questionnaire survey was chosen as the research method.

The questionnaire consisted of 4 parts. The first part concerned the basic company data that means number of employees, ownership relationship, nature of business and customer category. The second part asked questions about the certification: data and scope of the certification, motives, main function of the QMS, certification body and reasons for the choice or change of an auditor, costs, auditor's role, satisfaction and perceived benefits from certification audits. The third part asked questions about how an audit process is performed: auditing time, number of auditors, sources of information, audit conclusions, differences between audit procedure for ISO 9001:2000 and ISO 9001-3:1994. The two final questions asked to give a general grade to auditors' work on the whole and to indicate in an open question other benefits besides the certificate. The fourth part asked in an open question to give comments on the questionnaire. Most questions were measured on a Likert scale with seven points where 1-is assigned to "strongly disagree" or "not at all" and 7- to "strongly agree" or "very much".

The questionnaire was sent to every tenth certified organisation in Sweden that means to 528 organisations in total. The final response rate was 51 percent. More information about the methodology of the survey may be obtained from Poksinska et al (2006a).

Results

A QMS designed according to ISO 9000 will differ considerably from organisation to organisation, because it is influenced by different organisational and external conditions. The most important organisational conditions are: maturity level of quality management, internal motivation, implementation strategy, involvement of people. The external conditions include certification audits and relationship with customers.

Maturity level of quality management

Organisations may have different maturity levels of quality management. For some organisations, ISO 9000 may mean a radical change; for others, it is just the usual way of running the business. When starting to implement the standard, organisations may to differing extents already comply with ISO 9001:2000 requirements. Seddon (1997), known for his critical view of ISO 9000, discusses Toyota in one of his arguments against the standard: "Toyota tried ISO 9000 in its Shimoyama factory in 2000 and promptly ceased its use for they found it to be of no value." Toyota is a company with a high maturity level with quality management and with an image of a strong quality organisation. If Toyota already complies with the requirements and doesn't need to strengthen its quality image with an ISO 9001:2000 certificate, it is not surprising that the standard is of no value for the company. It doesn't mean that ISO 9000 is of no value for other organisations.

Internal motivation

This study showed that many organisations only certify to ISO 9000 because they are forced to by customers without reflecting on whether or not ISO 9000 is in fact appropriate to their business. Any improvement initiative needs a solid foundation to stand on. An improvement can only be accomplished through change, and without the proper motivation change will not happen (Pfeffer and Sutton, 2000). The internal motivation and design of ISO 9000 around the culture of the organisation is therefore the most important condition to achieve positive effects from the QMS. The design of the QMS has to start from the real needs of an organisation. The focus should not rest on fulfilling the minimum requirements, but on the areas that need to be improved. The objectives need to reflect the expectations of customers as well as the organisation's aims for future success. Therefore, only self-motivation will make improvement sustainable. If the ambition and commitment level are very low and organisations devote too much attention and place too much value on the certification, the focus on real improvements is shifted away by limiting the efforts to the satisfaction of the minimum necessary requirements, just fulfilling the auditors' demands and setting defensive and easy to achieve objectives.

Implementation strategy

Brunsson and Jacobsson (1998) discuss two strategies for implementing the standards. Organisations may standardise the practice or practise the standard. The first strategy implies that the practice is not changed, but only described in the language of the standard. The requirements of ISO 9001:2000 are general and there is considerable freedom in interpreting them. Organisations may interpret the requirements and the practice in such a way that they can claim that their existing processes already comply

with the standard. Practicing standards implies that organisations reflect on a requirement and determine the best possible way of fulfilling it in the context of their organisation. Then the necessary changes in the practice are implemented. These implementation strategies are not alternatives that are totally free to choose, but rather should be fitted to the maturity level with quality management and to the improvement needs of the organisation. For mature companies it is in many cases just enough to standardise the practice to fulfil the ISO 9001:2000 requirements. However, there is not only one single way of fulfilling a requirement and things can always be done better. Organisations that represent a low level of quality management would be better off practising the standard. They should find a way to fulfil the requirements in the best possible way for the organisation. They should not confine themselves to the easiest way, but to the way that will provide value for the organisation. With this way of thinking, the QMS that is designed will likely have positive effects on organisational performance and employee development.

Involvement of people

Finally, an important organisational condition identified in this study was the involvement of people. Top management needs to show commitment and be involved in the quality work in order to demonstrate the importance of quality work to other employees. Without the continuous support and commitment from top management, the true importance of the initiative will be in doubt and the energy behind it will be weakened. A quality manager or other person with knowledge of quality management must work as facilitator and drive the improvement work. Finally, all employees need to know what the customer requirements are and be aware how their work contributes to their fulfilment. Everybody needs to be involved in tackling and solving the existing quality problems and identifying quality improvements. It will not only have positive results for organisational performance, but also for employee development. The opportunity to participate in the improvement work will make the employees feel important, valued, and aware that they can influence decisions important to their work. Both motivation for ISO 9000 implementation and the choice of the implementation strategy are important for people involvement. It will be difficult to cause people to feel motivated and involved if the motivation for ISO 9000 implementation is only exerted externally by customers. Furthermore, if an organisation, due to a lack of internal motivation, decides to fulfil only the minimum requirements and to standardise the practice, the quality work will mostly be associated with documentation and satisfying auditors' requirements. In such a situation employees perceive the QMS just as a system for handling documents, which decreases their enthusiasm to work actively with the system.

Importance of certification audits

There are almost no studies that look at certification audits as an important condition for achieving positive effects from ISO 9001:2000. This study showed that certification audits may be used as a tool for enhancing the effectiveness and continual improvement of the QMS. The process of third-party assessment was usually perceived as a routine exercise for obtaining ISO 9001-3 certification. Many organisations still don't recognize the opportunities for improvement that external auditing may provide to them. When SWEDAC (the Swedish accreditation body) introduced regulations for "man-days" used for auditing, some quality managers expressed concerns that they "will now have the police longer" in their organisations. This point of view is understandable if audits are perceived only as a checkpoint to be

crossed in order to obtain the certificate, not as an opportunity to receive advice, new ideas, and help from outside. Longer audits can, however, only be positive, since that implies more time for getting into problems of audited organisations and consequently may lead to a better quality of audits.

As the auditing survey showed a development-oriented auditor may make valuable input to the QMS in the form of ideas and suggestions for improvement and the transfer of experience from other organisations. Audits also increase motivation and drive the quality work forward. If certification and periodic audits are performed with the aim of providing value for the audited organisation, not just issuing a certificate, this may have positive effects on operating the QMS and consequently on the effects from the system. But a documentation-oriented auditor checking just compliance with the ISO 9001:2000 requirements decreases the motivation and limits the efforts just to satisfying the auditors' demands.

However, not only is a qualified and development-oriented auditor important, but also the audited organisations must be open to the opportunities certification audits may provide. The key is to understand that with ISO 9001:2000 an auditor is not a policeman, but more a facilitator.

Relationship with customers

The importance of the relationship with customers for the QMS was not fully explored in this project. However, one thing can be said. For the case organisations customer pressure was the primary driver to implement ISO 9000 and led them to focus on achieving the certificate. It seems reasonable to assume that the pressure exerted by customers to achieve an ISO 9001:2000 certificate is not the same for every organisation and the influence of customers on the QMS is different from organisation to organisation. One hopes that some customers focus more on the actual quality management practices themselves than on the certificate.

Differences in benefits achieved

There are many studies that have investigated the benefits from ISO 9000, but they provide partly contradictory results. This section aims to provide some possible explanations for why such contradictory results have been reported.

ISO 9000 requires organisations to establish procedures that, when followed, should ensure appropriate management of quality. However, the standard is very general and may be interpreted in many different ways. Since ISO 9000 can be implemented in many diverse business environments, the results are actually not comparable. The goals and objectives are set based on consensus within an organisation and may differ considerably from QMS to QMS. The primary drivers for setting objectives don't come from ISO 9000 itself, but are influenced by the organisation's position in the supply chain, market position, or simply the ambition to improve the organisation's performance. One organisation may achieve improvements in customer satisfaction because it defined such quality objectives and focused their efforts on customer complaints. Another organisation may reduce costs by focusing on poor quality costs. One of the most important results from the initial survey was that ISO 9000 is primarily implemented for external reasons and that the motivation influences the benefits. Many other studies came to similar conclusions (e.g. Tsiotras and Gotzamani, 1996; Jones et al., 1997; Singels et al., 2001; Karlun et al., 1998). Organisations that seek certification focusing on organisational improvements achieve

higher overall benefits. On the contrary, organisations that seek certification for some external motives achieve major benefits only in this field.

In one of the case studies seven managers were asked to fill out a short questionnaire. The questionnaire consisted of 35 items describing different types of organisational performance indicators like product quality, customer satisfaction, customer returns, and productivity and the respondents were asked to assess the different performance improvements resulting from ISO 9000 implementation on a Likert scale with five points. The managers had difficulties in identifying the benefits resulting from operating ISO 9000 and often reported completely contradictory results. The problem was that the implementation of ISO 9000 didn't change many of the existing quality practices in the case organisation, because the organisation already complied with many of the ISO 9001:2000 requirements. The business continued as usual and the interviewed managers had difficulties seeing ISO 9000 as the cause of implementing any improvements. Only the quality manager, who perceived ISO 9000 as the current system used in the company for managing quality, recognized that some of the benefits stated in the questionnaire were achieved. This example shows how difficult it is to explore the actual benefits from ISO 9000.

Taking into account the above considerations, there is no unequivocal answer about the benefits of the quality management system. Organisations may achieve different benefits, but most important is that these benefits exist and ISO 9000 provides value for the organisations. As shown in Corbett's study (2002), which analysed the financial performance data of ISO 9000 certified companies against that of control groups of non-certified companies, the ISO 9000 certification pays. The certified companies showed, among others things, improvements in ROA, lower costs, and higher sales.

Conclusions

The value of ISO 9000 differs among organisations and depends on several organisational and external conditions, such as motivation for ISO 9000 implementation, maturity level of quality management, implementation strategy, involvement of people, and certification audits.

ISO 9000 is still implemented mostly because of customer requirements and the certificate is the most desired outcome of implementing a quality management system. The certification to ISO 9001:2000 is a must in today's business environment. In fact, the certificate gives no competitive advantages, but gives a competitive disadvantage for organisations which are not certified.

ISO 9000 offers organisations the capability to develop and implement an effective and dynamic quality management system with a focus on continual improvement, but the certification itself doesn't ensure that an organisation achieves sustained competitive advantages. The key to the success is the willingness and the depth to which an organisation desires to go in satisfying the standard's requirements or fulfilling their own improvement needs. However, organisations often lack internal motivation to work with the QMS. Those organisations devoting too much attention and placing too much value on the certificate would not be able to realise the full potential of ISO 9000.

Organisations implementing ISO 9000 may have different maturity levels of quality management. The maturity level determines to what extent organisations can standardise the practice or practise the standard. However, ISO 9000 requirements are

very general and organisations decide themselves what kind of practice complies with them. Consequently, organisations may claim that their organisational processes already comply with ISO 9000 without changing anything in their practice. Organisations lacking motivation to manage and improve their quality system limit their efforts to satisfying the minimum necessary requirements and only standardise the practice. For this reason, it is possible to become certified without changing anything in the organisation.

Furthermore, the involvement of people was identified as critical for the successful implementation and operation of a quality management system. Especially important is involvement of all employees in the quality work, which can be achieved through training and empowerment. Vital is also the commitment of top management and a dedicated and knowledgeable quality manager or facilitator.

Certification audits proved to be important for the effectiveness of the QMS. The auditing practices and the auditors' view on ISO 9000 may influence the way the QMS system is perceived and operated. Audits may provide valuable input to the improvement work and may be a motivating factor for continuous improvements. Some certification bodies progressed really far in the move from compliance audits to value-added management audits. Some are still only checking compliance with the standard's requirements.

The benefits achieved from ISO 9000 are not the same for every organisation. They depend on the level of ambition and commitment to achieve business excellence. There are only a few external and internal benefits that follow from the standard itself. Most internal benefits require a change in practice and commitment from all organisational members.

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