Australian Journal of Basic and Applied Sciences, 4(10): 4710-4716, 2010
ISSN 1991-8178

A Review of Purpose, Benefits, Impediments and Structure of Environmental Management System (EMS)

A.P. Puvanasvaran, M.R. Muhamad, Robert S.T. Kerk

Faculty of Manufacturing Engineering, University Technical Malaysia (UTeM),
Karung Berkunci 1200, Ayer Keroh, 75450, Melaka, MALAYSIA

Abstract: The ISO 14001 EMS has been designed to introduce environmental improvement into every aspect of a company's operations, offers an organized approach to manage environmental issues and it has now become administrative tool towards corporate environmental management.First introduced in 1996 including Malaysia. According to literature review there can be benefits that firms gain by adopting ISO 14001 and so on and so forth. There present information regarding ISO 14001 standard facts promoting adoption base from within firms such as those from Malaysia context.ISO 14001 certification is voluntary, adoption is depend on aspirations of the companies and the external drivers. This study focuses on the internal and external factors that several literatures indicate play significant role in determining adoption of ISO 14001. In Malaysia, the factor such as role of top management, perceived benefit, motivation, market orientation, resource availability, regulatory concerns and organizational culture is choose as independent variables. The adoption of ISO 14001 has been relatively slow outside of Africa/West Asia, value to approximately three percent (3.02 percent).

Key words: Environmental Management System (EMS)

INTRODUCTION

Environmental Management System (EMS) is defined as the part of the overall management system that includes organizational structure, planning, activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining the environmental policy (ISO 14001, 2004). The standard provide for elements of effective EMS that can be integrated with other management systems of an organization. The idea and practices of proper environmental management has spread in North America and in Europe (Guimares and Sato, 1996). However, in Far East more than 35 percent (35 percent) of the total certified firms (ISO, 2003). Malaysian firms seem to have conservative attitude toward the ISO 14001 adoption (Tan, 2005), in which only 370 firms were certified as in December 2003, which is about one percent (0.6 percent) of the total certified firms in the world. The aim of this study is to review the purpose, benefits, and impediments as well as review the structure of environmental management system (EMS) that directly focus on execution of ISO 14001.

Literature Review:

Holt (1998), has identified the perceived benefits of accreditation to an environmental management standards in 13 UK companies. The benefits include reduced risk, lower insurance premiums, cost savings, regaining new and old customers, and a broad competitive advantage. In addition, ISO 14001 would help the firm to address all of the legal, commercial and other challenges related to the environment also in Busse (2004). A systematic approach to manage environmental issues help to identify opportunities of conserving material and energy inputs, and to reduce waste, thus improving process efficiency. For example, a number of ISO 14001 adoption companies in Singapore have reported a significant amount of cost savings.

Darnall et. al. (2000), however found that other non environmental considerations such as maintaining a competitive advantage, enhancing public relations, meeting customer demands, and reduction in overall costs seemed to outshine more in a company's decision to seek certification. Economics and institutional pressures also play a significant role in determining adoption ISO 14001 (Bansal and Bogner, 2002). Results from studies done by Welch, Mori, and Aoyagi-Usui (2002), indicated that early adopters of such standards in Japan tend

Corresponding Author: A.P. Puvanasvaran,Faculty of Manufacturing Engineering, University Technical Malaysia (UTeM), Karung Berkunci 1200, Ayer Keroh, 75450, Melaka, MALAYSIA
E-mail: punesh@utem.edu.my

to be larger, greener and less driven by regulatory, competitive or media pressures. They believed that the organizations have the interest and resources to pursue new environmental initiatives.

Without commitment, the implementation of any new initiative would not be successful. The extent to which the top management participates in EMS activities is considered as a measure of the organization's commitment to the environment (Wee and Quazi, 2005). Many studies point out that strong commitment and support from top management to continuous improvement of environmental management, prevention of pollution, regulatory compliance and to adequate resource allocation are the key factors (Da Silva and De Medeiros, 2004).

For Malaysia, with segment of industry being export oriented the impact from consumer demand forces the individual companies to respond to the environmental issues. As far back as 1996, manufactured goods continue to be the main component of Malaysian exports, accounting for 29.12 percent of Gross Domestic Product (Economic Report 2001/2002). Realizing the significant contribution of exports to the economy, the Malaysian government has formally endorsed the drafts of the standard ISO 14001 because it feared the standards could put Malaysian companies off the European and other markets as well (Chemical Week, 1996). In February 1996, Standards and Industrial Research Institute of Malaysia started an ISO 14001 pilot project consisting of 32 companies, of which 5 companies were certified by end of 1996 and 22 companies by July 1997. By the end of December 2003, it was confirmed that 370 companies were certified in Malaysia (ISO twelfth cycle, 2003). As of June 2004, 288 companies were certified by SIRIM comprise of sectors such as chemical, material and food 40 percent, Engineering 14.2 percent, Electrical/Electronic 35.4 percent and Services 10 percent (SIRIM Directories, 2004). Central recorded 132, East Coast 27, South 35, North 75, Sabah 7 and Sarawak 12 companies respectively.

There are several major factors that influence an organization to adopt ISO 14001 as becomes a requirement by markets, internal or external stakeholders and industry associations. Some empirical finding indicates that the adoption is influences by top management involvement (Govindarajulu and Daily, 2004), managers' values and beliefs (Nakamura *et al*., 2001). Thus, other results indicate that motivation and perceived benefit are some of the main factors (Fryxell *et al*., 2004). There can be about EMS in such theoretical approach which can from within usage of details such as those noted by internet influence and some of its cases thereunto as information and tenets relevant to ISO 14001were available adding details of case studies towards overall understanding of the EMS structure (Yin, 2003). The choices of resources have implied to the standards input of EMS in accordance to ISO 14001 manifestation. EMS research deemed necessary for the careful selection of its process that may defend on ISO 14001areas and ways of implementation thus, creating of larger understanding and clarity of EMS from the basis of ISO 14001 patterns (Acevedo, 2004).

Thus, for positive assumption of EMS and its imperative studies directing to ISO 14001 functional cues, it can be ideal to start the EMS evaluation with a process of globalization as more than an effective strategy that links EMS organization to global marketing along with complex ISO 14001based project that keeps intact certain environmental as well as culture led aspects. However, in the daily pay-modern society, EMS in lieu with ISO 14001 don't have the concern to think questions related to the environment and the EMS relation without commitment with the nature was responsible for integrative culture, with belief of that EMS based resources can possibly be unlimited (Kilbourne, 2004). Meaning of environment that it denominates the environmental subject nowadays is ambiguous and can be interpreted in many ways for professionals of different areas, the environment is a determinative critic of the amount, quality and maintainable aspects of the activities human beings and industrial development (Gupta, 1994).

There showed that ideally 25 percent of the world population that lives at industrialized countries it consumes about 70 percent of natural resources of the planet. Thus, developing nations are industrialized and they impel your economical growth, it does with demand for resources and pollution increases (Gupta, 1994). Melnyk *et al.* (2002) simplifies the intention of the systems of environmental management in possibility to develop, to implement, to organize, to co-ordinate and to monitor the companies activities related to the environment aiming at conformity and reduction of residues. Chan (2006) have identified chances to reduce the use of materials and energy, as well as improving the efficiency of the processes. From within EMS domain, environmental degradation can be called environmental impact, Seiffert (2006) have indicated an elapse of environmental aspects that the substance and the energy generated during the productive process. The aspects are already characterized by the resources that are consumed or generated in the elaboration of the products and services of the organizations.

EMS from ISO 14001 execution, environment impacts will generate significant social consequences. Further, in accordance with norm ISO 14001 (2004), the norms of environmental management have for objective to provide the organizations with elements of an environmental management system efficient that they

can be integrated to other requirements of the management, and to assist them to reach its environmental and economic objectives. There specifies the requirements so that system of environmental management enables an organization to develop and to implement politics and objectives that take in consideration requisite legal and information on significant environmental aspects. Norm accounts ISO 14001 (2004) stand out that its adoption by itself will not guarantee excellent environmental results, being necessary that environmental management system stimulates organization to consider implementation of the best available techniques and relation cost benefit of such techniques is taken integrally in consideration.

Chan and Wong (2006) have reinforced that discharge direction from within implantation and maintenance of administration systems, because without commitment and involvement the program not wins credibility before the employers that affect the acting of this process directly. Oliveira (2005) points out that if admitting that the changes on the companies are subject to resistances, these can be avoided or minimized through appropriate strategies for EMS and some ISO 14001 stance. In spite of EMS benefits, Curkovic *et al.* (2005) point out that the management systems with base in ISO 14000 are surrounded of critics. The spread is that that considers the norm without commitment with a superior environmental performance due to the orientation lack of how to improve your environmental indicators.

There is also a strong concern that the benefits offered by ISO 14001 they can't be enough to supply the costs generated by your implantation. Thus, for implantation of different action of the activity, it is important that there considering factor for EMS flexibility with ISO 14001coordination into culture rooted beings (Bouyer *et al*., 2006). Thang (2007) have agreed that the success in an enterprise in the past automatically does not guarantee the success of the same enterprise applied in another place. Thus, when companies decide to import techniques of other countries or organizations, they must consider the cultural differences to get success in the enterprise. The culture of the organization represents its symbolic universe and provides to a referential of standards of performance between the employees, influencing the exactness, productivity and the concern with quality and service to the customer. Hussain (2006) explained the area of people´s management or human resources is seen as the quality manage mental promoter information of decision, supporting the provision of the executive and summary reports for high direction. EMS and organization performance is influenced by the human capital, that how much bigger, more success can provide the company and greater can be its competitive advantage (Brown, 2007).

Lima *et al*. (2006) point six generic strategies that can minimize the effect of the resistance to the changes: education and communication, participation and involvement, facilitation and support, negotiation and agreement, manipulation and cooperation and explicit and/or implicit coercion. EMS from within adaptation of ISO 14001 will fit to detach quality of the activities of the area of human resources directly influences the capacity of the organization in fulfilling with its objectives and goals. Although recognition of importance of management of people for ISO 14001 based EMS, few has been known on the overall ISO 14001 oriented interaction.

Purpose:

Environmental management has gone from an add-on function to an integral part of business operations. An ad hoc approach, still used by many companies, offers very few opportunities for improvement of the organizations environmental performance or environmental efficiency. Thus, with rising costs associated with environmental liabilities and the increased complexity of environmental issues, managers need a rigorous and systematic method for integrating these aspects into the organizations decision making process (Govindaraju and Daily, 2004). EMS is essential for driving improved performance in order to help companies systematically identify and appropriately manage their environmental obligations and risk. Governments worldwide are looking at the role that ISO14000 can play in their regulatory systems, their enforcement procedures, and their procurement policies.

For example, this can include a decrease in inspection frequency, possible tax incentives, and a decreased need for future environmental legislation. Some observers believe that this will be the primary driver behind ISO14001 registration as countries begin to require. Some important points, satisfy stakeholder interests as ISO14001 registrations can satisfy the public's desire for corporate accountability, improve company's environmental reputation. Many companies are already building environmental sensitivity into their marketing strategies and can demonstrate substantially increased sales due to product differentiation on environmental issues. ISO14001 implementation and ISO14001 compliance can be positioned to contribute to this marketing advantage. For companies that may have strong EMS in place, the ISO standard becomes a useful external benchmark against which they can evaluate their own EMS.

Benefits:

EMS certification is of the management system itself, not the environmental performance (Hewitt and Gary, 1998). A company can develop EMS but will not be certified, however most companies that develop EMS do indeed certify it. Certification does not generate instant results (Hewitt and Gary, 1998). Certification of EMS ISO 14001 has the following benefits to companies. It proves that its activities have been evaluated and accepted by an accredited, independent third party.

There is conservation of other natural resources in the process (Gbedemah, 2004 p. 28). Organizations that obtain the certificate would be able to increase the market share of their products since most customers are environmentally conscious these especially in advanced industrialized countries. Certification is a little more tangible than the lip service given in many cases. ISO 14001 provides competitive edge to business. In addition employment would be created in the home country thereby reducing unemployment thus poverty. Creating employment however does not mean poverty reduction as people have been employed in industries but are lowly paid thus poor. There also provides an effective means of technological development as well as its transfer to other sectors of the industry or the organization.

Potential benefits for ISO 14001 adoption includes reduced costs of waste management, savings in consumption of energy and materials, and enhancing corporate image, regulatory cost savings, more effective supply chain management, improve customer relationships, and increased market competitiveness (ISO 14001: 2004). Advocates of ISO 14001 claimed that the adoption of ISO 14001 substantially improved organization's operational and managerial systems (Rondinelli and Vastag, 2000). In Malaysia, Maliah and Nazli (2002), stated that ISO 14001 certification is perceived to boost both economic and environmental performance positively. Some companies take advantage by exploiting environmental issues to strengthen their market position and penetrate new markets (Halkos and Evangelinos, 2002).

Several studies indicated other motives as, tool in achieving more control over firm in general sense and a way of introducing structures into the firm (del Brio and Junquera, 2004). The most significant motive for implementing ISO 14001 is enhancing corporate image, gaining marketing advantage, reducing customer pressure, and to improve its relations with communities and authorities (Poksinska, Dahlgaard and Eklund, 2005). ISO 14001 is seen by many government officials as a possible solution to Asia's main problem, that is creating effective environmental law or to tackle problem concerning environmental laws. On the other hand, organisations need to keep in mind that ISO 14001 is a voluntary system and a tool and thus does not replace the existing regulations but provides guidance and flexibility in addressing both environmental and business issues (Zutshi and Sohal, 2004 c; 2005).

Impediments:

The standard has been criticized by a number of companies (Yiridoe *et al*, 2004). One of major barriers to certification and development of an effective EMS is that, companies become vulnerable to legal claims as they develop EMS. The development of an EMS creates documentation on environmental performance and these documents can become a basis for court action against an organization that does not go according to its targets (Kolk, 2005). These litigation problems can create caution on the development of an EMS. The good side however is that, the standard does not mention reporting of environmental performance by companies (Stone, Joseph and Blodgett, 2004).

Auditors may have access to information on performance and can leak such information out. Another critic of the system is the high cost required to get certified. Not only the cost but the attendant bureaucracy involved in its preparation and implementation. The yearly auditing of records also adds to the cost. A number of man hours are therefore spent on the certificate. These problems do not help the small and medium scale enterprises in developing countries to get the certificate.

Structure:

EMS, according to ISO 14001 has four components. It is like a cycle of, plan, do, check, and act. If the cycle is adhered to constantly it leads to continuous improvement of the system. The design and implementation of an EMS requires a considerable time and effort therefore requiring the commitment of management of the organization (Zutshi and Sohal, 2005). The organization's environmental programme specifies how the objectives and targets will be met by stipulating the actions, methods responsibilities, time frames and resources. There should be integration and coordination with areas of management and new structures can be identified if possible to enable total environmental management. Upon implementing ISO 14001

- Legitimacy
- Cost saving
- Due diligence and insurance
- Legislative compliance and other political benefits
- Marketing
- Human health

The ISO 14000 standards are of worldwide topicality, although each country has its own organisation structure through which the standards are administered. Thus, the standards obtained from Standards New Zealand in the context of this study would apply to campus environmental reviews conducted in other countries. However, it would be wiser to purchase the standards from the governing standardisation body where the audit is to take place, in the event of minor geographic variations in administration and certification. The important standards in the context of environmental initiatives were: ISO 14001 (EMS – specification with guidance for use) and ISO 14004 (EMS – general guidelines on principles, systems and supporting techniques)

Discussion:

Believed that almost all foreign electronic firms and their level of environmental awareness is higher compared to Malaysia. Malaysian firms tend to adopt EMS ISO 14001 when there are joint ventures with other non-Malaysian firms. The types of company either public or privately owned results are not significant contributor of the adoption of ISO 14001. This study tries to examine if the publicly traded firms are more concerned about environmental aspect as their stakeholders monitor their activities. The study by Delmas (2001), shows that the stakeholders play a significant role in determining ISO 14001 adoption. There is no evidence from previous study that size of the firm could determine the adoption (Zutshi and Sohal, 2004 a; 2004 b). However this study does not segregate clearly the size of the firms. The experience of the firms or number of year's establishment is quite substantial to determine the adoption, as almost all adopters were quite long established.

Tan (2005) surveyed the firms in Malaysia as newly industrialized found out that most Malaysian firms pursue ISO 14001 because of insistence from top management and not because of the experience that they have. EMS ISO 14001 is not a regulated system, it is merely voluntarily basis. There should be something internally or externally drives the organization to adopt ISO 14001. Melnyk *et al*., (2003) study has demonstrated that firms with formal environmental management system have a positive impact on many dimensions of their operations performance specifically in ability to reduce wastes and pollution. The adoptions of EMS 14001 are partly improved firms corporate image, and enhanced its relationship with authorities and communities. The reason why some firms still can stand for years even their activities are near to residential area. The firms believed environmental preservation is important as part of their corporate social responsibility.Obtaining commitment from the top management of an organization is an early step in establishing an environmental management system (ISO 14001:2004).

ISO 14001 specifies the requirements for establishing an EMS, in order to enable an organisation to formulate a working environmental policy and objectives, which take into account legislative requirements and information about the impact of the organisation's present and projected environmental practices. It does not include specific performance criteria. ISO 14001 contain rules and roadmap for adopting an EMS, ISO 14001 recommend initial environmental review (Zeng, Tam, Tam and Deng, 2003). The results of the review are used to inform an organisation about the kinds of issues and objectives it may wish to include in consolidating an environmental policy, and establishing EMS. The toolkit for conducting that review, contained in ISO 14004, includes questionnaires, interviews, checklists, inspections, record reviews, benchmarking. ISO 14001 makes it clear that an audit cannot proceed if a campus does not have an environmental policy in place. That is because the policy represents written commitment by senior management to sustainability. It is the rudder which steers all of the operational changes that may follow (Zutshi and Sohal, 2004 a; 2004 b).

Conclusion:

The ISO 14001 EMS has been designed to introduce environmental improvement into every aspect of a company's operations, offers an organized approach to manage environmental issues and it has now become administrative tool towards corporate environmental management.First introduced in 1996 including Malaysia. According to literature review there can be benefits that firms gain by adopting ISO 14001 and so on and so forth. There present information regarding ISO 14001 standard facts promoting adoption base from within firms such as those from Malaysia context.

Therefore, anyone seeking grant support under the act for EMS training, such as ISO, would be unlikely to succeed. That is because the act's definition of "environmental education" excludes technical training activities directed towards environmental management professionals, or activities primarily directed towards the support of non-educational research and development. In essence, the act is about financial support for environmental curricula and teacher training. Arguably, it does not extend to training initiatives which would be beneficial in a business context. To the extent that ISO 14001 approach fosters linkage, demonstrates practical value, and standardises approach, its use should be commended.

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