ISO 14001 - IMPROVING THE CONSTRUCTION INDUSTRY'S COMPETITIVENESS

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Abstract

Today, in order to sustain a competitive advantage many companies concentrate on preserving a healthy environment - both on company work sites and in the general, external environment in which they operate. Through interviewing representatives involved with nine of Australia's largest construction companies, the value of applying the International Organisation for Standardization (ISO) 14001 Environment Management System (EMS) and how it is developed, is explored. While most Australian construction industry companies state in their vision the determination to preserve a healthy environment, there is little evidence of companies actually embracing the concept of active involvement by the various stakeholders in the development of a corporate environmental culture. Without such involvement the company's competitiveness may be jeopardised.

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INTRODUCTION

To be globally competitive, construction industry companies have to provide not only an effective and efficient building and constructing service, but also effective management of their business (Price and Newson, 2003). Today, as part of this management, companies are focusing on both the financial side of the business as well as considering environmental factors – within the company structure and its work sites, and in the external environment (Petrovic-Lazarevic, 2006; Szamosi and Tsolakis, 2003; Burnett, 1999). By establishing environmentally responsible policies in the organisational vision (Jaques and Clement, 1991; Szamosi and Tsolakis, 2003), companies are seen to be ethically and socially responsible, thus assisting in maintaining their position in the world market (Petrovic-Lazarevic, 2005; Szamosi and Tsolakis, 2003; Zairi, 2000; Burnett, 1999). Recent research has also shown that top global companies communicate to their stakeholders a commitment to socially responsible behaviour through espousing an ethical framework of their mission within society, which includes a comprehensive environmental policy (Snider et al., 2003).

Care for a healthy environment comprises not only a concern for keeping the external working environment in good shape, but also providing a high level of occupational health and safety (OHS) measures to preserve good internal working conditions. The former mostly involves the application of ISO 14001 EMS, while the latter comprises OHS measures (Petrovic-Lazarevic, 2006). This paper aims to contribute to the debate on the value of implementing EMS standards, and how such a system may be successfully implemented, in the construction industry.

Many construction industry companies apply ISO14001, which includes: an environmental management system (EMS), environmental auditing, environmental labelling, environmental performance evaluation and life-cycle assessment (ISO, 2002). The ISO 14001 EMS is a voluntary standard enabling organisations to control the impact of their activities on the environment (Lundan, 2004). It contains 17 key elements grouped into five areas: environmental policy; planning; implementation and operation; checking and corrective action; and management review. The initial requirement is to comply with applicable environmentally related legislation and regulations and to implement a continual environmentally related improvement process in the company (ISO, 2002). Christini et al., (2004) summarise the value of an EMS: it - improves regulatory compliance requirements; reduces liability and risk; prevents or reduces pollution and waste; improves site and project safety; generally saves money; and establishes a system for continued environmental improvement. Additionally, it increases credibility and communication with stakeholders such as government agencies, community groups and investors.

Companies that have introduced EMS usually go a step beyond the legal requirements, adding their own company goals and public reporting of emissions. All EMS key elements are subject to an annual review by top managers, which is an important commitment to guarantee the credibility and effectiveness of a company's determination to sustain a healthy environment. Accordingly, the top managers' role is to communicate not only the annual review to stakeholders and lower level managers but, also the value of such ethics to the company (Zeng et al., 2003).

Within less than a decade, large construction companies around the world using an EMS have demonstrated improved efficiency in occupational health and a rise in the market share (Christini et al., 2004). Some companies, however, have faced difficulties in implementation due to a lack of government and client support; expensive implementation costs and a lack of a positive relationship with subcontractors (Tse, 2001). Chen et al. (2004), in their work on developing a decision-making model for implementing ISO 14001, support Tse's findings and add the importance of considering the cooperation of other stakeholders, such as suppliers and employees, when implementing the standards. In other cases, as Ofori et. al., (2000), and Kein et al., (1999), found in two studies of Singaporean companies, there is a wait and see attitude with a focus on cost-benefit concerns, before implementation occurs.

This paper is based on a recent research project conducted in Australia in large scale, global companies. The project investigated the commitment of these companies to support a healthy environment through the application of the ISO14001 EMS standard, and the community perception of those companies' social responsibilities in providing a healthy environment. The paper is organised as follows: after the introduction, a description of the methodology and project findings are presented, and concluding with some implication comments and future research interests.

METHODOLOGY

Interviews were conducted with the representatives of corporate governance and community, suppliers and employees of nine of the 15 leading Australian construction industry companies. The nine were selected by the following criteria: ease of access to their head office; being a member of the Australian Construction Industry Association; and having an annual turnover in excess of AUD$300 million. In summary, they represented major global companies. The interview data were supplemented with information from company annual reports and corporate information available on their web-sites.

Interviews were based on a semi structured questionnaire, covering:

- Vision statement about commitment to pursue a healthy environment
- Definition of a healthy working environment
- Corporate governance structure and corporate social responsibility
- Application of ISO 14001 EMS and OHS measures
- Communication of value and ethics

After interviews with the corporate governance representatives were completed, shorter interviews were conducted with an employee, supplier, customer, and a community representative to gauge their perception of the values and ethics of the company. These people were recommended by the corporate governance representatives (thus some bias may be inherent in the sample) because they have extensive knowledge of the company. An understanding was also sought on personal perceptions of a healthy working environment and whether that correlated with company values. The interviews were conducted by telephone, except for three conducted in-person with corporate governance representatives who had offices in the researchers city. Interviews were recorded and transcribed.

It should be noted this paper seeks to explore some initial indications, based on a limited, Australian, sample. It does not purport to be a detailed quantitative study, rather the start to the process. It does, however, present a level of insight into the issues surrounding the development and implementation of ISO 14001.

FINDINGS

This section looks at: the place of environmental concerns in the broader company vision and structure; how ISO 14001EMS is applied as part of the overall strategy; and finally how the company develops and communicates its environmental message to its stakeholders.

Commitment to Providing a Healthy Working Environment Within the Company's Vision

All companies have a company value or mission statement related in some way to a healthy work environment. Table 1 provides some examples of how environmental commitment is incorporated into the vision or mission of the company.

Interviews with corporate governance representatives reveal that, although not specifically highlighted in the company's vision, all companies relate their vision to the implementation of a formal EMS, recognising ISO 14001 standards. Seven of the nine already have this certification, one is in the process of acquiring it, and the other company is debating the issue.

Table 1: Companies' Vision/mission Statement on Healthy Working Environment

Company	Company commitment
A	Complies with all officially requested requirements and employment conditions such as equal employment opportunities and non discrimination. The view is that people return home in the same or better condition than when they arrive to work.
B	Promotes a safe, positive and enjoyable work environment.
C	Mission statement has an emphasis on quality, safety and environmental initiatives, and a safe and secure work environment for all employees.
D	Values a work/life balance.
E	Creates a safe challenging and fun workplace.
F	Committed to a "No harm" policy for all employees, as everyone has a right to return home in the same condition they arrived to work. This is extended to all who visit their worksites.
G	It is in their policies related to environment, safety and quality.
H	Everybody goes home without harm at the end of the day.
I	"People come first" and "open communication" policies, including a consultative and participative approach for all staff members.

Both corporate governance and employee interviewees criticised the volume of environmental legislation that the Australian construction industry has to cope with, second only to OHS legislation. It was noted that the main compliance pressure is from non-standardised legislation across the Australian states, rather than Federal Government legislation.

Four out of nine companies acknowledge their corporate governance structure does not highlight any corporate social responsibility function, while five companies are moving away from that structure towards the establishment of one which includes, for example, a social responsibility committee (including environmental matters). According to corporate governance representatives this is a major cultural change that is gradually developing in all construction companies. There is no representation from either the community or suppliers on corporate governance boards, but designated community representative managed liaison activities between the community, local government and the construction company can be found at the site level. Also, Board members from other industry backgrounds who have community links, often take on a role of community representative.

Variations to a separate Board committee include:

- A Sustainable Project Control Group that takes care of communication with the community
- A Corporate Safety and Environmental Quality Committee that is responsible for a total quality management system

- An Ethics and Compliance Committee that incorporates OHS, environment, community and ethics
- Sponsorship and encouragement of corporate involvement within the community, through, for example: community action groups, sponsorships, building programmes

On addressing the question of where the impetus for change was emanating, the perception of corporate governance representatives is that changing values filtered down from the large industry partners, such as oil companies, and when a major change occurred, there was a flow-on effect to the construction companies. For example, oil companies have introduced Incident and Injury Free policies to minimise the risk of injury and some construction companies have incorporated these new practices into their OHS policies.

Application of ISO 14001 EMS

All interviewed companies have formal environmental goals defined. They all comply with legislation. Six of the nine interviewed companies have ISO14001 EMS certification and two were considering it. The other company was a parent company and the certification lay with the operating companies (See Table 2).

Table 2: Compliance with Environmentally Related Legislation and Guidelines

Company	Formal Environmental Goals	Compliance with legislation	ISO14001EMS
A	Yes	Yes	No, but operating contractors under the company are
B	Yes	Yes	Yes
C	Yes	Yes	Yes
D	Yes	Yes	No, currently considering, may not need it
E	Yes	Yes	Yes
F	Yes	Yes	Yes
G	Yes	Yes	Yes
H	Yes	Yes	Yes
I	Corporate environmental policy	Yes	No, but considering it

The following reasons are given as to why ISO14001 EMS certification is being adopted:

- Companies are driven by contractual and community requirements
- Importance of being competitive and maintaining quality
- To be a good corporate citizen
- Clients requested it
- Increased public awareness through scientific research of global environmental concerns

Implementing these measures varied among companies; yet all focused on establishing measurable processes and outcomes. The following paragraphs provide some examples which

highlight different approaches based on a theme of Board policy setting with a nominated position being responsible for implementation. For example, in Company A, the Board sets policy, practical procedures and complying with the policy guidelines, while each operating contractor is responsible for the application of EMS.

Companies B, C, E and H follow similar systems at project level. The Business Systems and Environment Manager from Company B is responsible for ISO14001 implementation and each project has its own prescriptive environmental management plan. Company H has introduced a safety first culture at all levels. In environmental risk management the company has developed numerous standards which are modified to suit site conditions. This is similar to Company E which prepares risk and work-ethic statements, with checklists drawn up for each project. Monthly reports cover environmental and safety issues from all sites. In Company C both the Managing Director and Finance Director are responsible for environmental policy as a part of EMS. Depending on the size of project, an environmental manager will be appointed to a construction site while the other managers are responsible for quality and safety. Reporting for EMS and any remedial action is primarily being implemented at the project site.

Waste is a critical factor in any healthy work environment; the following examples indicate some ways it is being addressed. Company D is in the process of implementing the greening side of EMS. Apart from standard forms for reporting, a web-based project management system is used with performance targets aiming to reuse or recycle 90 percent of waste.

Company F's concern is the disposing of contaminated material; by adopting EMS, they have been able to manage the waste more effectively. Each project sets environmental objectives and targets, with controls for all personnel, subcontractors and consultants. Audits and checks, as part of review-compliance reports, go to the Board. When breaches of legislation occur, it is taken seriously and discussed on the Board of Directors agenda.

A similar operation occurs at Company I; it has implemented a generalised environmental plan which is primarily about waste control, unless specific environmental issues are required. Reporting flows from the project site manager to senior construction manager and on to the Board. Sometimes an independent project manager will be engaged to represent the client or to perform a third party audit. Auditing of projects is prepared fortnightly and results reported to the Board.

A significant spin-off from developing an EMS process, besides making savings through environmental recycling and minimising waste, is that all companies found that it added quality to their management systems and helped them do a better job.

Communication and Development of Values and Ethics

Since communication has been highlighted as one of the key elements in creating of a healthy work environment senior managers were asked how they communicated the values and ethics of the company, to stakeholders and lower level managers. Six companies communicate their values and ethics through the Annual Report, while two companies use only websites.

Communication techniques tend to fall into two main but interrelated categories – one involves the basic planning and legal notification and the other focuses on the broader community contact. In the first category there is a focus on resolving issues before they arise as well as having processes in place during the project; for example, Company G's two most senior people on the project site liaise with the community. They are also in charge of air quality testing/monitoring, water run-off, to make sure drains are not contaminated with waste. With Company I most of the community issues are resolved during the planning process, long before construction starts. Company A is about to introduce a core requirement for each subcontractor relevant to corporate environmental culture. The subcontractor will have primary responsibility with communicating environmental issues with the community. For Company C, community input depends on each project. For example, if the project is construction-only, then the client will take care of community responsibility. But if the

project includes design and construction, then the contractor takes care of community relations. Community groups often meet with the company representatives to discuss any potential impact on the community. Company B takes a slightly different view – it has provided a number of workshops and displays in shopping centres to advise and involve the community on what they are doing and going to do.

The second category includes more staff and community interaction as well as meeting the legal and planning requirements. For example, Company D has been actively liaising with the local community since the 1970s. They allow a community group to use their premises for meetings and for the last ten years office staff members have been able to take one day off to contribute to community projects.

Company E follows the legislative requirements, by notifying the community via mail drops and notices to keep them informed. Any environmental concerns related to a project will be resolved at the project site level. Similarly, Company H provides letter drops, organises meetings or may even go to schools and run little competitions, giving children hats and T-shirts. Project managers of Company F are also encouraged to be actively involved in the community through local governments, sporting teams and schools. Some of its construction sites have active stakeholder relations through regular meetings, public display and media release forums.

Compared to all other companies, Company I takes a particularly inclusive approach to communication of its environmental values and ethics. This approach is based on the view that a construction company can only run with a huge amount of delegation, since each project is a mini business. Senior management is seen as a resource for project managers and construction employees. Workers are empowered to make their own value judgments from the examples that management set. With a culture of open communication staff members produce regular feedback through the website to ensure continuous business improvement.

DISCUSSION

All companies believe their core values reflect the idea of maintaining of a healthy work environment – primarily meaning the construction site OHS measures which ensure people return home in the same or better condition than when they arrived at work. Seven companies apply ISO 1400with two others actively considering it. Such findings indicate the majority of large Australian construction industry companies pay attention to both a healthy internal and external environment to some extent.

How companies approach the development and responsibility for formal environmental goals varies from company to company. For example, some companies propose that everybody has a corporate social responsibilit*y,* while in other companies specific committees are introduced to define guidelines and implement systems. The key point, however, is that by introducing EMS, companies demonstrate a commitment to have effective management of their business to remain globally competitive and at the same time improve the general environment. This finding supports Petrovic-Lazarevic (2005), Price and Newson (2003), Myers (2003), Burnett (1999) and Westphal and Zajec (1997), who note that companies seem to be fully aware of the importance of supporting a healthy environment for their business success.

The nature of ISO14001 EMS means companies have to deal with the external environment and address such issues as policy, developing different forms of communication with their community, and fulfilling legal regulations or guidelines. In fact if they modify their corporate governance structure to cater for EMS it will improve their corporate environmental culture. It should help them to more easily communicate their both external and internal healthy environment concerns, and consequently improve their image in the community.

Even though the use of OHS measures in the Australian construction industry companies helps them to have a caring image for the site environment, it seems that there are still some issues, including sub-contactors safety and cooperation between, industry, union and government to be resolved. These issues, by all means influence the community and competitors perception of the company's ethical stance.

The research findings indicate that companies provide information to the community related to their ways of improving both the work environment and external environment through statements of organisational vision and direct liaison with the local community. But it does not seem that they are keen to know the community perception of their core company healthy environment values. Therefore, communication appears to be one-sided. To promote a full understanding of the company's healthy work environment vision, however, it is necessary to have a two way information flow. Knowing the community perception of the company's commitment to preserving a healthy environment, helps both top management to correct their actions, to gain a reputation of a company that cares for its environment, and at the same time minimises the gap between official organisational environmental aspirations and its perception in the community. The companies will have an image that they care to preserve both working healthy environment and external environment and consequently improve their competitiveness.

CONCLUSIONS

Australian construction companies are re-thinking their health, safety and environmental responsibilities, and appear committed to improving their industry competitiveness. They cope with much environmental legislation that is not standardised from state to state; while at the same time apply their own ISO 14001 EMS standards that expand on the minimum set by legislation.

The companies' core values articulated in the organisational vision include healthy work environment, although the understanding of what this means varies. Under a classic governance structure, it is possible that diverse understandings of a healthy work environment may contribute to a gap between the vision of the company and the way it is perceived in the community.

Companies are aware of the importance of having an image of a good corporate citizen who cares for the environment. They are in the process of or intend to improve their governance structure in accordance with EMS standards thus improving stakeholder input. When it comes to OHS measures, however, there are still issues such as sub-contactors safety and cooperation between, industry, union and government to be resolved. Even where companies have established environmental culture or corporate social responsibility committees, none has a community or supplier representative. It is noted that there are some attempts to build the corporate environmental culture by liaising with the community directly, but still there is little knowledge sharing among companies and local government, local community and customers. Information flow tends be one-sided from the company to the community. There is little evidence of companies actually embracing the concept of active involvement by the various stakeholders in the development of a corporate environmental culture. Without information about the community perception of a company's environmental commitments, a gap will remain between official organisational environmental aspirations and its acceptance among stakeholders. As a result, the industry competitiveness may be jeopardised.

This paper does not purport to be a detailed quantitative study, rather the start to the process. It does, however, present some insight into the issues surrounding the development and implementation of ISO 14001. This study does encourages further research into the implications of EMS in areas where, for example, there is a potential clash between newly designed, cost effective building and the need to preserve a healthy work environment.

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