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**Environmental Management Systems (EMS) and Learning in Small and Medium
Size Establishments (SME): A Case Study from the Beverage Industry**

By

Maureen Cooper

(BASc, University of Waterloo, Waterloo, 2006)

A thesis

presented to Ryerson University

in partial fulfillment of the requirements for the degree of

Master of Applied Science

in the Program of

Environmental Applied Science and Management

Toronto, Ontario, Canada, 2011

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Maureen Cooper

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Maureen Cooper, 2011

Master of Applied Science
in the Program of
Environmental Applied Science and Management, Ryerson University

ABSTRACT

For businesses that are internally motivated to incorporate environmental management into daily practice, an environmental management system (EMS) is an effective tool to address environmental impacts. Yet, certification to formal EMS standards such as ISO 14001 may pose challenges for the unique needs of a small and medium-sized establishment (SME) such as Company Y, who seeks systematized environmental management while maintaining flexibility and openness.

The researcher explores the proposition that EMS implementation and performance of an SME in the position of Company Y can be optimized by incorporating key tenets of Organizational Learning theory (OLT) into decision making and operations. Primary questioning, observation, and literature research are used to characterize Company Y's environmental decision-making and communication structure. For growing SMEs that are not comfortable with the formal requirements of third party EMS certification, this thesis suggests that OLT can be an effective approach to integrate environmental management into their business.

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LIST OF ACRONYMS

BAC	Brewers' Association of Canada
CSR	Corporate Social Responsibility
EC	Environmental Committee
EMS	Environmental Management System
GMO	Genetically-Modified Organism
OLT	Organizational Learning Theory
PDCA	“Plan, Do, Check, Act”
SAGE	Strategic Advisory Group on Environment
SME	Small and Medium Size Establishment
WHMIS	Workplace Hazardous Materials Information System

Chapter One: Introduction

1.1. Overview

The focus of this case study is Company Y, defined in the category of a Small and Medium Size Establishment (SME) (IC, 2011), within the brewery sector of the beverage industry. Company Y is actively progressive in adopting environmental practices thanks in part to its proximity to desirable alternative energy sources. However, other practices are more attributable to the environmentally responsible culture that is cultivated within the organization. Due to this combination of innovative operating techniques and cutting-edge corporate culture, Company Y has been recognized as a leader in green business, winning numerous awards in the category. Company Y seeks to create an appropriately structured environmental management system (EMS) that caters personally to its characteristics, but at the same time, is credible and provides useful results for benchmarking between other companies within the industry.

Company Y is unusual in that its environmental motivations have not come out of stakeholder pressure or catastrophe or regulatory requirements, but instead are due to internal efforts and employee-driven pressure. The organization also chooses to establish many of its initiatives before making them public, emphasizing a desire to make sure implementation is correct rather than advertising an initiative as a manipulative appeal to the public, a process commonly called greenwashing (Laufer, 2003). Both of these characteristics – internal pressure rather than external, and implementation rather than greenwashing – make it a distinctive and worthwhile organization to investigate as a case study.

Company Y has investigated the implementation of an environmental management system (EMS) capable of third party certification using an internationally recognized standard such as ISO 14001. Members of its Environmental Committee (EC) have concluded that such an approach is not suitable for their organization because of the associated expenses, the rigid structure of the standard, and the potential bureaucracy that additional paperwork would introduce. In a desire to continue to grow and be further recognized for its environmental stewardship, Company Y has sought out input from academic institutions, including Ryerson University, for assistance in how to move forward.

Company Y can be metaphorically described as a runner who has achieved success from natural talent, but wants to get to a greater level of achievement such as the Olympics. They seek

advice in how to improve by taking a more rigorous approach to training, equipment, technique and diet, while still operating in a comfortable manner where they are not being over-coached and structured so that they lose their original inspiration and energy for running.

This research provides the potential for a better understanding of the capabilities and limitations of conventional EMSs when applied to SMEs, and suggests appropriate EMS decision-making structures and approaches for SMEs. The tailored EMS for Company Y should be able to create the opportunities for learning within this SME, in a way that respects and builds on the largely informal and decentralized approach to environmental decision-making that is likely to be common to many other SMEs. An approach of this type could be beneficial to SMEs of any sector, moving beyond the beverage industry sector. Very little research has been conducted or presented linking decision-making, EMSs and EMS standards, organizational learning, and SMEs. Research collected from this exercise should contribute to the subject of Organizational Learning Theory (OLT) and EMSs, as well assist Company Y in maintaining its competitiveness at the North American level as a leader in environmental stewardship within its sector.

The main objective of the research is to identify the current status of environmental management at Company Y through interviews and observations. From this information, a baseline assessment of the company's environmental management is established, in other words what could be considered an audit of the company's environmental activities. From this point, a gap analysis is completed and then communicated to Company Y as to where there is room for improvement. One difficulty that often occurs within a company when trying to learn is that it is often a solitary process or journey. Without comparison to other companies in the industry, or other more advanced environmentally-friendly companies, it is difficult to discern what needs improvement. The outcome of this research is to provide a gap analysis which would guide Company Y on what areas of its management need improvement, which is often something that only a third party can provide. One of the major benefits of ISO 14001 certification is the requirement of a third party audit. Yet, if an organization chooses not to utilize the ISO 14001 certification option, there are other alternatives.

Along with an amalgamation of its environmental management status, in this thesis Company Y is assessed according to criteria found in literature as to whether it subscribes to the theory of organizational learning. If this dynamic of behaving as a learning organization is found

to be true for Company Y, then the needs of the organization with respect to its business and environmental goals, the benefits of an EMS, as well as the necessary attributes of a learning organization, can be combined to reach an enhanced version of what Company Y's EMS can be.

It should be emphasized that for Company Y the argument that environment and economy are inter-linked and not mutually exclusive is already an accepted understanding within the organization. Also to note, the rate at which Company Y is incorporating its green initiatives appears commendable, and not to be understated. The solution would appear to be to identify some way to maintain Company Y's environmental momentum by finding a suitable EMS that strives to be innovative in its approach to environmental management, but is not overly formal and structured. Similar to the metaphor of the runner, what is needed is a systematized method to enhance performance without taking away from the runner's natural exuberance and ability.

1.2. Research Questions

The following research questions are of main interest during this case study, and form the scope by which the information collected through observation, interview, and questionnaire will be assessed:

- As an SME, what should Company Y consider in implementing an EMS?
- What is the status of Company Y's current environmental efforts, with respect to typical EMS standards?
- Why is Company Y uncomfortable with implementing ISO 14001?
- In what ways does Company Y exemplify the traits of a learning organization?
- What are the traits of a learning organization, according to previous literature?
- What is the previous linkage made between the two concepts of EMSs and learning organizations?
- How might the attributes associated with a learning organization assist Company Y in establishing an EMS?
- How might the attributes associated with a learning organization allow Company Y to create a better EMS rather than only relying on ISO 14001?

1.3. Hypothesis

The hypothesis being tested throughout this thesis is summarized as follows:

An SME such as Company Y can achieve enhancements in environmental performance by applying OLT in EMS implementation even if it chooses not to adopt a formalized approach to EMS with third party certification, such as certification to ISO 14001.

Chapter Two: Research Methodology

This chapter aims to provide a summary of the methodological approaches used in this thesis, the results of which will be elaborated on in the sections to follow.

2.1. Research Strategy and Design

This research is meant to assist Company Y in developing an appropriately structured yet comparatively informal EMS approach to environmental decision-making and action, establish how environmental issues are addressed and communicated throughout the organization, determine who the decision makers are and how decisions are made, and create the opportunity for improved organizational learning and performance. The answers to these types of questions are gathered from interviews, questionnaires, observations, and interactions with Company Y, conducted by the researcher. Participants include internal employees of Company Y, as well as persons in other organizations relevant to Company Y. Information gathering for this thesis is collected through three main sources:

- an academic review of the concepts of EMSs and OLT,
- a primary investigation of the case study organization through observation, interaction, and formal interviews conducted in person or by phone,
- understanding of Company Y's stakeholders through primary research and external questionnaires

The academic review begins with investigating the generic approach to EMS implementation and assessing Company Y's status by relying on traditional EMS tools. In comparing alternatives to a formal EMS, the ISO 14000 series has been chosen as the formal EMS for comparison, given its global recognition and popularity within the North American region in which the case study organization is located. It is also the international environmental management standard about which Company Y is most familiar.

The second component of the academic review is research on the crucial attributes associated with learning organizations. Attributes from a variety of sources describing the

concept of learning organizations are compiled and form the framework for evaluating how much Company Y's behaviour mimics that of a learning organization.

Primary qualitative information is then collected from the case study organization. Interviews and questionnaires are chosen as an effective method to gather information and perform stakeholder consultation when investigating a solution to strategy implementation. The type of data collection for this research is meant to explore each participant's conceptions or values about the environment through their speech or narrative, as well as what is conveyed non-verbally. Manifest content includes obvious information that is communicated in the spoken form during the interview; while latent content is information conveyed non-verbally in a more subtle form (Sommer and Sommer, 2002). Interviews, interactions, and observations serve as the tools to examine Company Y's approach to environmental decision-making and organizational learning.

The interview process was semi-structured and questions were constructed as open-ended, using a shorter version of the same questions for the external questionnaire. The semi-structured process allowed the interviewer to ask the same questions to all respondents, but with the ability to change the order in which the questions were asked, as well as the manner and wording (Sommer and Sommer, 2002). Probing for more information was done, but is much more limited than for an unstructured, in-depth interview (Ritchie and Lewis, 2003). Sommer and Sommer (2002) warn that the further the researcher moves from a structured procedure, the greater the risk of interviewer bias. The interviewer must also possess a diverse and challenging range of qualities to be an effective in-depth interviewer, such as being able to listen and hear, yet still act in an active role as facilitator (Ritchie and Lewis, 2003).

To account for the novice experience of the researcher in capturing information as accurately as possible, the researcher took handwritten notes of the participants' responses. Qualitative data from the respondents' answers was summarized from the interviewer's note taking. Sommer and Sommer (2002) state that audio or video recorded interview information increases accuracy of responses, but can also increase a respondent's discomfort and compromise confidentiality. In this case, the researcher strove to write down as much detail as possible in interviewing so as to minimize paraphrasing to a certain degree. Though note taking can give participants unintended cues such as when to pause or slow down (Ritchie and Lewis, 2003), the researcher attempted to listen fully to each question's response and write down notes once the

respondent indicated that they were nearing the end of their answer. Phone interviews provided no difficulty in this regard. The final version of the internal questionnaire is located in Appendix B, with a summary of internal interview coded responses located in Appendix C.

Interviews took place in person at Company Y or over the phone, with each taking approximately 30 minutes on average to complete. During this entire process, confidentiality was maintained. Ryerson University stipulates that all research involving human subjects in information and data gathering be approved by The University's Ethics Board, and that all involved participants agree in the form of a signed consent form. These matters were all followed. The provided Consent Agreement form is located in Appendix A. Also, given that this case study is conducted for an actual organization, all specific names of persons and places remain confidential. Collected information was kept protected on data-encrypted files.

Participants who were interviewed were selected employees from Company Y. Selection was based on the researcher's discretion, ensuring that participants represented employees from each department, at varying levels of the organization, both part-time and full-time, and non-EC and EC members. If a desired employee was not available for interview, then someone in a position directly linked to that employee would be interviewed.

The selection process for external questionnaire participants involved first drafting a list of all of Company Y's external stakeholders, such as vendors, suppliers, regulators, operations, and other affiliated associations who have an ongoing, frequent business relationship with Company Y. An illustration of this process is provided in Figure 5.1. Company Y assisted in providing contact information for the researcher who then separately contacted external organizations to respond by email questionnaire. The final version of the external questionnaire is located in Appendix D, with a summary of external questionnaire coded responses located in Appendix E. Questionnaire completion was based on availability and willingness to participate. All organizations that participated were closely linked to Company Y's business, but those specific individuals who completed the questionnaire were in positions related to the environment within their organization.

Questions were composed in such a way that they incorporated information about both the traditional EMS tools used for implementation, as well as criteria for evaluating Company Y as a learning organization. Respondents' answers provided context for whether or not Company Y was satisfying EMS requirements. Any gaps identified through observation and interview

responses were addressed by applying the attributes or disciplines of a learning organization within a sustainability context. External participant responses were related to the same criteria as internal responses to evaluate corporate culture, with the addition of evaluating their perception of Company Y.

Casual observation was done as a complement to the interviews and questionnaires as a means of offering the researcher the opportunity to observe Company Y's daily business decision-making processes. The researcher was able to observe the physical space of the office, a typical lunchtime EC meeting, as well as the look of the overall business operation and production facility as a means of providing visual context to the information gathered through conversations and interviews. This means of observation provided an important component to the collection of primary research by witnessing environmental-decision making, environmental management structure and strategy first hand in addition to what was discussed in the interviews and questionnaires.

2.2. Literature Reviewed

The literature reviewed focused on the topics of EMS and EMS standards, organizational learning, and SMEs. Thompson (2002) formed the basis for the abbreviated EMS criteria by which Company Y was assessed. Environmental performance frameworks were also investigated, including ISO 14031 and The Natural Step.

Four main literature sources were used as reference for describing learning organizational attributes: Senge (1990), Garvin (1993), Epstein and Roy (1997), and Etzion (2007). Theoretical contributions from Chris Argyris' (1977) "Theories in Action Perspective" and Peter Senge's (1990) "Fifth Discipline" formed the basis for a large portion of theory on organizational learning.

2.3. Case Study of Company Y

A case study approach is taken to investigate Company Y's operations. Data collection, aside from interviews and questionnaires, involved three on-site visits to the facility, observation inside an EC meeting, numerous email conversations between the researcher's two main contacts – the Communications Director (founder of the EC), and a Quality Assurance Coordinator (co-chair

of the EC). Access was also granted to view previous years' meeting minutes and Company Y's employee handbook.

2.4. Limitations and Other Considerations

The number of external questionnaires received was limited due to the voluntary nature of participation and lack of incentive on their part. The busy summer season could have also played a factor in the poor response rate.

As in any case study, the unique nature of one organization limits the capability of fully applying the findings from this thesis to another SME.

Despite some limitations in maintaining confidentiality of the case study organization, Company Y was very open about supplying any information requested on the part of the researcher.

2.5. Summary

A three-pronged approach to data collection is utilized for this thesis, involving academic review of the concepts of EMSs and learning organizations; qualitative data collection from internal employees whose responses are assessed according to EMS implementation requirements and Organizational Learning attributes; and information gathering from external stakeholders to determine external their perceptions of Company Y and evaluate the culture of organizations in Company Y's supply chain.

Chapter Three: Environmental Management Systems (EMS) and Learning Organizations

In this chapter, the theory behind Environmental Management Systems and Organizational Learning are defined and explored. Literature describing the use of the ISO 14001 standard in an SME context and the limitations of the standard are presented here. Key theories and attributes of learning organizations are discussed. Any literature linking these two concepts is included in this section, as well as other environmental performance standards and frameworks useful for this case study.

3.1. Definition of an Environmental Management System (EMS)

An EMS is a system that should anticipate, avoid, or solve any environmental or resource conservation problem by setting strategic goals and objectives; identifying and organizing skilled individuals, technologies and other resources; identifying and assessing options to reach goals; and auditing, and implementing available tools (Thompson, 2002). An EMS should allow an organization to systematically identify and control the environmental impacts of its activities, products or services, and continually improve its environmental performance by setting environmental objectives and targets (ISO, 2010a).

The process of integrating this environmental criteria into business practice through the use of a management standard such as ISO 14001 is meant to challenge conventional thinking about the interaction between business and environment (Strachan, 1997). Environmental Management informally began to be considered in the 1960's, but formal systems were not created until the 1990's with the introduction of standards such as ISO 14001, Responsible Care, and the Global Environmental Management Initiative (GEMI) (Thompson, 2002). Companies and organizations understand now more than ever that the economy and environment are undeniably linked because limited resources from the environment will restrict and limit economic options (Burns, 1999).

An effective EMS should assist organizations in minimizing environmental impacts, while at the same time either reduce costs or increase productivity (Bansal and Bogner, 2002). By bringing environmental activities into the mainstream of corporate decision-making through the

means of a useful EMS, organizations can better transition towards sustainable development (Velasquez, Esquer & Munguia, 2011). In creating an EMS, an organization can certify itself through ISO 14001, certify its EMS through an independent agent, or pick and choose only certain applicable elements from a standard such as ISO 14001 (Bansal & Bogner, 2002).

3.1.1. ISO 14000 Series of Standards

The International Organization for Standardization is a non-governmental organization that was established in 1947 to develop a worldwide uniform set of standards in technical and safety areas. In 1991, ISO created a Strategic Advisory Group on Environment (SAGE) with a total of 100 representatives from countries and international organizations, who were brought together to define how International Standards could support environmental management (ISO, 2010a). Following a request from the United Nations Conference on Environment and Development during the 1992 summit in Rio de Janeiro (Bansal and Hunter 2003), ISO created its ISO/TC 207 technical committee in 1993 to embark on the creation of the ISO 14000 series (ISO, 2009). Then in 1996, the ISO 14000 series aiding the creation of EMSs was created as a means for managers to formulate and implement a sound EMS (Epstein and Roy, 1997).

ISO 14001:2004 specifically is meant to provide the framework for a holistic, strategic approach to an organization's environmental policy, plans, and actions (ISO, 2010a). By having ISO 14001:2004 as a general reference for an EMS, the goal is to create a common reference or benchmark for communication with other organizations, customers, regulators, the public, and other stakeholders (ISO, 2010a). ISO states that its standards have been purposely made to be very broad-based so that a variety of organizations can implement them, while still complying with legislation and continual improvement (ISO, 2010a). The ISO 14001 standard is also meant to be flexible, with room for interpretations having to do with scope, implementation, improvements, and internal and external communication (Jorgenson, 2007).

ISO has developed 350 International Standards for monitoring environmental aspects such as air, water, and soil as a source of data to support the impact of economic activity on the environment (ISO, 2010a). The ISO/TC 207 technical committee is

responsible for the development and maintenance of 21 published International Standards, and nine other new or revised documents making up the ISO 14000 family of standards (ISO, 2009). The committee is made up of environmental experts from over 100 countries including 27 developing countries, and is headed by one developed country and one developing country (ISO, 2009). Issues are brought forth through a national consensus from each country where interested parties and stakeholders have weighed in on the issues (ISO, 2009). Liaison members from 30 internationally recognized organizations such as the Environmental Defence Fund, International Institute for Sustainable Development, Organization for Economic Co-operation and Development, Sierra Club, United Nations Environment Programme, World Health Organization, World Trade Organization, also sit on the technical committee (ISO, 2009).

According to ISO (2009), ISO 14001 is the most recognized framework for EMSs on a global scale. Originally created in 1996, the newest version was published in 2004 (Gelber, 2004). As of 2007, 154 572 certificates had been issued in 148 countries and economies (ISO, 2009). One reason why the ISO 14001 standard has become popular is because it is possible for organizations to have their operations certified to it by a third party (Epstein & Roy, 1997). Yet certification of conformity to the standard is not a requirement of ISO 14001(ISO, 2009). ISO 14001 is voluntary, like all ISO standards, and as such at first instance there are no legal requirements to certify (Bansal & Bogner, 2002).

ISO 14001 describes the basic elements of an EMS such as organizational structure, planning activities, responsibilities, practices, procedures, processes, resources for developing, implementing, achieving, reviewing, and maintaining the environmental policy (Epstein & Roy, 1997). ISO 14001 initially dealt with standards to be used to improve organizational learning and environmental management subdivided into six subjects: EMSs, environmental auditing, environmental performance evaluation, environmental labelling, life cycle assessment, and environmental aspects in product standards (Epstein & Roy, 1997). The scope of ISO/TC 207 and ISO 14001 has now grown to include the following topics (ISO, 2009):

- EMSs

- Environmental auditing and related environmental investigations
- Environmental performance evaluation
- Environmental labelling
- Life cycle assessment
- Environmental communication
- Environmental aspects of product design and development
- Environmental aspects in product standards
- Terms and definitions
- Greenhouse gas management and related activities
- Measuring the carbon footprint of products

All of these components of the EMS are conducted mainly at the senior management level (Strachan, 1997).

The two fundamental stages of implementing ISO 14001 are development and usage, yet the usage stage is described to a lesser extent relative to the development stage (Balzarova and Castka, 2008). Many sources emphasize the importance of not relying wholly on the implementation of ISO 14001. ISO 14001 is meant as an approach to integrating environmental concerns into daily activities and responding to a need to promote prevention (Boiral, 2007) and should only be used as a base for organizations to begin to consider making significant changes to their corporate culture (Epstein and Roy, 1997). The learning process by which to shift an organization's behaviour towards consideration for the environment is not well outlined in generic EMSs (Strachan, 1997).

3.1.2. Benefits of ISO 14000

The benefits of ISO 14000 for an organization can be separated into four main categories: cost savings, risk management, marketability/credibility, and standardization. According to Baxter (2004), cost savings can be realized since focus is put on reducing resource consumption and waste outputs. Efficiencies can also be promoted by implementing the same standards across markets, sectors, and jurisdictions (ISO, 2009).

Organizations can also avoid potentially costly fines for infringing environmental legislation if an EMS is implemented (ISO, 2010a).

With increasing environmental legislation being imposed on an organization, it must manage its environmental risk and reduce legal, financial and reputation-related liabilities (Baxter, 2004). An EMS can help identify and establish controls to do so; regulators might even lower their level of scrutiny of an organization if it is certified to ISO 14001 (Baxter, 2004). The goal of ISO 14001 at the organizational level is to help reduce its environmental impact, while improving its management control (Bansal and Hunter, 2003). An EMS can provide assurance to management, as well as external stakeholders like regulatory agencies, community, and customers, that environmental impacts are under control and in compliance with environmental regulations (ISO, 2010a).

As environmental awareness amongst consumers continues to grow, an EMS can create opportunities for quality and sales growth by identifying changing customer requirements such as eco-design or supplier programmes (Baxter, 2004). ISO standards also represent the sum of knowledge of a broad pool of international expertise and stakeholders, thereby fulfilling an organization's stakeholders' needs through the international credibility of the EMS (ISO, 2009). An EMS can convey credibility of an organization's commitment to environmental issues (Baxter, 2004) internally, as well as externally. Advertising environmental commitment can also indicate to employees that they work at an environmentally responsible organization (ISO, 2010a).

The ability of an EMS to provide a framework for measuring and monitoring environmental performance and for communicating information (Baxter, 2004) provides the opportunity for standardization or benchmarking between organizations within a sector or industry. At this societal level, the ISO 14001 is meant to present itself as a legitimized system of standardization that would encourage international trade and sustainable development (Bansal and Hunter, 2003). ISO's environmental standards can be used for conformity assessment such as by audit, inspection, or certification, to enhance investor confidence in products, services, and systems (ISO, 2009). An organization's implementation of an EMS means that the specific organization can

participate in the ISO standards development process, which is built on participation by its national member institutes on a global scale (ISO, 2009).

3.1.3. Debatable Role of the Certifiable EMS

ISO 14001 is used as an internal management tool, as well as a way to publicize an organization's legitimacy to its stakeholders (Boiral, 2007). Studies suggest that businesses do benefit from adopting ISO 14001 in areas such as internal communication between staff and management, as well as external recognition and market benefits (Balzarova & Castka, 2008). The driving motivation for companies to become certified is either because of corporate image, marketing advantage, community relations, or because of a desire for environmental performance and emergency preparedness (Balzarova & Castka, 2008). However, given the high cost of developing an EMS such as ISO 14001, some companies are dissatisfied after their operations are certified and their systems are found to be less effective than expected (Balzarova & Castka, 2008). According to Bansal and Bogner (2002), certification could cost as much as \$200,000 USD for larger, industrial sites, or \$10,000 USD for smaller, stand-alone sites. If an organization's motives for implementing an EMS are not right, then an EMS can become a costly bureaucratic burden (Gelber, 2004).

Upon becoming certified, there may be a lack of motivation to maintain the system on an ongoing basis (Balzarova & Castka, 2008). It is often more difficult for an organization to maintain certification rather than obtain it (Boiral, 2007). Adoption of ISO 14001 alone will not provide maximum company benefits if very little disturbance is introduced to change the organization's original operations (Epstein & Roy, 1997). A company must also consider other important stages in the supply chain outside of its own to significantly reduce its environmental impacts (Jorgenson, 2007).

A case study involving nine ISO 14001-certified Canadian organizations observed that certification led, in most cases, to organizations' superficially behaving as though they conform to the standard (Boiral, 2007). Some real improvements were observed as a result of what the standard prescribed, but were mainly involving technical and administrative aspects that remained separate from daily operations (Boiral, 2007.).

Certification is incorrectly viewed as the end goal (Burstrom von Malmborg, 2002). Companies lose the intent of the EMS as a system to manage pertinent environmental issues because they treat the implementation of an EMS as a kind of “badge on the wall” (Gelber, 2004, p.10). ISO 14001’s formal structure has allowed organizations to satisfy the requirements of certification and reinforce the legitimacy of their systems without really having to question their current practices (Boiral, 2007). Instead, it should simply facilitate a company’s ability to learn within the organization and create important expertise that might be found useful as a competitive advantage for the company (Epstein & Roy, 1997).

The case study described in Boiral (2007) reports that the main driving force behind the implementation of ISO 14001 was for a company to legitimize itself. The result led to only relatively small improvements in actual environmental practices and performance, despite the standard’s presumed advantage of being rigorous and rational (Boiral, 2007). Etzion (2007) states that the environment, for many organizations, is distinct from its core business, causing a counterproductive approach to creating a competitive environmental strategy, which should consist of greater involvement in the organization’s core functional units yielding mutual economic and environmental performance.

A company should also be moving towards a trend of openness and co-operation with its stakeholders in disclosing its environmental performance and data (Jorgenson, 2007). Yet, ISO 14001 has been criticized for having a weak focus on actual environmental performance of a company or its plant (Balzarova and Castka, 2008). The United States’ (US) Environmental Protection Agency (EPA) has been reluctant to endorse ISO 14001 because it has not clearly been shown to influence an organization’s environmental performance (Bansal and Bogner, 2002). Strachan (1997) also questions the validity of the EMS to raise a firm’s environmental performance, concluding that organizations that follow a standard like ISO 14001 for environmental excellence are not likely to reach their aim. ISO 14001 does not set performance standards, requiring only that organizations set targets that do not necessarily have to be met, and to create systems for monitoring that reduce environmental impacts (Bansal and Bogner, 2002).

Instead of establishing a criterion for performance, ISO 14001 establishes a standard for the process, and sets up no specific demands for environmental improvements (Jorgenson, 2007). The development of ISO 14001 to be able to suit all companies, globally, in any industry, has been criticized as not creating a big enough challenge for those organizations that are heavier polluters to certify themselves (Bansal and Bogner, 2002). Another criticism is that organizations with better environmental reputations are more likely to get certified for ISO 14001 and those that are most in need of certification may be least likely to seek it (Bansal and Bogner, 2002) because of a need to improve their environmental performance. Thompson (2002) recommends improvements to ISO 14001 in the areas of: controlling social aspects and impacts, protection of green spaces and natural areas, linking to other popular environmental performance principles that could act as moral compass for ISO 14001-based organizations, reporting of environmental performance information to external stakeholders and decision makers, and having the definition of the environment include social, cultural, and economic factors.

According to Burstrom von Malmberg (2002), the traditionally specific, pre-defined role of an EMS such as ISO 14001 is considered as a narrow and short-sighted view of the tool. Burstrom von Malmberg (2002) instead recommends an elaborated view of the EMS, reflecting the need for an organization to be flexible, creative, and adaptive in dealing with increasingly complex environmental issues. True environmental and financial performance can only be accomplished through significant changes in corporate culture, structure and systems (Epstein and Roy, 1997). Strachan (1997) also emphasizes that an EMS overly stresses a mechanistic solution, and should be replaced with a more flexible form of management, more in keeping with the principles of a good learning organization. Although EMSs are gaining popularity globally for providing structure in integrating environmental management into daily business operations, they do not offer a vision to guide organizations towards sustainability; yet are useful in maintaining a company's direction and documenting progress (Burns, 1999).

3.1.4. Challenges for SMEs in Applying EMSs

Small and Medium-Sized Establishments (SMEs) are defined, according to Industry Canada (2010) as “an establishment which employs, on average, less than 500 employees in a given year”. This collective of organizations is an important part of the economy, with 90% of businesses on a global basis considered as SMEs (ISO, 2010a). As a result, SMEs make an important collective contribution to economic growth, employment, as well as environmental impacts from by their activities, products and services (Baxter, 2004). According to Hillary (2004), the heterogeneous nature of SMEs creates difficulty in generalizing the environmental impacts and strategies of the sector, leading to a lack of conclusive literature on the adoption of an EMS. Hillary (2004) points out that SMEs do benefit from the adoption of an EMS, but non-formal EMSs can also be just as beneficial. Baxter (2004) also mentions that an official EMS supported by certification may not be appropriate or desirable for every organization, and instead emphasizes that the importance is actively engaging in the continual improvement of an organization’s environmental performance. An SME has disadvantages when implementing EMSs based on ISO 14001, due to its size and resources (Heras and Arana, 2010). Etzion (2007) affirms that SMEs may be more competitively able to incorporate and develop potentially disruptive innovations than larger organizations because SMEs tend to be more flexible and agile than their larger counterparts who more frequently stay committed to existing products and processes.

Delay in adopting an EMS for SMEs can happen for a number of reasons. In certain areas, environmentally correct behaviour is not always appreciated enough to be rewarded by the market (Cambra-Fierro, Hart & Polo-Redondo, 2008). SMEs have limited resources and so the adoption of an EMS must assure that economic profit will result from an environmental effort (Cambra-Fierro et al, 2008). Other factors that may delay EMS implementation include a difficulty in finding good quality advice and information, a lack of available human resources for such an undertaking, as well as a lack of pressure from customers to change business practices compared to larger organizations (Hillary, 2004). Also, SMEs may resist simply because they consider that their environmental impact is relatively small (Hillary, 2004.).

The appropriateness of formal EMS systems has been questioned for SMEs, given that many firms have simple organizational structures and few documented procedures making the cost of implementation often not worthwhile (Cordano, Marshall & Silverman, 2010).

3.1.5. The Role of Informal EMSs

The concept of a scaled down version of a formal EMS for SMEs can be a desirable option. These systems still retain all of the same elements of policy making, planning, and implementation, as well as environmental goals, training, budgets, supplier criteria, and formalized responsibilities (Cordano et al, 2010). The disadvantage is that these simplified systems do not have the same kind of external impact or recognition as ISO 14001 (Heras and Arana, 2010).

ISO has also created an SME Task Group to create a standard suitable for SMEs that often face in implementing an EMS (ISO, 2010a). It has proposed a versatile ISO 14005 standard for SMEs, published in Winter 2011, which suggests a phased approach to EMS implementation and the inclusion of environmental performance evaluation (ISO, 2010b).

Described in its simplest form, EMS implementation is broken down into just two main steps (Baxter, 2004): 1) Attain management commitment by building a team and a business case for implementation 2) Conduct a baseline assessment considering physical boundaries, costs and benefits, environmental legal requirements, existing management practices, current policies, and environmental indicators, and the health and safety system. Comparatively, Bansal and Bogner (2002) recommend four key steps for EMS implementation: (1) Identify all of the organization's environmental aspects, or interactions between its business and the environment; (2) Develop an environmental impact mitigation plan involving an environmental policy, goals and target setting, delegating responsibility for the EMS, setting up documentation processes, and changing the organizational structure and systems to better enforce goals and policies; (3) Implement policy, and work towards objectives through communication, training, and proper documentation. Identify actual environmental impacts and address any goal

nonconformances; (4) Assess the EMS through a management review process and make any changes deemed necessary.

Burns (1999) also speaks to the key components of EMS implementation: creating an environmental policy to be communicated internally and externally, identifying all sources of environmental impacts due to an organization's operations, establishing short-term and long-term objectives and targets, training and awareness, good design of environmental performance indicators, and review by management.

3.2. Organizational Learning Theory

3.2.1. Definition

The concept of organizational learning can be traced back to Chris Argyris, who defined it as “a process of detecting and correcting error”, error being “any feature of knowledge or knowing that inhibits learning” (1977, p.116). Senge (1990) defined learning organizations as:

“organizations where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together” (p.1)

Other subsequently modified definitions of a learning organization are of an organization that is capable of “creating, acquiring, and transferring knowledge” (Garvin, 1993, p.80) and is willing to change as a result of what is learned (Thompson, 2002). According to Velasquez (2011), learning organizations should be able to respond to the changing environment by aligning corporate values with human resource values, and be able to integrate business with the natural environment in a practical way through the use of tools and disciplines. The key distinguishing factor of a learning organization is that new ideas and knowledge generated by the company must be applied to a company's activities (Garvin, 1993).

3.2.2. Single Loop versus Double-Loop Learning

Argyris (1997) writes that organizations, just like individuals, have two different behavioural designs: the first is how humans believe they act, referred to as their espoused behaviour; and the other is their actual behaviour, named their “theories-in-use” (p.10). Just like individuals, organizations often can detect the discrepancies between the two behaviours in other parties, but not in themselves (Argyris, 1976).

Traditionally, organizations adopt adaptively or reactively, whereas learning organizations work off the idea of generative learning (Strachan, 1997). Adaptive learning and generative learning are also referred to as single-loop or double-loop learning processes, respectively (Argyris, 2008). The common theories-in-use behaviour for human beings is to act as single-loop learners, which provides stable working environments yet are not opportunities for real systemic learning (Argyris, 1976). A single-loop learning process involves the detection of a change in the internal and external environment, followed by the need for a correction (Epstein and Roy, 1997). Participants are encouraged to learn as long as learning does not question fundamental design, goals, and activities of the organization in single-loop learning (Argyris, 1976). In single-loop learning, a correction can change an action, but the change still occurs within the same governing values, whereas double-loop learning involves changing the underlying values first and then the correcting the actions (Argyris, 1997). A likely response to correct ineffective single-loop decision-making is to increase control and secrecy, resulting in withdrawal and passivity from within the organization instead of perceiving it as a shift towards double-loop learning (Argyris, 1976).

Argyris (1977) describes an effective double-loop learning organization as a place where underlying assumptions, norms, and objectives are open to questioning, and any discrepancy between an organization’s actual and espoused objectives and policies could be challenged. Individuals within a healthy functioning learning system should also be willing to advocate, as well as be encouraged to inquire and confront anything being advocated (Argyris, 1977.). The second loop of double-loop learning is the process of management review (Epstein & Roy, 1997). Double-loop learning happens when an organization not only detects an error, but also questions its underlying policies and goals as well (Argyris, 1977). Participants are allowed to ask fundamental questions about the

organization (Argyris, 1976). Generative learning occurs within a functioning learning organization when authority and responsibility are delegated throughout the organization and a more horizontal organizational structure exists (Strachan, 1997). The added component of a management review of an EMS' effectiveness in double-loop learning challenges and examines the company's values, strategies and policies before any direct problem occurs (Epstein & Roy, 1997).

3.2.3. Development of a Learning Organization

Argyris (1976) theorized that an organization's change towards double-loop learning requires a change in the organization's as well as each individual's current behavioural theories-in-use. The greater an individual has fused their goals and ambitions with their own organization, the greater that individual will feel a sense of self-expression (Argyris, 1954). The goal is to shift from a fear-based, top-down strategy, towards a self-disciplined strategy based on passion, curiosity, and trust (Senge, Carstedt & Porter, 2001). Argyris (1977) also emphasized that the double-loop learning should be initiated from the top of an organization.

Leadership from the organization should develop and communicate clearly a broad, strategic framework; instead leadership has degenerated into merely improving operations (Porter, 1996). Learning still has to take place within all levels of the organization, instead of figuring it out from the top and having everyone else follow orders from one leader at the top (Senge, 1990).

In further research on organizational decision-making, Argyris (1976) identified two important factors to consider: (1) the ability of the organization to produce valid information for decision-making, even as decisions become more important; and (2) the ability of the receiving groups within the organization to correctly interpret the available information for decision-making. If an organization is not prone to uncovering errors and unpleasant truths out of accurate feedback, problems can be hidden creating a rigid and deteriorating working atmosphere (Argyris, 1977). Learning can also be blocked if the concept of learning is limited to just problem-solving, or if it is assumed that people only need motivation to learn (Argyris, 2008).

The popularization of the concept of learning organizations can be attributed to Peter Senge's book entitled "The Fifth Discipline: The Art and Practice of the Learning Organization" in 1990. Senge (1990) claimed that by mastering five basic disciplines, an organization could distinguish itself from that of a traditionally controlling organization to that of a learning organization: personal mastery, mental models, team learning, systems thinking, and shared vision.

Similarly, Garvin (1993) identifies four areas of consideration for a learning organization: learning from your own experience and past history; learning from the experiences and best practices of others; transferring knowledge quickly and efficiently throughout the organization; systematic problem solving; and experimentation with new approaches.

Epstein and Roy (1997) provide a pyramidal building set of skills a learning organization must possess. At the base, are the skills and knowledge of the people in the organization, specifically their expertise and qualifications. The next stage is the physical technical systems that exist within the organization, such as the hard data (i.e. monitoring) and codified procedures (i.e. policies) that are created over time. The third level represents managerial systems, where an organization accumulates knowledge, and controls and evaluates its processes. Finally at the top stage, the organization's values and norms are so fundamental that they can shift the entire culture. The above described attributes of learning organizations are listed in Table 3.1 below for each source as a means of comparison:

Table 3.1 Literature Sources of Learning Organization Attributes

Senge, 1990	Garvin, 1993	Epstein and Roy, 1997
1. Personal Mastery	1. Learning From Their Own Experience and Past History	1. Skills and Knowledge
2. Mental Models	2. Learning From the Experiences and Best Practices of Others	2. Physical Technical Systems
3. Team Learning	3. Transferring Knowledge Quickly and Efficiently Throughout the Organization	3. Managerial Systems
4. Systems Thinking	4. Systematic Problem Solving	4. Values and Norms
5. Shared Vision	5. Experimentation with New Approaches	

Each literature source builds off of the earlier one with respect to the listing of Organizational Learning attributes. Senge (1990) expands Argyris' (1976) investigation into behavioural theories-in-use. An organization's actual mode of behaviour, similar to an individual's, is referred to by Senge (1990) as use of subconscious mental models that an organization needs to self-identify before it can begin to change its behaviour and actions. These assumptions and generalizations are deeply ingrained so that we are not consciously aware of how we understand the world and how we act as a result (Senge, 1990). A learning organization must be able adjust these potentially limiting perceptions by self-reflecting and being open to detect any errors in assumption that prevent opportunity for new decision-making and design (Thompson, 2002).

The success of an organization is not only dependent on behaviour, but also on the support of employees towards personal and professional development in the form of lifelong learning (Thompson, 2002). Epstein and Roy (1997) list this component as skills and knowledge, while Senge (1990) defines this concept as personal mastery. Employees should be personally motivated to continually learn how the environment is affected by

their actions through development programs such as community outreach or training courses (Thompson, 2002).

Opportunities for collaboration in groups encourages learning through the exchange of knowledge by providing the opportunity for skilled groups of people to take a broader perspective of issues and to identify behaviours that undermine learning (Senge, 1990). Effective team learning also prevents stagnation, either through cross-functional teams or feedback loops that improve efficiency and achieve consensus easier (Thompson, 2002).

Physical technical systems can be formed as procedures and usable data from the collection of pertinent knowledge (Epstein & Roy, 1997) gathered from individuals or teams as long as it is accurate and appropriate (Argyris, 1976). This information needs to be transferred easily and quickly throughout the entire organization (Garvin, 1993). Management is then able to trust the legitimacy of the received information to encourage further learning (Argyris, 1976), and properly interpret it for decision-making. Managerial systems provide the opportunity for review of the system prior to making a final decision (Epstein & Roy, 1997).

Argyris' (1976) double-loop learning model is developed in later literature through Epstein and Roy's (1997) description of managerial systems, Senge's (1990) concept of systems thinking and Garvin's (1993) inclusion of systematic problem solving. Each literature source highlights the importance of an organization's willingness to not only correct an error upon review, but also for management to question related policies and actions prior to arriving at a solution. A systematic approach to problem solving considers a larger scope involving not just the immediate problem, but also our actions or behaviours surrounding the problem (Senge, 1990). Garvin (1993) also suggests that a learning organization be open to consider new approaches and be flexible to take risks in experimenting with different solutions.

An effective learning organization willing to take risks is able to challenge itself by creating an innovative strategy. Senge (1990) describes how an organization must have the capacity to collectively share a vision of the future it wants to strive to create (Senge, 1990). For this type of collective strategy, members of the organization must share common values and norms (Epstein & Roy, 1997). A shared corporate goal has the most

impact on behaviour if it is fully embedded in the culture of the organization (Thompson, 2002). Long-term goals must be considered commitments out of a common identity and not merely compliance (Senge, 1990).

It is important to note the difference between an organization's environmental management strategy and an EMS. Strategy is one component of the system, and addresses the organization's objectives for the long-term development of the organization (Thompson, 2002); the EMS encompasses all aspects of an organization's approach to minimizing its environmental impacts (ISO, 2010a), including a strategy.

3.3. The Link Between Organizational Learning and Environmental Management

Very few literature sources have linked the concepts of organizational learning and environmental management. Etzion (2007) provides a review of organizational theory and environmental strategy, writing that limited information combining the two concepts is available. Rolker-Denker (2011) combines these two concepts, specifically within the context of health organizations.

ISO presents a cyclical model for its 14000 series that theoretically incorporates management review, a key step in Argyris' (1976) double-loop learning model. Named the cyclical Plan-Do-Check-Act (PDCA) strategy, each standard within the 14000 series is categorized within one of the plan, do, check, or act steps, depending on the part of the process in which the standard is involved (ISO, 2010a). The "Plan" stage should ask why an EMS is needed and what initiatives are already in place by comparing the existing EMS to a formal EMS, or completing a gap analysis (Thompson, 2002). For example, ISO 14001 is part of the "Plan" category, whilst ISO 14031 is part of the "Do" category. The "Do" category provides the opportunity to try different implementation strategies. An organization can decide to incrementally build on its current practice, erase what it has been doing and start something else, select a test case in one area of its business before applying it to the whole, or map out its own strategy (Thompson, 2002). The "Act" stage is meant for management review, after the organization's environmental management process has been "checked" or audited.

Etzion (2007) includes a list of four strategic attributes of learning organizations that are consistently linked to improved environmental performance. Three attributes are related to those

previously compiled in the list of attributes associated with learning organizations outlined in Table 3.1, but with a clearer connection to environmental management. Innovation involves an organization systematically changing from the previous practice of considering the environment as second to its business, and instead developing new practices that create a central role for managing their environmental impact (Etzion, 2007). The skills and knowledge previously mentioned as necessary by Senge (1990) and Epstein and Roy (1997), are referred to as the Cognitive Inclinations of Employees by Etzion (2007), placing emphasis on making sure employees are aware of environmental issues by improving their behaviour and practices. The flow of information throughout the organization is also mentioned here in the context of how timely flow of information through an interconnected internal network improves environmental performance (Etzion, 2007).

The integration of multi-stakeholder perceptions and concerns is noted by Etzion (2007) as being distinctive to environmental management. Organizations must be capable of listening to and uncovering differing stakeholder perspectives before responding to broader societal needs and creating long-term innovative solutions (Etzion, 2007). Garvin (1993) also mentions that learning should come from both within the organization as well as from the best practices of other sources, but without the requirement of including the viewpoints of stakeholders before reaching a conclusion.

These four new attributes suggested by Etzion (2007) are added to Table 3.1 for comparison of all literature sources describing different skill sets for learning organizations, and are outlined in Table 3.2.

Table 3.2 - Revised Literature Sources of Learning Organization Attributes

Senge, 1990	Garvin, 1993	Epstein and Roy, 1997	Etzion, 2007
1. Systems Thinking 2. Personal Mastery 3. Mental Models 4. Shared Vision 5. Team Learning	1. Systematic Problem Solving 2. Experimentation with New Approaches 3. Learning From Their Own Experience and Past History 4. Learning From the Experiences and Best Practices of Others 5. Transferring Knowledge Quickly and Efficiently Throughout the Organization	1. Skills and Knowledge 2. Physical Technical Systems 3. Managerial Systems 4. Values and Norms	1. Innovation 2. Cognitive Inclinations of Employees 3. Integration of Multiple Stakeholder Perceptions 4. Organizational Information Flow

3.3.1. The Sustainable Learning Organization

A sustainable learning organization is defined as having enough knowledge of sustainability to act as a role model in preventing, eliminating, and/or reducing the environmental and occupational risks of its operations without sacrificing its profitability (Velasquez, 2011). The concept of sustainable organizational learning is still in the early stages of development (Thompson, 2002), with existing knowledge about sustainability and organizational learning not yet able to provide a clear idea of how to develop into a sustainable learning organization (Velasquez, 2011).

3.4. Measuring Environmental Performance

Increasingly, organizations are recognizing that a focus on evaluation of their environmental performance can be an excellent direction if they have reached a point where they don't know what to do next (O'Reilly, Wathey & Gelber, 2000). As a requirement of ISO 14001, section 4.4.1 states that an organization should record information for tracking environmental performance (Bowers, 2000). An organization like Company Y can assess its continual improvement through such methods as creating performance, operating, or management indicators, conducting audits, establishing objectives and targets, emissions reporting, or through consideration of the PDCA cycle (Brouwer and van Koppen, 2008) previously described.

Evaluation of environmental performance is assisted through the use of company-specific environmental indicators (Brouwer and van Koppen, 2008). Environmental indicators can be distinguished as environmental condition indicators (ECIs), management performance indicators (MPIs), and operational performance indicators (OPIs) (O'Reilly et al, 2000). Examples of common management performance indicators that can be introduced could include environmental costs, amount invested in environmental education, number of environmental ideas of personnel, total environmental investments, or operating indicators (energy use, materials use, amount of wastewater emitted, composition of waste, air emissions) (Brouwer & van Koppen, 2008). A range of usable data exists in any organization that is inexpensive to develop, with focus being made on collecting suitable data to evaluate environmental performance (O'Reilly et al, 2000). Yet true improvement depends on how ambitiously the organization sets its objectives, ideally through slowly progressing toward more ambitious goals as opposed to quickly reaching more modest ones (Brouwer and van Koppen, 2008). Data should also be targeted to the needs of certain target stakeholders to improve its usefulness (O'Reilly et al, 2000). Also, the development of indicators should involve those who will be accountable for delivering the associated data (Keeble, Topiol & Berkeley, 2003).

3.5. Environmental Frameworks Emphasizing Performance

3.5.1. ISO 14031

The ISO 14031 standard, a component of the ISO 14000 series, emphasizes measurement and evaluation of environmental performance as a useful tool for management decision-making (O'Reilly et al, 2000). It is written so as to be applicable to any EMS, including one that it is not based on ISO 14001 (Bowers, 2000). ISO 14031 can act as an alternative to a formalized EMS with the option to certify itself later with ISO 14001, since many of its components are requirements of a formal EMS (O'Reilly et al, 2000). ISO 14031 also encourages organizations to examine indicators already developed regionally, nationally and globally by other organizations and institutions (Bowers, 2000).

3.5.2. The Natural Step

The Natural Step (TNS) is a non-profit, non-partisan organization interested in the interface between science and decision-making, to help people understand and make meaningful progress towards sustainability (TNS, personal communication, May 19, 2011). TNS helps an organization identify risks and opportunities associated with the challenge of sustainability (Burns, 1999). TNS was originally developed for education and training in sustainability, but the framework has evolved to become a useful tool in promoting organizational learning as a way to create systemic change (Thompson, 2002).

TNS assists an organization in identifying all sources of its operations' potential impact on the environment that go above and beyond those regulated by law (Burns, 1999). The systemic nature of the sustainability challenge is that the current design of society's structure puts pressure on social and ecological systems, which will increase over time (TNS, personal communication, May 19, 2011). TNS has defined four system conditions that provide a more concrete approach to sustainability by challenging organizations to use creativity, innovation and opportunity to work within these

constraints and boundaries (TNS, 2009). These four system conditions are described in Figure 3.1:



Figure 3.1 - TNS System Conditions for Sustainability (Source: TNS, 2009)

Much of the TNS framework reflects key characteristics of Senge's (1990) description of a learning organization (Thompson, 2002). For example, TNS supports the notion that if organizations don't adopt a unified vision, then their efforts could move them along a variety of paths that ultimately do not add up to one coherent direction making significant improvements (Burns, 1999). As a tool for creating this vision, TNS recommends a tool known as backcasting; which involves the organization deciding what it wants for the future so that it can figure out what has to happen today to get there instead of estimating the future based on current trends (TNS, 2009). Similar to the approach of thinking systematically described in Chapter 3.3, TNS suggests that organizations examine the long-term consequences of its seemingly insignificant short term impacts (Thompson, 2002).

TNS is meant to be integrated into a formal EMS (Burns, 1999), with the inclusion of the concept of backcasting to assist in developing a vision, and development of System Conditions for Sustainability to comply with when establishing indicators and metrics. Figure 3.2 indicates at what stages in the cycle TNS is to be integrated, and how a TNS integrated system differs from ISO 14001. Integration of the TNS framework into pre-existing business operations and environmental management practices should involve identification of both the organization's formal and informal leaders, assessment of corporate culture, formalization of commitment through the creation of a policy, education of its employees, and opportunity for team building and learning to set goals and targets (Thompson, 2002).

3.6. Summary

The definition of an EMS is that it must systematically reduce environmental impacts, and allow for continued improvement in environmental performance. Often what keeps SMEs from implementing an EMS is difficulty in finding good quality advice and information, lack of human resources available, or the inappropriateness of formal EMS systems to suit an SME's simple organizational structure and few documented procedures. An EMS should include an environmental policy, identification of environmental impacts, objectives and targets, training and awareness, environmental performance indicators, and management review.

A learning organization must be able to create, acquire and transfer knowledge (Garvin, 1993) and respond to the changing environment by aligning corporate values with human resource values (Velasquez, 2011).

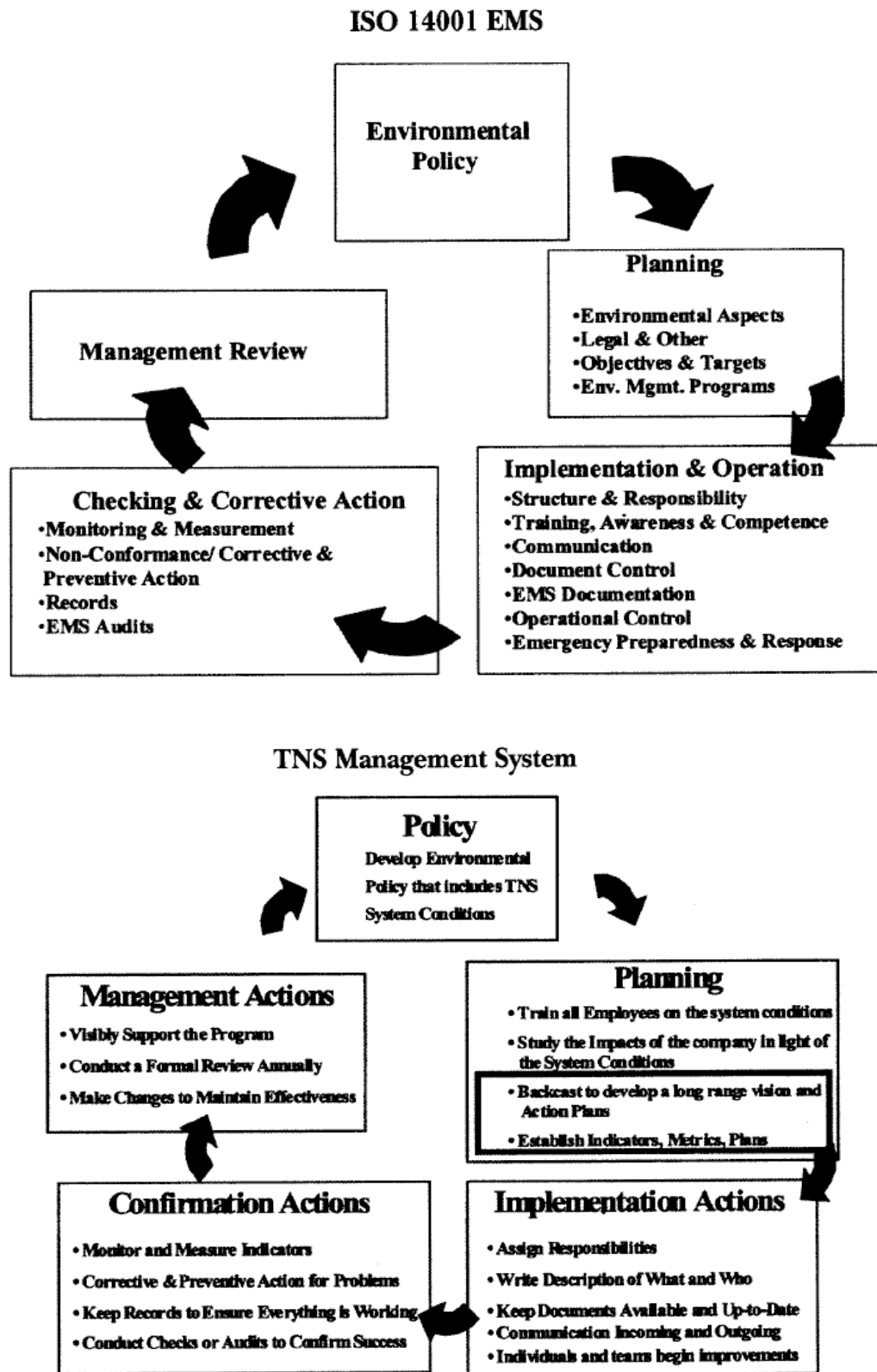


Figure 3.2 - Comparison of ISO 14001 system and TNS Management System
(Source: Burns, 1999)

Chapter Four: Case Study of Company Y

In this chapter, statistical information pertaining to the broader brewery industry is presented along with a description of the approaches other environmental leaders in the same industry are taking. Finally, a thorough description of all of Company Y's environmental initiatives is described.

4.1. Brewery Industry Information

Agriculture Canada (2010) estimates that 10 million Canadians are drinking beer, making it the country's most popular alcoholic beverage by production and consumption. Canada's top two largest breweries are multinational, foreign-owned companies that control 90% of the nation's market share of beer sold domestically. The next largest brewery holds 5% of the market, with the remaining 5% made up of 197 establishments, mainly microbreweries (as of 2007) (AC, 2010). Table 4.1 provides the national distribution of breweries as of 2007, providing the number of breweries in each province:

Table 4.1 - National Distribution of Breweries in 2007 (Source: Agriculture Canada, 2010)

Province	Number of Breweries
Ontario	91
British Columbia	48
Quebec	32
Nova Scotia	8
Alberta	6
Newfoundland and Labrador	4
Manitoba	3
New Brunswick	2
Saskatchewan	2
Prince Edward Island	1

Canada's domestic beer market has seen a noticeable decline in the past 10 years as imports become more prevalent, with approximately 88% of the sales market from domestic sources, as of 2007 (AC, 2010). More microbreweries are being established in the country as consumers seek new specialty and premium brews, especially the older, more affluent clientele. Sales of canned beer have doubled in the last ten years, while bottled and draught beer sales have only decreased slightly (AC, 2010).

98% of Canada's breweries, according to amount of domestic beer sold, are members of the Brewers Association of Canada (BAC). According to BAC (2011), Canada's brewing industry is a leader in environmental stewardship, from its successful bottle reuse program recapturing 97% of Canada's beer bottles to the use of spent grains for animal feed, to the recycling of packaging-related containers. Due to the large quantities of water and energy used for brewing, water-use reduction and energy efficiency are also a priority. The industry average water to beer ratio has been essentially halved over the years from 10 hectalitres (HL) of water per 1 HL beer produced, down to 5 HL of water used per HL of beer (BAC, 2011).

4.2. Environmental Leadership in the Beverage Industry

There are notable companies in the beverage industry, large and small, making innovative strides to improve their business by reducing their environmental impact. Of the larger companies, Coca-Cola's broad consideration of corporate social responsibility involves a specific environmental focus in the core areas of energy efficiency and climate protection, sustainable packaging, and water stewardship (Coca-Cola, 2010). Coca-Cola has challenged itself with ambitious objectives and targets in each of these core areas to be met by a certain timeline. These goals are created with consideration of the entire life cycle of Coca-Cola's operations (2010).

One of Canada's largest breweries, Labatt Brewing Co., is guided by an Environmental Health and Safety policy with specific focus paid to reducing packaging waste, converting reclaimed beer to ethanol, creating feed from by-products, as well as energy, wastewater treatment, refillable bottles, and aluminum can recycling (Labatt, 2011). Labatt Brewing Co. is able to benchmark its data against other breweries within its parent company, with ideas shared online between facilities (Saunders, 2011). Most recently, it has also been successful in achieving a 50% reduction in water usage within its brewing process (Saunders, 2011). Another major

Canadian brewery, Molson Coors Brewing Co., also provides a comprehensive strategy to environmental management, through its core areas of focus in water stewardship, and volunteer conservation and restoration projects, having monitored its performance since 2007 (Molson Coors, 2010).

For smaller-sized organizations such as New Belgium Brewing Co. of Colorado, environmental stewardship is also present in an innovative way, with its scope also including sustainability management, not just environmental management (New Belgium, 2009). This organization has formally reported its goals and accomplishments since 2007, identifying target areas of carbon footprint, water stewardship, closing loops, and advocacy (New Belgium, 2009). Within each of these target areas is an ambitious timeline for achievement, similar to how Coca-Cola has organized itself. Annual measurements are recorded and benchmarked against previous years' performance (New Belgium, 2009). Similar to what Company Y should consider, New Belgium has created a sustainability management system by combining aspects of different frameworks into an individualized management system.

4.3. Company Y Background Information

Company Y is a successful Canadian brewing company in operation since 2000. It employs just over 100 people (62% full time, 38% part time), and produces approximately 500,000 cases of beer annually (Company Y, personal communication, November 2010). Their market share is less than 1% in Canadian sales, producing approximately 60,000 hectalitres (HL) of beer in 2011 (Company Y, personal communication, March 2011). The organization's product is premium beer (Company Y, personal communication, March 2011). The brewery's building also features publicly available event space and daily organized public tours of the facility's operations. Company Y's target consumer group is aged 25-35, whose members generally favour environmentalism and good corporate social responsibility.

The company has proven its environmental leadership in various areas of its business. Many green initiatives began with the founding of the company in 2000, yet the owners hesitated in disclosing them to customers, thinking that they would be perceived as a marketing angle often referred to as greenwashing. The first time that green initiatives were disclosed to the public was during a 2007 touring event featuring the area's green buildings, in which Company Y

participated. Customers were given a facility tour that exposed environmental aspects of the building and operations within the organization. That same year the EC was initiated by one of the founding members of the organization. Figure 4.1 illustratively summarizes the evolution of Company Y's EC:

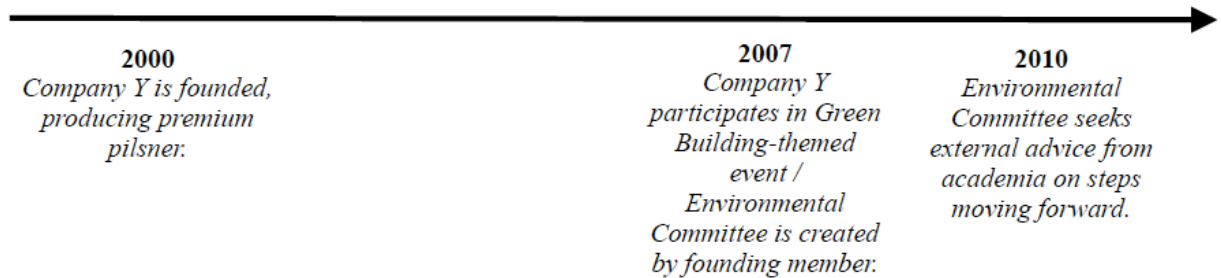


Figure 4.1 - Company Y's Timeline of Events (Source: personal communication)

The idea for an EC came from younger employees who wanted “greener” thinking, but were not managers or in a decision-making position. Therefore, the committee was created to link ideas from other parts of the company to those people in the company with decision-making roles (Company Y, personal communication, March 2011). Consisting of approximately 10 employees who volunteer their lunchtime once every one to two months, the EC acts as the representative body for all environmental aspects of the organization.

Company Y prides itself on first creating a green program and subsequently advertising it, contrary to what many organizations do in announcing a green strategy and then having to go about accomplishing it. Each of the following initiatives are examples of how Company Y is an exemplary organization in its proactive concern for the environment:

4.3.1. Green Building Infrastructure

Company Y's source of heating water for brewing, bottle washing, and climate control of the brewery is from external heating, from which they only draw what they need, when they need it (Company Y, personal communication, August 2010). Having all of their heating needs met by an external source eliminates the energy requirement and added burden of an onsite boiler. Climate control for the facility is supplied by an external

cooling source, eliminating the installation of an air conditioning system (Company Y, personal communication, August 2010).

4.3.2. Water Conservation

The installation of a new, more water-efficient Brewhouse equipment system in 2008 saw a 2/3 reduction (approx. 4,500,000 L of water) in Operations' wastewater output, equating to \$11,000 (CAD) in savings for its sewage bill, which was reinvested in other green initiatives (Company Y, personal communication, August 2010). The investment of the new Brewhouse also reduced overall steam usage requirements by 22% by capturing the heat energy from steam condensate and using it to heat the next brew as well as tap water for household and operations cleaning (Company Y, personal communication, March 2011).

A new keg washer and filler also reduces water usage. The organization has also installed separate water metering equipment so that it can separately keep track of its production water usage, and its retail and events water use. Company Y continues to look for improvements to reduce overall water usage.

4.3.3. Energy Conservation

The new Brewhouse uses less electricity than the older version used prior to 2008, equating to \$45,000 (CAD) in electrical and steam power savings. Company Y also conducted a voluntary lighting audit in 2008 in partnership with a local, provincially-funded association. One of the initiatives resulting from the audit was to replace old light fixtures and bulbs with new, more efficient fixtures and bulbs only once they burn out as a way to reduce the potentially large amount of fixtures and bulbs that would undoubtedly go to landfill as a result.

Other energy saving improvements include installation of power capacitors on motors to level out power draw and reduce usage. This adjusted capacitance of its machinery has lowered Company Y's electricity usage (Internal Interview, 2011). The installation of motion light detectors in back of house and refrigerator storage areas

(Company Y, personal communication, November 2010) and switch to induction lighting has reduced Company Y's lighting usage by 50% (Internal Interview, 2011). Company Y also tries to take advantage of natural sunlight flowing into the building thanks to the architecture of the facility.

4.3.4. Alternative Energy Use

Company Y made the decision in 2007 to pay a premium and source 100% of its electricity needs from a private company which invests in only alternative sources of energy such as wind and EcoLogo certified low impact hydropower. Energy use for 2010 was approximately 800,000 kWh. Roof solar panels were investigated as an alternative energy option to supply electricity needs to the facility, but building architecture logistics prevented this installation.

Company Y has also worked to improve the environmental impact of its fleet, by incorporating electric and biofuels as energy sources for some of its vehicles. The organization pays an annual \$10,000 (CAD) premium for biofuel, having done so since 2006. Approximately 50,000 L of biofuel, made up of soya fuel and recycled restaurant grease, was supplied to Company Y's truck fleet vehicles in 2010.

Good maintenance and vehicle selection has also helped in lowering energy consumption (Company Y, personal communication, March 2011). The organization was one of the first owners of a Smart Car when it came to Canada. This was meant as a way for the organization's service representative to promote the example of fuel efficiency. In Spring 2011, Company Y completed the challenging financial and logistical task of converting one of its vehicles to run solely on electricity, supplied by the same private company that provides alternatively-sourced electricity to the brewery's main facility (Internal Interview, 2011).

4.3.5. Waste Diversion

The organization has invested in waste and recycling receptacles (worth approximately \$7,000 (CAD)), and trained staff on how to properly separate their food waste from

personal meals or catering events to reduce the amount going to landfill. A commercial organic waste pickup and composting service is also employed by the organization, costing \$5,000 (CAD) per year, but Company Y has estimated that their garbage bill has also gone down.

Company Y is able to receive revenue from the sale of recycling its waste cardboard, cans, shrink wrap, and glass. Shrink wrap from the central beer distributor and suppliers is baled and sent to plastic recyclers. After an employee discovered that shrink wrap balers existed to recycle these contents, the waste reducing initiative has been going for the past five years (Internal Interview, 2011). Baled cardboard, broken glass, scrap metal from bottle caps and broken kegs, aluminum cans, shrink wrap, and spent grain are all sold to secondary users or recyclers. Revenue from selling recyclable items is \$12,000 (CAD) per year.

The organization has concluded from a feasibility study that the use of automatic towel dispensers is better than installing hand dryers. Company Y's automatic towel dispensers also aim to reduce paper waste by portioning out smaller sized paper towels.

4.3.6. Green Event Venue

Company Y was one of the first breweries in Canada to adopt a corn-resin biodegradable drink cup for its outdoor events. The biodegradable cup is made from cornstarch resin, that is 100% compostable within 50 days. Initially, the cost of cups was 25% more in cost, but now that it is an industry standard the price has reduced (Company Y, personal communication, March 2011).

Empty wine and spirit bottles from events are returned to the central beer distributor for redemption, with the proceeds used to purchase rechargeable batteries for small lab equipment, automatic towel dispensers, and most recently, bike stands for outside bicycle parking. The program has generated hundreds of dollars in the last two years that it has been implemented, also fixing the problem of what to do with the bottles after an event, especially when facility space is limited. The idea came out of the casual tradition of after-work beers where one employee chatted with others about the

idea, then worked out the co-ordination between departments within a couple of weeks (Internal Interview, 2011).

No bottled water, plastic cutlery, or Styrofoam plates are allowed for parties (Company Y, personal communication, March 2011). Large jugs of water are delivered for retail events instead of the distribution of personal-size bottles (Internal Interview, 2011).

Preferred caterers are chosen based on a like-minded interest in the environment evident from their own environmental initiatives, with the large amount of waste apparent with non-preferred caterers (Internal Interview, 2011). Before any event, caterers must go through a checklist of waste diversion policies – how to separate items properly and what needs to get done by the caterer following an event.

4.3.7. Green Office Practices

The organization participates in the recycling of its toner cartridges and packaging materials, and an electronic recycling program is being put in place. Scanning of business documents and invoices is strongly encouraged over printing (Internal Interview, 2011). Yet, when not possible, double-sided printing is a default setting. The implementation of double-sided printing initially stalled because employees were either uncomfortable or did not know how to adjust the settings, so the Information Technology Manager assisted each person in making the change (Internal Interview, 2011). When printing from the internet, Company Y utilizes Hewlett Packard's SmartPrint program to assist in picking specifically what they wish to print, thus minimizing paper (Internal Interview, 2011). Computers are set to run on optimal efficiency, and the environmental impact and energy demand of any new technological purchase is considered (Internal Interview, 2011). This initiative came from a networking opportunity with an external Environmental Officer during a small business meeting (Internal Interview, 2011).

The practice of turning off lights in unused meeting rooms and other areas is also greatly encouraged. Lighting has been changed to motion-sensored lighting in most areas of the facility (Internal Interview, 2011).

4.3.8. Social Initiatives

Company Y sponsors over 200 cultural, charitable, and community groups. They also donate any leftover food/edibles from events and organize and arrange them to be sent to a local mission or women's shelter to reduce the organization's organic waste.

Active living and commuting is also encouraged. A new modern, stacking, space-saving, umbrella-covered bike rack, along with the installation of showers and towel service, were recently purchased to provide incentive to bike to work (Internal Interview, 2011).

4.3.9. Product Considerations

Company Y has improved the packaging of its beer by increasing the amount of glass in the design of the bottle. With 33% more glass composed in the bottle, company Y is able to increase the number of refills to a minimum of 45 times, versus the 12-15 refills that the industry standard bottle is reused (Company Y, personal communication, March 2011). The percentage bottle return rate is 85% (Company Y, personal communication, August 2010). The bottle design includes a permanent painted label to eliminate the waste created from paper labels, to save trees, and to eliminate the need for contaminating water with glues or dyes. The wash cycle is also more efficient, saving water and energy (Company Y, personal communication, March 2011). "Sustainable Forestry Initiative" certified paper products are used for Company Y's packaged products if available.

According to Canada's Food and Drug Regulations, Section B.02.130, (Justice, 2010) Canada allows breweries to use over 100 ingredients in their beer with no requirement for standardized alcoholic beverages to fully disclose their ingredients on alcohol packaging (CFIA, 2011). Company Y, however, uses only four, all natural ingredients to produce its beer – pure spring water (from a local source), malted barley, hops, and yeast. It voluntarily discloses these ingredients on its packaging. It is the first Canadian brewery to secure a Genetically Modified Organism (GMO)-free status for

these four ingredients in beer (Company Y, personal communication, November 2010). Company Y's decision to use pure spring water is also unique in that most breweries make their beer with tap water that has been filtered through reverse osmosis (de-mineralized water). Pure spring water gives the beer a distinctive taste (External Questionnaire, 2011).

4.3.10. Corporate Culture

Company Y prides itself on its volunteer stewardship, specifically pertaining to environmental awareness. The EC is staffed by volunteers in all departments of the brewery, with meetings taking place twice monthly. The committee's demographic is mainly made up of younger employees, who influence green thinking in Company Y's operations. Committee members communicate this green thinking internally through the incorporation of environmental topics into the organization's quarterly staff breakfasts and monthly departmental meetings. Externally, Company Y's EC has networked with local environmental business organizations.

Company Y communicates its environmental initiatives through its company website, monthly eNewsletter to the community supporters of the brewery, as well as during its highly successful visitor tours. Company Y hosts approximately 80,000 visitors at its brewery annually (Company Y, personal communication, November 2010). Company Y spreads its environmental knowledge to academic institutions through student field trips and talks, as well as through support of other green organizations financially and in-kind. The organization has received large amounts of media attention for its environmental initiatives.

Because of all of these initiatives, Company Y has received numerous awards and accolades for being a green employer, an admired corporate culture, and a top employer for young people, along with overall public recognition.

Company Y receives opportunities to try out many of the latest products, services, and technology in energy and water on energy conservation thanks to its reputation for being environmentally considerate. For example, Company Y is the first location to try a

new lubrication system for the plant's conveyors that is meant to reduce water consumption (Internal Interview, 2011).

As can be concluded, Company Y can be considered an exemplary organization for all of its environment efforts. Financially, the organization has succeeded because of its initiatives as well, resulting in revenue and savings totalling approximately \$25,000 (CAD) despite paying premium prices for many of its environmentally considerate services.

Company Y has investigated the implementation of a generic EMS, specifically ISO 14001. Consultants have contacted the organization to assist in creating an EMS, requesting \$11,000-20,000 (CAD) for the service of determining Company Y's carbon/environmental footprint. After reviewing such a framework, the organization concluded that adoption of ISO 14001 was not the right fit for the company, largely due to the impression that many of the suggested environmental initiatives were already being done, and the perception that the standard, and the documentation requirements associated with it, were not appropriate for a smaller organization.

4.4. Summary

Company Y has successfully created initiatives in all aspects of its organization in just four years since the EC has been formed and having only been in business for eleven years. Initiatives range from energy and water conservation, to alternative energies, office policies, and green event actions. The brewery sector as a whole includes many companies advertising green practices, with special attention given to waste reduction and water conservation achievements.

Chapter Five: Results of Internal Interviews and External Questionnaires

This chapter involves a detailed description of how interview and questionnaire responses were evaluated, as well as the actual internal and external response results organized relating to standard EMS tools for implementation.

5.1. Interview and Questionnaire Methodology

The goal for Company Y is to establish an EMS that follows the route of choosing only those elements from ISO 14001 which are applicable to its needs in starting out with a simple approach (Bansal and Bogner, 2002). Although there are over 22 available environmental tools to assist organizations with their environmental management, Thompson (2002) identifies eight essential tools to use when designing and implementing an EMS, which will be applied to Company Y for the purposes of this research. They are:

- Analysis of Driving Forces
- Analysis of Barriers
- Strategic Environmental Management and Planning
- Environmental Policies
- Environmental Management Structures
- Education and Training
- Risk Management
- Environmental Indicators

Examples of other tools not addressed above include Life Cycle Assessment, Environmental Reporting, Purchasing Guidelines, and Environmental Accounting. These are useful tools that can be introduced at any stage of development of an organization's EMS, but will not be discussed for the purposes of this thesis. The content of the interviews/questionnaires has incorporated each of the eight essential tools listed above, either in manifest form through respondents' answers, or in latent form through researcher observation. A brief description of each tool is given in Table 5.1, along with the corresponding interview/questionnaire question used to evaluate the EMS tool's status of implementation:

Table 5.1 - EMS Implementation Criteria and Corresponding Interview Questions

Tool	Description (Thompson, 2002)	Associated Prepared Interview/ Questionnaire Question
Analysis of Driving Forces	Identify those reasons that would convince decision makers and managers to make a commitment to implement an EMS	What are the drivers for environmental activity in your organization? Please rank the following in order of importance: <ul style="list-style-type: none"> • Law • Competition • Consumer interest/pressure • Awards • Internal Leadership • Other, please specify: _____
Analysis of Barriers	Identify reasons or conditions that could adversely affect implementation or the effectiveness of environmental initiatives, EMS	Could you describe three recent environmental innovations associated with your organization, how and why they were developed, the challenges experienced in their implementation, and “learnings” that have emerged from them?”
Strategic Environmental Management and Planning	Address where the organization wants to go and how it plans to get there in terms of the long-term development of the organization	What characteristics epitomize or represent an organization that is environmentally responsible? What do you think is the best way to effectively measure these characteristics?
Environmental Policies	Create a statement by the organization to communicate its intentions, and guiding principles for environmental performance; set requirements for action through objectives and targets	Is there any relationship between your organization’s everyday business and focus on the environment? Are there any environmental policies or procedures in place in your organization? If so, what are they (please provide titles). How useful are they? Why or why not?

Tool	Description (Thompson, 2002)	Associated Prepared Interview/ Questionnaire Question
Environmental Management Structures	Consider how the organization wants to operate its environmental management aspect by identifying: the organization of people and corporate units, description of responsibilities, flows of information, decision-making processes, and internal and external stakeholders	<p>How does your organization make environmental decisions? Who has input into these decisions? What role, if any, do you play in making environmental decisions? Do you have any suggestions on how environmental decision-making could be improved in your organization?</p> <p>Whose responsibility is it within your organization to suggest and create environmental initiatives?</p> <p>How does your organization “learn” from previous environmental experiences or from the experiences of others? For example, how do ideas about addressing environmental activity get recorded, transmitted, discussed and then applied within the organization?</p>
Education and Training	How the organization provides its employees with certain skills and knowledge with respect to the environment, whether it be through courses on specific topics, formal courses with certification, seminars and workshops, self-learning packages, team building, or informal information packages or conference attendance	<p>How should an organization go about educating its employees, specifically in regards to the environment? Do these activities occur in your organization?</p> <p>Does your organization use any standards or software in your daily work? If so, what type? How useful are they? Why or why not?</p>

Tool	Description (Thompson, 2002)	Associated Prepared Interview/ Questionnaire Question
Risk Management	Scientifically sound, cost-effective, integrated actions (risk identification, assessment, control and mitigation, emergency response, communication, perception) that reduce or prevent risks while keeping social, cultural, ethical, political, and legal factors into consideration	How might your organization identify and prevent any sort of environmental failure from occurring? What does your organization do when there is any sort of environmental failure? Who is involved? What role, if any, does management play in this response? If no environmental failure has occurred, is there a procedure in place so that you know what to do?
Environmental Indicators	Measure of progress toward a particular state of being, with a focus on quality of the environment	Does your organization set any objectives and targets for specific environmental impacts? If yes, how are these objectives measured and documented? If no, what is the best way to monitor and document these objectives?

Respondents' answers provided context for whether or not Company Y satisfied each of the eight above tools as requirements of an EMS, the results of which will be elaborated on in the following sections.

5.2. Internal Interview Results

A total of 17 internal interviews were completed, three by phone and fourteen in-person, with one follow-up interview between the Human Resources Manager and Communications Director scheduled to review the role of the environment in Human Resources policies. Six of the 17 interview respondents are members of the EC. Table 5.2 lists the job titles of each interview participant, as well as who is a member of the EC:

Table 5.2 - List of Company Y Interview Respondents (Source: personal communication)

Participant
Production Manager
Truck Driver
Director of Purchasing, Logistics and Information; Health and Safety member
Retail Supervisor, Event Supervisor, Marketing off-sites
Quality Assurance Technician; EC Co-chair
Marketing Coordinator, Fleet Manager; EC member
Director of Retail and Events; EC Co-Chair
Quality Assurance Coordinator; EC member; Health and Safety member
Accounting, Credit Control
Human Resources Manager; Health and Safety member
Accounts Payable
Distribution Manager
IT Manager; EC member
Communications Director; EC founder
Director of Sales
Co-Founder
Automation and Electrical Manager

Interview participants were selected at the researcher's discretion, based on employee position, department, and level within the organization, making sure that fair distribution of part-time versus full-time, and non-EC versus EC members was evident amongst participants. In the case of someone who did not want to participate, another employee whose job was closely-linked filled the position.

The internal interview process revealed many insights into the environmental decision-making process within Company Y. First, the unanimous response to the question of a relationship between business and environment reveals that for Company Y, a case does not need to be made to show that environment and business are linked. All participants responded positively that environment and business go “hand-in-hand” (Internal Interview, 2011) when considering any operational decisions.

Most respondents indicated that it is everyone’s responsibility to make environmental decisions or at least contribute to environmental decisions, although two major formal decision-making groups have been identified – the volunteer EC, and the Management team consisting of those who participate in Management meetings.

5.2.1. Analysis of Driving Forces

Six generic driving forces regarding environmental activity were listed within the internal respondent questionnaire: Law, Competition, Consumer Interest/Pressure, Awards, Internal Leadership, Other (please specify). Each respondent was asked what priority he or she perceives the organization places on each driving force. Most respondents ranked internal leadership and consumer interest as the highest.

Many additional driving forces categorized under the “other” category were given high importance as well, mainly in the category of employee culture. Company Y was described as a “young person’s driven company”(Internal Interview, 2011) where the environment is part of the lifestyle of its employees, or “the norm” (Internal Interview, 2011). Company Y’s employees consist of an engaged [young] aged group (Internal Interview, 2011) that provides a huge boost to the company by being socially conscious of its environmental impacts (Internal Interview, 2011). Employees perceive the owners and company as a whole to care about the environment, want to be part of the environmental movement, attract people that think alike to the culture and want to make a difference (Internal Interview, 2011). The company has shown by its financial decisions as well, that it is willing to purchase a more expensive option if it is considered better for the environment (Internal Interview, 2011).

Consumer interest, more so than pressure, was ranked high as an important driving force for Company Y. The conscientiousness of its consumers, and the amazing feedback they provide (Internal Interview, 2011) fits with Company Y's premium brand (Internal Interview, 2011). Awards, cost savings and recognition are appreciated, but are not shown to be a driving force for Company Y's actions. According to Company Y's co-founder, it is up to the organization to provide the environment, and for the employee to provide the passion and energy through initiatives and customer service (Internal Interview, 2011). Company Y's product itself does not improve the environment necessarily, but instead the goal for Company Y is to create less of a footprint when producing its beer (Internal Interview, 2011). The law is considered to be the minimum that an organization is expected to do, and so respondents did not rank it of high importance.

5.2.2. Analysis of Barriers

Respondents were asked during the interview to describe the process that exists for Company Y's existing initiatives to be put into action, describing any barriers thought to stall or prevent implementation. Some reasons provided for why environmental actions may have been stalled were: lack of available information on how to measure environmental impact, lack of available and appropriate products and suppliers, difficulty in co-ordinating between departments, a closed-minded employee, but most commonly cost was listed. In each case where cost was an issue, alternatives were either explored or the cost to implement the initiative was approved by management. Respondents also indicated a lack of desire to introduce a formal EMS. Their perception is that an EMS can be a bureaucratic, overly rigid system that takes away from the openness and flexibility of the organization's current process and is incompatible with Company Y's corporate culture (Internal Interview, 2011).

Respondents indicated an indifference about improving the current system, and considered it to be working well as is, which could provide a barrier to EMS implementation. Many are satisfied with what has been done for the environment

already and how communication and decision-making are being approached (Internal Interview, 2011). Others voiced some needs that are currently not being met:

- The provision for a meeting for everyone to brainstorm together, or a platform to speak up (Internal Interview, 2011)
- Existence of a framework or “brain trust” to preserve culture and keep human element without involving too much paperwork (Internal Interview, 2011)
- The setting in of complacency, loss of passion for creating new initiatives and lack of people getting interested in voicing opinions (Internal Interview, 2011)
- More tracking and monitoring (Internal Interview, 2011)
- More education of staff (Internal Interview, 2011)
- Recognition for creating an initiative or idea (Internal Interview, 2011)

General barriers provided in the literature (Thompson, 2002) that were not witnessed during interviews included: a lack of recognition for need for environmental management (instead this was self-identified), crisis management, reluctance to use external expertise (this was sought out), loss of commitment from senior management, employee resistance, or a lack of communication.

Therefore, particular attention should be placed on continuing to make the business case for an EMS, align an appropriate EMS with the organization, and most importantly focus on educating, training, and communicating environmental management goals.

5.2.3. Strategic Environmental Management and Planning

With regard to the need for an organization to possess an environmental management strategy, internal respondents were asked what an environmentally responsible organization looked like, and what kinds of characteristics it epitomized.

Company Y respondents provided characteristics that closely matched their organization itself and what members of the organization value. The desire to be an innovative and open company was strongly communicated by many internal respondents (Internal Interview, 2011). The desire for Company Y to be a leading organization with respect to the environment is indicated from its employees. The environment is meant to

be part of the business model and developed into the staff culture in a way that it is embraced and not regulated (Internal Interview, 2011).

Respondents expressed how the strategy should convey a financial commitment to do things in a responsible manner and reduce energy and materials without compromising products or services to run the business (Internal Interview, 2011). Company Y started off with its main focus of creating a premium product, and then quickly realized that the environment was important to the brand (Internal Interview, 2011). The desire to differentiate itself is evident from respondents' comments, saying that as long as the company is "green" and still making a profit, then customers will be more like loyal fans than just customers, and the business will see steady growth even when industry is not doing well (Internal Interview, 2011). Company Y wants to be an organization that takes the "bigger steps" by being aware of what's going on in the world and continuing its efforts to make changes throughout the life of its business (Internal Interview, 2011). Though just looking at the environment tends not to be enough, all three things – social, economic, and environmental – need to be looked at (Internal Interview, 2011).

5.2.4. Environmental Policies

In response to whether or not business and the environment are related to each other, respondents were unanimous in saying that they do. The unanimity in this question's responses indicates that Company Y's behaviour, or its corporate culture, is such that it treats business and environment as a symbiotic relationship and not as mutually exclusive or in opposition to each other. This value has been effectively translated to its employees.

Various internal responses were given to the question of whether or not the organization has any environmental policies or procedures, indicating that policies do exist but are not as clearly communicated as they should be. There is also no guiding principle/mission statement/environmental policy communicated throughout the entire organization. Company Y's many green initiatives are considered the policies and procedures for the company (Internal Interview, 2011) for most people, but understanding of environmental terminology differs. Respondents interpreted the term

“policies” to include anything that involves the environment, with no overriding universal policy being communicated. Various practices comprise what Company Y thinks of as its corporate environmental policy: trying to recycle every piece of packaging and use minimum energy and materials to produce a quality product; thinking about the environmental impact just as much as output; making a quality product that leads to a small environmental footprint; making every decision consider the impact on future and current decisions; placing the environment in a strong relationship to day-to-day business; continuing to do what we do at home for the environment at work; to constantly make practical changes; with every person taking part; and backing up operations so that there is nothing to hide (Internal Interview, 2011). Yet, there is no centralized documentation to support these sentiments.

5.2.5. Environmental Management Structures

Company Y’s environmental decision-making structure is loosely based around a central body created by voluntary representation from all other departments, as opposed to a separate body operating entirely on its own. The benefit of this type of model is that, because members of the committee are from different departments within the organization, information can be effectively communicated throughout (Thompson, 2002). Yet, currently representation from all departments is not achieved, especially from Operations and Human Resources. The Communications department is thought to run a lot of the EC (Internal Interview, 2011).

The EC acts as the centralized staff body, with an already established link to senior management. The Communications Director, who sits on the EC, acts as the senior spokesperson who can fight for budget allocation and act on behalf of the EC’s intentions within management. Ideas from various sources are funnelled through the EC and discussed during monthly and bimonthly meetings. These meetings provide the opportunity to discuss and collect information supporting new possible initiative ideas before being sent for approval to management. Once management gives its approval, a key person from the EC is put in charge of contacting the necessary people to put the idea into action.

Right now, two co-chairs have been chosen by the Communications Director to share duties of the committee, yet the Communications Director still holds many responsibilities in implementing environmental initiatives due to the need for senior management involvement. The recently appointed co-chairs of the EC have innately acquired respect from the rest of the organization outside of the EC. Employees feel comfortable in approaching these three key individuals with an idea that will then be proposed at the following EC meeting and decided upon. Those employees less associated with the building's daily operations are of the understanding that the EC mainly accepts, generates, and decides upon new actions, but all employees feel comfortable in approaching the committee with an idea. Ideas have come from non-EC members as well.

Employees all have the self-initiative to consistently evaluate operations for environmental impacts, and have come to know to contact the co-founders, management, or the EC about an improvement or consideration. The co-founders and management are also open and listening parties to approach with an idea, which will then be run by the EC. Ideas are generated mainly from within the organization, with some more recent ideas created from interactions with external parties. Company Y currently uses no internal standards or software as supporting tools for environmental management.

The perception of Company Y's internal environment among employees is considered to be very democratic with no rank or hierarchy (Internal Interview, 2011), with respect to making suggestions regarding environmental management or new initiatives. Visual indications of an equal opportunity, "open door" structure are evident even from the physical design of the group office space, void of any separated offices. Although the EC makes many of the decisions on what topics to pursue and management determines the feasibility and provides the budget approvals, employees feel like decisions are made at every level.

5.2.6. Education and Training

Environmental training at Company Y begins at Orientation, as the company's emphasis on environment is included in the job advertisement and employee handbook. Afterwards, education is conducted informally through internal communications, monthly management meetings if applicable, and biannual staff breakfast meetings. These biannual staff breakfast meetings describe how successful certain initiatives have been by disclosing statistics regarding reductions and diversions (Internal Interview, 2011). Newsletters are emailed monthly that include an environmental perspective, and an office bulletin board is used to post policies about environmental behaviour (Internal Interview, 2011).

Employees, starting in 2010, are reviewed annually on their participation in Company Y's environmental initiatives (Internal Interview, 2011). This review is part of the employee's annual performance review and rates environmental performance on a personal level by developing and basing individual standards one-on-one (Internal Interview, 2011). Those employees who conduct daily brewery tours for visitors are also trained to make sure they can discuss environmental aspects with customers (Internal Interview, 2011). Education is thought to be a hands-on approach, done through leading by example, and employees learning on their own time and talking about the subject often (Internal Interview, 2011). Though self-drive learning has provided success for Company Y so far in its endeavours, some employees consider that education should be more formalized (Internal Interview, 2011).

5.2.7. Risk Management

The question regarding identification and prevention of environmental failure was, in many cases, misinterpreted and left respondents confused as to the meaning of the question. The definition of an "environmental failure" given by the researcher is anything that could compromise the air, water, land, and surrounding community. Most respondents interpreted this definition to be a short-term event only, in the form of an out of compliance incident or emergency. Such type of event has not taken place at

Company Y to date, and most respondents did not think it likely that an environmental failure based on that definition could take place given its type of business.

Interpreting “environmental failure” to be something of a short term emergency, respondents pointed out that with the Workplace Hazardous Materials Information System (WHMIS) in place, the Health and Safety committee in charge of that aspect would be able to deal with any releases or dangerous chemicals or any dangers to people (Internal Interview, 2011). Some respondents pointed out that as a brewery company, its operations are not considered to be detrimental to the environment (Internal Interview, 2011), especially given that Company Y deals only with four natural ingredients and simple packaging.

Some signs of broader thinking on the subject were observed when respondents linked risk management to objectives and targets by suggesting that objectives be reviewed and ambitiously set, employees be empowered to make sure they are met, walk-arounds be regularly done and by everyone checking and alerting someone in charge if something is not working properly. Those lead hands should be trained in proper due diligence in handling environmental risks and someone should be assigned the role of looking at these types of issues (Internal Interview, 2011). Broadly speaking, respondents suggested that the organization brainstorm by asking “what’s next?” and understanding clearly whether it is executing or exceeding its goals (Internal Interview, 2011).

5.2.8. Environmental Indicators

Employee knowledge of Company Y’s current environmental initiatives is vague and mixed. Many respondents who are not involved as a member of the Environmental Committee assumed more monitoring was being done than was actually taking place on a regular basis. Hydro and water are tracked, and costs are reviewed with the Brewmaster on an annual basis as required by Statistics Canada, yet these are done on an as needed basis (Internal Interview, 2011). An environmental component has also been added to employee performance reviews as a chance for feedback and to make employees accountable (Internal Interview, 2011). Objectives such as being “100%

green”, trying to be as environmentally friendly as possible, and running as efficiently as you can were mentioned as environmentally responsible characteristics. Employees know intrinsically and can see results on a project basis, but no reporting is being done in a quantitative sense (Internal Interview, 2011).

Respondents voiced a difficulty in the ability to set targets given that every organization and region is different, instead of there being a national framework (Internal Interview, 2011). Some suggested indicators to be measured were:

- *Measuring waste diversion*: The frequency of waste deliveries, amount of organics versus garbage, and amount of waste diversion from landfill (Internal Interview, 2011)
- *Measuring hydro and water*: Compare the cost before and after the installation of the new Brewhouse and more efficient lighting; install more meters, cut down on water intake and cooling; use old metrics to see how breweries, which notoriously use lots of water, can use less water and lower their footprint (Internal Interview, 2011)
- *Measuring financials*: Fuel costs; something that can be measured through sales, target markets (Internal Interview, 2011)
- *Tracking education*: More education, surveys; random checks for whether everyone knows the policies and procedures (Internal Interview, 2011)
- *Customer feedback*: Track whether customers are buying for environmental reasons or product; collect public opinion through calling, writing, complaints (Internal Interview, 2011)
- *External Input*: External contributors run interviews or audits; benchmark to other companies (Internal Interview, 2011)
- *Communication*: Keep track of how many initiatives are brought to EC per month; keep records and logs (Internal Interview, 2011)
- *Supply Chain*: See if values reflected in employees align with suppliers, customers, shareholders (Internal Interview, 2011)

5.3. External Questionnaire Methodology

Etzion (2007) emphasizes the importance of studying how organizations integrate stakeholder concerns into their overall strategy. Garvin (1993) also adds that learning should come from the best practices of other sources as well as from within the organization. Both Etzion’s (2007) and Garvin’s (1993) suggestion of the importance of external involvement on an organization’s

learning, the scope of interviews is broadened to include those external organizations to which Company Y deals with regularly, and with whom they choose to do business. The purpose of these external questionnaires is twofold:

- Comparison of each organization's environmental culture – To compare a different business to that of Company Y to see the relative approach to environmental culture and priorities
- Determination of Company Y's Supply Chain choices – To observe the current state of the influence of Company Y's culture on neighbouring businesses and evidence/ lack of evidence of a green supply chain

The selection process for questionnaire participants involved the construction of a stakeholder map listing Company Y's business-related vendors, suppliers, regulators, operations, and other affiliated associations. The researcher subsequently contacted each external organization either by email or phone, and those available and willing to participate filled out a questionnaire by email. The final version of the external questionnaire is located in Appendix D. All organizations that participated were closely linked to Company Y's business, but those specific individuals who completed the questionnaire were in positions related to the environment within their organization.

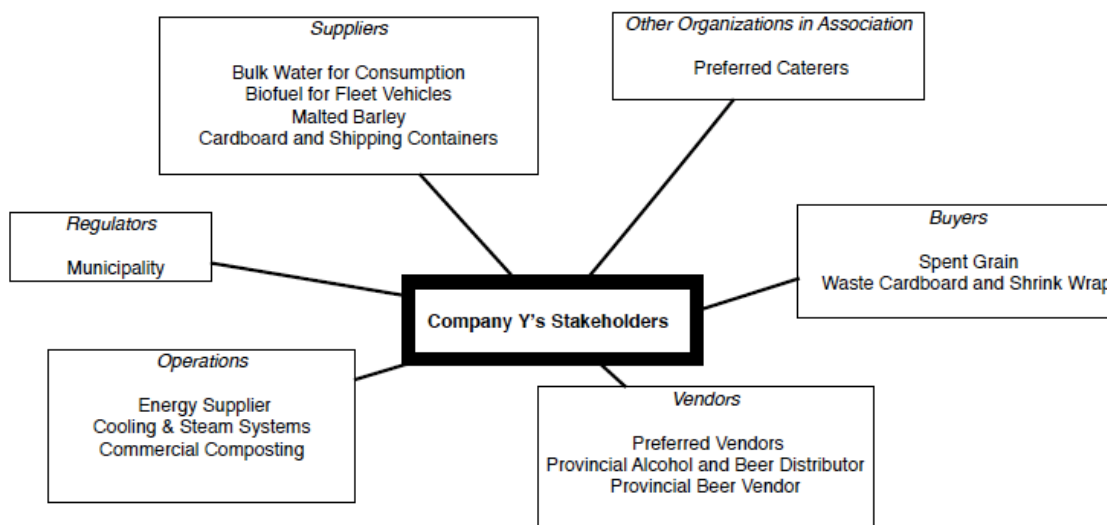


Figure 5.1 - Interview Stakeholder Map (Source: personal communication)

The focus for this case study is placed more on internal communication and decision-making networks more so than external. Yet, some external organizations are included to contribute to the investigation of Company Y's operations. Future research involving the viewpoints from more of Company Y's supply chain is encouraged.

5.4. External Questionnaire Results

External questionnaires were completed by three different stakeholders to supplement the existing internal research. Respondents included the region's two main purchasers of products that Company Y sells, as well as the brewery's bulk water supplier. All three external participants support the authenticity of Company Y's image, commending what it has accomplished to date and describing it as having a comprehensive approach to greening its business (External Questionnaire, 2011). The most well understood notion of Company Y's driving forces are because of a deep, personal interest, responsible manufacturing, and quality product that a young, urban, customer base demands (External Questionnaire, 2011).

Within all three of these organizations, efforts are being made to incorporate environmental management into its business according to the strategy that by sustaining a healthy planet, business is also sustained (External Questionnaire, 2011). Each of these three external stakeholders has taken a different approach to communicating its environmental information to the public. External participant #1 (2011) chooses to include the progress of its environmental leadership in its operational report, using a more integrated approach. The next external participant #2 (2011) is still in the stages of establishing a reporting system, and currently provides an electronic information sheet of its environmental initiatives, while external participant #3 (2011) is just recently launching its first sustainability report.

The driving force for these organizations stems from always being environmentally friendly, having an internal leadership and corporate culture of being environmentally conscious with existing internal champions who sway others to perceive the value and recognize the intrinsic value of doing so (External Questionnaire, 2011). Responding to consumer interests and pressures, and stakeholder expectations for social and environmental responsibility can also be a motivating factor (External Questionnaire, 2011). The difficulty lies in deciding how quickly or

deeply to get into environmental endeavours with employees struggling to get everyone on the same page (External Questionnaire, 2011).

External participant #1 (2011) has chosen to focus its efforts on packaging reduction and reuse, especially in the form of a successful deposit return program, yielding a 96% return rate. External participant #2 (2011) similarly focuses on its use of refillable bottles rather than single use, while also investigating the emissions associated with its vehicles' fuel. External participant #3 (2011) champions the use of lightweight containers for transportation, naming itself an industry leader on the initiative, along with making efforts in promoting local alcohol sources, measuring carbon output, diverting waste, and exploring more efficiencies in logistics and transportation.

All three organizations accept ideas from employees, especially external participant #3 (2011) who has created an "innovators" program for employees to bring forward ideas, and recently developed a subcommittee on employee engagement. Methods of keeping employees informed are through email, websites, inserts in employee payroll stubs, internal policies and procedures and worldwide greenhouse emissions standards (External Questionnaire, 2011), newsletters, internal print magazine, intranet site specifically for environmental communications, and copies of the sustainability report available in store (External Questionnaire, 2011). External participant #2 (2011) is in the early stages of trying to tie value to its initiatives and develop ways of disseminating information, while external participant #3's (2011) communications network is more well established and though communications channels are already in place, struggles to ensure that information stays mainstream and is not isolated to only those departments interested in environmental issues.

External participant #1 (2011) is promoting the environment and committing to green leadership by working through an online assessment program developed by a governmental agency where customers, consumers, clients and constituents can rate businesses on green leadership. Specific targets also exist for which policies and procedures are based to ensure that they are met. External participant #2 (2011) has chosen a systematic approach based on measurements such as calculating its carbon footprint, followed by publicly documenting their progress as they develop their Corporate Social Responsibility (CSR) policy this year. External participant #3 (2011) has just completed its own carbon emissions calculation, which will be used

as its baseline year. Targets also include waste diversion rates, lightweight glass bottle use, money allocated to support initiatives, and employee satisfaction surveys.

5.5. Summary

The responses from seventeen internal employees and three external participants were assessed according to eight areas of a formal EMS. Employees at Company Y possess an impressive amount of self-initiative in conceiving of an idea, knowing who to speak to, and quickly making it happen. Employees value the organizational structure that exists within the organization, allowing for great flexibility, openness and support from management. Some areas for consideration involve misunderstanding of terminology, misinterpretation of risk management, and a misperception that more environmental indicators were thought to be in place for regular performance monitoring than actually are.

For external questionnaire results, all three external participants commended Company Y for its achievements to date, and actively supported the inclusion of environmental management into their own business through various initiatives. Each external participant also showcased certain aspects of environmental management in which it was particularly accomplished.

Chapter Six: Evaluation of Company Y as a Learning Organization

This chapter delves into how Company Y has expressed its ability to behave like a learning organization, particularly with respect to five areas: values and priorities, experiences and knowledge, information storage and communication, regulatory compliance and enforcement, and environmental decision-making and action.

Unruh (2010) describes how an organization evolves through three phases of sustainability leadership – the learning phase, alignment phase, and the embedding phase. The learning phase starts when either internal or external pressures encourage the organization to think about sustainability but knowledge of the subject is limited. Organizational infrastructure is started, teams are formed, and sustainability issues try to match up to employee values.

The alignment phase involves the creation of self-starting teams, voluntary sustainability programs for recycling or waste, and the acquisition of substantial understanding of what sustainability entails in a general sense. What is lacking is co-ordinated action that aligns with the organization's sustainability goals. Leaders need to articulate a mission or vision of where the organization can be heading to, with those existing sustainability champions receiving recognition through the formal roles and responsibilities.

The final embedding phase, when sustainability is fully embedded into the entire culture, processes and systems of the organization, is rarely reached. According to this description, Company Y has definitely surpassed the learning phase, having created many initiatives since the creation of its EC. Organizational infrastructure exists, with respect to environmental management, in the form of co-chairs, multi-departmental volunteers on the committee, and senior management involvement. Pinning down Company Y at the Alignment phase, co-ordinated action and an articulated mission or vision are the focus for this organization to evolve itself into a fully embedded, or self-actualized, organization.

6.1. Methodology for Evaluating Learning Organizational Attributes

As described previously, learning organizations possess certain attributes (Senge, 1990; Garvin, 1993; Etzion & Roy, 1997; Etzion, 2007) that need to be fully integrated within an organization's daily operations in order for organizations to be considered true learning organizations. The

categories of assessing Company Y's behaviour as a learning organization are derived from the compilation of the following collected literature sources elaborated on in Chapter 3.2:

- *Values and Priorities*: Shared Vision (Senge, 1990); Values and Norms (Epstein & Roy, 1997); Innovation (Etzion, 2007); Experimentation with New Approaches (Garvin, 1993)
- *Experiences And Knowledge*: Skills and Knowledge (Epstein & Roy, 1997); Cognitive Inclinations (Etzion, 2007); Personal Mastery (Senge, 1990); Mental Models (Senge, 1990); Learning From Past (Garvin, 1993); Team Learning (Senge, 1990)
- *Information Storage and Communication*: Transferring Knowledge (Garvin, 1993); Organizational Information Flow (Etzion, 2007); Physical Technical Systems (Epstein & Roy, 1997)
- *Regulatory Compliance and Enforcement*: Learning from Experiences of Others (Garvin, 1993); Integration of Stakeholder Perceptions (Etzion, 2007)
- *Environmental Decision-Making and Action*: Systems Thinking (Senge, 1990); Systematic Problem Solving (Garvin, 1993); Managerial Systems (Epstein & Roy, 1997)

Each interview/questionnaire response provides insight into how Company Y learns and essentially makes decisions from the outcome of this knowledge. Any identified EMS implementation gaps are addressed by applying the attributes or disciplines of a learning organization to an environmental management system context in the following sections.

6.2. Values and Priorities

Often a company needs to be persuaded as to why the consideration of its environmental impacts should be brought into its daily operations before management is willing to make a commitment to provide resources. In Company Y's case, management backing seems to have always been present, and in turn all of its employees feel free to support and propose ideas. A cause such as the environment is one way for organizations to retain a highly valuable and loyal workforce. Senge et al. (2001) state that in order for companies to maintain their employees' commitment in a society that favours a mobile and free agent-type workforce, they must appeal to their employees' values in the form of a mission that employees want to support.

According to OLT, an organization's vision needs to be shared (Senge, 1990) if it is to be effectively ingrained into the daily behaviours and norms (Epstein & Roy, 1997) of its employees. Members of the EC continue to possess an internal motivation to improve upon itself, review

what has been done to date, and move forward. This type of willingness to assess itself and perform review of its actions is indicative of a double-loop learning framework. Yet, accurate information needed for assessment is not yet available for the EC to make proper decisions. Without the proper information made available, learning is being inhibited (Argyris, 1976). Other members of the organization not involved either at the Management level or in the EC seem to possess some of the knowledge needed to assist in making these decisions, but are not aware that their skills are needed. As far as they are concerned, the current EMS as it is now is working very well. The EC however does not agree, and senses that the organization is lagging in its motivation to continually innovate when it comes to the environment. Surveys have been organized as well as drop off boxes as ways to collect feedback from the workforce, but no revelations have been forthcoming. This is not uncommon to reach a point of lessening activity. Company Y is not idiosyncratic in its current position. The EC recognizes that they have reached a lull in environmental growth and seek out external assistance from the academic community, government-funded agencies, and not-for-profit organizations encouraging sustainability. In doing so, they have an opportunity to reenergize their environmental management strategy to elevate Company Y to the next stage of its successful development, which involves a well thought out vision.

Other than the decision to make the environment a priority, Company Y's leaders have not communicated to their employees as to how innovatively they want employees to think about the environment, what the vision is for the future of the company, nor any constraints to work within. The organization has created a positive environment where the type of freedom and flexibility has afforded many employees the opportunity to spearhead his or her own idea to completion. Such an open working environment is often unique to SMEs who have not fallen into the trap of traditional controlling organizations that become rigid and hierarchical. Company Y's equal opportunity organizational structure is very apparent, even in the manner in which the office space is designed with all employees working together in a cohesive space regardless of job rank.

Throughout this investigation, it is very apparent that emphasis on the environment is truly felt by all employees at varying degrees. The co-founders have communicated that the environment is highly valued at Company Y and employees support this mentality within all

levels of the organization. The EC, mainly made up of younger employee volunteers, is largely responsible for spreading this value.

As part of this third-party assessment, Company Y should consider evolving from having projects-based environmental initiatives, towards constructing an ambitious and articulate vision as the long-term environmental strategy that guides what type of objectives and short-term targets to set. From a traditional EMS perspective, Company Y needs to set targets and objectives. From an organizational learning perspective, the company can succeed by setting loftier goals that stem from a common vision shared by all of its employees. A projects-based approach has been successful to date, with a proven track record of speedy implementation of reduction programs, conservation improvements, and initiatives that lower carbon footprint. Now Company Y can consider a larger goal that incorporates multiple initiatives instead of implementing stand alone initiatives. The challenge of thinking more broadly and more ambitiously can be accomplished by Company Y reassessing what its long-term expectations are for itself. A helpful tool to accomplish this task is back-casting as a part of the TNS framework, defined in Chapter 3.5.2.

Once a vision is clearly defined, then an environmental policy can be created to capture this idea in a systematized manner. Such a piece of documentation would serve as a reliable long-term source of information that would outlast any sort of change in personnel involvement with the EC and Company Y's related EMS, which is why some degree of systematization is useful for Company Y to consider in its approach.

6.3. Experiences And Knowledge

When asked indirectly what an organization's consideration for the environment should be, most employees do not have a clear idea of what that image looks like for a business. Most individuals have a viewpoint stemming from their knowledge and behaviour from home. In turn, these concepts get carried over into business.

Employees are now annually assessed during their performance review on their efforts towards improving the environment within the organization. Yet, no real resources have been added to spark creativity or innovation for employees to generate ideas. Employees are limited to the knowledge they have from prior experiences, mainly those associated with behaviours from

home, such as recycling, turning off lights, and considering their paper and water usage. These efforts should not be discounted, but if Company Y wants to stay a dynamic, innovative, and generative learning organization, a stimulus has to be available to all of its employees to adjust each individual's mental models of how they perceive the environment's involvement in business, and vice versa.

Mental models can also be adjusted through an effective employee recruitment program. Job postings have recently been updated to describe Company Y's value in reducing its impact on the environment. According to the Human Resources Manager, applicants already apply because they are aware of Company Y's environmental stewardship and share in these same values. Recruitment of like-minded individuals is already happening without actively trying, merely through Company Y's reputation in the community. Continued efforts in this endeavour are encouraged.

Strachan (1997) emphasizes how much more likely generative learning is to happen if an organization's Human Resources policies spread out authority and responsibility. The divergence of influence strengthens not just a few members, but the entire workforce toward organizational strategies and goals. The kind of environmental decision-making structure that Strachan (1997) is referring to exists when employees are prepared for the amount of responsibility and are intrinsically motivated by the autonomy it allows (Pink, 2009). Each individual must also want to improve his or her own knowledge of the environment as an aspect of personal mastery (Senge, 1990). Company Y will be able to continue to attract and retain an employee base of like-minded, innovative individuals if it provides more incentive for employees to put forth suggestions for improvement of the organization's EMS.

According to Pink (2009), intrinsic motivation is much more fragile than extrinsic motivation, but can have greater positive effects on human behaviour. The real "soul of the machine", in terms of motivating a company to improve its performance, is through the internal drive of the company, with a need to further explore how indicators can support the further development of this internal motivation (Brouwer & van Koppen, 2008). Each individual's intrinsic motivation comes through purpose, autonomy, or personal mastery (Pink, 2009). Management has provided the purpose, now focus needs to be placed on improving personal mastery and autonomy. Employees should feel that they have individual knowledge and skills that can contribute to the purpose of reducing environmental impact. They should also feel that they

are given recognition and authority to carry out these skills within the framework of the organization.

Employees can gain personal mastery by being exposed to resources that provide knowledge, training, and certification. The outcome of this personal mastery, conceiving of and implementing a successful initiative, should be recognized through the creation of an award. The organization may decide to broaden the concept of personal mastery from an individual employee to a department level. Each department, depending on the skill strengths and available resources, can be tasked with a specific goal for improvement, with associated measurable targets. Inter-departmental challenges can be created to award those departments that are successful in getting to zero waste, for example, or finding the greatest percentage energy reduction opportunities.

During the internal interviews, many respondents felt that the questioning seemed repetitive, resulting in similar answers to different questions. Interview respondents provided different interpretations of environmental terminology, for example: confusing the definition of policies and procedures with initiatives, or strategy with objectives and targets. For these respondents, the subtleties in the questioning would be better understood through more exposure to the topic. Employees are very engaged and knowledgeable about the environment in similar ways, indicating that communication is effective, but a deeper knowledge of the issues surrounding environmental decision-making is held by a select few. Education can assist in adjusting mental models that control individual and organizational behaviour. It can also assist those employees who voiced concern in having inadequate information to make correct decisions. Formal education, in the form of courses, certifications, and one-day seminars can all encourage personal mastery and progress employees towards gaining a level of proficiency in environmentally-related decision-making.

One of Company Y's most recent initiatives involves converting a fleet vehicle to run entirely on electric energy. The main obstacles faced for this endeavour included a lack of knowledgeable people involved, which used up a lot of the company's financial resources (Internal Interview, 2011). The willingness for management to back this project despite complications shows a risk-taking flexibility to experiment with new approaches (Garvin, 1993), yet also shows where Company Y needs to focus its resources for the future: in educating its staff. Such as in the case of communicating a clear vision, by continually exposing members of its

organization to new ideas and arming them with new skills for the environment, Company Y can continue to change behaviour of some of its members who latently express an obedience rather than an internal motivation to fully embrace environmentalism.

EMS implementation at Company Y has not been fully embraced because of the notion that a formal EMS equates to an overly bureaucratic process, incompatible to Company Y's corporate culture. This type of preconceived notion about a formal EMS is an example of a mental model that needs to be adjusted. After all, Company Y must consider the benefits of a systematized EMS approach such as the ability to properly document knowledge collected up to this point, and provide standardization to employee training and environmental education. Company Y's employees should be made aware that, as Bansal and Bogner (2002) suggest, you can pick and choose elements from an ISO 14001-type standard as it suits the organization's goals without feeling the need to fully comply with all that the standard provides. The result is a uniquely appropriate formal EMS that retains knowledge management and maintains a reliable structure to tackle environmental challenges.

Moving outside of the organization, Company Y can make the most of its relationships with other businesses in its supply chain to collaborate on projects as an opportunity for team learning. So far the organization's initiatives have been developed strictly internally, but as these projects mature and become more established, Company Y can widen its network. Capitalizing on the expertise of external parties that work with Company Y would encourage exchange of information and ideas. A good way to introduce new ideas is through group interactions with individuals who can offer different solutions (Doppelt, 2003), especially willing organizations that have participated in the questionnaires for this research.

External questionnaire participant #1 has been very successful in the specific area of packaging reduction and reuse. Tapping into this expertise to hone Company Y's waste reduction program can improve both programs with the possibility of future collaborations. This particular vendor was also mentioned by an internal interview participant as an industry leader in its waste reduction and recycling initiatives. As an example of best practices and a willingness to share these successes with its community, external participant #1 would be an excellent organization to benchmark against.

External participant #2, due to the very nature of its business as a bulk water supplier, has an interest in water conservation and community awareness of good business practices. This

organization is also at the very same stage in its environmental management development as is Company Y. Both organizations are looking to upgrade their environmental initiatives into a full-fledged environmental management system while encountering similar barriers in improving employee awareness and continuing participation. A collaboration might expose both parties to more information and provide a new energy for innovation.

6.4. Information Storage and Communication

With regard to how Company Y stores and communicates information pertaining to the environment, a few concerns are flagged: only a few key members of the EC possess most of the organization's knowledge, and there is no clear cut system of storing or documenting information to be passed on for the future.

The Communications Director, who is also the EC founder, currently acts as the main “brain trust” when it comes to the environmental condition of the company. She holds a strong liaison position between management and the EC, and would be difficult to replace without formalizing the position, if for whatever reason she was to leave. It is important that her knowledge be transferred throughout the organization to sustain the presence of an environmental component within Company Y. The only formalized positions currently existing within the EC are the two co-chair positions. Since the committee acts on a voluntary basis, any turnover of members can potentially create voids in communication. For example, one previous employee used to provide weekly environmental tips for the organization, but the initiative ended once the employee transferred jobs to another location. For this sake, the EC's co-chairs and other experienced members of the committee should consider establishing other roles for which employees can volunteer to complete specific tasks. Assigning tasks to more members can free up time to discover other ideas, and spread out responsibility from only three key individuals (two co-chairs and Communications Director) to the entire committee to maintain a desired equal opportunity structure. To prevent positions from getting stale, the committee can reassign positions each year to different individuals. This rotating of responsibilities is another way to engage and expose as many individuals as possible to new information. All of these examples support a need for Company Y to shift towards systematizing key aspects of its environmental management system, specifically structure and communication.

Employees, especially members of the EC, have voiced their concern over the creation of an EMS that would become too bureaucratic and take Company Y too far away from the flexible, ad hoc approach that has to date made it successful. However, as organizations grow, the formalization of main communication pathways is a necessity in effectively transferring knowledge to a larger group. Miscommunication identified through the interviews and casual observation concerning terminology, monitoring, and policies and procedures is indicative of the mistakes that can happen if a predetermined system is not established ahead of time. Information storage is a key consideration for any growing organization, and the same methods used to document the company's business progress can be translated to capture the progress of its environmental focus.

The next stage to having a knowledgeable and capable workforce is to have physical technical systems in the form of procedures and usable data (Epstein & Roy, 1997) that can travel easily throughout the organization (Garvin, 1993). Company Y should determine a fixed method of archiving the knowledge and information it has collected in the past four years of developing its environmental program and EC. Right now meeting minutes are a main source of historical reference, while training presentation slides, the employee handbook and website provide up-to-date information about the status of Company Y's environmental initiatives.

As consumers become more interested and knowledgeable of what organizations and businesses produce and how they operate, Company Y should consider more disclosure of its information through the use of environmental reporting. According to Brouwer and van Koppen (2008), those companies that report about their environmental management on an annual basis are generally more ambitious, and set higher goals. There are available frameworks such as the Global Reporting Initiative which can provide guidelines for creating a corporate environmental or sustainability report. Reporting information creates an excellent resource for referral for new employees to gain knowledge about Company Y's environmental stewardship, and for existing employees to check progress. Eventually making it available to public puts needed pressure to ensure continued accuracy and accountability for the program.

A company should also be moving towards a trend of openness and co-operation with its stakeholders in disclosing its environmental performance and data (Jorgenson, 2007). The brewery industry is known for commonly providing tours of their facilities to reach out to the public, provide a fun social opportunity, and potentially recruit new customers. The concept of

having a brewery tour itself keeps Company Y accountable, while providing an ideal opportunity to connect with a broader community and disclose its achievements and ambitions.

6.5. Regulatory Compliance and Enforcement

Regulatory Compliance and Enforcement is not directly mentioned in any OLT, as it is somewhat more specific to issues of the environment (Etzion, 2007). Yet, learning from the experiences of others (Garvin, 1993) and integrating the perceptions and considerations of stakeholders (Etzion, 2007) involves considering those who are concerned with safety and regulation, such as the government, and figuring out how others have tackled potential environmental issues in other situations. Risk management can be addressed in the same manner as other goals, by setting higher than compliant objectives and targets, thereby reducing the likelihood of non-compliance.

Along with the setting of objectives and targets, it is important to have a proper monitoring system to substantiate those targets quantitatively. One concern brought about from interviews and meeting observations is the disconnect between those outside of the EC and its members regarding monitoring practices. Company Y's employees were under the impression that more monitoring was taking place than was actually being done for environmental purposes. Despite necessary annual checks, a monitoring system should provide regular, online reliability that will mitigate any sort of potential for risk, which is why it is important for the EC to structure key areas such as environmental monitoring in its EMS.

Team learning is a learning organization attribute that can be applied to help satisfy regulatory compliance and enforcement needs. For example, collaboration between the Health and Safety Committee and EC is encouraged as a way to improve overall assessment of environmental impacts which would improve risk management. Communication between these two parties could integrate such areas as risk management, emergency preparedness and emergency response, education and some training, and purchasing guidelines (Thompson, 2002). Also, the operation of the Health and Safety Committee is a clear example of a functioning systematized, standardized operation within Company Y that is not considered bureaucratic. The Health and Safety Committee must run in accordance with requirements from provincial health and safety regulations, describing who must participate in the committee, and how safety should

be managed. These skills in monitoring and self-regulation can be directly applied to the EC, while still allowing the EC to remain its own regulating body. Even though many organizations decide to combine these two committees into an Environmental, Health and Safety Committee, fully integrating them into one is not recommended (Thompson, 2002). Currently, a Quality Assurance Co-ordinator sits on both the EC and Health and Safety Committee, a liaison position which should be formally established so that someone is always available to communicate between these two groups.

6.6. Environmental Decision-Making and Action

Company Y's decision-making process so far has proven to be very effective, with the time span between when an idea is conceived to when it can be put into action happening within months. Employees are given leeway to explore an idea, consider its feasibility, and then have the financial backing from management to test it. Ideas have so far been generated naturally without much effort needed to cultivate more. Yet, the EC is starting to see signs of slowing down as the organization begins to reach the further extent to which initiatives have already been completed. Management is looking to the EC, the EC is looking to all of Company Y's employees, and the remaining employees are looking to both of these established groups for leadership as they have in the past. A surge of inspiration and creativity is sought out while concern is in its early stages.

Environmental performance is being assessed at the individual level through performance reviews, which is useful for personal development and learning, but opportunities for group level knowledge exchange have to be present as well. Research has exposed a disconnect between those who are members within the EC who make decisions or conduct feasibility studies, and those who have the information that is needed to make the decisions, outside of the EC. As Doppelt (2003) notes, one of seven common blunders of sustainability is to create a narrow functional unit for sustainability that is separate from the rest of the organization in decision-making, and does not involve as many departments as possible in assigning responsibilities for continual improvement. A variety of departments are involved as part of the EC, yet without key departments like Human Resources and Operations present in some capacity, the decision-making process is less holistic and likely to be narrow in its focus.

At this point in the evolution of Company Y's environmental management, it is a good time to rethink how the EC wants to operate. Systems thinking involves questioning what the EC should represent and what its purpose should be. Currently the EC acts as the main central body to funnel environmental initiatives to the appropriate channels within the organization. Yet the committee is completely voluntary and survives as long as its members are intrinsically willing to participate. This type of volunteer approach to the EC makes it vulnerable in the long-term. As part of the shift towards systematizing its EMS, the committee and company leaders should strategize about how they want the EC to look in the future, for example whether the EC should become redundant as roles become integrated into existing paid job roles, or whether the EC should be composed of permanent, paid positions.

As part of reassessing the entire current system of environmental management, the EC should rethink the scope in which it has chosen to consider up to this point. In other words, the EC should discuss whether the intention is to focus strictly on Company Y's environmental impacts, or whether it should consider sustainability as a whole, and define the EC and long-term vision with that decision in mind. Already, many initiatives such as GMO-free ingredients in its beer, funding of bike racks, towel service and new showers, food donations to local missions, award recognition for diversity in the workplace, and financial contributions to local charities and organizations are examples of consideration for social causes and healthy living that delve into the topic of Corporate Social Responsibility (CSR). CSR more broadly involves the concept that organizations should strive to act ethically as good corporate citizens (Carroll, 1999). The EC should consciously decide whether the scope of its EMS will deal with CSR or if its efforts will be restricted to environmentally-specific topics.

Finally, right now the only existing documented framework is a description of the initiatives already in place. A policy that focuses only on what has already been done is likely to lose momentum. Therefore, a guiding principle created from a strategy that describes what the company is striving towards will provide something against which it can assess itself through management review. Within Company Y's employee handbook, a vision, mission and slogan are communicated for the organization's business strategy. The business vision for the organization already has a focus on being accountable for producing a premium product, and draws people who are accountable but also creative and passionate to want to work for the organization. Similarly, the EC, which has emerged as the leader in communicating an environmental message,

should establish its vision, mission, and even a slogan to communicate to employees and the public.

Company Y has shown that its members are flexible and risk-taking enough to embrace a bigger challenge. Once that challenge is defined, then smaller objectives and targets can be created to measure progress. In addition to those objectives and targets mentioned by respondents as desirable to track, other possible measurable targets mentioned from external sources include carbon emissions calculation, waste diversion rates, lightweight glass bottle use, amount of money allocated to support initiatives, and employee satisfaction surveys. Company Y has proven that it can push the boundaries of what it means for a company to be green. In situations where costs were a barrier to implementation of an environmental initiative, management fully supported the action. By challenging itself to demand more in the form of higher objectives and targets for waste reduction or carbon footprint, this organization will create opportunities for creativity and innovation. TNS' four System Conditions for Sustainability, as illustrated in Figure 3.1, create a border of constraints as a translatable framework for an organization to adopt. The creation of constraints ensures risk protection for the environment and effectively create opportunities to discover creative solutions.

Company Y applies initiatives in certain areas, which should be identified within a broader theme to track long-term progress. Specific measurable indicators should also be associated to each broader theme as a way to measure short-term progress. Keeble et al (2003) suggest that an organization should begin by creating indicators using data that are easier to collect internally in areas such as water, energy, and waste, and then move outwards with more complexity when the system is further established, as illustrated in Figure 6.1:

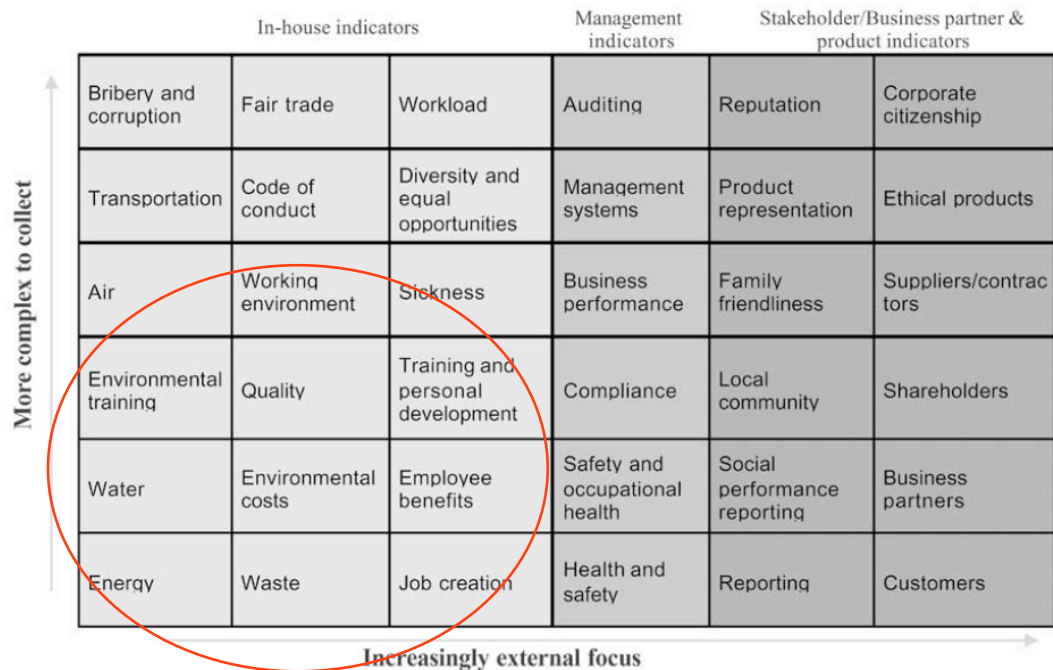


Figure 6.1: Framework of Environmental Indicators (Source: Keeble et al, 2003)

Suggested areas would be in energy use reduction, carbon footprint reduction, water conservation, waste reduction, community involvement, or more simply – water, energy, waste, and people. Examples of innovative goals Company Y could consider in each category would be:

- *Water* – Reduce water usage by a certain percentage by a certain future year, create a community program for water conservation
- *Energy* – 100% green energy, reduce energy requirements by certain percentage, 100% fossil-fuel free vehicle fleet
- *People* – establish itself as a zero footprint event venue, educate and certify each employee as an environmental expert
- *Waste* – establish itself as a zero waste production facility, collaborate with other stakeholders to not only reduce waste but also conserve or rehabilitate land use or community areas

6.7. Summary

Company Y has shown an excellent capability to communicate a shared vision of environmentalism amongst all of its employees. Information is also very effectively communicated throughout the organization in an informal manner, making decision-making and action swift. With more exposure to the latest information on the subject of environmental management within SMEs, Company Y's EC can develop a clearer vision of how innovative it wants to be in tackling its environmental impacts. The depth of decision-making can also be greater in certain areas as more accurate information is accessible. Long-term information storage and documentation should be introduced into EC's actions, and external stakeholders should be brought into the picture to introduce different perspectives on how to reduce environmental impacts.

Chapter Seven: Conclusions

This concluding chapter provides a summary of research findings that resolve to answer the initial hypothesis (page 4), which investigates the interaction between EMSs, SMEs and learning organizational attributes. Suggestions are then given of further areas to explore for this research.

7.1. Summary of Findings

As stated earlier in the initial hypothesis, an SME such as Company Y can achieve enhancements in environmental performance by applying OLT in EMS implementation even if it chooses not to adopt a formalized approach to EMS with third party certification, such as certification to ISO 14001. Company Y identifies that there is a need for an EMS, but secondary literature research debates ISO 14001's effectiveness when adopted by an SME. Company Y can establish a formalized, individually suited EMS, but needs to be persuaded that it has merit and will not be a bureaucratic process. By incorporating the skills of a sustainable learning organization, Company Y can create a more stable EMS while holding on to the flexibility and openness that is highly valued by its employees.

Many organizations rely on the use of a framework such as ISO 14001 to get started on implementing an EMS as a way of considering the environment in their business practices. In this typical scenario, going through the actions of considering environmental impacts and setting objectives and targets results in typical expectations for most large organizations. SMEs in particular have difficulty in taking this route to EMS implementation because of the informality of many of their policies and the changeable nature of their operations as they continue to grow. What is presented in this research is a relatable scenario in which an SME wants to set itself apart as an environmentally innovative organization already possessing a financial and cultural commitment towards this mission. An opportunity such as this case study presents itself as an alternative to pre-existing EMS implementation that emphasizes the need for certification.

Similar to a runner who has gone as far as they can from natural talent alone, now is the opportunity to introduce more systematized tools for the runner to draw from. These tools, if implemented simply and practically should allow for continued success that builds from the

runner's inherent natural inclination, without the need to systematically alter and formally structure every aspect of what brought them success in the first place.

Company Y is an example of how an organization is successful when it decides to incorporate environmental initiatives into its business. By considering the environment as a company's mission, an organization not only retains loyalty of its employee base, but also its consumer base. Company Y recognized that for selling a sociable beverage product to the aged 18-35 main target market, good business sense meant satisfying both employees and customers by focusing on a topic in their value system, that being the environment. Along with the environmental initiatives associated with its product, Company Y tries to connect to the community through its events. Thus, Company Y's discernible value lies in appealing to a more socially conscious, community-minded market through its services as well as its premium product. As this case study has investigated, its discernible value can also lie in the dynamic way in which it tackles environmental decision-making as a sustainable learning organization to form a unique EMS. Such an EMS would provide a third option for those organizations wavering between an ad hoc approach and an overly systematized, ISO 14001-type approach.

Very little research has been conducted or presented linking decision-making, EMSs and EMS standards, organizational learning, and SMEs. The opportunity for the researcher to view the EC's actual committee meetings and witness office daily life was a rare means of confirming personal accounts of behaviour provided during the interviews. Research collected from this exercise is meant to contribute to the subject of OLT and EMSs, as well assist Company Y in maintaining its competitiveness at the North American level as a leader in environmental stewardship within its sector. Learning organization attributes are an effective and simple way of including all aspects of an EMS into daily use, and reminding organizations why certain EMS aspects are useful in the first place. An organization like Company Y that thrives on the energy and passion of its employees deserves to have an EMS that matches that enthusiasm for the environment, and does not make the task of incorporating sustainability into business practices a tedious one.

From these results, many practical recommendations are provided to enhance Company Y's approach to environmental management. These recommendations incorporate the theory of organizational learning, with a focus on the definition of creating, acquiring, and transferring knowledge to innovate a company's environmental management program. Company Y already

shows signs of operating as a learning organization, by communicating a shared vision to all of its employees, by being willing to open its doors for assessment and improvement, and by expressing a desire to improve its environmental knowledge base. It has also shown that systematization of its practices is not a foreign concept that would be revoked by its employees. Both in its approach to Health and Safety, and in its business practices, Company Y shows how it can operate in a more systematized manner. As its environmental management matures and grows with the organization, environmental processes such as a clear communication structure, environmental vision, information storage system, and performance monitoring system can be achieved through a systematic approach that takes into consideration learning organization attributes.

7.2. Suggestions for Future Research

An EMS that incorporates the need for systematization by introducing OLT provides a viable third option to two differing approaches: ad hoc or an ISO 14001-type system. An approach of this type could be beneficial to SMEs of any sector, moving beyond the beverage industry sector. More research involving organizations from a variety of sectors that implement an EMS by incorporating Organizational Learning attributes would be useful in further supporting the conclusions found during this case study. Observations considered as idiosyncrasies of Company Y could be characteristic of other SMEs in different sectors. This type of comparison would substantiate conclusions made here and prove worthwhile in adopting an effective method of EMS implementation for SMEs.

Existing knowledge of sustainable learning organizations still needs to be further developed, but the application of frameworks that prioritize environmental performance and characteristics common for SMEs such as TNS and the one presented here should be further investigated.

This thesis includes some research into the interactions with external stakeholders and their perception of Company Y. Research can be broadened from understanding the environmental learning and decision-making process within an organization to exploring how companies learn with other companies, within the same supply chain, as competitors, or as supporting industries.

Appendix A - Consent Agreement Form

Ryerson University Consent Agreement

Research Study: Environmental Management Systems and Learning in Small to Medium Sized Organizations: A Case Study from the Beverage Industry

You are being asked to participate in an interview/questionnaire as part of a research study. Before you give your consent to participate in the interview/questionnaire, it is important that you read the following information and ask as many questions as necessary to ensure that you understand what is being asked of you and the implications of participating in this interview/questionnaire. If you are a potential phone interview or email questionnaire participant, you are receiving this consent form far in advance of your interview/questionnaire, so as to receive your written consent before moving forward with the research process. For those participants involved in an in-person interview, your written consent may be received directly prior to the start of the interview.

Investigators:

Maureen Cooper, Graduate Student Researcher

MASc candidate, Environmental Applied Science and Management, Ryerson University

Kernaghan Webb, Supervisor

Associate Professor, Ted Rogers School of Management, Ryerson University

Purpose of the Study:

This study will research the role of organizational learning within small-to-medium-enterprises (SMEs) who are trying to, or are considering developing, environmental management systems (EMS) for their organizations. This research aims to assist organizations in understanding the value and role of environmental management systems and the connections between EMSs and organizational learning. The research focuses on such issues as how environmental management

decisions and actions are undertaken and communicated throughout the organization. The interviews and questions will focus on these issues.

Description of the Study:

Approximately twenty participants will be involved in the interview and/or questionnaire process. As one of the interview/questionnaire respondents, you would be asked a series of approximately 10 -15 questions regarding your organization's approach to making decisions regarding the environment. The interview/questionnaire should take no longer than 1 hour of your time, with the possibility of a follow-up discussion within 4 months following the initial discussion, should you or the researcher have any further questions. In the case of a follow-up meeting, the participant's consent is required.

Interviews will not be audio-taped. Instead, the student researcher will take hand-written notes during the in-person / phone interview, or from the email questionnaire. The interview location will take place according to the preference of the participant - either in person at your workplace, at another preferred location outside of the workplace, over the phone, or by email. A summary of your responses will be provided to you for review and for your records. Your name and identity will not be included in the summary or any report or article that might follow from the research. Copies of any report or article that might follow from the research will be provided to you upon request. Hard copy information collected (hand-written notes) from the interview/questionnaire will be stored on campus with the research supervisor in a locked filing cabinet. Once transferred electronically, information will be stored in a data-encrypted file on the student researcher's laptop. Data will be stored until December 2012.

Risks or Discomforts:

We understand that the nature of an interview/questionnaire could provide a level of discomfort for some participants. As a voluntary participant, if at any time you feel uncomfortable during the interview /questionnaire process, or do not wish to answer a particular question, please feel free to refuse or let the researcher know of your discomfort.

We also appreciate the voluntary time commitment you are giving to this research study, and as such, want to make sure that it is as least disruptive as possible to your time schedule. The interview/questionnaire would be conducted during the most convenient time and place for you.

Benefits of the Study:

Research collected from this project would be a new contribution to the subject of Organizational Learning theory and EMSs. This research provides the potential for a better understanding of the capabilities and limitations of conventional EMSs when applied to SMEs, and will suggest appropriate EMS decision-making structures (and adjusted EMS standards) for SMEs.

The intended benefit for the case study organization is improved decision-making and organizational learning, and a more systematic approach to environmental decision-making. These results could assist the case study organization in being competitive at the North American level as a leader in environmental stewardship within the brewery sector of the beverage industry.

Confidentiality:

Confidentiality will be maintained during the entire research process. All research documents, including the student's final research paper and presentation or any article that might flow from the research, will not disclose the specifics of the case study organization, nor the names of those who have participated in the interview/questionnaire process.

If any publications arise out of this research, the name of your organization, as well as the names of interview/questionnaire respondents involved in this study, will not be published and instead remain confidential.

Voluntary Nature of Participation: Participation in this study is voluntary. Your choice of whether or not to participate will not influence your future relations with Ryerson University. If you decide to participate, you are free to withdraw your consent and to stop your participation at any time without penalty or loss of benefits to which you are allowed.

At any particular point in the interview/questionnaire, you may refuse to answer any particular

question or stop participation altogether.

Questions about the Study: If you have any questions about the research now, please ask. If you have questions later about the research, you may contact.

Maureen Cooper, Student Researcher

Email: maureen.cooper@ryerson.ca

Phone: ###-###-####

Kernaghan Webb, Supervisor

Email: kernaghan.webb@ryerson.ca

Phone: 416-979-5000 ext 2478

If you have questions regarding your rights as a human subject and participant in this study, you may contact the Ryerson University Research Ethics Board for information.

Research Ethics Board

c/o Office of the Vice President, Research and Innovation

Ryerson University

350 Victoria Street

Toronto, ON M5B 2K3

416-979-5042

Agreement:

Your signature below indicates that you have read the information in this agreement and have had a chance to ask any questions you have about the study. Your signature also indicates that you agree to be in the study and have been told that you can change your mind and withdraw your consent to participate at any time. You have been given a copy of this agreement.

You have been told that by signing this consent agreement you are not giving up any of your legal rights.

APPENDIX A

Name of Participant (please print)

By placing a check-mark in one of the following boxes, you may agree or disagree to participate in a possible follow-up interview process (by phone or email):

- ☐ I agree to participate in a follow-up interview process if necessary (by phone or email)
- ☐ I do not agree to participate in a follow-up interview process if necessary (by phone or email)

Signature of Participant

Date

Signature of Investigator

Date

Appendix B - Internal Interview Questioning

CASE STUDY RESEARCH INTERVIEW / QUESTIONNAIRE
Investigation into Environmental Decision Making

1. What is your position in the organization? How long have you worked at this organization? Please describe what a typical work day consists of for you. Do any of your daily activities involve the environment?
2. How does your organization make environmental decisions? Who has input into these decisions? What role, if any, do you play in making environmental decisions? Do you have any suggestions on how environmental decision making could be improved in your organization?
3. What are the drivers for environmental activity in your organization? Please rank the following in order of importance:
 - Law
 - Competition
 - Consumer interest/pressure
 - Awards
 - Internal Leadership
 - Other
4. Whose responsibility is it within your organization to suggest and create environmental initiatives?
5. Is there any relationship between your organization's everyday business and focus on the environment? Are there any environmental policies or procedures in place in your organization? If so, what are they (please provide titles). How useful are they? Why or why not?
6. What characteristics epitomize or represent an organization that is environmentally responsible? What do you think is the best way to effectively measure these characteristics?
7. Does your organization set any objectives and targets for specific environmental impacts?
 - If yes, how are these objectives measured and documented?
 - If no, what is the best way to monitor and document these objectives?
8. How might your organization identify and prevent any sort of environmental failure from occurring? What does your organization do when there is any sort of environmental failure? Who is involved? What role, if any, does management play in this response?
 - If no environmental failure has occurred, is there a procedure in place so that you know what to do?

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9. How does your organization “learn” from previous environmental experiences or from the experiences of others? For example, how do ideas about addressing environmental activity get recorded, transmitted, discussed and then applied within the organization?
10. How should an organization go about educating its employees, specifically in regards to the environment? Do these activities occur in your organization?
11. Does your organization use any standards or software in your daily work? If so, what type? How useful are they? Why or why not?
12. Could you describe three recent environmental innovations associated with your organization, how and why they were developed, the challenges experienced in their implementation, and “learnings” that have emerged from them?”

Appendix C - Internal Coded Responses

Coding: Analysis of Driving Forces

Internal Interview #	Observation: Main Drivers Include Internal Leadership, Staff Culture/Expectations/Involvement, Lifestyle “the norm”, Self Satisfaction/Personal Passion, Cost Savings
1	want [kids] to grow up in a good environment can see that company cares about [the environment] other: personal passion
2	other: cost savings amazing feedback from customers law and competition shouldn't be motivating factors
3	consumer interest/pressure greater than law, but not the largest driver don't want to be seen as lagging behind competition Done based upon ideal that helping environment, why would you not want to do it
4	other: pricing company tends to purchase more expensive thing if better for environment
5	young organization, everyone has voice, comfortable with sharing, expect organization to do more other: staff expectations
6	Conscious consumer, want to appeal to them, fits with premium product Intrinsically “right thing to do” We go above and beyond the law in place See ourselves a more of a leader, breaking ground for other businesses
7	Everything Company Y has done is from staff initiative, then [the EC] following through Recognition came after the fact, seems like we're going after them but we're not other: staff/company involvement
9	“young person's driven company” other: lifestyle, “the norm”
10	For environment, but saves money other: age group engagement
11	Owners want to be part of environmental movement

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Internal Interview #	Observation: Main Drivers Include Internal Leadership, Staff Culture/Expectations/Involvement, Lifestyle “the norm”, Self Satisfaction/Personal Passion, Cost Savings
12	Because relatively young, hip, socially conscious of impact, huge boost to company other: self satisfaction
13	Hopefully attract people that think alike, culture here Practically not possible to be green all the time, but having that conscience is important in moving forward in how people think other: innovation
14	other: Desire to do the right thing, good corporate citizen
15	other: Culture comes from employees, quite authentic, genuine concern about the environment
16	other: staff culture Company Y tries to provide an environment and [the employee] provides the passion, energy through initiatives, customer service Kind of an underdog company, attract people who want to make a difference, not because consumers would notice, but because we should at least be doing what we’re doing at home Our product is not one where if you consume it, you’re doing better for the environment. Instead, on the road to producing beer, we’re creating less footprint/ensuring a lower footprint
17	Co-founders are quite willing, they care Seem to encourage people who are environmentally interested

Driver	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Law	1	2	4	1	3	1	4	2	3	1	5	1	1	1	1	1	1
Competition	1	3	3	3	2	3	2	3	4	4	4	1	1	3	1	1	2
Consumer Interest/ Pressure	5	5	5	5	4	4	3	4	2	4	5	5	4	5	4/5	5	2/3
Awards	1	2	2	2	1	2	1	1	5	4	4	4	3	3	1	1	3
Internal Leadership	5	4	3	4	5	5	5	5	1	5	5	2	5	5	5	5	4
Other: Specify_____	5	4	-	1	3	-	5	-	5	5	-	5	4	5	5	5	-

Coding: Analysis of Barriers

Internal Interview #	Observation: Main Barrier is Cost, Lack of Knowledge, Lack of Availability of Appropriate Supporting Products/Suppliers, Closed-Minded Employees
1	Had to spend money on machines [for a plastic baler], but suggested idea to managers and then they were implemented
2	Recently revamped Brewhouse, highly efficient, cut water usage; lots of money, otherwise straight forward Biodiesel implemented, reluctant to put stickers on vehicles because sometimes you have to get regular diesel Small hurdle, scheduling to fill up tanks Shrink wrap baler, absolute news that it was recyclable
3	Heavier bottle makes it more reusable, LCBO saying heavier is worse; challenge in measurability of environmental impact
4	Biodegradable cups led to biodegradable shot glasses, straws; not many places making cocktail-size straws, make informed decisions with what we can use, order in bulk from Canadian supplier which helps in pricing, limits number of deliveries
5	Hoping universities will be that “thing”
6	New Brewhouse challenge as smaller brewery, end up recuperating costs to use for later initiatives Empty liquor bottles, challenge in coordinating between all departments took a couple of weeks to speak to all departments, informally approached different people, chatted casually during staff beers after work
7	Food donations program – communicating to staff/suppliers, understanding how food is to be saved, setting up guidelines, ensuring staff and suppliers knew what to do
8	Garbage diversion – challenge for the right places to put them, how to communicate process, signage as an attraction
11	Electric car, many frustrations in finding expertise

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Internal Interview #	Observation: Main Barrier is Cost, Lack of Knowledge, Lack of Availability of Appropriate Supporting Products/Suppliers, Closed-Minded Employees
12	Biofuel -finding a supplier 2 or 3 years ago, cost more money; increased awareness on how you can do it
13	Electric car – very big idea, “is this project going to see the light of day?”, implementation issues Management will and backing, Company Y can undertake even bigger projects
14	HP Smart web print – people didn’t feel comfortable/ know how to change printer settings, [IT Manager] went around and changed Biofuel – delivery time changed, unable to use biofuel, new distribution manager – within 2 days arranged to have trucks filled in morning
15	Cost of electric vehicle is really expensive Technology – no place to plug in, infrastructure not there yet, we’re on forefront
16	Budget for [electric vehicle] was considerable, went over quite a bit, logistics required, big, big project, took 1.5 years to complete

Coding: Environmental Management Structures

Internal Interview #	Observation: Equal Opportunity, “Open Door Policy” Structure; Everyone is meant to be Involved
1	[Co-Chair of EC] and [Production] work closely on the production floor, change small things [Co-Chair of EC] asks questions, makes suggestions for improvement
2	Assume most [decisions] are made by the EC, but anyone at Company Y can also make suggestions to [co-founders] and managers
3	EC tries to force issues Directive brought to help employees out EC coming to different departments Health & Safety Committee concerned about individuals (ergonomics, hazards, toxins) Told it’s everyone’s [responsibility], especially now that employees are being reviewed on it Communications department runs a lot of the EC, brings forth information, makes suggestions to employees, difficult to get data

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Internal Interview #	Observation: Equal Opportunity, “Open Door Policy” Structure; Everyone is meant to be Involved
4	Everyone has say; utilitarian environment Always open to discussion, open concept Some are more present role
5	Comes directly from office/management [Communications Director] has influence on EC EC brainstorms projects, gathers information from external events Decisions made at every level Formally, no job performance type of responsibility Once idea brought up, if EC setting, discussed then, delegated to right person to see if best suited Recorded in the minutes, followed up in next agenda
6	Ideas generated from EC Managers responsible to champion environmental policies “Two way street” between EC and Managers bimonthly EC, work on new ideas; don’t make decisions Written in Every job description Ideas from every department Sometimes takes months, year to develop idea
7	EC is primary resource [for ideas], meet and go over ideas, come up with ways to reach out to staff Minutes sent out to members, make sure delegated to managers in company Execution of ideas usually from EC or department Everyone here is a consumer, has to embrace it in daily lives A lot of departments not represented in committee Should have representative from each department – no longer volunteer – promoted to environmental steward, direct point of contact for initiating ideas, professional distinction Company Y doesn’t have bureaucracy to get things approved, literally just initiate it
8	Approach managers, not necessarily committee because only meet once every couple of months Managers as last responsibility Information posted in the building, or sent via email

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Internal Interview #	Observation: Equal Opportunity, “Open Door Policy” Structure; Everyone is meant to be Involved
9	<p>Not any one person, everyone involved</p> <p>We’re all privy to ideas, everyone has input</p> <p>[Communications Director] is strongly involved, main contact</p> <p>Within three days of one suggestion, employee spoke to co-founder about initiative, given the go ahead; weekly reports came out about new initiative, everyone knew progress</p>
10	<p>EC discusses issues, ideas, but everyone makes them</p> <p>Up to EC to think of implementation</p> <p>Any information [from EC] is spread to company, including on notice board</p>
11	<p>Company opened it up, also could be on EC</p> <p>Open door policy, reinforced in all emails</p> <p>Everyone has input, can bring forth ideas</p> <p>EC shares info, but never seen written information</p>
12	<p>Anybody has input, all staff members</p> <p>EC makes decisions, [Communications Director] passes on information between managers’ meetings and EC group</p> <p>Lots of research before “leap into it”</p>
13	<p>Very open in making decisions</p> <p>EC makes decisions, but does not mean only place that things get decided</p> <p>No rank, hierarchy</p> <p>Everyone has input, very democratic</p> <p>Constantly taking tools from companies that have been champions in certain areas, try to talk to them and bring back knowledge</p>
14	<p>Ideas initiate with EC – “conduit” by which policies, products, services go through</p> <p>Relevant functional management, depending on department, make final decisions</p> <p>Person on committee assigned task, provides updates/status</p> <p>Definitely ad hoc changes, but structurally EC gives report</p> <p>[Implementation of Waste Diversion Program] communication and education went through different iterations, took around 4 months</p>
15	<p>Bottom up more than top down</p> <p>Young organization, very local</p> <p>Someone brings attention to co-founders, also EC</p> <p>EC tables it in meeting, then implemented, people talking to each other</p>

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Internal Interview #	Observation: Equal Opportunity, “Open Door Policy” Structure; Everyone is meant to be Involved
16	Comes from staff members EC comes up with ideas, presents them to management [Co-founder] makes sure initiatives are executed Done through EC’s emails, discussions, management meetings, talk to leaders/managers, have lots of meetings, works effectively
17	Anybody can bring up an issue, see if it’s feasible Bring up issues at management meeting, see if money can be allocated Everyone gives suggestions, told we’re responsible

Coding: Suggestions For Improvement / Satisfaction with System

Internal Interview #	Observation: Most Feel Current System Adequate, Few Sense Complacency Set In
1	Current system is not too bad, always things to improve, can improve everyday
4	Allowed to have “piece”; there isn’t really a platform to do that, need to speak up about Not a meeting for everyone together to brainstorm at one time
5	Company Y has done great so far, but getting bigger Need framework, “brain trust”, so that things don’t fall through cracks, preserve culture without becoming too much paperwork, don’t want to lose human element Want to keep hierarchy “flat” as possible
6	Everyone knows who to talk to with ideas
7	No issues with how decisions are made Lacking in getting people interested in voicing opinions, complacency has set in Passion for creating new initiatives has really dried out
8	A lot of good will, but see that you need more tracking, monitoring
10	The culture allows people to discuss, join committee
11	Great system This organization, more environmental than any other business ever worked for

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Internal Interview #	Observation: Most Feel Current System Adequate, Few Sense Complacency Set In
13	The way it is, is pretty good Formal systems are not good, start becoming a filter, not everyone is comfortable proposing, you notice these dynamics
14	Sharing information, greater awareness with each department
16	Pretty happy with how we've created opportunities with our staff Could do a better job with educating staff
17	Going to institute an idea box, person should get recognition

Coding: Environmental Policies

Internal Interview #	Observation: Unanimous agreement that Business and Environment have relationship to each other
1	Training - as managers, train people in sorting recycling into bins
2	Water and Electricity usage - use minimum energy, materials to still produce quality product Couldn't name them specifically, but trying to get idling in place, speak to caterers/outside suppliers about recycling and disposal policies Trying to emulate The [central beer distributor]'s model - every single piece of packaging is returned for recycling
3	Everyday working, expected to think about the environmental impact just as much as output Procedures with dealing with materials, wastewater, waste stream, nothing measurable Employee Review
4	All of us take it seriously, whether part of our branding or not Easy for people to get excited when hiring Because making a quality product leads to small environmental footprint Different environmental initiatives

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Internal Interview #	Observation: Unanimous agreement that Business and Environment have relationship to each other
5	Company Y has only one product, so emphasis on beer and everything else on branding and image (green so engrained in marketing) Every decision has impact on future and current decisions No, no formal policies in place Green initiatives are policies and procedures
6	Everyday we do what we can Strong relationship in day-to-day business 12 main environmental initiatives
7	Catering checklist, guidelines for sorting donated food, walk through at end of night Waste Diversion - training event prepared package, retail prepared package Very useful, makes people accountable for their actions
8	Mostly all the activities, but more examples than procedures WHMIS - chemical spills, storing the waste chemicals
9	Everything from water usage, to glass to vehicles From orientation, told about recycling, double-sided printing
10	Easy to follow, straight forward No bottled water, use correct bin, print 2-sided on photo copier, don't buy plastic plates, scan as much as we can
11	Not absolutely policies, but definitely procedures [Company Y] want you to be conscious of the environmental procedures Do that at home, so why shouldn't we do them at work, or consider them just as important?
12	[Business and environment] go hand in hand, don't see it as something that sticks out; see it as something that occurs
13	Constantly making changes More practically, how we do things, not a binder somewhere Don't consider them policies, more "how to's", very integral to the success of Company Y
14	Really requires every person to take part, even just sorting garbage -caterer contract renewal - included in annual contract that they abide by policies, supervisor signs off on checklist

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Internal Interview #	Observation: Unanimous agreement that Business and Environment have relationship to each other
15	Never put there, just done that way Comes organically, not dictated, just sort of happens, built into the infrastructure
16	“part of our fabric”, “nothing to hide” policy; we have many people who come to our plant so [the environment] has to be part of our operations if we’re going to back it up Staff Guide outlines expectations Annual Review - pay based on environmental initiatives

Coding: Strategic Environmental Management and Planning

Internal Interview #	Observation: Strategy to be Innovative Company
1	Make sure everyone is trained
2	A company interested in reducing energy and reducing materials without compromising products, services to run business
3	Openness communication, suggestions No fear, open door Assessing initiatives, question whether safe or helpful
4	Company Y didn’t start off with the environment being the main concern, main focus was a premium product, then realized environment made more importance to brand
5	Transparency, accountability Like seeing it when companies have done performance benchmarking, just so what you are saying is accomplished Just looking at the environment tends to not be enough, need to look at all 3 things (social, economic, environmental)
6	A lot of forethought Social responsibility, being generally aware Transparency, not hiding anything to customers Those organizations take the bigger steps
7	Open-mindedness, critical thinking, teamwork, leadership, accountability
8	You don’t have to hide anything from anyone

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Internal Interview #	Observation: Strategy to be Innovative Company
9	Do whatever you can to do your part
10	Everybody is aware of policy, engaged in environment
11	They're aware of what's going on in world, that changes need to be made Continue to make those changes, continue efforts throughout the life of business
12	Part of the business plan/model
13	Differentiate yourself by being an "earth citizen" As long as you're green, and still making a decent profit, then that will be seen by customers – seen as fans rather than customers, they will remain more loyal; one of reasons why we see steady growth even when industry is not doing well
14	Forward thinking, innovative
15	Financial commitment to do things in responsible manner
16	Embraces staff, develops culture Opposed to regulating, requiring staff to get it done If staff aren't behind it, not going to get there
17	Innovations

Coding: Risk Management

Internal Interview #	Observation: Not Much Consideration for Environmental Risk Management
1	Provide a lot of maintenance for machines
2	Don't think operations could be detrimental to the environment 4 natural ingredients, simple packaging, don't think a true environmental failure could apply to the company
3	Don't think we've had a failure WHMIS sheets in spots downstairs, also includes chemical handling, training
4	Fleet vehicles were contrary to environmental culture, hope to do more with our cars, could strive towards moving fleet towards electric

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Internal Interview #	Observation: Not Much Consideration for Environmental Risk Management
5	Luckily we don't work with dangerous chemicals in significant amounts If released accidentally, feel confident in Health & Safety Committee
6	Lead hands, staff are trained, know what to do, proper due diligence
7	Environmental aspects in review by talking to people, EC, integrated sustainability with Human Resources
8	Everyone checking, through observation You notice something not working properly, find the appropriate person/supervisor
10	Can't prevent contamination unless you know it's there City tracks water (pH), air (no fumes from manufacturing), trucks are befouled, someone has to measure to know it's contaminated Health and Safety Committee must ensure environmental hazards aren't danger to people
11	Whoever is setting objectives and targets could go back and review whether they're being met
12	Empower everyone with making sure environmental objectives are met
14	Through brainstorming "so what's next?", relying on external parties, staff surveys, a walk around
15	Have to assign someone to do that, position created or assignment of roles, go around and look at these issues
16	The leaders need to be aware of what the objectives are Need to understand clearly what we need to work around, are we actually executing, are we exceeding our goals?
17	Doing our business, being aware of what cause

Coding: Education and Training

Internal Interview #	Observation: Environmental Training at Orientation; rest is informal communication, management meetings, and biannual staff breakfast meetings; No standards or software
1	more training, the more the better

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Internal Interview #	Observation: Environmental Training at Orientation; rest is informal communication, management meetings, and biannual staff breakfast meetings; No standards or software
2	Semi-annual staff breakfasts – focus on environment, new programs, policies Newsletter emailed monthly, environmental perspective Environmental aspect to employee annual reviews with managers, whether employee is following company's procedures
3	Newsletter, email, employee board about behaviour, management meetings All employees being reviewed on environmental initiatives, brought in last year
4	Talk about it amongst ourselves, haven't sat down all together and talked about, definitely large number of people who would love to talk about aspects of business and the environment Learn about environmental policies when we start here, when trained Talk about on tours, make sure people can discuss it with customers in store EC could make us more aware
5	All new stuff, something included in Health and Safety, training for job, values, know what Company Y does, expectations Lack formal training, but people learn if on own time, talked about often Not sure how effective we've been
6	Hands-on approach, can't spew out policies to staff, need to get them on board, make them see why it's beneficial to them
7	Should be more formal Employees learn through involvement Bulletin board – updates, ideas
8	Bulletin board, email, got book about green companies, staff breakfasts, monthly management meetings Discussed ISO before, still small so don't want someone to spend time doing just that
9	talk, lead by example
10	induction program, intranet, notice board, memos, info after each meeting
11	Sometimes bombarded with emails, if staff breakfasts, then more "in your face"
12	monthly postings about programs, open door policy

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Internal Interview #	Observation: Environmental Training at Orientation; rest is informal communication, management meetings, and biannual staff breakfast meetings; No standards or software
13	<p>mostly by example</p> <p>By the fact that we see benefit in our daily lives, how initiatives complement our daily lives, natural extension to include those in daily life</p> <p>As soon as you talk standards, you're trying to acquire things just because of the standard, better to constantly use best practice</p>
14	<p>Staff breakfast meetings twice a year (power points, tell statistics of reductions, diversions)</p> <p>Regular communication, different sources</p> <p>Regular meetings, immense support, frequent, actually doing it, "live your word"</p> <p>First time environmental part of job description</p>
15	<p>Should come from the top, mandate of company</p> <p>Have environmental objectives just like sales objectives - environmental initiatives (14 of them) get fine tuned and implemented</p>
16	<p>One-on-one opportunities</p> <p>Staff breakfasts two times a year, describe how successful initiatives have been</p> <p>Maybe have experts come in</p> <p>[Standards] part of employee review process, look at individual's success/performance with respect to the environment, rated on a personal level, have discussion, develop standards one-on-one, based on individual</p>
17	On all the time, awareness

Coding: Suggested Environmental Indicators

Internal Interview #	Overall Observation: Suggested Indicators to Measure
1	Show that they are doing the best they can
2	<p>How often dumpster is being picked up</p> <p>Measure hydro, water bill after Brewhouse installation, more efficient lighting</p> <p>Measure fuel cost</p>
3	How many initiatives brought to EC per month

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Internal Interview #	Overall Observation: Suggested Indicators to Measure
4	Measure through sales, target markets See whether customers are buying for environmental reasons or product Hard to get feel for customer base
5	Ideally, nice if national framework people could use, but every region, company is different How much diversion from landfill
7	Environmental component to employee reviews, chance for feedback, make them accountable Accounting team can see bills, amount of money Look at number of waste deliveries picked up – organics over garbage
8	Someone from outside coming to interview people Running tests, auditors monitoring progress Install more meters, do more audits More education
9	Benchmarking to other companies Setting standards that other breweries have no choice but to follow
10	Having surveys Random check that everyone knows policies/procedures
11	Cut down on water intake/cooling, see it in the dollar amounts Recognition through different levels, awards do recognize efforts Don't run faucet for so long Turn computer, lights off Recycle paper Garbage in correct bins
12	Through public opinion calling, writing, complaints
13	To look up and downstream, for example suppliers, customers, if their values align Should be reflected in likes of employees, shareholders
14	True costs of things - savings, reduction, opportunity costs, satisfaction Customer, employee participation
15	Breweries notoriously use lots of water – how can we use less water, lower footprint Use old metrics, compare your progress

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Internal Interview #	Overall Observation: Suggested Indicators to Measure
16	Through personal experience, see what's actually happening [reference to television show "Undercover Boss"] Can talk the talk, but actually have to execute
17	Other companies and peers recognizing you Records, logs come in

Coding: Current Environmental Indicators

Internal Interview #	Observation: Mixed Understanding, Assume more being done than what is actually take place
1	Objective to be 100% green in the future
2	Don't know how EC is measuring progress
3	Might be measuring electricity use
4	Running out of ideas to make company environmentally friendly, slowing down a bit Objective "do our best", try to be as environmentally friendly as we can
5	Maybe something we can measure financially
6	Definite intention to reduce impact, run efficiently as you can
7	Not specific targets
8	Mostly goodwill, intention
9	Reduced water usage by 1/3, don't know how Double-sided printing, scans/emailing as much as possible Company loves that people don't drive
10	Water targets not long ago
11	Assume yes, but don't know what targets Track hydro, water, troubleshoot with Brewmaster why costs changed Info usually required once per year for Statistics Canada, track amounts yearly
12	Cost savings? Don't know about them

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Internal Interview #	Observation: Mixed Understanding, Assume more being done than what is actually take place
13	Production may have electricity, water consumption numbers that I don't know about
14	Yes, on project basis Know intrinsically, could see results working but not reporting on results in numerical sense
15	Never communicated to me
16	Leadership really, pushing envelope No set targets, really hard to do that
17	Naturally they do, don't know

Appendix D - External Questionnaire

CASE STUDY RESEARCH INTERVIEW / QUESTIONNAIRE - EXTERNAL
Investigation into Environmental Decision Making

1. What is your official job position within your organization? What is your affiliation with [Company Y]?
2. Is there any relationship between your organization's everyday business and focus on the environment? How so?
3. How does your organization make environmental decisions? For example, who has input into these decisions?

In your business relationship with [Company Y], how do you view their environmental decisions? Do you have suggestions for improvement either in your own organization, or for [Company Y]?

4. What are the drivers for environmental activity in your organization? Do any of the following apply?
 - Law
 - Competition
 - Consumer interest/pressure
 - Awards
 - Internal Leadership
 - Other
5. Are there any environmental policies or procedures in place in your organization? If so, what are they (please provide titles). How useful are they? Why or why not?

With respect to [Company Y], what do you view as its drivers for environmental activity?

6. Does your organization set any objectives and targets for specific environmental impacts? If yes, how are these objectives measured and documented? If no, what is the best way to monitor and document these objectives?
7. What characteristics epitomize or represent an organization that is environmentally responsible? What do you think is the best way to effectively measure these characteristics?
8. How should an organization go about educating its employees, specifically in regards to the environment? Do these activities occur in your organization?
9. Does your organization use any standards or software in your daily work? If so, what type? How useful are they? Why or why not?

Appendix E - External Coded Responses

External – Questionnaire Participants

Questionnaire #	Participant
1	Beer Distributing Vendor
2	Bulk Water Supplier
3	Alcohol and Beer Distributing Vendor

Coded Response - Analysis of Own Driving Forces

Questionnaire #	
1	<ul style="list-style-type: none"> -always been environmentally friendly; “we were green before green was cool” -internal leadership and corporate culture of being environmentally conscious -it’s right thing to do, all employees proud of company’s environmental stance
2	<ul style="list-style-type: none"> -consumer interest/pressure is primary group we want to respond to, most proactive company, meet quickly evolving environmental standards -awards do motivate us -competition not so much -internal battle, how quickly/deeply we get into environmental endeavours, “one area all employees in companies struggle with if everyone is not on the same page at the outset” -internal champions sway others to perceive value
3	<ul style="list-style-type: none"> -customer and stakeholder expectations to operate responsibly, socially and environmentally -come down to dollars and cents, recognizes intrinsic value in doing so -President and CEO, other internal key leaders supportive of environmental sustainability

Coded Response - View of Company Y

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Questionnaire #	
1	-all affirmative environmental decisions made by [Company Y], or any other brewer are viewed in a very positive light
2	-do not have direct contact, but see website summary and been on brewery tour where environmental initiatives are posted -commend Company Y for what they've already done
3	-comprehensive approach to greening their business -view their environmental decisions positively -awarded for environmental commitment -commend [Company Y] for providing showers and covered bike parking for employees

Coded Response - View of Company Y's Driving Forces

Questionnaire #	
1	-any brewer who takes steps or implements environmental policies that protect the environment is viewed positively
2	-not sure, would guess consumers, dollar savings
3	-centered on deep personal interest, responsible manufacturing, quality product, great place to work -young, urban, customer base demands these things

Coded Response - Environmental Policies

Questionnaire #	
1	<ul style="list-style-type: none"> -environmental leader since 1927 -industry brown beer bottle, financial sense for industry, positive environmental impact, sense of reuse and recycle permeates all aspects of [Beer Distributing Vendor] -reduce, reuse, recycle and return -96% of containers [bottle caps, plastic, beer rings, cardboard] returned, return of beer bottles in place since 1927, expanded to include cans in 1950's -2007, accept all glass, plastic, tetra, aluminum, steel, ceramic and bag from all alcohol containers -ensure every truck leaves distribution centre full, comes back full
2	<ul style="list-style-type: none"> -predominantly use refillable bottles, not single use bottles -we own the life cycle of the bottle, not the consumer -developing and launching our CSR (corporate social responsibility) program this year which will include environmental management systems -focusing on delivery vehicles, majority of our emissions are associated with vehicle fuel -developing these more formally, many exist but not yet categorized as environmental policies
3	<ul style="list-style-type: none"> -sustaining healthy planet sustains business -protecting biodiversity and helping mitigate climate change are necessities for sustaining quality products -making strides improving environmental performance; measuring carbon output, energy efficiencies, diverting waste, championing lightweight containers, reducing paper, exploring efficiencies in logistics & transportation, phasing in environmentally friendly cleaners and engaging our employees -GoLocal, supports local alcohol, stimulates [local] economy, makes environmental sense -numerous, provide standardization across organization -e.g. paper and printer reduction strategy

Coded Response - Environmental Management Structures (Decision-Making)

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Questionnaire #	
1	<ul style="list-style-type: none"> -all employees make environmental decisions when they accept returned containers -all suggestions by all employees taken seriously, continuously trying to improve Environmental Leadership targets
2	<ul style="list-style-type: none"> -mostly [Director of Business Development] who initiates environmental programs, other individuals -processes made efficient by plant managers -will have EMS to use to benchmark, drive programs in organized way
3	<ul style="list-style-type: none"> -done in consultation with government -from specific program areas based on needs -brought to senior management, Board of Directors for approval -environmental steering committee and subcommittee on employee engagement, consult, do not make final decisions -"innovators" program for employees to bring forward ideas

Coded Response - Strategic Environmental Management and Planning (Environmentally Responsible)

Questionnaire #	
1	<ul style="list-style-type: none"> -partnered with an arm of Provincial Conservation council to promote conserving resources and environment, encourage businesses to make commitment to green leadership; provide assessment program on website to define green leadership businesses, rated by customers, consumers, clients and constituents
2	<ul style="list-style-type: none"> -systemic measurement, then actions based on measurements -documented and made visible to public
3	<ul style="list-style-type: none"> -waste management, energy efficiency, supporting sustainable organizations or community events, running operations in the most responsible manner available (i.e. utilizing available technology, innovations, manufacturing processes), conserving water and other valuable resources and supporting employees along the way. <p>Measurements might include: carbon calculating, diversion rates, money allocated to support initiatives, employee satisfaction surveys</p>

Coded Response - Education and Training (Standards and Software)

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Questionnaire #	
1	<ul style="list-style-type: none"> -weekly “retail mail” format, “one-stop shopping format for employees to keep up to date” -website available, regularly use emails, inserts into employee payroll stubs -email may come from retail mail system, employee, or executive -use many standards - internal policies and procedures, worldwide greenhouse emissions standard
2	<ul style="list-style-type: none"> -struggle with this as well -some do not see value of what we’re doing, developing ways to make everything more visible to our own staff, require methods of disseminating information to staff -not certified for any environmental standard, Hazmat plant procedures cover a lot
3	<ul style="list-style-type: none"> -embarking on comprehensive employee engagement strategy: electronic and hard copy newsletters (not all employees have access to a computer at work), printed copies of sustainability report in each store for employees, internal print magazine, intranet site just for environmental communications -integrate environmental communications through existing channels as much as possible, becomes mainstream and “not isolated in a silo of granola”

Coded Response - Environmental Indicators (Objectives and Targets)

Questionnaire #	
1	<ul style="list-style-type: none"> -does have, for specific environmental impacts -targets are agreed upon beforehand and measurements then taken before starting program -additional policies or procedures to help ensure targets are met
2	<ul style="list-style-type: none"> -took “Climate Smart” course to calculate carbon footprint, identify reduction tactics and targets -will incorporate much of this into CSR policy
3	<ul style="list-style-type: none"> -just completed baseline year for counting carbon emissions, not yet finalized targets -92% waste diversion rate for recyclable or reusable bottles, significantly reduced store waste -target to increase use of lightweight glass bottles, industry leaders on initiative

Appendix F - List of Recommendations

Note: The following recommendations are meant as simplified ideas of what was discussed in the main section of this thesis. The idea is to use this list as a suggested simplified referral after theory of EMSs and Organizational Learning is fully understood and implemented, and not vice versa.

Recommendation #1:

Consolidate project-based initiatives into broader topics, with associated short-term goals

Recommendation #2:

Collaborate on projects with companies in supply chain

Recommendation #3:

Formalize roles and define the specific communication pathways

Recommendation #4:

Provide opportunities to develop skills and knowledge of environment

Recommendation #5:

Create a reward recognition program for employee's environmental efforts

Recommendation #6:

Consider new internal team collaborations as way of creating new ideas

Recommendation #7:

Fully disclose environmental intentions in form of environmental policy, annual report

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