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## Identifying Elements of a Climate for Sustainability

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IDENTIFYING ELEMENTS  
OF A CLIMATE FOR  
SUSTAINABILITY

A Dissertation

by

ROSEMOND A. MOORE

Submitted to the Graduate College of  
The University of Texas Rio Grande Valley  
In partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

December 2015

Major Subject: Business Administration



IDENTIFYING ELEMENTS  
OF A CLIMATE FOR  
SUSTAINABILITY

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by  
ROSEMOND A. MOORE

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December 2015



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## ABSTRACT

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Sustainability as an area of research is growing in importance not only among academicians, but practitioners as well. A 2010 Accenture study of 700 CEOs found that 93% identified sustainability as important to the long term future success of their organizations (Bertels, Papania, Papania, 2010). Utilizing CEO sustainability statements Content Analysis was conducted to understand and identify those key elements necessary for a climate for sustainability. A climate for sustainability is one in which sustainability policies, practices, and procedures drive behaviors that are rewarded, supported, and expected within an organization.

Content analysis of CEO statements from organizations recognized for both their sustainability practices as CRO's 100 Best Corporate Citizens and as CEO members of the Sustainability Business Roundtable (BRT) were evaluated to better understand and identify these key elements necessary for a climate for sustainability. For organizations practicing sustainability and for those wishing to practice sustainability both identify that knowing where to begin or what to measure is still relatively unknown. This research seeks to identify the key elements necessary for a climate for sustainability through the development of a sustainability assessment tool. This tool will provide researchers and organizations alike with the foundation for further study and analysis.





## DEDICATION

The completion of my doctoral studies would not have been possible without the support and understanding of my family. My husband Keith Moore, my sons Nazier and Mekai, and my parents Cynthia and Edmond Ragan were my source of strength, guidance, and persistence. Without their presence in my life this doctoral journey would not have been possible. There were also several four legged friends Kobe, Rufus, and Blanket that made sure I always had company late into the night and early mornings. Finally to longtime friends Lisa Weathersby and Elizabeth Stovall who kept me laughing along the way and helped out whenever I needed them. Thank you for all of your love and support as I travelled on this journey.



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## CHAPTER I

### INTRODUCTION

Sustainability as an area of research is growing in recognition, not only in academia, but also is being embraced by corporations (Aguinis & Glavas, 2012). Seuring and Mueller (2008) in their analysis of sustainable supply chain literature find wide acceptance of the concept as acknowledged by increasing numbers of articles from 2 in 1994 to 30 in 2007. Also found in this research were increasing numbers of special sustainability issues, and an equal distribution of articles between environmental, sustainability, and operations management journals. While on the practical side Bertels, Papania, and Papania (2010) note in their research that a 2010 study of 700 CEOs by Accenture found that 93% of CEOs view sustainability as important for their long term future success.

As sustainability evolves into a key business imperative researchers and organizations will struggle to holistically integrate sustainability without an understanding of the elements necessary to create a climate for sustainability. The state of sustainability has evolved from a prescriptive, regulatory concept to a proactive, strategic one (Laszlo & Zhexembayeva, N., 2011). Organizations seeking to integrate sustainability in the future need a better understanding of the elements (policies, practices, and procedures) that drive a climate (behaviors that are rewarded, supported, and expected) within organizations.

Bertels, Papania, and Papania (2010) found also in their research that while CEOs see sustainability as important, most CEOs have no idea how to integrate sustainability into their organizations. Achieving sustainability depends on the knowing what elements are necessary within an organization supporting or emphasizing social, environmental, and economic dimensions in a mutual manner (Vos, 2007).

Sustainability is most commonly mentioned with sustainable development, which is defined by the World Commission on Environment and Development (WCED), Brundtland Commission's *Our Common Future* report as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs (1987, p. 8)." The full definition clearly suggests that sustainability has both short and long term implications. And converging research on the definition clearly suggest that sustainability is composed of three distinct dimensions: social, environmental, and economic (SEE) (Lozano, 2008).

The appealing nature of the WCED definition lies in the conceptualization that action necessary to conserve the present need for economic sustainability should also address at the same time how organizational actions impact future social and environmental sustainability needs such as the depletion of natural resources and changes that impact society at large (Valance, Perkins, & Dixon, 2011). While sustainability is conceptualized as three parts of a complex whole, researchers and practitioners tend to focus on a singular dimension within the research, measurement, and implementation of sustainability.

Sustainability researchers and practitioners have tended to deconstruct sustainability into its various dimensions for purposes of study and organizational integration. This deconstruction of the dimensions for purposes of study and implementation are evident in the literature. Montiel (2008) in his research acknowledges this deconstruction in his study of the corporate social re-

sponsibility and corporate sustainability literatures. He finds that the corporate social responsibility literature tends toward addressing the social aspects of sustainability, while the corporate sustainability literature emphasizes the environmental nature of sustainability (Montiel, 2008). There is limited research that concurrently addresses all three dimensions of sustainability (Lozano, 2008) therefore limiting understanding of how sustainability is implemented and/or integrated into the infrastructure of an organization as a wholly integrative concept.

The concern with this silo approach to sustainability is a lack of research and practical knowledge that addresses and attempts to understand the interrelated nature of the dimensions and how over time changes in an individual dimension may impact sustainability as a whole (Lozano, 2008). By observing sustainable organizations one can observe that each organization places emphasis to varying degrees on one or more of the dimensions of sustainability. While Walmart is clearly focused on reducing the environmental sustainability impacts of its supply chain (Walmart, 2014), Theo Chocolate is more concerned about social sustainability through its sourcing of sustainable, free trade cocoa beans that compensate growers directly (Theo Chocolate, 2014). Whereas Walmart is also known to focus on the economic sustainability of the organization through innovations in supply chain management (RFID) and its low cost philosophy which supports long term economic sustainability (Walmart, 2014).

This singular focus on one or two dimensions does not adequately capture the integrative nature of sustainability. This research offers that in order to best capture sustainability, researchers and organizations must acknowledge this integrative nature of the dimensions. It is with this knowledge that an accurate understanding of sustainability and its dimensions are captured for study and implementation. Sustainability in the context of this research consists of three unique dimensions that should be studied as an integrative whole in order to better capture impacts within organizations.



For purposes of this research the sustainability literature provides insight into what are the elements (policies, practices, and procedures) of each dimension of sustainability and how the dimensions are interrelated. Organizational climate (OC) literature provides the context for discerning how the sustainability elements are tied to behaviors that are rewarded, supported, and expected (and therefore integrated) within organizations. For this research elements necessary for a climate for sustainability are those sustainable policies, practices, and procedures that drive behaviors that are rewarded, supported, and expected within sustainable organizations.

OC literature is also utilized to capture how these elements imply meaning for the employees within the strategic, sustainability setting (Schneider et al., 2011). An understanding of the elements of sustainability advances the research knowledge and provides insight for the organizational practitioner that wants to implement sustainability within their organization. Ultimately this knowledge is needed to best understand how sustainability drives performance within organizations.

Concerns about sustainable performance have grown due to the inefficiency of products and processes that consume natural resources (Kleindorfer et al., 2005). The BP Oil Spill in the Gulf of Mexico (April, 2010) is representative of an organization that emphasized cost to the detriment of society and the environment. Organizations that desire to implement sustainability want to know are there trade-offs, and what are those trade-offs (Hahn, et al., 2010). Firms want to understand how all three elements of sustainability can be balanced, while still achieving organizational performance. There is limited understanding of the complexity involved in balancing all three elements of sustainability as well as the fact that behavioral aspects of sustainability are often overlooked (Dilliard, Dujon, & King, 2009). Identifying and understanding the climate for sustainability (CfS) provides the framework for organizational understanding.

It is only with this understanding of the elements of sustainability within the context of successful sustainability organizations that we will best understand how to implement and integrate sustainability elements into new organizations. This is important because as organizations begin to understand the impact that sustainability has financially and in the eyes of their key stakeholders and customers, sustainability is becoming a minimum expectation of the communities, customers, and key stakeholders of organizations worldwide. Sustainability is becoming a basic business imperative (Lubin & Esty, 2010). While organizations understand these new minimum requirements and have a desire to implement sustainability, they rarely have success in the implementation process (Epstein, 2008).

Organizations are being asked by their stakeholders to implement sustainability elements that equally focus on social, environmental, and economic performance (Hubbard, 2009). These stakeholders are placing pressure on firms to better protect the environment through more efficient processes, less damaging products, and to have a greater impact on society. Organizations need to understand how to implement sustainability within their organization to meet the new business imperative and to take advantage of the competitive benefits.

Implementing aspects of sustainability is recognized as providing firms with a competitive advantage. This competitive advantage results from outcomes such as higher productivity (Ichnowski et al., 1997), improved organizational and market performance (Chan et al., 2004), and innovation (Shipton et al., 2005; Jimenez-Jimenez & Sanz-Valle, 2005). The sustainability elements necessary to create a climate for sustainability is the primary question of this research. How an organization becomes sustainable is covered, not because it is in question, but because understanding of the differences provide clues to those sustainability elements that may be important given an organization's industry, leadership vision, and/or mandatory regulatory requirements.

Organizations become sustainable in a variety of ways and for a variety of reasons, yet in each way they can function viably. Gaining an understanding of sustainable elements and their differences across organizations is necessary in assisting new organizations interested in implementing and becoming sustainable. This understanding of elements also is necessary to ensure that current sustainable organizations remain sustainable over the long term. Below are some ways in which organizations may become sustainable.

A business may begin operations founded on the principles of sustainability, which are permeated throughout the organization, such as Patagonia, Terracycle, and Ben & Jerry's. Passing of legislation in several states for a new form of business ownership – Benefit (B) Corporation, is recent evidence of the strong interest in sustainability within organizations.

A business may become sustainable opportunistically, as a result of the development of sustainable products and processes, such as General Electric's Eco-imagination Division and Walmart's effort to reduce their carbon footprint tied to logistics. A business may become sustainable due to imposed regulations that require them to report sustainable actions. Or, a business may also become sustainable accidentally (i.e, an entrepreneur starts a sustainable business as a spinoff of a parent's business – use waste from one business to create a new business). There is also the hybrid organization (Haigh & Hoffman, 2012) that becomes sustainable to build an organization and markets to address the environmental and social problems that exist in society.

While the sustainable foundation for each of these firms is recognizably different the internalization of sustainable elements (policies, practices, and procedures), and supported behaviors are what allow the organization to continue to move toward a strategic intent (Schneider, Ehrhart, Macey, 2011) such as sustainability. In practice there is an obvious need to understand elements, but also Parisi & Maraghini (2010) find there is an increasing emphasis in the sustainability literature to translate business strategies into business practices.

Understanding differences facilitates knowledge of how firms remain sustainable over time. This research searches for differences among and between sustainable organizations by identifying what internal elements (policies, practices, and procedures) exist within sustainable organizations that create a climate for sustainability (*CfS*). Internal elements in the context of this research are drivers within an organization that move organizational members toward a specific strategic intent, such as sustainability. The internal sustainability behaviors within the organization that are rewarded, supported, and expected create the climate for sustainability (Schneider, 1987). The impetus of this research is to uncover what are the sustainability elements necessary for creating (implementing and assessing for integration) a climate for sustainability (*CfS*).

A climate for sustainability is an organizational environment that supports sustainable elements (policies, practices, and procedures). These elements create the climate that drives behaviors that are rewarded, supported, and expected across all three dimensions of sustainability. What is not yet fully understood about sustainability are these unique, identifying organizational elements of a *CfS* (Salzmann, Ionescu-Somers & Steger, 2005). By investigating sustainability and climate literature to uncover key elements (policies, practices, and procedures) and through the intended research methodology similarities and differences that exist across organizations are uncovered.

This study addresses identifying those key elements necessary to create a climate for sustainability. The purpose of this exploratory, qualitative design is to first identify sustainability elements existing in recognized sustainable organizations utilizing content analysis. The findings from the qualitative content analysis are then utilized to develop a sustainability assessment tool. The first phase of the study will be a qualitative exploration of what are the elements that

exist in 44 U.S. recognized sustainable organizations. These organizations are both members of a sustainable business roundtable and are recognized as CRO's 100 Best Corporate Citizens in 2013. From this initial exploration, the qualitative outcomes are used to develop a sustainability assessment tool that addresses the problem of guiding those that desire to integrate sustainability within their organizations. The remainder of the introduction provides an overview of the study background, a statement of the research problem, the purpose of the research, details of the methodology, identification of limitations, and lastly the significance of the research.

### **Background of Study**

Climate literature identifies that different climates exist for organizations just as different climates exist for organizational imperatives such as climate for safety and climate for service (Schneider & Gunnerson, 1990). Therefore, one could hypothesize that there is also a "climate for sustainability." The success of sustainability initiatives can only be understood by investigating what elements serve to create this climate for sustainability (*CfS*).

*CfS* is an original construct developed for the purpose of conceptualizing sustainability as a set of elements (policies, practices, and procedures) that exist for each dimension of sustainability and specifying that these elements drive actions within organizations that lead to the integration of sustainability as a strategic initiative. This approach addresses the concern and the research question: What internal organizational elements drive a climate for sustainability? The importance of this understanding serves to explain how and why sustainable organizations differ and provide insight on those elements important within sustainable organizations for ensuring long term, viable success.

Organizational climate (OC) is defined as the policies, practices, procedures, and behaviors that are rewarded, supported, and expected in a setting (Schneider, 1990; Ostroff et al., 2003). Organizational Climate (OC) examines the impact of organizational systems on groups and individuals within organizations through the evaluation of these policies, practices, and procedures (Schneider, Ehrhart, & Macey, 2011). The strategic focus within the OC literature suggests that there is a climate for “something” (Schneider, 1975). This climate for “something” is necessary to have valid measures of expected outcomes.

OC literature is the context utilized to identify a climate for sustainability. In order for firms to better conceptualize the importance of sustainability, they must first understand what internal organizational elements and behaviors support and drive a climate for sustainability. Having this understanding allows for the effective implementation and integration that results in sustainable organizational performance (Bertels, Papania, and Papania, 2010).

Identifying these internal elements of a *CfS* serves to specify important factors represented by each dimension (social, environmental, and economic) and how these dimensions successfully interact and drive sustainability outcomes within organizations. It is through these sustainability policies, practices, and procedures that firms focus their investments in resources that execute sustainable activities that ultimately lead to sustainable performance. Organizational practices such as hiring and selection, training, performance evaluation, and rewards and recognition all serve to support the development of attitudes and behaviors in support of sustainability (Jabbour & Santos, 2008). Organizational approaches such as development of sustainable products and processes, sustainable logistics, and sustainable supply chain management support the system of sustainable behaviors and actions.

## Statement of Problem

Sustainability is becoming an important business imperative due to concerns about performance that have grown as a result of the inefficiency of products and processes that consume natural resources (Kleindorfer et al., 2005). Academicians and practitioners want to understand how SEE dimensions of sustainability can be managed, while still achieving organizational performance. Identifying and understanding the elements necessary for a climate for sustainability (CfS) provides the framework for organizational understanding. There is still limited understanding of the complexity involved in managing all three dimensions of sustainability and integrating sustainability within organizations (Bertels, Papania, and Papania, 2010).

Behavioral aspects of sustainability are also typically overlooked in the literature (Dilliard, Dujon, & King, 2009), therefore addressing both the understanding of sustainable elements and behaviors contributes significantly toward closing the sustainability research gap. However, the true challenge is how to implement and integrate the impact of all three dimensions of sustainability simultaneously. One way to understand this challenge is to compare the sustainability movement with the quality movement.

Sustainability is travelling a path similar to that of the quality movement (Waddock & Bodwell, 2004). Aspects of sustainability will become integrated into organizations not because organizations proactively desire it, but because societal expectations will demand that it be a minimum requirement (i.e., alternative energy options, higher gas mileage). Very similar to the quality movement, a point in time arrived where quality became a business imperative.

Often the sustainability literature compares sustainability's progression to that of the quality movement (Waddock & Bodwell, 2004). Whereas, organizations believed that the cost outweighed the benefits of quality implementation, similar arguments are made with regard to sustainability. Does the cost really provide expected benefits? Does the cost of implementing

one dimension impact the cost of another dimension? Similarly to quality one could expect sustainability to be a primary organizational initiative that drives business success and eventually becomes an expected business imperative.

Sustainability is on a path to become the next business imperative. Implementing sustainability and/or improving on their current sustainability position require understanding of the elements and behaviors necessary to create a climate for sustainability. Creating this climate becomes of paramount importance to conceptualize and re-shift the paradigms of sustainability research and organizational implementation of sustainability away from a deconstructed silo approach to conceptualizing one construct with three equally important interrelated dimensions that provides positive, strategic implications for the organization.

### **Purpose of Study**

The purpose of this study is to uncover the internal organizational elements (policies, practices, and procedures) necessary for holistically implementing and/or maintaining a sustainable climate. By identifying these elements organizations can more insightfully implement sustainability across all three dimensions, and better understand organizational impacts. By identifying these elements researchers can more insightfully study sustainability integrating all three dimensions into their research designs. As sustainability becomes a business imperative, organizations that want to create a climate for sustainability need a way to understand what elements are important under each dimension and how to integrate these elements into their organization. This research will meet this need by utilizing a exploratory, qualitative approach that identifies elements through content analysis and literature review. Also an outcome of this research is the



development of a sustainability assessment tool that researchers and organizations can apply to enhance knowledge, understanding, and guide implementation of sustainability within organizations across all dimensions. The proposed methodological approach is discussed and detailed next.

### **Methodology**

This research utilizes an exploratory, qualitative approach for identifying the elements (policies, practices, and procedures) necessary for creating a climate for sustainability. This research consisted of an exploratory, qualitative content analysis of CEO narratives from members of the 2013 Sustainability Business Roundtable (BRT). The CEO sample of 44 organizations consisted of companies that also ranked on the CRO's 2013 100 Best Corporate Citizen report. The purpose of the content analysis was to identify elements of sustainability within sustainable U.S. organizations across all three dimensions of sustainability. Schneider, Wheeler, and Cox (1992) studied the climate for service utilizing content analysis and their findings offer that this is a valid approach for identifying elements of routines and rewards tied to a specific strategic intent. Results from the content analysis are utilized sequentially for two primary purposes. First the results are used to identify additional elements to enhance the research covered in the Chapter II – Literature Review. Secondly, content analysis results are used to develop an assessment tool to be distributed to a larger population of sustainable U.S. organizations for future quantitative, survey research to validate the themes identified by the content analysis. More specific details about the methodology can be found in Chapter III – Methodology.

### **Limitations, Inclusion/Exclusion Criteria**

Environmental sustainability, corporate social responsibility (CSR), and corporate sustainability (CS) literature are utilized to capture the social, environmental, and economic elements of sustainability. Literature not included while acknowledged, is the sustainability literature that focuses on stakeholder theories (Ruf et al., 2001), and external pressure (Schaefer, 2004). Stakeholder research conceptualizes that there are externalities that are driving the organization to implement sustainability (reactively, proactively, and/or to gain a competitive advantage). Whereas this research is internally focused on identifying policies, practices, and procedures utilized in the support of sustainability integration and implementation. Also, discussions about the life of sustainability as an organizational initiative are also not included, nor addressed.

### **Significance of Research**

Contributions of this research involve identifying elements (policies, practices, and procedures) that create a climate for sustainability across all three dimensions. While the literature addresses what sustainability “is”, there is a new focus on translating this knowledge into how organizations become sustainable through their business practices (Parisi & Maraghini, 2010). This research seeks to identify elements of a climate for sustainability and to provide an assessment tool to use for assessing organizational gaps and understanding of elements necessary for implementing a sustainability initiative. Academically and practically, this study contributes to the sustainability research by increasing understanding of which elements under each dimensions of sustainability are important in a holistic approach, and by providing an assessment tool for assessing and implementing sustainability within organizations.

Content analysis is being utilized to address two specific gaps in the research. The first gap being the identification of sustainability elements not typically found in the research, but captured in CEO narratives. The second gap addressed is the development of an integrative assessment tool that can be utilized in the implementation of sustainability initiatives within organizations. This assessment tool is the integrating element of the survey analysis which is outside of the scope of this dissertation, but identified for future research.

The organization of the remainder of the paper includes a literature review in Chapter II, of the sustainability and organizational research streams. Sustainability literature is reviewed in Chapter II to provide an overview of the literature, its evolution, and identification of dimensional elements. Organizational climate literature is reviewed to establish the foundation of important content to collect within the sustainability literature. After completion of the initial literature review, content analysis is undertaken to identify and enhance the sustainability literature review through the integration of important elements based on the content analysis outcomes. In Chapter III a detailed review of the research methodology, content analysis is provided. Chapter IV provides the results and findings. While the paper concludes with Chapter V which summarizes the conclusions and discussion of future opportunities for research and practice.

## CHAPTER II

### LITERATURE REVIEW

With growing interest in sustainability by academicians and practitioners, there are questions remaining revolving around what is sustainability, how should it be studied, and how it is characterized within organizations (Mohrman & Worley, 2010). While there is generally an accepted definition within the literature (WCED definition), this definition is often re-interpreted to meet individual research interest and/or a unique or specific organizational purpose (van Marrewijk, 2003).

Sustainability is defined by the WCED as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs (1987, p. 8).” From this definition there are several aspects of sustainability that can and have been acknowledged. First, there is the longitudinal aspect of this definition. One understands from this definition that sustainability is not only meeting present organizational need in the short term, but also making organizational decisions that ensure future longevity (Faber, Jorna, & Van Engelen, 2005). One can also take away from this definition that sustainability is multi-dimensional. Dimensions that are a recognized part of sustainability are the social, environmental, and economic (SEE) aspects (Faber, Jorna, & Van Engelen, 2005).

While this definition’s longitudinal and dimensional aspects are readily accepted by academicians and practitioners and considered ground breaking (Johnston, Everard, Santillo, & Robert, 2007), there is a tendency by both to approach understanding of sustainability breaking it

into its smaller parts. In the past corporate sustainability was related primarily to research and organizational focus on the environment in the form of Environmental Management (EM), while Corporate Social Responsibility (CSR) referred to social actions or their impact within organizations (Montiel, 2008). Economic sustainability is acknowledged as well in the literature as a primary means for being environmentally and socially responsible (Waddock & Graves, 1997). Economic elements of sustainability are also captured as measures of performance with regard to sustainable actions and practices.

Sustainability has evolved such that CSR and CS are beginning to converge (van Marrewijk, 2003). Understanding sustainability actions and how much importance to place on each dimension of sustainability still remains unclear. In order to do something about sustainability one must understand what sustainability means (Faber, Jorna, & Van Engelen, 2005), not just for one or two dimensions, but also the impact of organizational decisions to all three SEE dimensions. van Marrewijk (2003) suggests that whether an organization addresses one, two, or all three dimensions, that evaluations of the firm's efforts can be interpreted as their ambition for sustainability.

Organizations that conceptualize sustainability based on these various ambitions have demonstrated not only failure, but also success in the long term. British Petroleum's (BP) emphasis on economic cost reductions led to negligence that resulted in significant negative social, environmental and economic outcomes which will have long term effects (Department of Justice, 2012). On the other hand Patagonia's focus on the environment drives its business strategy, products, and economic success for the future. In 2011 Patagonia gave away over \$3 million in grants for environmental and socially responsible projects. Since 1985 they have given back

over \$34 million in monies for organizational environmental and social initiatives (McLaren, 2009). The key to correctly capture the impact of sustainability is to view it across all three dimensions symbiotically.

When viewing sustainability across all three dimensions a beginning point is to conceptualize sustainability as three equal sized circles whereby sustainability is represented as the intersection of the three SEE dimensions (see Figure 1). In order to drive sustainability across all three SEE dimensions, a structure that drives a sustainable structure is required (van Marrewijk, 2003). A sustainable structure establishes (a) strategic direction, (b) important organizational metrics and measures, (c) serves as communication of important sustainability initiatives to all stakeholders, and (d) facilitates a performance management system that becomes integrated throughout the organization. Creating a climate for sustainability (*CfS*) requires policies, practices, and procedures that drive sustainable behaviors that are rewarded, supported, and expected. Identifying elements necessary for a *CfS* are the impetus of this research.

The following literature review begins with an overview of the sustainability literature which is undertaken to identify those policies, practices, and procedures that drive sustainable behaviors across all three dimensions within organizations. The resulting elements identified suggest the necessary structure required to create a climate for sustainability. Secondly, a review of the organizational climate literature is undertaken to uncover behaviors that are rewarded, supported, and expected within organizations. The ultimate goal of this research is to utilize these outcomes to develop a sustainability assessment tool that can be used to advance research and to be applied practically within organizations.

## **Sustainability**

A review of the literature is conducted with the purpose of providing an overview of each of the three dimensions of sustainability. Also, results induced from content analysis of sustainable organizations were used to identify sustainability elements (policies, practices, or procedures) and/or behaviors that are rewarded, supported, and expected within organizations.

Sustainability has evolved not only in practice, but also within the literature. Sustainability for practitioners is no longer just about compliance, now organizations look to sustainability as a means to innovate, create new opportunities, and achieve excellence across all three dimensions (i.e., social, environmental, and economic) (Epstein, 2008). This evolution away from compliance has led to aspects of sustainability that drive shareholder value and require organizations to deal with the contradictions of simultaneously improving corporate social, environmental, and economic performance (Epstein, 2008).

For the academic researcher, sustainability has also evolved. Research interest in the social responsibility of organizations has become more widespread. A current review of corporate social responsibility (CSR) research by Aguinis and Glavas (2012) found that the number of CSR articles doubled between 1990 and 2005. And they identified that of those 588 journal articles reviewed that 43% of the articles written have been published since 2005. (Aguinis & Glavas, 2012).

When reviewing the literature across each of the three sustainability dimensions there are recognized sustainability policies, practices, and procedures that are identified as being rewarded, supported, and expected. A review of the literature for each of the dimensions follows. The chosen literature for the review is sustainability literature from two key functional areas of research, human resource management and operations management. Literature from these two streams of research represents areas within organizations where policies, practices, and procedures are managed and guide the organization (human resource management).

Thompson (1996) found that companies that utilized human resource management practices that impact climate outperformed organizations that had less progressive practices. Also, this literature reflects where behaviors and actions concentrated within operations management to improve the organization for the purpose of meeting some strategic intent such as sustainability. One may wonder whether finance was not included as well as a function important to sustainability, given the economic dimension of the concept. A recent meta-analysis by Kim and Adriaens (2013) found that due to varying objectives and means of measure that it is difficult to connect specific sustainability efforts to financial performance. They also found when comparing academic and practitioner literature on financial sustainability that the relationship while significant, was very small.

A review of the literature across the streams of literature for each of the sustainability dimensions suggests common themes and approaches to sustainability. All three dimensions are reviewed below based on identified practices within the literature, work content and elements, and characteristics of leadership. Each dimension of sustainability recognizes the importance of rewarding and supporting the behaviors specific to that dimension.

### **Social Sustainability**

Social sustainability elements are those policies, practices and procedures within organizations that are proactively undertaken by organizations with the purpose of having a direct impact on society at large. Examples of this include everything from allowing employees time off to do community service project to implementing projects that improve the literacy of residents in the area where an organization operates. Research literature acknowledges the importance of human resource management practices on implementing strategic imperatives (Fleury, 1999).



The social sustainability context and practice most often associated with the literature is the recruitment, selection, training, and performance evaluation (Jabbour & Santos, 2008) associated with managing a diverse workforce, and how diversity impacts the organization (Wentling & Palmas-Rivas, 2000; Wu & Chang, 2007; Ng & Burke, 2005) (see Table 1). Social sustainability is also acknowledged within the operations management literature.

Within the operations management literature practices that are rewarded, supported, and expected with regard to the social dimension of sustainability are the way in which organizations select, train, and evaluate the performance of suppliers (sustainable supply chains), how organizations produce products and implement processes that are socially responsible (i.e., reverse supply chains and closed loop supply chain), and how organizations report on their social performance (Erol et al., 2009; Ciliberti, et al.; 2008) (see Table 2).

Literature on social sustainability and performance provides insight into those practices that are valued internal to organizations relative to social sustainability. Social sustainability training is the training that occurs within organizations that provides employees knowledge about how to be more socially proactive internal and external to the organization (Wentling & Palmas-Rivas, 2000; Erol, 2009). This type of training involves improving internal elements within organizations, toward the achieving a common purpose.

Other social sustainability practices documented in the literature that impact internal elements are the amount of investments that organizations make whether financial, time, or philanthropic activities to improve the society at large (Wikstrom, 2010). Firms also offer employees paid time off to work on community projects on company time (Wikstrom, 2010). Another key practice that develops external elements is social sustainability reporting (Makower, 2010). This practice involves voluntarily providing a report of performance on social sustainability measures. Relative to diversity social sustainability places strong emphasis on recruiting and selection as a

means for hiring a diverse workforce with the values to support sustainability efforts (Fluery, 1999; Wentling & Palmas-Rivas, 2000).

Aspects of work content are captured in the social sustainability literature through the integration of social actions into the content of work and measured as part of the performance evaluation (Wentling & Palmas-Rivas, 2000). Integrating required social actions into the employee's performance evaluation drive work behaviors in support of the organization's social sustainability initiatives.

Work environment elements recognized in the social sustainability literature are actions such as career planning (Wentling & Palmas-Rivas, 2000) and career development (Wu & Chang, 2007; Devine et al., 2007). Research by Wu & Chang (2007) support that organizations that provide structure that promote and provide opportunities for development create environments that encourage employees to succeed and progress within the organization.

An organization through its leadership practices encourages a particular climate within. If the leader of an organization emphasizes practices that address social issues, this helps the employee develop similar perceptions and attitudes (Pagell & Gobeli, 2009), and therefore a climate for sustainability. If that leader emphasizes that importance of integrating the social dimension into the decision-making and problem solving process this as well serves to establish that climate for sustainability. Next a similar review is conducted of the environmental sustainability research around key practices, work content, and leadership characteristics.

## **Environmental Sustainability**

Environmental sustainability elements are those policies, practices and procedures within organizations that are proactively undertaken by organizations with the purpose of having mini-

mizing and/or eliminating actions that have an adverse affect on the natural environment. Examples of environmental sustainability elements include emissions reductions, designing of products and processes to reduce environmental impact (closed loop systems for return and recycle), and implementation of environmental management systems.

Due to forced compliance initially, and evolution into utilizing “green” products and processes to innovate and develop new markets, environmental sustainability is the most recognized and researched of the three dimensions (Montiel, 2008). Human resource management (HRM) practices are considered crucial for environmental management within organizations (Wee & Quazi, 2005). Human resource management practices that are acknowledged in the literature are environmental training (Ichinowski et al., 1997), providing rewards and incentives for environmental actions (Jabbour & Santos, 2008), and implementing Environmental Management Systems (Brio et al., 2007; Perrone et al., 2006, Wee & Quazi, 2005) (See Table 1). Similarly environmental sustainability practices are acknowledged in the operations management literature.

Environmental sustainability literature within operations management focuses on the development of environmental products and processes. The literature also emphasizes the importance of systems utilized for returning, recycling, remanufacturing, reworking, and/or repurposing of products (Montabon, et al., 2007) to ensure impact on the environment is minimized (See Table 2). The relationship and practices of external suppliers and stakeholders in the entire supply chain also are relevant aspects of environmental sustainability.

Just as with social sustainability, training is recognized in the environmental sustainability literature as enhancing environmental performance (Angell & Klassen, 1999; Daily & Huang, 2001). Environmental sustainability training emphasizes and provides employees insight on how to proactively be more environmentally conscious. Investments in environmental projects and

initiatives also are recognized as leading to improved environmental performance (Gonzalez-Benito & Gonzalez-Benito, 2005; Wikstrom, 2010).

Allowing employees to work on environmentally oriented projects outside of work on company time demonstrates the organization's commitment to the environment. Environmental reporting is a practice that communicates to internal and external stakeholders the importance the organization places on being transparent about their behaviors related to the environment. This practice has been found to result in improved environmental performance (Azzone, Manzini, & Noci, 1996; Chang & Kuo, 2008; Pagell & Gobeli, 2009).

Similarly to social sustainability, practices that encourage a climate of sustainability create perceptions and attitudes that decision-making with regard for the environment is an important aspect of organizational performance (Wikstrom, 2010). Measures that organizations take to reduce emissions, waste, and/or consumption are specific practices that demonstrate to employees the organizations commitment to the environment (Rothenberg, Pil, & Maxwell, 2001; Pullman, Maloni, & Carter, 2006).

Internal elements documented in the environmental sustainability literature reflect those actions taken within to drive environmental performance. Just as with the social sustainability literature, the environmental sustainability literature identifies training as important to the specific dimensions. While social sustainability places a greater emphasis on selection and recruiting, environmental sustainability emphasizes the importance of reward and recognitions systems to support environmental initiatives (Daily & Huang, 2001). Elements most noted in the environmental sustainability literature include environmentally sustainable product / process design (Sroufe et al., 2000; Maxwell & van der Vorst, 2003; Kleindorfer et al., 2005; Gonzalez-Benito & Gonzalez-Benito, 2005).

Development of environmental products is seen as a competitive advantage that would not exist had the organization had a different strategic focus (Gonzalez-Benito & Gonzalez-Benito, 2005). Concern however is also that utilizing organization funds for environmental projects also may negatively impact the financial performance (Gonzalez-Benito & Gonzalez-Benito, 2005). Key elements identified in the operations management literature related to environmental sustainability also address the logistics and supply chain within organizations.

Organizations that take on sustainability as an initiative recognize that sustainability must exist also beyond their four walls. What a supplier does to negatively impact the environment (i.e. using paint with lead and polluting) ultimately is the responsibility of the business that utilizes the supplier's goods. Organizations are being tasked with ensuring that their suppliers are also socially and particularly environmentally sound. Additional challenges facing organizations are items such as what to do with waste once the consumer has finished with their item (Kleindorfer et al., 2005).

This had led to a stream of research on closed loop systems (Kleindorfer et al., 2005) and reverse logistics (Sarkis et al., 2010) – how to return used goods. Also organizations must evaluate incoming processes (from suppliers) as well as outgoing processes (to customers / consumers), which has generated a stream of research on sustainable supply chains (Linton et al., 2007; Seuring & Muller, 2007). Aspects of work content and work environment are similar to those for social sustainability. Integrating environmental elements into an employee's performance evaluation drive behaviors and actions that support organizational environmental initiatives (Ramus, 2002; Jabbour & Santos, 2008).

Leadership emphasis in the environmental sustainability literature involve aspects of top management support for environmental initiatives (Daily & Huang, 2001), environmental communication (Sammalisto & Brorson, 2008), and elements of motivation and participation as

driven by leaders within the organization (Brio et al., 2007). Lastly, the economic literature is discussed and reviewed. Similar patterns are found around the practices, internal work elements, and leadership.

### **Economic Sustainability**

Economic sustainability elements are those policies, practices and procedures within organizations that are proactively undertaken to ensure economic longevity of an organization, such as implementation of a cost reduction initiative. Economic sustainability of organizations is treated in the literature traditionally as to how sustainability impacts organizational performance measures and financial outcomes. Also, the literature utilizes by proxy innovation as a means of characterizing economic sustainability (Jimenez-Jimenez & Sanz-Valle, 2005). Practices identified in the literature as supporting economic sustainability and innovation are compensation, incentive pay, teamwork, training, employee involvement (Ichinowsky et al., 1997), organizational culture (Lau & Ngo, 2004), and overall human resource management systems (Laursen & Foss, 2003).

In regard to economic sustainability, this dimension often is evaluated along with one of the other two dimensions (i.e., social and environmental). As such, both the environmental and social sustainability literatures address what are those policies, practices, and procedures that most impact performance. However, there are other aspects of organizational practices that suggest the importance of sustainability on economic performance within organizations.

Economic performance captures elements that address cost savings, but also discuss the cost of being sustainable. However, it is the reduced costs due to reduction in emissions, waste, and penalties/fines that lead the discussion (Pagell, Krumwiede, Sheu, 2007). While there are

specific social and environmental practices that are recognized as driving sustainability performance it is the savings and/or profit associated with these practices and the manner in which they enhance or detract from organizational outcomes that's important. Increased profits as a result of sustainability practices come from the implementation of new products, processes, methods, and/or the creation of new markets (Orlitzky & Benjamin, 2001; Chang & Kuo, 2008). Implementation of these new processes and methods have resulted as well in improved product quality (Rao & Holt, 2005; Pagell, Krumwiede, & Sheu, 2007; Rusinko, 2007).

Involvement in sustainable practices also leads to the introduction of new employment opportunities (Erol et al., 2009). Growth of the green economy, green products and services, green careers, has been at the forefront of the sustainability movement (Bruyere, S. M. & Filiberto, D. M., 2013). These practices and the desire for organizations to acknowledge and commit to sustainability have resulted in a new form of business ownership termed a "B" corporation. These organizations are taking the lead on identifying, implementing, and transparently reporting on sustainable practices. Ultimately what all of these organizations are in search of are improvements in financial and market performance. What organizations have discovered is that sustainable practices can and do result in financial gains for the company (Gonzalez-Benito & Gonzalez-Benito, 2005).

Just as the other dimensions acknowledge the importance of internal practices such as training (Walsworth & Verma, 2007), performance evaluation, (Jimenez-Jimenez & Sanz-Valle, 2005), and recruitment and selection (Shipton et al., 2005), the unique emphasis for economic sustainability is more focused on the having systems in place that support these elements. As such, of the three sustainability dimensions, the economic dimension places the most responsibil-

ity on practices of the leader. For success under this dimension the leader needs to lead the implementation of HRM systems that support sustainability (Laursen & Foss, 2003; Lau & Ngo, 2004), in particular innovation that drives sustainability.

Other relevant leadership practices that drive innovation are industrial relations and employee involvement (Mazzanti et al., 2006). Mazzanti et al. (2006) found industrial relations and employee involvement to be stimulants of organizational innovation. Lastly, organizational culture while not unlike organizational climate drives behaviors within organizations. While organizational climate emphasizes what and how an organization should integrate sustainability (i.e., policies, practices, and procedures), organizational culture emphasizes why things should be done (i.e., values and beliefs) in support of sustainability. Leadership within organizations establishes both the climate and the culture. Culture dimensions can influence organizational and market performance (Chan et al., 2004). While this is a cursory review of the dimensions within the sustainability literature, later this review is expanded to include outcomes from a content analysis study of U.S. CEO sustainability narratives.

While dimensionally the literature review above addresses the elements specific to each dimension there is also a need to identify and discuss the literature associated with those elements found to exist within sustainable organizations. The identification of sustainable elements was arrived at inductively through the results of content analysis. A collection of 44 CEO narratives about sustainability were content analyzed to identify those key elements that make up a climate for sustainability.

Specific details of the content analysis methodology can be found in Chapter III Methodology section of the paper however, a short overview is provided here. A content analysis of CEO narratives from 44 recognized U.S. sustainable organizations was undertaken. The narratives are generated annually by a network of CEOs that are all members of the Sustainability



Business Roundtable (BRT) group. The narratives were evaluated based on the statements made about sustainability in general as well as each of the dimensions of sustainability. Also content analyzed were statements made that reflected those climate elements (policies, practices, and procedures) that are rewarded, supported, and expected in a sustainable organization.

### **Sustainability Themes**

The CEO narratives were also evaluated to better understand and enhance the sustainability literature review to include analysis of key elements occurring presently within sustainable organizations. Key elements were uncovered in research by Bertels, Papania, and Papania, 2010.

Bertels, Papania, and Papania, 2010 were commissioned by the Network for Business Sustainability to identify sustainable practices that result in a culture of sustainability. They were commissioned to conduct this study as the result of a global study by Accenture that found 93 percent of CEOs found sustainability to be important, however these same CEOs found it difficult to integrate sustainability into their daily operations. The output from their research was a how to guide for executives that provides a framework in which CEOs can measure their sustainability performance.

The framework consists of four quadrants that categorize practices as fulfillment (north) practices that support current organizational activities, innovation (south) practices that focus on practices that prepare organizations for the future, formal (east) practices that establish rules and procedures around sustainability, and informal (west) practices that drive values and behaviors around sustainability. These practices were identified from sustainability and

Their research was supported by a network similar to the network participants in the Business Roundtable (BRT), the Network for Business Sustainability consists of CEO members of sustainable business organizations, however these organizations are headquartered in Canada.

Outputs from the BRT CEO narratives were mapped against the four quadrants from the Bertels, Papania, and Papania framework. Results from the content analysis of BRT CEO narratives (See Figure 2) identified the following elements (policies, practices, and procedures) as necessary for a climate for sustainability within the 44 sustainable U.S. organizations. Four of the top five elements were selected because they represent the highest scoring practice from each of the quadrants in the Bertels, Papania, and Papania (2010) framework. The fifth element codification was selected because of its representation of one of the defining elements (policies, practices, and procedures) of climate. These five elements were subsequently reviewed for inclusion in this literature review.

- Sustainability & Re-Envisioning
- Sustainability & Integration
- Sustainability & Development
- Sustainability & Signaling
- Sustainability & Codification

### **Sustainability & Re-Envisioning**

Re-envisioning in the context of the Bertels, Papania, and Papania (2010) research is an informal practice for innovation. It falls in the quadrant of building momentum for change. This quadrant captures informal, innovation practices. This practice ranked first for sustainability and each of the three dimensions of sustainability in the content analysis. Re-envision involves both defining sustainability and backcasting. All of the statements represented in the narratives fell

under the practice category of defining sustainability. Neither defining sustainability nor back-casting were practices that received support based on their research. As such there is a need for additional research in these areas.

Envisioning is the process of promoting a sustainability vision that involves developing a common definition of sustainability utilized throughout the organization (Lozano, 2008). It also involves celebrating that vision systematically by integrating rewards and expectations around sustainable actions. Lastly, it involves embracing sustainability personally and practicing the elements outside of the organization as well (Stanley, 2007).

Envisioning as a sustainability practice sets the foundation within an organization to have a common understanding of what the organization believes are the important aspects of sustainability. While in its theoretical form sustainability is depicted as equal concentric circles that intersect, actual research of organizational focus on the dimensions of sustainability suggests that a more realistic depiction is of circles of varying sizes with varying degrees of overlap (Moore, 2010).

Review of the literature also informs that consideration for not only varying degrees of dimensional focus is relevant, but also that organizations must consider the dynamic aspects of sustainability that occur over time (Lozano, 2008). Integrating a time element into the visioning process serves as a means to tie sustainability to the strategic intent and initiatives important within the organization. The manner in which organizations collect the information that becomes the vision (definition) of sustainability is also important.

The manner in which organizations develop their definition of sustainability also serves as a way to increase awareness and to signal the importance of sustainability through promotion within and external to the organizations. Utilizing a variety of methodologies such as surveys,

open forums, face-to-face discussions, e-mails, and open space events (Pollock, Horn, Constanza, 2009) all serve as a means of communicating what sustainability means to an organization and where the organization will place dimensional emphasis. While this form of internal promotion is important also external promotion and awareness of sustainability actions also serve to generate financial benefits for organizations.

Envisioning sustainability externally occurs via backcasting. Backcasting is a method of promotion that involves reaching externally through the use of design charrettes, regional visioning, future modeling to get the public involved in developing the vision of sustainability for an organization. Backcasting is utilized to increase public awareness and engagement on issues of sustainability (Robinson, et al., 2011). While the literature suggests the how and why of envisioning and its benefits to the organization, it also provides research on how to develop the future sustainability leaders by identifying key competencies necessary for leading a sustainable organization.

Leading a sustainable organization requires one that embraces and develops a vision for sustainability that becomes integrated into the climate of the organization. Key competencies identified include: 1 – systems thinking competence, 2 – anticipatory competence, 3 – normative competence, 4 – strategic competence, and 5 – interpersonal competence (Wiek, Withycombe, & Redman, 2011). These competencies are matched to our understanding of the need to include all dimensions (systems thinking), the need to address the impact of time (anticipatory), the need to follow the rules within an industry (normative), the need to create a sustainability climate (strategic), and the need to integrate personal values and beliefs (interpersonal).

Sustainability research around envisioning characterizes well how an organization can create a definition of sustainability, why envisioning is important, and how to develop leaders

that have the key competencies necessary to create a climate for sustainability. Once an organization has developed their definition of sustainability and envisioned what the future impacts will be, then organizations must consider how to integrate sustainability within the organization.

### **Sustainability & Integration**

Integration in the context of the Bertels, Papania, and Papania (2010) research is a formal practice for delivering on current sustainability commitments. It falls in the quadrant of clarifying expectations. This quadrant captures formal, fulfillment practices. This practice ranked second for sustainability and each of the three dimensions of sustainability in the content analysis. Integrate involves the integration into product design and life cycle, into mission and values, into strategy and business plans, into business processes and systems and into existing roles.

All of the statements represented in the narratives fell under the practice categories of integration into product design and life cycle, into mission and values, into strategy and business plans, into business processes and systems. Only integration into product design and life cycle was supported by the research conducted by Bertels, Papania, and Papania (2010). Because of the lack of support in their research again there is significant potential in research opportunities on the other unsupported sustainability practices.

Integration of sustainability can also inform how sustainability should be envisioned for the future. Outcomes from the content analysis suggest that this integration happen into the business, into the missions and values, into the strategy and business plans, and into product design and life cycle. How organizations assess their level of integration can determine how climates for sustainability are created.

If an organization is focused on integration into the business a suggested approach is to view this integration on a continuum. If evaluation of the present level of integration is at the

low end of the continuum, then the focus becomes on how to minimize costs involved in the implementation of an environmental project, for example. If an organization wants to become more integrative in how they combine the social, environmental, and economic sustainability dimensions, they might want to consider a win/win/win approach that minimizes impacts but also seeks positive outcomes for each dimension (Morrison-Saunders & Therivel, 2006). This continuum of approaches serves as a way for organizations to evaluate their present position in regard to sustainability integration and determine where they want to move over time and/or where they want to direct the organization for the future.

Another approach to integration is to focus conceptually on generic criteria for assessing sustainability. These approaches can consist of a variety of options given the sustainability emphasis. Organizational emphasis could be integration of all dimensions of sustainability, intra-generational integration, inter-generational integration, resource maintenance and efficiency, civility and democratic governance, precaution and adaptation, or temporal (immediate and long term) integration (Gibson, 2006).

Utilizing continuums and other integrative approaches such as those found in the literature provide guidance for organizations not only for assessment of present integration, but also to allow for planning for ongoing, and future integration of sustainability. These approaches take into account those aspects of sustainability most important to an organization and also facilitate the use of an approach that fits the decision-making approaches and methodologies already existing within organizations. While these approaches address integration into the business there are other approaches that address integration into mission and values. Integration into the mission and values of an organization can be accomplished utilizing envisioning as discussed above.

Other ways in which integration were identified as occurring within organizations is through product design and life cycle assessment. Industrialized growth and technology have

led the way for increased use of resources and manufacturing. This increased use has led to a complementary increase in waste from the various processes. As such finding ways to re-design products to minimize waste and reduce environmental impacts is an eminent next step. The importance of planning for the design that minimize waste is because while a small percent of total cost is the result of product design over 70% of the final product cost is based on decisions made in the design process (Ramani, et al., 2010). Because of this impact on total cost and ultimately end-of-life costs, it becomes important to integrate sustainability into product design and life cycle assessment.

Elements of life cycle assessment involve making a determination about how to dispose of a product once it is no longer being used. Designing products to have the capability to be processed at end-of-life to minimize waste is ideal. Organizations that are able to accomplish this are able to impact their product cost throughout the entire cycle of the manufacturing process and product life. The practice of designing in end-of-life strategies helps to drive down environmental impacts that results in product and process innovative and may lead to a competitive advantage for the organization (Gehin, Zwolinski, Brissaud, 2007).

Integration of end-of-life strategies into product development have many potential benefits to the organization in the form of reduced costs, reduced cost of disposal, and reduced raw materials costs (Gehin et al., 2007). Creating a climate for sustainability requires that organizations consider their products and processes earlier in the design phase to ensure the most socially, environmental, economic approaches are implemented and integrated into their organizational systems. Once organizations have the ability to integrate end-of-life strategies then they are able to focus on the developing new products, business processes, services, and systems.

## **Sustainability & Development**

Development in the context of the Bertels, Papania, and Papania (2010) research is a formal practice for innovation. It falls in the quadrant of instilling capacity for change. This quadrant captures formal, innovation practices. This practice ranked third for the social and environmental dimensions of sustainability and fourth for economic sustainability in the content analysis. Develop involves developing new business processes and systems and developing new products and services. Again the research conducted by Bertels, Papania, and Papania (2010) concluded that these practices have undergone very little testing or evaluation for effectiveness. Therefore these practices are relevant for further research and evaluation.

Sustainable product development is the process for developing new products and services for the market (Bhuiyan & Thomson, 2010) that achieves environmental optimization, social realization, and meets economic expectations. Development of sustainable products, processes, services, and systems has been dominated by the environmental movement (Driessen et al., 2013).

Everywhere one shops they can find items such as “green” cleaning products, re-cycling processes that are managed by the original producer, solar panel repair services, and life cycle costing and assessment. Each of these examples is present in our daily interactions with products and services. Creating a climate for sustainability means having the capability to develop these new sustainable products, processes, services and systems that not only serve to impact the environment, but also to have a social and economic impact. Focus and interest in new product development from a social aspect is growing (Aguilera et al., 2007).

Research in this area suggests that it is not possible to develop efficient sustainable products, processes, services, and systems without the use of life cycle concepts (Gmelin & Seuring, 2014). These concepts as discussed prior require integration into a very complex system within



organizations that have internal and external influences. These influences drive whether organizations seek to introduce new sustainable products, processes, services, and systems. The difficulties exposed in the literature are based on the time, costs, and complexity involved in implementing product life cycle approaches to all products within an organization (Gmelin & Seuring, 2014). The development of sustainable products, processes, services, and systems serve as signals within the organization of the importance of sustainability.

### **Sustainability & Signaling**

Signaling in the context of the Bertels, Papania, and Papania (2010) research is an informal practice for delivering on current sustainability commitments. It falls in the quadrant of fostering commitment. This quadrant captures informal, fulfillment practices. This practice ranked second for the social dimension, fourth for the environmental dimensions of sustainability and fifth for sustainability in the content analysis. Signaling involves modeling sustainability behaviors, allocating resources for sustainability, adhering to sustainability standards, investing in the community, and commitment to sustainability. Only the modeling and allocation of resources are supported by the research conducted by Bertels, Papania, and Papania (2010). The other practices within the signaling category have undergone very little testing or evaluation and are also candidates for further research and evaluation.

Modeling as a practice was researched and supported by Bertels, Papania, and Papania (2010). Modeling is a representative practice that involves demonstrating sustainability leadership within an industry, prioritizing sustainability in decision-making, showing interest in sustainability committees, and participating in ongoing discussions about your sustainability journey. All of the organizations that were selected for the content analysis already demonstrate

this practice through their participation in the BRT which provides annual updates of sustainability actions and outcomes. All of the CEOs providing narratives as part of the involvement in the BRT area also demonstrated leaders in their industries with regard to sustainability. Along with the modeling practice, the allocation of resources was also supported by the Bertels, Papania, and Papania (2010) research.

### **Sustainability & Codification**

Codification in the context of the Bertels, Papania, and Papania (2010) research is a formal practice for delivering on current sustainability commitments. It falls in the quadrant of clarifying expectations. This quadrant captures formal, fulfillment practices. This practice ranked fourth for the social dimension, and fifth for the environmental and economic dimensions of sustainability. Codification involves the creation of sustainability policies and the setting of sustainability goals. Only the creation of policies is a practice supported by the research conducted by Bertels, Papania, and Papania (2010). Setting of goals is a practice within the codification category that has undergone very little testing or evaluation and is a candidate for further research and evaluation.

Research on internal sustainability policies is nearly absent in the extant literature. However the role of external policies (governmental, etc.) plays a role in the development of practices internal to an organization. As an automotive supplier working on a new engine for the next generation of vehicles, governmental sustainability policy around gas mileage would play a major role in the design of the next generation of engines for the vehicles that are manufactured. Literature also discusses the role of local city policy and its impact on sustainability. In particular given the size and financial stability of a city their emphasis on sustainability varied given

policy focus on one of the “three Es. (Saha & Paterson, 2008). The “three Es” consist of a healthy economy, a healthy environment, and social equity.

While framed under the context of the three dimensions of sustainability policy emphasis has focused primarily on environmental aspects (Saha & Paterson, 2008) within local cities. Research offers that there needs to be more of a balance between the economy, environment, and social equity. More policy is needed to address sustainable economy and social equity. Also more research is needed to understand what internal policies are supported within sustainable organizations. The content analysis outcomes identified key elements that are important within sustainable organizations. Work that is still required is identifying the impact of several of the key practices that are not supported by research and have yet to be proven effective.

Content analysis conducted on 44 sustainable organizations informed not only those key sustainability elements for expansion of the literature review, but also identified how organizations have experienced success implementing sustainable practices. There is much more work to be done to evaluation all of the elements identified beyond the top five ranked elements. The content analysis methodology utilized to uncover key elements will be explained in more detail in the following section.

### **Organizational Climate**

In an effort to understand what elements are necessary for a climate for sustainability one can look to the organizational climate (OC) literature as a point of reference. A very early definition of climate defines it as “a relatively enduring environment that is (a) experienced by occupants, (b) influences their behavior, and (c) can be described in terms of the values of a particular set of characteristics (Tagiuri, 1968).” This definition has evolved over time to one with a more

specific, strategic emphasis on the policies, practices, and/or procedures that drive behaviors that are rewarded, supported, and expected (Ostroff, Kinicki, & Tamkins, 2003).

Organizational climate is the perception held by organizational members about the way things are within their organization based on their policies, practices, and procedures (Schneider, 1975). Organizational climate attempts to identify the type of environment necessary to drive the behaviors of employees within organizations (Holloway, 2012). Organizations are recognized for their climate by various measures, one of which is Fortune's 100 Best Companies to Work For. In 2012, Google took the number one spot (up three spots from the prior year). The reason Google was recognized was because the employees raved about "their mission, the culture, and the famous perks of the Plex: bocce courts, a bowling alley, eyebrow shaping (for a fee) in the New York office. Then there's the food: some 25 cafes companywide, all gratis (CNN, 2012)."

Measures of climate identified in the literature exist across various dimensions. Litwin and Stringer (1968) identified nine dimensions of OC in their Organizational Climate Questionnaire (OCQ) which include: structure, responsibility, identity, reward, warmth, conflict, risk, support, and conflict. Many organizations use various aspects of these dimensions to determine their organizational climate and its impact on firm performance.

Organizations recognize the importance of climate because it is believed that OC contributes to a variety of performance measures. For instance, Schneider (1980) found that service climates were predictors of customer satisfaction. Patterson, Warr, & West (2004) found that manufacturing organizations that focused on positive organizational climate, showed more productivity than those that did to a smaller degree. Ekvall (1996) found a positive relationship between a climate emphasis on creativity and innovation and an organization's profits. Hansen & Wernerfelt (1989) found that organizational factors explain twice as much variance in profit rates as

economic factors. While, Thompson (1996) found that companies utilizing progressive human resource practices such as communication, innovation, rewards and recognition, and environmental responsibility outperformed organizations that used less progressive practices.

Performance outcomes dictate for most organizations whether or not a strategic direction is relevant to achieving future goals and objectives, which measures and metrics are important, how to best communicate to key stakeholders, and the type of performance measurement system to integrate throughout the organization. These aspects are utilized in this research to identify elements of a climate for sustainability within organizations.

### **Strategic Direction**

The more strategic definition of OC is utilized for purposes of this research to identify elements necessary for a *CfS*. Historically, the OC literature has taken one of three approaches: (1) molar approach, (2) process construct approach, or (3) outcome construct approach. The molar approach focuses on the dimensions of organizational practices that are associated with positive employee well being. The molar approach has been evaluated across three dimensions: affective, cognitive, and instrumental (Ostroff, Kinicki, & Tamkins, 2003). The process construct approach places emphasis on specific processes that lead to a particular type of climate. This has led to new paths of OC research to address areas such as justice climate (Li & Cropanzano, 2009), ethical climate (Martin & Cullen, 2006), and industrial relations climate (Dastmalchian, 2008).

Outcome construct approach, which is most appropriate for meeting the goal of this research, speaks to the idea that organizations create climates to achieve particular outcomes. This approach is the most relevant for increasing understanding of what elements make up a *CfS*. Schneider (1975) addresses this approach in his research that discusses that there is a “climate

for something” in most organizations. Schneider (1975) emphasizes that this approach leads organizations to develop a strategic emphasis for something that results in organizational structures (policies, practices, procedures) that ultimately drive expected organizational behaviors that lead to performance results. New streams of research have been driven by this strategic approach to OC. Strategic organizational outcomes such as climate for service (Schneider, Parkington, & Buxton, 1980), climate for safety (Zohar, 1980), climate for sustainability, a recent paper from this research (Moore, 2012), are all represented in the OC literature.

Establishing a *CfS* with a strategic focus required that organizations move away from a “one size fits all” focus on sustainability to one in which sustainability solutions fit the unique strategic direction and intent of the organization (van Marrewijk & Werre, 2002). Taking this approach, organizations may have different approaches to the individual SEE dimensions within their organization, albeit the ideal sustainable organization incorporates and integrates all three dimensions to some degree or another within their organizational structures. This unique approach to identifying strategic directions requires organizational metrics and measures to track relevant organization performance.

### **Organizational Climate Dimensions**

Capturing climate as it exists within organizations involves identifying in the literature what climate dimensions are recognized as important for measuring various types of climate. Climates for safety, service, innovation, and industrial relations are believed to describe organizational behaviors that support high levels of performance in safety, service, innovation, and industrial relations, respectively. A review of the literature for each of these types of climate is undertaken to identify those dimensions that are relevant to capturing climates with high performance in their respective areas.

## **Climate for Service**

The prevalent argument in the climate for service literature is that work facilitated (i.e. customer service) and supported by the organization drives employees to meet the demand of the customer. A lack of barriers for employees to exhibit customer service behaviors allows a climate for service to develop. In the process of identifying foundational dimensions of a climate for service Schneider, White, and Paul (1998) conduct structural equation modeling to determine the causal relationship between employee perceptions of a service climate and the customer's perception of service quality. Their findings suggest that the relationship does not occur in one direction, but that it is reciprocating in nature. While employee's perceptions of service drive customer perceptions, customer perceptions of service quality drive employee perceptions of service through feedback. They find a reciprocating relationship that's driven by four foundational dimensions. Existence of these foundational dimensions is found, as in other research, to provide a basis for a climate for service.

Climate for service is found to have inter-department service and work facilitation (leadership, participation, computer support, and training) as key foundational dimensions. These dimensions are supported by three specific service climate practices: customer orientation, managerial practices, and customer feedback (Schneider, White, & Paul, 1998). While the climate for service literature identifies climate dimensions based on a reciprocal internal – external relationship, the climate for safety is based on a leadership commitment that drives the climate.

## **Climate for Safety**

Research on the climate for safety recognizes the importance of management commitment as a foundation for any type of measure of climate (Zohar, 1980). Zohar's research on safety climate identified six key dimensions that were demonstrated by organizations with high safety performance. The dimensions identified are: (1) strong management commitment as evidenced by personal involvement and high rank and status for the safety officer, (2) emphasis on safety training, (3) open communication evidenced by frequent inspections, (4) general environmental control and good housekeeping, (5) a stable workforce (i.e., less turnover, older workers), and (6) very distinct promotion methods such as praise and recognition over enforcement and admonitions. Zohar hypothesized that the cues provided in the work environment led to employee perceptions and expectations about safety behavior – outcome contingencies which leads the employee to behave accordingly. While the climate for safety emphasized leadership commitment and importance, the climate for innovation focuses on the actual creation of something new. Creation of something new is driven by how actual work is supported within organizations.

## **Climate for Innovation**

Research has demonstrated that a climate for innovation is linked directly with actual innovation (Kazama, Foster, Hebl, West, & Dawson, August, 2002). A climate for innovation has been studied and several models of climate for innovation have been developed and identified (West & Sacramento, 2012). These include climate for innovation models from a team climate perspective (Anderson & West, 1998), based on intrinsic motivation (Amabile, Conti, Coon, Lazenby, & Herron, 1996), tied to psychological processes of innovation (Ekvall, 1996; Isaksen, Lauer, Ekvall, & Britz, 2000), and based on work contexts that facilitate organizational climates (Hunter, Bedell, & Mumford, 2006)



The various dimensions identified by each of the above mentioned research efforts include: vision, participative safety, task orientation, and support for innovation (Anderson & West, 1998). The dimensions identified in the research by Amabile et al. (1996) were: work group support, organizational encouragement, supervisory encouragement, challenging work, freedom, resources, work load pressure, and organizational impediments. Ekvall (1996) identified nine dimensions in his research on climate for innovation which include: challenge & involvement, freedom, trust & openness, idea time, playfulness & humor, conflict, idea support, debate, and risk taking.

Lastly, Hunter, Bedell, and Mumford (2006) identified fourteen dimensions of organizational climate that facilitate a work context for innovation which include: positive peer group, positive superior relations, resources, challenges, mission clarity, autonomy, positive interpersonal exchange, intellectual stimulation, top management support, reward orientation, flexibility & risk taking, product emphasis, participation, and organizational integration. Each of these streams of research on climate for innovation provide clues to identifying elements of a climate for “something.” This strategic approach to climate research is evidence as well in research on a climate for industrial relations.

### **Climate for Industrial Relations**

Climate for industrial relations utilizes organizational climate not only for its explicative nature, but also for its ability to function as an intervening variable that impacts organizational outcomes (Dastmalchian, Blyton, & Adamson, 1989). Industrial relations refers to union-management relationship within organizations and the environment that the relationship creates. In research by Dastmalchian, Blyton, & Adamson (1989) they tested and validated climate dimen-

sions that best explain a climate for industrial relations. After beginning with testing of a ten dimension scale, the resulting reliability and validity analysis concluded with a five dimension scale that represents a climate for industrial relations. Those five dimensions are: harmony, openness, hostility, apathy, and promptness. The research found these dimensions to be consistent between union and non-union organizations, for members within a bargaining unit, and for members within a department. Another relevant study in this vein is that of Deery, Erwin, and Iverson (1999). They investigated industrial relations climate relative to employee absence.

Their model investigates this relationship by evaluating three groups of variables: personal, work-setting, and environmental. Work-setting variables identified include: autonomy, routinization, distributive justice, promotional opportunity, job security, and job satisfaction. These work-setting variables were selected based on an interest in the relationship between industrial relations climate and dual allegiance.

Evaluation of these various streams of strategically focused climate literature provide climate elements that focus on external dimensions associated with the customer (service climate), internal dimensions, such as aspects of the work environment (industrial relations climate), and elements specific to the work content within organizations (innovation climate), and the role of the leader in developing the climate (climate for safety). Each of these offers guidance on how to develop and structure this research for detailed study.

Researching and identifying elements of a climate for sustainability will require dimensions that address how sustainability behaviors within the organization impact external elements, how sustainability aspects impact internal elements, how sustainability impacts work structure, the work environment, and how sustainability is managed and lead within organizations.

Organizational culture could also have been used to provide the context for identifying sustainability elements. Organizational culture is represented by the deeply held values and beliefs that exist within an organization. Cultural elements tend to be passed on from older members to newer members (Bertels, Papania, and Papania, 2010). Culture shapes the behaviors and structure within organizations based on world views and typically represents shared perceptions of the world. Culture is considered the property of the organization and represents *why* a company does what it does.

Organizational climate was used instead as the context of this research because climate represents the policies, practices, and procedures that drive behaviors within organizations. Climate is focused on *what* a company does based on shared perceptions of the work environment. Climate is easier to measure and subsequently easier to impact and change (Schneider, 1975). Climate influences the environmental conditions of an organization and is the property of the individual. Sustainability as a concept requires individuals within organizations to commit to behaviors that will protect the environment and society, in addition to protecting the financial viability of the organization. The organizational climate literature is utilized as a means of defining and providing a structure for a *CfS*. Organizational climate research defines a set of characteristics that allow one to distinguish one company from another, are enduring over time, and influence the behavior of people (Forehand & Gilmer, 1964), understanding the elements in the context of sustainability is the approach.

## CHAPTER III

### RESEARCH DESIGN & METHODOLOGY

The purpose of this study is to identify elements (policies, practices, and procedures) necessary to create a climate (support, rewards, and expectations) for sustainability. An exploratory, qualitative approach to identify the elements is undertaken. This approach combines qualitative content analysis of CEO narratives (Phase One) with the development of a sustainability assessment tool (Phase Two). Results from the qualitative content analysis are utilized to create a sustainability assessment tool that will be developed to address concerns of sustainability integration and implementation within organizations.

The content analysis design and methodological approach are discussed below (Creswell, 2014). Included in the discussion of the content analysis are the target population, sample, source materials, and validity and reliability. This chapter concludes with a discussion of the content analysis design, process steps, and reliability and validity.

#### **Phase One: Content Analysis**

The first phase of this research is the completion of a qualitative, content analysis to identify themes and patterns that suggest the key elements of a climate for sustainability. Results from the content analysis in conjunction with dimensional elements from the literature review are combined quantitatively to develop an assessment tool that will be utilized for future

evaluation and validation, which is outside of the scope for this research. Results from the qualitative content analysis will answer the question: What elements are necessary for a climate for sustainability?

## **Content Analysis**

Content analysis is the interpretation of narrative data through the systematic process of classification, coding, and identification of themes or patterns within the data (Hsieh & Shannon, 2005). CEO narratives about sustainability represent data that is qualitative in nature, and the design of this study is summative. Summative data focuses on analysis of patterns of data that result in contextual analysis and involves the counting of data also (Hsieh & Shannon, 2005).

Content analysis is utilized to identify those policies, practices, and/or procedures that drive behaviors that are rewarded, supported, and expected in a sustainable climate. Content Analysis is defined as a “technique which aims at describing, with optimum objectivity, precision, and generality, what is said on a given subject in a given place and time” (Lasswell, Lerner, & Pool, 1952, p.34).

Content analysis can be classified as either qualitative and/or quantitative research. For the purpose of this research content analysis will be utilized in both a qualitative and quantitative manner. As well as being utilized to induce the meaning of sustainability for added literature review research and deductively to identify the elements necessary for a climate for sustainability (CfS) for the purpose of developing an assessment instrument.

The summative aspect of this approach involves moving beyond counts of word toward the understanding of the underlying meanings of the content and how it drives organizational climate. The deductive aspect of this research involves identifying the methodology which is content analysis, determining a sampling strategy, selecting the unit of analysis, categorizing the

content, interpreting, and reporting results (Polit & Beck, 2012). Each of these aspects are covered in the remainder of this chapter. This chapter will also address aspects of reliability and validity with regard to the selected methodology content analysis.

### **Target Population**

U.S. Fortune 500 organizations recognized for promoting and supporting sustainability are the target population. Insight from this population provides knowledge about the specific elements (policies, practices, and procedures) that drive sustainability behaviors that are rewarded, supported, and expected. Capturing the themes and patterns of these self-designated and ranked sustainable organizations facilitates the understanding necessary for assessing characteristics of a climate for sustainability. This population is represented by a group of 126 organizations that are members of a Sustainable Business Roundtable (BRT). The members of this group are the CEOs of each organization, who meet annually and publicly communicate their organization's sustainability initiatives, actions, and outcomes.

Companies represented in this population have acknowledged the importance of the strategic imperative of sustainability within their organizations and agree that sustainability is a key business imperative. The mission of the organizational members is to “address sustainability in innovative ways to make the U.S. economy more sustainable while continuing to drive economic growth, sustain, and enhance the quality of life on our planet for generations to come.” (BRT Sustainability Report, p. 1) A sample of 44 organizations was taken from this population of 126 for the purpose of conducting the content analysis.

## **Sample**

The purposive sample for the content analysis consisted of 44 out of 126 (see Appendix A) U.S. sustainable organizations that met two criteria. One, they were members of the Sustainable Business Roundtable (BRT) in 2013 and secondly in the same year they were also ranked as one of CRO's 100 Best Corporate Citizens. Companies represented in this sample of 44 organizations demonstrated success across all three dimensions of sustainability as noted by their CRO 100 Best Corporate Citizen ranking, commitment to sustainability as noted by their BRT membership, and economic success based on their Fortune 500 ranking.

## **Source Materials**

Source material for the content analysis consisted of the BRT's annual Sustainability Report. The 2013 Sustainability Report – Create, Grow, Sustain offers narrative responses from the 126 CEO members of the BRT. These narratives clearly identify those policies, practices, and procedures (elements) that are representative of the sustainability initiatives of each organization across all three dimensions of sustainability (See Sample in Appendix B).

Organizations in this report represent U.S. companies with over \$7.3 trillion in annual sales and more than 16 million employees. These organizations generate over \$400 billion in sales for small and medium sized businesses annually, and represent 1/3 of the value of the U.S. Stock Market. Consequently, these organizations also represent 61% of all private U.S. R&D spending (BRT Sustainability Report, 2013). Contributions from these organizations to economic growth and sustainability are evident in the information above and the narratives provided in the report.

BRT's annual report as source material captures various aspects important to this study. First, the mission of the Business Roundtable is complementary of the WCED definition of sustainability utilized in this research, "development that meets the needs of the present without compromising the ability of future generations to meet their own needs (Brundtland, 1987, p. 8)." Secondly, CEO narratives have been found to reflect the strategic imperatives that establish an environment for a specific climate (Schneider, 1975). Lastly, identifying and gaining understanding of the policies, practices, and procedures of sustainable organizations that drive behaviors that are rewarded, supported, and expected provides knowledge of the elements necessary for a climate of sustainability. Another source utilized in the sample selection for the content analysis was the CRO's 2013 100 Best Corporate Citizens Report.

CRO's 100 Best Corporate Citizens report was also utilized as a source document in the selection of the content analysis sample because of its use of an assessment methodology that includes multiple categories under each of the three dimensions of sustainability. One of the key concerns of this research is that sustainability be represented as an integrative, three dimensional concept. This report as a source document serves this purpose because various measures are assessed and weighted under each of the three dimensions of sustainability (See Appendix C). The data collected for each category was represented by 298 publicly available sources (see parentheses below). The 2013 CRO 100 Best Corporate Citizen report ranks and measures the three dimensions of sustainability in the following manner. What should be pointed out is that the ranking is based over half of the score on social sustainability elements (51.5%), while the environmental is 33 percent of the ranking with economic sustainability as the lowest contributor to the ranking.

**Social Sustainability (51.5%)**

*Human Rights Rank (16%)*

*Human Rights Disclosure (39)*

*Employee Relations Rank (19.5%)*



- Diversity Disclosure (13)
- Diversity Performance (5)
- Employee Benefits Disclosure (45)
- Corporate Governance Rank (7%)*
- Corporate Governance Performance (8)
- Philanthropy Rank (9%)*
- Philanthropy Disclosure (8)
- Giving (1)

**Environmental Sustainability (36%)**

- Environment Rank (19.5%)*
- Environmental Disclosure (59)
- Environmental Policy (50)
- Environmental Performance (6)
- Climate Change Rank (16.5%)*
- Climate Change Disclosure (27)
- Climate Change Policy (27)
- Climate Change Performance (2)

**Economic Sustainability (12.5%)**

- Financial Rank (12.5%)*
- Economic Performance (8)

A final key source document is the research conducted by Bertels, Papania, and Papania (2010) titled “Embedding Sustainability in Organizational Culture.” This research was commissioned by the Network for Business Sustainability in Canada and involved the development of a framework for embedding sustainability (See Appendix E). This report was utilized to establish consistent definitions and categories to utilize for analyzing the outputs from the content analysis of CEO narratives. Their framework was also utilized to categorize sustainability statements found in the BRT CEO narratives to better capture the meaning of sustainability to these CEOs and as a way to identify additional aspects of research for the literature review.

One continuum of the Bertels, Papania, and Papania (2010) research defines the sustainability practice as informal or formal. The other continuum defines the sustainability practice as

fulfillment or innovation. The informal / formal continuum helps to dissect whether a sustainability practice is tied to a value and behavior (informal) or to a set of rules and procedures (formal). The fulfillment / innovation continuum helps to dissect whether a sustainability practice meets the need of the present commitments (fulfillment) or serves to move the organizational along into the future (innovation). This source document supports the study by capturing the long term aspect of sustainability and the definition of elements as behaviors, policies, practices and/or procedures found in the organizational climate literature (Bertels, Papania, and Papania, 2010). All three of these key source documents were utilized in the execution of the content analysis process.

### **Control Variables**

For purposes of this research, firm size is measured based on organizational sales. The organizational sales are identified as the net revenue for each organization during year, 2013 for which the data was collected for the CEO narratives and the CRO's 100 Best Corporate Citizens.

Industry and industry sector is also relevant to sustainability research because different industries are regulated for their sustainability practices in different ways and with very different measures. Different industries might also be more advanced in their sustainability implementation as a result of regulations and/or proactive actions to gain a competitive advantage.

Firm type is designated for this research as public or private. The distinction made by these two choices is important for understanding the role of sustainability given an organization's responsibility for financial reporting and to its stakeholders. Utilizing these control variables allows the results to be evaluated and generalized across each control variable. While control variables will provide additional descriptive elements of understanding from a research perspective, the practical significance of this study to organizations is equally important.

The content analysis process began with the coding of the 44 selected BRT CEO narratives (see Appendix D). The researcher and a selected coder coded CEO sustainability narratives across the identified sustainability and climate categorizations from the literature. The coder received content analysis training, practice coding, and received an overview of the climate and sustainability research streams. Once coding began, each CEO narrative was independently coded by the researcher and selected coder.

Once 25% (10) of the CEO narratives were coded by both parties, an initial review of rater commonality was evaluated and adjustments to the coding implemented. Once 50% (21) of the CEO narratives were coded, inter-rater reliability was calculated. Finally, upon completion of coding of all 44 CEO narratives (100%), a final inter-rater reliability calculation was calculated.

Annually, CEOs that are members of the BRT provide narrative about how they are making the economy more sustainable while also driving economic growth. These narratives were utilized to identify those elements within sustainable organizations that drive social, environmental, and economic action. Utilizing steps for conducting content analysis by Neuendorf (2002) this research analyzed the annual sustainability narratives of the Sustainable Business Roundtable to identify:

1. What sustainability elements are important to study (consistent sustainability themes across organizations) for a climate for sustainability?

An example of narrative from A. O. Smith CEO states the following: “Our global facilities are embracing the goal of operating in a more sustainable fashion. Each of our facilities employs professionals focused on safety, health, and the environment.” From this statement, recruiting and selection are an important part of the organization’s structure and how it supports

sustainability. The entire narrative statement from each CEO was evaluated and coded. These narratives were utilized to identify those elements/practices within sustainable organizations that drive specific projects that result in social, environmental, and economic action.

## **Design**

The content analysis design approach is inductive. From the literature review and the content analysis results, climate for sustainability themes are identified and utilized in the development of a practical assessment tool. Themes identified from the content analysis inform review of the literature based on identified sustainability themes and categories utilized to code the CEO narrative. Utilizing an approach to extract climate for sustainability themes, a process similar to one used by Schneider, Wheeler, and Cox (1992) is undertaken. Schneider, Wheeler, and Cox (1992) utilized content analysis to identify elements of a climate for service.

In particular, their study utilized content analysis to extract those routines and rewards that were strongly related to service passion. A similar design and process steps are planned for this research study. From each of the CEO narratives policies, practices, procedures, rewards, support, and expectations about sustainability are captured to identify elements impacting a climate for sustainability.

## **Process Steps**

The first step in the process is to identify the unit of analysis. Units within content analysis can be broken into the unit of content, the study unit, and the content unit (Riffe, Lacy, & Fico, 1998). Units in content analysis can be words, sentences, paragraphs, or themes. Each individual CEO sustainability narrative is the unit of content. The sentence within each narrative is the study unit, and the content units are sustainability themes. An example of paragraph content

from the BRT 2013 Sustainability Report from Paul W. Jones, Chairman and CEO of A. O.

Smith is provided as a guide to walk through each step.

#### Paragraph 4 – A. O. Smith

“An example is our plant in Franklin, TN, which installed a new waste water recovery system in its production area that reclaimed and reused more than 1 million gallons of process water last year, in addition, Franklin installed new equipment and improved processes that reduce its annual electricity usage 18 percent and natural gas consumption 16 percent. (BRT Sustainability Report, p. 1)”

This content “*installed a new waste water recovery system*” is representative of a sustainability (environmental) theme within the sentence of the CEO narrative for A. O. Smith.

The second step is the identification of coding categories. Initial categories important to the research question and analysis were identified during the literature review. This involves categorizing statements within each sentence, of each CEO narrative into each of the sustainability dimensions (social, environmental, or economic), noting for each organization whether all three dimensions of sustainability are mentioned and to what degree each dimension is mentioned per organization. Each statement is also categorized as a policy, practice, or procedure, and whether it is a reward, type of support, or expectation. Given that this is an inductive process, newly identified categories are to be added to the process as they are discovered.

#### Paragraph 4 – A. O. Smith

“An example is our plant in Franklin, TN, which *installed a new waste water recovery system* in its production area that *reclaimed and reused more than 1 million gallons of process water* last year, in addition, Franklin *installed new equipment and improved processes that reduce its annual electricity usage 18 percent and natural gas consumption 16 percent.*”

Given the italicized themes from the same paragraph, the following table represents the way in which each theme statement would be categorized (See Table 3).

The third step is to determine whether manual coding or computer based coding meets the intent of the research study. In order to capture elements of a climate for sustainability, a manual coding process is necessary. Identifying elements that define a specific climate require not only counts, but also ratings of the various counts, and documentation of the statements under each category. Specific elements identified are subsequently categorized into meta-themes that are used in the development of the assessment tool.

The fourth step is to train the coder to correctly and appropriately categorize each statement designated in the CEO narrative. Coders will have access to the entire 2013 BRT Sustainability Report. For reasons of efficiency the BRT report narrative themes are pre-identified (highlighted) (Holsti, 1969). Training involved the completion of several designated readings about content analysis and sustainability, review of the codebook and coding sheet (Appendix E), practice identifying sustainability statements similar to the example above, correctly categorizing, determining related outcomes, and training to assign the correct sustainability action and frequency ratings at the organizational level (See Table 4).

Part of the coding responsibility will be to capture counts based on elements about the organization: (a) total number of statements, (b) number of statements for each sustainability dimension, (c) number of statements for each policy, practice, or procedure, (d) number of statements for each reward, support, or expectation, and (e) number of times that the word sustainability is used (see Appendix E). It is this aspect of the content analysis that makes the approach quantitative in nature. Once the content analysis is complete it will be used as an input toward creating a sustainability assessment tool. The resulting assessment tool will be for future research and study of sustainable organizations to further validate and understand those elements necessary for a climate for sustainability.

## Reliability & Validity

Measurements of reliability and validity in content analysis involve the evaluation of aspects of trustworthiness (Elo, et al., 2014) of the approach. For purposes of this research a review of both qualitative and quantitative reliability and validity is discussed. Qualitative reliability is merely a measure of consistency of the researchers approach across different researchers, in the case of content analysis, different coders (Creswell, 2014). Qualitative validity means that a specific procedure is undertaken to verify the accuracy of the findings (Creswell, 2014).

Qualitative content analysis reliability in this study is measured as intra-rater and inter-rater reliability. Intra-rater reliability or stability is when a single coder gets the same results repeating the process over and over. Inter-rater reliability is when two coders have an understanding of the content such that coding results in the text being coded into the same categories. Reliability of content analysis can be measured at the weakest level as stability, which is a measure of intra-rater reliability only. To increase the strength of the reliability test one can test reproducibility, which is a measure of intra-rater and inter-rater reliabilities. The strongest measure of reliability in content analysis is accuracy, which is a test of intra-rater, inter-rater, and test of deviations from a known standard (Krippendorff, 1980). For this research reproducibility is the reliability measure conducted.

Measurement of inter-rater reliability can be calculated using Krippendorff's *alpha*, Cohen's *kappa*, Spearman's *rho*, Scott's *pi*, or Pearson *r* (Neuendorf, 2002). As the calculation approaches 1 the coding is more reliable, as the calculation tends toward 0 then only agreement by chance is represented in the coding process. Inter-rater reliability is calculated in the Results chapter of this paper and a value of .41 - .60 is considered moderate with .61 - .80 being substantial

agreement and .81 - 1.00 being almost perfect according to Landis & Koch's 1977 study (as cited in Stemler, 2001). Aspects of validity in qualitative content analysis are also important.

Validity needs to be built into the design of the research (Creswell, 2014). It is built into the design of the research based on how the researcher utilizes multiple sources of data, methods, coders, etc. There are various approaches to validity based on whether the validating data is focused on the nature of the data, the analytical results, or the nature of the process (Krippendorff, 1980). The content analysis in this research is focused on the nature of the data. Does the content in the CEO narratives reflect the practices necessary for a climate for sustainability? Does the content in the CEO narratives reflect an integrative definition of sustainability that includes social, environmental, and economic dimensions? Does the content in the CEO narratives inform aspects of climate such as integration of policies, practices, and procedures and rewards, supportive elements, or organizational expectations. Data related validity can be assessed as semantical validity or sampling validity (Krippendorff, 1980).

For purposes of this research the emphasis is on semantical validity which is the degree to which the content is tied to its semantical meanings in this case sustainability. The validation of the sustainability practices can occur through validating based on existing research frameworks like that Bertels, Papania, and Papania (2010). Validation of the sustainability practices can also occur by surveying the CEOs of the Business Roundtable. While a survey methodology is outside of the scope of this research study, the development of the assessment tool based on an existing framework is undertaken. Future opportunities for assessing validity through survey research utilizing the assessment tool is recommended for the purpose validation of the sustainability practices necessary for a climate for sustainability.



## **Phase Two: Assessment Tool Development**

Results from the literature review and content analysis were then subsequently used to develop an assessment tool. This tool in future research will be provided to a larger population of sustainable organizations, but is outside of the scope of this research. These organizations will be able to utilize the assessment tool to assess organizational gaps in sustainability. The assessment tool will also serve as a means for conducting further academic research in the area of sustainability.

Results of the content analysis in combination with elements identified in the literature review are used to categorize and develop sustainability themes across the three dimensions of sustainability. Results from the content analysis were subjected to a sub-analysis on the instances of the use of the word sustainability within the narratives. This sub-categorization was created based on the Bartels, Papania, & Papania (2010) framework for embedding sustainability. Each of the sustainability statements was placed into one of the categorizations designated by the framework (see Appendix F). The resulting themes were captured and additional review of the literature was undertaken and discussed in Chapter II Literature Review.

These themes will also become the foundation of the development of the assessment tool. The identification of elements (policies, practices, and procedures) that create a climate (behaviors that are rewarded, supported, or expected) for sustainability will be evaluated based on the themes uncovered in the content analysis and literature review. These themes are subsequently utilized also in the development of the assessment tool. Also inclusion of additional practices from the Bertels, Papania, and Papania framework are includes to better understand the importance to organizations already practicing sustainability.

## **Practical Significance**

Lastly, the findings from the research are utilized to develop an assessment tool that organizations can use to profile their organization against other organizations or to compare divisions within an organization with regard to sustainability elements. Developing and offering an assessment tool to assist organizations in the identification of elements necessary to create a climate for sustainability provides both the academic and practical significance of this research. The finalized assessment tool will be available for use by academicians for future research and validation, and available for the practitioner to assess sustainability gaps and/or advise their journey toward integrating sustainability, and ensuring long term viability for the organization.

In the following chapter the results of the content analysis is discussed. Aspects of the study results will include descriptive statistics of participating organizations, techniques for finding relationships such as Pearson's  $r$ , and techniques for assessing differences (industry, type of organization) between means. These are recommended data analysis techniques when utilizing frequency and interval data (Riffy, Lacy, & Rico, 1998).

Descriptive statistics captured for each organization include: industry type and sector, net revenue for 2013, ranking on CR's 100 Best Corporate Citizens list, number of years as a member of BRT beyond 2013, and type of organization (manufacturing vs. service). Other techniques such as ANOVA analysis to identify and address any differences due to industry or type of organization are utilized to better understanding the sustainability climate. Some industries may have more regulations that drive a stronger emphasis on environmental practices. A manufacturing organization may also place greater emphasis on environmental practices than a service organization due to the nature of their product producing needs. While understanding the importance of demographic outcomes, measures of reliability and validity of the content analysis methodology are also very important.

## CHAPTER IV

### RESULTS

#### **Organization Demographics**

There were 44 organizations selected for the content analysis review due to their concurrent presence as Sustainability Business Roundtable (BRT) members and ranking as CRO's Top 100 Corporate Citizens in 2013. Collected data for each of the organizations can be found in Appendix F. Of the 44 organizations in the sample 95.4% (42) are headquartered in the United States. The remaining two organizations are headquartered outside of the U.S. in Dublin, Ireland. The 42 organizations are located throughout the U.S. with 14% (6) located in Texas and another 11% (5) located in New York. Additional graphics on the analysis conducted on the data outcomes discussed below can be found in Appendix H.

In terms of industry and sector the organizations are spread across many industry classifications with 7% (3) being drug manufacturers, while another 7% (3) make processed and packaged goods, with only two or one organizations in each of the remaining industries. With regard to sector, of which there were only nine, 25% (11) of the organizations are located in the technology sector and another 20.5% (9) are located in the consumer goods sector, the remaining organizations fall into one of the other seven sectors.

Net Revenue of the 44 organizations in 2013 was \$2,331.61 billion (\$2.3 trillion) with three outliers: Exxon Mobil (\$420.8B), Chevron (\$220.2B), and General Electric (\$146B), which represent one third or 33.7% of the total net revenue. Of these 44 organizations three are not

ranked on the Fortune 500 (Accenture, CA Technologies, and Eaton), which would be expected for Accenture and Eaton which are headquartered in Dublin, Ireland.

The organizations in the study are represented in the full range of the CRO 100 with the companies ranking from 1 - 95 out of the 100 and from 2 - 528 in the Fortune 500 ranking. So the sample is representative of companies contributing significantly to sustainability and those contributing, but not as much. This makes the results generalizable to other U.S. organizations in the same or similar industries and organizations that are at various stages of sustainability implementation. Also economically, the net revenue of the organizations in the study are representative of a wide range of financial performance outcomes. The revenue of the companies in the study range from \$1.23 billion to \$420.8 billion.

Another evaluation of the organizations involved identifying those organizations that continued to be on both the CRO 100 ranking and continued to be members of the BRT beyond 2013. 75% (33) of the organizations in the study continued to be on both listings in 2014 and 56.8% (25) of the organizations in the study continued to be on both listings in 2015. Of the 44 organizations, 52.2% (23) organizations were on both lists for 2014 and 2015. This is important, because it suggests those organizations that have truly embraced sustainability, continue to participate, and continue to be recognized for their emphasis on sustainability, suggesting that sustainability is important and is becoming an integral element of the organization. Besides the demographics, results from the content analysis are also discussed within this chapter. Content analysis was utilized as the primary research methodology for this study. First an overview of content analysis, validity, and reliability results is discussed. This is followed by a review of the two phases of content analysis conducted, one to advance the literature review and the second phase for development of the sustainability assessment tool.

## Content Analysis

For purposes of this research content analysis was utilized to serve various functions. To advance the literature review for this study content analysis was utilized to convert textual units into conceptual categories (Krippendorff, 1980). Sustainability statements from 44 CEO members of the Sustainability Business Roundtable were content analyzed for study, interpretation, analysis, and review.

Each unit (sentence) in each narrative statement was categorized based on the study definition of a climate for sustainability (*CfS*). The unit was categorized as to whether there was a mention of the word “sustainability,” whether that unit included content related to one or more of the dimensions of sustainability (social, environmental, and/or economic), and whether that unit included content that suggested there was an element (policy, practice, and/or procedure), that drove a climate (behaviors that were rewarded, supported, and/or expected) for sustainability. The initial results were a listing of 177 units that included the word “sustainability.”

The listing of 177 units with the word “sustainability” were subsequently reviewed and placed into context with surrounding units in order to categorize each unit into one of the practice and sub-practice categories as defined by the research of Bertels, Papania, and Papania (2010). The research by Bertels, Papania, and Papania (2010) involved a group of CEOs from Network of Business Sustainability organizations in Canada. The research was requested by the group to facilitate the development of a sustainability assessment tool. This is relevant because this study as well seeks to develop a sustainability assessment tool to evaluate the elements necessary for a climate for sustainability.

Content analysis for purposes of this study was the methodology of choice to assist in the identification of elements (policies, practices, and procedures) that drive behaviors within sustainable organizations that are rewarded, supported, or expected and that result in a climate for

sustainability. There are two primary analytical approaches for content analysis ([www.writing.coloradostate.edu](http://www.writing.coloradostate.edu)), conceptual or thematic and relational or semantic.

Relational content analysis involves the evaluation of the narrative content with the purpose of identifying relationships that exist in the narrative and can be evaluated based on the affect, proximity of words, or by creating cognitive maps. Conceptual content analysis is the method of choice for this research because conceptual content analysis involves utilizing the results of the coding process to guide answers to the research question and to support validation as to whether themes found in the narrative statements reflect a climate for sustainability. In conceptual content analysis the emphasis was on the existence of sustainability elements, themes regarding the integration of the three sustainability dimensions (social, environmental, and economic), and themes related to behaviors that were rewarded, supported, and/or expected with regard to sustainability. One way of evaluating the CEO narratives is through the utilization of word clouds.

Word clouds are visual representations of textual data that can be evaluated for the purpose of understanding potential messages and also can be used to validate findings of content analysis outcomes (McNaught & Lam, 2010). Wordle is a analytical word cloud generator that provides a graphical representation of the frequency of words in a narrative or text based on the frequency of each word. The more frequent the word, the larger the size of the text. Utilizing various textual analysis tools such as word clouds by [wordle.com](http://wordle.com) we can see visually the top ten most frequent terms found in the 44 CEO narratives (See Figure 3).

These terms in order (higher to lower frequency of word) are energy, business, sustainability, sustainable, world, environmental, communities, water, and new. We can suppose with these top words that sustainability is seen by these organizations as a concept that integrates all three dimensions of sustainability since they are represented by the top high frequency words.

The social dimension is represented by the word communities, the environmental dimension is represented by the word energy and water, and the economic dimension is represented by the word business, world (global), and new (innovation).

Full text analysis was also run on the 44 CEO narratives. Full text analysis report by textalyser.com of the individually ranked words, two term, three term, and four term groupings of words from the CEO sustainability narratives is available, but only the first page summary is provided in Appendix J. From this textual analysis one can also conduct relational content analysis and evaluate the relationship of the word sustainability to better understand from the narratives what other terms are found most often with the word sustainable or sustainability.

The three term statements found in the narrative are “commitment to sustainability,” “commitment to sustainable,” “to sustainable development,” “focus on sustainability,” “on sustainability and,” “a healthy sustainable,” “for sustainable long,” “for sustainable development,” “sustainability issues,” “sustainable development,” “more sustainable world,” “a more sustainable,” “sustainable world,” “sustainability to create,” and “dow jones sustainability.”

A review of the three word term combinations with sustainability offer some insight into the companies in the study. These organizations acknowledge the long term aspect often associated and discussed in regards to sustainability. The statements demonstrate a true focus and commitment to sustainability by the participating organizations and we can also see that sustainability is seen as a global concept and the need for organizations to take a world view when it comes to sustainability. The reference to Dow Jones Sustainability is a reference to an index developed to rate an organization’s commitment to sustainability, so that potential investors can make more informed investments based on a sustainable climate within an organization. Other aspects important to the performance and results of the content analysis are measures of reliability and validity.

## Reliability

Measures of reliability in content analysis address stability, performance of coding the measure is consistent over time and between coders. Reproducibility as a measure addresses how well the coders classify categories in a similar manner. Accuracy is a measure of how well the categories represent the standard or the norm. As a standard most measures of reliability specify 80% or .80 or greater as an acceptable measure of reliability (Neuendorf, 2002). There are many approaches to calculating reliability however it is important to understand the type of data involved and whether elements of chance need to be integrate.

Basic measures of reliability focus on the percent (%) agreement between coders. This can be measures as a simple as the calculation proportion agreement (PAo) which equals the number of items in agreement between two coders (A) divided by the the total number of units the two coders have coded ( $PAo = A/n$ ). However in cases where there are two coders that code the same units the Holsti method is recommended (Neuendorf, 2002). For the purpose of this research reliability was calculated utilizing the Holsti method. The formula for this method is proportion agreement (PAo) which equals two times the number of items in agreement between two coders ( $2A$ ) divided by the the total number of units coded by coder A and coder B ( $PAo = 2A/n_A + n_B$ ). Using this method of calculating reliability the following results were achieved by the coders in this research.

As discussed earlier reliability was calculated at various stages in the content analysis process. The first calculation was for the coding of each the 177 sustainability statements (Appendix G) relative to whether the statement mentions one, two, or all three dimensions of sustainability (social, environmental, and economic). Reliability was calculated across all three dimensions. There are 177 potential categorizations for sustainability for which 42 or 23.7% were



categorized under the social dimension, 60 or 33.9% were categorized as environmental, and 51 or 28.8% were categorized under the economic dimension. This would be as expected since historically sustainability has emphasized protection and development of the natural environment. Of the 177 sustainability statements only 11 or 6.2% refer to all three dimensions of sustainability, which as well was expected based on the literature review. The reliability of the coding of the 177 statements and the three dimensions of sustainability using Holsti's method was  $PAo = \frac{2A}{n_A + n_B}$  or  $(2*280)/(330 + 330) = .8484$ . This value is greater than .80 therefore suggesting that the coding in this case is reliable. Reliability was also calculated for each company across the ten elements in the definition of a climate for sustainability (see Appendix G). The lowest reliability calculated for a company was .806 (AT&T) one of the first companies evaluated with the highest at 1.000 (Whirlpool). It is important to also look at reliability calculations in two groups.

The first group based on the process consisted of the first 22 organizations. After coding the first half a review and adjustment was completed before coding the second half of the organizations across the ten elements. Evaluating reliability in these two groups the results show a reliability calculation of  $(2*986)/(1100 + 1100) = .896$ . Reliability of the second group would be expected to be higher as a result of the review and adjustment process. The reliability calculated for the second group is  $(2*1000)/(1040 + 1040) = .962$ . As expected the reliability calculations were much higher for the second group of organizations. In both cases the reliability calculation was greater than the recommended .800, suggesting the coding process is reliable. Once we were satisfied with the reliability of the coding we next reviewed the validity of our content analysis methodology.

## **Validity**

Validity can be measured based on two characteristics: 1) how well does the categorizations utilized correspond to conclusions and 2) how generalizable are the results (Neuendorf, 2002). Because the categories utilized for the coding of the narratives was based on an existing framework developed by Bertels, Papania, and Papania (2010) it easily corresponded to the existing definitions of elements that drive behaviors that are either rewarded, expected, or supported. Not only was correspondence assessed, but generalizability as well.

Results also can be generalized because the framework utilized for the coding was developed based on a group of Canadian organizations that were members of a sustainability network, very similar to the Sustainable Business Roundtable (BRT). This group of organizations commissioned the researchers Bertels, Papania, and Papania (2010) to identify practices that would create a culture of sustainability. While this research is focused on climate the developed framework addresses a continuum that captures the stated definition of climate within this study.

Other aspects of generalization exist in regards to the size of organization which is represented by organizations of a wide range of net revenues, ranking in Fortune 500, and ranking in CRO's 100 Best Corporate Citizens. Also there is varied representation of organizations across many industries and several (seven) sectors. Measures of reliability and validity suggest that the coding approach was reliable and the findings can be generalized to a variety of organizations with varying characteristics. Now that that measures or reliability and validity have been addressed, a review of the two phases of content analysis are discussed next. Phase One is the content analysis conducted to inform and enhance the literature review and Phase Two of the content analysis discusses the development of the assessment tool.

## **Phase One: Content Analysis**

The first phase of the content analysis involved identifying additional categories for study and inclusion in the literature review. The analysis of the use of the word “sustainable”, “sustain”, “sustainability” and its various configurations was the impetus for categorizing content to deepen the literature review research. Analysis of the CEO statements resulted in the identification of 177 statements (See Appendix G) that used some form of the word “sustain.” These 177 statements were coded against the research framework developed by Bertels, Papania, and Papania (2010). From this phase of the study the following categories were identified for additional research. See Chapter II - Literature Review for the discussion of the additional research categories relative to sustainability.

- Sustainability & Re-Envisioning
- Sustainability & Integration
- Sustainability & Development
- Sustainability & Signaling
- Sustainability & Codification

These specific themes identified with the sustainability statements suggest important areas of focus by the BRT CEOs in regards to sustainability and sustainability assessment.

Subsequently, these 177 statements were quantitatively coded and counted to identify whether the emphasis of the statements focused on a specific aspect of sustainability (social, economic, and/or environmental), whether emphasis of the statement represented a policy, practice, or procedure, and whether these statements reflected a reward, support, or expectation of sustainability.

Utilizing the Bertels, Papania, and Papania (2010) framework the majority of sustainability practices were classified as practices that build momentum for change with representation by

76 of the 177 statements (42.9%) This was followed by practices that clarify expectations (58 or 30.5%), foster commitment (29 or 16.4%), and instill capacity for change (18 or 10.2% ) (See Appendix G).

What this suggests is that many of these organization's emphasis on sustainability is still primarily focused on practices that set the stage for a climate of sustainability, but that this climate may not yet exist. However, also there is evidence that these organizations are also working to set expectations and take necessary steps to establish this climate for sustainability. Also as discussed in the demographic section over half or 23 of the 44 organizations in the study remained as members of the Sustainability Business Roundtable and ranked on CRO's 100 Best Corporate Citizens for the next two years (2014 and 2015). Categorization of the sustainability statements were also used in the second phase of the content analysis. This phase focused on utilizing the categorical results to develop a sustainability assessment tool.

### **Phase Two: Assessment Development**

Development of the assessment involved evaluation of existing sustainability assessments and utilization of the sub-practices identified by the content analysis of sustainability statements. In order to assess and validate whether practices are or should be integrated into a sustainable climate will be evaluated in the assessment. Bertels, Papania, and Papania (2010) identified in their research whether not each of the practices was supported. Of the 177 statements categorized only 24 of the 177 or 13.5% of the statements were determined to have empirical support in the literature. The others remain to be vetted and evaluated as relevant sustainability practices. The assessment tool developed will serve to continue the call to action by Bertels, Papania, and Papania (2010) to identify practice usage by real organizations.

*Sustainability Assessments / Tools.* Sustainability assessments originally focused primarily on assessments of environmental impacts and evolved over time to including all three dimensions (SEE) of sustainability (Lee & Lee, 2014). The importance of assessing sustainability grew as a result of a need to quantify sustainability efforts for the purpose of reporting. Sustainability as a concept is described as the integration of the social, environmental, and economic elements and the balancing of trade-offs between the elements. Just as the concept is integrative it is believed that the assessment of utilized to measure sustainability should be integrative in nature as well (Gibson, 2006). Proveda and Lipsett (2011) conduct a review of the various assessment tools that have been developed over time for the purpose of assessing sustainability. Each of these assessments however were developed with different outcomes in mind.

Proveda & Lipsett (2011) mention in their research the Community Capital framework developed by Hart in 1999, the Natural Step Method developed by Roberts in 2007, the Ecological Footprint framework by Wackernagel and Rees in 2011, the Monetary Approach, Driving Force State Response Model, they discuss time based models, and accounting frameworks. The variety of assessment frameworks presented suggest the need to develop assessments that address the unique research and/or practical implementation purpose. This research is focused on development of an assessment tool that assesses the necessary elements needed to create a climate for sustainability.

Sustainability assessment literature also provides guidance on the key outcomes necessary for the development of an effective assessment tool such as that the tool: 1) identify important issues, (2) have elements that are calculable and comparable, (3) have content that moves beyond basic categorization of the dimensions (i.e. eco-efficiency), (4) has elements that measure processes and motivations, and (5) that stress comprehensibility (Shriberg, 2002).

While a variety of sustainability assessment tools exists, only one recognized assessment tool, S-CORE (Sustainability - Competency, Opportunity, Reporting, & Evaluation) has been developed specifically for evaluation of organizations in general. Many of the other sustainability assessment tools exist such as CPHSS (Center for Public Health Systems Science's Program Sustainability Assessment Tool) is focused on assessing sustainability of Public Health Programs, UNEP (United Nations Environment Programme's Unit Based Sustainability Assessment Tool) is focused on the sustainability assessment of nations, and GASU (Graphical Assessment of Sustainability in Universities) which is focused on sustainability assessment within higher education. There is limited availability of assessment tools focused on practices within organizations.

The tool developed (See Appendix K) will serve two primary purposes. It will close a research gap through the validation of sustainability elements (policies, practices, or procedures) that drive behaviors that are rewarded, supported, and expected in a sustainable climate. This tool will also serve as a practitioner tool that will allow organizations to assess gaps in their sustainability implementation and integration. The categories utilized for assessment within the developed tool stem from the content analysis results that identifies key practices and sub-practices based on the work by Bertels, Papania, and Papania (2010).

### **Sub-Practices**

Sub-practices to be included in the assessment tool are those that were identified through content analysis as well as those that while not selected are represented in the higher level practice categories found in the Bertels, Papania, and Papania (2010) framework. If as a guide we utilized the representative counts of the sustainability practices to determine order of importance of the framework elements, it would suggest the following for these sustainable organizations: 1)

first they build momentum for change, followed by 2) the clarification of sustainability expectations, then 3) the fostering of a sustainability commitment, and finally 4) instilling capacity for change. The sub-practices that are emphasized by the sample organizations are defined below.

**Build Momentum for Change.** Four of the six sub-practices identified by the Bertels, Papania, and Papania (2010) framework were represented by the coding of the CEO narratives. Those sub-practices were: 1) re-envision, which is represented by the sample organizations defining sustainability within their organizations; 2) sharing, which is represented by actions by the organization to collaborate with others, 3) champion, which involves the leader of the organization championing the sustainability change, and 4) raise awareness, which consists of the leaders of the organization framing sustainability in terms important to the organization (i.e. sustainability is important, sustainability is good for our organization, sustainability is a way to grow the organization). The two practices that were not represented by the content analysis were: 1) experiment, which is encouraging the development of solutions to sustainability challenges and 2) invite, which involves inviting employees and external stakeholders to provide input and ideas about sustainability.

**Clarifying Expectations.** Six of the seven practices identified under this category in the framework were represented by the CEO sustainability statements in the content analysis. Those sub-practices were: 1) integrate, involves the integration of sustainability into existing roles within the organization, integration of sustainability into the business, integration of sustainability into the product design and life cycle, integration of sustainability into the mission, vision, and values of the organization, and integration of sustainability into the strategy and business plans of the organization, 2) verify / audit, involves the verification of sustainability activities

by a third party, external entity, 3) codify, involves the setting of sustainability goals at all levels within the organization and creating organizational policies that drive sustainability behaviors, 4) assess, involves taking an inventory of the current state of sustainability, identifying improvements, and driving the change, measuring sustainability performance against pre-determined goals and objectives, and the documentation and reporting of sustainability, 5) assign, refers to the assignment of senior leadership to the role of delivering the sustainability message to the organization and 6) train, which involves training the workforce on systems and procedures related to sustainability. The one practice not represented by the sustainability statement was incentive, which involves linking some form of compensation to a sustainability objective.

**Fostering Commitment.** Four of the five practices in this quadrant of the framework were represented by sustainability statements from the CEO narratives. The four practices were: 1) signaling practices are those actions within the organization that communicate sustainability as a priority. Five sub-practices were represented under signal including modeling whereby organizational leaders model the sustainability behaviors and actions expected by the workforce, the allocation of human, financial, and time resources in support of sustainability, adherence to standards external to the organization, contribution to the community and community service in regards to sustainable actions, and the public commitment to sustainability by organizational leaders, 2) engage involves practices that raise employee engagement for sustainability. There are five sub-practices with representation in the CEO narrative statements. Educate is the practice of raising awareness of sustainability in informal ways (i.e. bulletin board, speakers, etc.). Challenge involves engagement through recognition of sustainable efforts through internal competitions. Link is the practice of helping the employees make connections between sustainability at work and how it translates at home and their individual communities. Leverage involves



the organization supporting sustainability activities initiated by the employee through funding, time off, etc. Lastly support is how the organization makes it possible for employees to decisions that support sustainability initiatives.

Practice number 3) communicate is the use of stories to explain the expected behaviors necessary for achieving an environment for sustainability, and the use of customization to target the sustainability message toward specific groups within the organization, different media, different cultures, etc. And finally practice 4) manage talent involves the recruitment of organizational members that already believe and/or have skill sets that support sustainability. The one practice not represented was reinforce, which involves keeping the employees up-to-date on the status and progress of sustainability initiatives.

**Instilling Capacity for Change.** both of the two practices in this quadrant of the framework were represented by sustainability statements from the CEO narratives. The two practices were 1) learn and 2) develop. One sub practice reflect was represented under the learn practice and under the develop practice was the development of new products and services. Reflect is the practice. However none of the seven sub-practices for this quadrant were found to be supported by the Bertels, Papania, and Papania (2010) research.

The sub practice of reflect involves learning about and reflecting on what the organization is doing and why. Organizations then use this information to drive innovation for the future. The other sub practices under develop include the development of new products and services and the development of new business processes and systems. The development of new products,

services, business processes, and systems involves introducing new items that support sustainability by meeting the needs of the present while ensuring that the environment is protected, and impacts on society are considered.

## CHAPTER V

### CONCLUSIONS, LIMITATIONS, FINDINGS & FUTURE OPPORTUNITIES

#### **Conclusions**

Identifying elements of a climate for sustainability is a tenuous task given that the research has yet to identify those elements (policies, practices, and procedures) that drive sustainability behaviors that are rewarded, supported, and expected within organizations. This research was conducted to identify these key elements utilizing content analysis of CEO sustainability narratives as a means of understanding elements that exist in recognized organizations.

Utilizing the framework of Bertels, et al. (2010) the research methodology allowed for the evaluation of sustainability statements and categorization of these statements into formal vs. informal practices and sustaining vs. innovative practices. However as with the Bertels, et al. (2010) framework many of the practices have yet to be validated. The development of an assessment tool to initiate the validation process is needed not only for the practitioner seeking to integrate sustainability, but also the researcher that wants to identify those relevant aspects of literature that require further development.

Just as CEOs maintain that sustainability is a key strategy or future organizational success, many organizations don't understand how to implement and integrate within their organizations (Bertels, Papania, and Papania, 2010). The development of a sustainability assessment tool moves the research forward in beginning the process of validation of the relevant practices required for a sustainable climate and providing a practical tool for implementation and integration.

### **Limitations**

This research looks inward to what is required for organizations and does not focus on the external aspects of sustainability such as the impact on integration or the external stakeholder. This internal focus is believed to be necessary for organizational understanding and ultimate improvement, and organizational performance. There is no attempt in this study to understand "why" these organizations selected the practices that they did for integration into their sustainability initiatives. This research was solely focused on "what" organizations do, as this is a critical starting point.

This research also does not address or attempt to continue the discussion of organizational culture versus climate. While the Bertels, et al. (2010) framework is focused on culture the defining element of the framework has a continuum that also addresses sustainable practices that drive behaviors within sustainable organizations. Needless to say there could be an extensive discussion around this topic, but it is not necessary given that many of the key practices have yet to be validated as identified. The validation of the recognized practices from the content analysis is a positive next step.

## Findings

What we know from this research is that there are sets of practices that sustainable organizations use, and at this stage in the process that most organizations have implemented practices informally, but have not taken the steps to integrate more formally into their policies and procedures. We also can conclude from the content analysis of CEO narratives that organizational leaders are mainly supporting key initiatives, but have not taken it to the level of rewarding and setting expectations when it comes to sustainability. Creating this climate for sustainability requires that not only practices exist, but also that policies and procedures are created that drive behaviors that are not only supported but also rewarded and expected.

We also know that while many of these practices are being implemented at Fortune 500 organizations that these organizations are still in the early stages of defining sustainability for their particular organizations. The literature suggests that there are many definitions and argue that in order to conduct effective research we need to coalesce on a common definition. I would offer that the WCED definition is widely accepted as a general definition of sustainable development, but that each organization will need to independently define sustainability and what it means for their industries and organizations.

Additional statistical analysis (regression) (See Appendix H) was undertaken to introduce initial findings based on a relational analysis of content. From the statistical analysis the results suggest a relationship between net revenue and the various rankings. This finding aligns with an expectation that financial stability allows organizations to more readily support sustainability initiatives. As a variable the industry is responsible for explaining 55% of variation in net revenue. The CRO ranking however was found to have no relationship to net revenue suggesting that sustainable practices as described in the use of the word sustainability by CEOs is somehow independent of organizational, financial outcomes. For the Fortune 500 ranking as expected findings

show that a higher net revenue is associated with a lower ranking (1 being the best rank). This research while providing a sustainability assessment tool for future validation only scratches the surface of other future research opportunities.

### **Future Opportunities**

The first, next step the researcher is to survey actual CEOs whose organizations are BRT members and ranked as one of CRO's Best Corporate Citizens. By seeking validation of the practices we can take a significant step forward and begin to ask and understand why certain practices were implemented and what are the key outcomes. Also the data provides content that can be further categorized and analyzed such as the definitions provided by CEOs, the categorization into the three dimensions of sustainability, and all of the remaining statements in the narrative that were not directly attached to the word sustainability. Inclusive in this additional analysis is understanding the sustainability outcomes and whether these outcomes are and do impact financial outcomes. Also the assessment tool can be utilized as a means of gaining new and future understanding.

The design of the assessment tool also takes into account not only whether the practice exists, but the participant must also provide information on the relevancy of the stated practice. Comparing the use and the importance of the use of a sustainability practice also presents future opportunities to study gap analysis between "as is" and what "should be." This gap analysis sets the stage for an additional profile analysis tool that can be developed to supplement the integration of sustainability within organizations. There are several other opportunities for future research based on the findings and yet answered questions uncovered as a result of this study.

While this study only completed an in depth analysis of the statements in the CEO narratives that reference the term "sustainability," there are additional opportunities to evaluate and

better understand the other columns in the content analysis table (See Appendix G). Such as more in depth relational analysis and coding of the statements associated with each dimension of sustainability (social, environmental, and economic) as it relates to the existing literature streams under each category. Also a more in depth relational analysis of the policies, practices, and procedures as well as the relationship of the practices to being rewarded, supported, and/or expected. There are other potential avenues for future research.

When looking at relational aspects of the research evaluation of the strength of the relationship should be assessed as well as the direction of the relationship. Does the implementation of an environmental practice have a positive or negative impact on financial outcomes? Does the implementation of a reward system for sustainability motivate the employees to work more effectively which results in improved organizational outcomes? There are additional text analysis tools that can be utilized as well to better understand these relationships. What types of relationships could be uncovered with cognitive mapping and/or co-occurring word analysis? There are other areas of potential research that should be addressed in the future.

We know that the Bertels, Papania, and Papania (2010) framework was developed by a network of sustainable Canadian organizations. To aid in generalizability surveying participating Canadian and U.S. organizations to understand similarities and difference in establishing a climate for sustainability would be useful in identifying common elements and common behaviors across different countries. Establishing an international view of these relationships would advance the sustainability research stream. Another interesting unknown is the impact of time on sustainability and whether elements of a climate for sustainability evolve. How and why do these elements change the climate and with what effect?

Utilizing content analysis as a means of identifying elements of a climate for sustainability provided some new and promising results for addition to the sustainability body of

knowledge. The results confirm that while organizations discuss and communicate about sustainability as a three dimensional construct that the CEO narratives suggest that this language has not yet entered the consciousness of the leaders of these sustainable organizations. Or is it merely time for us to accept that each organization defines sustainability different and a sustainable organization is one that integrates sustainability practices that allow that organization to sustain financial performance in the long term while caring for the environment, and ensuring the prosperity of the communities in which they operate.



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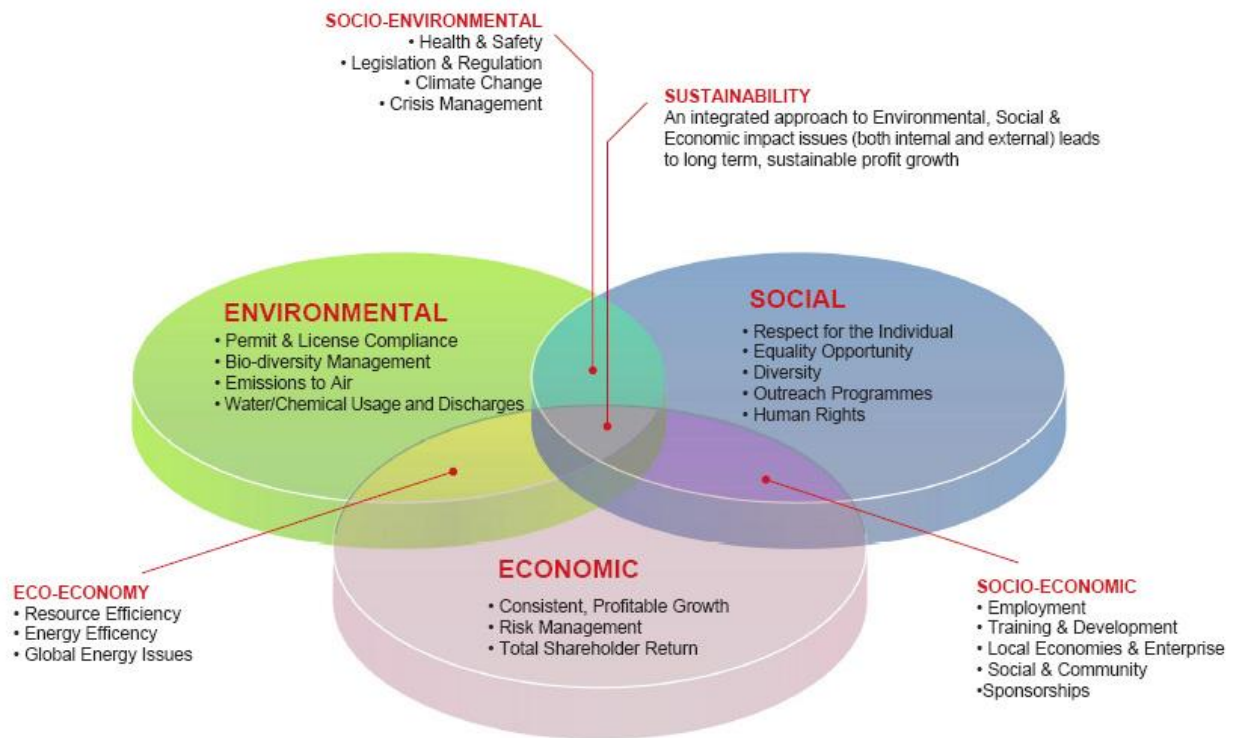
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FIGURE 1

INTEGRATED MODEL OF SUSTAINABILITY



Source: [www.verifyustainability.com/pie%20diagram/piediagram\\_open\\_page.aspx](http://www.verifyustainability.com/pie%20diagram/piediagram_open_page.aspx)

FIGURE 2

MIND MAP OF CONTENT ANALYSIS RESULTS OF CEO NARRATIVES AGAINST BER-TELS, PAPANIA, AND PAPANIA (2010) FRAMEWORK

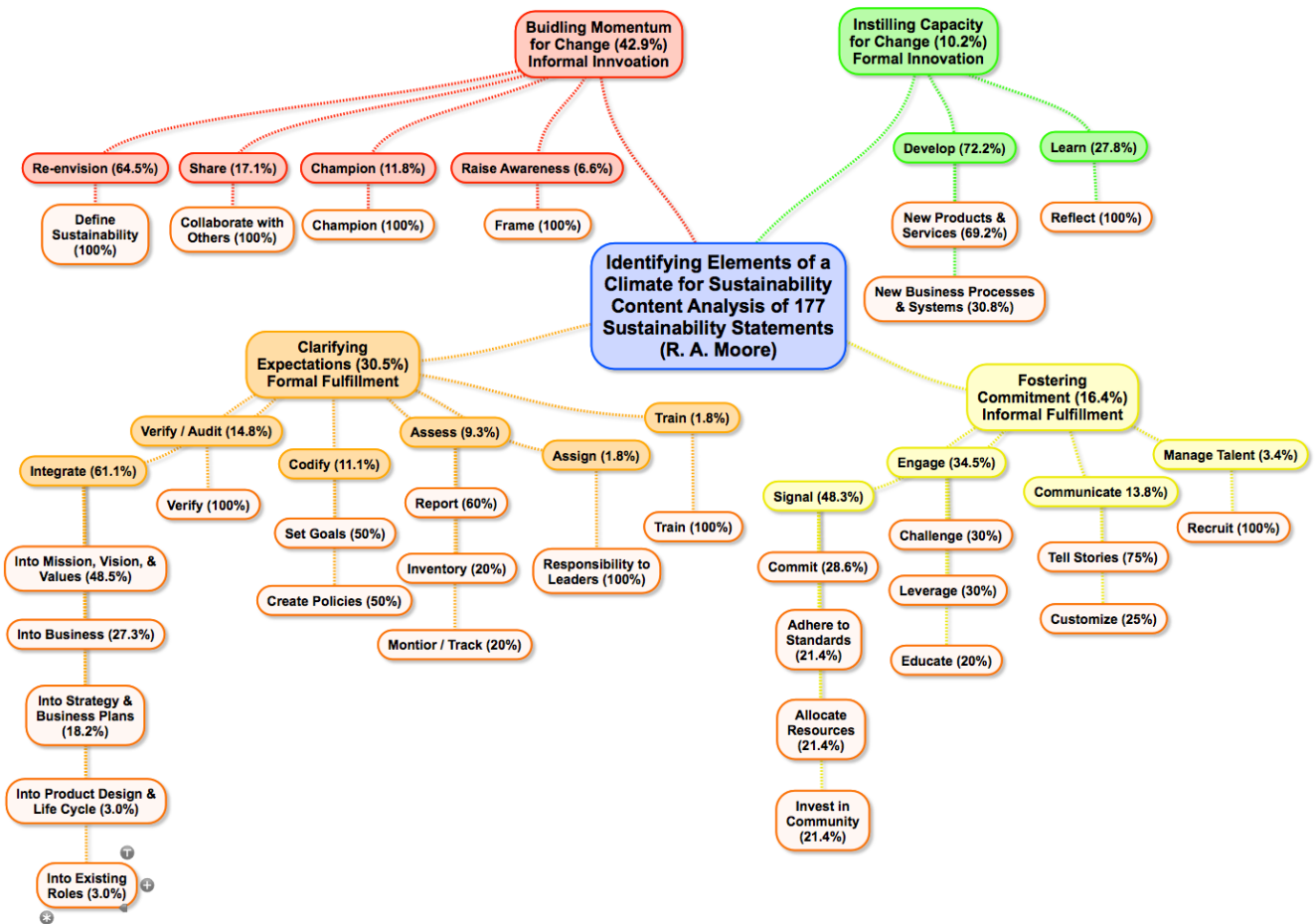




TABLE 1

HUMAN RESOURCE MANAGEMENT / SUSTAINABILITY PRACTICES

Year	Author(s)	Sustainability Context	Country Context	HRM Factors	Key Outcomes
1996	Azzone et al.	Environmental	N/A	<ol style="list-style-type: none"> <li>1. Functions Dedicated</li> <li>2. Professional Profile</li> <li>3. Training, Participation</li> <li>4. Cost of Training and Participation</li> <li>5. Number of Dedicated Functions</li> </ol>	Performance Indicators - Commitment
1997	Ichniowski et al.	Economic - Innovation	U.S.	<ol style="list-style-type: none"> <li>1. Incentive Pay</li> <li>2. Teamwork</li> <li>3. Flexible Jobs</li> <li>4. Employment Security</li> <li>5. Training</li> </ol>	Lines with innovative work practices achieve higher productivity than traditional line
1999	Fleury	Social - Diversity	Brazil	<ol style="list-style-type: none"> <li>1. Recruitment &amp; Selection</li> <li>2. Training</li> <li>3. Communication</li> </ol>	Diversity management increases value due to: (1) attraction and retention of best employees, (2) access to new market share, (3) stimulates creativity and innovation, (4) increases organizational flexibility
2000	Wentling & Palma-Rivas	Social - Diversity	Multiple	<ol style="list-style-type: none"> <li>1. Recruitment</li> <li>2. Selection</li> <li>3. Performance Evaluation</li> <li>4. Career Planning</li> </ol>	HRM personnel need skills and knowledge to deal with diversity at international level
2000	Kitazawa & Sarkis	Environmental	N/A	<ol style="list-style-type: none"> <li>1. Environmental Training</li> </ol>	Found relationship between reduction in pollution and participation of employees trained in environmental management
2001	Daily & Huang	Environmental	N/A	<ol style="list-style-type: none"> <li>1. Top Management Support</li> <li>2. Environmental Training</li> <li>3. Employee Empowerment</li> <li>4. Teamwork</li> <li>5. Reward Systems</li> </ol>	A proposed EMS-HR conceptual model is developed



Year	Author(s)	Sustainability Context	Country Context	HRM Factors	Key Outcomes
2002	Ramus	Environmental	N/A	1. Reward System 2. Performance Evaluation 3. Organizational Culture	Importance of HRM Dimensions in environmental Performance
2003	Laursen & Foss	Economic - Innovation	Denmark	1. HRM System	HRM Stimulates innovation and is different for manufacturing vs. service sector
2004	Chan et al.	Economic - Innovation	Hong Kong	1. Organizational Culture	Dimensions of organizational culture influence organizational and market performance
2004	Lau & Ngo	Economic - Innovation	Hong Kong	1. HRM Systems	Organizational culture is mediator between HRM System and Product Innovation
2004	Zutshi & Sohal	Environmental - EMS	Australia	1. HRM Dimensions	HRM dimensions are critical for EMS implementation
2005	Ng & Burke	Social - Diversity	N/A	1. Diversity Practices	Women & Minorities consider organizational diversity practices important when accepting job offers
2005	Shipton et al.	Economic - Innovation	U.K.	1. Recruitment & Selection 2. Appraisal 3. Training	Effective HRM systems with sophisticated approaches predict organizational innovation
2005	Jimenez-Jimenez & Sanz-Valle	Economic - Innovation	Spain	1. Compensation 2. Employee Participation 3. Appraisal System 4. Internal Career Opportunities	Innovation strategy dictates HRM practices
2005	Wee & Quazi	Environmental - EMS	Singapore	1. HRM Factors	HRM practices are crucial for environmental management
2006	Tsai	Economic - Innovation	Taiwan	1. Employee Empowerment	Positive relationship between employee empowerment & innovation
2006	Mazzanti et al.	Economic - Innovation	Italy	1. Industrial Relations 2. Employee Involvement	Good IR & EI stimulate organizational innovation
2006	Perron et al.	Environmental - EMS	N/A	1. Environmental Training	Training efficacy needs to be evaluated

Year	Author(s)	Sustainability Context	Country Context	HRM Factors	Key Outcomes
2006	Vuontisjarvi	Social - Reporting	Finland	<ol style="list-style-type: none"> <li>1. Pay &amp; Benefits</li> <li>2. Participation</li> <li>3. Staff Involvement</li> <li>4. Employee Health &amp; Well Being</li> <li>5. Measurement of HR Policies</li> <li>6. Employment Policy</li> <li>7. Security in Employment</li> <li>8. Equal Opportunities</li> <li>9. Work-Life Balance</li> <li>10. Training &amp; Staff Development</li> <li>11. Values &amp; Principles</li> </ol>	Content analysis of Annual Reports on HRM Practices (160 companies) - Control Variables: Size, Industry, and Country of Headquarters
2007	Wu & Chang	Social - Diversity	Asia	<ol style="list-style-type: none"> <li>1. Career Development</li> </ol>	HRM practices contribute to management of diversity difference
2007	Devine et al.	Social - Diversity	Ireland	<ol style="list-style-type: none"> <li>1. Career Development</li> <li>2. Promotion</li> </ol>	Management of diversity is improved with alignment to HRM practices
2007	Brio et al.	Environmental - EMS	Spain	<ol style="list-style-type: none"> <li>1. Employee Motivation</li> <li>2. Employee Participation</li> </ol>	Strategic integration of environmental dimension, employee motivation, and employee participation
2007	Walsworth & Verma	Economic - Innovation	Canada	<ol style="list-style-type: none"> <li>1. Training</li> </ol>	Variable pay and employee involvement have less impact
2008	Jabbour & Santos	Social Environmental Economic	N/A	<ol style="list-style-type: none"> <li>1. Social - Diversity</li> <li>2. Env. - EMS</li> <li>3. Economic - Innovation</li> </ol>	Literature review of HRM and three dimensions of sustainability. Offers Hypothesis for future study
2008	Jabbour & Santos	Environmental	N/A	<ol style="list-style-type: none"> <li>1. Recruitment &amp; Selection</li> <li>2. Training</li> <li>3. Performance Appraisal &amp; Reward</li> <li>4. Organizational Culture</li> <li>5. Organizational Learning</li> </ol>	EMS Implementation
2008	Sammalisto & Brorson	Environmental	Sweden	<ol style="list-style-type: none"> <li>1. Environmental Training</li> <li>2. Communication</li> </ol>	Environmental training and communication are important in implementation of ISO 14001

TABLE 2

OPERATIONS MANAGEMENT / SUSTAINABILITY PRACTICES

Year	Author(s)	Sustainability Context	Country Context	OM Factors	Key Outcomes
2000	Sroufe et al.	Environmental	U.S.	New Product Design Design for Environment (DfE) Environmentally Responsible Manufacturing (ERM)	Classified firms into five groups. Factors that lead to acceptance of ERM for innovators and early adopters is significantly different than early majority, late majority, and laggards
2003	Maxwell & van der Vorst	Environmental	London, U.K.	Sustainable Product Design Eco-Design Environmentally Superior Products	Offer a framework for design and development of sustainable products and services
2005	Kleindorfer et al.	Sustainability	N/A	Green Product and Process Lean and Green Operations Re-manufacturing and Closed Loop Supply Chains	Overview of sustainability themes in first 50 issues of POMS
2005	Gonzalez-Benito & Gonzalez-Benito	Environmental	Spain	Operational (4 product related and 12 process related)	Environmental management practices can provide competitive advantage, but some practices produce negative effects
2007	Linton et al.	Sustainability	N/A	Sustainable Supply Chains	Overview of sustainability and supply chains
2007	Seuring & Muller	Sustainability	Germany	Sustainable Supply Chains	Delphi study of sustainable supply chains – Identification of four dimensions that can be utilized to structure the sustainable supply chain discussion
2007	Montabon et al.	Environmental	UK & Netherlands	Recycling Proactive waste reduction Remanufacturing Environmental design Specific Design Targets Surveillance of market for environmental issues	Use of corporate environmental reporting to identify operational, tactical, and strategic environmental practices (6) that impact financial performance

<b>Year</b>	<b>Author(s)</b>	<b>Sustainability Context</b>	<b>Country Context</b>	<b>OM Factors</b>	<b>Key Outcomes</b>
2008	Ciliberti et al.	Social Environmental	Italy	Logistics	Review of social responsibility reports to develop a taxonomy of logistic social responsibility practices
2009	Erol et al.	Social Environmental Economic	Turkey	Sustainability Indicators	Development of a comprehensive identification of social, environmental, and economic indicators based on Turkish retailers
2009	Kaynak & Montiel	Environmental	U.S.	Green Supply Management	Development of framework and instrument to measure sustainable supply chain practices and sustainable performance
2010	Sarkis et al.	Environmental	Spain	Reverse Logistics	Environmental training mediates the relationship between stakeholder pressures and various environmental practices

TABLE 3

CONTENT ANALYSIS CATEGORIZATIONS

<b>Sustainability Statement</b>	<b>Sustainability Dimension</b> (Social, Environmental, Economic)	<b>Type of Organizational Content</b> (Policy, Practice, Procedure)	<b>Type of Motivation</b> (Reward, Support, Expectation)	<b>Organizational Outcome</b>
Installed new waste water recovery system	Environmental	Practice	Support	Reclaimed and re-used more than 1 million gallons of process water
Installed new equipment	Environmental	Practice	Support	Reduce annual electricity usage 18% and natural gas consumption 16%
Improved processes	Environmental	Practice	Support	Reduce annual electricity usage 18% and natural gas consumption 16%

TABLE 4

COUNTING OF CONTENT ANALYSIS INSTANCES

<b>Sustainability Statement</b>	<b>Sustainability Dimension</b> (Social, Environmental, Economic)	<b>Type of Organizational Content</b> (Policy, Practice, Procedure)	<b>Type of Motivation</b> (Reward, Support, Expectation)	<b>Organizational Outcome</b>	<b>Sustainability Definitional Rating</b>
Installed new waste water recovery system	Environmental	Practice	Support	Reclaimed and re-used more than 1 million gallons of process water	
Installed new equipment	Environmental	Practice	Support	Reduce annual electricity usage 18% and natural gas consumption 16%	
Improved processes	Environmental	Practice	Support	Reduce annual electricity usage 18% and natural gas consumption 16%	
Number of Instances <b>3</b>	Social <b>0</b> Environmental <b>3</b> Economic <b>0</b>	Policy <b>0</b> Practice <b>3</b> Procedure <b>0</b>	Reward <b>0</b> Support <b>3</b> Expectation <b>0</b>	Reduce <b>2</b> Reclaim & Reuse <b>1</b>	

## APPENDIX A

## APPENDIX A

### SELECTED SAMPLE ORGANIZATIONS FOR CONTENT ANALYSIS

	<b>Business Roundtable CEO Narratives 2014</b>	<b>CR's 100 Best Corporate Citizen 2014</b>	<b>Rank</b>
1	A.O. Smith	No	
2	ABB Inc., USA	No	
3	Abbott*	Yes	20
4	Accenture*	Yes	6
5	ACE Limited	No	
6	Aetna, Inc.	No	
7	AGCO Corporation	No	
8	AK Steel Corporation	No	
9	Alcoa, Inc.*	Yes	63
10	Altec, Inc.	No	
11	American Electric Power Company, Inc.	No	
12	Amerigroup Corporation	No	
13	Apache Corporation	No	
14	AT&T, Inc.*	Yes	33
15	Avery Dennison Corporation	No	
16	Ball Corporation	No	



17	Barclays, PLC	No	
18	Bayer AG	No	
19	Bechtel Group, Inc.	No	
20	BNSF Railway Company	No	
21	The Boeing Company*	Yes	67
22	C.V. Starr & Co., Inc.	No	
23	CA Technologies	No	
24	Caesars Entertainment Corporation	No	
25	Campbell Soup Company	No	
26	Case New Holland, Inc.	No	
27	Caterpillar, Inc.	No	
28	CBRE Group, Inc.	No	
29	CH2M Hill Companies, Ltd.	No	
30	Chevron Corporation*	Yes	40
31	CIGNA Corporation	No	
32	Cisco Systems, Inc.*	Yes	43
33	Citigroup, Inc.	No	
34	The Coca-Cola Company*	Yes	14
35	Cognizant Technology Solutions Corporation	No	
36	ConocoPhillips*	Yes	91
37	Cooper Industries, plc	No	
38	Covidien, plc	No	
39	CSX Corporation*	Yes	99

40	Cummins, Inc.*	Yes	81
41	CVS Caremark Corporation*	Yes	95
42	DaVita, Inc.	No	
43	Deere & Company	No	
44	Dell, Inc.*	Yes	37
45	Deloitte Touche Tohmatsu	No	
46	The Dow Chemical Company*	Yes	34
47	Duke Energy Corporation*	Yes	35
48	DuPont	No	
49	Eastman Chemical Company	No	
50	Eaton Corporation*	Yes	17
51	Edison International	No	
52	Eli Lilly and Company	No	
53	EMC Corporation*	Yes	47
54	Ernst & Young, L.L.P.	No	
55	Exxon Mobile Corporation	No	
56	FedEx Corporation	No	
57	Fluor Corporation	No	
58	FMC Corporation	No	
59	Freeport-McMoRan Copper & Gold, Inc.*	Yes	10
60	General Electric Company*	Yes	73
61	General Mills, Inc.*	Yes	44
62	W.W. Grainger, Inc.	No	

63	Harman International Industries, Inc.	No	
64	The Hartford Financial Services Group	No	
65	Hasbro, Inc.*	Yes	23
66	Honeywell International, Inc.	No	
67	Humana, Inc.	No	
68	IBM Corporation*	Yes	2
69	Ingersoll-Rand Company	No	
70	International Paper Company*	Yes	21
71	ITC Holdings Corporation	No	
72	ITT Corporation*	Yes	72
73	Johnson Controls, Inc.*	Yes	5
74	KPMG, LLP	No	
75	Macy's, Inc.	No	
76	Marathon Oil Corporation*	Yes	74
77	MassMutual Financial Group	No	
78	MasterCard Incorporated	No	
79	The McGraw-Hill Companies*	Yes	16
80	McKesson Corporation	No	
81	Medtronic, Inc.*	Yes	50
82	Merck & Co., Inc.*	Yes	46
83	Meritor, Inc.	No	
84	Motorola Solutions, Inc.*	Yes	77
85	National Gypsum Company	No	

86	Navistar International Corporation	No	
87	NextEra Energy, Inc.	No	
88	Norfolk Southern Corporation	No	
89	Northrop Grumman Corporation	No	
90	Owens Corning	No	
91	PepsiCo, Inc.*	Yes	22
92	Praxair, Inc.	No	
93	PricewaterhouseCoopers, L.L.P.	No	
94	Principal Financial Group, Inc.	No	
95	The Proctor & Gamble Company*	Yes	26
96	Prudential Financial	No	
97	Public Service Enterprise Group, Inc.	No	
98	Qualcomm, Inc.	No	
99	R.R. Donnelley & Sons Company	No	
100	Rockwell Automation Corporation*	Yes	87
101	Rockwell Collins, Inc.	No	
102	Ryder System, Inc.	No	
103	SAP	No	
104	SAS	No	
105	Siemens Corporation	No	
106	Simon Property Group, Inc.	No	
107	Southern Company	No	
108	State Farm Insurance Companies	No	

109	Suffolk Corporation	No	
110	Target Corporation*	Yes	64
111	Tenet Healthcare Corporation	No	
112	Tenneco	No	
113	Texas Instruments, Inc.*	Yes	25
114	Textron, Inc.	No	
115	Thermo Fisher Scientific, Inc.	No	
116	Tishman Speyer	No	
117	Union Pacific Corporation	No	
118	United Parcel Service, Inc.*	Yes	48
119	Verizon Communications*	Yes	57
120	Wal-Mart Stores, Inc.	No	
121	Western & Southern Financial Group	No	
122	Weyerhaeuser Company*	Yes	60
123	Whirlpool Corporation*	Yes	69
124	The Williams Companies, Inc.	No	
125	Wyndham Worldwide Corporation*	Yes	79
126	Xerox Corporation*	Yes	32

## APPENDIX B

## APPENDIX B

### CODING PROTOCOL FOR ELEMENTS OF A CLIMATE FOR SUSTAINABILITY

#### *Introduction*

This climate for sustainability protocol is focused on assessing the 126 CEO narratives from the members of the Business Roundtable. A sustainability report is published annually by the BRT. The 2013 BRT Sustainability is utilized as the primary source for this analysis. Following are the four primary topics are categorized for each sentence highlighted in the CEO narratives for each organization.

#### *Dimensions of Sustainability*

Sustainability is recognized to have three dimensions (a) social, (b) environmental, and (c) economic. Coding the sentence units into one of these categories involves capturing whether the content within the sentence acknowledges an organizational activity that impacts the society, the environment, or the economic performance of the organization. Sub categories for each are identified and are utilized for coding into the appropriate category.

#### *Climate for Sustainability*

A climate for sustainability is one in which policies, practices, and/or procedures drive behaviors that are rewarded, supported, and/or expected. Utilizing this definition, two additional categories are identified, type of organizational content and type of motivation. Categories for organizational content are policies, practices, or procedures. Categories for motivation are reward, support, or expectation.

## *Coding Procedure*

The following steps should be taken to code the CEO narratives from the BRT Sustainability Report. All sustainability narrative coding begins with identifying the location of the content. Content location is specified by:

Variable 1: **Narrative Identification**: page number – paragraph number – sentence number (i.e., A.O. Smith: Paul W. Jones would be coded as **1-4-1a**).

Variable 2: **Number of times that the word sustainability is mentioned** for the CEO narrative (i.e., A.O. Smith: Paul W. Jones Count = **1**).

Variable 3: **Sustainability Dimension** - theme that is identified by sustainability statement in the narrative; number of times that each of the dimensions is mentioned.

Social = number of instances

Environmental = number of instances

Economic = number of instances

Variable 4: **Climate for Sustainability – Type of Content** – theme that is identified by the sustainability statement in the narrative; number of times that each of the content types is mentioned.

Policy = number of instances

Practice = number of instances

Procedure = number of instances

Variable 5: **Climate for Sustainability – Type of Motivation** - theme that is identified by the sustainability statement in the narrative; number of times that each of type of motivation is mentioned.

Reward = number of instances

Support = number of instances

Expectation = number of instance



## APPENDIX C

## APPENDIX C

### CODING FORM

Narrative ID	# of Sustainability Mentions	Dimensions			Type of Content			Type of Motivation		
Page – Paragraph – Sentence		# of Social	# of Environmental	# of Economic	# of Policy	# of Practice	# of Procedure	# of Reward	# of Support	# of Expectation

## APPENDIX D

## APPENDIX D

### CONTENT ANALYSIS PROCESS DETAIL

1. Select organizations (44) that are on both CRO's 2013 ranking and are members of the 2013 Sustainability BRT.
2. Develop the design for the content analysis (Neuendorf, 2002)
  - a. Unit of Analysis – sentence
  - b. Identify the variables to measure based on the literature review
  - c. Create an a priori coding scheme that involves capturing the dimensions of sustainability and the sustainability elements (policies, practices, and/or procedures that drive behaviors that are rewarded, supported, and expected) from the 44 CEO narratives
3. Train coder and conduct reliability checks (sustainability, sustainability dimensions & sustainability elements)
  1. Revise coding form and clarify definitions based on the pilot reliability
  2. Code 50% (22) of the CEO narratives
  3. Randomly select 50% of the coded CEO narratives (11) for a midpoint reliability check and revision to coding process
  4. Code remaining 50% of CEO narratives (22)
  5. Randomly select 50% of the coded CEO narratives (11) for a final reliability check
  6. Calculate a final reliability check for all of the variables
4. Train coder and conduct reliability checks (sustainability, sustainability dimensions and sustainability practice and sub-practice categories)
  - a. Capture the specific sustainability comments (177) from all 44 CEO narratives
  - b. Utilize the Bertels, Papania, & Papania (2010) article to establish definitions and categories in which to analyze the sustainability statements
  - c. Create a coding form to capture counts of sustainability, sustainability dimensions and sustainability practice and sub-practice categories from the Bertels, Papania, & Papania (2010) framework
  - d. Code all 177 of the sustainability statements from the CEO narratives
  - e. Calculate a final reliability check for sustainability and sustainability dimensions, practices, and sub-practices
5. Analyze results

- a. Use the results of the content analysis to identify the key elements used by sustainable organizations in the creation of a climate for sustainability
- b. Utilize these identified elements to update and enhance Chapter II Literature Review
- c. Utilize these identified elements to develop an assessment tool which is validated through survey analysis

## APPENDIX E

## APPENDIX E

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## APPENDIX F

## APPENDIX F

### DEMOGRAPHIC DATA FOR EACH COMPANY

<b>Content Analysis - Company Demographics</b>														
Identifying Elements of a Climate for Sustainability (R. Moore)														
Company	CRO 100 2013 Rank	CRO 100 2014 Rank	Both Lists 2014	CRO 100 2015 Rank	Both Lists 2015	Both Lists - 2 More Yrs.	Fortune 500 2013 Rank	Fortune 500 2014 Rank	HQ Location City	HQ Location State	Industry	Sector	Net Revenue 2013	Net Revenue 2014
Accenture	21	15	1	48	1	1	0	0	Dublin	Ireland	Management Consulting	Services	28.6	30
AT&T	1	49	1	16	1	1	11	11	Dallas	TX	Telecommunications Service	Technology	128.8	131.6
Ball Corp.	95	0	0	0	0	0	301	321	Broomfield	CO	Packaging & Containers	Consumer Goods	8.57	8.47
Boeing	85	86	1	0	0	0	30	30	Chicago	IL	Aerospace / Defense	Industrial Goods	90.76	86.62
CA Tech	72	37	1	0	0	0	0	0	Islandia	NY	Application Software	Technology	4.64	4.52
Campbell's	9	11	1	8	1	1	338	315	Camden	NJ	Processed & Packaged Goods	Consumer Goods	8.05	8.27
Chevron	71	66	1	0	0	0	3	3	San Ramon	CA	Integrated Oil & Gas	Basic Materials	220.2	200.5
Cisco	90	16	1	33	1	1	60	55	San Jose	CA	Networking & Communication	Technology	48.6	47.1
Coca-Cola	15	9	1	15	0	0	57	58	Atlanta	GA	Beverages - Soft Drinks	Consumer Goods	46.8	45.9
Conoco Phillips	93	0	0	73	1	0	45	47	Houston	TX	Independent Oil & Gas	Basic Materials	58.2	55.5
Darden	61	0	0	0	0	0	328	319	Orlando	FL	Restaurants	Services	5.9	6.3
Dell	46	0	0	0	0	0	51	0	Round Rock	TX	Computer Systems	Technology	56.9	
Dominion	57	71	1	0	0	0	210	212	Richmond	VA	Electric Utilities	Utilities	13.1	12.4
Dow	70	45	1	26	1	1	52	48	Midland	MI	Chemical Diversified	Basic Materials	57.1	58.2
Duke Energy	26	0	0	0	0	0	145	123	Charlotte	NC	Electric Utilities	Utilities	22.7	23.9
Eaton	4	25	1	0	0	0	0	0	Dublin	Ireland	Industrial Electrical Equipment	Industrial Goods	22	22.6
Eli Lilly	64	59	1	57	1	1	130	129	Indianapolis	IN	Drug Manufacturer	Healthcare	23.1	19.6
EMC Corporation	65	82	1	80	1	1	133	128	Hopkinton	MA	Data Storage Devices	Technology	13.7	14.05
Exxon Mobil	50	99	1	92	0	0	2	2	Irving	TX	Integrated Oil & Gas	Basic Materials	420.8	394.1
Fed Ex	84	63	1	43	1	1	63	64	Memphis	TN	Air Delivery & Freight	Services	44.3	45.6
Freeport McMoran	73	0	0	0	0	0	156	142	Pheonix	AZ	Copper	Basic Materials	20.9	21.4

General Electric	53	30	1	49	1	1	8	9	Fairfield	CT	Conglomerate	Conglomerate	146	148.6
General Mills	33	46	1	39	1	1	169	159	Minneapolis	MN	Processed & Packaged Goods	Consumer Goods	17.7	17.9
IBM	11	18	1	31	1	1	20	23	Armonk	NY	Diversified Computer Systems	Technology	98.4	92.8
Intel	5	8	0	7	0	0	54	53	Santa Clara	CA	Semiconductor Broad Line	Technology	52.7	55.9
Intl. Paper	30	41	1	69	1	1	107	105	Memphis	TN	Paper & Paper Products	Consumer Goods	23.5	23.6
Johnson & Johnson	17	2	1	3	1	1	41	39	New Brunswick	NJ	Drug Manufacturer	Healthcare	71.3	74.3
Johnson Controls	14	12	1	14	1	1	67	68	Milwaukee	WI	Auto Parts	Consumer Goods	41.4	42.8
Marathon Oil	92	97	1	0	0	0	174	188	Houston	TX	Oil & Gas Refining & Marketing	Basic Materials	11.3	10.8
McGraw Hill	19	20	1	22	1	1	390	484	New York	NY	Publishing Books	Services	4.7	5.1
Merck	8	23	0	27	0	0	58	65	Whitehouse Station	NJ	Drug Manufacturer	Healthcare	44	42.2
Microsoft	29	4	1	1	0	0	35	34	Redmond	WA	Application Software	Technology	77.8	86.8
Motorola Solutions	32	40	1	94	1	1	304	312	Schaumburg	IL	Networking & Communication	Technology	6.2	5.9
Pepsico	43	54	1	55	1	1	43	43	Purchase	NY	Processed & Packaged Goods	Consumer Goods	66.4	66.7
PG&E	37	0	0	58	1	0	183	183	San Francisco	CA	Utilities, Gas & Electric	Energy	15.6	17.1
Rockwell Automation	40	0	0	0	0	0	403	410	Milwaukee	WI	Industrial Electrical Equipment	Industrial Goods	6.4	6.6
Target	62	61	1	75	0	0	36	36	Minneapolis	MN	Discount Variety	Services	71.3	72.6
Texas Instruments	38	31	1	17	1	1	218	227	Dallas	TX	Semiconductor Broad Line	Technology	12.2	13
UPS	24	24	1	28	1	1	53	50	Atlanta	GA	Air Delivery & Freight	Services	55.4	58.2
Verizon	47	60	1	89	1	1	16	16	New York	NY	Telecommunications Service	Technology	120.6	127.1
Weyerhaeuser	23	6	0	12	0	0	363	320	Federal Way	WA	Lumber, Wood Production	Industrial Goods	5	5.3
Whirlpool	42	78	1	79	1	1	154	153	Benton Harbor	MI	Appliances	Consumer Goods	18.8	19.9
Wyndham	80	69	1	98	1	1	528	494	Parsippany	NJ	Lodging	Services	1.19	1.23
Xerox	68	43	1	4	1	1	131	137	Norwalk	CT	Business Equipment	Consumer Goods	20	19.5

## APPENDIX G



## APPENDIX G

### CONTENT ANALYSIS OF SUSTAINABILITY STATEMENTS

Identifying Elements of a Climate for Sustainability (R. Moore)										
Sustainability Sub-Categories of Content Analysis										
			Sust	Soc	Env	Eco	Practices (1-20)	Sub-Practice	Policy, Practice, or Procedure	Reward, Support, or Expectation
1	Accenture	Strive to make a measurable, sustainable difference to the communities where we work and live		1			Signal	Invest in the Community		
2	Accenture	Ensure sustainable growth span our entire operations from internal operations , to services we provide clients, to engage employees & suppliers	2				Engage	Leverage		
3	Accenture	Focus on sustainability and inclusion extends to our supply chain	3				Codify	Create Policies	Practice	Support
4	AT&T	Supporting a more sustainable world	4				Develop	Develop New Products and Services	Practice	Support
5	Ball Corp	Balancing decision-making and activities related to sustainability to create long term, shared value for our stakeholders and business				5	Integrate	Into Mission, Vision, and Values	Practice	Expectation
6	Ball Corp	Focusing our sustainability efforts on areas where we can have the greatest impact	6				Champion	Champion		
7	Ball Corp	Increase our role as a sustainability leader in our industry	7				Champion	Champion	Policy (?)	Expectation
8	Ball Corp	Established an internal sustainability award			8		Engage	Challenge		
9	Ball Corp	Annually assess sustainability for each Ball plant around the globe in 10 categories			9		Engage	Challenge	Practice	Reward
10	Ball Corp	Exchanging information and ideas on sustainability issues through collaboration with our suppliers				10	Share	Collaborate with Others		
11	Ball Corp	Increased our engagement with suppliers on sustainability aspects in a more systematic way				11	Share	Collaborate with Others	Practice	Support
12	Boeing	Deliver sustained world class business performance through innovation fueled by disciplined execution and productivity				12	Integrate	Into Strategy and Business Plans		
13	Boeing	Generating sustainable growth and a better future for our industry, our customers, and our communities around the world		13			Champion	Champion	Practice	Expectation
14	Boeing	Report focuses on how companies are sustaining and creating growth by doing good	14				Verify / Audit	Verify	Practice (?)	Support
15	CA Tech	Company has set ambitious goals for sustainability	15				Integrate	Into Strategy and Business Plans		
16	CA Tech	Provide a full range of value including our commitment to sustainable practices				16	Integrate	Into Business	Practice	Expectation
17	CA Tech	Provide a full range of value including our commitment to sustainable communities		17			Integrate	Into Mission, Vision, and Values		
18	CA Tech	No one company or individual can tackle issues such as sustainable energy, we believe doing our part will make a difference			18		Integrate	Into Existing Roles	Practice	Support
19	CA Tech	Created Energy and Sustainability Management software solutions to provide business insights for our customers			19		Develop	Develop New Products and Services	Practice	Support
20	CA Tech	Launched an aggressive corporate sustainability program			20		Integrate	Into Strategy and Business Plans	Practice	Support
21	CA Tech	Empowered our employees to help define and implement sustainability solutions			21		Engage	Leverage	Practice	Support
22	CA Tech	Host sustainability innovation challenge	22				Engage	Challenge		
23	CA Tech	Incorporate sustainability into our training and employee on-boarding	23				Train	Train	Practice	Support
24	CA Tech	Recognized by third parties like Newsweek and the Dow Jones Sustainability Index	24				Verify / Audit	Verify	Practice	Reward
		Take a leading role in a variety of partnerships, industry organizations, and sustainability organizations								

25	CA Tech	Take a leading role in a variety of partnerships, industry organizations, and sustainability organizations (CEREs, BICEP, etc.)			25	Signal	Adhere to Standards	Practice	Support
26	CA Tech	Sustainability isn't a business issue or a government issue it is a human issue			26	Integrate	Into Mission, Vision, and Values		
27	Campbell's	Our corporate responsibility strategies focus on nourishing the lives.....by engaging in....., focus on sustainability and give back to the community			27	Integrate	Into Strategy and Business Plans	Practice	Support
28	Campbell's	Leverage corporate social responsibility and sustainability as key drivers of employee engagement in our culture	28			Engage	Leverage	Practice	Support
29	Campbell's	Named to the Dow Jones Sustainability Index	29			Verify / Audit	Verify		
30	Campbell's	Named to the Global 100 Most Sustainable Corporations in the World	30			Verify / Audit	Verify	Practice	Reward
31	Campbell's	Leverage distinct capabilities to become one of the most sustainable consumer products goods companies in the world	31			Champion	Champion	Practice	Support
32	Chevron	Meeting our commitment to produce this vital energy safely, reliably and in an environmentally responsible and sustainable manner			32	Develop	Develop New Products and Services		
33	Chevron	Deliver on the promise of shale gas safely, responsibly, and sustainably			33	Develop	Develop New Products and Services		
34	Cisco	Education is vital to long term, sustainable economic growth and quality of life			34	Re-Envision	Define Sustainability	Practice	Support
35	Coca-Cola	Seeking the formula for growth, a large part of the solution lies in the sustainability driven innovations			35	Re-Envision	Define Sustainability	Practice	Support
36	Coca-Cola	Impactful innovations over the next decade will emerge at the intersection of sustainability and our vast global value chain			36	Re-Envision	Define Sustainability		
37	Coca-Cola	Working to embed sustainability minded innovations			37	Integrate	Into Business		
38	Coca-Cola	Intensifying our efforts across the sustainability spectrum			38	Integrate	Into Mission, Vision, and Values	Practice	Expectation
39	Conoco Phillips	Committed to sustainable development	39			Signal	Commit	Practice	Expectation
40	Conoco Phillips	Integrated sustainable development more clearly into the Health, Safety, and Environment Management System			40	Integrate	Into Business	Practice	Support
41	Conoco Phillips	Interactive best practices workshop on social and environmental issues for more than 100 sustainable practitioners worldwide		41	41	Engage	Educate		
42	Conoco Phillips	Launched an innovative sustainable development learning module to promote employee awareness and understanding			42	Engage	Educate	Practice	Support
43	Conoco Phillips	Consider sustainable development to be smart business	43			Re-Envision	Define Sustainability	Practice	Support
44	Conoco Phillips	Employees are watching the video, discussing sustainability issues	44			Communicate	Tell Stories		
45	Conoco Phillips	Employees are incorporating sustainable development into daily decision-making	45			Engage	Link	Practice	Support
46	Conoco Phillips	Recognized in 2012 for sustainable development success	46			Verify / Audit	Verify	Practice	Reward
47	Conoco Phillips	Made the Dow Jones Sustainability North America Index for the 6th consecutive year	47			Verify / Audit	Verify		
48	Conoco Phillips	Making steady progress in practicing sustainable development	48			Integrate	Into Business		
49	Conoco Phillips	Our SPIRIT (safety, people, integrity, responsibility, innovation, teamwork) values... provide the foundation for commitment to sustainable development	49			Integrate	Into Mission, Vision, and Values	Practice	Expectation
50	Darden Restaurants	Full breadth of sustainability efforts reflects our investment in our culture, restaurants, and supply chain			50	Integrate	Into Mission, Vision, and Values		

51	Darden Restaurants	One company cannot change global forces affecting sustainability, taking proactive steps.. in our own operations...to influence suppliers				51	Share	Collaborate with Others	Practice	Support
52	Darden Restaurants	Unique connection between food and natural resources, sustainability requires working from "farm to fork"				52	Re-Envision	Define Sustainability	Practice	Support
53	Darden Restaurants	Focus efforts to broaden our sustainability to create value for people and society		53			Champion	Champion	Practice	Support
54	Darden Restaurants	Investments in sustainability have a clear business impact				54	Raise Awaren	Frame	Practice	Support
55	Darden Restaurants	Sustainability furthers our core purpose: to nourish and delight everyone we serve	55				Raise Awaren	Frame	Practice	Reward
56	Dell	Helping to develop the world's first sustainable packaging made from mushrooms				56	Develop	Develop New Products and Services	Practice	Support
57	Dominion	Create sustainable value by investing in the communities where we live and work		57			Champion	Champion	Practice	Support
58	Dominion	Four sustaibility focus areas are designed to help grow the economy, create jobs, enage our stakeholders, and reduce environmental impacts		58	58	58	Raise Awaren	Frame		
59	Dominion	Commitment to sustainability starts at the top	59				Signal	Model	Policy	Expectation
60	Dominion	Executive-level Sustainability Council provided strategic direction	60				Assign	Responsibility to Senior Leaders		
61	Dominion	Invest where we live and work and partner with our stakeholders to shape solutions to sustainability challenges of our time		61			Share	Collaborate with Others		
62	Dow	A sustainable enterprise is no longer an opt-in or opt-of choice made by individuals	62				Re-Envision	Define Sustainability	Policy	Expectation
63	Dow	Sustainability is no longer a noun, but an adjective	63				Re-Envision	Define Sustainability	Practice	Expectation
64	Dow	Sustainable operations				64	Re-Envision	Define Sustainability	Practice	Expectation
65	Dow	Sustainable business				65	Re-Envision	Define Sustainability		
66	Dow	Sustainable solutions	66				Re-Envision	Define Sustainability	Practice	Expectation
67	Dow	Sustainable profits				67	Re-Envision	Define Sustainability		
68	Dow	Sustainable planet				68	Re-Envision	Define Sustainability	Practice	Expectation
69	Duke Energy	Our new logo represents our combined strength and joint commitment to innovation, energy efficiency, and sustainability				69	Integrate	Into Mission, Vision, and Values	Policy	Expectation
70	Duke Energy	Provide affordable, reliable, increasingly clean energy - in safe, sustainable ways				70	Integrate	Into Mission, Vision, and Values	Policy	Expectation
71	Duke Energy	The "grandchildren's test" has long been my standard for sustainability	71				Re-Envision	Define Sustainability	Policy	Expectation
72	Eaton	Eaton's sustainable products include: electrical power distribution, circuit protection, backup power protection, etc.				72	Learn	Reflect		
73	Eaton	Acquisition of Cooper Industries reinforced our commitment to sustainability	73				Assess	Inventory		
74	Eaton	Helping to build sustainable communities by investing time and resources in local programs		74			Signal	Allocate Resources	Practice	Support
75	Eli Lilly	Subscribe to the concept of triple bottom line: that society, the environment, and business depend on one another for longevity		75	75	75	Re-Envision	Define Sustainability	Practice	Support
76	EMC Corporation	Sustainability means recognizing that the decisions we make today will impact the choice available in the future for ourselves, company, our children		76			Re-Envision	Define Sustainability	Practice	Expectation
77	EMC Corporation	Sustainanility is not just for the long term	77				Re-Envision	Define Sustainability	Policy	Expectation

77	EMC Corporation	Sustainability is not just for the long term	77				Re-Envision	Define Sustainability	Policy	Expectation
78	EMC Corporation	Embedding sustainability into every aspect of our business is making us an even stronger company today	78				Integrate	Into Business	Policy	Expectation
79	EMC Corporation	Customers are looking for business partners who share their sustainability vision				79	Share	Collaborate with Others	Practice	Support
80	EMC Corporation	Sustainability priorities are focused on where we can have greatest impact: energy consumption, electronic waste, supply chain, etc.		80	80	80	Communicate	Customize	Practice	Support
81	EMC Corporation	Established the Blue Sky award for sustainable suppliers				81	Share	Collaborate with Others	Practice	Reward
82	EMC Corporation	Encourage exchange and adoption of innovative approaches to sustainable practices				82	Share	Collaborate with Others	Practice	Reward
83	EMC Corporation	We are on a mission to transform ourselves, our industry, and our world to build a sustainable future	83				Integrate	Into Mission, Vision, and Values	Policy	Support
84	Exxon Mobil	Access to reliable, affordable energy is vital....to creating and sustaining economic development		84	84	84	Re-Envision	Define Sustainability	Practice	Support
85	Exxon Mobil	Addressing the sustainability challenge - the balancing of economic growth, social development, and environmental protection		85	85	85	Re-Envision	Define Sustainability	Practice	Support
86	Exxon Mobil	Integrate sustainability inot ever facet of our business through a commitment to responsible operations, careful risk management, etc.			86	86	Integrate	Into Business	Policy	Expectation
87	Exxon Mobil	To be sustainable, we must enable our society to cultivate the innovators of tomorrow		87			Re-Envision	Define Sustainability		
88	Exxon Mobil	Ensure new generation of scientists and engineers.....develop energy technologies for future generations to sustain growth			88	88	Signal	Allocate Resources		
89	Fed Ex	Working toward greater sustainability and citizenship has led us to develop a myriad of new programs and processes		89	89	89	Develop	Develop New Business Processes and Systems	Practice	Support
90	Fed Ex	We realize our sustainability efforts don't just come from the top of the organization	90				Re-Envision	Define Sustainability		
91	Freeport McMoran	Advance our sustainable development performance so that we can provide economic and social benefits		91		91	Develop	Develop New Business Processes and Systems	Practice	Support
92	Freeport McMoran	Role as leading resource company that will last long into the future and be a significant contributor to sustainable development			92		Champion	Champion	Practice	Support
93	General Electric	We have proven that we are a resilient and sustainable entity	93				Assess	Monitor / Track	Practice	Expectation
94	General Electric	It is incumbent upon businesses to contribute to society....we this goes hand in hand with our ability to grow and sustain economies across the world		94		94	Re-Envision	Define Sustainability	Practice	Support
95	General Electric	Continues to expand ecomagination, healthymagination, etc. to provide new solutions and continue our success as a valued sustainable entity		95			Develop	Develop New Products and Services	Policy	Expectation
96	General Mills	For over a century, sustainability has been an integral part of our business	96				Integrate	Into Business		
97	General Mills	Our sustainability mission centers on conserving and protecting the natural resources on which our business depends			97		Integrate	Into Mission, Vision, and Values	Policy	Support
98	General Mills	To achieve mission, focus on two key areas: reducing resource usage in operations, increasing sustainable sourcing across supply chain			98	98	Integrate	Into Mission, Vision, and Values	Practice	Support
99	General Mills	Key to operating sustainably and supporting our business for the long term	99				Re-Envision	Define Sustainability	Practice	Support
100	General Mills	Sustainable source strategy focuses on 10 priority ingredients ot have the best impact	100				Integrate	Into Strategy and Business Plans	Policy	Support
101	General Mills	Through our work with industry groups, we are helping to move the raw material supply chain toward more sustainable solutions				101	Share	Collaborate with Others		
102	General Mills	Recently launched a global water stewardship strategy with the Nature conservancy to improve the sustainable use of water			102		Share	Collaborate with Others	Policy	Support
103	General Mills	Commitment to source 100 percent of our palm oil from responsible and sustainable sources by 2015			103		Codify	Set Goals		
104	IBM	Applied its research, technology, expertise, and global reach to help our clients and the world become more efficient, sustainable, properous	104				Learn	Reflect	Policy	Support

105	IBM	Enabling more effective and sustainable growth for these nations and their people, while also creating value for the company and our investors		105	105	Learn	Reflect	Practice	Support	
106	Intel	Continued innovations in technology will be the key to improving lives, ensuring environmental stewardship and sustaining business value		106	106	Re-Envision	Define Sustainability	Practice	Support	
107	International Paper	Sustainability goes far beyond the forest, committed to the environment			107	Re-Envision	Define Sustainability	Practice	Support	
108	International Paper	Publicly announcing in 2011 the company's sustainability goals	108			Signal	Commit	Policy	Expectation	
109	International Paper	Working together with all parties is the only way to solve today's sustainability challenges	109			Re-Envision	Define Sustainability	Practice	Support	
110	International Paper	Launched new collaborations to help our company implement and refine our sustainability agenda	110			Share	Collaborate with Others	Practice	Support	
111	International Paper	Stepped up efforts to help landowners certify their land as sustainably managed			111	Signal	Allocate Resources	Practice	Support	
112	International Paper	Increased our global fiber certification through organizations such as the Sustainable Forestry Initiative			112	Signal	Adhere to Standards			
113	International Paper	Joined the World Business Council for Sustainable Development			113	Signal	Adhere to Standards	Practice	Support	
114	International Paper	Embarked on groundbreaking relationships with a number of global and regional organizations....working together to advance sustainable forestry			114	Share	Collaborate with Others	Practice	Support	
115	International Paper	Expect to make significant progress toward our tough but doable 2020 sustainability goals	115			Codify	Set Goals	Practice	Support	
116	International Paper	Start to shape the latest chapter in the company's story on sustainability and provide additional environmental, social, and economic benefits		116	116	Communicate	Tell Stories			
117	Johnson & Johnson	Providing accessible, affordable, and sustainable healthcare is one of the most important and difficult challenges for every nation		117		Re-Envision	Define Sustainability	Practice	Support	
118	Johnson & Johnson	Providing healthcare is the ultimate meaning of sustainability		118		Re-Envision	Define Sustainability	Practice	Expectation	
119	Johnson & Johnson	Use materials that carry the least negative impact on the environment, sustainably design and market products, hold supply chain to high stds			119	119	Codify	Create Policies	Practice	Expectation
120	Johnson Controls	Global leader in sustainability and social responsibility		120		Champion	Champion	Practice	Expectation	
121	Johnson Controls	Commitment to sustainability is expressed every day in each of our businesses	121			Learn	Reflect	Practice	Expectation	
122	Johnson Controls	Committed to our vision of creating a more comfortable, safe, and sustainable world		122		Integrate	Into Mission, Vision, and Values			
123	McGraw Hill	Provide customers and markets with insights they need to create a more sustainable world	123			Learn	Reflect			
124	McGraw Hill	Recognition that our work has received, such as being listed in the Dow Jones Sustainability Index	124			Verify / Audit	Verify	Practice	Reward	
125	Merck	Committed to discovering smart, sustainable ways to expand access to healthcare through innovation		125		Develop	Develop New Products and Services			
126	Merck	Commitment is necessary to sustain our business in the longer term			125	Re-Envision	Define Sustainability	Practice	Expectation	
127	Merck	Vision for our environmental sustainability is also being supported and realized by innovative products and packaging			128	Integrate	Into Business	Practice	Support	
128	Merck	Sustainable operations and the establishment of an integrated approach throughout our organization			127	Integrate	Into Mission, Vision, and Values			
129	Microsoft	Seek to have an even greater impact by working on sustainability issues with others as we transition to a low carbon economy			129	Share	Collaborate with Others			
130	Motorola Solutions	Donated more than \$14 million to non-profit organizations around the globe, many that focus on sustainability		130		Signal	Invest in the Community			

131	Pepsico	Never been more important for enterprises to manage themselves for sustainable long term growth				131	Re-Envision	Define Sustainability		
132	Pepsico	Committed to delivering sustained value		132			Signal	Commit	Practice	Support
133	Pepsico	Goal to deliver sustained financial performance by providing a wide range of foods and beverages from treats to healthy eats		133	133	133	Codify	Set Goals		
134	Pepsico	Reduce our impact on the environment with a focus on water, sustainable agriculture, packaging, waste to landfill, and greenhouse gas emissions			134		Integrate	Into Product Design & Life Cycle	Practice	Support
135	Pepsico	Look beyond the immediate and manage our efforts for sustainable long term growth		135		135	Re-Envision	Define Sustainability		
136	PG&E	Customers depend on us to be there for them not just today, but over the long run for planning and preparing for a sustainable, secure energy future			136		Re-Envision	Define Sustainability	Practice	Support
137	PG&E	Clean energy, economic vitality, workforce development, community engagement are key to sustainability and are at the heart of our business		137	137	137	Integrate	Into Mission, Vision, and Values		
138	PG&E	A place on prestigious lists such as the Dow Jones Sustainability Index	138				Verify / Audit	Verify		
139	PG&E	There is much work to do to create, grow, and sustain a better world	139				Re-Envision	Define Sustainability	Practice	Support
140	PG&E	Our annual sustainability report is one way we hold ourselves accountable to our sustainability pledge	140				Assess	Report	Practice	Expectation
141	Rockwell Automation	Lean, efficient, and productive operations provide opportunity and advantage, and drive the need for smart, safe, and sustainable manufacturing				141	Re-Envision	Define Sustainability	Practice	Reward
142	Rockwell Automation	Fewer resources, minimize waste, control variability are sustainable practices that lead to cleaner, safer, and more energy efficient manufacturing			142		Re-Envision	Define Sustainability	Practice	Reward
143	Rockwell Automation	Use of mission to improve the standard of living for everyone by making the world more productive and sustainable		143			Integrate	Into Mission, Vision, and Values	Practice	Support
144	Rockwell Automation	Reflected our key principles of our Global Social Responsibility and Sustainability Policy		144	144		Codify	Create Policies	Policy	Expectation
145	Target	Committed to transparency - not only in how we interact with our guests, but also how we engage with our communities to build a sustainable future		145			Signal	Commit	Practice	Support
146	Target	Strengthen our relationships with our communities by improving sustainable practices and directly engaging our guests with commitment to education		146			Share	Collaborate with Others	Practice	Support
147	Target	Earned praise for our ongoing efforts in sustainable seafood			148		Champion	Champion		
148	Target	Report on progress made toward public goal of having 100 percent sustainable seafood in stores by 2015			148		Assess	Report		
149	Target	Team members worldwide are working to advance our commitment to sustainable and responsible business practices		149			Manage Talent	Recruit	Practice	Support
150	Texas Instruments	Learn about our performance and vision for sustainability in our 2012 Citizenship Report	150				Assess	Report	Practice	Support
151	UPS	Company makes supply chains more sustainable				151	Raise Awareness	Frame		
152	UPS	Make supply chains more sustainable by improving our own sustainability, but also improving that of our customers			152	152	Raise Awareness	Frame	Practice	Support
153	UPS	Serve as a model for other posts throughout the world on how a post and vendor can cooperate on sustainability	153				Communicate	Tell Stories	Practice	Support
154	UPS	Corporate sustainability is becoming a matter of competitive advantage in the marketplace				154	Re-Envision	Define Sustainability	Practice	Expectation
155	UPS	Companies are requiring their suppliers to report their sustainability to organizations			155		Re-Envision	Define Sustainability		
156	UPS	Working to drive greenhouse gas emissions reduction and sustainable water use			156		Re-Envision	Define Sustainability	Practice	Support
157	UPS	Drive greenhouse gas emissions through corporate sustainability disclosures			157		Re-Envision	Define Sustainability	Practice	Support



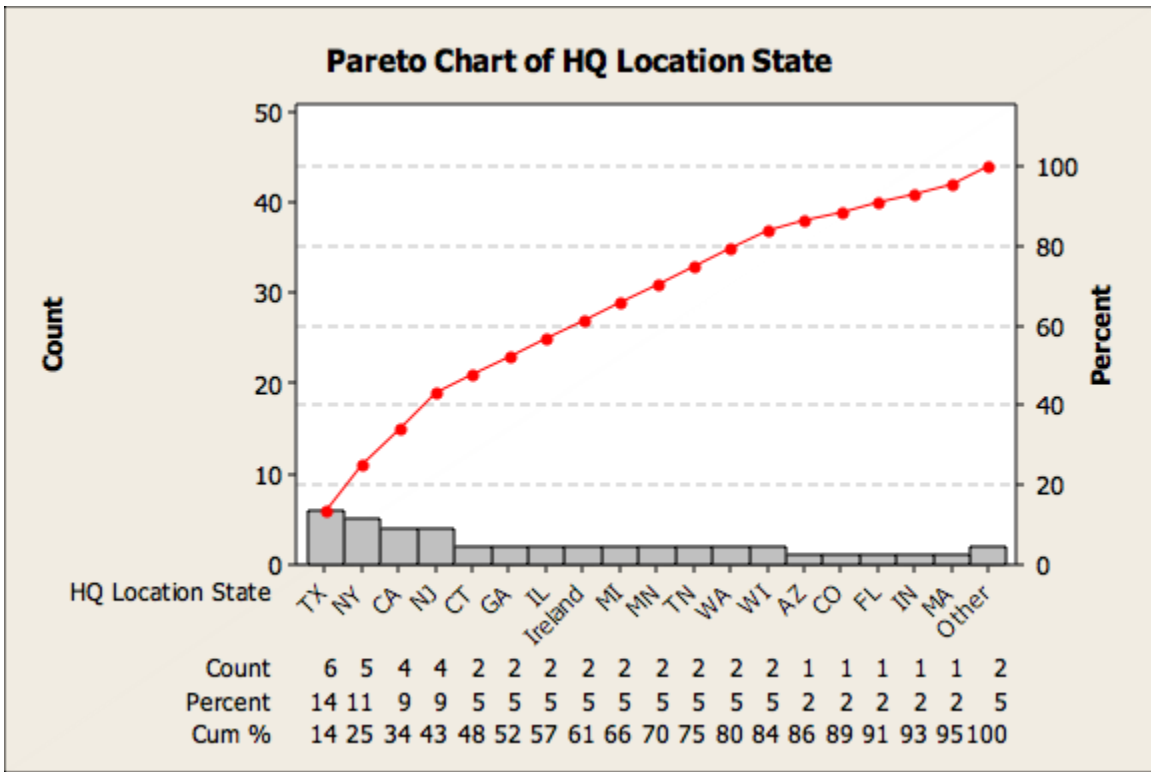
158	UPS	Investors see corporate sustainability disclosure as a factor in assessing a firm's future wellbeing				158	Re-Envision	Define Sustainability	Practice	Support
159	UPS	CDP Global Carbon Disclosure Leadership Index consists of companies who excel in the breadth and depth of their sustainability measures			159		Re-Envision	Define Sustainability	Practice	Reward
160	UPS	Proud of our record and will continue to make sustainability part of doing good business	160				Integrate	Into Business		
161	Verizon	Global eSustainability Initiative SMARTer2020 report showed information communications technology can reduce annual emissions by up to 16 %			161		Re-Envision	Define Sustainability	Practice	Support
162	Verizon	Take corporate responsibility to a higher level of social impact because believe that creating a healthy, sustainable society is best		162			Re-Envision	Define Sustainability	Practice	Support
163	Verizon	Creating a healthy, sustainable society is best way to create a healthy, sustainable business			163		Re-Envision	Define Sustainability	Practice	Support
164	Weyerhaeuser	We've been providing society with innovative sustainable solutions, based on trees			164		Develop	Develop New Business Processes and Systems		
165	Weyerhaeuser	Land and forests inspire our vision: to deliver superior, sustainable solutions for the world			165		Integrate	Into Mission, Vision, and Values		
166	Whirlpool	Another sustainability priority for the company is helping to create strong communities		166			Signal	Invest in the Community	Practice	Support
167	Wyndham	Maintained our investment and focus on developing sustainable solutions			167		Develop	Develop New Products and Services	Practice	Support
168	Wyndham	Create value and support responsible, sustainable growth around the world			168		Develop	Develop New Products and Services		
169	Wyndham	Our sustainable practices are created and developed through our Green program, now in its seventh year, which is a top strategic priority			169		Integrate	Into Strategy and Business Plans	Practice	Reward
170	Wyndham	Efforts and achievements are supported and celebrated as part of our culture where sustainability and innovation are inherent in everything we do	170				Engage	Support	Practice	Support
171	Wyndham	Develop programs and solutions to support our owned and managed properties, as well as hotel franchisees who join our sustainable journey	171				Develop	Develop New Business Processes and Systems	Practice	Support
172	Xerox	When you focus on simplicity you improve sustainability	172				Re-Envision	Define Sustainability		
173	Xerox	Sustainability is balancing the social, environmental, and economic needs of business today without compromising the ability of future generations		173	173	173	Re-Envision	Define Sustainability	Practice	Support
174	Xerox	We are seeing simplicity and sustainability come together to make a real impact	174				Re-Envision	Define Sustainability	Practice	Support
175	Xerox	Avoided the negative sustainability impacts that would come with building a new center	175				Re-Envision	Define Sustainability	Practice	Support
176	Xerox	Helping customers simplify their businesses leads to sustainability	176				Re-Envision	Define Sustainability	Practice	Support
177	Xerox	The pursuit of sustainability leads to a healthier business and a greener planet			177		Re-Envision	Define Sustainability	Practice	Support

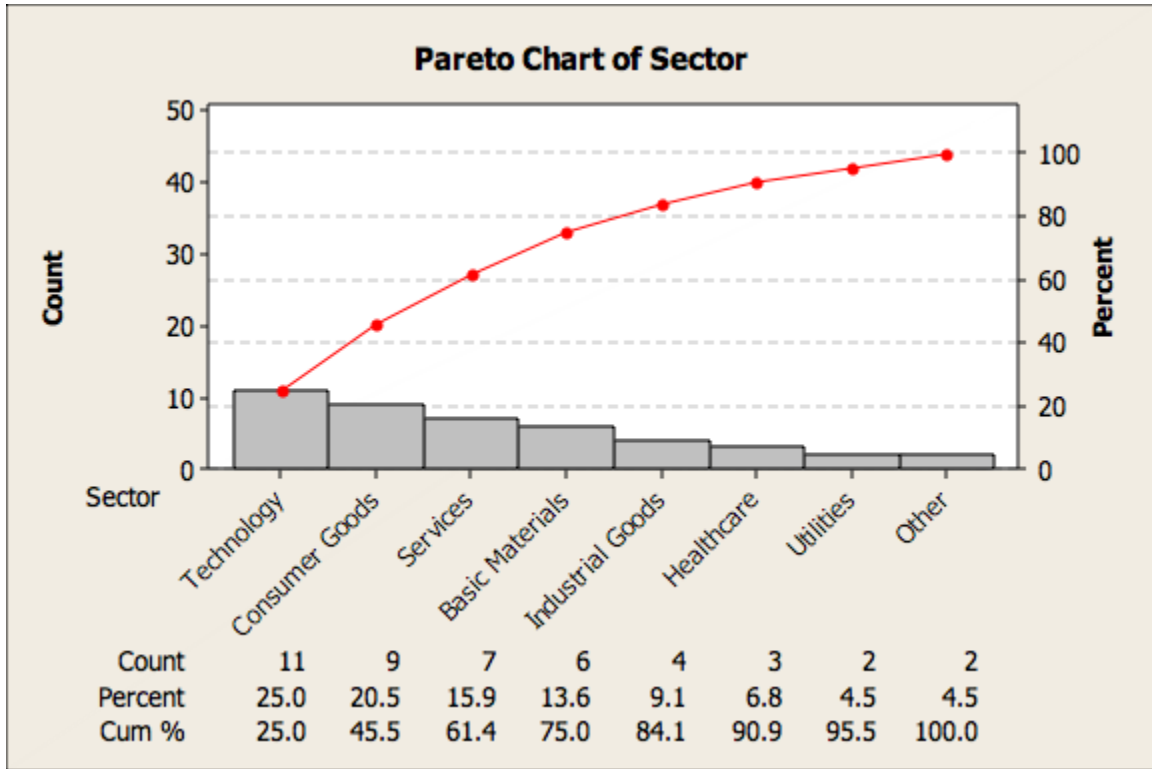
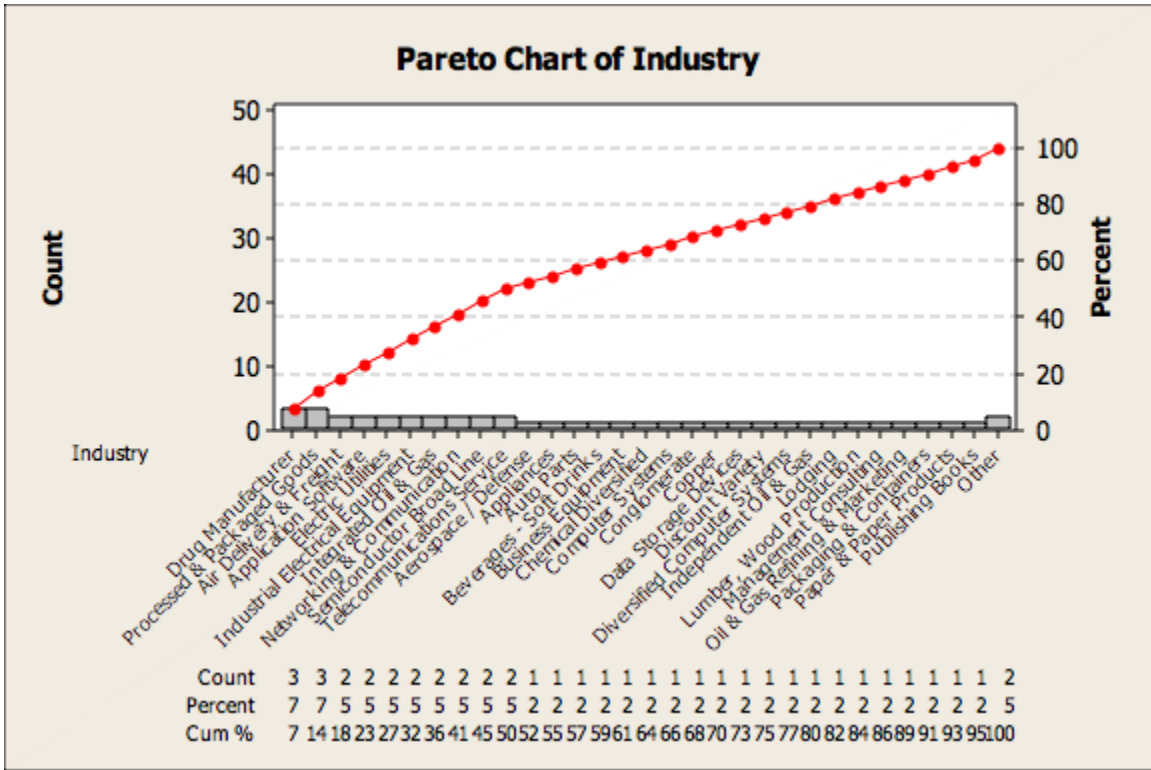
## APPENDIX H



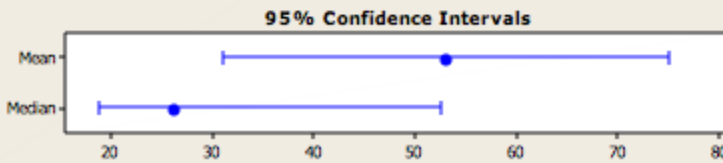
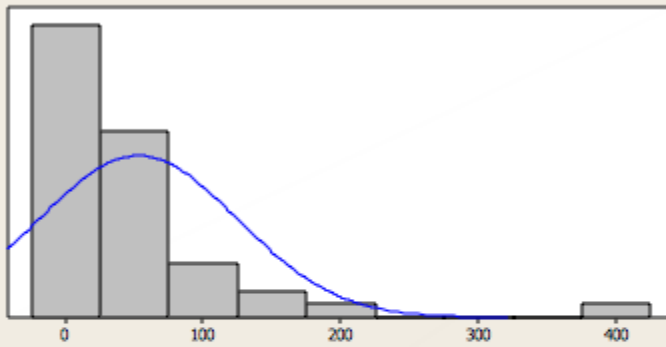
APPENDIX H

GRAPHICAL ANALYSIS





### Summary for Net Revenue 2013



#### Anderson-Darling Normality Test

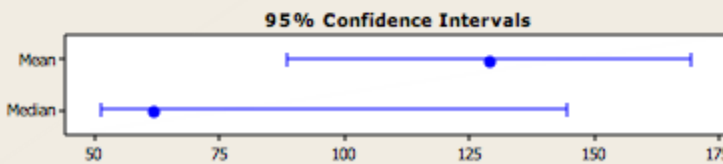
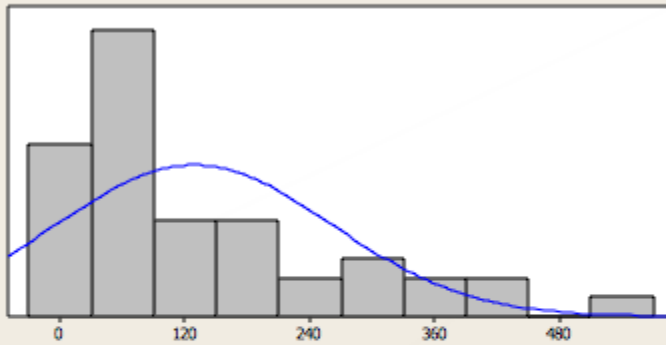
A-Squared 4.38  
P-Value < 0.005

Mean 52.991  
StDev 72.258  
Variance 5221.154  
Skewness 3.5261  
Kurtosis 15.6969  
N 44

Minimum 1.190  
1st Quartile 12.425  
Median 26.050  
3rd Quartile 64.350  
Maximum 420.800

95% Confidence Interval for Mean  
31.023 74.959  
95% Confidence Interval for Median  
18.854 52.517  
95% Confidence Interval for StDev  
59.701 91.552

### Summary for Fortune 500 2013 Rank



#### Anderson-Darling Normality Test

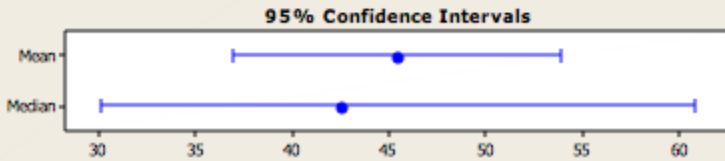
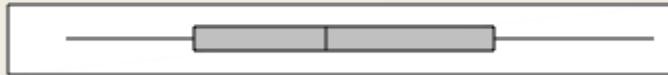
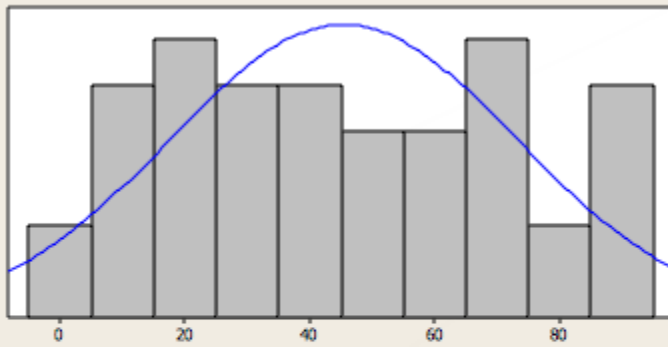
A-Squared 2.47  
P-Value < 0.005

Mean 128.86  
StDev 132.51  
Variance 17558.31  
Skewness 1.25129  
Kurtosis 0.83897  
N 44

Minimum 0.00  
1st Quartile 35.25  
Median 61.50  
3rd Quartile 180.75  
Maximum 528.00

95% Confidence Interval for Mean  
88.58 169.15  
95% Confidence Interval for Median  
51.04 144.46  
95% Confidence Interval for StDev  
109.48 167.89

### Summary for CRO 100 2013 Rank



#### Anderson-Darling Normality Test

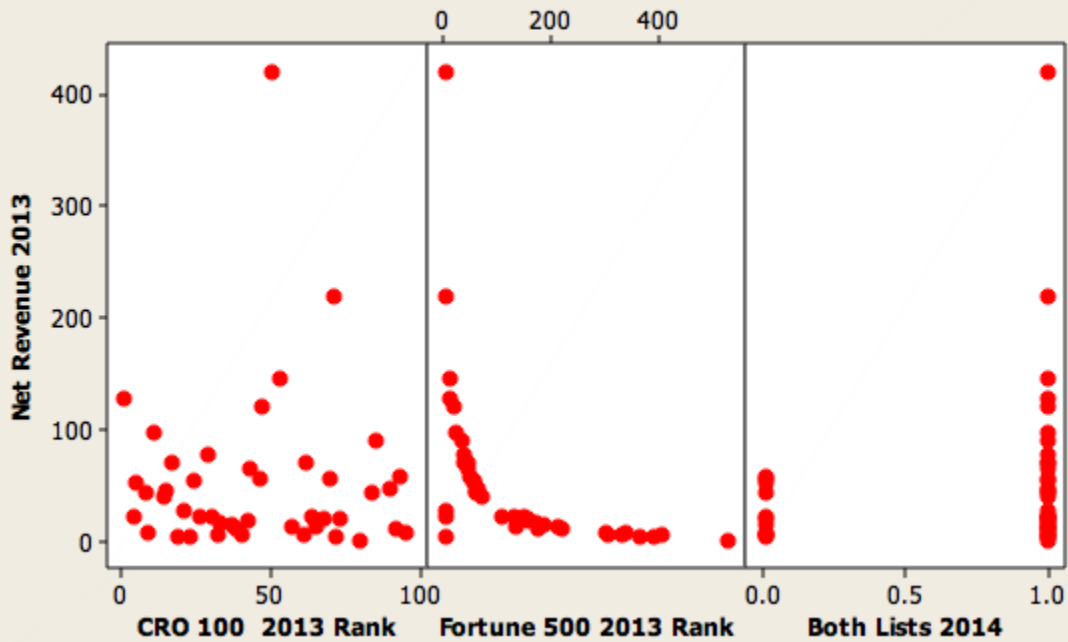
A-Squared 0.52  
P-Value 0.175

Mean 45.432  
StDev 27.882  
Variance 777.414  
Skewness 0.18279  
Kurtosis -1.13179  
N 44

Minimum 1.000  
1st Quartile 21.500  
Median 42.500  
3rd Quartile 69.500  
Maximum 95.000

95% Confidence Interval for Mean  
36.955 53.909  
95% Confidence Interval for Median  
30.089 60.821  
95% Confidence Interval for StDev  
23.037 35.327

### Matrix Plot of Net Revenue vs CRO 100 201, Fortune 500 , ...





## APPENDIX J

## APPENDIX J

### TEXTUAL ANALYSIS ([textalyser.com](http://textalyser.com))

#### Textalyser Results

The complete results, including complexity factor, and other features

Total word count :	11062
Number of different words :	2876
Complexity factor (Lexical Density) :	26%
Readability (Gunning-Fog Index) : <i>(6-easy 20-hard)</i>	11.7
Total number of characters :	116334
Number of characters without spaces :	77679
Average Syllables per Word :	1.95
Sentence count :	1213
Average sentence length (words) :	17.93
Max sentence length (words) :	58
<i>( while marathon oil continues to evolve and adapt to the ever changing global economic geopolitical and competitive landscape we maintain our focus on our long standing commitment to living our values - incorporating core principles related to health and safety environmental stewardship honesty and integrity corporate citizenship and a high performance team culture into all aspects of our business)</i>	
Min sentence length (words) :	1
<i>(s)</i>	
Readability (Alternative) beta : <i>(100-easy 20-hard, optimal 60-70)</i>	23.2

#### Frequency and top words :

Word	Occurrences	Frequency	Rank
sustain	5	0%	11
our	624	5.6%	1
energy	113	1%	2
business	88	0.8%	3
sustainability	87	0.8%	3
sustainable	75	0.7%	4
world	68	0.6%	5
environmental	68	0.6%	5
communities	66	0.6%	5
water	56	0.5%	6
through	54	0.5%	6
percent	52	0.5%	6
global	51	0.5%	6

## BIOGRAPHICAL SKETCH

Rosemond A. Moore attended Purdue University in West Lafayette, IN where she received her Bachelor of Science degree in Electrical Engineering in 1987. She began her professional career as a Manufacturing Engineer at Honeywell's Microswitch Division in Freeport, IL. She returned for graduate school in 1992 at Indiana University in Bloomington, IN where she completed her Master's degree in Business Administration (MBA) with a concentration in operations management. Upon completion of the MBA, Rosemond joined TRW Automotive where she took positions of increasing responsibility including Kaizen Engineer, Production & Operations Manager, Lean Promotions Manager, and Six Sigma Master Black Belt.

Rosemond ultimately transitioned into academia in 2008 as a Business Administration instructor at South Texas College. She has served as Program Coordinator & Chair in the launch of the first competency-based bachelor's degree at a public institution in the state of Texas. And she currently is Program Chair responsible for the accounting, economics, and business administration departments. Rosemond is a published author. She co-authored the book *Social Responsibility: Failure Mode Effects and Analysis* with Holly Duckworth in 2010.

Rosemond completed her dissertation and received her Ph.D. in Business Administration with a concentration in management in December 2015 at the University of Texas Rio Grande Valley. She currently resides at 1207 Cimarron Drive in Mission, TX 78572 with her husband and two sons.