

Project Proposal

An Internal Business Plan for Improving the Environmental Performance of Footwear Manufacturing Facilities in China for Deckers Outdoor Corporation

**Donald Bren School of Environmental Science and Management
University of California, Santa Barbara**

May 2008

Danielle Côté-Schiff Kolp, Clancy Donnelly, Lauren Flinn, Brian Fulmer, Chien-Ju Lin

Advisor:
Gary Libecap



Abstract

Deckers Outdoor Corporation seeks to improve its position as an environmental leader in the footwear industry. After examination of its supply chain, the environmental impacts of manufacturing facilities in China have been identified as an opportunity for improvement. Because Deckers does not own these facilities, any desired improvements to reduce their environmental impacts must be leveraged through education, incentive programs, contractual arrangements, or collective pressure from all the contracting companies. In conjunction with the Donald Bren School of Environmental Science and Management, an internal business plan will be developed to analyze the possible financial benefits to Deckers for initiating improvement in the environmental performance of factories. An audit of the current environmental impacts and practices of select facilities will then be completed. Based on this information, it will be determined what changes can be made in shoe production facilities and recommendations will be made that target three levels of cost—fast, inexpensive changes; more involved, retrofitting solutions; and new construction. In addition, through examination of Deckers' consumer data, it will be decided how to communicate these efforts to Deckers' customers. Finally, work will be completed to conceptualize a consistent environmental language for Deckers to employ internally and recommendations will be provided to ensure that this language is adopted within the company.

Table of Contents

- Abstract.....ii**
- Table of Contents 1**
- Executive Summary 2**
- 1. Introduction 3**
- 2. Problem Statement 4**
- 3. Significance and Literature Review..... 5**
 - 3.1 Summary of Footwear Manufacturing Industry and Environmental Concerns..... 5
 - 3.2 Current Efforts at Corporate Environmental Responsibility in the Apparel Industry 6
 - 3.3 Criteria for Selecting Manufacturing Upgrades 7
 - 3.4 Consumer Demand for Corporate Environmental Responsibility 9
 - 3.5 Competitive Advantage Potential..... 10
 - 3.6 Barriers and Entrance Strategies for Incentivizing Chinese Facilities 11
- 4. Approach..... 12**
 - 4.1 Part One: Develop an Internal Business Plan 12
 - 4.2 Part Two: Manufacturing Facility Changes..... 14
 - 4.3 Part Three: Internal and Consumer Communication 15
- 5. Management Plan..... 15**
 - 5.1 Group Structure and Management..... 15
 - 5.2 Positions and Responsibilities 15
 - 5.3 Meeting Structure 16
 - 5.4 Deadline Management..... 16
 - 5.5 Conflict Resolution..... 16
 - 5.6 Procedure for Editing Documents 17
- 6. Deliverables..... 17**
- 7. Milestones..... 17**
 - 7.1 Spring Quarter, 2008 17
 - 7.2 Summer, 2008..... 18
 - 7.3 Fall Quarter, 2008..... 18
 - 7.4 Winter Quarter, 2009..... 18
- 8. Budget and Budget Justification 19**
- 9. References Cited 20**

Executive Summary

Many product-producing U.S. companies are taking steps to lessen the environmental impact of their supply chain and business processes as public awareness and concern about environmental degradation grows. As one of these companies, Deckers Outdoor Corporation is committed to promoting environmental sustainability wherever it can and ensuring that its products are made as cleanly as possible (Derby 2008b). They employ Ethical Supply Chain Guidelines, which include several environmental expectations. Currently, Deckers is interested in promoting the greening of the manufacturing facilities where their products are assembled, which will help ensure that the expectations of their Ethical Supply Chain Guidelines are met at the final state of the footwear assembly lifecycle. This project will prepare an internal business plan for Deckers to analyze the possible financial benefits for initiating improvement in the environmental performance of factories.

In addition to considering the benefits to Deckers, this project will take the first steps of initiating the proposed project, which will present several challenges. As with almost all American footwear companies, Deckers outsources the manufacture of their shoes to facilities in China. Because Deckers does not directly own these facilities, any desired improvements to reduce their environmental impacts must be leveraged through education, incentive programs, contractual arrangements, or collective pressure from all the contracting companies. In this information age, consumers are demanding transparency and validation for environmental performance assertions. Therefore, upon suggesting these changes to the manufacturing facilities, these initiatives and changes made from the suggestions must be communicated in a clear and substantiated manner. Along with this, a consistent internal language must be adopted to provide a coherent unifying message so that consumers, stakeholders, and those involved in the business process have a clear understanding of Deckers' environmental intentions and accomplishments. These elements will aid in securing a leadership position in the footwear industry for Deckers and thus retain and attract a solid consumer base.

To address these challenges faced by Deckers, the following questions must be answered:

- What changes Deckers should recommend to the manufacturing facilities in China, considering both the level of environmental improvements generated from the changes and the economic-feasibility of making the changes?
- How Deckers can influence the facilities to make these changes?
- How Deckers should communicate the environmental achievements to their consumers?
- How Deckers should ensure the use of a consistent environmental language within the company?

In order to recommend and encourage changes in the Chinese manufacturing facilities through this proposed project, we will first determine the best criteria for evaluating the environmental impact of existing shoe manufacturing facilities in southern China. We will then use these criteria to collect the necessary data from the facilities that produce Deckers' products. Based on this information and green building research, we will determine what changes can be made in shoe production facilities and make recommendations that target three levels of cost—fast, inexpensive changes; more involved, retrofitting solutions; and new construction. Finally, we will recommend a framework that Deckers can use to encourage the Chinese facilities to adopt our recommended changes. Additionally, we will recommend ways for Deckers to communicate to their customers their efforts to make changes in the shoe manufacturing industry. And finally, we will work with Deckers on creating a consistent environmental language for use within the company.

1. Introduction

In the wake of growing concern over climate change and other forms of environmental degradation, many U.S. companies want to lessen the environmental impact of their supply chain and business practices. Not only are these activities an important aspect of the international movement to protect the environment, but they also show customers and investors that the companies are concerned about environmental sustainability. The impetuses behind these changes are manifold, with some companies focusing on effecting actual environmental improvements and other companies focusing on profit maximization by improving their image as a responsible business. Regardless of the motivations, which are often impossible to understand fully, any changes implemented within a company must be justified to shareholders and not affect the company's ability to be profitable in the marketplace. Companies can benefit from greening in many ways, such as increasing customers' willingness to pay, reducing costs, or improving risk management (Reinhardt 2005). More generally, demonstrating evidence of corporate environmental responsibility can improve brand image, therefore increasing profits by maintaining existing customers and attracting new customers. Additionally, as more and more companies begin implementing comprehensive corporate social responsibility programs, those companies that neglect to consider the greater impacts of their business may eventually become relics in the marketplace, shunned by consumers for their narrow focus and detrimental business practices.

Deckers Outdoor Corporation, which was founded in 1973 in Goleta, CA, is interested in improving their environmental performance and communicating these improvements to their customers, with the ultimate goal of becoming the environmental leader in the footwear industry. Thus far, Deckers has focused its efforts at environmental sustainability on its Simple Shoes brand. Through the innovative use of sustainable materials and consideration of recycling and take-back programs, Deckers has promoted the Simple brand as "a nice little shoe company" that produces "shoes for a happy planet." However, Deckers as a whole, which currently owns four niche brands—Simple, Teva, Ugg, and the recently purchased Tsubo—is not interested in becoming known simply as a company that sells green products, such as Patagonia, Burts Bees, or Seventh Generation (Derby 2008). Deckers mission statement is as follows:

Deckers builds niche products into global lifestyle brands by designing and marketing innovative, functional and fashion-oriented footwear, developed for both high performance outdoor activities and everyday casual lifestyle use (Deckers 2008a).

By their nature, many of Deckers footwear lines require the use of materials, such as leather and sheepskin, which will always have certain environmental impacts. However, Deckers is committed to promoting environmental sustainability wherever it can and ensuring that its products are made as cleanly as possible (Derby 2008b). Currently, they employ Ethical Supply Chain Guidelines, which include several environmental expectations as listed below:

We require a continuous effort to improve environmental performance along a defined path towards clean production. We expect our business partners to: 1) adopt environmental management systems that address key business impacts and advance sustainable environmental practices; 2) disclose environmental impacts and activities through regular reporting; 3) reduce or eliminate toxic and hazardous substances from operations and products, in accordance with the Deckers Restricted Substances Policy; 4) increase

efficiency and thereby minimize pollution and waste; 5) reduce the use of natural resources including raw materials, energy and water; and 6) take responsibility for proper waste management. (Deckers 2008b)

Currently, some Deckers employees are interested in promoting the greening of the manufacturing facilities where their products are assembled. This will help ensure that the expectations of their Ethical Supply Chain Guidelines are met at the final state of the footwear assembly lifecycle. This Bren group project will prepare an internal business plan for these parties within Deckers to present to upper management as a first step to implementing their desired program. The remainder of this proposal lays out the background and justification for the project as well as outlines the steps that will be taken to prepare the business plan. In addition to a traditional internal business plan, our group project will enact the first stages of the project proposed in the business plan, as outlined below.

2. Problem Statement

As with almost all American footwear companies, Deckers outsources the manufacture of their shoes to facilities in China. Specifically, Deckers employs the following five Chinese- and Taiwanese-owned manufacturing facilities to make merchandise for all their brands: Shing Tai, Stella, Erofa, Gau Shing, and Peace Union. These facilities range in size from small—Peace Union manufactures only for Deckers—to large—Stella is a publically-traded company that produces footwear for multiple companies, including Clarks, ECCO, Rockport, Timberland, and Wolverine, as well as Deckers (Stella 2008).

While Deckers is interested in lessening the environmental impacts of these facilities, challenges exist because they are not owned by Deckers and because they manufacture footwear for multiple companies. Therefore, Deckers must convince these facilities that their current operations are impacting the environment, that changes can be made to lessen these impacts, and that the initial costs involved in making changes are justified due to long-term gains from resource efficiency and competitive advantage as an environmentally-friendly Chinese manufacturer. Deckers can leverage the desired improvements through education, incentive programs, contractual arrangements, or collective pressure from all the contracting companies.

In addition to the challenges associated with influencing the facilities, Deckers is also faced with the challenge of being one of the first footwear companies to promote the environmental sustainability of the manufacturing facilities and production processes in China, not just the sustainability of the products used to make their shoes. Therefore, Deckers must determine if their actions will be of interest to consumers and therefore increase sales, and if so, how consumers will be most receptive to learning about their actions.

Finally, as Deckers wants to become an environmental leader in the industry, they are faced with the challenge of developing a consistent language throughout the company to describe their environmental efforts. This will ensure that suppliers, manufacturers, and all company employees understand the company's environmental mission, act in accordance with this mission, and present a consistent message about the mission to their consumers. This in turn will ensure that Deckers' changes are recognized beyond an effort to "greenwash" their brands and that Deckers becomes known as a company serious about environmental sustainability.

To address the challenges faced by Deckers, the following questions must be answered:

- What changes Deckers should recommend to the manufacturing facilities in China, considering both the level of environmental improvements generated from the changes and the economic-feasibility of making the changes?
- How Deckers can influence the facilities to make these changes?
- How Deckers should communicate the environmental achievements to their consumers?
- How Deckers should ensure that a consistent environmental language is used within the company?

These actions will help strengthen Deckers' environmental image, thereby improving the visibility of the Deckers Outdoor Corporation as the maker of their three, well-known brands: Simple Shoes, Ugg Australia, and Teva.

3. Significance and Literature Review

3.1 Summary of Footwear Manufacturing Industry and Environmental Concerns

Since 1978, consumption of footwear in the U.S. has increased by almost 200%, reaching almost 2.3 billion pairs in 2005, which translates to almost 8 pairs of shoes purchased per person (AAFA 2006). Of these 2.3 billion pairs of shoes, 98.5% were imported, with 84% coming from China (AAFA 2006). This represents a 600% increase in imports from China since 1978, which has been driven by the availability of low-cost labor as well as limited regulations in China (AAFA 2006, Frenkel 2001, Lowder 1999). Prior to the 1990s, shoe manufacturing was centered in Taiwan and Korea. However, in the last 20 years, the Taiwanese and Korean firms transitioned their businesses to China, Indonesia, Thailand and Vietnam, while retaining ownership of the companies (Frenkel 2001). In China alone, there are over 20,000 companies manufacturing footwear, which usually employ young, female workers for the labor-intensive manufacturing process (China Daily 2006, Frenkel 2001).

Obtaining documented information regarding the current environmental impacts from Chinese footwear manufacturing plants has proved difficult. As the project progresses, we will rely heavily on Deckers' direct connections to the manufacturing facilities they employ for information. However, this project will focus on the environmental impacts of the manufacturing facilities themselves and not on the impacts that occur from obtaining and preparing the products that are used to make the shoes. Therefore, it can be concluded that as with other manufacturing facilities, the operation of shoe-making facilities will have implications for water and energy use as well as waste production.

In the textile industry in general, 15 to 20 gallons of water are used to produce only one pound of textile (Nike 2006). The high demand on water resources presented by the textile manufacturing industry has produced increased pressure on the limited water available for China's booming population (BSR 2008). Additionally, water use has implications for water pollution. In Guangdong Province, where 23% of all of China's textiles and apparel for export are manufactured, less than 2% of towns and cities have wastewater treatment facilities in place (BSR 2008, Brownlow and Renzi 2007). As a result, 28% of all

rivers in Guangdong are severely polluted, which has led to increased rates of infectious diseases and chronic health issues in the area (BSR 2008, Brownlow and Renzi 2007).

In addition to water concerns, China is plagued by considerable air pollution issues, driven by the staggering economic development that has led to huge increases in the demand for energy. Seventy-six percent of this demand is met by coal-fired power plants (as of 2001), which has led to sulfur dioxide and nitrogen oxide pollution as far away as Los Angeles (Kahn and Yardley 2007, World Bank 2004). Additionally, it is estimated that China has either already or will soon become the world's leader in greenhouse gas emissions (Kahn and Yardley 2007). While the footwear industry is only a small contributor to this immense problem, the global implications of China's energy use and air pollution issues, which are only expected to worsen, require that any industry interested in reducing their contribution to this problem consider their effects. Additionally, according to the Chinese, there will be "a power shortage of 10 to 15 percent in the key manufacturing areas estimating that about \$108 billion of new generation capacity will be needed in the coming five years to close the gap" (World Bank 2008). By reducing reliance on outside energy sources, footwear manufacturing facilities can reduce their risk of an interrupted power supply.

While the Chinese government has banned the publications of statistics on the effects that environmental degradation has had on human health in China, several recent reports have produced some alarming statistics (Kahn and Yardley 2007). According to a World Bank study, around 400,000 premature deaths are caused every year by outdoor air pollution, with an additional 300,000 premature deaths caused by indoor air pollution (Kahn and Yardley 2007). In light of these significant human health issues, lessening the environmental impact of the footwear industry has broader human rights implications. As labor issues related to human rights have attracted significant consumer attention recently (particularly the use of sweatshop labor in the footwear industry), raising awareness of the human-rights implications of environmental harm in China among consumers may increase demand for environmentally-friendly shoes.

3.2 Current Efforts at Corporate Environmental Responsibility in the Apparel Industry

Within the footwear industry, there have been recent efforts by several companies to reduce the environmental impact of their products by using more sustainable materials and production processes. For example, Timberland has released an Earthkeepers line of boots made with organic and recycled materials (Henderson 2007). In 2005, Nike introduced their Considered line, which takes into account the environmental impact, as well as the performance, aesthetics, and price, during the product design process (Nike 2006). Additionally, Nike has established several programs to promote environmental responsibility among their suppliers in China, such as their apparel water program, which was "developed based on guidelines from an international working group, the Business for Social Responsibility Apparel Water Quality Working Group (Nike 2006)." While this program does not address the footwear manufacturing facilities, Nike does audit the wastewater from their contract footwear facilities in China (Nike 2006). Nike has also established programs to reduce waste production and promote responsible disposal of hazardous wastes, as well as targets for climate neutrality (Nike 2006).

Despite Nike's extensive efforts at promoting environmental responsibility at their contracted facilities, their immense size and breadth of products has not allowed them to focus efforts on the footwear

manufacturing facilities specifically. Deckers efforts to promote environmentally-minded changes at their five contracted facilities will be a unique effort in the footwear industry. In the overall manufacturing industry though, there have been efforts to retrofit and build green manufacturing facilities, such as the recently constructed MAS Group's lingerie factory (Weerasinghe 2008). This Sri Lankan facility manufactures solely for Marks and Spencer, a British retailers, and was built to help further their goals of becoming a greener company (Weerasinghe 2008, Environmental Leader 2007). By employing solar and wind energy, along with light-emitting diode (LED) lighting and other energy saving techniques, the facility expects to use 50% less energy than a similarly-sized, standard facility (Weerasinghe 2008).

3.3 Criteria for Selecting Manufacturing Upgrades

In order for Deckers to encourage facility greening and perhaps influence the building of a state-of-the art green building for footwear manufacturing, we will need to identify an established and respected criteria and/or certification program to determine which environmental changes, technologies, and systems should be recommended. There are currently several U.S.-based and international certification programs for green buildings, as discussed below.

US-Based Building Sustainability Certification Programs

In the U.S., the third party certification program known as LEED (Leadership in Energy and Environmental Design), developed by the United States Green Building Council, is considered by many to be definitive measure of building sustainably. These standards can be applied to new or existing buildings of all types and focus on sustainable site development, water savings, energy efficiency, material selection and indoor environmental quality. The LEED Rating System has been, and continues to be developed in an open and transparent process by LEED committees.

LEED currently certifies existing buildings, which helps optimize operational efficiency while lowering environmental impacts. According to the USGBC website,

LEED for Existing Buildings...addresses building exterior and site maintenance programs, efficient and optimized use of energy and water, the purchase of environmentally preferred products and food, waste stream management and ongoing indoor environmental quality. In addition, LEED for Existing Buildings...provides sustainability guidelines for whole-building cleaning and maintenance, recycling programs and systems upgrades to improve building energy performance, water consumption, indoor environmental quality and materials use. (USGBC 2008)

These areas of sustainability are divided into 92 sustainability measures and recommendations. Buildings are given scores based on how many of these criteria they adopt. There are four levels of certification: Certified, Silver, Gold, and Platinum. In order to qualify for Certification standing, an existing building must meet at least 34 the criteria, while Platinum standing requires at least 68.

The biggest problem with using LEED criteria for the purposes of our project is that it does not have a specific measure for industrial facilities. The measure however, can be easily modified in order to adapt it to a manufacturing facility. A further problem may be the reliability of the sustainability measures. A study by Humbert et al. (2007) found that LEED's criteria may not recommend that the most environmentally beneficial steps be taken by a company. However, the study makes several

recommended alterations to these measures in order to make the overall certification more sustainable, and these recommendations should be taken into account should we choose to follow LEED guidelines.

One area for which LEED has been criticized is its allegedly weak stance on energy. As an alternative, Energy Star, a federal environmental sustainability program, may be useful as a sustainability assessment tool for the purposes of this project. Unlike LEED, Energy Star has an energy management program specific to manufacturing facilities and has published an upgraded manual which has recommendations for these facilities. Over 470 U.S. manufacturers, including General Motors, Lockheed Martin, 3M and Toyota, have adopted this program; General Motors alone saved over \$480 million in eight years (EPA 2008a). If followed, Energy Star can save companies two to three dollars for each dollar invested in energy efficiency (Energy Star 2008b). A portion of our group project will focus on energy savings, and because Energy Star is a well-established program with a strong track record, it will likely be an important tool in developing an assessment framework for our sustainability criteria.

Energy Star and LEED are established, widely-used sustainability certifications in the United States. These certifications will be valuable tools for developing sustainability criteria for Deckers' manufacturing facilities in China. LEED focuses largely on building design, maintenance, and systems, while Energy Star focuses on improvements which can be made to increase a facility's energy efficiency, an area in which LEED defers to Energy Star standards (USGBC 2008). Ensuring that corporations are able to increase profitability while increasing sustainability is an important aspect of both programs. Further research needs to be done on both Energy Star and LEED to begin assessing the exact framework and methodologies utilized by each program to assess buildings, make recommendations for changes, and determine the success of these changes. A peer reviewed study of LEED's sustainability criteria and another comparing several of the international criteria has been ordered.

International Certification Programs

There are several certification programs outside the United States which have gained international acceptance within the green building community. These programs include BREEAM (Building Research Establishment Environmental Assessment Method, based in the U.K.), HK-BEAM (The Hong Kong Building Environmental Assessment Method), DGNB (Deutsche Gesellschaft für Nachhaltiges Bauen), GBA (Green Building Association), BEPAC (Building Environmental Performance Analysis Club), and the Green Star Building Council of Australia. A study by Crawley and Aho (1999) compares the merits of BREEAM, LEED, BEPAC and GBA. The authors are quick to point out that addressing building sustainability requires a multi-faceted approach which should take into account building construction, operations, and maintenance. The authors recommend that performance-based measures (e.g. lowering water consumption by 30%) rather than feature-based (e.g. installing low-flow toilets or fixtures) should be used to evaluate these areas of concern. The reasoning for this recommendation is that the use of feature-based measures does not encourage any actual reduction in environmental impact but allows for the illusion of increased performance. This can be difficult, given the lack of measurement tools for some performance standards (e.g. indoor air quality). Crawley and Aho conclude, based on an assessment of methodologies, scope, and applications of the building certifications, that GBA is the strongest of the tools studied. For similar reasons, GBA may be a useful tool in assessing Deckers' manufacturing facilities in China. The program has been developed to be applicable to multiple building types, including

manufacturing facilities. Further, GBA was developed specifically for international situations where there may be varying availability of information.

Each sustainable building certification program has different areas of focus, which are outlined in the chart below: (Crawley 1999)

Program	Construction Type/Location	Focus Areas
BREEAM	New and existing construction in England as well as Hong Kong, Australia, and Canada	<ol style="list-style-type: none"> 1. Global Impact 2. Local Impact 3. Indoor Issues
BEPAC	New and existing construction in Canada	<ol style="list-style-type: none"> 1. Ozone Protection 2. Environmental Impacts of Energy Use 3. Indoor Environmental Quality 4. Resource Conservation 5. Site and Transportation
LEED	New and existing construction in the United States, though some international projects exist	<ol style="list-style-type: none"> 1. Building Commissioning 2. Energy Efficiency 3. Indoor Air Quality 4. Ozone Depletion/CFCs 5. Smoking Ban 6. Comfort 7. Water
GBA	International standard developed by 13 countries based on the results of the 1998 Green Building Challenge	<ol style="list-style-type: none"> 1. Resource Consumption 2. Environmental Loadings 3. Quality of Indoor Environment 4. Longevity 5. Process 6. Contextual Factors

3.4 Consumer Demand for Corporate Environmental Responsibility

Prior to Deckers promoting changes within the manufacturing facilities they employ to make their shoes, it is important to consider whether consumers will care about Deckers' efforts to improve their environmental sustainability. Whether consumers are interested in making purchases from "green" companies, how consumers determine which companies are green, and what green marketing strategies consumers are most receptive to are important questions to answer to determine if Deckers' efforts will result in increased sales and/or promote their image as an environmental leader in the footwear industry.

Green marketing has become increasingly prevalent in the marketing landscape as environmental concerns, particularly related to climate change, have grown.¹ This is confirmed by the current series of Federal Trade Commission (FTC) hearings occurring on green marketing to decide if and how to revise their "Green Guides" (FTC 2007). However, research into whether green marketing is effective at improving sales has shown mixed results.

¹ According to the American Marketing Association, green marketing can be defined as follows: "the efforts by organizations to produce, promote, package, and reclaim products in a manner that is sensitive or responsive to ecological concerns" (AMA 2008).

A recent consumer survey has shown that 42% of Americans “consider the environmental impact of either making purchases or supporting companies in” the footwear and apparel industry, affirming that Deckers’ efforts to green the facilities that manufacture their footwear will resonate with a significant number of American consumers (Cone 2008). Moreover, another survey showed that consumers prioritize energy efficient/green operations and energy efficient buildings when considering environmental leaders, highlighting that Deckers’ desire to focus on greener manufacturing facilities is relevant in the current consumer landscape (Cogar 2008).

However, some research has indicated that while consumers are demanding environmentally-friendly products, they are often not willing to pay higher prices for these products (Makower 2008). On top of this, the large number of green marketing campaigns have led to some level of consumer skepticism and alertness to greenwashing (Makower 2008). In fact, 90% of Americans believe that companies must prove their product is good for the environment, not just say it is (Cone 2008, Cogar 2008). While these factors may go hand-in-hand (i.e., consumers are not willing to pay more for products that they have no way of knowing are truly greener), they present significant challenges for companies desiring to make genuine, substantial changes and somehow employ these changes to improve their profit margin, whether it be through increased prices or increased brand loyalty. This indicates that Deckers must seriously consider its goals in promoting greener manufacturing facilities in China and when and how to market their environmental agenda to their consumers.

3.5 Competitive Advantage Potential

Some consumers are aware of and interested in purchasing from green companies, but there is evidence that others are not yet ready to base purchase decisions on whether or not a product is green, especially when a price premium is involved. However, research has shown that several other improvements and competitive outcomes are possible for companies that introduce green initiatives in their operations. Sincere and effective environmental initiatives can lead to increased consumer loyalty, cost reduction, improved risk management, stimulated investor activity, and retention of quality employees (Reinhardt 2005, Ruskino 2007, Portney 2005).

The performance of green manufacturing has recently caught the attention of scholars and business people alike. In a case study of the U.S. carpet industry, Ruskino (2007) assesses the competitive outcomes available to companies that undertake sustainable practices, which include lower production costs and increased product quality. The entire U.S. carpet industry was solicited for surveys about environmental action and derived benefits. The respondents constituted 84% of the market. The two areas of question were pollution prevention practices and product stewardship practices.² The competitive outcome reported from pollution prevention was decreased manufacturing costs. Product stewardship outcomes had positive correlations to improve company image and promote innovation, which in turn attracted new consumers. The least substantiated relationship to stewardship practices was an increase in product quality. (Ruskino 2007)

² “Product stewardship include[s] redesigning products and processes to be more environment friendly, using renewable resources, and encouraging suppliers to practice pollution prevention and product stewardship” (Ruskino 2007).

Managers are pressed with improved environmental performance but ultimately still must provide favorable profit margins to shareholders. Klassen and Whybark (1999) conducted a study of the furniture industry. The plant managers at 302 manufacturing plants were surveyed with a response rate of 27.5%, which is considered acceptable. The study focused on the relationship between manufacturing performance and environmental performance with the adoption of “environmental technologies”—technologies defined as limiting or reducing negative environmental impacts—and final performance outcomes. The technologies were classified into three groups: pollution prevention, management systems, or pollution control. These elements constitute an important part of the management scheme, and if these resources were a part of the strategic plan, they were shown to work favorably in overall performance (Klassen and Whybark 1999). The researchers concluded that investment in environmental technologies in manufacturing significantly improved manufacturing performance over time and provided competitive advantages (Klassen and Whybark 1999). Moreover, the largest increase in manufacturing performance came from allocating pollution prevention technologies. Similar results were found for cost, speed, and flexibility, however, no significant relationship was found for quality performance.

Unruh (2008) highlights companies that have taken the plunge into sustainable business and advocates a "natural operating system" in which companies (1) stop relying on synthetic materials and instead incorporate recycling and use fewer resources, (2) practice up-cycling, which is a plan for the product beyond its useful life and (3) leverage "general-purpose platforms." He asserts companies can lower costs, obtain profitable returns, and appeal to ecologically concerned consumers. These points lend credit to the success of a management shift towards sustainability.

Case studies such as these provide evidence that Deckers can utilize to promote the advantages available to the Chinese manufacturing companies when Deckers chooses to recommend changes. The manufacturing firms that adopt improvements in their facilities can capture benefits on many levels including reduced costs and improved image, which can translate into more U.S. manufacturing business. Association with manufacturing firms that Deckers was able to successfully influence to improve environmental performance can also yield many advantages ranging from enhancing consumer loyalty, boosting company image, and promoting innovation.

3.6 Barriers and Entrance Strategies for Incentivizing Chinese Facilities

A challenge in the literature review has been finding incentive programs that span across national boundaries. The U.S. EPA implements numerous incentive programs to domestic companies, but thus far, documentation on incentives for manufacturing facilities in China have been scarce. Therefore, if Deckers can implement a successful program that encourages changes and ensures they are maintained, they will be able to center their environmental message on their unique and early efforts in not only the footwear manufacturing industry, but also the overall manufacturing industry in China. This course of action will also be beneficial as the Chinese government begins to roll out more stringent environmental regulations for manufacturers and society as a whole.

As a developing country, China is just beginning to care about the environmental impact of their society. Several new environmental laws have been enacted recently, including the Cleaner Production Laws, which have begun to regulate the environmental performance of manufacturers (Chinese EPA 2008). In the world manufacturing market, China has a strong advantage over competing countries because of the

cheap cost of labor, as well as lenient regulations. This may change as China begins implementing environmental regulations. Businesses, manufacturers especially, will be forced to find an affordable way to comply with regulations, or they may find that they will no longer be able to operate. According to Luken and Van Rompaey (2008), the biggest barriers preventing Chinese companies from adopting cleaner processes and technologies *today* is the high implementation costs and lack of tradition and skills. Thus, it will be important for our project to take cost into consideration as it proceeds. Further, as a major barrier to the adoption of environmentally friendly technologies is the lack of tradition and skills, it will be important to think about how employees can be trained to help minimize project costs, as well as to ensure a smooth transition.

4. Approach

Our approach will have three main parts, focusing on (1) the competitive advantage potential Deckers can gain from implementing this project, (2) the manufacturing facility changes this project will recommend, and (3) our recommendations for internal and consumer communication.

4.1 Part One: Develop an Internal Business Plan

The first stage of our project will focus on developing an internal business plan for a program within Deckers to incentivize changes at the Chinese manufacturing facilities. The business plan will include the following sections:

4.1.1 Opportunity

This section will discuss the size of the problem, the timeliness for a solution, and the opportunity for growth. Our opportunity, in summary, is that Deckers Outdoor Corporation is interested in improving their environmental performance and communicating these improvements to their customers, with the ultimate goal of becoming the environmental leader in the footwear industry.

4.1.2 Solution

To develop a solution, we will first conduct an audit of the current environmental impacts and practices of select facilities located in China. Based on this information, we will determine what changes can be made in shoe production facilities and outline recommendations for facility operators and owners that target three levels of cost—fast, inexpensive changes; more involved, retrofitting solutions; and new construction. In addition, through examination of Deckers' consumer data, we will decide how to communicate these efforts to Deckers' customers.

4.1.3 Team

Our team will include the following members:

- Danielle Cote-Schiff: *Financial Manager and Client Contact*
- Clancy Donnelly: *Website Manager and Business Plan Oversight*
- Brian Fulmer: *Secretary and Business Plan Oversight*
- Lauren Flinn: *Data and Deadline Manager*
- Chien-Ju Lin: *Scheduling Coordinator and International Contact*
- Gary Libecap: *Faculty Advisor*
- Pat Devaney: *Client Representative, Deckers Outdoor Corporation*

4.1.4 Target Market

This section will discuss the Deckers' customers who are willing to pay for the improved environmental conditions of manufacturing facilities. The challenge will be finding how these customers are divided amongst the three Deckers' brands and how much they value these changes.

To determine if Deckers' consumers are willing to pay more for "greener" footwear and/or will experience greater brand loyalty due to Deckers' proposed actions, we will work with Deckers' marketing department to elucidate this from existing data and possibly a consumer survey. If a survey is conducted, we will work directly with Deckers' marketing department to develop, distribute, and analyze the results. Qualitative research in the form of focus groups will also be investigated.

4.1.5 Marketing Strategies

This section will discuss how Deckers will contact their target market and what, if any, pricing changes will be made. Deckers' efforts to improve environmental conditions in facilities in China will likely be communicated to its customers through its website and the websites of its individual shoe brands. How much it is emphasized on the websites of Ugg, Simple, and Teva will depend on the results of primary market research.

The specific actions we will take to determine how best to contact the target market are outlined below:

- Obtain existing customer profile information for each Deckers' brand and/or work with Deckers to conduct consumer surveys to obtain necessary data.
- Utilize consumer profile data to determine the demand and willingness to pay for environmentally-friendly footwear.
- Learn about current marketing techniques used by the three brands.
- Work with Deckers to determine how to communicate changes to consumers.

4.1.6 Industry Analysis

This section will discuss the buying power, supplier power, rivalry, entry, and competitive pressures within the footwear industry. Additionally, we will conduct a SWOT (Strengths, Weaknesses Opportunities and Threats) analysis of Deckers' four or five top competitors in the footwear industry.

4.1.7 Financials

This section will discuss the estimated sales, costs, break even, rate of return, assets, and liabilities.

4.1.8 Competitive Advantage

This section will discuss the following:

- barriers to entry,
- core competencies,
- value chain analysis, and
- intellectual property, team characteristics and other intangibles.

4.1.9 Key Strategies

This section will discuss how Deckers will differentiate itself from other footwear companies through its leadership in improved environmental performance.

4.1.10 Risk Analysis

This section will discuss any key risks and contingent responses. We will focus on the stability of the U.S. economy and overestimation of consumers' willingness to pay for environmental improvements.

4.1.11 Operations

This section will summarize how the project will be implemented, as is described in Sections 4.2 and 4.3.

4.1.12 Time Line

We will outline the steps to be taken for the duration of the group project and any potential steps to be taken in the future.

4.2 Part Two: Manufacturing Facility Changes

In addition to the internal business plan, we will perform the research and analysis necessary to begin implementing the project, as Deckers has already decided it is interested in this program. In order to recommend and encourage changes in the Chinese manufacturing facilities, we will first need to determine the best criteria for evaluating the environmental impact of existing shoe manufacturing facilities in southern China. We will then use these criteria to collect the necessary data from the facilities that produce Deckers' products. Based on this information and green building research, we will determine what changes can be made in shoe production facilities and make recommendations that target three levels of cost—fast, inexpensive changes; more involved, retrofitting solutions; and new construction. Finally, we will recommend a framework that Deckers can use to encourage the Chinese facilities to adopt our recommended changes.

The following list summarizes the specific steps we will take to complete Part One of our approach.

- Develop Criteria
 - Research different criteria currently used, such as LEED for Existing Buildings and Energy Star.
 - Determine which method is most appropriate for our application.
 - Customize criteria as necessary.
- Collect Data & Create Manuals
 - Based on determined criteria, collect necessary energy usage and other environmental impact data from select facilities in China.
 - Compare availability, cost, and implementation timelines and consult experts on greening manufacturing facilities to determine recommended technology changes.
 - Conceptualize a new vision for a facility design incorporating environmentally sustainable practices not currently used in the footwear industry.

- Produce a set of manuals that offer recommendations to facilities on three levels: 1) making quick changes to their facilities or “low hanging fruit”—designed for facilities with limited resources, 2) facility retrofit solutions, and 3) new construction recommendations.
- Determine the management structure of the facilities and the relationships between management at Deckers and at the facilities.
- Elucidate the competitive advantages the facilities will gain by making these changes.
- Establish a framework for encouraging facilities to make these recommended changes and ensuring that agreed upon changes are made. This framework may include the development of approved implementation plans, a memorandum of understanding between the two companies, contractual agreements, and/or agreements for self-reporting or monitoring of changes.

4.3 Part Three: Internal Communication

The final part of our approach, we will work with Deckers on creating a consistent environmental language for use within the company.

The following list summarizes the specific steps we will take to complete Part Three of our approach.

- Research the use and definitions of environmentally-focused language (e.g., sustainable, green, carbon footprint) within the corporate, governmental, and non-profit landscape.
- Contact Deckers about current techniques (i.e., intranet, training) used to communicate to employees.
- Conceptualize a consistent environmental language for Deckers to employ internally and provide recommendations to ensure that this language is adopted within the company.

5. Management Plan

5.1 Group Structure and Management

It is expected that all group members will complete and submit all assigned work in a timely and professional manner. In addition, group members are required to attend all scheduled meetings on time (unless prior notice is given), keep their schedules current in Corporate Time, and check their email on a daily basis. Also, it is the responsibility of all members to ensure that quality work is being completed by all fellow group members. This includes being open to the suggestions and concerns of other team members.

5.2 Positions and Responsibilities

Each of the group members will be responsible for the specific tasks detailed below. Additional tasks and projects may be assigned to group members as the project progresses.

- Danielle Cote-Schiff: *Financial Manager and Client Contact*
 - Maintain group financial account
 - Design and maintain project budget
 - Track and record all group expenses by maintaining a log of expenditures
 - Serve as contact between Bren financial staff and other group members
 - Serve as main contact between the group and the client

- Clancy Donnelly: *Website Manager and Business Plan Oversight*
 - Maintain website and manage other related computer tasks
 - Create agendas for weekly meetings and ensure that all relevant documents are printed and/or distributed
 - Maintain the project focus towards an internal business plan and ensure that the final project meets the business plan requirements
- Brian Fulmer: *Secretary and Business Plan Oversight*
 - Record and distribute minutes from all meetings
 - Maintain the project focus towards an internal business plan and ensure that the final project meets the business plan requirements
- Lauren Flinn: *Data and Deadline Manager*
 - Maintain group project folder on the G drive
 - Maintain library of documents (e.g., e-documents, bibliographies, emails)
 - Ensure that all deadlines are met
- Chien-Ju Lin: *Scheduling Coordinator and International Contact*
 - Schedule and arrange all internal meetings
 - Communicate with contacts in China
- Gary Libecap: *Faculty Advisor*
 - Provide assistance to group via logistical and technical advice
 - Review written documents
- Pat Devaney: *Client Representative, Deckers Outdoor Corporation*
 - Provide direction and advise based on industry expertise
 - Assist with data gathering and other technical support

5.3 Meeting Structure

Weekly meetings with all group members will be scheduled and held based on quarterly schedules. Regular meetings will be scheduled with the faculty advisor and/or client based on need. Each meeting will be a forum to discuss project logistics and action items, establish deadlines, and voice any concerns or thoughts group members may have. Meeting agendas will be emailed to group members prior to meetings and be brought to meetings by the assigned agenda creator. The previous meeting's minutes will be summarized by the secretary at the beginning of each meeting.

5.4 Deadline Management

Prior to the weekly meetings, all group members will be responsible for meeting the deadlines set forth in previous meetings and in overall accordance with the milestone section of this proposal. If a deadline cannot be met, that group member must notify the other group members as early as possible if an extension is needed.

5.5 Conflict Resolution

Group members will maintain the primary responsibility for conflict resolution and will seek help from the faculty advisor only if issues cannot be adequately addressed by the group. If, after faculty

arbitration, the issue cannot be resolved, group members will seek assistance from the Group Project Coordinator or the Chair of the Group Project Committee. Group members may also contact the campus ombuds office (<http://www.ombuds.ucsb.edu>) for access to trained mediators. Group members will maintain written documentation of any problems they are having with other group members, in case administrative intervention is necessary.

5.6 Procedure for Editing Documents

The following chain-of-command will generally be followed when editing documents:

- Danielle Côté-Schiff brings together individual pieces,
- Brian Fulmer reads documents for flow and transitions, and
- Lauren Flinn copy edits (grammar and formatting).

6. Deliverables

The following list summarizes the deliverables that will be prepared and sent to Deckers throughout the year:

- Interim Deliverables
 - Assessment of facilities (e.g., technologies used, energy consumption, water use)
 - Description of criteria chosen
 - Summary of Deckers' customers regarding willingness to pay for improved factory environmental performance (to be prepared based on Deckers' marketing information and if necessary, a survey prepared in conjunction with Deckers' marketing department)
- Final Report: Internal business plan with appendices including
 - Three manuals and description of methodology used to create them
 - Suggestions for consumer awareness, and
 - Suggestions for internal education
- Four Page Project Summary
- Poster and Oral Presentation

7. Milestones

7.1 Spring Quarter, 2008

- Draft Project Proposal – May 23, 2008
 - Send draft of project proposal to faculty advisors
- Website – June 1, 2008
 - Website will be established and functional by this date and include all pertinent information as is listed in the group project guidelines
 - Website will continue to be updated by the Web Manager from this point forward
- Final Project Proposal – June 2, 2008
 - Draft project proposal will be edited based on comments from faculty advisor in preparation for the project proposal review.
- Project Proposal Review – Week of June 2, 2008

- All faculty and external reviewers will be established and invited to proposal review by May 27, 2008
- Drafts of project proposal will be sent to attendees by June 2, 2008
- Self and Peer Review Evaluations – June 6, 2008

7.2 Summer, 2008

- Data Collection
 - Group project members will work with the client to make sure that all data required for the project is being collected and organized.
- Criteria Selection
 - Group project members will continue to research criteria for selecting recommended changes/technologies

7.3 Fall Quarter, 2008

- Data Collection
 - Group project members will continue to collect all data required for project with the goal of having all data collected by the end of October 2008
- Group Project Progress Review – November 14, 2008
 - All faculty and external reviewers will be invited to project review by October 21, 2008
- Final Progress Report – November 28, 2008
 - This report will include the specifics detailed in the group project guidelines and should be collectively developed over the month of November.
- Self and Peer Review Evaluations – November 28, 2008

7.4 Winter Quarter, 2009

- Data Review and Analysis Complete – January 9, 2009
- Project Report – January – February 2008
 - Work over the month of January and beginning of February to draft the final project report
 - The faculty advisor should be reviewing drafts of this document throughout the month
 - Prepare for project defense
- Project Defense – February 6 or 13, 2009
 - Prepare a 20-25 minute presentation on project
 - Recommendations from this defense will be used to revise project and deliverables
- Draft of Final Project Report – February 6, 2009
 - A final draft of the report will be submitted to advisor
- Group Project Presentation Template – March 11, 2009
 - The presentation template will be submitted to the group project coordinator
- Submit Final Report – March 16, 2009
 - Report must be signed by faculty advisor and archived at the Bren School
 - Submit final copy both electronically (PDF) and hard copy (bound) to Group Project Coordinator

- Report must be in accordance with the Bren School Filing Guidelines specified in the group project guidelines
- Project Brief
 - Four page project brief to be drafted over the month of March and presented to the faculty advisor by March 12, 2009, for review
 - Electronic (pdf) and hard copy of brief will be submitted to Group Project Coordinator by March 16, 2009
- Self, Peer, and Faculty Advisor Evaluations – March 16, 2009
- Presentation and Poster Preparation
 - Work on poster and visual and oral presentation over the month of March
 - Draft Power Point presentation will be submitted to advisor by March 23, 2009
 - Discuss printing of final poster with iCQD by March 13, 2009
- Public Presentations – April 3, 2009
 - Rehearse presentation until all member of group feel comfortable speaking and answering questions during the days prior to the presentation
 - Submit group project poster to group project coordinator after presentation

8. Budget and Budget Justification

Printing	\$200	Printing expense designated by The Bren School
Final Poster Printing	\$300	Professional printing and mounting
Meetings	\$100	Food (for client meetings) and presentation materials
Library Copy Card	\$50	Copying of necessary documents from UCSB library
Final Presentation	\$50	Presentation materials other than poster
Administrative Supplies	\$50	Organizational supplies
Travel	\$300	Travel to visit with experts in energy and design
Software	\$250	May purchase design and/or energy auditing software
Unanticipated Expenses	\$200	Purchase of resources not listed here
Total	\$1,500	

9. References Cited

- AAFA. (2006). "ShoeStats." American Apparel and Footwear Association. July 2006. Available online at <http://www.apparelandfootwear.org/Statistics.asp>.
- AMA. (2008). "Dictionary." American Marketing Association. Available online at http://www.marketingpower.com/_layouts/Dictionary.aspx?dLetter=G.
- BSR. (2008). "Water Management in China's Apparel and Textile Factories." Business for Social Responsibility. April 2008. Available online at http://www.bsr.org/reports/ChinaWater_IssueBrief_042908.pdf.
- Brownlow, Kaleb and Stephanie Renzi. (2007). "Is Guangdong the Dark Horse in Addressing Ecological and Human Health Threats?" *China Environment Series*. Issue 9. Woodrow Wilson International Center for Scholars. Available online at http://www.wilsoncenter.org/topics/pubs/brownlow_and_renzi_feature_ces9.pdf.
- China Daily. (2006). Shoe firmoss damns EU's tariff decision. October 13, 2006. Available online at http://www.chinadaily.com.cn/chinagate/doc/2006-10/13/content_707564.htm.
- Chinese EPA. (2008). "Cleaner Production." Available online at <http://www.sepa.gov.cn/tech/qjsc/>.
- Cogar, Dana. (2008). "Branding Green But Seeing Red: Consumer Perceptions of Green Brands." *EcoAlign*. Survey Report. Issue 3. March 2008. Available online at <http://www.ecoalign.com/assets/EcoPinionSurveyReport03final.pdf>.
- Cone. (2008). "Green Gap Survey." Cone LLC and The Boston College Center for Corporate Citizenship. Available online at <http://www.coneinc.com/content1136>.
- Crawley, D. and I. Aho. (1999). "Building Environmental Assessment methods: applications and development trends." *Building Research and Information*. 27(4-5): 300-308.
- Deckers. (2008). "Corporate Social Responsibility. Deckers Ethical Supply Chain Guidelines." Deckers Outdoor Corporation. Available online at <http://deckers.com/about/CorporateSocialResponsibility.aspx>.
- Deckers. (2008a). "Mission Statement." Deckers Outdoor Corporation. Available online at <http://www.deckers.com/about/mission.aspx>.
- Deckers. (2008b). "Corporate Social Responsibility: Deckers Ethical Supply Chain Guidelines." Deckers Outdoor Corporation. Available online at <http://www.deckers.com/about/CorporateSocialResponsibility.aspx>.
- Derby, M. (2008). "Driving Deckers." *Footwear News*. March 31, 2008. Available online at <http://www.footwearnews.com/site/article.php?id=963>.
- EPA. (2008a). "How Energy Star Works with Manufacturers." U.S. Environmental Protection Agency. Available online at http://www.energystar.gov/ia/business/industry/estar_and_manufacturers.pdf.
- EPA. (2008b). "Energy Star Building Upgrade Manual." U.S. Environmental Protection Agency. Available online at <http://www.energystar.gov/ia/business/BUM.pdf>.

- Environmental Leader. (2007). "MAS Breaks Ground On Green Apparel Manufacturing Facility For M&S." *Environmental Leader*. November 26, 2007. Available online at <http://www.environmentalleader.com/2007/11/26/mas-breaks-ground-on-green-apparel-manufacturing-facility-for-ms/>.
- FTC. (2007). "FTC Reviews Environmental Marketing Guides, Announces Public Meetings." Federal Trade Commission. November 26, 2007. Available online at <http://www.ftc.gov/opa/2007/11/enviro.shtm>.
- Frenkel, Stephen J. (2001). "Globalization, Athletic Footwear Commodity Chains and Employment Relations in China." *Organization Studies*. 22(4): 531–562.
- Henderson, Diedtra. (2007). "Timberland ads aim to cut carbon footprint; Boot campaign vows power credits, recycling." *The Boston Globe*. October 13, 2007. Third Edition. pg. E10.
- Humbert, S; Abeck, H; Bali, N, et al. (2007). "Leadership in Energy and Environmental Design (LEED) – a critical evaluation." *International Journal of Life Cycle Assessment*. 12(1): 46-57.
- Kahn, J. and J. Yardley. (2007). "As China Roars, Pollution Reaches Deadly Extremes." *The New York Times*. August 26, 2007. Available online at http://www.nytimes.com/2007/08/26/world/asia/26china.html?_r=1&sq=china%20olympics%20air%20pollution&st=cse&oref=login&scp=8&pagewanted=all.
- Klassen, Robert D, Whybark, D. Clay. (1999). "The Impact of Environmental Technologies on Manufacturing Performance." *Academy of Management Journal*. 42(6): 599-615.
- Lowder, Stella. (1999). "Globalisation of the Footwear Industry: A Simple Case of Labour?" *Tijdschrift voor Economische en Sociale Geografie (Journal of Economic & Social Geography)*. 90(1): 47-61.
- Luken, R. and F. Van Rompaey. (2008). "Drivers for and barriers to environmentally sound technology adoption by manufacturing plants in nine developing countries." *Journal of Cleaner Production*. 16(1): 67-77.
- Makower, Joel and the editors of GreenBiz.com. (2008). "State of Green Business." Greener World Media. Available online at <http://stateofgreenbusiness.com/files/StateOfGreenBusiness2008.pdf>.
- Nike. (2006). "Considered Design and the Environment." *Nike FY05-06 Corporate Responsibility Report*. Available online at <http://www.nikebiz.com/nikeresponsibility/#crreport/main>.
- Portney, Paul R. (2005). "Corporate Social Responsibility: An Economic and Public Policy Perspective." *Environmental Protection and the Social Responsibility of Firms: Perspectives from Law, Economics, and Business*. Eds. Bruce L. Hay, Robert N. Stavins, & Richard H.K. Vietor. Resources for the Future: Washington D.C. p.107-131.
- Reinhardt, Forest L. (2005). Environmental Protection and the Social Responsibility of Firms: Perspectives from the Business Literature. *Environmental Protection and the Social Responsibility of Firms: Perspectives from Law, Economics, and Business*. Eds. Bruce L. Hay, Robert N. Stavins, & Richard H.K. Vietor. Resources for the Future: Washington D.C.

Rusinko, Cathy A. (2007). "Green Manufacturing: An Evaluation of Environmentally Sustainable Manufacturing Practices and Their Impacts on Competitive Outcomes." *IEEE Transactions on Engineering Management*. 54(3).

Stella. (2008). "Casual Footwear." Stella International Holdings Limited. Available online at <http://www.stella.com.hk/products/causal>.

Unruh, Gregory C. (2008). "The Biosphere Rules." *Harvard Business Review*. 86(2): 111-117.

USGBC. (2008a). "LEED for Existing Buildings: Operations & Maintenance." U.S. Green Building Council. April 2008. Available online at <https://www.usgbc.org/ShowFile.aspx?DocumentID=3617>.

Weerasinghe, Harshani. (2008). "Inside Sri Lanka M&S supplier's 'green' factory." Lanka Business Online. May 18, 2008. Available online at http://www.lbo.lk/fullstory.php?newsID=1217278044&no_view=1&SEARCH_TERM=46.

World Bank. (2004). "Environment at a Glance: China." The World Bank. Available online at <http://siteresources.worldbank.org/INTEEI/Data/20799751/China.pdf>.

World Bank. (2008). "China and Energy: Ensuring Energy Supply Reliability to Meet Demand Growth." The World Bank. Available online at <http://go.worldbank.org/B1F4M5YQ70>.