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Do U.S. Food Companies Achieve Competitive Advantages by Implementing Green Strategies throughout their Supply Chains?

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Abstract

The research examines whether U.S. food companies will achieve competitive advantages by implementing green strategies throughout their supply chains. Since being green has been a strategy for companies to pursue both financial and social benefits, companies have increasingly implemented green strategies. However, the food industry faces many challenges and issues in the supply chain. Using prior research as the measure to gauge how green strategies will help food companies achieve competitive advantages, this study examined green strategies implemented throughout the supply chain by U.S. food companies. It found that food companies which implement green strategies in food supply chain will consider different strategies in different processes. However, these green strategies should respond to the issues regarding the food supply chain, have innovative thinking, integrate sustainability into the core business strategy, and market their brand image with green concept to the public. By adopting these principles, food companies can achieve competitive advantages through differentiated green.

Keywords: Competitive advantage, food supply chain, green strategies, sustainability, U.S.

1 Introduction

Green concepts have been advocated for the past two decades. As global warming, climate change, and natural disasters have increased the awareness of environmental issues for the public, many companies have voluntarily engaged in green practices to

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fortify their profit margins in an environmentally responsible way. Multinational companies such as Nike and GE make a great effort on green initiatives which have helped them to reduce costs.

As Rugman and Verbeke (1998) noted, environmental regulations have discussed largely on multinational enterprises (MNEs) because they have more impact on the environment. As a result, many companies go green to achieve competitive advantages.

Governments have increased regulations and standards for monitoring the environment. As Blanchard (2010) concluded in *Supply Chain Management Best Practice*, the "capand-trade" program modeled and implemented in the European Union in 2005 has gained increased interest in the U.S. Now, "cap and trade" programs are found in the U.S. such as the Acid Rain Program and NO_x Budget Trading Program. In addition, the carbon tax, which has been addressed by the federal government, pointed out the present environmental issues that have been imposed on every organization. No matter what the "cap and trade" programs or the carbon tax initiatives have achieved to reduce greenhouse gases emissions, companies are aware of the increasing responsibility for environmental sustainability.

Therefore, going green is not only a slogan or concept, but a strategy that can help companies achieve sustainability. Formulating and implementing a sustainable green strategy can help companies increase their competitive positions in their industry (Tay, Chan, & Nguyen, 2013). To meet the standards and regulations, companies need to reduce their carbon footprints by either modulating their products or processes or adopting more eco-friendly technologies. When governments around the world engage in protecting the environment and pursuing renewable energy, companies will embrace green technologies beyond regulatory concerns. Kauffeld, Malhotra and Higgins (2009) pointed out that going green is a strategy companies need to actively implement green strategies through their whole operation.

2 Statement of the Problem

According to the research by Unruh and Ettenson (2010b), different industries will have different definitions of sustainability. They described sustainability standards and green standards interchangeably, and the green battle among companies has transformed the definition of what constitutes a green product. Therefore, to win the green war, companies should work on how to achieve sustainability.

Green strategies have shifted from the companies themselves to the whole supply chain. It is no longer the company itself, but the supply chain that will affect overall performance. Rao and Holt (2005) mentioned that it is hard for customers to distinguish companies from their suppliers. Companies are increasingly able to maintain high levels of accountability and responsibility for the environmental impact of their processes. They also addressed that suppliers are a key component in achieving goals for U.S. manufacturing firms.

Not only have regulations and legislation been created to protect the environment, but many issues regarding environmental sustainability have generated public concern. For the food industry, the supply chain varies and is very complicated. As the research by Maloni and Brown (2006) pointed out, the origin of food from growers, the purchase from brokers or food processors by distributors, wholesalers, retailers and consumers, the product itself, and customer demand all together create a complex supply chain.

As Trienekens, Wognum, Beulens, and van der Vorst (2012) mentioned in their research, supply chains are complicated because more than one supply chain operates simultaneously or sequentially. As a result, food supply chains include many factors that affect the end product's quality and safety. However, many difficulties still stand in the way of improving transparency and providing clear information because of the different factors in the supply chain and insufficient systems and mechanisms.

Some industries such as oil and manufacturing have more obvious evidence of how pollutants adversely affect the environment. Customers are not normally aware of negative impact on the environment through the food supply chain since no formal standards or measurable methods exist to describe how environmental-friendly the product is. According to the research by Worsley and Lea (2008) and Tobler, Visschers and Siegrist (2011), consumers usually are not aware of the environmental impact of food products even though they believe that locally produced and organic goods are more environmental-friendly.

3 Purpose of Study

This study examines whether implementing green strategies throughout the supply chain will help food companies achieve competitive advantages. Since different processes within the supply chain require different green strategies, food companies will need to expend great effort to implement green strategies through different processes. Despite the increasing regulations from governments or demand for environmental-friendly food from consumers, companies will need to compete to distinguish themselves if they are to win the green battle. It is questionable whether food companies will gain competitive advantages by implementing green strategies to their supply chains. To examine this problem, we analyze green strategies and supply chain issues by reviewing prior literature. Through the research, many factors were found that motivate companies to pursue green strategies through supply chain management. As a result, we will examine food companies' green strategies to see if these efforts have helped them to gain competitive advantages.

4 Motivation for Adopting Green Strategies

Many motivations drive companies to go green. As Bansal and Roth (2000) concluded from their research, competitiveness, legitimation and environmental responsibility are the motivations for companies to be more ecologically responsive. For example, energy and waste management, eco-labeling, and green marketing help companies to achieve competitiveness and benefits from higher profits, lower costs, and differentiation. Similarly, companies may benefit from complying with legislation, working with environmental committees and local communities, companies by attaining long-term sustainability, avoiding fines, and obtaining necessary licenses to operate. Companies can achieve social responsibility and benefit from employee morale and individual satisfaction by redeveloping the used land, producing green products and recycling office waste (Bansal & Roth, 2000).

Moreover, research has found that companies have been more actively involving in environment activities. The first driving force is the economic risk from energy and raw materials. Since the fluctuating energy prices and scarce raw materials are a reality, companies are actively reducing their energy consumption and recycling materials. Second, consumer awareness of environmental issues encourages companies to research and develop new products and adopt green strategies to attract customers. Third, companies have enhanced their businesses by adopting new government legislation and standards that are becoming global in scope. Fourth, as companies search for competitive advantages, customer loyalty, and market share, they have adopted higher ethical standards and increased their investment in Corporate Social Responsibility (CSR) to search for long-term financial return. Finally, operational and supply chain risk from the inconsistent alignments also makes companies seek ways to become environmental stewards.

Studies also indicate that companies pursue green initiatives because of demand from stakeholders. People are more likely to buy products or services from a business with a good "green" reputation rather than from a financially successful company. A recent global study commissioned by Weber Shandwick, a public relation firm, shows that 60% of a company's market value is based in its reputation (Low, 2012). As Esty (2007) pointed out, companies want to protect their reputation because environmental performance reviews are available to the public. Moreover, consumers nowadays have more control over which companies they choose to interact with. Thus, the attitudes and capability of being ecofriendly influence companies' ability to attract customers and affect their investments from the financial market. Roosevelt and Llewellyn (2007) revealed in a 2007 report that investment in sustainable energy has doubled from 2004 to 2006 and indicated that investors have begun to demand sustainable energy.

5 Issues within Food Supply Chain

It is essential for companies that want to win the green war to achieve sustainability. Jennings and Zandbergen (1995) mentioned that green companies that are more proactive are considered more sustainable. Buysse and Verbeke (2003) demonstrated that environmental stakeholder management is more important than public relations exercises if companies want to achieve their competitive advantages. For food companies, sustainable agriculture is an important part throughout the supply chain. Congress defines sustainable agriculture as "… an integrated system of plant and animal production practices having a site-specific application that will, over the long-term—(A) satisfy human food and fiber needs; (B) enhance environmental quality and the natural resource base upon which the agriculture economy depends; (C) make the most efficient use of nonrenewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls; (D) sustain the economic viability of farm operations; and (E) enhance the quality of life for farmers and society as a whole" (United State Department of Agriculture [USDA], 2009).

Another issue in green initiatives is greenhouse gas emissions. According to Horowitz and Gottlieb (2010), greenhouse gas emissions are emitted from animals' digestive processes, manure decomposition, emissions from nitrogen fertilizers, and CO_2 emissions from their vehicles and machinery. Maloni and Brown (2006) developed a framework of issues regarding the food supply chain which included animal welfare, biotechnology, health and safety, environment, labor and human rights, community, fair trade, and procurement. For example, Boehlje (1993) and Wade (2001) mentioned that water pollution, packaging and food miles are issues within food supply chains; Fox pointed out manure disposal, soil and water damage, deforestation and methane emission (as cited in Maloni & Brown, 2006).
Based on the definition from sustainable agriculture, supporting farmers and society is also considered a method to achieve sustainability. Therefore, companies should be aware of issues regarding the community and fair trade. MacKenzie mentioned that many coffee bean growers are poor and even bankrupt because of the low supply price (as cited in Maloni & Brown, 2006). As a result, pertaining to raw materials, the impact of production methods and processes on the environment and community all together influence how green the supply chain is. Therefore, companies will need to solve both the environmental and social issues if they plan to adopt green as a strategy into the supply chain.

6 Green Strategies

To solve supply chain issues, Shrivastava (1995) noted that many green producing technologies will help companies achieve competitive advantages by creating new products, improving production processes, and making more eco-friendly packaging. Horowitz and Gottlieb (2010) suggested different production processes. For example, methane emissions can be managed by farmers changing change livestock feeds while dairy and hog producers can install digesters. Moreover, digesters can also generate electricity to replace fossil fuel based electricity. For the crop producers, Smith et al. observed that farmers can apply different practices such as plant tissue testing or soil testing to further reduce emissions from nitrogen fertilizers (as cited in Horowitz & Gottlieb, 2010). Moreover, Fargione et al. mentioned that farmers can reduce greenhouse gas emissions by using renewable energy such as wind turbines or solar panels (as cited in Horowitz & Gottlieb, 2010).
Green purchasing, as addressed by Rao and Holt (2005), is a strategy that can solve a range of problems from waste reduction to the substitution of environmental friendly raw materials. By using a green purchasing strategy, companies can reduce pollution significantly. Other strategies such as recycling and the re-use and eco-packaging are effective but less significant than green purchasing. Green marketing, which goes above and beyond providing an environmentally friendly product by communicating and promoting business practices to lower the environmental impacts, can enhance the message to the public and help companies achieve competitive advantages through innovation. Green packaging, or sustainable packaging, through improved transportation and distribution channels, can help companies reduce their carbon footprint and solid waste.

7 Achieving Competitive Advantages

Unruh and Ettenson (2010b) urged companies to define the meaning of green or sustainability before their competitors do in order to achieve an edge in green initiatives. Moreover, companies should check the existing standards within the industry and the opportunities to pursue sustainability. The strategy they suggest is to adopt industry standards when a company has fewer capabilities. By adopting these well-established standards, companies have the chance to win the marketplace. By carefully assessing the company capabilities and industry standards, companies can win the green war by successfully implementing their green strategy. Second, when green standards have existed for a long time, companies may want to co-opt standards with other credible organizations. By doing so, the companies can both achieve the financial and environmental goals. Third, if standards do not exist, companies that are capable and feel a need to recognize the issues to achieve sustainability can create their own standards. Companies that actively set their own standards to meet social, financial, and environmental concerns will have advantages in gaining trust from stakeholders. Finally, companies can break away from the existing strategy and define new ones. By doing so, companies will win with this strategy only when they can design measurements to prove their credibility.

Kauffeld et al. (2009) presented five steps to adopt "differentiated green" as a business strategy. Differentiated green means that companies will proactively make environmental policies to achieve green goals. First, companies should elevate sustainability to a core business strategy, which means they should adopt green concepts throughout their culture. Second, companies should embed green principles in innovation affect which requires companies to involve creativity when designing new products or production processes. Third, view the entire product life cycle, including the whole supply chain, through a green lens. Fourth, companies should consider the green principles in making major decisions. By doing this, they are more likely to make efforts to pursue their green goals even though they have very long payback periods. Five, integrate green principles into corporate and brand marketing and messaging. This step is important for helping companies achieve differentiated green. By increasing their transparency, companies can effectively inform stakeholders how green their products are and simultaneously promote sustainability.

It is important for companies to consider achieving competitive advantages by combining the Unruh and Ettenson (2010a) and Kauffeld et al. (2009) approaches. The five steps used by Kauffeld et al. (2009) to achieve differentiated green involves bringing the whole supply chain into consideration. Since green concepts have existed for decades, general green approaches make it difficult to achieve competitive advantages when every company has a similar strategy in place.

Therefore, companies should first adopt sustainability as a core business strategy to achieve competitive advantages. Moreover, they should implement green strategies throughout the food supply chains and respond to the food supply chain issues. Third, they should involve innovation within their green efforts. Fourth, they should integrate sustainability into their brand marketing. Finally, since some green standards exist in the food industry, a competitive advantage will be achieved by creating a new standard or coopt with reliable organizations. We define companies which achieve competitive advantages by adopting all principles (see Appendix I). We will examine successful food companies to see if they adopted these green strategies.

7.1 Whole Foods Market

Whole Foods Market was founded in 1980 and is based in Austin, Texas. It is the world's leading retailer in natural and organic foods and the first nationally certified organic grocer in the U.S. Its motto, "Whole foods, Whole people, Whole planet", seeks to explains that Whole Foods Market cares not only about being a food retailer, but also about the community and the environment. Green concepts and sustainability have been the core business strategy throughout its organization (Whole Foods Market, 2012).

Whole Foods Market has pursued green initiatives throughout its supply chain. Among the general green efforts it has been working on for a long time are recycling centers, sales of reusable grocery bags, educational outreach, waste reduction, energy conservation, renewable energy, and green building. From its green mission, Whole Foods Market is one of the major retailers using wind energy to offset its energy uses. The company has also stopped using disposable plastic grocery bags at its U.S., Canada, and U.K. stores in 2008. It sells reusable bags to promote reuse and recycling. Beginning in 2009, Whole Foods Market was the first retailer to offer the Forest Stewardship Council-certified paper grocery bags to close the loop of post-consumer reclaimed materials (Whole Foods Market, 2012). The Whole Trade Guarantee of products was created to respond to the issue of fair trade and human rights and to provide better wages and working conditions to the workers. It now offers 1,500 items with the Whole Trade Guarantee and sales reportedly increased 28% in 2011. To support the community, Whole Foods Market commits to purchasing products from local producers. Despite purchasing locally grown products, it also provides loans to local producers to help them continue their business (Whole Foods Market, 2011). In 2010, the company improved its transparency by providing sustainability labeling for all wild-caught seafood and Eco-Scaling systems for cleaning products. By doing so, it also provided a clear message to the public and presented its sustainability measures (Whole Foods Market, 2011). Overall, Whole Foods Market has elevated sustainability to a core business strategy. Its effort on the supply chain demonstrates that it views the entire business through green concepts. It also embeds innovations through its offerings such as being the first retailer to offer certified seafood. As a result, its green efforts prove that it has achieved competitive advantages.

7.2 Chipotle Mexican Grill

Chipotle opened its first store in 1993 is now a chain restaurant that serves a focus menu of burritos, tacos, burritos bowls and salads. At first, the idea was to demonstrate that food served fast didn't have to be a "fast-food" experience. As a result, it prepared food with high quality raw ingredients using classic cooking methods. However, its vision has since evolved not only to provide fresh ingredients, but carefully source them reflecting its concerns about environmental and societal impacts. Chipotle developed a program called "Food with Integrity" to guide its business (Chipotle Mexican Grill, 2012). The "Food with Integrity" program means that it will serve sustainably raised food that provides great taste, nutrition and value. Its first green effort within the supply chain it was to use meat from naturally raised animals, which are defined as animals that are raised without antibiotics or added hormones. Chipotle has sourced 100% of pork from producers who have followed these guidelines since 2001. It also provides the use of dairy products made with milk from cows that are raised in open pastures. The company continues to serve cheese and sour cream made only with milk from cows not treated with the synthetic hormone rBGH (Chipotle Mexican Grill, 2011). These efforts reflect Chipotle's use of innovation to offer naturally raised pork and milk without rBGH, and that it elevates sustainability as its core business strategy (Chipotle Mexican Grill, 2012).

Chipotle has purchased organic food and supported family farms and local producers to support the community, protect environment and improve safety and health,. Currently, 40% of its beans are organically grown, which has protected the environment by reducing the use of chemical pesticides. It communicates with its farm suppliers to ensure these farms meet its green standards. Chipotle created the Chipotle Cultivate Foundation, which is a nonprofit organization to improve animal welfare, family farming and educate the next generation farmers (Chipotle Mexican Grill, 2011). It is clear that Chipotle has met the first of Kauffeld et al.'s four steps through its products, payback and support to the community and suppliers.

Chipotle sources local producers to reduce food miles and support its business. Producers are considered local if the distance between the farms and restaurants is less than 350 miles. By sourcing from the local producers, Chipotle ensures the freshness and great taste of its ingredients as well as reduces greenhouse gas emissions. This policy also responds to the supply chain issues (Chipotle Mexican Grill, 2011).

Chipotle advertises from its in-store menu to implement sustainability into its brand image. From the menu, it provides a clear description of the source of its ingredients. This approach provides a clear and easy way to let customers understand directly its efforts. Chipotle's cooking style reflects its efforts to promote a healthy style and distinguishes itself from the traditional fast food restaurants. It also includes many videos to educate people. For example, Chipotle created a film called "Back to the start" to depict sustainable farming (Chipotle Mexican Grill, 2012).

7.3 Starbucks Corporation

Starbucks began as a roaster and retailer of whole beans and ground coffee, tea and spices in Seattle in 1971. Its mission is "to inspire and nurture the human spirit one person, one cup, and one neighborhood at a time." In addition to promising high quality coffee, Starbucks is committed to being a responsible company. It ensures the use of ethical sourcing practices, makes efforts to protect the environment, and supports the community (Starbucks, 2012). From its mission statement and company profile, Starbucks expresses its initiatives in green efforts in its business operation.

Starbucks initially used World Resources Institute Green House Gas Protocol to conduct an inventory of its greenhouse gas (GHG) emissions in 2010. This protocol presents the company as co-opting with reliable organizations to achieve green goals. Starbucks found that its major emissions are from its global retail stores and roasting plants. To solve the problem, it started recycling in stores. Starbucks has practiced the front-of house recycling since 2007 in some markets. In 2011, it created a comprehensive recycling program to increase and improve commercial recycling. It has worked to provide greener cups including researching new ways to reduce disposable cups, using other packaging, and encouraging its customers to use reusable cups.

Starbucks uses LED (Light Emitting Diode) light bulbs to increase energy efficiency and asked GE to develop new bulbs that can effectively save even more energy. It changed its signage from neon to LED. A new initiative is to reduce the energy used in store heating and air conditioning. Finally, Starbucks supports the renewable energy by purchasing the Renewable Energy Credits (RECs) from wind farms for its store electricity consumption (Starbucks, 2011).

Starbucks reduced water consumption by 15 percent through the use of dipper wells, which include the continuous streams of water to clean spoons with the manual faucets. It also launched a new water filtration system and installed low-flow faucets, toilets and spray heads to reduce water consumption. Finally, it reduced its environmental footprint by implementing the LEED Certification standards to build its new company-owned stores (Starbucks Corporation, 2012).

Starbucks' green effort on supply chain focuses on creating support centers and loan programs to help local farmers have better operational opportunities as well as to protect the environment. Its experts collaborate with local farmers to implement responsible farming and secure the long-term cooperation. Starbucks also partnered with Conservation International (CI) to create Coffee and Farmer Equity (C.A.F.E.) practices which can help farmers grow coffee that can benefit both people and the planet. The CAFE practices include an evaluation among the farmers, processors and suppliers (Starbucks Corporation, 2012)**.** Starbucks integrates sustainability into corporate and brand marketing and messaging by selling reusable cups in every store and giving discounts to customers who use reusable cups.

In sum, the three companies discussed above have adopted sustainability into their core business strategy. Their green strategies help to solve issues in the food supply chain. In addition to exercising general green approaches such as reuse or recycling, they have innovated in green concepts. Even though these efforts will increase operational costs, they create their own standards and have done innovative thinking in their operation. Moreover, companies that want to adopt green strategies to achieve competitive advantages should put more effort to communicate with customers by sending out the green message either through products or the business environmental practices.

8 Managerial Implications

The motivation for companies to go green has been studied extensively in prior research. Green supply chains and issues in food supply industry have been a focus as well. However, it is hard for companies to go green to achieve competitive advantages when issues are not relevant to the public,. This research focused on the issue of achieving competitive advantages by implementing green strategies through food supply chains. Along with literature which addressed green strategies that companies use to achieve their green goals and gain competitive advantages, the study combined their approaches as the criteria to measure successful food companies to see if they meet the criteria.

These approaches can be regarded as successful tools because other industries can also use these criteria to gauge whether they can gain competitive advantages by implementing green strategies to their supply chains. However, companies should first examine their industries' environmental standards or regulations before adopting these principles,. The implications can cause companies to contemplate their capability before deciding to use green strategies to achieve competitive advantages. This paper offers a better framework for companies to implement green strategies. Managers who want to use green strategies to achieve competitive advantages should integrate the green concepts and sustainability into their cultures. Moreover, different industries have different considerations regarding supply chain issues. It is essential for managers to understand both current issues and potential issues within the supply chain so they can make better decisions and acts to choose different green strategies to achieve competitive advantages.

Finally, the concept of "green washing" is well-known when companies are pretending they are green. Kauffeld et al. (2009) pointed out that companies can ruin their reputation if their green efforts cannot be scrutinized by the public and environmental advocates. As a result, companies should prepare well when they use green strategies to achieve competitive advantages.

9 Conclusion

Companies should always ask themselves whether their strategies are different from other companies and whether these strategies can help them to achieve a position that gives them better advantages. The intention of this study is to examine whether food companies will gain competitive advantages by implementing green strategies through supply chains. Since green strategies have been studied for decades, companies increasingly understand the importance of being green.

The findings of this study show that companies can achieve competitive advantages by implementing green strategies throughout the supply chain. To achieve differentiated green, companies should consider the green concepts through their supply chains and their cultures. Moreover, when companies engage in green efforts, it is important to send the green message to customers through different brand marketing strategies. Since customers may not be aware of issues regarding supply chain, companies should increase their transparency, which can help ensure they are doing the right thing. For further research, it is important to consider that each industry will have different green standards. Since food industry now has many issues regarding supply chains, it is both a risk and an opportunity for food companies to exert a green strategy. However, industries that have more adverse impact on the environment may need more research on supply chain issues, and different industries have different regulations. They may adopt or break way the standards instead of creating or co-opting. Therefore, it is important for further research to examine this factor to see if the framework needs to expanded or modified.

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Appendix

Competitive advantages principles

1. Adopt sustainability as a core business strategy.
2. Implement green strategies throughout food supply chains
3. Respond to the food supply chain issues.
4. Involve innovation within their green efforts.
5. Integrate sustainability into their brand marketing.
6. Creating a new green standard or co-opt with reliable organizations

Source: Kauffeld et al. (2009) and Unruh and Ettenson (2010za).