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Full Length Research Paper

Global warming mitigation promotes corporate entrepreneurship within Woolworths' supply chain

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This study demonstrates how Woolworths, a South African retail chain promotes corporate entrepreneurship within its supply chain as it implements sustainable marketing strategies. A qualitative case study approach, restricted to a single retail chain, was used and the data analysed was derived from their public documents. A content analysis using a thematic approach that incorporated product life cycle model variables was used to code the data. The results demonstrate that retailers can promote entrepreneurial activity within supply chains as they implement sustainable marketing strategies.

Key words: Retailing, environmentally sustainable marketing practices, corporate entrepreneurship, supply chain.

INTRODUCTION

The implementation of environmentally sustainable marketing strategies by retail chains such as Woolworths can facilitate and promote corporate entrepreneurship within their supply chains and this is the primary aim of this study. Retail chains are able to encourage this entrepreneurship due to their corporate retail power (Jones et al., 2005: 34) and the benefits that accrue to supply chain members as a result of this collaboration.

The benefits gained by supply chain members through collaboration include; reducing the risk associated with the entrepreneurial activity since Woolworths offers a profitable and reliable market for the suppliers' products; the development of first mover advantage by members of the supply chain who wish to benefit from the retailer's sustainable business practices and who want to promote their more sustainable products to other customers. For example Woolworths' trolley and basket manufacturer supplies Woolworths with new trolleys and baskets that contain recycled plastic derived from this retailer's obsolete trolleys and baskets. This supplier markets these more environmentally sustainable products to other retailers who are interested in improving their sustainability profile. In 2008, this project had recycled 161 tons

of obsolete plastic (Press release, 15th January 2008).

Global warming, its mitigation and sustainable marketing in retailing

Using sustainable marketing strategies in a retailing context is becoming increasingly significant as the negative effects of global warming receive increased attention from the interested stakeholders around the world. Linder (2006: 103) states that international environmental groups and a few Western governments have invested considerable resources in informing the public about the risks associated with global warming and climate change. These social marketing campaigns focused on the individual's contribution to this phenomenon and their responsibility in assisting in its mitigation. This, in the context of derived demand, which states that demand in business markets is ultimately determined by consumers, supports this approach. The results of these campaigns indicate that public awareness of global warming issues has increased and there is some willingness on the part of consumers to

adopt some of the proposed mitigation measures.

A poll conducted in the United States and quoted by Cordero et al. (2006: 865) indicated that 83% of Americans agree that humans are at least partially responsible for the recent warming of the planet.

Whitmarsh (2009: 406) states that respondents in the UK cited more human causes for global warming than natural causes. Dressler and Parson (2007: 75 to 76) state that although the warming of the planet prior to 1950 can be explained by human activity and a variety of natural causes; the magnitude of the warming, its timing and distribution since then can mostly be explained by the increasing concentrations anthropogenic greenhouse gases in the earth's lower atmosphere.

Spence (2005: 18 to 19) and Lorenzoni and Hulme (2009: 383) state that most scientists worldwide are now certain that human activities on this planet are altering the global climate while Heath and Gifford (2006: 49) suggest that there are still pockets of uncertainty among scientists as to whether global warming is actually occurring. From a South African perspective, the South African government states:

"The science is very clear - there is no "silver bullet" - climate change is a huge global challenge which will take a combination of the full range of available interventions, technologies, policies and behaviour changes to resolve the climate problem"

"South Africa, being a responsible global citizen and in line with its obligations under article 4.1 of the United Nations Framework Convention on Climate Change acknowledges its responsibility to undertake national action that will contribute to the global effort to reduce greenhouse gas emissions" (Office of the Presidency, 6th December 2009)

Increased public awareness about global warming is focusing the relevant stakeholders' attention on issues relating to the natural environment since this phenomenon has major impact human societies and the planet's ecosystems. Wüstenhagen et al. (2008: 1) state that the threat of uncontrolled changes in the atmosphere has led to renewed interest in environmental sustainability. Retailers can assist consumers in adopting more environmentally sustainable lifestyles through the provision of environmentally friendly products and services to their customers. This is the strategy that Woolworths uses.

Although global warming and a focus on the natural environment may be perceived as a business threat, this need not be the case. According to Woolworths' 2009 annual report, sustainability report, its sustainable practices provide it with opportunities to save costs, improve operational efficiencies, differentiate itself from its competitors, enhance its brand image, and simultaneously reduce its impact on the natural environment

(Annual report, 2009: 2 and 17).

Davies (2008: 10) states that although cost savings can be achieved by reducing greenhouse gas emissions and waste, a more effective strategy is one where businesses seek opportunities to have a greater positive impact on the environment. This study demonstrates how Woolworths reduces its impact on the natural environment by promoting corporate entrepreneurship through collaborative innovation within its supply chain as well as improving the supply chain's efficiencies, minimising wastage and recycling.

An international retailer that has seen the benefits of taking a more environmentally sustainable approach to business is Wal-Mart. Gibbs (2009: 55) states that Wal-Mart is focusing on providing organic products to its customers, recycling energy and encouraging the growth of local food schemes. Davies (2008: 11) states that Wal-Mart executives *"soon realised how their company and its suppliers could achieve big returns from small changes in their packaging"* By partnering with suppliers on no fewer than 300 kid connection toys, Wal-Mart was able to save 3425 tons of corrugated material, 1358 barrels of oil, 5190 trees, 727 shipping containers and US\$3,5 million.

Sustainable marketing for the purposes of this study is defined as:

"The process of planning, implementing, and controlling the development, pricing, promotion, and distribution of products in a manner that satisfies the following three criteria: (1) customer needs are met, (2) organisational goals are attained, and (3) the process is compatible with ecosystems" (Fuller, 1999: 4).

Sustainable marketing strategies enable businesses to win by ensuring their profitability, the customers win in that their needs are satisfied and the environment wins since businesses' negative impact on the environment is minimised (Fuller, 1999: 11). Schaefer (2005: 46) suggests that sustainable marketing systems need to be flexible, decentralised and open to learning from environmental cues such as the emerging evidence of impending raw material shortages, observable environmental degradation in relation to forest cover, soil fertility, air and water quality as well as global environmental changes that include global warming and the subsequent climate change.

Kärnä et al. (2002: 35) use the term environmental marketing to describe the process of gaining profit from identifying and providing for the need and wants of consumers while recognising and minimising business impacts on the environment. According to Kärnä et al. (2002: 35) the primary principle behind environmental marketing is the integration of company activities in a way that the company, the consumer and the environment benefits.

In order to identify the sustainable environmental issues that need to be addressed, a business needs to

examine its activities in relation to the following three main issues:

1. What it takes from the environment in relation to resources that it removes or destroys in the ecosystem for example the fauna, flora, water and minerals (Fuller, 1999: 1 to 2). To counter balance these effects, the business needs to find more efficient and effective methods of utilising and restoring what it removes and destroys (Ryan, 2003: 262).
2. What it makes refers to the firm's product and service offerings in the market (Fuller, 1999: 2). In this instance, the issues that need to be considered include eco-efficient product design and reductions in material flow. In addition, sustainable marketing strategies that encourage consumers to change their preference for material intensive products need to be developed (Ryan, 2003: 263).
3. What it wastes takes cognisance of the amount of garbage and waste that is generated, the pollution that occurs throughout the taking, making and consuming process as well as the natural environment's destruction as a consequence of waste disposal and pollution (Fuller, 1999: 2). To reduce the amount of waste generated by the business, sustainable marketing strategies that increase process efficiency, reduce wastage and facilitate the adoption of biologically inspired production models within the whole supply chain need to be developed (Ryan, 2003: 262 and 263).

To facilitate a comprehensive identification of the supply chain's activities involved in taking, making and wasting and their impact on the natural environment, the whole supply chain needs to work together, since limiting the analysis to a single stage or business may provide a distorted view of what is happening (Fuller, 1999: 52). Take for example, retailers who in many instances do not manufacture any product but resell manufactured products to their market. It could be said that these retailers are not responsible for the waste and pollution associated with what they sell. However this is not in fact true, because by providing a market for the product, the purchaser and subsequent reseller is responsible for its existence. If there was no market, there would be no product. Similarly, retail chains such as Woolworths, do contribute negatively to the natural environment since they operate and do business both locally and internationally. Any business activity that involves the use of fossil fuels, the removal of natural resources from the environment and the production of waste does have a negative impact on the natural eco-system and does contribute to global warming.

A diagnostic tool that can be used to identify all relevant ecological variables involved in the taking, making and wasting within the supply chain is the product system life cycle model (Fuller, 1999: 50). Ryan (2003: 258 to 259) states that life cycle assessments of

suppliers facilitate the identification of weak links that "import" environmental problems for retailers. According to Ryan, Business to Business partnerships or value chain strategies that utilise green alliances support entrepreneurship which is defined as:

"The formulation and implementation of ecologically beneficial corporate policies that protect market position while creating revenue for the participants" (Ryan, 2003: 259).

Pesonen (2001: 45) states that enhancing the environmental performance of products requires life cycle thinking which stimulates and encourages co-operation within the supply chain. According to Pesonen (2001: 46) the main contractor (Woolworths) in an industrial value chain very often puts pressure on other members to improve their products' environmental performance. Pesonen (2001: 46) then goes on to say that the requirements for environmental performance are also forcing businesses to increasingly focus on what is happening upstream in terms of the impact of raw materials and components on the natural environment.

From an entrepreneurial perspective, the implementation of sustainable marketing strategies by Woolworths encourages entrepreneurship within its supply chain. In this instance, suppliers are encouraged to innovate by developing more sustainable products and processes in their businesses, while devoting the necessary resources and taking the appropriate risks in order to achieve this. Their reward at the end of the day is a profitable and sustainable market for their products in a target market that is perceived as growing in South Africa. Dixon and Clifford (2007: 327) suggest that one of the ways an entrepreneur can remain economically viable and yet pursue an environmentally sustainable approach to their business is to develop close interdependent relationships with corporate organisations that want to enhance their corporate social responsibility profile. In this particular study, Woolworths needs the assistance of its supply chain to implement more holistic sustainable marketing strategies, because it does not manufacture what it sells nor does it source its products directly from the natural environment.

It is the supply chain that is mostly responsible for much of the taking, making and wasting that occurs in the different stages of the products' system life cycle. Woolworths works with its suppliers because it has found that it cannot solve environmental problems on its own (Annual Report, 2010: 36) and it works with business partners, non-governmental organisations (NGOs) and their own customers in order to achieve their sustainability objectives (Sustainability Report, 2008: 14).

As members of Woolworths' supply chain innovate to become more sustainable, they stimulate corporate entrepreneurship which according to Ribeiro-Soriano and Urbano (2009: 422) involves internal innovation or

venturing, and the transformation of organisations through the renewal of key ideas on which they are built.

Brizek and Khan (2008: 229) suggest that corporate entrepreneurship includes two conceptually distinct and separate ideas namely strategic renewal (which refers to efforts to revitalise, renew and transform a business' strategy and structure) and new venture creation within an existing business. According to these researchers, strategic renewal usually involves innovation and creativity.

Entrepreneurship is seen by the South African government as a means of stimulating the economy, achieving a more equitable income distribution and reducing unemployment levels in the country (Pretorius and Wlodarczyk, 2007: 504). One of the problems facing the South African government is the fact that despite its huge investment in entrepreneurial support and training, there has been little appreciable impact on the small, medium and micro enterprise (SMME) sector and South Africa is still seen as not being very entrepreneurially active particularly amongst its peers (Pretorius and Wlodarczyk, 2007: 504).

According to statistics provided by Pretorius and Wlodarczyk (2007: 504), it was estimated in 2004 that the average entrepreneurial activity in South Africa was 5.4% compared to 21% for other developing countries. This article's aim is to demonstrate how Woolworths, a South African retailer, encourages corporate entrepreneurship within its supply chain as it implements its sustainable marketing practices.

Sustainable marketing is becoming increasingly significant as the adverse effects global warming receive increased mass media attention and consumers and governments are increasingly concerned about the impact of these two environmental variables on human populations and ecosystems.

Grant (2008: 25) substantiates this statement by saying that "climate change is characterised by extreme scale and urgency" while Moroke (2009: 3) states that people have woken up to the fact that irresponsible private and public consumption is not a good thing for anyone. He further states that there is an emerging trend in the marketplace where people believe that what is good for the pocket needs to be good for the planet.

According to the Woolworths Annual Report (2010: 34), consumer research by this retailer has demonstrated that consumers are more aware of its sustainable marketing practices and they show high levels of support for this retailer's initiatives. In addition, this report states that customers increasingly want to understand where products come from and they want to be certain that these products are sourced ethically and without harm to the environment.

Problem statement

Global warming is a macro-environmental variable that is

receiving increased attention as its negative impact on societies is felt. For example in Bolivia and Peru, peasant farmers are moving from rural to urban areas as changing weather patterns and reduced precipitation make it difficult for them to survive as farmers (Nature Inc., 2009). As these people migrate to cities, their infrastructure comes under increasing pressure to meet the growing population's needs. The costs associated with this are not only high in social and local monetary terms but they are internationally high in the agricultural sector as the genetic pool for potatoes and corn continues to diminish (Nature Inc., 2009). As international stakeholders become aware and witness the effects of global warming, pressure on businesses to become more environmentally sustainable will continue to be exerted, since they are perceived as major contributors to environmental degradation.

As the product system life cycle suggests, every business operating in a product's life cycle contributes in some way to its environmental impact. In order to improve a product's environmental performance, all participating businesses in the supply chain need to co-operate (Pesonen, 2001: 45) and they need to innovate and become more entrepreneurial in order to develop more effective ways of addressing sustainable marketing issues raised by concerned stakeholders. This case study demonstrates practically how Woolworths promotes corporate entrepreneurship as it seeks to continuously improve on its sustainable marketing performance.

Objectives

The primary objective of this study is to demonstrate that Woolworths' sustainable marketing strategies in South African promote corporate entrepreneurship. The secondary objectives for this study include:

1. Commenting on the importance of entrepreneurship in a South African context in order to lay the foundation for this study.
2. Proposing that the global warming phenomenon is making stakeholders more aware of the negative impact of human activity on the natural environment.
3. Discussing sustainable marketing and the product system life cycle to demonstrate how it can be used to identify areas within Woolworths' supply chain that have a negative impact on the natural environment.
4. Demonstrating the link between sustainable marketing and entrepreneurial activity in a South African retailing context.
5. Describing and linking the sustainable marketing practices of Woolworths to the promotion corporate entrepreneurship within its supply chain.

RESEARCH METHODOLOGY

An exploratory, qualitative case study approach was used in order

Table 1. Retailer's financial statistics, market share and number of stores.

Year	Turnover (billions of Rand)	Profit before tax (billions of Rand)	Market share clothing	Market share food	Total number of stores
2008	21.8	1.6	15.3	9.2	385
2009	19.3	1.1	14.5	8.5	410
2010	20.9	1.5	15.3	8.3	419
2011	22.6	2.3	15.4	On average for the year out-performed the market by 4%*	450

Source: Sustainability report, Good Business Journey 2011.

to provide insights and to practically demonstrate how Woolworths promotes corporate entrepreneurship through its implementation of sustainable marketing strategies. Woolworths was chosen for this study due to the fact that it operates Australia, New Zealand, South Africa and some selected countries in the Middle East (Annual Report, 2009), and it is well known in South Africa for its multipronged, innovative approach to profitable sustainable marketing practices (Table 1). As Table 1 demonstrates, Woolworths' turnover, profit before tax, and its food market share declined in 2009 due to the worldwide recession which had an impact on businesses in South Africa.

Woolworths was able to recover in 2011 due to strategies it implemented in 2009 and 2010 to counteract the negative impact of the recession on its turnover, profit before tax and market share. Although, Woolworths sustained losses in its financial and market indicators it continued to expand its retail outlets in the country from 2008 to 2011 (Table 1).

The methodology utilised in this study includes a review of current academic and popular literature on entrepreneurship and sustainable marketing, as well as an examination of the content of Woolworths (2008, 2009, 2010 and 2011) annual and sustainability reports as well as their press releases. In addition, comments made in the local and international mass media on global warming were also noted during 2008, 2009, 2010 and 2011. This methodology was used because it has been used in previous studies in a business context (Wright, 2011: 361 to 382).

Content analysis (Krippendorff, 2004; Krippendorff and Bock, 2009; Tengblad and Ohlsson, 2010: 657) was selected for this study because it was found that these documents contained a wealth of information that could benefit academics and practitioners who were interested in the variety of entrepreneurial outcomes that could be achieved when sustainable marketing strategies are implemented by Woolworths, a major South African retailer. The examples chosen for this case study do not reflect all the entrepreneurial activities that have been developed by Woolworths' supply chain in response to their sustainable marketing strategies and their subsequent implementation. Instead they reflect the diversity of entrepreneurial activity found in this retailer's documents.

Content Analysis for the purposes of this study is defined as "a research method that detects, records and analyses the presence of specified words or concepts in a sample of forms of communication" (Sproule, 2008: 115). In addition, personal e-mail communications with the Manager: The Good Business Journey at Woolworths' head office was carried out when clarity regarding certain issues in the study was needed. The Good Business Journey mentioned in Woolworths' documents refers to a comprehensive 5 year plan launched in 2007 that is designed to help society and the planet. This plan incorporates a series of targets and commitments that are designed to achieve the

following: accelerate transformation within Woolworths (which in a South African context refers to bringing the demographic profile Woolworths' employees in line with the demographic profile of the South African population); drive social development by helping to alleviate poverty; enhance.

Woolworths' environmental focus and address global warming and climate change issues (Press release, 1st June 2008). Each year, Woolworths' performance is measured relative to their 2012 targets (Annual Report, 2010: 15).

In order to identify the different sustainable marketing practices that Woolworths has implemented, a content analysis of this retailer's public communications was done using a thematic approach. The relevant content of this retailer's documentation was initially categorised as representing corporate entrepreneurship. This content was then coded using the upstream, midstream and downstream sector categories of the product life cycle. These codes were used to identify the different entrepreneurial suppliers within the Woolworths' supply chain that had implemented sustainable marketing strategies. The three product life cycle sectors used in this study are described as follows:

1. The upstream: consists of the raw material and material-component channel networks that incorporate all the associated manufacturers and industrial distributors that operate in this sector.
2. The mid-stream sector: includes Woolworths and all relevant manufacturers and wholesalers who supply it.
3. The downstream sector: is the consumer target market and is concerned with identifying the customer's needs and wants in order to design, develop and market products that satisfy the customer's requirements.
4. Concurrent operations in all sectors (waste, pollution and reverse waste channel networks): Every sector in the product system life cycle produces waste and pollutes the environment. Most of the waste that is produced by each sector tends to either end up in landfills or it is disposed in rivers, streams or the sea.

The reason why this sector is considered in the product system life cycle is to reduce or reuse these wastes in order to manufacture products that can be utilised by businesses or society (Fuller: 1999: 55). A Woolworths example that demonstrates this principle is the biodiesel mix that is used in the Woolworths fleet and is discussed in the upstream sector (Annual Sustainability Report, 2008: 41).

Fuller (1999: 50) states that the product system life cycle is a useful tool for the identification of all businesses, processes and resultant wastes that are involved in the supply chain; from the sourcing of raw materials needed to develop the product, right through to the actual consumption and disposal of that product by the customer. (It should however be noted that data provided in the annual reports, press and media releases only reflect those areas in the product system life cycle that have and are currently being

addressed by Woolworths and do not reflect the total system).

As this study is based on Woolworths' sustainable business practices and there is no manufacturing activity in the conventional sense of the term, this retailer is perceived as being both directly and indirectly involved in the taking, making and wasting. This is due to the fact that it uses resources that are ultimately derived from the natural environment to satisfy its customer's needs by existing, producing food in its in-store café areas, and by purchasing products from its supply chain which it makes available to its target market.

RESULTS AND DISCUSSION

Woolworths uses a multipronged approach to its implementation of sustainable marketing strategies. The different sustainable marketing strategies that impact on their supply chain's entrepreneurial activity are discussed subsequently using the appropriate product system life cycle sectors mentioned by Fuller (1999: 50). For the purposes of this study, it is stated that entrepreneurship is seen as developing and investing resources in something new, risk taking, and reaping the rewards for doing so (Hisrich et al., 2008: 8) while corporate entrepreneurship is seen as internal innovation or venturing, and the transformation of organisations through renewal of key ideas on which they are built (Ribeiro-Soriano and Urbano, 2009: 422).

Corporate entrepreneurship within the upstream sector (raw materials channels networks)

The businesses that operate in the upstream sector act as suppliers to the midstream sector discussed in below. Woolworths has a strong influence in this sector since it directly and indirectly provides a market for this sector's products and it acts as its channel captain. In order to implement its sustainable marketing strategies, Woolworths needs the assistance of all its supply chain members including its upstream sector. This is statement is substantiated in Woolworths' annual report (2010: 34) which states that:

"Experience has shown that most sustainability challenges cannot be solved by one company acting alone, and that support from suppliers and specialist non-profit organisations has been essential to the implementation of sustainable business practices."

Corporate entrepreneurship in this sector is found within the farming industry that supplies Woolworths with either conventionally or organically grown fresh produce such as fruit, vegetables, and meat. Fresh produce farmers that supply Woolworths' organic produce do not use artificial chemicals such as herbicides and pesticides in their farming and they have to comply with strict organic standards (Press release, 8th February 2008). These organic products are independently certified to reassure Woolworths' customers that their purchases are truly

organic (Press release, 1st February 2008).

Organic farming benefits the environment by preventing potentially harmful chemicals such as herbicides and pesticides from being used and released into the country's water supplies (Press release, 8th February 2008). Woolworths also works with conventional farmers to assist them in incorporating biological farming practices on their farms.

Biological farming uses compost and organic fertilisers instead of the conventional inorganic fertilizers that are commonly found on conventional farms. This practice allows farmers to eliminate the use of these potentially harmful water pollutants from entering the ecosystem while simultaneously improving the natural fertility of the soil. In addition, biological farming methods help to ensure that the customer gets safe produce that is not contaminated with harmful chemicals such as pesticides, herbicides and artificial growth enhancers (Press release, 8th February 2008, Press release, 3rd November 2009).

According to a statement made in Woolworth's annual report (2010: 34), consumer research has shown that "customers increasingly want to understand where their products come from, and to be certain that these are sourced ethically and without harm to the environment."

In relation to its environmental focus, Woolworths supports activities that aim to protect South Africa's biodiversity and accelerate water, soil, and environmental conservation. Suppliers who are willing to innovate and improve their performance in relation to their environmental impact are supported by Woolworths through access to a profitable market and reduced risk due to the suppliers' association with an established, well recognised, profitable retailer. Other benefits that accrue to suppliers include improved processes and enhanced efficiencies, innovation and a publicly enhanced social responsibility image, through the Eco- efficiency award that recognises suppliers who adopt environmentally sound farming methods (Press release, 29th September 2008).

According to Woolworths' public documentation, it has so far achieved the following in relation to its sustainable marketing practices:

1. It sources wood which is either recycled or is independently certified as coming from approved sustainable sources (Sustainability report, 2008: 7). This is important in the context of deforestation as mentioned by Schaefer (2005: 46).
2. Woolworths only sells fish that is independently certified as coming from sustainable sources (Sustainability report, 2008: 7). According to a press release dated 1st of March 2009, consumers are becoming more aware of the need to preserve seafood and they want to make sure that the seafood that they buy is responsibly and sustainably sourced.

Independent certification is important in this retailer's sustainable marketing strategy as it assures consumers

that the products being sold come from truly sustainable sources. Peattie and Crane (2006: 358) state that many companies "have become cautious about launching environmentally based communications campaigns for fear of being accused of "green washing".

1. Woolworths works with experts to reduce wildlife/human conflicts, for example reducing hive raiding by honey badgers (Sustainability report, 2008: 8) and introducing predator friendly meats by working with conservation and farmer groups to avoid the destruction of natural predators wandering into private farms (Sustainability report, 2008: 8). This retailer also facilitates predator friendly farming by offering farmers workshops that introduce them to this concept and to Woolworth's published guidelines titled "Predators on Livestock Farms: A Practical Manual for Non-Lethal, Holistic, Ecologically Acceptable Management" (Press release, 29th September 2008). In addition, Woolworths also assists with the introduction of Anatolian Sheepdogs to livestock farms in order to reduce predator attacks on both sheep and goats (Sustainability Report, 2008: 8).

2. Woolworths partners with its textile supply chain as well as governmental and non-governmental organisations to develop a comprehensive business model for organic cotton farming in South Africa (Sustainability report, 2008: 31). It achieves this by encouraging conventional cotton farmers and farmers from disadvantaged communities to become organic cotton producers by providing them with a profitable and enduring market for their output. In 2008, Woolworths as the world's this largest consumer of this product imported all its organic cotton (Press release 3rd January, 2008). By 2009, this retail chain was able to offer its customers a range of South African grown and manufactured 100% organic cotton t-shirts in its women's and menswear range (Annual Report, 2009: 37).

3. This retailer acknowledges and rewards suppliers who actively pursue more sustainable marketing strategies in order to "entrench the principles of sustainable development in its supply chain." This retail chain offers an eco efficiency award to suppliers who have shown significant progress in (1) reducing their use of natural resources namely water, energy or raw materials through improved production methods, (2) decreasing the amount of pollution in their effluents and (3) developing a programme that identifies, manages and monitors the business' impact on the natural environment (Press release, 1st July 2008).

The General Manager of the 2007 winner of the eco-efficiency award stated that "We are pleased to be associated with a retailer that supports an environmentally sustainable enterprise," while one of the panel judges stated that Woolworths "was enhancing the value of their product through their commitment to the environment." (Press release, 1st July, 2008).

Corporate entrepreneurship within the midstream sector (finished product channel networks)

Fuller (1999: 52) states that this sector in the product system life cycle is in the unique position to influence waste outcomes and eco-costs in all the other sectors since it interprets the target market's needs and develops the appropriate marketing mix to satisfy these needs. This is particularly true in the Woolworths case since it encourages the implementation of sustainable marketing strategies throughout its whole supply chain.

Woolworths participates in corporate entrepreneurship in this sector by firstly, recognising that global warming and climate change is an issue requiring urgent and extensive action on the part of all stakeholders. Secondly, it recognises that global warming and climate change poses both risk and opportunities for the business and thirdly, it participates in global warming mitigation by setting itself a greenhouse gas emission reduction target of 30% relative to its April 2007 emissions. The operational savings achieved in this exercise is reinvested in exploring additional sustainable business alternatives (Annual Sustainability Report, 2008: 40).

In order to achieve the foregoing target, Woolworths is doing the following:

1. It recycles used cooking oil from its in-store cafés to generate a 5% bio-diesel mix that is used in their Cape and Gauteng fleet. This activity results in a saving of 1500 tons of CO₂ per annum. This retailer also works with engine manufacturers to design engines that can take a 20% bio-diesel mix (Annual Sustainability Report, 2008: 41).

2. Woolworths introduces new technologies in its food stores which in 2008 reduced its electrical consumption by 30% (Annual Sustainability Report, 2008: 41). For example, in 2009 this retailer piloted a new refrigeration system which uses carbon dioxide, a naturally occurring molecule which is a weaker greenhouse gas than the conventional fluorohydrocarbons, as a refrigerant. This system also uses less electricity than conventional systems and it does not contribute to the depletion of the ozone layer. This new refrigeration system is to be the standard in all new store installations (Press release, 1st November, 2009).

Reducing the amount of electricity that is used by Woolworths is particularly significant in South Africa since most of the electricity that is generated comes from the burning of fossil fuels. These fuels release huge volumes of carbon dioxide, ash and sulphur into the atmosphere annually and are responsible for the greenhouse gas effect associated with global warming (Bond et al., 2007: 11). Similarly the burning of fossil fuels for transportation purposes also contributes to the accumulation of greenhouse gases in the earth's lower atmosphere. Consequently any business that reduces the amount of electricity and fuel that it consumes is saving both money

and contributing to a mitigation of the greenhouse gas effect. In order to become more efficient in terms of its distribution function, Woolworths has increased the number of distributable units per kilometre travelled and per litre of diesel consumed (Annual Sustainability Report, 2008: 41).

3. Woolworths has also built and designed an energy efficient distribution centre which produced savings of 9370 kilometres of delivery related travel per week (Annual Sustainability Report, 2008: 41). This centre located in the Midrand in South Africa, is designed so that it is able to store and use recycled, grey and rain water. This is significant in South Africa since this is a dry country, with an average rainfall of less than 500mm per annum. Other features that are incorporated in this distribution centre include the use of evaporative cooling technologies that enable Woolworths to reduce the amount of electricity consumed; elevated flood lights that reduce the amount of luminaries required; and recycled heat from the refrigeration plant that is distributed to the under floor heating system.

Corporate entrepreneurship within downstream sector (consumer target market)

This sector can be regarded as the marketplace and is concerned with identifying the customer's needs and wants in order design, develop and market products that satisfy the customer's requirements. An area of particular significance in this process is product design since this will determine what the supply chain takes, makes and wastes. In developing sustainable marketing strategies, the supply chain needs to be entrepreneurial in order to discover ways of limiting its impact on the environment.

According to a press release dated the 20th of October 2009, Woolworths' customers are concerned about the well being of the planet and they want to recycle their waste. To facilitate the recycling process for its customers, Woolworths has formed a partnership with a major national petroleum company and major packaging manufacturer and recycler. The petroleum company in this partnership provides the recycling facilities at its local service stations, the major packaging company collects the recycled packaging material from these stations and it installs the recycling facilities with the assistance of this retailer.

The results of a trial conducted at eight petrol stations in the greater Cape Town area revealed that consumers actively participated in this exercise and the volumes of recycled packaging material increased dramatically soon after the trial commenced. It is anticipated that in the future, these eight collection sites will give rise to 140 tons of recycled material per annum. According to a press release dated 24th of May 2010, a further 50 collection sites will be installed nationally at the petroleum company's petrol stations over the next six months.

Consumers in the Western Cape have indicated that they want to recycle and they are looking for convenient recycling solutions (Press release, 24th May, 2010).

Corporate entrepreneurship within concurrent operations in all sectors (waste, pollution and reverse waste channel network)

All the sectors in the product system life cycle produce waste and pollution as a result of their activities. The aim of this particular aspect of each sector is to reduce the amount of waste and pollution produced, either by improving the efficiency of all the operations involved in each of the sectors; reducing the amount of waste produced through better design and management; or by mitigating the pollution and waste by finding a value or input for this material. For example the cooking oil previously mentioned in this article is regarded as a waste product in the food production process but it is used to manufacture biodiesel that is consumed by Woolworths' fleet of trucks. A similar example that has already been identified in this article is that of recycling the plastic of obsolete trolleys' and shopping baskets in the manufacture of new trolleys and shopping baskets for Woolworths.

Like Wal-Mart, Woolworths is also focusing its attention on reducing the amount of packaging associated with its products and it incorporates recycled material in packaging. For example in 2009 this retailer saved over 320 tons of packaging in 1400 food lines (Sustainability Report, 2009: 42) and it had incorporated recycled packaging material in these same lines. In 2008, the sleeves of its readymade meals, dips, and other food products contained 80% recycled paper content (Sustainability Report, 2008: 36). By providing suppliers of recycled packaging with a market for its products, this retailer encourages further investment and research into innovative ways of utilising recycled packaging material. Recycling packaging material plays an important role in protecting the environment since less trees are removed from forests, less energy is required to produce packaging materials with recycled content, less landfill space is utilised and less pollutants enter the planet's ecosystems.

MANAGERIAL IMPLICATIONS

The marketing function in business is concerned with interpreting the target customer's needs, developing product concepts in response to those needs and making them available to the customer through the strategic application of the marketing mix. Marketing decisions that are centred on the marketing mix determine the resources that are taken from the natural environment and utilised to make and market those products to the

target market. The marketing decisions that are made also determine the resources/energy that is used and the waste that is generated and is responsible for the ecosystem's degradation and pollution (Fuller, 1999:3). The challenges that businesses therefore face is to develop product systems that imitate biological systems in that they enable eco-systems to be sustainable and/or they produce waste that is either an input for other production processes such as recycled packaging or they are biodegradable for example the corn starch window in Woolworths' sandwich pack is compostable and comes from independently certified sustainable sources (Sustainability Report, 2008: 36).

In order to monitor and control what the business takes, makes and wastes in relation to the environment, it needs to examine all the processes within its supply chain. This analysis will enable the business to come up with strategies that will allow it to reduce or eliminate its negative impact on the environment while meeting its target market's needs and still making a profit. A strategy that Woolworths utilises to become environmentally more sustainable is the promotion of corporate entrepreneurship within its supply chain. As was previously stated, supply chain members who collaborate and innovate in response to Woolworths' sustainable marketing efforts accrue certain benefits such as a profitable market for their products, reduce risk associated with the innovation, first mover advantage and the potential to offer sustainable products to other customers.

An interesting by-product of Woolworths' sustainable marketing practices, as mentioned previously in this study include cost savings which are invested in new, improved sustainable marketing options, improved operational efficiencies, brand differentiation and an enhanced brand image amongst its stakeholders. This finding in the context of sustainability and global warming is interesting since it demonstrates that as businesses implement more sustainable marketing strategies, they and their supply chain members to benefit positively from this activity.

LIMITATIONS OF THE STUDY

This case study focuses on only one of the major South African retailers and it is based primarily on what is stated in its 2008, 2009, 2010 and 2011 annual reports and media portfolio releases. These two data sources were found to be comprehensive and detailed enough to give a good indication of what this retail chain has and is doing in terms of its sustainable marketing activities. There was personal e-mail communications with this retailer's Manager: The Good Business Journey but only when there was an issue that needed to be clarified. The public documents provided by this retailer are detailed, explicit and easily understood.

RECOMMENDATIONS FOR FUTURE RESEARCH

This study seeks to demonstrate how one of the four major retailers in South Africa promotes corporate entrepreneurship within its supply chain by implementing sustainable marketing strategies. As this retailer appears to be channel leader, it is able to influence and motivate members of its supply chain to develop more sustainable business practices. Further possible research in this area could be to examine the different relationships and networks that have developed within the supply chain to facilitate corporate entrepreneurial development in relation to sustainable marketing practices. Future research in this area could also include other industries within the South African context.

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