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**“How can Sustainable Management be leveraged for Corporate Social Responsibility?”**

**Executive Summary**

Within the resource orientated perspective of sustainable management is discussed with regard to how it can be leveraged for Corporate Social Responsibility. This focus has lead to the environmental aspect of the triple bottom line being highlighted. LCA’s were found to contribute to the ethical and economic aspects of Carrols pyramid. This due to the guidance it offers, and the potential compensation given by ethically minded consumers. It was also found that in order to meet the levels of the pyramid a product’s components must be heavily researched and long term effects assessed- as well as designing it in a way that I can be easily dismantled. This ethical mentality should be carried through to the process design where waste should be seriously considered. Without this consideration the legal, ethical and economic levels cannot be met. Finally by having a life cycle approach a firm could not just met the ethical level but also the economic level of the pyramid.

**Main Body**

The following essay will discuss the resource-orientated perspective of sustainable management and how it can be leveraged for the contemporary view of corporate social responsibility (CSR). To do this, different aspects of sustainability management will be analysed, alongside theories of CSR.

Due to the depletion of natural resources and impacts of business operations on society and the environment, a need has been identified for impact reduction and the implementation of more sustainable methods (moving away from finite resources such as fossil fuels) (Kalakul *et al*., 2014, P98). It is not argued that economic motives should be discarded but instead balanced (Bansel, Roth, 2000, P 724). Sustainability management as defined by Elkington is the implementation of practices to meet the triple bottom line, which is a concept “which simultaneously considers and balances, economic, environmental and social issues” (Gimenez, Sierra, Rodon, 2012). The resource-orientated view (ROV) of sustainability management focuses on resource efficiency and sustainability (the impacts of resource use on the environment), and harnessing of this to gain competitive advantage (Guang Shi et al., 2012). Due to the focus on the ROV, the main aspect of triple bottom line focused on here will be the environmental aspect. The sustainable management practices that will be discussed are: life-cycle-assessment (LCA), sustainable process and product design, and the cradle-to-cradle mentality.

The Contemporary view of CSR as described by Crane and Matten, is where “CSR is built in”, with the company working proactively to make sure that its CSR values are implemented in everyday operations (Crane, Matten, 2016, P55). Linked with this view is the concept of Carroll’s CSR Pyramid and Freeman’s stakeholder theory. Carroll’s Pyramid has four levels: “Economic Responsibilities (required by society), Legal Responsibilities (required by society), Ethical Responsibilities (expected by society) and finally Philanthropic Responsibilities (desired by society)” (Carroll, Athens, 2016). Freeman’s theory describes how an organisation does not just have an obligation to shareholders, as Friedman suggested, but to all stakeholders, from employees to the local community (Freeman *et al.* 2004). The following essay will focus on the economic and ethical levels of the CSR pyramid, but reference will be made to legal level and stakeholder theory.

An LCA should be conducted when looking to take a prototype into mass production. This is because it allows definition of elements of product and process design, which are having the greatest negative impact on the environment. An LCA “is a tool that helps to quantify the environmental impacts throughout the…product lifecycle” (Kalakul *et al*., 2014, P98). This means that it is not just resources utilised in the product’s manufacture that are being considered, but also resources that will be consumed by the product through use. There are four main stages when conducting an LCA: “Goal and scope definition”, “Life Cycle Inventory”, “ Life Cycle Impact assessment” and “interpretation” (Kalakul *et al*., 2014, P99) After carrying out an LCA, a firm using sustainable management techniques will look to change aspects of the product that are having the greatest negative environmental impacts. This may mean changing the type of material used, or assembly methods (it may be hard to dismantle, and therefore recycle). The act of carrying out the LCA itself has no direct effect on CSR, but does when used to guide the way product and process are designed (specifically to minimise the environmental impacts). The ethical level of Carroll’s CSR pyramid will be met because the firm will be consciously decreasing its environmental impacts in line with societal views. Furthermore it can also enhance the legal level; as stated by the 2008 Climate Change act, all businesses must report their carbon emissions to the government (CCC, 2016), allowing this to occur with ease.

The LCA can also be used to conduct a comparison (Lewandowska, Foltynowicz, 2004). For example a firm can compare the data of the product, to an already successful, sustainable product. Therefore the firm can see if the market standard has been met with regard to environmental considerations in design of the product and process (it is important that the standard is maintained because without it the firm will be perceived out of sync with market expectations). As will be discussed later, a major consumer consideration in the purchase of a product is its environmental impacts. Therefore if the product that is brought to the market is not in line with the market standard, product sales are likely to suffer. Therefore by making sure that the environmental impacts are at the market standard, the economic level of Carroll’s pyramid will be enhanced. This is because a product that is in line with the market standards is more preferable to consumers, as it would be meeting their perceived needs.

Another aspect, product design, is the conception of the product, for example, its features; it will define the processes and resources needed for the product to be made and what will be needed in the future. In traditional product design the aim is to “achieve high quality at low cost”, with environmental duties being carried out in other stages, for example using philanthropy (Vinodh, Rathod, 2010, P833). When moving towards being sustainable a firm must give considerations for the environment throughout operations (the contemporary view of CSR).

The resource-orientated view, as discussed, deals with impacts caused by the use of natural resources on the environment. As well as immediate environmental effects, due to society there can also be future impacts. In the 1960’s there was much research into new materials, as there was a drive to increase efficiency. As a result there was a lack of regard for potential environmental impacts. An example of this would be the natural fibrous rock asbestos, used for insulation due to its high efficiency and low cost. Asbestos has now been shown to contain harmful chemicals that cause Mesothelioma (Mesothelioma Center, 2016). The issue occurred due to insufficient research into the material and lack of short-term symptoms. Due to the adverse health effects, asbestos is actively disposed of by professionals. Asbestos cannot be processed in the same way as general waste; it cannot be burnt as this would lead to the fibres polluting the air (Hales Holdings, 2016). Due to this it must be put into landfill in a separate area to other waste. The removal of asbestos has had a high environmental cost due to the infrastructure that has been in place to remove it. For this reason before choosing materials extensive research should be conducted, specifically looking at the health effects, and the issues this raises with disposal (certain aspects of this could be looked at during an LCA). By doing this, the potential impact of the product (due to its resources) will be decreased. This approach will lead to the ethical aspect of Carroll’s pyramid being met. This is because the firm would be actively trying to produce a product, which limits its lasting impact on the environment. It would also enhance the economic level because additional infrastructure would not be required.

In the UK “50% of consumers have environmental concerns… adding in environmental requirements into a product’s design is an essential issue” (Younesi, Rogonian, 2015). This suggests that in order to enhance CSR the environment must be considered when designing a product. A company using sustainable management techniques will consider the environmental impacts of the product’s design throughout the life cycle of resources used; this is called “eco-design” (Sakao, 2007). When designing a product in a sustainable way it should meet (amongst others): “harmless to the living environment”, “low energy consumption”, “easy to process wastes from production” and “easy to disassemble” (Sakao, 2007). Using resources that comply with the former, and designing the product in a way which its down stream effects do not diverge from the original values, will lead to CSR being enhanced. An example of this is Firm A. Their motto is “reducing, reusing and recycling” (Firm A, 2016). In the planning stages they make sure that all of their products are energy efficient (reducing on going environmental impacts) and made to be recycled (easy to dismantle). Furthermore they conduct an LCA for every product. This allows them to set a benchmark for their next project, and identify areas where there is too large an impact. By doing this the stakeholder view has been applied as it takes into account the down stream effects (the amount of resources the consumer must use to power the product). Firm A have also enhanced the ethical level of Carroll’s Pyramid, because environmental impacts have been purposefully limited; built to be recycled, reduced energy consumption (actions not dictated by law).

When implementing environmental consideration into the product design, it generally means that the cost increases (Gimenez, Sierra, Rodon, 2012). For example Firm B had to create the infrastructure needed for its suppliers to be able to produce the cotton, used in their products, in a sustainable way (Aspen Idea Festival, 2016, 9:00-12:00). Esfahbodi, Zhang and Watson argue that in the short term there are high costs involved, as there must be investment in “environmental initiatives”, but in the long term economic aspects will be enhanced (Esfahbodi, Zhang, Watson, 2016, P 362). Gimenez, et, al put forward that the economic position of the firm Is enhanced in the long run because greater environmental consideration in product design can lead to increased social reputation and therefore a premium can be charged. Suggesting that there is a business case for sustainability management, as it can increase sales and profit margins as well as the reputation of the brand (Epstein, Roy, 2001). This shows that by increasing environmental consideration in product design, economic performance can be enhanced (but not immediately). Although this will only occur if the correct marketing is used to support the actions, for example eco labelling, and full transparency of information. If the consumer is not aware that the product is considerate of the environment then there will be no economic benefit (Lemke, Luzio, 2015 P 621).

The penultimate aspect is process design, which can be defined as “the overall configuration that determines the sequence of activities and the flow of transformed resources” (Slack, etal, 2013, P708). With regards to the ROV of sustainable management it is the wastage, and energy consumption of the process that must be considered. When the former are minimised from the planning phase to inception, the process can be considered as having an “eco-design” (Ouattara et al, 2011). Process waste comes in many forms: carbon emissions, water and other bi-products of the process. Transportation between operations is one of the main areas where resources are not used efficiently (not limiting impacts). For example if trucks are only being filled to half capacity, it means that twice the amount of trucks are needed and therefore twice the amount of fuel. If a system is put in place to monitor stock levels, predictions can be made for when stock will run out limiting the need for ineffective deliveries (Bergenwall, etal, 2012). With regard to energy, there are both relatively complex and simple ways to reduce energy consumption. This is primarily done through the equipment being used and the premises. For example Institution A reduces energy consumption by having eco lighting, which is movement sensitive, meaning that lights are only used when needed. There is a high short-term cost with regards to the cost of the equipment, but there will be long-term economic (reduced bills) and environmental benefits. The most important thing for any firm using sustainable management is the consideration of wastage and energy use, not just from their process, but also the waste up and down stream. This is because although one stage’s process may be using sustainable energy, others may not. For example the timepiece of a watch may be made of a sustainable mineral through a sustainable manufacturing process, but the strap may be made using virgin resource intensive processes, making the overall product unsustainable, therefore it cannot be marketed as sustainable (reducing the economic benefits).

 A company that has an eco design in relation to their process is Firm C (Slack, Brandon-Jones, Johnston, 2013, P101). Firm C are a producer of cleaning products; they have implemented both waste decreasing and energy reducing aspects into their process. To limit energy consumption in the process Firm C operate in a “green factory”. It is built out of sustainable materials and is completely run on sustainable energy from turbines, solar panels and tidal generators. To reduce energy consumption the building has also been designed in a way that the maximum amount of natural light can be utilised. Therefore there is less need for artificial lighting reducing the impact on the environment. The main way Firm C reduce wastage is through their water consumption. The machines need no water to clean them. The company has invented an absorbent material that can be pushed through the machine to clean it. This does not just mean that less water is used, but it also means that water (with the product) is not pumped into the water system (another area where Firm C impact on the environment has been reduced).

By designing a process that decreases wastage and energy consumption, multiple aspects of CSR are enhanced. Firstly the ethical layer of Carroll’s pyramid, because there will be a smaller impact on the environment. The reduced impact on the environment will also mean that stakeholders such as the wider community are being taken into account, due to a smaller amount of pollutants entering the wider environment. Finally, as seen from, above some of the methods decrease the amount of energy being used, therefore reducing the cost of the process. Thus the economic aspect of Carroll’s pyramid would be enhanced. This is another example of where there is a business case for sustainability, because it results in reduced costs (Epstein, Roy, 2001).

Throughout this essay the importance of maintaining sustainability management through all operations has been emphasised. Stating that a company cannot claim that it is producing in a sustainable manner unless all upstream and down stream operations have a sustainable design. This is called having a “life cycle approach” (Llorach-Massana, Farreny, Oliver-Sola, 2015 P 243). Saying this the discussion so far has ended before considering the life of the materials used to create the product, after the product has fulfilled its purpose. A theory that considers the materials is Cradle to Cradle. The cradle-to-cradle (C2C) approach is where used products are purposefully turned into a resource. At the beginning of the essay it was stipulated that one of the main reasons for sustainable management was brought on by the scarcity of finite resources, Mc Donough and Braungart the theorists of C2C argue that C2C allows for a closed cycle which means that all inputs can be up cycled reducing the need for virgin resources (Llorach-Massana, Farreny, Oliver-Sola, 2015 P244). A company that has implemented a version of the approach is Firm D, which opened “the world’s largest bottle to bottle plant, which converts bottles into plastic chips (Aspen Idea Festival, 2016, 5:00- 6:00). Firm D do not have a straight cradle-to-cradle approach, they also sell the chips to other companies. An example is Firm B, which is a clothes manufacturer. Firm B use the plastic chips in their polyester fleece products. The C2C approach increases the efficiency of a resource (it is used over and over again, never being made redundant).

 The C2C approach primarily enhances two aspects of CSR: the economic and environmental levels of Carroll’s pyramid. Environmental, because resources are in a closed cycle so are never disposed of, therefore less virgin resources need to be harvested. Saying this it is important that the actions needed to recycle/repurpose the resource do not have a greater environmental impact than if it was put into landfill. The economic level of Carroll’s pyramid is enhanced for two reasons. Firstly Firm D controls it’s recycling centres, meaning that it supplies itself. Therefore there is less uncertainty with regard to price of resources because they control the price. Secondly as can be seen from the example of Firm D, the recycled resource can be sold to other companies, generating income.

To conclude it is clear that by employing environmentally (ROV) sustainable management techniques CSR can be enhanced. The main areas that are enhanced are the ethical and economic levels of the CSR pyramid and the stakeholder theory. The stakeholder view and the ethical level of Carroll’s pyramid (when the actions are greater than that required by law) is enhanced through reduced impacts on the environment (enabled by the use of the sustainable techniques), for example by having a process and product that requires less virgin resources, whether through using recycled materials or having a smaller reliance on fossil fuels, environmental impacts are decreased. Saying this, as discussed within C2C it is important that the resources being used to recycle resources and reduce impacts are not greater than the environmental impacts of putting the resources in landfill. If this is the case then more research has to be conducted before the use of that technique is sustainable.

The economic level is enhanced in two ways: firstly by the cost savings incurred by having the infrastructure in place to reduce energy consumption, for example the eco lighting in the university. Due to the need for infrastructure to achieve these savings, as discussed in the short run, there will be a need for a large economic cost, but in the long run this is reimbursed with dividends. Secondly if the use of environmentally friendly techniques are conveyed to consumers through the use of eco labelling, it can lead to more consumers purchasing the product because as discussed 50% of consumers see environmental concerns as an essential issue. Therefore if no considerations are made then a products target market is greatly reduced (less potential revenue). Furthermore by marketing a product as environmentally sustainable a premium can be charged. The issue with this is that in order for a product to be seen as environmentally sustainable, all stages from design to retailing must have environmental considerations. As discussed this is difficult to guarantee.

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