Utilising a consumer-focused approach to influence sustainable consumption.

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Introduction

Changing consumer demands, forthcoming legislation and an increase in pressure from stakeholders has encouraged companies to integrate sustainability principles into their business and marketing strategies (Sarkis, Gonzalez-Torre & Adenso-Diaz 2010). As a result, many improvements have been achieved with respect to sustainable consumption and production. However, there still remains the need to address the social and environmental impacts associated with the purchasing, use and end of life of products and services (Mont, Bleischwitz 2007).

This paper presents preliminary findings from doctoral research aiming to build a model supported by user-centred design (UCD) that can guide companies to influence sustainable consumption (SC). The paper will first describe the role of industry in influencing SC and argue that to motivate consumers to purchase, use and dispose of products more sustainably; decisions must be made at a strategic level so that actions towards SC are incorporated throughout the business, not just within product design and marketing. The authors will explain how the research drew on the principles of user-centred design (UCD), but developed a more holistic perspective to create a self-assessment and implementation model that can increase opportunities for companies to leverage SC at a strategic level. The findings of empirical research, which formed the framework theory and led to the development of the BCDS model, will be discussed. Then the BCDS model and accompanying Sustainable Consumption Index (SCI), which measures the levels of SC that a company can achieve through selecting and implementing different consumer-focused strategies devised from this doctoral research, will be introduced. Finally, the paper will conclude with an outline of future work to be conducted.

The Role of Business to Leverage Sustainable Consumption

Industry can play a leadership role in fostering more sustainable levels and patterns of consumption (Málovics, Csigéne & Kraus 2008). However, moving towards SC will require setting in place new business models that can influence people to consume more sustainably (Charter 2006). Furthermore, the benefits afforded by influencing consumer's behaviour must be clearly articulated and understood if companies are to engage in this matter (WBCSD 2008).

Recognition of the environmental and social impacts of consumption resulting from product use and disposal has driven fast moving consumer goods (FMCG) corporations, such as Unilever and Procter and Gamble (P&G), to use their power to influence consumer's behaviour to deliver greater health and well being benefits (Early 2011). Both companies have ambitious plans to reduce their environmental and social impacts but at the same time grow their businesses (Early 2011). They understand, at a strategic level, that this challenge will not just involve decoupling business growth from social and environmental impacts to ensure better quality of life, but will also comprise influencing consumer's behaviour and engaging with different stakeholders (Early 2011).

In order to positively influence SC, companies must develop an in-depth understanding of the complex factors which govern consumer behaviour, including: aspirations, habits, needs, lifestyles, and the context in which goods and services are delivered (Seyfang 2009; Mont, Plepys 2008). Thus, companies' main focus should be on the final need, demand, or function of consumers to design a mix of educational, marketing, and technological interventions to leverage SC (WBCSD 2008). Such interventions will be designed according to specific goals, which should fit the strategic interests of the company. E.g. Unilever's goals are improving health and well being, reducing environmental impacts, and enhancing livelihoods. Interventions can also enable disruptive changes by encouraging consumers to reduce consumption of goods in favour of services through innovating in the business model, product, or service with the overall aim of achieving systemic changes (Nilstad, Boks 2008). For interventions to be effective, it will be necessary to communicate the company goals throughout the workforce and work in partnership with companies, governments, consumers and other stakeholders externally to ensure actions towards SC are successfully implemented (WBCSD 2008).

Businesses are central to the creation of technology and innovation, which have an important role to play in moving towards SC (Michaelis 2003). Innovation and Research and Development (R&D) have a strong link to design because it is considered to be a creative and innovative discipline responsible for delivering solutions (Verganti 2009). Design has an important role to play towards sustainable consumption and production (Tischner, Charter 2001). To achieve more sustainable consumption through design it is essential to have a major focus on the consumer and their needs (Bharma, Lilley & Tang 2008). As such, design has been related to the ability to understand users through different design approaches under the umbrella of UCD, e.g. interaction design, experience design, user interface design, inclusive design and human-centred design, amongst others (Moggridge 2007; Nilstad, Boks 2008; IDEO 2009). Though not all of these approaches are necessarily based on social values or aim to contribute towards sustainability, they have recently been seen as viable approaches to leverage SC because they focus on influencing people and their context (Nilstad, Boks 2008; Haines, Mitchell & Mallaband 2010; Wever, Van Kuijk & Boks 2008). Thus, the research was built upon user-centred design theory as it is considered as an appropriate tool for communicating consumers' wants, needs, habits, practices and behaviours to higher management (Lofthouse, Lilley 2006), but developed to enable the consideration of a more holistic and strategic consumer focused-approach.

Building the Framework Theory

The doctoral research is comprised of three phases *(Figure 1)*. This paper will report on the first phase of research - *Phase 1: Theory building* - and its findings. Phase 1 is comprised of an extensive literature review, which informed two consecutive studies: *Study 1*, which consisted of ten in-depth semi-structured interviews and a document analysis, and *Study 2* which involved a Focus Group with a UCD consultancy.
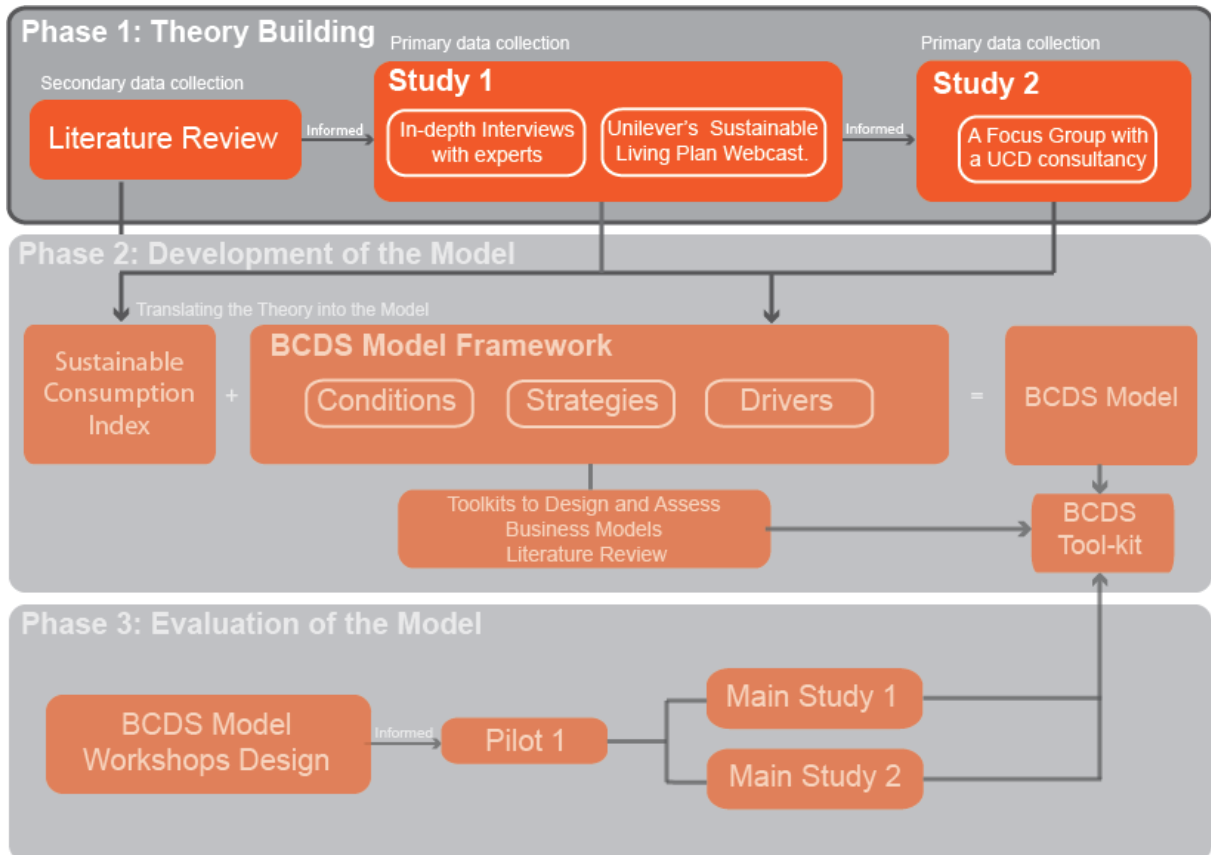
Figure 1 Three phases of the doctoral research emphasising Phase 1: Theory Building

The interviews conducted in *Study 1* were carried out with five UCD experts, two experts related to the strategic view of design and sustainability, one expert related to Design for Sustainable Behaviour (DfSB), and two consultants on sustainable business strategy. The aims of the interviews were to explore how companies can adopt sustainability into their business strategy, how design and innovation is seen at the strategic level of a company and how applying the principles of UCD can help companies to leverage SC (Moreno, Lofthouse & Lilley 2011). A document analysis was carried out to complement the interviews. The research studied a section of questions and answers related to SC from the general public posted on an on-line webcast during the Unilever Sustainable Living Plan event on November 15th, 2010. The aim of the document analysis was to report on where companies such as Unilever stand regarding the path towards SC (Moreno, Lofthouse & Lilley 2011). The focus group in *Study 2* was conducted with six participants from a UCD consultancy to explore strategies and attributes of UCD principles to influence SC.

The findings from *Study 1* and *2* were coded and clustered separately according to the three different types of data gathering. In *Study 1*, the findings from the interviews were complemented by the document analysis, thus both findings were compared to inform *Study 2*. The findings from the focus group were then triangulated within the comparison previously made in *Study 1*. The cross triangulation of findings resulted in a series of conditions, UCD strategies and drivers that helped to determine three key concepts: communication, collaboration and innovation, which formed the framework theory upon which the BCDS model was built.

Translating the Framework Theory into the BCDS Model

This section will first describe how the framework is based on a more holistic and strategic consumer focused approach. This approach was adopted as the research indicated that thinking systemically allows companies to understand the system in which consumption takes place; to foresee problems, barriers, and impacts that will help companies to prioritize sustainability actions, and implement strategies to develop feasible solutions. Then, it will describe the main findings of the research and how these findings relate to the three key concepts of communication, collaboration and innovation. Finally this section will explain how these three key concepts formed the framework theory, which led to the development of the BCDS model.

Developing a consumer focused approach

Current approaches towards influencing sustainable consumption have focused on consumer behaviour through designing frameworks to inform policy makers or implementing strategies within product design and marketing without having an integrated framework that takes into account a business perspective. Thus, the aim of this research was to enable industry to develop a more holistic perspective towards leveraging SC by identifying and accounting for conditions, user-centred design (UCD) strategies and drivers.

Conditions

To understand sustainability at the top level of a company and to understand design as a strategic tool to leverage SC, three conditions *(Table 1)* were identified (Moreno, Lofthouse & Lilley 2011*)*. The conditions were developed according to the three key concepts: communication, collaboration and innovation, obtained through a comparison of the research findings. These conditions will help companies to set targets consummate with their business strategy and vision, and define the operational structures and mechanisms to leverage SC.

Table 1 Description of the three conditions for a company to leverage SC

Three conditions for a company to leverage SC
Condition Related to Communication
Design and sustainability have to be embedded at the strategic level of a company, to enable the company to find and communicate business benefits and opportunities.
Condition Related to Collaboration
By analysing and prioritising sustainability actions, companies will be able to align sustainability with their company's ambitions. Then, through collaborating internally and externally, they will be able to analyse which consumption phases need to be addressed, and ultimately understand which factors motivate consumers.
Condition Related to Innovation
By thinking of Design as an intellectual process, companies will be able to facilitate design thinking through the company's own values, and thus enhance innovation.

User-centred Design (UCD) Strategies

The user-centred design strategies found can be divided into three sets:

1. Strategies to leverage SC,
2. Strategies to understand sustainability at the top level of the company,
3. Strategies to understand design as a strategic tool to leverage SC.

1. **Strategies to leverage SC:** two key strategies were found in this set: "Bring systemic changes by developing the market" and "having an in-depth understanding of consumers' aspirations and behaviours". The strategy "Bring systemic changes by developing the market" is connected to the three concepts. *Table 2* describes this relationship and further sub-strategies for each concept.

Table 2 Description of the three key concepts found under the strategy "Bringing systemic changes by developing the market"

"Bringing systemic changes by developing the market"	
Concept	**Strategies**
Communication: To develop the market companies will need to communicate with consumers to find consumer's motivations, as sustainability tends not to be consumers primary motivation.	• Empower consumers • Communicating through the company's brands • Providing confidence to the consumer • Having an effective behaviour change message that: · Provides information which is accurate, simple and straightforward · Creates awareness so consumers can make more informed decisions, · Triggers behavioural change of consumers,

	· Uses different communication channels to rich the user, · Enables partnerships with collaborators to deliver efficient educational programmes and campaigns, Communicates sustainable attributes of the product/service, to make them interesting to the consumer · Positively motivates consumers, and · Considers economic and social costs to the consumer • Assess the effectiveness of campaigns by having following up programmes • Looking into actual trends in consumer markets"
Collaboration: Companies are not in isolation, thus they need to collaborate with consumers, other stakeholders -e.g. governments, other companies and NGOs- and within multi-disciplinary teams in order to leverage SC	• By involving different stakeholders to develop a project • By working in partnerships in roundtables and boards e.g. Rain Forest Alliance • By influencing other actors through promoting awareness and optimism • By having common objectives and listening to different views
Innovation: To develop the market it will be necessary to influence consumers' behaviour through innovating in the value proposition. Thus different levels of innovation will be needed according to what the company wants to achieve	• Investing in R&D/design and innovation • Through visible/invisible interventions • Through technological interventions •By developing interactions between products/services and the consumer • By developing optimal product/services and testing them with the consumer to get feedback • Through creating consumers' experiences •By seeing products/services as problem solvers

The strategy "having in-depth understanding of consumers' aspirations and behaviours" relates to collaboration and innovation. It recognizes the importance of involving consumers and other stakeholders in the design process to gain more knowledge about the consumer that will help to identify consumers' motivations, perceptions and their overall experiences to design optimal products/services/business models. Having an in-depth understanding of consumers will help in assessing the strategic options that a company has to leverage SC, as consumers will not change their consumption patterns if the product/service/business model does not deliver the performance, price and convenience that they are used to.

2. **Strategies to understand sustainability at the top level of a company:** The key strategy found by the interviewees in this set was "developing new business models" as sustainability can offer business opportunities. As described in *Table 3* this strategy is based on the three key concepts of communication, collaboration and innovation.

Table 3 Description of the three key concepts to develop new business models

Developing New Business Models
Communication Communicate the value of sustainability throughout the company so there is a common understanding within the management and the operations.
Collaboration Collaborate with stakeholders to spread the value of sustainability.
Innovation Innovate by looking at key functions of the product/service to understand possible sustainability impacts and thus find areas of opportunity.

3. **Strategies to understand design as a strategic tool to leverage SC:** The key strategy found was "Applying lateral and creative thinking" as design is seen as a facilitator. As seen in *Table 4*, this strategy relates to the three main concepts.

Table 4 Description of the three key concepts to apply lateral and creative thinking

Applying lateral and creative thinking
Communication Communicate the value of design by inspiring and challenging decision makers and other people inside/outside the company.
Collaboration Collaborate in multi-disciplinary teams to spread the value of design.
Innovation Innovate to find a correlation between what consumers want and what the company wants to achieve.

Drivers

The findings revealed that similar drivers to those that influence companies to integrate sustainability measures inside a company will influence companies to start thinking about implementing mechanisms to influence SC. The research classified these drivers according to the three main concepts – communication, collaboration, and innovation - as illustrated in *Table 5*.

Table 5 Drivers for companies to leverage SC

Drivers for a company to leverage SC
Drivers Related to Communication
• Gaining business benefits through an increase of market demand and thus an increase in profits, as communicating with consumers companies realized that they are asking for more sustainable businesses.
• Thinking about business responsibility through corporate social responsibility campaigns.
Drivers Related to Collaboration
• Influencing other companies: through the supply chain or just because companies see the benefit of doing it.
• Upcoming legislation: companies will have to collaborate with policy makers to create mechanisms that target consumers and companies to leverage SC.
Drivers Related to Innovation
• Finding relevant issues for a company that makes them think about leveraging SC e.g. Through a Life Cycle Assessment (LCA), a company see that the biggest environmental impact of certain product is in the use stage, thus for them it will be reasonable to innovate in their products and communication campaigns in order to influence SC.
• Minimizing environmental impacts and economic costs through innovating in the business model.

Transition of the Framework Theory into the BCDS model criteria

The set of conditions, UCD strategies and drivers presented above are related through three key concepts: communication, collaboration, and innovation, which formed the framework theory. Therefore, in order for a company to bring systemic changes to leverage sustainable consumption it will be necessary to assess its abilities to innovate, communicate and collaborate, and identify strengths and weaknesses of its aptitude to do so. As such, the research defined four factors - business model, consumer, design, and sustainability - that were considered as important to evaluate according to the relevant criteria found that relates to the three main concepts (*see Figure 2*).
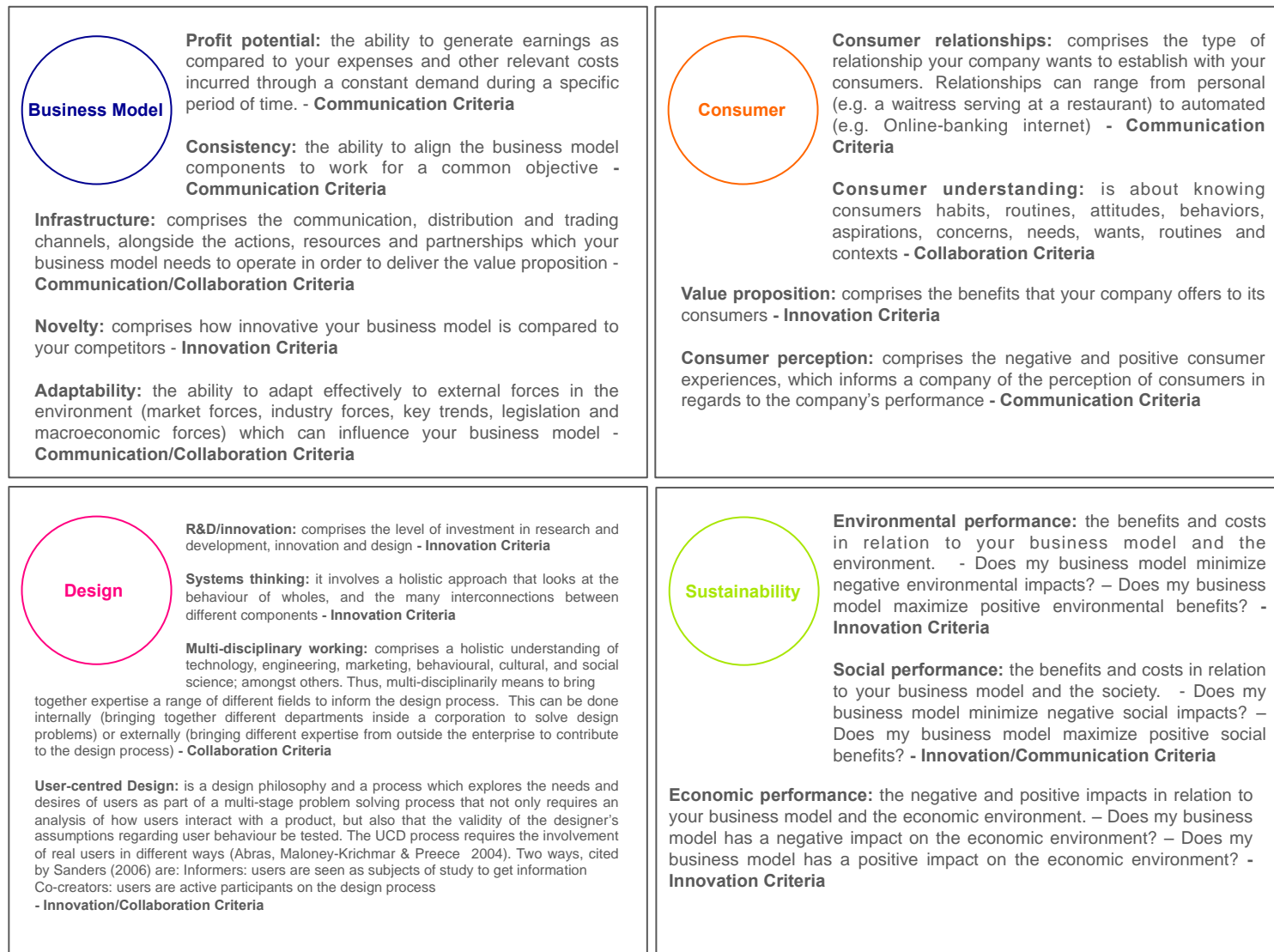
Business Model

Profit potential: the ability to generate earnings as compared to your expenses and other relevant costs incurred through a constant demand during a specific period of time. - **Communication Criteria**

Consistency: the ability to align the business model components to work for a common objective - **Communication Criteria**

Infrastructure: comprises the communication, distribution and trading channels, alongside the actions, resources and partnerships which your business model needs to operate in order to deliver the value proposition - **Communication/Collaboration Criteria**

Novelty: comprises how innovative your business model is compared to your competitors - **Innovation Criteria**

Adaptability: the ability to adapt effectively to external forces in the environment (market forces, industry forces, key trends, legislation and macroeconomic forces) which can influence your business model - **Communication/Collaboration Criteria**

Consumer

Consumer relationships: comprises the type of relationship your company wants to establish with your consumers. Relationships can range from personal (e.g. a waitress serving at a restaurant) to automated (e.g. Online-banking internet) **- Communication Criteria**

Consumer understanding: is about knowing consumers habits, routines, attitudes, behaviors, aspirations, concerns, needs, wants, routines and contexts **- Collaboration Criteria**

Value proposition: comprises the benefits that your company offers to its consumers **- Innovation Criteria**

Consumer perception: comprises the negative and positive consumer experiences, which informs a company of the perception of consumers in regards to the company's performance **- Communication Criteria**

Design

R&D/innovation: comprises the level of investment in research and development, innovation and design **- Innovation Criteria**

Systems thinking: it involves a holistic approach that looks at the behaviour of wholes, and the many interconnections between different components **- Innovation Criteria**

Multi-disciplinary working: comprises a holistic understanding of technology, engineering, marketing, behavioural, cultural, and social science; amongst others. Thus, multi-disciplinarily means to bring together expertise a range of different fields to inform the design process. This can be done internally (bringing together different departments inside a corporation to solve design problems) or externally (bringing different expertise from outside the enterprise to contribute to the design process) **- Collaboration Criteria**

User-centred Design: is a design philosophy and a process which explores the needs and desires of users as part of a multi-stage problem solving process that not only requires an analysis of how users interact with a product, but also that the validity of the designer's assumptions regarding user behaviour be tested. The UCD process requires the involvement of real users in different ways (Abras, Maloney-Krichmar & Preece 2004). Two ways, cited by Sanders (2006) are: Informers: users are seen as subjects of study to get information Co-creators: users are active participants on the design process **- Innovation/Collaboration Criteria**

Sustainability

Environmental performance: the benefits and costs in relation to your business model and the environment. - Does my business model minimize negative environmental impacts? – Does my business model maximize positive environmental benefits? **- Innovation Criteria**

Social performance: the benefits and costs in relation to your business model and the society. - Does my business model minimize negative social impacts? – Does my business model maximize positive social benefits? **- Innovation/Communication Criteria**

Economic performance: the negative and positive impacts in relation to your business model and the economic environment. – Does my business model has a negative impact on the economic environment? – Does my business model has a positive impact on the economic environment? **- Innovation Criteria**

Figure 2 Framework theory translated into four factors and their relevant criteria to be assessed

Consumer focused-strategies

Twelve consumer-focused strategies were devised from the conditions, UCD strategies, and drivers, and categorized according to the three main concepts. An example of each type of strategy, drawn from the twelve developed, is depicted in *Figure 3*. Through identifying strengths and weaknesses of companies' abilities to communicate, collaborate and innovate, businesses will be able to select appropriate consumer-focused strategies to put into place actions towards leveraging SC.
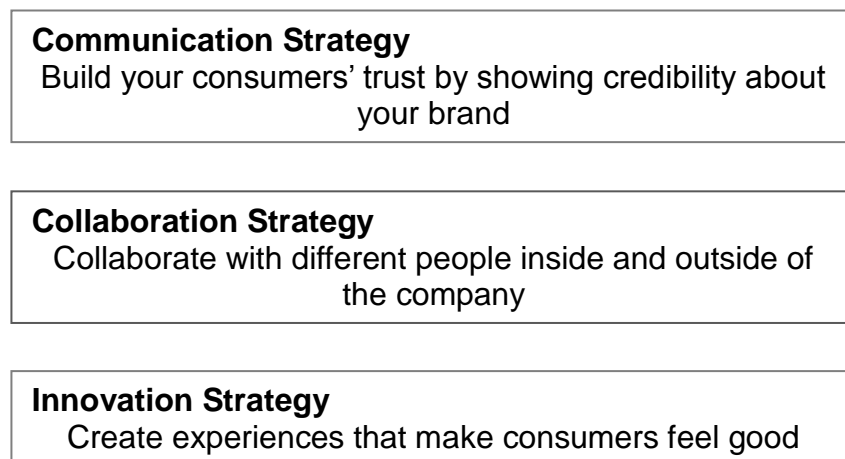
Communication Strategy
Build your consumers' trust by showing credibility about your brand

Collaboration Strategy
Collaborate with different people inside and outside of the company

Innovation Strategy
Create experiences that make consumers feel good

Figure 3 Example of Communication, collaboration and innovation strategies

Sustainable Consumption Index

The three main concepts of communication, collaboration and innovation that formed the framework theory were used to create a sustainable consumption index (SCI) to measure the levels of Sustainable Consumption – be it incremental or disruptive – that a company can set its targets to, dependent on their objectives and business strategies (Moreno, Lofthouse & Lilley 2011).

The SCI was inspired by similar models that explain different levels of eco-efficiency, related to different types of innovation (see: Brezet 1997; UNEP 2009). The premise of the SCI is that a correlation between innovation and collaboration exists. Thus, to leverage SC, different innovative actions and degrees of engagement among stakeholders are required in order to enable incremental, radical or systemic changes within the business model of a company. The former is grounded in the idea that to achieve higher levels of sustainable consumption a greater level of innovation and involvement of stakeholders is needed (Nilstad, Boks 2008; Mont, Plepys 2008).

Grant (2007) described three green marketing objectives, 1) set new standards and communicate 2) share responsibility and collaborate 3) support innovation and reshape culture, which are associated to the three main concepts of communication, collaboration and innovation, identified in this research. These marketing objectives were interpreted by the research as three different approaches that companies could apply to influence SC. To integrate the three different approaches into a scale of sustainable consumption, measuring varying degrees of stakeholder involvement and innovation, the research looked at three outcomes; commercial, environmental and/or ethical, and cultural; which

Grant (2007) related to the green marketing objectives, and then argued that the highest level of SC will be accomplished by the approach that can simultaneously achieve the three outcomes.

The SCI is depicted in *Figure 4.* It shows the three different approaches, identified by Grant (2007), in relation to the levels of SC (y axis) and level of innovation and stakeholder involvement (x axis). The aim of the SCI is to measure the results of a plan of action derived from applying different consumer-centred strategies.
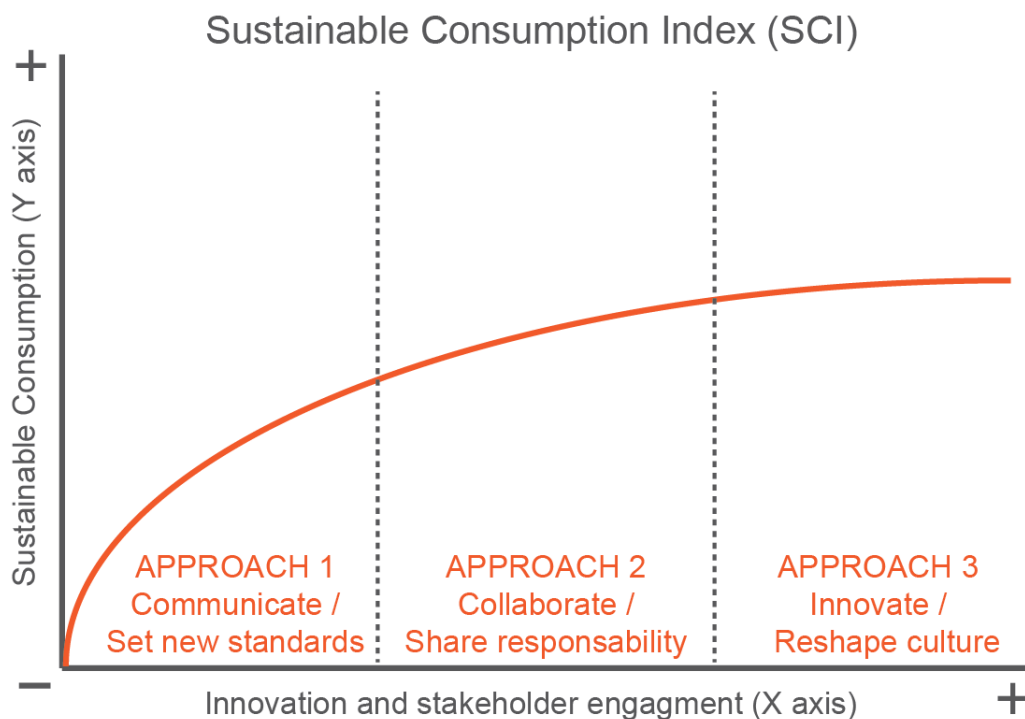
Sustainable Consumption Index (SCI)

Sustainable Consumption (Y axis)

APPROACH 1
Communicate /
Set new standards

APPROACH 2
Collaborate /
Share responsability

APPROACH 3
Innovate /
Reshape culture

Innovation and stakeholder engagment (X axis)

Figure 4 Sustainable Consumption Index: Three different approaches to SC.

Conclusions and future work

In preliminary findings of this research, the transition from the framework theory to the development of a model that aims to assist businesses towards leveraging SC is presented. The BCDS model differs from other frameworks in that it takes into account a business perspective, in which SC can only will be achieved if it ensures 'economic stability' to the company by growing the business but at the same time halving environmental and social impacts by meeting the real needs of consumers. The former is grounded in a holistic perspective that takes into account a mix of communication, collaboration and innovation criteria and strategies that can guide companies towards SC. The research also recognizes that the benefits afforded by implementing the model have to be understood at a strategic level of a company.

Future work will test the model to identify corporate reactions so that the research can distinguish strengths and weaknesses that will lead to improvements.

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