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USING PRODUCT INNOVATION AS ECO-BRANDING TO ENCOURAGE SUSTAINABLE LIFESTYLES – AN EXPLORATORY STUDENT APPROACH TO BUSINESS STRATEGY

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ABSTRACT
Recently, new market demands and customer expectations have forced companies to expand their commitment to sustainability and to offer new eco-friendly solutions. It is therefore of increasing importance for companies to expand their product portfolio with new sustainable and innovative designs. New product solutions have the ability to change how we as individuals live and use resources in our everyday life. This offers great opportunities for companies and designers to use creative technology innovation as a tool to promote new sustainable lifestyles. This paper discusses the challenge of using product innovation as eco-branding and how an exploratory approach to this has been used in a number of student projects. Based on in-depth analyses of different brands and their existing products, students created ten new brand, product and service concepts. The sustainability aspect was particularly stressed both in the created concepts and in the accompanying business and brand strategies. In the paper, we report on the overall description of the project as well as the overall results. Finally, we will describe one case in more detail and discuss the project approach in regards to the actual result and contribution to the student learning experience and insight on eco-branding.

Keywords: Branding, product innovation, sustainable lifestyles, communicating sustainability, business strategy

1 INTRODUCTION

Sustainable thinking has become a central element of business and design during the last 20 years. Not only has the regulatory environment drastically changed, but also the public is posing increasing demands towards companies in terms of more responsible environmental policies and actions. We may be undergoing an era of a "new industrial revolution [1]. Companies can adopt either a reactive or proactive strategy in terms of environmental improvements: to change their behaviour as dictated by regulations and demands, or to adopt sustainability as core element of their business and brand strategy. Already in 1995, the latter choice was suggested by prominent strategy scholars such as Shrivastava [2] and Porter and van der Linde [3]. Shrivastava stated: "In this decade and the coming century, the natural environment will be an important arena for economic competition. Ecological issues regarding energy, natural resources, pollution, and waste offer both competitive opportunities and constraints, and are changing the competitive landscape in many industries. Corporations can gain competitive advantage by managing ecological variables." The advantages of such strategy included: cost reductions, revenue enhancement, quality improvements, reduction of liabilities, social and health benefits, gaining competitive edge and better public image, and being ahead of regulatory curve.
In particular, environmental sustainability as the strategic component may give the company a substantial competitive advantage, directly accruing from cost reductions and revenue improvements prompted by environmental technologies. Environmental technologies also offer companies the potential for creating unique and inimitable strategies, through which they can distinguish themselves and become environmental leaders on their field. [2] Consequently, it is suggested that companies must start to recognize environmental improvements as an economic and competitive opportunity, not as some annoying cost or inevitable threat [3].

Regulations, along with the new market demands and customer expectations have forced companies to expand their commitment to sustainability and to offer new eco-friendly solutions. This concerns developing solutions, products and services that help reducing energy usage, choosing more ecological materials, and creating less consuming closed-loop manufacturing processes, among other things. Companies are also using different types of product life-cycle analysis (LCA) approaches to reduce or eliminate waste at all stages of the product's life cycle.

2 COMPETITIVE ADVANTAGE THROUGH ECO-BRANDING AND DESIGN AS BUSINESS STRATEGY

Companies differ in terms of their degrees of pro-activity in environmental management. In this regards, different strategic options may be identified [4], [5]: (1) Noncompliance: a company is cost-constrained and cannot react (or chooses not to react) to changing environmental standards. (2) Compliance: a reactive position driven by legislation; a company practicing compliance is not likely to be in a position to use its environmental stance to gain a competitive advantage. (3) Compliance plus: a proactive position on environmental management; a willingness on the part of a company's senior management to use management systems and policies to encourage organizational change. (4) Commercial and environmental excellence, leading edge: environmental management is seen as "good" management; strive to be environmental leader in the industry in which the company operates.
The forth category, creating leading edge through commercial and environmental excellence, companies must adopt a holistic approach integrating sustainable business, eco-branding and environmentally friendlier design activities into a coherent whole. If products are designed independent of the brand strategy, they may fail to provide the user with the intended experience. Hence, design and brand strategies must be integrated. Product success is increasingly dependent on the positive meanings and associations communicated by the brand [6], [7].
Also in terms of ecological excellence, design is invalid in making chance without strategic commitment on the higher level. "If the sorts of process and product redesigns needed for true innovation are even to be considered, much less implemented, environmental strategies must become an issue for general management. Environmental impact must be embedded in the overall process of improving productivity and competitiveness. The resource-productivity model, rather that the pollution-control model, must govern decision making" [3].
There are several benefits that can arise from integrating environmental sustainability issues into business operations [8]: increased efficiency in the use of resources, return on investment, increased sales, development of new markets, improved corporate image, product differentiation and enhanced competitive advantage. In the long run, better environmental performance at its best would also provide firms with a reputational advantage [9], [10], [11]. But strong eco-brand reputation is difficult to create and sustain, as it is nowadays difficult to find a company that would not state environment as its central concern and lots of "green washing" activities happen in many industries. In order to be believable and credible, true performance and proactivity is needed. Firms with more proactive profiles do differ from less environmentally committed firms in their perceptions of the relative importance of different stakeholders. Environmentally proactive firms not only view all stakeholders (except the media) as important, but also take the time and money to manage their environmental problems actively. [12]
Proactive eco-branding involves a holistic approach towards "Design for environment" (DFE). In technical terms, DFE often means that a consistent life-cycle analysis (LCA) has guided product development. LCA naturally needs to be an integral part of DFE, as eco-brands are expected to design products for disassembly, modular upgradeability and recyclability, which can diminish the problems with disposal at the end of a product's life. DFE also reduces re-processing costs and returns products to market more quickly and economically. [1]
"Product stewardship" is another strategy that provides an additional approach to product-centred environmental protection. Through this approach, it is highly stressed that all players involved throughout a product life cycle must take responsibility for reducing the environmental impact of the product, e.g. manufacturers, retailers and users. [1] In addition from applying a traditional approach to DFE and product stewardship, companies can also aim to create a competitive business advantage by actively develop new products and services to support and encourage more environmentally friendly lifestyles. A strategy, often referred to as "User Centred Design for Sustainable Behaviour", has evolved during recent years and address behavioural environmental impacts due to the usage of a

product [13]. It is suggested that this approach can foster solutions aiming to reduce a product's environmental impact during the use phase by encouraging more environmentally friendly user behaviour. Many studies have highlighted various behavioural intervention strategies that could be applied to design solutions with the aim to influence and motivate specific target behaviours. *Feedback*, *Scripting* and *Persuasive Technology* are some examples of well known strategies with high potential for guiding or ensuring user actions that can reduce the environmental impact while interacting with a product or service [14].

3 COURSE OVERVIEW

Knowledge on how to pursue different environmental strategies offers great opportunities for companies and designers to proactively lead their business towards a more sustainable direction. Eco-design can for example enable companies to use creative technology innovation as a tool to promote new sustainable lifestyles. To explore how this strategy in particular can be addressed, the 2010 edition of the course *Visual Brand Identity and Product Design* at Chalmers University of Technology chose to highlight the advantages of applying a behavioural approach to eco-design as a business strategy. During the course, ten groups of four students each, developed innovative concepts for energy visualization and management in private household environments. The students were assigned two tasks; first to analyse an existing brand and second to develop a new suitable brand and business strategy and then design a product solution based on environmental objectives. An overview of the different brands and solutions that were developed during the project are given in Figure 1.

	ANALYSED BRANDS	NEW BRANDS	PROPOSED PRODUCTS
1.	ELECTROLUX	ENLIGHT	AN ENERGY CONTROL DEVICE WITH VISUALISATION OF NATIONAL ENERGY USAGE
2.	PHILIPS	SIMPLESWITCH	AN ENERGY VISUALISATION AND MANAGEMENT DEVICE
3.	APPLE	IHOME	A VISUALISATION AND CONTROL DEVICE FOR HOUSEHOLD APPLIANCES
4.	SONYERICSSON	ECHO	A HOUSEHOLD ENERGY VISUALISATION AND CONTROL DEVICE
5.	BANG & OLUFSEN	BEOSOUL	A DEVICE FOR ENERGY MONITORING AND ENERGY MANAGEMENT
6.	GOOGLE	GOOGLE GRID	AN ENERGY CONTROL DEVICE AND A WEB APPLICATION FOR ENERGY MONITORING
7.	BOSCH	BOSCH GEIST	AN ENERGY VISUALISATION DEVICE
8.	SAMSUNG	SAMSUNG SAVE	AN ENERGY MANAGEMENT DEVICE
9.	LG	ECORNIA	A HOME ENERGY VISUALISATION AND CONTROL DEVICE
10.	HTC	TIE A KNOT	A SOCIAL WEB-PLATFORM FOR SUSTAINABLE LIVING

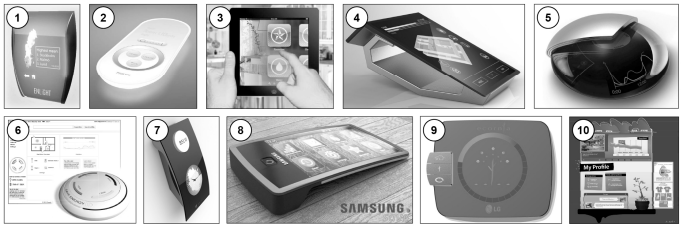

Figure 1. Overview of the ten student group-projects

3.1 Part 1: Brand analysis

When selecting an existing brand for analysis, the student groups were free to choose from ten different brands within the areas of consumer appliances and interface solutions. The brand analysis focused on two main issues:

1) *What does the brand and its products stand for?* What are the brand's core values and brand essence by which the brand is recognized and differentiated from competitors? How does the brand define their target customer group/s? What is the role of heritage for brand identity? What is the brand policy for sustainability? Are the brand's products designed with a focus on sustainability?

2) *How is the brand's strategy reflected in (visual) product design?* How does the brand define its product identity and how is this identity visible in the products? What design features constitute the brand's visual product identity, concerning both explicit and implicit cues? What is the role of the brand's design history in the current strategies?

3) Are environmental issues addressed in the strategic business management? How does the company approach sustainability and what is their commitment? Are there any company goals expressed for sustainable product development? Is the actual environmental engagement congruent with how the company communicate this aspect? How does the public perceive the brand? How well does the company integrate sustainable business and eco-branding with DFE?

The frameworks and methods presented during the course provided the students with a set of basic tools for brand analysis. In addition to these tools, the groups were encouraged to further develop the

existing methods and also develop their own methods, suited for their specific cases. To investigate the visual identity a Design Format Analysis (DFA) [15] was performed along with analyses of the company's other visual material.

3.2 Part 2: New brand creation and design of a household energy control unit

In the second part of the project, each group were asked to start a thorough branding /re-branding process and to create a new product solution for a household energy control unit for the new /further developed brand. Sustainability through innovation was stressed as a key issue for both brand creation and product design. The two tasks were addressed according to the following:

1) *Creation of a new brand and a believable story for it.* This task included naming the brand, formulating the identity strategy of the brand (e.g. brand essence, sustainability philosophy, positioning, target customers, etc.) and defining the visual design philosophy for the brand.

2) *Designing a new household energy control unit for the new brand.* For this task the students were required to create a solution that is innovative yet realistic and representative for the identity of the new brand. They were asked to focus their work both on the product's visual design features to support the brand story and on the product functionality to encourage sustainable lifestyles through new user experiences. The following key questions were discussed: Is the design aesthetically attractive, of high quality and reflecting the brand values? Does the product demonstrate innovation and creativity? Does the product design reflect the brand's strategy for sustainability? Does the solution help users to live and act more sustainable?

4 THE CASE OF ECHO

The group projects resulted in a set of new brands and sub-brands specifically aimed to introduce new innovative products encouraging sustainable lifestyles. Providing easy accessible information on household electricity consumption was the main focus for most concepts while some also addressed various ways for the user to take action and lower the overall energy usage. An interesting project to discuss in more detail is the case of Echo, a proposed new sub brand of Sony, which represents one of the student groups' results. After a thorough analysis of the Sony Ericsson brand, an opportunity for market differentiation was identified when combining features for energy feedback with a management system for home entertainment products. The product concept introduces an alternative way to interact with entertainment products and thereby encourages new everyday routines regarding the use of electricity and appliances in the home environment.

4.1 Analysis of the brand and business strategy of Sony Ericsson

The brand and business analysis of Sony Ericsson was carried out through the use of a number of methods and tools, either described in the course lectures or introduced previously during the educational programme. Main aspects considered during the analysis included the visual identity of the product portfolio, the brand heritage, the competition on the market and the product target groups. In addition, the company sustainability policy was also thoroughly analysed along with the brand strategy for continued sustainability work.

Sony Ericsson was established in 2001 through a merger between Sony and Ericsson. Both brands had for long been in the forefront of the technological development but within different sectors, Ericson focusing on telephones and Sony on small consumer electronics. Today, the Sony Ericsson product portfolio consists of mobile phones specialized in the entertainment segment. In 2009, the first product in the "GreenHeart" series was introduced; made of recycled plastics, waterborne paint, with an electronic manual instead of paper and reduced packaging. The product family now includes six different mobile phones, from basic models to advanced touch screen phones. For 2011 the company strives for a broader representation of the GreenHeart qualities within the whole product portfolio (Sony Ericsson Sustainability Report 2009). Alongside these intentions, several expressed company goals for increased sustainability were identified: increased profitability; improved living and working conditions for the workforce; improved quality of life for the users; reduced environmental impact of the products and activities associated with the products. The company ambition was perceived as very proactive in regards to the environmental management strategy. Sony Ericsson does not only just meet current regulations and carry out general DFE measures, but strives to be a pioneer among mobile phone companies focusing on

sustainability. Since key activities for the mobile phone segment in general have been focused on traditional DFE measures, a great opportunity for differentiation arose for the next task of brand creation and product design: to combine the company's sustainability goal for reducing environmental impact of products and activities with the Sony Ericsson business strategy of providing a unique user entertainment experience. An opening for an augmented business strategy was thus identified; providing users with a unique system solution for both entertainment and energy management control.

4.2 Creation of a new sub brand and design of a household energy control device

In the second part of the project work, based on the analysis and identified business opportunity, the students chose to create a new brand with focus on proactive environmental solutions. The brand Echo was created as a new fictitious sub-brand of Sony, focused on solutions enabling energy efficient user habits and energy management control while providing the ultimate entertainment experience. Therefore, Sony was chosen as a more suitable mother brand than Sony Ericsson, enabling Echo to more easily attain a strong position within the home electronics segment. The new product line takes advantage of smart grid technology to integrate and connect all types of consumer electronics throughout the home, changing the way consumers interact with technology during everyday activities. As outlined by the students: "Echo stands for Energy Control for Home Organising. It is also a metaphor of a system, that is echoing between all electrical sources in your home and that gives an echo into the future". With Echo, saving energy can become a lifestyle.

Flexibility, Transparency and Quality were chosen as main core values to represent both the heritage of Sony and the environmental objectives. Echo products will be targeted as high end products, developed with high demands on an intuitive user experience, everyday convenience, system compatibility and honesty in all details. To demonstrate the brand and brand values, a portable household energy control device was created as a first product within the Echo brand product line, see figure 2. The device monitors energy usage throughout the home and can communicate with all appliances, enabling the user to choose between an automatic or manual control of their appliances. With these features the device facilitates everyday actions enabling a decreased energy usage. Visually, many of Sony's traditional design cues were incorporated in the design. Bright, glowing graphics on dark background characterise the design of the interface. To further emphasis entertainment, the base of the interface consists of symbols and visual representations rather than text. The entertainment functions are always visible in the bottom of the screen to provide quick control of music, television and film, being specific new developed brand values for the Echo brand to distinguish the brand and to differentiate the product from other energy meters on the market.

Figure 2. Echo – a household energy control device and its interface

5 FINAL REMARKS

Our experience with the course demonstrated that a practical approach towards brands and their diverse aesthetic, symbolic and business strategic qualities could provide a fruitful learning experience for design students. The project work successfully illustrated the multiple functions and demands of strategic design issues, both in understanding and practical application and added value to the student learning experience on branding in regard to sustainable business strategies.

According to their feedback and course evaluations, the students have found the project rewarding and motivating, albeit also challenging and time consuming. They spent a significant period of time creating a common understanding of a brand in general including all different parts that are

communicated through a brand. The distinction between implicit and explicit references [16] was regarded as a useful concept when trying to identify the design cues in the respective brand analysis. Many students were astounded how implicit design cues can be used to influence customers and to push eco-branding without communicating 'green' features explicitly. The broad theoretical and analysis part formed a valuable basis for the creative and designing work afterwards and the common understanding ensured that each part fitted well together. These types of analytical and practical approaches are needed, in particular, when new ways are sought to explore and experience the diverse and holistic aspects of today's design work and strategic business management on a deeper level. The explanatory project work as a learning procedure, although intense and demanding, was highly appreciated to enhance and apply the knowledge presented in the lectures. The large representation of external and high-ranking lecturers from industry was estimated and highlighted the relevance of the mediated knowledge, methods and tools in today's markets.

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