Goig Green: Integrating Customer Requirements into Green Product Designs

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Abstract—Green product development has been recognized as one of the key factors to achieve growth, environmental sustainability, and a better quality of life. This study explores customer’s participation in green design activity, which involves transforming personal value and preference into green design elements. As a result, this study finds that customers play an important role in determining environmental sustainable development. Perceived customer preference has important implications for marketing communicator intending to target customer with pro-environmental options.

Keywords—sustainability, recyclability, consumption, green design.

I. INTRODUCTION

ENVIRONMENT has become a critical factor in the past twenty years, which has led to social and economic development.

Resources of the earth are limited, and the sustainability of the entire environment is controlled by the activities of human beings. Sustainable development of the environment has already drawn a lot of attention, where the green product design that is natural-oriented has become an important direction of development. Actually, through the efficient use of resources, low impacts and risks to the environment, and waste generation prevention since their conception stage, green products offer high quality and low overall costs to the consumers and society [3].

Green products are emerging from the demand-pull of customers with new attitudes toward environmental value [5]. The increase in environmental consciousness has had a positive effect on consumer behavior, helping expand the green product market at a remarkable rate [1]. This forces many marketers to jump on the green bandwagon, developing and promoting the environmental benefits of new "green" products [12]. They develop technological innovations aiming at improving the environmental performance of their process and products. However, marketers most likely will be unfamiliar with all of the environmental intricacies of their firm’s activities and would therefore need to obtain input from various stakeholders (customer, employees, etc.)[11]. From the perspective of customers and based on the idea of user design—the process of creating environmental products to identify the innovation-oriented and trend-setting customers with whom new solutions to the problem of environmental protection can be tested; Furthermore, such way can establish unique design and added value to consumers and, facilitate the development of recycling-based initiatives.

Currently, the number of green consumers are increasing rapidly globally [6], and daily consumer activity would cause environmental problem, so the consumers would take action because they concern about the environment [7]. The purchase behavior of green consumers is influenced by their concern towards the environment, and these consumers worry about the impact caused by the purchased products towards the environment so they pay more and more attention on the relationship between products and environment. Krause [8] found that consumers were concerned about their everyday habits and the impact of these habits on the environment. The outcome of this increased consumer consciousness is a commitment to the active design of green products. When customer involves green design and manufacturing together to create a safe environmental product, then the customers can take a proactive role in defining and negotiating their product needs to meet their explicit and implicit requirements [14]. Customer participates in green product design, integrating their preferences and demands with the innovative ideas of professional designers. Thus, the firm can produce a unique product design in both appearance and functionality but also enable consumers to purchase or use green products to enhance the environmental value. Prior studies mostly focused on the methods and techniques of green product design innovation but ignored the reasons why consumers buy green products. Therefore, green design must provide a balance between application of green technology and consumers’ preferences. Successful green product design comprises an integrative analysis of the interactions between the functionality of the product and customers’ preferences and includes environmental protection features. This study uses the customer design concept to understand consumer preferences for green products and posits that effective cooperation is an outcome of increased communication between the designer and the customer, the effective optimization of innovation processes, and both designers’ and customers’ positive attitudes toward the design of green products.
II. LITERATURE REVIEW

Sustainable environmental concern regarding product development has become an important challenge for firms in today’s global marketplace. Environmental issues regarding product design and innovation have received significant attention from consumers around the world. Lenox et al., [9] point out design for environment is the systematic process through which products are designed in an environmentally conscious way. Most environment concerns focus on how green products are produced and organized. Green products mean incorporating environmental attributes into the overall product mix, not simply —tackling them on to existing products as an afterthought[12]. Green products consist of reduced raw material; have high recyclable content; and involve low energy consumption during use disposal, reuse whenever possible, and a long shelf life [4]. Green product has forced material suppliers and manufacturers to solve the environmental impact of their products. In producing green products, firms must concurrently consider product functionality, cost, quality, and environmental impact [10]. The goals of green product development are to launch more environmentally conscious products with more renewable material and less energy consumption and to proactively expand the recycling system[12].

Green design, development methods, and technology create ecological harmony. For example, new technologies have had the greatest total effect on green product development. Such technologies have enabled firms to concentrate their activities on use, disposal, and reuse [4] and adopt environmentally friendly specifications [10]. Green products promote environmental virtues, such as recyclability and energy efficiency, but ignore the consideration of consumer preferences and demands. This study believes the design of green product must consider customer preferences, so that the failure risk of new products could be reduced and the customer effectiveness and personalized product could be maximized. Consumers purchase green products that they consider under concrete factors (1) resource and energy conservation, (2) product component materials obtained in a sustainable manner, (3) product serviceability, (4) reusability, (5) recyclability, and (6) low-impact disposal and treatment. Therefore, if it is possible to connect the attributes of green products and the product value that the consumers desire, then the connection can help the designers to design green products that are suitable for market need so as to reduce the risk of companies developing green products. Considering consumers’ preferences not only allows the appearance or functions of the products show personalized environmental protection design, but also the value added when purchasing or using this green product would be promoted, where this value added is still the value of promoting environmental protection.

III. CONCLUSION

For the successful innovation of green products, firm must recognize that product development needs to focus on customers, who are capable of creating new products to satisfy their individual needs. Customers are first informed of the capabilities of the company, including the spectrum of product offerings, product attributes, the possible levels of those attributes, and the organization of those levels. Consumers should actively gather environmental information from a wide range of sources, including, product labels, information disclosed in company promotional material, and product purchasing guidelines and consumer guides. Design of green products is recognized as an access for solving consumer need and improving environment. Consumer can design the right good goods to the right individual with value gained to him. The customer who is willing to design for green product needs to be identified. Customer participating in the design of green product can decrease impact to the environment but also achieve economic development and improve the environment pollution. It can increase customer satisfaction with much reduced resource consumption, and added social benefits. In green product design, customers may have a choice of different green product attributes. Such customer participation design improves green products and services that could help getting things done.

REFERENCES