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The Interaction between Innovation Management and Sensory Design in Creating Value for Customers

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Abstract

Innovation is one of the key drivers of achievement that a firm should use to achieve competitive advantage. The capacity to improve is particularly essential for a company's survival in unique and competitive environment. The highly competitive and information intensive environment stimulates the customer demand for change. Therefore, the innovative design which incorporates the customer requirements is always highly valued. Despite the fact that the significance of design has expanded, no exploration has been done to clarify the connection between innovation, product design and customer value. Past research has been constrained and has not given a reasonable idea of design innovation or characterized the connection between design innovation and customer value. This paper tries to characterize the connection between design innovation and customer value. Three dimensions of design innovation (style, features and feeling) have studied to establish relationship with customer value. Results have verified that there is a strong and significant impact of overall innovative sensory design on the customer value in general and innovative style and features in particular. This exploration contributes considerably to our comprehension of the connection between design innovation and customer value.

Keywords: Design, Innovation, Customer Value, Style, Features, Feeling

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Introduction

The connections among sensory design and innovation have turned out to be vital over the previous decade. This upward direction has prompted acknowledgment of the connection among innovation and design. Moreover, organizations have discovered that they can build up an advantage over competitors by cultivating this connection. However, the central point is that it very hard to characterize the strategy to obtain results. The connection between design and innovation is particularly hard to characterize on the grounds that design envelops an extensive variety of fields. Furthermore, there is a misconception about innovation and design (Walsh, 1996). In fact, the essential term "design" is very wide and has varied implications (Candi, 2007).

The firms those can convey their product differentiation based on product design are more successful (Sethi, Smith, and Park, 2001). Moreover, it is observed that distinctive design is also helpful in saving marketing cost. Similarly the importance of product design is more significant in high tech industry where companies obtain competitive advantage on design (Ravasi and Lojacono, 2005). In spite of the extensive variety of design ideas, the one shared trait over the range of design is the utilization of inventive perception in ideas, plans, and thoughts, and the transmission of those thoughts into the development of something that did not already exist (Walsh, 1996).

The prior research on innovation inquired useful aspects of product that are not found in past products. The significance of sensory design has expanded in the present markets. Hence, a competitive advantage can be achieved with design (Matthyssens et al, 2006). Therefore, firms should incorporate innovation in the organization to produce better design which leads to competitive advantage for instance iPod (Moon, 2004). However, innovation in a dynamic and highly competitive environment has greatest difficulties that organizations look in building and keeping up achievement (Kaplan and Norton, 2007). Although there is a general perception about significance of sensory design and innovation in the literature but design innovation has gotten little consideration. It is very difficult to precisely define design innovation as there is a significant drought of literature on this subject. It is hard to characterize design and innovation since the two terms change contingent upon the circumstance. By joining design and innovation, this paper endeavors to give a definition where other research has missed the mark. Thusly, this paper tries to characterize design innovation. This study is motivated to explain the connection between innovation, sensory design and the customer value. How innovation sensory design can affect the customer value. Furthermore, this paper likewise tries to depict the key factors in the connection between design innovation and customer value.

Literature Review

The connection between innovation management and design enhancements in like growing new items inside the firm Walsh (1996). The associations among design and innovation are sometimes portraying the significance of innovation. It is important to think about the different effects of design and innovation on firm achievement.

Innovation refers the way of introduction new products and services in the market (Hauser, Tellis, and Griffin, 2006). Effective innovation is accomplished priorities the customer need and translate these need into innovation to successfully satisfying the user (Hauser et al., 2006). However, the significance of innovation is variable for different firms and industry (Nasution and Mavondo, 2008). The early definition of is explained by Hjalager (2010) as presentation of new or change in a current item that is new to an industry. Innovation is an incredible, progressive device in new markets, and usually accountable for quality products with low cost.

Innovation in Sensory Design

Design is the blend of innovation and human needs into assembling an item (Crawford and Di-Benedetto, 2007). Similarly, Hauser et al. (2006) noticed that effective innovation depends on first understanding client’s needs, and afterward fulfilling those necessities through the improvement of product. This paper

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characterizes design innovation as new or generously enhanced product design made to fulfill client needs. The idea of "client focused design," which portrays how organizations can use design to enhance their associations with clients and build up a superior comprehension of client needs is introduced by (Kim and Mauborgne, 1997). Karniouchina, Victorino, and Verma (2006) accentuated the significance of design innovation and its impact on enhancing client satisfaction to enhance the performance of organizations.

Prior studies have characterized design innovation in three aspects for instance style, feature and feeling characteristic. Style traits are about the design while feature characteristics focus on functions of product to fulfill customer needs. Feeling properties center around how the client feels when buy product. The customer purchase decision is significantly influenced by stylish aspect of product (Mokarian, 2007). Human reactions are affected not just by the frame or the obvious physical properties, yet additionally by the content and the emblematic meaning (Liu, 2003, Davoudi et al., 2018). This recommends style credits are firmly identified with the shape and features of an item. Considering the significance that clients put on design characteristics, it is equally important to provide quality products to obtain competitive advantage (Chang, 2008). Thusly, the designing of product need to be compatible with the need of customer. Designers must see how the visual part of an item influences the client's impression of item design innovation. Liu (2003) contended that the style of an item impact its piece of the overall industry, implying that stylish qualities of an item are basically identified with client needs. Apple as an exceptional trend-setter in product design produced high quality products based on a design-driven model. It is also found that the understanding of sensory design must be compatible with customer need and this is an ongoing process.

Hence, the design characteristics are concerned with the style and shape that is particularly not the same as those of their contenders (Ravasi and Lojacono, 2005). Similarly Ravasi and Lojacono (2005) defined some other aspects of sensory design including ease of use emotional appeal. Therefore, the promise of design innovation to achieve competitive advantage over other products has also been found by Roy and Riedel (1997). It is also noted that the job of design has upward trajectory in unbeaten products as compare to unsuccessful products. This implies that design esteem is made by design job through the fulfillment of client needs. The design of a product gives benefits, for example, enhanced convenience, better performance, and enhanced capacity to the client. Hence the features are the functions of product to provide better experience (Crawford and Di Benedetto, 2007; Fartash et al., 2018). The pre-purchase behavior of customer is effete by its previous experience. The emotional component like amusement, satisfaction and positive energy are the most common elements. The more an item design fulfills the enthusiastic requirements of buyers, the more it will create shopper enthusiasm for obtaining the item (Seva and Helander, 2009).

Customer Value

Customer value is the exchange off between the expenses and advantages that happen at the point when clients buy an item (Zhilin, Yang and Peterson, 2004). The production of specialized design esteem, along these lines, animates the creation of positive client esteem in item quality. Customer value has turned into a tool with aim in the advancement of the overall product to give customers a value (Hulten, Broweus, VanDijk, 2009). The customer value has been portrayed as the principle instrument of focused techniques and the core of the management policies (Brennan and Henneberg, 2008). Moreover, the customer value is firmly identified with marketing approach and customer-centric nature of business (Brennan and Henneberg, 2008).

Customer value is a key weapon in holding customers and has turned out to be a most impotant element for the success of business (Mathuramaytha and Ussahawanitchakit, 2008; 128). In spite of the fact that there is no assertion in meaning of the concept of "value", however a most referred term in literature is customer value (Howden and Pressey, 2008).

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The most important thing and accomplishment for an organization is as expanding the net customer value (Butz and Goodstein, 1996). Measurement of customer value is one strategy for deciding how likely customers are to be fulfilled by product or services. Customer value is made through the introduction of new styles, designs, and pictures, or through the enhancement of items by means of expanded efficacy (Walsh, 1996). Butz and Goodstein (1996) characterized customer value as an enthusiastic bond built up between the customer and the supplier when the customer sees included value from an amazing item or on the other hand benefit. Value creation through the customer is most vital in the promoting domain since customer fulfillment is the essential objective of promoting. In the light of above discussion this investigation hypothesized that:

H1: Style of product significantly and positively affects customer value
H2: Features of product significantly and positively affect customer value
H3: Feeling of product significantly and positively affects customer value

Methodology

In this investigation 473 graduate and undergraduate students of Baghdad University were randomly selected to collect their responses on the sensory design of mobiles and the perceived value of product. The study was administrated with online and printed questionnaires. The responses were collected on a 5 point likert scale (1=strongly agree, 2= disagree, 3=neutral, 4= agree, 5=strongly agree). The study is conducted in the special context of Iraq. Another purpose of this study is to highlight the proposed framework with different social and economic perspective. As the cultural, political and social norm impact the behavior of customers.

The instrument used to collect responses on design and customer value is obtained from previous researches. Design characteristics has been measured n three dimensions' style, features and feeling and adapted from Jones (2002). The customer value has measured by using the instrument of Ulaga and Chacour (2001).

Results and Discussion

In the first step, reliability of questionnaire has estimated using Cronbach Alpha. The results of Cronbach alpha are presented in table 1. It is shown that all the results are above the minimum standard value (0.6) (Nunnally, 1978).

Variables	**Dimensions**	**Cronbach Alpha (α)**
Design Innovation	Style innovation	0.86
	Features innovation	0.83
	Feeling innovation	0.87
Customer Value	Customer Value	0.79

In next step we examine the hypothesis using regression analysis for each hypothesis. The results of regression analysis are presented in table 2.

Hypothesis	**Coefficients**	**t-value**	**Results**
Style innovation→Customer Value	0.482	5.82	Accept
Features innovation→Customer Value	0.512	2.59	Accept
Feeling Innovation→Customer Value	0.023	1.99	Accept

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The test results for sensory design innovation impact over customer value provide interesting results. Style innovation was found positively related with customer value ($\beta = .48$, $t = 5.82$). Feature innovation was also found positively associated with customer value ($\beta = .51$, $t = 2.59$). Feeling design innovation was found to be positively influence customer value ($\beta = .023$, $t = 1.99$). The results describe that features innovation stood highest importance in the eyes of customer of mobile phones. The feeling characteristics have received least importance associated with customer value among others. The overall impact of innovation design on the customer value was found to be positive and highly significant.

Conclusion and Implications

This paper endeavors to illustrate how design can influence customer value creation through design innovation. This paper tries to locate the predecessor of each underlying dimension of design from the aspect of innovation. The customer perception has changed over the past decade with the boom of information technology. Firms must change accordingly to heterogeneous customer requests. As customer request has turned out to be progressively differed, the significance of product design has expanded. The product with new design can build the accomplishment of product in the market. Product overall sensory design is considered by customers when they are thinking about making a buying decision. Further, innovatively designed items can be progressively alluring to customers since the items are designed by a customer-focused view. This implies customers feel delightful when they experience the creatively designed items. These items make the customer anxious to buy. Imaginative design is the instrument through which customers assess visual solace.

The results of the examination have a few administrative suggestions for successful products. The innovation of predominant design qualities positively affects customer value. This proposes firms will have more noteworthy consumer loyalty by giving innovatively designed products. Therefore, organizations must invest in research and development activities to provide more useful and innovative product designs to get highest customer value. Hence, this research concludes that customers are more inclined towards the overall sensory design of product specially features and style.

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