http://ansinet.com/itj

ITJ

ISSN 1812-5638

INFORMATION TECHNOLOGY JOURNAL

ANSInet
Asian Network for Scientific Information
308 Lasani Town, Sargodha Road, Faisalabad - Pakistan

Information Technology Journal 10 (7): 1402-1408, 2011
ISSN 1812-5638 / DOI: 10.3923/itj.2011.1402.1408
© 2011 Asian Network for Scientific Information

An Effective Approach to Construct Value-Based Decision Model for Positioning Strategy

[1]Kuei-Feng Chang and [2]Hao-Wei Yang
[1]168 University Rd., Dacun, Changhua, 51591, Taiwan, Republic of China
[2]168 Jifeng E. Rd., Wufeng District, Taichung 41349, Taiwan, Republic of China

Abstract: Perceptual map is often used as a positioning tool for firms in marketing practice; however, this map provides misleading information due to simplified statistical data. This research adopts Delphi method to confirm multiple needs of consumers in cosmetic bundles and constructs a value-based decision model. From these analysis results, firms could utilize advantageous attributes and unique benefits to develop appeal strategy and positioning strategy. Also, compared with two other approaches-simple multi-attribute ranking technique and analytic hierarchy process, firms could obtain more complete results in the real world.

Key words: Delphi method, cosmetic bundle, value-based decision model, positioning strategy, simple multi-attribute ranking technique, analytic hierarchy process

INTRODUCTION

Positioning is the process of building and maintaining a distinctive image, relative to other competitors, in the mind of the consumers (Javalgi *et al*., 1995). A firm may attempt to utilize positioning as a communication tool to research target customers and increase market share (Rise and Trout, 1986). In the 1950s, psychologists developed "perceptual maps" for positioning objects in two-dimensional "virtual" spaces, based on perceived similarities and differences among the objects. However, a problem exists when customers view the firm's position differently than the manner in which the company sees itself. One possible reason is that the virtual space utilizes only two dimensions which are probably developed by discriminate analysis in statistics but refer to object characteristics that are specified in advance. In fact, consumers consider multiple attributes for their alternatives at the same time in their decision making process (Zanjani *et al*., 2009). Thus, the perceptual map could only provide limited information for a firm and cannot develop into a useful marketing strategy to satisfy multiple needs from consumers (Yang, 2010). To develop a useful positioning strategy for an enterprise, two key roles need to be considered. The first one is the competitors that the enterprise faces. With the aggressive behavior of competitors in business activities, an enterprise needs to know the relative strengths and weaknesses for keeping market share and enhancing advantage. Thus, an enterprise must confirm who are the main competitors and put them in a set of alternatives for competitive analysis. The second one is the customers that the enterprise serves. To close the gap between the customers' view and the firm's approach to positioning, customers' evaluations of foundational attributes and overall value are both important (Asikhia, 2009). From these results, an enterprise could obtain useful information for improving and developing an effective positioning strategy to match customers' perceptions. Thus, marketers should not only deconstruct customer value to explore the customers' preferences of bottom individual attributes and performance of products, but also adopt a feedback concept to recognize the customers' overall image of the product (Jiang *et al*., 2011). In marketing, the product bundle is widely employed to satisfy multiple customer needs. Marketers use the joint pricing for the sale of two or more products and/or services in a single package (Guiltinan, 1987; Kaicker *et al*., 1995; Stremersch and Tellis, 2002). Paun (1993) argued that bundling is a strategic marketing variable. Firms could utilize product bundles to increase performance and create a competitive advantage by increasing customer value (Montinaro and Sciascia, 2011). Thus utilizing bundling strategy will provide for the variety of values that customers express and enhance the overall evaluation of a product bundle.

According to the forecast by Euromonitor International, the average growth rate of global C and T will keep at 3.6% every year until 2009, when the market value will reach US$ 275 billion. In the practice of C and T sales, cosmetics bundles are a popular form for providing for customers' diverse needs by offering multiple product attributes. Therefore, this study will utilize cosmetics bundles as an empirical issue to develop a decision model

Corresponding Author: Hao-Wei Yang, 168 Jifeng E. Rd., Wufeng District, Taichung 41349, Taiwan, Republic of China

based on positioning. In this decision model, the customer preference for product attributes will be explored. Next through competitive analysis, an enterprise could obtain useful information for planning a long-term strategy. Last, utilizing customer's cognition, an enterprise could develop a short-term strategy to match the product to customers' perceptions.

CONCEPTUAL FRAMEWORK

Destructure of value: In 2004, American Marketing Association offered the formal definition "Marketing is an organizational function and a set of processes for creating, communicating and delivering value to customers and for managing customer relationships in ways that benefit the organization and its stakeholders." Based on this definition, the customer value plays an important role for firms to develop customer relationships. However, what is value? It may bring to mind two different concepts. Firstly, some authors might think of personal values-the shared, central beliefs about right and wrong, good and bad, which guide behavior and this sense is also the key point of this study. Secondly, the concept of the value of a customer is gaining importance because of the growing interest in customer relationship management. This concept refers to the economic (e.g., profit) value to a seller of patronage by a customer over a lifetime. In fact, there are two similar definitions which could help us to obtain the overall view of customer value. Value is the consumer's overall assessment of the utility of a product, based on perceptions of what is received and what is given (Zeithaml, 1988). Based on these views, value is the trade-off between what the customer receives and what the customer gives up in acquiring and using a product. In addition to the above, Woodruff (1997) suggested a concept hierarchy model of consumer value. Starting at the bottom of the hierarchy, customers learn to think about products as bundles of specific attributes and attribute performances. When purchasing and using a product, they form desires or preferences for certain attributes based on their ability to facilitate achieving desired consequence experiences, reflected in value in use and possession value, in the next level up in the hierarchy.

Although Woodruff proposed the "conceptual" customer value hierarchy model, the components of each level are not available. Thus, Woodruff's model merely considers the "guiding of customer value" and needs to be restructured to explore enough components to fill out the model. However, most authors agree that value involves trading off between benefit and sacrifice experiences within use situations (Lapierre, 2000; Slater and Narver, 2000; Walter *et al*., 2001; Chen and Dubinsky, 2003). Thus, the value could be the result of perceived benefits minus perceived sacrifices. The benefits may include product qualities, features, convenience, or other functional, psychological and social aspects of the product that are considered desirable by potential adopters. On the other hand, the sacrifices may include the purchase price of a product and other non-price costs, such as the time for acquiring and installing (Mazumdar and Jun, 1993). Homans (1958) has proposed the fundamental premises of the social exchange analysis of human interaction and indicated that an individual's behavior is guided by the principle of maximizing rewards and minimizing costs in order to obtain the most profitable outcomes in any human interaction. Thus, if customers want to obtain higher value from a product, there are two basic strategies which could be used: maximum benefit and/or minimum cost.

Benefit views of value: What are the benefits of products for consumers? (Holbrook, 1994) submitted two types of benefits: utilitarian benefit-as the means to an end in the everyday life and hedonic benefit-as the pleasure potential of a product class. In empirical studies, several researchers have noted the existence of two different types of motivation, functional and symbolic motivation, for identifying consumers' needs (Johar and Sirgy, 1991). However, what is the functional utility of the product? This study proposes two types of functional goal-utility approach and problem avoidance. In fact, these goals could be viewed as a positive and a negative motivation of a utility approach. The positive motivation is a driving force toward or to approach some object or condition; the negative motivation is a driving force away from or to avoid some object or condition (Schiffman and Kanuk, 2000). Once the product utilities satisfy consumers' expectations or achieve problem avoidance, consumers may perceive product bundling as more beneficial.

In particular, when the components of product bundling are compatible and also conform to a common purpose (problem avoidance) and/or increase consumers' satisfaction (utility approach) through the bundling, this could cause a different beneficial influence. Another question is in identifying the symbolic meaning for consumers. Bhat and Reddy (1998) applied factor analysis to abstract two sub-dimensions-prestige and personality expression from brand symbolism. Their results support the idea that a prestige brand could enhance self-image from social views (external) and that personality expression through a brand can maintain self-identity that an individual expected (internal). Once product attributes are associated with personality or prestige, consumers will perceive their symbolic utility. Especially when the components of product bundling can enhance prestige

(enhancing self-image) and or express personality (maintaining self-identity) by the joint form, this could lead to a different beneficial influence.

Cost views of value: What are the costs of a product for consumers? Murphy and Enis (1986) argued that the costs should be conceptualized in two independent dimensions-effort and risk. The effort is the amount of money, time and energy that the buyer is willing to expend for acquiring a product. Strategically, price bundling obviously benefits consumers by providing monetary savings (Yadav and Monroe, 1993); on the other hand, product bundling benefits consumers by reducing the time and cognitive effort required to make purchase decisions simultaneously (Moriarty and Kosnik, 1989). Especially in practice, bundles are often offered at a discount of the summative price of the bundled components (Sarin *et al*., 2003). Consumers can pay less to get the bundled components at the same time and obtain the value via minimizing the effort of purchase. However, if the product can not deliver the expected benefit or outcome, risks may emerge. For reducing the possible risk of a product, consumers may rely on extrinsic cues (such as price, brand name, store image and manufacturer reputation, warranty) to form perceptions of product quality (or benefits) and perceptions of monetary sacrifice (or costs), which, in turn, lead them to form perceptions of value (Bearden and Shimp, 1982; Rao and Monron, 1989; Dodds *et al*., 1991; Teas and Agarwal, 2000).

In empirical studies, product bundles have used either well-known brands (Simonin and Ruth, 1995) or existing technology (Sarin *et al*., 2003) to reduce consumers' perceived risk associated with a new product; and the store's perceived image or reputation is influenced by the store name and positively influences purchase intentions (Grewal *et al*., 1998; Vijayasarathy and Jones, 2000); under the influence of functional and compatibility risk, consumers make preferences for product bundles vis-à-vis separate items (Harris and Blair, 2006). Comparing separate products, a product bundle provides a more complete and integrated set of information or knowledge for consumers and hence reduces risk. Marketing new high-tech equipment in bundles is always likely to lower consumers' perceived risk compared to offering the same product in a stand-alone form, because it signals the availability of complementary products, compatibility between products and conformity to a common technological standard (Sarin *et al*., 2003). In other words, products bundles could provide more complementarily and compatibility information than in a stand-alone form. Consumers could rely on the complementarily and compatibility information of a product bundle to reduce perceived risk and so increase consumer value.

RESEARCH DEVELOPMENT AND DESIGN

Development of a value-based decision model: The customers' requirements are gathered by the Delphi method. Reid (1988) points out that one of the keys to success in the Delphi method is an appropriate selection of panel members: they should be selected for their rich capabilities, knowledge and independence. Besides 9 VIPs introduced by department stores, 12 experts (working experience of at least 10 years) comprised the panel: scholars, sales managers and senior cosmetologists. To obtain the customer requirements about cosmetics, a communication process is established as shown in Fig. 1. The questions for the experts are concentrated on "when customers purchase cosmetic bundles, what kinds of benefit could enhance the value for the customer?" and "when customers purchase cosmetic bundles, what kinds of attribute could provide related benefit to reach the value?" Through sorting, classifying and structuring the customer requirements, from three rounds of questionnaires, this research can finally obtain customer requirements (including goals, benefits and attributes) and are initially structured into 3 different hierarchical levels. The first level is the customers' goal-most valuable cosmetic bundle (MVCB). The second level is desired benefits, including symbolic, functional, safety and transaction benefit. The third level is product attributes, including White-Skinned, Clean and Clear, Smooth and Moist, Anti-wrinkle, Recuperation, Brand Reputation, Utility compatibility, Proper Packing, Time Saving and Money Saving. Finally, the last level is alternatives; three different cosmetics bundles (Bundle A, B, C) which are popular items of department stores are selected as the cases for testing this model.

Finally, three different cosmetics bundles (Bundle A, B, C) from a department store are selected as the alternatives for testing this model. There are five parts in the product description sheet alternatives shown to the experts, including brand name, product name and picture, description of performance, price of cosmetic bundle and the country of production. There are some detailed controls in this study to reduce the possible interference in the product description sheet. First, the spaces for bundle picture and the descriptive words for each bundle are nearly equal. Next, all the product information comes from the official websites of the manufacturers. Lastly, the components of each bundle are similar (4 components for bundle A and B, 5 components for bundle C). Figure 2 shows a four-level hierarchy model for the customers' goal-to evaluate the "most valuable cosmetic bundle (MVCB)".

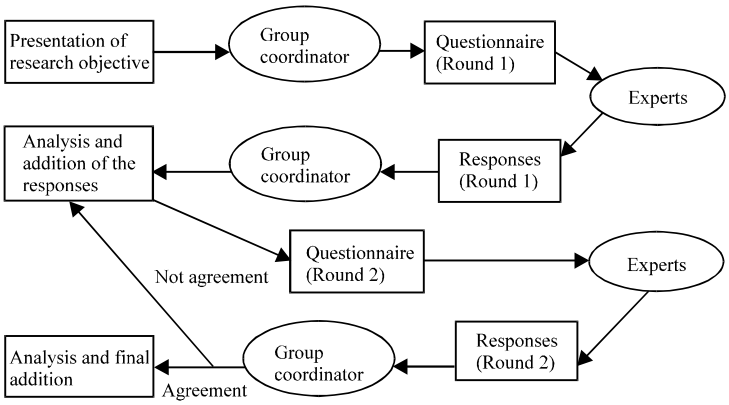

Fig. 1: Communication process in the delphi method

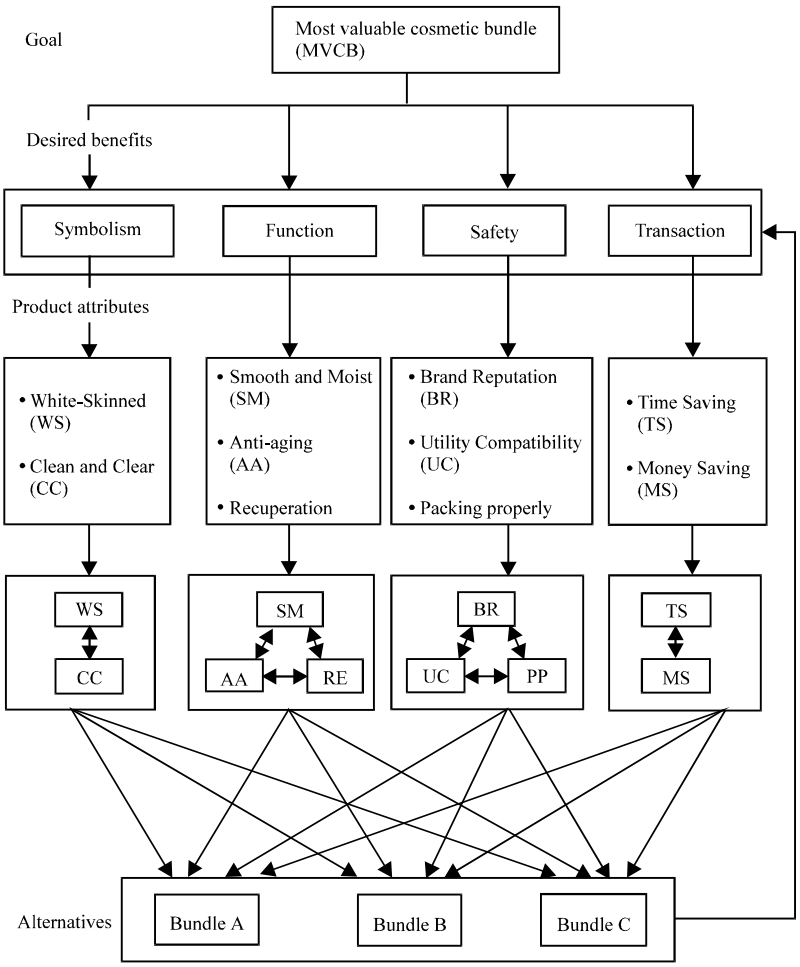

Fig. 2: Evaluation model of "most valuable cosmetics bondle"

RESULT'S DISCUSSIONS AND SUGGESTIONS

In previous research, most of the hierarchical evaluation models start from the goal and end with alternatives and the feedback loop is not considered. There are principally two evaluation methods which are applied in this decision making research. The first one is based on simple multi-attribute ranking technique

(Edwards, 1977) to develop the following formula which is provided by Meade and Sarkis (1999) and application thereof in various journal papers (Agarwal *et al*., 2006; Jharkharia and Shankar, 2007) in selecting or forecasting the best alternative:

$$D_i = \sum_{j=1}^{J} \sum_{k=1}^{Kj} P_j A^D_{kj} A^I_{kj} S_{ijk} \quad (1)$$

In this Equation, D_i is desirability index for the alternative i, P_j is the relative weight of desired benefit j on the goal, A^D_{kj} is the relative weight of product attribute k in influencing the goal through desired benefit j for the dependency (D) relationships. A^I_{kj} is the stabilized relative weight for product attribute k of j desired benefit for interdependency (I) relationships within the product attribute component level which are taken from the converged super-matrix. S_{ikj} is the relative impact of alternative i on product attribute k of desired benefit j for the goal. Kj is the index set of beneficial attributes for performance j and J is the index set for the desired benefit j. Table 1 is the result that utilizes the above formula to calculate the desirability index of all alternatives.

The second method is to utilize a supermatrix hierarchy formation to select the optimal alternative, as in the following:

$$W = \begin{array}{c} \\ \text{Goal} \\ \text{DBs} \\ \text{PAs} \\ \text{Alternative} \end{array} \begin{array}{c} \begin{array}{cccc} \text{Goal} & \text{DBs} & \text{PAs} & \text{alternative} \end{array} \\ \begin{bmatrix} 0 & 0 & 0 & 0 \\ W_V & 0 & 0 & 0 \\ 0 & W_S & W_S & 0 \\ 0 & 0 & W_A & I \end{bmatrix} \end{array}$$

The entry in the last row and column of the hierarchy super-matrix is the identity matrix I, which means each alternative depends only on itself. Under this condition, this research obtains the result which is shown in Table 2.

Based on the results of the SMART, hierarchy and holarchy models, the comparison table is shown in Table 2. According to priority weight, the rank 1 is Bundle C, followed by Bundle B and Bundle A in the SMART model. The difference between the maximal one (Bundle C) and the minimal one (Bundle A) is 0.0210. However, in the hierarchy model and holarchy model, the rank 1 is Bundle B but followed by Bundle A and Bundle C. In the hierarchy model, the difference between the maximal one

Table 1: The weight, index and evaluation results of cosmetic bundle

Performance	*Pj*	Attribute	A^D_{kj}	A^I_{kj}	S1	S2	S3	Bundle A	Bundle B	Bundle C
Symbolism	0.239	WS	0.428	0.404	0.121	0.513	0.366	0.005	0.021	0.015
	0.239	CC	0.572	0.596	0.149	0.231	0.620	0.012	0.019	0.051
Function	0.409	SM	0.416	0.245	0.409	0.398	0.194	0.017	0.017	0.008
	0.409	AA	0.322	0.364	0.314	0.372	0.314	0.015	0.018	0.015
	0.409	RE	0.262	0.391	0.311	0.307	0.382	0.013	0.013	0.016
Safety	0.250	BR	0.486	0.288	0.424	0.335	0.241	0.015	0.012	0.008
	0.250	QA	0.357	0.647	0.427	0.412	0.161	0.025	0.024	0.009
	0.250	PP	0.156	0.125	0.267	0.499	0.234	0.001	0.002	0.001
Transaction	0.102	TS	0.396	0.465	0.508	0.358	0.134	0.010	0.007	0.003
	0.102	MS	0.604	0.535	0.522	0.239	0.239	0.017	0.008	0.008
Desirability index (*Di*)								0.130	0.136	0.138
Normalized Desirability index, (Di_N)								0.322	0.336	0.343
Rank								3	2	1

Table 2: The comparison among SMART, hierarchy and holarchy model of evaluation

Comparison	Bundle A	Bundle B	Bundle C
SMART			
Priority/overall weight	0.1298	0.1356	0.1383
Normalized weight	0.3215	0.3359	0.3426
Rank	3	2	1
Weight difference with rank 1	0.0210	0.0067	
Hierarchy			
Priority/overall weight	0.3272	0.3478	0.3250
Normalized weight	0.3272	0.3478	0.3250
Rank	2	1	3
Weight difference with rank 1	0.0206		0.0228
Holarchy			
Priority/overall weight	0.0812	0.0880	0.0808
Normalized weight	0.3248	0.3520	0.3232
Rank	2	1	3
Weight difference with rank 1	0.0272		0.0288

(Bundle B) and the minimal one (Bundle C) is 0.0228. Further, in the holarchy model, the difference between rank 1 and rank 3 is amplified to 0.0288.

CONCLUSION

These comparisons provide the necessary information to consider the inner-dependency and feedback loop in decision making. Even if researchers could utilize clear formula and objective calculations to obtain the overall weight, based on the relative weight of alternatives in each evaluation criteria or sub-criteria, in the real world, an evaluator is subjective in expressing one's own preference. Although the alternative may have one or two defects under the specific desired benefit, this does not necessarily mean that this alternative will obtain a lower evaluation in that value. In fact, an adjuster may simplify the evaluation process and assess the different value characteristics of alternatives directly based on personal cognition. Thus, the image of cognition leads the feedback influence to be transmitted from an alternative cluster to the desired benefit cluster, forming a cycle. Moreover, in making a decision, influenced by subjective preferences and the overall image for each alternative, researchers may possibly obtain an incomplete result or make an error in forecasting that will cause an error of judgment and lead to a wrong decision.

REFERENCES

Agarwal, A., R. Shankar and M.K. Tiwari, 2006. Modeling the metrics of lean, agile and leagile supply chain: An ANP-based approach. Eur. J. Operational Res., 173: 211-225.

Asikhia, O.U., 2009. Marketing decisions and small businesses in lagos state: A case study of furniture making business. Res. J. Bus. Manage., 3: 85-94.

Bearden, W.O. and T.A. Shimp, 1982. The use of extrinsic cues to facilitate product adoption. J. Marketing Res., 19: 229-239.

Bhat, S. and S.K. Reddy, 1998. Symbolic and functional positioning of brand. J. Consumer Marketing, 15: 32-43.

Chen, Z. and A.J. Dubinsky, 2003. A conceptual model of perceived customer value in e-commerce: A preliminary investigation. Psychol. Marketing, 20: 323-347.

Dodds, W.B., K.B. Monroe and D. Grewal, 1991. Effects of price, brand and store information on buyers' product evaluation. J. Marketing Res., 28: 307-319.

Edwards, W., 1977. How to use multiattribute utility measurement for social decision making. IEEE Trans. Syst. Man Cybernetics, 7: 326-340.

Grewal, D., R. Krishnan, J. Baker and N. Borin, 1998. The effect of store name, brand name and price discounts on consumers' evaluations and purchase intentions. J. Retailing, 74: 331-352.

Guiltinan, J.P., 1987. The price bundling of services: An integrated framework. J. Marketing, 51: 74-85.

Harris, J. and E.A. Blair, 2006. Functional compatibility risk and consumer preference for product bundles. Academy Marketing Sci., 34: 19-26.

Holbrook, M.B., 1994. The Nature of Consumer Value. In: Service Quality: New Directions in Theory and Practice, Rust, R.T. and R.L. Oliver (Eds.). Sage Publications, Newbury Park, CA, pp: 21-71.

Homans, G.C., 1958. Social behavior as exchange. Am. J. Sociol., 62: 597-606.Javalgi, R.G., W.B. Joseph and W.R. Gombeski Jr, 1995. Positioning your service to target key buying influences: The case of referring physicians and hospitals. J. Services Marketing, 9: 42-52.

Jharkharia, S. and R. Shankar, 2007. Selection of logistics service provider: An Analytic Network Process (ANP) approach. Int. J. Manage. Sci. Omega, 35: 274-289.

Jiang, J., T.J. Chou and X. Tao, 2011. The impact of price discount, product complementarity and relational investment on customer loyalty: Empirical evidence from China's telecommunications industry. Asian J. Market., 5: 1-16.

Johar, J.S. and M.J. Sirgy, 1991. Value-expressive versus utilitarian advertising appeals: When and why to use which appeal. J. Advertis., 20: 23-33.

Kaicker, A., W.O. Bearden and K.C. Manning, 1995. Component versus bundle pricing: The role of selling price deviations from price expectations. J. Bus. Res., 33: 231-239.

Lapierre, J., 2000. Customer-perceived value in industrial contexts. J. Bus. Indus. Marketing, 15: 122-145.

Mazumdar, T. and S.Y. Jun, 1993. Consumer evaluations of multiple versus single pricechange. J. Consumer Res., 20: 441-450.

Meade, L. and J. Sarkis, 1999. Analyzing organizational project alternatives for agile manufacturing process: An analytical network approach. Int. J. Prod. Res., 37: 241-261.

Montinaro, M. and I. Sciascia, 2011. Market segmentation models to obtain different kinds of customer loyalty. J. Applied Sci., 11: 655-662.

Moriarty, R.T. and T.J. Kosnik, 1989. High-tech marketing concepts, continuity and change. Sloan Manage. Rev., 30: 7-17.

Murphy, P.E. and B.M. Enis, 1986. Classifying products strategically. J. Marketing, 50: 24-42.

Paun, D., 1993. When to bundle or unbundle products. Ind. Marketing Manage., 22: 29-34.

Rao, A.R. and K.B. Monron, 1989. The effect of price, brand name and store name on buyers' perceptions of product quality: An integrative review. J. Marketing Res., 26: 351-357.

Reid, N., 1988. The Delphi Technique: Its Contribution to the Evaluation of Professional. Chapman Hall, London.

Rise, A. and J. Trout, 1986. Positioning: The Battle for Your Mind. McGraw Hill, Inc., New York, pp: 12-24.

Sarin, S., T. Sego and N. Chanvarasuth, 2003. Strategic use of bundling for reducing consumers' perceived risk associated with the purchase of new high-tech products. J. Marketing Theory Practice, 11: 71-83.

Schiffman, L.G. and L.L. Kanuk, 2000. Consumer Behavior. 9th Edn., Prentice Hall, Upper Saddler River, New Jersy, ISBN: 8177589997.

Simonin, B.L. and J.A. Ruth, 1995. Bundling as a strategy for new product introduction: Effects on consumers' reservation prices for the bundle, the new product and tie-in. J. Bus. Res., 33: 219-230.

Slater, S.F. and J.C. Narver, 2000. Intelligence generation and superior customer value. J. Acad. Marketing Sci., 28: 120-127.

Stremersch, S. and G.J. Tellis, 2002. Strategic bundling of products and prices: A new synthesis for marketing. J. Marketing, 66: 55-72.

Teas, R.K. and S. Agarwal, 2000. The effects of extrinsic product cues on consumers' perceptions of quality, sacrifice and value. J. Acad. Marketing Sci., 28: 278-290.

Vijayasarathy, L.R. and J.M. Jones, 2000. Print and internet catalog shopping: Assessing attitudes and intentions. Internet Res., 10: 191-202.

Walter, A., T. Ritter and H.G. Gemunden, 2001. Value creation in buyer-seller relationship. Marketing Manage., 30: 365-377.

Woodruff, R.B., 1997. Customer value: The next source for competitive advantage. J. Acad. Marketing Sci., 25: 139-153.

Yadav, M.S. and K.B. Monroe, 1993. How buyers perceive savings in a bundle price: An examination of a bundle's transaction value. J. Marketing Res., 30: 350-358.

Yang, C.W., 2010. Integrating fuzzy integral with multinomial logit model to evaluate the effects of service quality on traveling airline choice. Inform. Technol. J., 9: 1449-1457.

Zanjani, M.S., N. Sakhaee and H. Shahbaznezhad, 2009. Mechanisms of customer knowledge management in E-commerce websites. Res. J. Inform. Technol., 1: 86-93.

Zeithaml, V.A., 1988. Consumer perceptions of price, quality and value: A Means-end model and synthesis of evidence. J. Market., 52: 2-22.