

Chapter VIII

Identifying and Clustering of Target Customers of Green Products

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ABSTRACT

The number of consumers concerned about the environment is growing. Although the promotion of green products is recognized as a basic method for solving the waste crisis and improving the environment, resources for producing or serving green products are relatively limited, causing inconveniences and elevated prices for the consumer. Therefore, it becomes significant that those customers who are willing to sacrifice convenience in order to purchase higher priced green products be identified. Through the affirmation of target customers in an effective marketing system, enterprises can recycle used products efficiently, increase profits and successfully transmit advertising information to consumers who are disposed to buy green products. In this chapter, we apply data mining techniques to cope with this problem. After clustering the customers, a bi-objective nonlinear problem is constructed with multiple attribute utility theory; the target customers form the foundation of marketing.

INTRODUCTION

Due to the potential depletion of raw materials in the near future, environmental protection issues have become increasingly important; likewise, the numbers of consumers who are concerned about the environment are also increasing. Green

products can reduce the negative environmental impact while still maintaining or improving costs and quality needs. Promotion of green products is recognized as an access for solving resource waste and improving environmental pollution. In consequence, green marketing becomes a business management trend requiring frequent

interactions between consumers and producers to ensure the 3R's of reusing, remanufacturing, and recycling.

Initially, green products and traditional products were sold in the market simultaneously. Most peripheral equipment or environments, however, mainly rely on traditional products as resources for serving green products are relatively limited and inconvenience and higher prices are associated with obtaining these products. Therefore, apart from setting up a complete recycling system, it becomes essential that customers who are willing to pay higher initial prices for products not widely used be identified. The affirmation of target customers and a complete marketing channel can not only assist enterprises in recycling effectively, but can transmit advertising information to customers who are willing to buy new products or services and thereby increase their profit.

For our purposes, a "target customer" refers to a consumer who is willing to purchase higher priced green products even though his/her convenience may be sacrificed. Investigating the product value with respect to such target customers will provide companies with good reference points for future pricing of such products.

To achieve the above goals, we need to efficiently cluster customers into various segmentations according to their preferences for green products. The multiattribute utility theory (MAUT) was used to develop the aggregated fulfillment of obtaining such a product. Based on the win-win concept, a bi-objective model was constructed to derive the optimal price that satisfies both the customers' utility and the producers' benefit simultaneously. Based on the characteristics of the customers' clusters, the target customers can be identified and this will be the foundation for marketing. Therefore, we can sell the right goods to the right person with value gained to the company.

In this chapter, we first introduce the background of related researches. Then, the theoretical development and the basic structure

of the model are constructed, and the first part of a case study is used to illustrate the procedures of selecting suitable segmentation variables. Next, the optimal prices of a hybrid electric vehicle are used to illustrate the procedures for obtaining segmenting optimal prices by MAUT. Finally, discussion and conclusions are drawn. This chapter will be the foundation of a Web site for the marketing of green products.

LITERATURE REVIEW

The rapid development of information technology and the Internet has changed traditional business environments. Companies are realizing that they can use the Web to effectively communicate with customers, making their business easier. The author had proposed a Web mining system that incorporates both online efficiency and off-line effectiveness to provide the "right" information, based on users' preferences (Wang & Wang, 2005). To efficiently construct a Web site that will provide information about green products, we first need to identify customers according to their preferences, so that Web customers' behavior can be characterized.

Based on the above ideas we will first introduce the different demands of green marketing and in order to cope with these different demands, the existing research about the customer features will be investigated. Facing the customer heterogeneity and for a successful marketing, the suitable variables for profiling the green customers are discussed. Furthermore, MAUT and related techniques are introduced to construct a compromised model of the consumers between alternatives with conflicting objectives. Finally, the solution procedures for the proposed model are presented.

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