Online Customer Value Structure: A Network Analysis Approach

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Abstract. Increasingly, customers use the internet as a vehicle for purchasing things. While customer value measurement is an important element in customer relationship management. Based on analyzing some typical models of customer value, the paper explores the advantages and limitations of current models and methods on customer value evaluation, and it focuses on the online customers’ behavior and develops a model of online customer value. The framework of the model is consistent of historical value, current value and the future potential value of online customers.

Keywords: Customer relationship management, Customer value, Customer lifetime value, Online customer value evaluation.

1 Introduction

With the development of Internet technology, customer data mining has become an important element in the daily management of modern enterprises. To enterprises which make a profit through providing network services, building up a CRM system in consistent with Internet is an important way to the core-competitiveness and survival ability of the enterprises in the Internet era. Online customer has greater fluidity and uncertainty than traditional customer, theories and methods on traditional CRM are challenged from many aspects[1].

The paper focuses on the group value model of online customer. Online customer data mining is based on the study of basic characteristics of individual online customer, consuming behavior, consuming process and constitute of online consuming cost, building up online customer consuming balance model. Further study is based on the online consuming time, click rate, data flow, transaction amount and personal information, turning out the calculation and analysis methods of amount of online customer service consumption. Group value model of online customer is based on amount of online customer service consumption, from the aspect of online customer life cycle, building up the framework of value calculation and evaluation model.

2 Models

The models of customer value evaluation mainly include: RFM model, FRAC model, NPV evaluation model, and EVA evaluation system[1-2].
RFM model is a frequently-used tool of customer behavior analysis from direct selling field, which predicts customer future purchase behavior by analyzing customer’s past consumer behavior. R (Recency) represents the time span between the latest consumption time and current time; F (Frequency) represents the number of purchase behavior during the research. M (Monetary) represents average expenditure in study region. RFM model structure is based on prior reasoning and the assumption of empirical evidence.

Deficiency of RFM model is that it primarily used to predict customer’s future behavior, which disagrees with the evaluation of customer value; in addition, RFM model non-direct selling industry.

Essentially, FRAC model which was put forward by Bob Kestnbaum is the expansion of RFM Model, F (Frequency) represents the frequency of consumption; R (Recency) represents the time lag between consumptions; A (Amount) represents total quantity of consumption. C (Category) represents the category of consumption. Through the evaluation of these four aspects, a customer’s long-term value can be estimated accurately.

The shortage of FRAC model is that it is primarily based on comparative qualitative study. If it lacks of comparability between individual customers, the application effect of FRAC model will be affected. FRAC model is not suitable for non-direct selling industry either.

NPV (Net Present Value) is a life-cycle model, it was based on Frederick Reichehd’s factor analysis that loyal customers helps to increase corporate earnings. In NPV evaluation system, customer profiles mainly come from two aspects: profit from primary customers and new customers. Customer tenure actually is lifecycle of customers, which is a dynamic process substantially. Individual customers’ lifecycle can be confirmed easily, but internal customers’ lifecycle is not the simple superposition of individual customer’s lifecycle.

EVA (Economic Value Added) is a valid method of enterprise value evaluation, it not only can excellently solve problems that exist in traditional evaluation index system, but also can reflect value created for shareholders in specific period. EVA is a financial evaluation method essentially, therefore, it is hard to avoid some deficiencies of financial analysis in practical application.

In conclusion, the lack of customer file information and non-traditional transactions, traditional methods can’t take effect obviously. In addition, traditional methods are hard to stay the same in evaluating consumption of different service products.

3 Methods

The current methods of calculating customer value make total customer value as customer lifetime value (CLV), which equals to the sum of historical value, current value and potential value, but the calculation of potential value exists disputes, it is not easy as well as historical value and current value.

In the opinion of Peter C. Verhoef and Bas Donker (2001), potential customer value is equal to the probability of purchasing product multiply the profit of product[2]: