

# Customer Churn Identifying Model Based on Dual Customer Value Gap\*

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## ABSTRACT

The customer churn and the forecast of customer churn have been important research topics for a long time in the academic domain of customer relationship management. The customer value is studied to construct a gap model based on dual customer values; a basic description of customer value is given, then the gaps between products and services in different periods for the customers and companies are analyzed. The main factors that influence the perceived customer value are analyzed to define the "recognized value gap" and a gap model for the dual customer value is constructed. Based on the dual customer gap a conceptual model to determine potential churn customers is proposed in the paper.

Keywords: Customer Churn, Identifying Model, Dual Customer Value Gap

## 1. Introduction

The subject of customer retention, loyalty, and churn attracts much attention in many industries. This is important in the customer lifetime value context. A company will

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have a sense of how much is really being lost because of the customer churn and the scale of the efforts that would be appropriate for retention campaign. The mass marketing approach cannot succeed in the diversity of consumer business today. Customer value analysis along with customer churn predictions will help marketing programs target more specific groups of customers [8].

Customer churn analysis is critical for a good marketing and a customer relationship management strategy. An important component of this strategy is the customer retention rate, in other words, customer churn rate. Customer churn rate has a strong impact on the customer lifetime value, and understanding the true lost value of a possible customer churn will help the company in its customer relationship management. Conventional statistical methods are very successful in predicting a customer churn. In this paper, from the perspective of dual customer value gap, a method to identify which customers have more propensities to churn is discussed.

## 2. Customer churn

The focus on customer churn is to determine the customers who are at risk of leaving and if possible on the analysis whether those customers are worth retaining. The churn analysis is highly dependent on the definition of the customer churn. The business sector and customer relationship affect the outcome how churning customers are detected. The customer churn is closely related to the customer retention rate and loyalty.

Hwang et al. [4] defines the customer defection the hottest issue in highly competitive wireless telecom industry. Their LTV (Lifetime Value) suggest that churn rate of a customer has strong impact upon LTV because it affects the length of service and the future revenue. Hwang et al. also defines the customer loyalty as the index that customers would like to stay with the company. Churn rate describes the number or percentage of regular customers who abandon relationship with service provider [4].

$$\text{Customer loyalty} = 1 - \text{Churn rate} \quad (1)$$

Usually on the marketing perspective the sufficient information about the churn

is the probability of possible churn. This enables the marketing department so that, given the limited resources, the high probability churners can be contacted first [1].

### 3. Customer Value

#### 3.1 Dual Nature of Customer Value

Much attention has been paid to how much direct and indirect profit a company can receive in the certain period as a means to define the customer value from the company's perspective. This value is a key indicator for evaluating customer value, but it can never give the whole meaning of customer value.

The "customer value" concept actually has two meanings. One meaning focuses on the value that a company can bring to the customer as a subjective evaluation from the company's perspective. The other definition focuses on the value a customer can bring to a company as a subjective evaluation of the products and services supplied by the company from the customer's perspective.

Obviously, these points of view are not the same. One is a company oriented value of the customer, while the other is a customer oriented value of the company. To emphasize the difference between these two values, this phenomenon is referred to here as the dual nature of customer value.

Philip Kotler's [6] referred to the first value as the customer perceived value or the "perceived value." This value has also been called the delivered value [5].

The second value is usually called the customer value. The two values are compared as Table 1.

Table 1. Dual nature of customer value

Attributes	Perceived value	Customer value
View point	Customer	Company
Content	Value to company	Value to customer
Information Source	Company and products	Customers and transactions
Application	Purchase decisions	Marketing

## 3.2 Customer Value Models

### 3.2.1 Kotler's deliverable theory

Kotler [1] premised that the customer will buy a product or service from a company which provides the highest perceived value. Thus the customer value is based on the customer delivered value and the customer satisfaction. The customer delivered value is defined as the difference between the total customer value and the total customer cost.

The total customer value is the sum of all the benefits received by the customer from the products and services. The total customer cost is the sum of all the costs that the customer paid for the products and services, including the monetary cost, time cost, psychological cost and physical cost. Customers are always trying to maximize their value. When they buy a product, they always hope to be most satisfied with the lowest cost.

The total customer value and the total customer cost defined by Kotler [1] are the same as the total product value and the total product cost used in this paper.

### 3.2.2 Customer value model of Van der Harr

Van der Harr et al. [9] described the whole process of value transfer from a blurred concept to a concrete product as the development of a business transaction both the suppliers and customer points of view.

The model of Van der Harr et al. not only did not discriminate between customer value and customer perceived value, but also did not give a detail discussion about the components of customer value and customer perceived value.

## 4. Dual Customer Value Gap Model

This paper uses the dual nature of customer value to design a conceptual gap model for the dual customer values shown in Figure 1 based on Kotler's [1] model and the research methods of van der Harr et al. [3].

The notation used in this analysis is given by: VP, value proposition; VD, value need; DV, designed value; EV, expected value; CV, customer value; TCV, total customer value; TCC, total customer cost; PV, perceived value; TPV, total product value;

TPC, total product cost and GPV, gap of perceived value. We define the customer value and the perceived value respectively as following:

$$\text{Customer Value} = \text{total customer value} - \text{total customer cost} \tag{2}$$

$$\text{Perceived Value} = \text{total product value} - \text{total product cost} \tag{3}$$

The value is the profit that one gets in a transaction. This value can be evaluated very differently by different individuals for different environments and even moods.

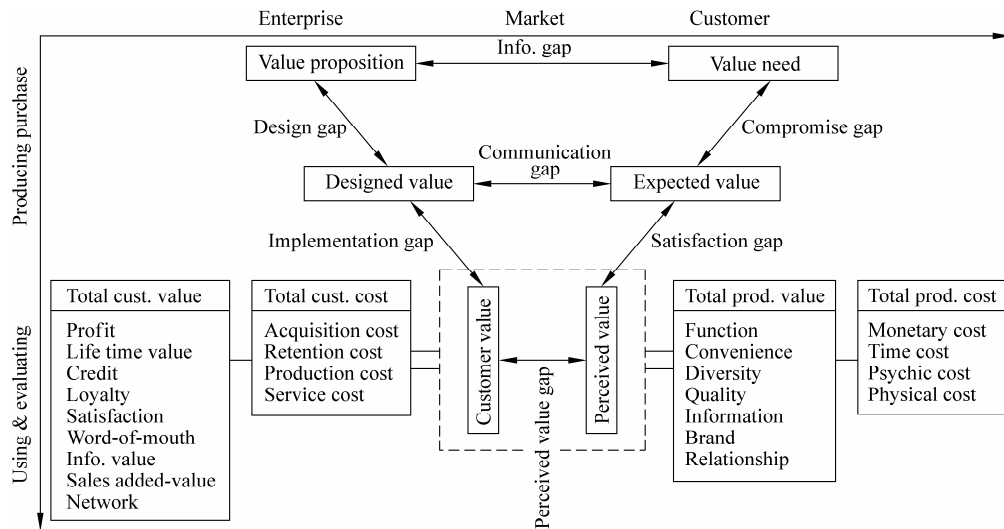


Figure. 1 Gap model for dual customer value

#### 4.1 Perceived value from the customer perspective

The perceived value focuses on the value evaluated from the customer’s perspective. The perceived value is also called the service delivery value [11].

According to Kotler <sup>[1]</sup>, the customer delivery value is equal to the difference between the total product value (TPV) that a customer gets from the products and services supplied by the company and the total product cost that the customer has paid for these products and services

$$PV = TPV - TPC \tag{4}$$

When a customer makes a purchasing decision he must seek to maximize his PV.

The components of the total perceived value and the total product cost are described in the following.

#### **4.1.1 Total product value**

The total product value includes the following factors [10]. They are functional value, convenience value, diversity value, quality value, information value, brand value and relationship value.

#### **4.1.2 Total product cost**

Customers always seek the high value product or service with as the lowest as possible cost. They then have the highest perceived value. Generally speaking, the total product cost should include the following. They are monetary cost, time cost, physical cost and psychological cost.

### **4.2 Customer value from the company's perspective**

Customer value is the value that a customer can bring to a company from the company's perspective. The direct value is the profit contributed to the company by the customer. There are also many other factors that influence the customer value.

The other important factor influencing customer value is the total customer cost. The total customer value is equal to the difference between the total customer value and the total customer cost:

$$CV = TCV - TCC \quad (5)$$

One of the most important goals of any company is to maximize the company's value. With the development of a market economy and societal changes, each company's view of value and its marketing philosophy are evolving with time. In a service economy, maximization means the acquisition of high value customers and high returns on investment where keeping the costs as low as possible.

The components of the total customer value and the total customer cost can be described as follows.

#### **4.2.1 Total customer value**

The total customer value consists of the following factors [3]. They are customer

profit and customer lifetime value

The customer lifetime value can be defined as the total profit one customer can bring to a company in the future. The value is based on the lifetime model relating the impact of customer loyalty on increments of the company's profit as proposed by Reichheld [7].

Other influencing factors are customer credit, loyalty, satisfaction, word-of-mouth, customer information value, sales added-value and customer network value.

#### ***4.2.2 Total customer cost***

Total customer cost includes customer acquisition cost, customer retention cost, production cost and service supply cost.

## **5. Customer Churn Analysis**

The supplier and the customer views of the value of a product can be used to overlap a model do describe the whole process of value evolution from an unclear idea to a concrete product for sale, and to demonstrate what the company should do in order to reduce some gaps or enlarge others.

### **5.1 Vertical gap (internal gap)**

#### ***5.1.1 Design gap***

A company will form it's concept of proposition value according to the perceived customer needs and the company's strategy, capabilities, resources and vision. Differences between a company's resources and products and the market's needs make a gap between the active value and the design value of a product and service. This gap is called the design gap.

#### ***5.1.2 Implementation gap***

Management, technology and resource limitations and other internal factors limit a company's ability to provide customers with the products and services that are consistent with the desired value. Thus, there is a gap between the final value provided to the customer and the designed value which is called the implementation gap.

### ***5.1.3 Compromising gap***

Social and technical limitations and other objective factors also limit a company's ability to provide products and services to the market that totally conform to the customer's value, so that there is a compromising gap between the company's product and the customer's desire.

### ***5.1.4 Satisfaction gap***

The gap between the perceived value of the product or service and the expected value is called the satisfaction gap which is related to the customer satisfaction [2]. Denoting this satisfaction by  $S$ , then,

$$S = PV - EV \quad (6)$$

Larger  $S$  will mean more satisfied customers. If  $S$  is less than zero, the customer will not be satisfied.

## **5.2 Horizontal gap (external gap)**

### ***5.2.1 Information gap***

Because of asymmetrical information between the suppliers and the customers, or lack of neutrality when investigating the customer's needs, the customer need analysis may not be objective and accurate, then an information gap between the value and the customer need resulted.

### ***5.2.2 Communication gap***

When both the customer and the company intend to build a business relationship, the extent of these communications determines how well the designed value of the product conforms to the expected value of the customer. If the communication is incomplete, this gap will increase which will result in customer dissatisfaction and customer churning.

### ***5.2.3 Perceived value gap***

This most important gap is due to different evaluations of product or service by the customer and the company.

$$GPV = PV - CV \quad (7)$$



When this gap is positive, customers are willing to buy the product and a business transaction results.

In marketing, companies should do their best to increase this gap, so that the customers feel that the transaction is profitable for them and they will be satisfied and be loyal to the company.

**5.3 Customer churn identifying model**

Based on the above discussed customer value gap, we can build a customer churn identifying model with which we can determine loyalty customer and customers with strong propensity to churn. That means, the exterminating factors depends on the customer value gap relating to both customer’s perceived value and customer value.

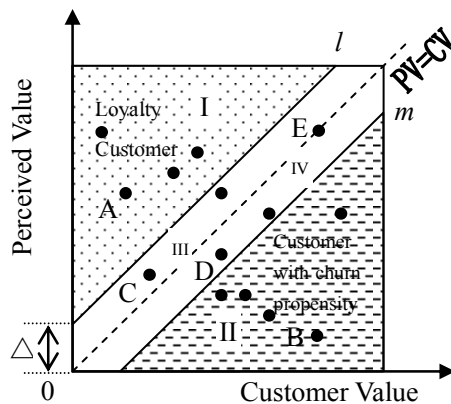


Figure 2 Customer churn identifying model

The customer churn identifying process could be described as following:

**5.3.1 Building the coordinate system**

As figure 2 shown, the vertical axis and the horizontal axis were used to present perceived value and customer value respectively, and the line  $PV = CV$  divided the plane into two parts, i.e. I+III and II+IV.

Selecting an appropriate  $\Delta$  and drawing two parallels  $l$  and  $m$  to the line  $PV = CV$  with the intercept  $\Delta$ , and  $\Delta$  depends on how accurately the identifying process was required.

### 5.3.2 *Computing perceived value and customer value*

According to section 3, we can compute every customer's perceived value and customer value. Using two values every customer has its' own position in the coordinate system.

### 5.3.3 *Customer churns identifying*

As Figure 2 shown, any customer must belong to one of four areas, i.e. I, II, III and IV except for the customer just on the lines.

- Loyalty customer and less loyalty customer

All the customers located above the line  $PV = CV$  believe what they get is worthy of what they pay because  $PV > CV$ , so that they are willing to continue their transactions with company. That means, they will not churn in the near future.

These customers can also further be divided into two parts, I and III. Generally speaking, the customers in Part I, e.g. customer A, are loyalty customer because their evaluation to the product and service is very high. The customers in part III are satisfied with their relation with company but their loyalty to company is less than Part I.

- Customer with churn propensity

All the customers located below the line  $PV = CV$  believe what they get is not worthy of what they pay because  $PV < CV$ , so that they are not willing to continue their transactions with company, and therefore perhaps they will churn in the near future.

As above discussed, the customers in part II have very strong propensity to churn, and the customers in part IV have less propensity to churn.

The management in company can classify their customers into four groups and make their right marketing policy according to the analysis results.

## 6. Conclusions

How to predict and determine the churn customer is already widely discussed, but most analysis methods are based on customer value from company's perspective. This paper tries to find a new way to forecast and determine the churn customer from the perspective of dual customer value gap. Further study will focus on quantitative

analyses of the method.

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