

December 2003

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## Recommended Citation

Yoon, Jongwook; Hwang, Seok; Kim, Dan; and Yoon, Jongsoo, "A Balanced View for Customer Segmentation in CRM" (2003).  
*AMCIS 2003 Proceedings*. 67.  
<http://aisel.aisnet.org/amcis2003/67>

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# A BALANCED VIEW FOR CUSTOMER SEGMENTATION IN CRM

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## Abstract

*Many researchers place great emphasis on the customer segmentation step of the CRM implementation process because it is a starting point for creating differentiated offerings and target marketing to satisfy customers. As the process of segmenting customers is to make an important service encounter with a company and its customers, both the companies' and customers' expected value should be considered equally. However, most of the current studies have focused only on the companies' view in terms of profitability.*

*This paper proposes a balanced view for segmenting customers. Focusing on communications and banking industries that have massive demographic and transactional data, this study states that the intangible customers' expected value, including customer satisfaction or loyalty, can be indicated as a monetary measure and used as an input of customer segmentation. Through the proposed segmentation approach, a company can more multilaterally define its loyal customers and build mutually beneficial relationships with customers. The resulting more exact definition of customer loyalty will effectively retain customers.*

## Introduction

Stanford-based Meta Group Inc. predicted that the Customer Relationship Management (CRM) software market would more than double, from \$20 billion in 2001 to \$46 billion by 2003 [Melymuka, 2002]. CRM investments by companies are expected to exceed \$90 billion by 2003 [Kaneshige, 2000]. Despite the bright future of CRM, the success rate of CRM applications is not satisfactory. Only about thirty-five percent of CRM applications have been estimated as a success [Davids, 1999]. Even though it is getting better, fifty-five percent of all CRM applications fail according to Gartner Inc. [Melymuka, 2002].

Corner (2002) suggests four stages – attraction, sales effectiveness, loyalty management, and churn management – as the life cycle of CRM. He also points out that for successful CRM implementation, companies must pay careful attention to the segmentation stage. The process of segmenting customers should take into equal consideration both the companies' and customers' expected value. However, most of the current studies have focused only on the companies' view in terms of profitability.

This paper proposes a balanced view for segmenting customers. Focusing on communications and banking industries which have massive demographic and transactional data, this study posits that the intangible customers' expected value which, including customer satisfaction or customer loyalty, can be indicated as a monetary measure and used as an input of customer segmentation. Such balanced segmentation encourages customers to stay longer.

## The Importance of Segmentation in CRM

Some researchers have suggested general steps for implementing CRM successfully [Peppers and Rogers, 1993, 1999; Winer, 2001; Zeithaml, 2000]; however the paradigm of CRM is unclear and different definitions have been used both in academic and

industrial areas [Harker, 1998; Wright et al., 2002; Goodhue et al., 2002]. Dibb (2001) summarized four steps to implement CRM as ‘Identify customers,’ ‘Differentiate customers,’ ‘Interact with customers,’ and ‘Customize for customers’ by comparing previous research models.

One of the common concerns of these models is to emphasize ‘customer retention and segmentation’ steps (Corner, 2002). Based on a Meta analysis of CRM studies, Abbott et al. (2001) found three keys to success: segmentation, retention, and prospects based on clean and accurate data. The uses for CRM can be grouped into two functions: customer acquisition and customer retention [Mckim & Hughes, 2000]. Today, particularly for the company’s “best” customers, the tone of the conversation has changed from customer acquisition to retention [Winer, 2001; Roberts, 2000; Dibb, 2001].

## Customer Retention and Differential Customer Value

According to the well-known Pareto Principle or 80/20 rule, it is important to target highly profitable customers with frequent advertising, promotion, sales calls and ongoing communication efforts [Weinstein; 2002]. The underlying rationale for CRM can be grouped into two parts: customer retention and differential customer value.

First, customer acquisition is generally expensive and difficult to achieve, so *customer retention* and relationship building are important [Simon & Sullivan, 1993]. A main strength of CRM is that it allows organizations to take defensive marketing postures to discover preferences in their current customer base. This is especially valuable when considering the cost of gaining new customers, versus cultivating existing customer relationships [Kos et al., 2001]. Conventional wisdom suggests that it costs at least five times more to get a new customer than keep an existing one [Weinstein; 2002]. Reichheld also shares some similar statistics on the significance of customer retention [Reichheld, 1996].

Secondly, and more important, both managers and scholars have come to believe that *not all customers are of equivalent value* [Ness et al., 2001; Zeithaml, 2000; Winer, 2001]. According to Peppers and Rogers (1993), CRM is simply treating different customers in different ways.

## The Evolution of Segmentation Theory and a Limit in the New Approach

Segmentation theory has been an evolutionary process. The theory is that customers are grouped just on the basis of product needs and buyer behavior [Kotler, 2000]. This can be referred to as ‘traditional segmentation’. A variety of multivariate statistical methods such as cluster and discriminant analysis have been used to group together customers with similar behavioral patterns and descriptive data, which are then used to develop different product offerings or direct marketing campaigns [Wedel et al., 1999].

More recently, traditional segmentation approaches have been heavily criticized [Peppers and Rogers, 1993; Zeithaml et al., 2001; Winer, 2001]. The most critical problem of the traditional segmentation approach is that not all customers are equal [Weinstein; 2002; Ness et al., 2001; Winer, 2001]. As a result of the finding that *heavy users* are more valuable to sales, a new approach for customer segmentation has been introduced. The most important element in the new segmentation approach is ‘corporate profit from the relationship with customers.’

In view of practical applications, Kuenne et al. (2000) shows that segment-based targeting is more effective than simple demographic-based targeting. Based on the premise that not all customers have equivalent value, simple revenue, or profit, has often been selected as a measure of customer value, indicative of a beginning level of understanding in valuation [Drew et al., 2001]. “Big” customers are those who purchase the most products or services. These customers are often handled in special ways in order to induce them to buy more products or services. Davenport et al. (2001) analyzed twenty-five companies including FedEx, US WEST, and several banks by interviewing their marketing executives. He categorized customers according to profitability, figuring out which were the most profitable and focusing on these. Clearly profitability in his research simply means ‘corporate profit from a relationship;’ many researchers agree with this view.

Is corporate profitability from customers enough to start segmentation? Levitt (1983) defines the relationship between companies and their customers as a ‘marriage’. In this context, marriage means a balance between corporate and customer profit, leading to a long-term relationship. Some research maintains that company and customer views of benefit should be considered for

successful CRM [Corner, 2002; Mckim and Hughes, 2000; Davids, 1999]. A focus on more than corporate profitability might be a better way to segment customers.

Through the above discussion, it is clear that (1) the current method by which customer profitability is measured is ultimately intended to estimate the corporate profit, (2) customer profit from a relationship deals with customer satisfaction or customer loyalty, which means it is difficult to consider the customers' view of profit in the step of segmenting customers.

## Building Proposition

After reviewing the literature, we summarized the terms related to *the companies' expected value or profit*, EV(CO), and *the customers' expected value or profit* through participating in a customer relationship, EV(CU). Table 1 shows the related terms. Surprisingly, few researchers address EV(CU) as an important factor for segmenting customers.

**Table 1. Various Definitions of EV(CO) and EV(CU)**

Researchers	EV(CO)	EV(CU)
Zeithaml (2000), Zeithaml et al. (2001), Weinstein (2002), Drew et al. (2001), Schreyer (2001), Davenport et al. (2001), Almquist et al. (2002), Winer (2001)	Customer(s) profitability or Customers value	
Winer (2001), Drew et al. (2001), Schell (1990), Keane and Wang (1995), Hughes (1996), Andon et al. (1998), McDonald (1998), Ness et al. (2001), Davids (1999)	Customer lifetime value (CLV)	
Miglautsch (2002), Verhoef et al. (2002), Baesens et al. (2001), Suh et al. (1999), Ha et al. (1998), Gattuso (1994)	RFM index (Recency, Frequency, and Monetary)	
Drew et al. (2001), Mckim and Hughes (2000), Melymuka (2002), Ness et al. (2001), Kalustian et al. (2002), Zeithaml (2002)	(Corporate) revenue or profit	
Kotler (2000), Anderson et al. (1994)		Customer satisfaction
Drew et al. (2001), Mckim and Hughes (2000), Melymuka (2002), Almquist et al. (2002), Colgate and Danaher (2000)		(Customer) loyalty

EV(CO) and EV(CU) should be applied to segment customers; but some barriers prevent both concepts from being applied in the customer segmentation step. It is especially difficult to find studies where EV(CU) has been applied. We can surmise some reasons for this from existing research. Intrinsically, EV(CU) cannot be isolated from all effectiveness of CRM [Almquist et al., 2002]. Current measures like customer satisfaction or customer loyalty are hard to make tangible. 'An incomplete variable set', such as only considering corporate revenue, can lead to segmentation failure. If mutually exclusive and collectively exhaustive sets of factors are not included in segmentation, the resulting segments would not be clearly defined [Kuenne et al., 2000]. Sometimes under-skilled personnel can be a problem in the segmentation step [Dibb, 2001]. These kinds of problems will lead companies' segmentation efforts to be incomplete. A more serious issue is that customers' tenure, or period of custom, with a particular provider may be brief [Drew et al., 2001].

Based on the above discussion, we offer a proposition which is beneficial to both customers and companies, and thus makes the segmentation step more balanced. In Figure 1, the cell *Marriage* is an ideal status for balanced segmenting. The worst case is *Parting*, which is when the customer leaves for another company. *One-sided love* is a selfish case that is apt to deteriorate into *Parting*.

What remains is a method to measure EV(CO) and EV(CU). Estimation of EV(CO) can be accomplished using measures summarized in Table 1; the majority of research agrees that examining customers by profitability is the most frequently used measure for EV(CO). Even though EV(CO) has been used frequently to segment customers, EV(CU) has not been. Another important point in this paper is that just a few industries have the potential to make EV(CU) visible – in other words, into *a monetary measure*. Zeithaml (2000) pointed out that telecommunications and banking are ahead of other industries in these customer insight efforts; one characteristic of both industries is the ease of capturing customer transactional data and demographic information.

EV(CU)	High	One-sided love	<b>Marriage (Successful CRM)</b>
	Low	Parting	One-sided love
		Low	High

EV(CO)

**Figure 1. Proposition – EV(CO) and EV(CU) for Successful Customer Segmentation**

In this case study for a security company, the *average price-earnings ratio (Avg. PER) per capita* was chosen as a proposed monetary value for individual customers. The ratio during a given period can be expressed by the following simple function.

$$\text{Avg. PER} = \{ \Sigma(P-P'-C) / \Sigma(P') \} * 100$$

In the equation, individual notations mean the following:

- P = a customer’s sale price of bonds or securities.
- P' = a customer’s purchase price of bonds or securities.
- C = commission for the transaction.

The reason why the ratio is important is that it might be regarded as one of EV(CU) which is related with customer satisfaction or customer loyalty. Using the ratio, we can estimate EV(CU) which was not able to be considered in the customer segmentation step because of its abstractness. In addition, this kind of customer segmentation would be fair for both a company and its customers because EV(CO) and EV(CU) were considered in balance. Although the applicable area is constrained to banking or telecommunications, it may be generalizable to make other well-tiered customer groups.

### Research Methodology and Initial Analysis

To test the proposed research model, we conducted data mining analysis, which has been refined from previous research [Lee and Siau, 2001; Hui and Jha, 1999; Kattan and Cooper, 1998]. 10,243 transactional records for customers of the ‘D’ security company in Korea were gathered. The data was produced between February and April 2002. As a pre-processing step, we organized the transactional records by individual customers. Table 2 shows input variables used in the cluster analysis for customer segmentation.

Of the initial 27 variables, those having many missing values were excluded. Finally the 16 variables including RFM index were selected as input variables, which were divided into main and auxiliary variables for the sake of demographic cluster analysis. As a result of the analysis, eight clusters appeared and their names were assigned after analyzing the attributes and characteristics of each cluster. Following the cluster analysis, ‘loyal customers’ was selected based on calculation of EV(CO) and EV(CU). In this case study, The RFM index was chosen as a measure of EV(CO) as it is widely used in industry because it is simple to use and gives effective results [Gattuso, 1994]. Average price-earnings ratio, which is customers’ monetary value gained from a relationship with ‘D’ company, was chosen as a measure of EV(CU). figure 2 shows the results.

In Figure 2, cell-I indicates that there are just a few loyal customers (2.13%) belonging to the ‘D’ company under the proposed framework. This may reflect the difficulty security companies have in differentiating their services from others. It is important to develop marketing strategies to induce customers belonging to cell-II and cell-IV to move into cell-I.

Table 2. Input Variables for Customer Segmentation

	Variables type	Variables	Note
Main variables	Transactional Variables	RFM index	0 – 1 value
		Average balance(AVG BALANCE2)	Discrete
		Average PER(AVG PER2)	Discrete
		Changing of PER(CHANGE PER2)	Discrete
		Stipulated amount of stock(STOCK AMT2)	Discrete
		Commission(COMMISSION2)	Discrete
		Rotation ratio of stock(STOCK RATIO)	
		Average frequency of order(AVG FREQ ORDER)	
		Scale of preference enterprise_stock(PERF STOCK)	Large/medium/small
		Scale of preference enterprise_KOSDAQ(PERF KOSDAQ)	by capital
		Market scale	
Auxiliary variables	Transaction medium	Medium group of visit preference(MEDIUM PERF2)	
	Customer propensity	Preference business(PERF BIZ)	
		Frequency until recent transaction days(FREQ DAYS)	discrete
	Demographics	Age	
Gender			

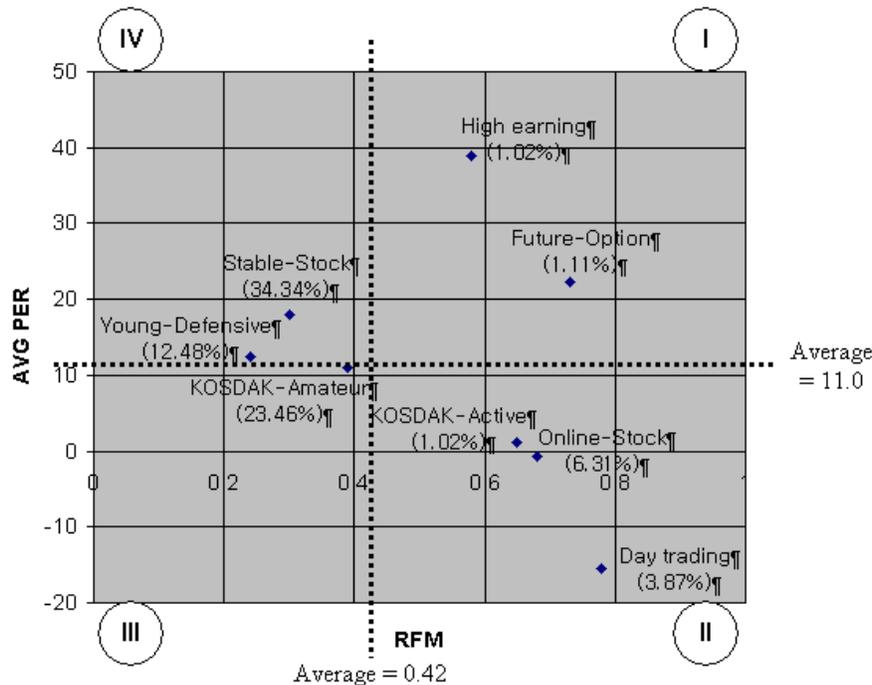


Figure 2. Customers Classification by EV(CO) and EV(CU)

### Expected Contributions

Both companies' and customers' views should be considered in this segmenting step so that the tiered group forms a mutually exclusive and collectively exhaustive set. In this case study, we propose that RFM index as EV(CO) and average price-earnings

ratio as EV(CU) can be applicable to segment customers in the security industry and combine it with the result of traditional cluster analysis. Such balanced segmenting efforts will provide an increase in both corporate profit and long-term customer relationship development.

A primary purpose for segmentation is the selection of loyal, profit-producing customers; A general method of selecting loyal customers is to evaluate customer loyalty or profitability using an RFM score based on EV(CO) alone. The company then concentrates on these customers to the exclusion of others. In contrast, the proposed in this paper offers a multilateral viewpoint that will help companies to understand and appeal to their customers completely.

Customers' views can be easily captured as monetary measures in the telecommunications or banking industries,. Thus, the proposition suggested here would be more applicable to those industries and also may be generalizable as a better customer segmentation model for other industries.

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