

Association for Information Systems

**AIS Electronic Library (AISeL)**

---

ICEB 2002 Proceedings

International Conference on Electronic Business  
(ICEB)

---

Winter 12-10-2002

## **Analyzing the Functional Frame of eCRM Based on Customer Value**

Bing Liang

Bocheng Chen

Follow this and additional works at: <https://aisel.aisnet.org/iceb2002>

---

This material is brought to you by the International Conference on Electronic Business (ICEB) at AIS Electronic Library (AISeL). It has been accepted for inclusion in ICEB 2002 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact [elibrary@aisnet.org](mailto:elibrary@aisnet.org).

# Analyzing the Functional Frame of eCRM Based on Customer Value

Bing Liang, Bo-Cheng Chen  
School of Economics and Management  
Tsinghua University  
Beijing, China  
chenbch@em.tsinghua.edu.cn

## Abstract

eCRM ties customer relationship management with the e-business. This paper suggests the functional frame of eCRM should base on the customer value to realize the win-win strategy for both the companies and their customers. The main functions to support these are explained and a functional frame model is proposed.

## 1. Introduction

No other inventions in recent years can have such a deep influence like the Internet to the companies on how to management their customer relationship and how to do business. The use of network has greatly changed a customer's purchase expectation to convenience, speed, price and service. Internet provides totally a new way of doing business in this century.

More and more customers now purchase goods through Internet, but this is not the only influence of Internet to the customer behavior. Customers also search for information's about products, services and other related things through Internet before they make a purchase decision, and enjoy more services that the companies offered on their service web sites. Companies have to rethink about how to tighten the relationship with their customers by creating the e-business strategy.

eCRM ties customer relationship management with e-business. We can expect eCRM may have a rapid growth in the near future. However, what should the eCRM functional frame be? Is it purpose merely to realize the marketing, sales and customer service automation through Internet technology?

We think the automation is the basis for eCRM operation, but the main propose of customer relationship management should be the realization of the customer value. Here the customer value means not merely the value that customers provide to companies, but also the value that companies can provide for their customers. Therefore, when we build an eCRM functional frame, we first should consider how to realize the customer value for both sides. A successful eCRM should effectively support the company to realize the win-win strategy in the Internet Era.

In this paper, we first state the customer value as the core of eCRM. Then the content of customer value is discussed from what customer requires and what customer returns. Third, based on the customer value, the main functions for supporting the realization of customer value

are suggested and a functional frame model is proposed.

## 2. Customer Value: Core of CRM

People usually classify the CRM software products by their main functionalities to three types: the Operational CRM, the Analytical CRM, and the Collaborate CRM. The operational CRM is a customer-orient application, which is something like parts of ERP's function. It not only strengthen the relatively weaken part of sales function in the ERP, but also integrate the marketing and customer service function as a whole. The analytical CRM captures, stores, extracts, processes the customer data and publishes the corresponding paper by using the data warehouse and data mining technology, so to discover the new customer knowledge for the company. The Collaborate CRM provides collaborate working environments across all the customer touchpoints.

Currently there are many CRM softwares available in the market, including the eCRM applications. However, we can see that most of them still function as marketing, sales, and customer service automation and integration tools. Although there are more or less customer management functions in them, those functions looked more like customer information management systems than customer relationship management.

The automation and integration of marketing, sales and customer service contribute to company's front-office automation, and it is the basis to run the customer relationship management, but not the core. We all know that today's market goes from product centric to customer centric, a customer driven business requires a clear knowing to the customer value. Some acknowledged marketing and management theories on CRM suggest CRM bring value to the company through these ways:

First, it should bring the capacity of "one to one marketing" to the companies. Companies should classify their customers base based on the value each customer brings to the company, and provide different service to them.

Second, based on the "80%-20%"rule, to keep an old customer is more profit than to acquire a new customer, so, companies should turn from the focus on opening new marketing to the focus on keep their loyalty customers and make them more profitability

These methods focus on the value that customers bring to companies, but this is not the all, CRM should not merely consider the value that the customers provide to companies, but more important is the value that the

customers need! Customers wouldn't keep relationship with companies if their own value requirement cannot be satisfied; this is more prominent in today's customer centric era. So, a successful CRM should first focus on the value that the customer required, consider what value can the companies provide to their customers, how can these values be provided to their customers. CRM should first manage customer value by providing customers with their required value, and to gain customers' return value. This is the win-win key for a successful CRM. To management customer value and realize it should be the core of CRM.

In the eCRM environment, Internet provides the convenience and flexibility for a customer to browse information, purchase goods and get services, it also provides the companies the power to provide information about products and services quickly to their customers, and to monitor their customers online more effectively. Whereas, Internet also carries a situation that people never meet before, that companies and their customers wouldn't communicate face to face as before, but just through a computer network. How to deal with the changes and how to realize the customer value is the problem that eCRM should face. This problem needs effective functions to meet the customers required value and make a good use of customers return value.

### 3. Customer Value Analysis

To get a clear understand on the contents of customer value, here we analyze customer value based on both customers' required value and their return value to the company.

#### 3.1 The Customer Required Value

The propose that customer buy a product is to get its use value, but this is not the all, customer has requirements during all the process — from product selection, purchase to usage, these requirements form the customer's additional value requirement. We now discuss the customer's value requirement by dividing the customer interaction process into three periods: pre-purchase period, in-purchase period and post-purchase period.

##### 3.1.1 Pre-purchase Value

The diversification of products and the mass of information make it difficult for the customers to make their purchase decisions, customers have to spend considerable quantity of time and energy, sometimes even money to seek and acquire the useful information to help them choose the proper products.

We call the cost arisen during customer's product seeking activities as the seeking cost. It contains the time, energy and money consumed during the product seeking process, besides, the risk cost of choosing wrong product also included. Lower down the seeking cost means the customer can choose product more fit for use while spend much more less time, energy and money in it. So, the value that customer requires during pre-purchase period is to minimize the seeking cost.

##### 3.1.2 In-purchase Value

Once customer makes a choice, the value he requires will transfer to the purchasing process. The common expectations to the purchasing process are: (1) Convenience, that he can place a purchase order through a convenient way, for example, he can buy it on the web, not necessarily going abroad. (2) Simple ness, the purchase procedure won't be so complex. (3) Timeliness and accuracy, means that the product he buys can be sent to him as soon as possible and the product delivered is the right one he wants. (4) Flexibility, which means some flexible payment ways can provide to customer. The value requirement during purchasing period is to maximize the expectation utility.

##### 3.1.3 Post-purchasing Value

Companies appear to know their customers' needs after the products sold, so this is a common scene for companies to provide after service for their customers. After-service is an effort by companies to meet their customers' post-purchasing period value requirements. The post-purchasing period value requirement is to pursue the minimization of risk cost of the product use. The risk cost includes the probability of consumption in the product maintenance and repair, and the lost due to the incapable of product use.

The pre-purchase value requirement, in-purchase value requirement and post-purchase requirement form the process value requirement, here the word process represents the companies' relationship process with their customers. The customer required value includes two important parts: the process value arisen from the relationship and the use value brought by the product. Though the use value is determined by the nature of product, it is apparent that high process value can take a positive improvement to use value. Figure 1 shows the construct of customer required value.

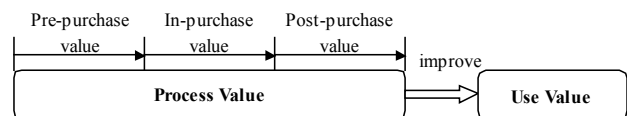


Figure 1: The construct of customer value

#### 3.2 The Customer Return Value

The customer return value is the value that customer contributes to the company after his own requirement is fulfilled. The main value within the return value is, of course, the money value that customer brings to the company. The money value consists of three parts:

- History value: The value that has been realized until now.
- Current value: The future value that the customer can bring to the company if his current behavior pattern keeps unchanged
- Potential value: If customer's purchasing enthusiasm can be raised by company's effective marketing and sales means, he might provides

more value to the company than ever.

Currently more and more companies are prone to care not just the temporary profits that their customers brought to, but the long-term profits through the whole customer lifecycle, which is called the customer lifetime value, abbreviated as CLTV. CLTV is the net value of all the revenue a customer contributes minus all the cost relevant to the customer.

A loyalty customer can bring more value to the company other than the increase in profit, these mainly include the cost saving and the word of mouth. Cost saving is the result of an effective cut down in marketing and transaction cost. While a good word of mouth may grow the company's good will to the society and leave a favorable image to company's prospects.

#### **4. An eCRM functional frame analysis**

The eCRM should well support a company to realize its win-win strategy under Internet environments. So its functionality settlement should based on the customer value that we discuss above.

Based on customer value, the functionality of CRM should include customer support and customer segmentation.

##### **4.1 Customer Support**

It is essential for a company to provide more process value for its customer to gain a competitive edge. A well-designed customer support functionality can help to win it. These functions or modules may be as follow:

###### **(1) Customer Decision Support**

In most cases, customers like to find out a way that can make their seeking cost the lowest, such as asking an experienced friend. Now the information available on Internet is so abundant and easier to access, more and more customers are used to find out information about the products before they make a purchase decision or go out to the street.

The troubles caused by much too many information won't be simpler than those caused by to less information available. Customers have to find out something useful among the huge searching results, which lower the seeking efficient and make it difficult for customers to make a decision. Therefore, the effective way to lower a customer's seeking cost is to import a customer decision support system into CRM. Here customer decision support means to help customer:

Identify the product range that fits his needs.

Know the advantages of the company's products comparing to the competitors.

Choose a proper product from the company's product list.

This is not a new idea. In fact, there are many resources; especially a lot of web sites on Internet are helping people to make a good purchase decision. The help forms include providing a purchase guide, a comparison among the leading products, and a final purchase solution. This kind of help is actually to make

information collection, classification and analysis for the customer, so that they don't have to waist time and energy to do this work, thus effectively lower their seeking cost.

To give a decision support for the customer is meaningful to a company's marketing strategy. Based on the minimization of seeking cost rule, the probability that a customer comes to buy or inquire is larger if he thinks this company can effectively help him to make a right decision on purchase.

This work may be miscellaneous, but not difficult for the realization in technology. To build a customer decision support system maybe not as complex as a truly decision support system that can help a top manager to make decisions, but actually companies take less notice of it. To give customers help in the pre-purchasing period is an aspiring manifest in concerning the customer's requirement value.

###### **(2) Purchase checking and monitoring**

There exists many differences between the purchase online and the traditional purchasing patterns, some may bring troubles to customers while some are favorable to them.

If the product that a customer wants to buy is out of stock, then he may want to know when it can be available again. If the customer is doing shopping with a company's sales employee, he could get this information from the employee, but on a web site, often he is just get a notice that this product is OOS. It is the same in the situation while the available quantity of product is less than what the customer wants.

After placing a purchasing order in a web shop, a customer needs to wait for the company delivers. The customer wants to know whether his order is accepted and being processed, when can his product be sent to, is it right on the way?

To meet a customer's purchasing requirement, a purchasing check and monitor system should be incorporated in the CRM system to provide him with these capabilities.

This cannot be done entirely by CRM, actually, it needs a cooperation with company's back end systems, such as ERP or SCM to get the information.

###### **(3) Self-service**

The Internet can provide a true 24x7 service capacity for the companies. The service web sites can provide such functions as a solution database, FAQs, resource downloads, E-mail answers for questions and so on. The future development of Internet self-service web sites is to cooperate with the customer interaction center so to strengthen the capacity of providing real-time service to the customers.

##### **4.2 Customer Segmentation**

The purpose of a company to know its customers value is to segment its customer base based on the value they provide. Then the company can find its most valuable customers through recognize, identify and retain of customers.

The differentiation of service can lower down the

total service cost while ensuring the valuable customers that they can enjoy service that is more valuable. The functions that work through using customer return value can be as follow:

(1) Customer classification

Customer value management suggests viewing customers as an important asset for a company. The method of classifying and managing customers based on customer return value is an application of ABC analysis.

To identify the importance of a customer for the company, customer profitability is an important but not the only measure element. A more comprehensive way is to use the customer loyalty as an evaluate figure.

(2) Customer behavior analysis

Customer behavior analysis is used to analyze the customer's purchasing behavior. Applying the data mining methods to customer data to segment customer base, and define the cross-selling product association rules. We can also use the RFM analysis to optimize the business campaigns.

Customer behavior analysis can also be used to determine customer's churn propensity. Using the data mining methods to analyze the history data and identify which type of customer behaviors often happen frequently before customer leaving the company, and define these behaviors as the alert for customer churning.

(3) Customer intention analysis

Different from the history record based customer behavior analysis, the customer intention analysis is to forecast the customer's future intention. The data that this analysis used comes from the feedback information through proactive customer interaction.

Forecast can help companies to know their customers' latent thought, to know what customer needs in the first time, and put these demands into the product or service development process; or use this information to propose more suitable products to their customers. Through the real-time monitor of customers' attitudes to satisfaction during the customer interaction process, companies can make a more precise evaluate on how their products can be accepted by their customers, and find out the problem during the process in time, then a more accurate forecast to customer churn can be made.

To collect more elaborate customer feedback information through CRM system environment, thereby forecast the customer's intention seems to be a common sense. However, customer intention analysis is still not an emphasis on customer relationship management, at least current developed applications don't think much of it. To integrate the true customer voice into a company's business process is a slow process which a high technology and a plenty of money is required. Consequently, many companies still make their customer analysis and decision based on the past sales data and history records.

In fact, customer intention analysis has existed in other forms for many years. Tools such as customer visit, telephone inquiry and personalized talking are all used to do this task. Internet even provides a strong capability to

monitor customers' activities on line and make responses in time. Therefore, the work is to make a good use of these tools and capabilities through a system ways to build a systematic customer intention analysis system.

(4) Customer group segmentation

Customer group segmentation is a most important way for a company's marketing department to do company's market strategy. The development of data warehouse and data mining technology enables the companies to segment their customer base not simply based on the demographic data, the segmentation based on the customer behavior analysis and the customer intention analysis can be more precise and valuable.

(5) Personalized configuration

The customer master data together with the customer classification information and the customer analysis result can form a comprehensive customer profile. The personalized configuration is to provide different service solutions for different customer profiles, such as product-combined suggestion, pricing discount strategy and after-sales promise.

4.3 A Functional Frame Model

From a general prospect, the frame of an eCRM still takes the automation and integration of marketing, sales and customer service as its operation base. Working in the Internet environment, the feature of this model is to provide both customer support and customer segmentation functions for the customer required value and the customer return value. Figure 2 shows this model.

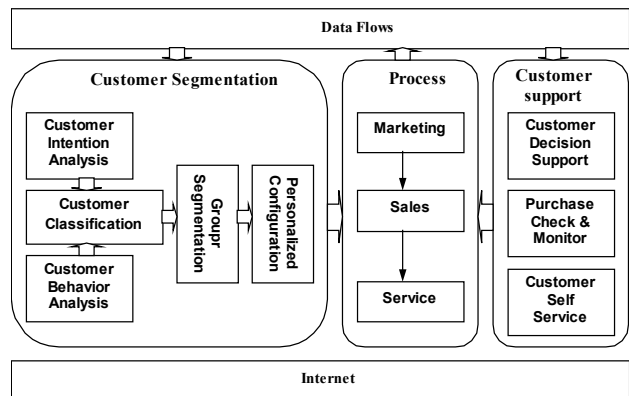


Figure 2: A functional frame model of eCRM

5. Summary

In this paper, we suggest the customer value should be the basis when we consider the function frame of eCRM. The first we should do is to realize the customer values by using it. The customer values include both the customer required value and the customer return value. Based on the content of these values, the main functions of customer support and customer segmentation operating on the Internet environment are explained and a function frame model is proposed. It is a way of thinking in an attempt to realize the win-win strategy for both the companies and their customers through Internet under the e-business environment.

## References

- [1] Paul Greenberg. *CRM at the Speed of Light: Capturing and Keeping Customers in Internet Real Time*. McGraw-Hill, 2001.
- [2] Wang Jiankang. "The CRM Value Chain in the Era of Internet," *China soft science*, 2001, 11,72~75.
- [3] Hu Zuo-hao, Zheng Zhao-hong. "The Concept of Customer Lifetime Value and Its Reveal to CRM," *Foreign Economies & Management*, 2001,4, 43~48.
- [4] Qi Jia-yin, Li Huai-zu. "Analyzing the Systematic Frame of CRM," *Industrial Engineering Journal*, 2002, 1, 42~45.
- [5] James G. Barnes. *Secrets of Customer Relationship Management: It's All About How you Make Them Feel*. McGraw-Hill, 2001.