

The Application of Data Mining in CRM

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Abstract: The concept of CRM and data mining are discussed in this thesis. Based on that discussion the application of data mining in CRM is demonstrated.

Keywords: Data Mining; CRM

1. Introduction

Now, a new business culture is developed. The face of these changes, the company urgently need to implement new solutions, develop new strategies. Since the industrial revolution, the first time when mass production and mass marketing concept and customer relationship management by gradually this new concept of alternative. The company is now analyzing the life cycle of customers to participate in the assessment of customer value. The traditional product-oriented model of customer-oriented gradually replaced by the model. The traditional mass marketing approach by the new replaced one to one marketing. In the traditional approach, the marketing objective is to obtain more customers, expand customer base. However, if access to new customer needs to spend more than to contact customers now. To do so, the focus of marketing, customer base shift from expansion to the depth of excavation on customer needs. Showed changes from the so-called market share to wallet share. Not only for commercial and business customers, they sell products from the main to the service experience and efforts, and every customer to establish long-term relationship.

2. Customer Relationship Management (CRM)

Customer relationship management, referred to as CRM (Customer Relationship Management) from the "customer centric" new business model, is designed to improve the relationship between businesses and customers a new management mechanism. Customers relationship management in the Internet Age should be the use of modern means of information technology in the enterprise and its customers to create a digital, timely, interactive communication management system. Through sales, marketing and service departments and personnel to provide comprehensive personalized customer information, and strengthen the tracking service, and information analysis. To enable them to establish and maintain cooperative with customers and business partners, a series of fruitful "one to one relationship", so that enterprises can provide more efficient and considerate services, improve customer satisfaction, attract and retain more customers so as to increase

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sales, and through information sharing and optimizing business processes effectively reduce the cost of doing business.

Customer relationship management is the scope of the retail strategy, by focusing on customer segmentation, to conduct customer business processes in manufacturing to meet customer needs, connect clients and banking products and other tools to maximize client profits and customer satisfaction. Customer relationship management to better understand customers and enhance the effectiveness of customer contact channels to achieve interaction with customers, improve customer sales and reduce customer service costs. The market in the current environment, the who can grasp the customer's demand trends, help identify and manage customer resources, improve customer relationship banking Hu, who will be able to Huo De Xian advantage in the fierce competition in the market stand undefeated. Customer Relationship Management building the first step [1] is to solve: how to find potential customers, identify key customers, how to measure customer value and other issues. Customer relationship management systems to data mining and OLAP based, to carry out customer classification, Ke for Ying Ye income, risks and costs related to factors such as analysis, prediction and optimization, transactions can be classified on the client to determine what customers most likely to buy and use a product. To achieve effective control of various risks and reduce their costs, a lot of recognition, attract, develop and retain high-end customers.

2.1 The definition of data mining

Data Mining (Data Mining) is from a large number of incomplete, noisy, fuzzy, random data, extracting implicit in them, people do not know in advance, but is potentially useful information and knowledge process. In CRM, data mining is a large number of the customer data, collect customer information, using various analytical methods, through the disorder, the inner surface of the information dug up the knowledge and rules, companies can follow these rules or use the information to design a mathematical model to make the results of the predicted behavior not occurred, the comprehensive enterprise management decision, the market provide the basis for planning.

3. Data Mining in Customer Relationship Management

Data mining can manage customer life cycle Zai Qi Ye's all Jieduanfahui, including by: to engage new clients, retain the original customer, let Yi You create more value for customers 等, to help firms master and Lejieguke characteristics, providing Gexing of service。

3.1 Customer Life Cycle

Customer life cycle is the stage of the relationship between customers and enterprises. Understanding of the customer life cycle is very important because it and the customer's income and directly related to customer returns. Market traders said that there are three ways to improve customer value. 1, increase the use value of their existing products; (2) to sell them more products or higher profits; (3) more time to maintain its customers [4]. However, over time, customer relations have been changing. Gradually become enterprises and consumers constantly learning from each other. So, this is why the customer life cycle is important? It provides an understanding of customer behavior and the overall framework.

1. Potential customers - not the customers, but customers in target markets;
2. Respondents - for products and services generated interest in potential customers;
3. Active customers - now and in the use of products and services;
4. previous customers - may lead to high-cost debts, or "bad" customers; they are no longer the target market part; or they have bought a competitor's product.

Customer life cycle for data mining in customer relationship management application provides a good framework. In data mining the input plane, customer life cycle to tell us what information can be used; in the output of the time, customer relationship management to tell us what information should draw attention. Data mining to predict when they become active when the customer returns, how long they will become active customers, how they will leave the [5]. In short: the difficulties China's retail presence and focus of the present is how to integrate customer data, integration of customer contact channels to large number of customers information, used various channels to enhance customer Guanxi transaction data, mining customer value, Zhangwo Yewuguilv. Now it seems the retail industry in the management of customer life cycle

stages can be used in data mining: data mining could help in determining customer characteristics, which can provide customers with targeted services; through data mining can be found to purchase certain products, customer characteristics, which can expand the customer base; also can find the characteristics of the loss of customers, and similar features in the event of loss of customers have not adopted before the targeted features. Therefore, customer maintenance, customer care and maintaining, the data mining tools are playing an active role.

3.2 Data Mining in Customer Relationship Management in specific application

Customer segmentation, decision tree, clustering is a common tool for customer segmentation, in accordance with different standards, such as: customer's spending habits, consumer psychology, purchase frequency, demand for the product or profit contribution of products classified in different user groups to achieve specific customer service and development of targeted products, to improve customer satisfaction, maximum digging customer lifetime value to enterprises. This will help companies through the breakdown of the different characteristics according to the customer to provide differentiated services will enable enterprises to maximize the minimum return on investment.

Obtain new customers businesses, not only to maintain existing customers, more importantly, to discover the potential value of new user groups. Get new customers is to convince potential customers use your products or services. Based on historical data, using data mining techniques to establish a "customer behavior response" forecast model, to predict the future behavior of customers. Forecast their sales efforts on your reactions, can be divided into "negative reaction", "no response", "positive reaction." Negative response is not interested you say so, no response is demand for the product is dispensable state; positive reaction expressed interested in your product (but does not necessarily mean to buy), whereby positive response categories selected groups marketing.

3.2.3 Customer Retention under the 80/20 principle, 80% from 20% of business profits back customers. Customer retention is to retain the possible loss of customers. The cost to acquire new customers increased year by year, the old customers have a high turnover rate, customers get a new customer costs is to retain an old customer costs 5 times. According to Laikehaide and Sachenko school statistics, if the enterprise customer churn rate has dropped 5%, profits will increase by 25% -50%. Therefore, customers generally contribute to the business much more than new customers. We use data mining technology to keep abreast of customer satisfaction with the services and requirements, and timely analysis of the reasons for changes in the customer as soon as possible amendments to the existing service quality, improve performance, prevent the loss of a large number of customer base and reduce losses. To guide the company focused, the rational allocation of resources to provide clients with "one on one" personal service. Help enterprises firmly grasp the potential of existing customers and attract more customers, greater competitive advantage. For example, in a mall, for every customer to do a membership card for each customer to purchase a monthly amount or number of purchases to set a value, the daily behavior of customers in this value should be among, if a customer in a month the purchase amount or number of purchases less than the value that the customer appeared abnormal behavior, and probably a lost customer, at the moment, market management should analyze the causes in time, to live a certain strategy to retain customers.

Customer profitability analysis of customers to buy directly related to profits. Using data mining technology to build customer return forecasting model, we can classify customers, high-value customers, low-value customers and worthless customer. For low-value customers and worthless customer, can take certain measures to make low-value customers or no value into profitable customers; enterprises limited energy and resources on profitable enterprises the most useful place. For high-value business customers, can take different promotional tools and incentives to maintain customer loyalty enterprise ^[5]. From the prediction model can identify the trend of the size of customer returns. Return may be high returns from low return to change or return to the low returns from high fall trend. Accordingly, the enterprise can be targeted to take corresponding measures to promote good conversion, retention, or to avoid bad conversion.

4. Conclusion

In today's global economy, the tide of integration, CRM has become an essential business survival business strategy, Ta can help companies achieve profit maximization, and improve enterprise competitive Li. Data mining technology in the field, throughout the customer life cycle, the various stages of mining enterprise customers the greatest value of Tongshi You Zhuyu enterprise proper allocation of existing resource for businesses Juece support and Shangye function plays a central role.

5. References

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