Applications and Analysis of Client Consumer Behavior Based on Big Data

Baoli Yuan
Shijiazhuang Vocational Technology Institute, Shijiazhuang, HeBei province, 050081, China
stevenybl@qq.com

Abstract. Consumer behavior analysis is an important part of customer relationship management, the traditional means of analysis are carried out basic theory of economics, there is no quantitative research, the results of some limitations. In today's new technology development, data mining technology as a powerful data analysis technology, used in customer relationship management is gaining more and more attention. However, from the application layer perspective, the study of data mining and customer relationship management applications are a considerable part in the commercial area, the application in non-commercial areas have no major development. With the development of information technology, in many of the non-commercial sector we have established appropriate information systems, generating large amounts of data, such as the campus information system.

Keywords: Data mining; Consumer behavior; Customer relationship management; network optimization

1 Introduction

College students are a special category of high consumer groups, their consumption habits and the consumption characteristics of more and more people's attention [1]. In order to better build information campus, the University implemented a campus card project, all consumption of college students and faculty can use one card to complete, this will generate a lot of consumer information from the card every day, for the study of this article a powerful data support [2, 3]. Since the university campus card project implementation is at the forefront of the national university, so now basically no campus card application data generated by consumer behavior analysis precedent. In this paper, the card generated on the basis of daily consumption data, the application of the concept of customer relationship management and data mining technology, design and implement a consumer behavior analysis system, focuses on students' consumption level and consumption differences in consumer preferences and characteristics of faculty and students and staff satisfaction with the school canteen, staff and students to understand the propensity to consume, and get meaningful results, so it is very practical value [4].
This paper analyzes the problems in the process of the existing consumer behavior, in accordance with the requirements of article campus information construction in the card on the basis of consumption data, the application of modern tools and techniques, within the framework of customer relationship management, data mining technology for students everyday consumer behavior exploratory research. Consumption data from students trying to dine and buy daily necessities and other aspects of the data in consumer behavior law students discover, analyze students of all ages spending differences, different economic conditions of students and students' consumption difference of degree of satisfaction with the school cafeteria. Because enterprise customers recognize the performance of enterprises to master customer knowledge, customer knowledge is an important part of customer relationship management, and consumer behavior analysis is an important part of customer knowledge. Data mining technology as a powerful knowledge discovery technology plays an important role in customer relationship management, is an important tool to study consumer behavior.

2 Consumer Behavior Research Status

As early as the mid-19th century, economists began research on consumer behavior [5, 6]. From an economic point of view of social reproduction in consumption is an important link in the process of social reproduction, the consumer is the end. The purpose of production to consumption and only continue to expand consumption, in order to stimulate sustainable economic growth. Economics is the earliest start in the field of consumer behavior analysis and research. Consumer behavior research is mainly related to the field of economics, sociology, and later added another theory, it is one of the emerging interdisciplinary [7].

From the overall perspective, the research on the consumer behavior research, there are still many shortcomings at present, such as most of them are qualitative and less quantitative analysis; theoretical studies using mostly basic theory of economics, marketing of Since in recent years working on interdisciplinary, sociology, psychology and other disciplines have also embarked on a study of consumer behavior analysis.

3 Experimental results

3.1 Operation of the Process of Customer Relationship Management

Premise CRM system implementation is a business existing business processes and restructure and optimize business processes to improve operational efficiency of the system. For businesses, the general market directly to customers, sales and customer service department. Operations in these sectors should be promptly reported to the decision-makers there, in order to carry out scientific management decision-makers and decision-making. In addition, enterprises should also be knowledge management into business process reengineering in the past, business processes and business processes in disordered systematic knowledge management, knowledge sharing and
reuse, in order to improve the professional level and efficiency. A comprehensive customer relationship management must be a complete set of operating procedures. It includes information management stage, build customer behavior patterns stage, event management stage, management and forecasting stages that form a closed-loop CRM process. Fayyad knowledge discovery process model was shown in Figure 1.

![Fig. 1. Fayyad knowledge discovery process model](image)

### 3.2 Analysis of Consumer Behavior

Consumer behavior analysis is an important part of customer relationship management, is the consumer to obtain, using a variety of behavior of consumer goods or services taken. Determine consumer behavior is affected by many factors, such as mental activity of consumers in the process, individual psychological characteristics of consumers, consumers around the social factors, commodity factors and so on. Consumer behavior analysis is to understand the process of customer needs, if they can seize the behavioral characteristics and propensity to buy consumer will be able to retain existing customers and achieve customer relationship management purposes.

Consumers in determining its course of action is always according to certain criteria and principles of choice, consumer spending decisions by the principle of maximum satisfaction general principle, the principle is quite satisfactory, sorry minimum principle, expected satisfaction principles. The principle of maximum satisfaction sought by the consumer decision-making program selection, implementation, to achieve maximum effectiveness, so that certain aspects need to maximize satisfaction.

The greatest satisfaction is to make decisions in accordance with this idea in principle; the principle is relatively satisfied with the consumer in determining consumer behavior when only made relatively reasonable choice, we can achieve a relatively satisfactory; the program will not be any decision-making to achieve absolute satisfaction, there is always some regret, regret as the decision will have a minimum principle is the principle of minimum regret; expected satisfaction principle is the consumer before the consumer has formed a certain psychological expectations, as long as their psychological expectations coincide to make decisions. These principles are the fundamental basis for consumers to make decisions consumer behavior, which is the principle of maximum satisfaction principle an idealized,
almost impossible to achieve in reality, other principles to be applied generally to supplement. The overall design of the system was shown in Figure 2.

Fig. 2. The overall design of the system

Mining determine the target system. Mining goal is to guide the direction of the whole system, every step the system is carried out in accordance with mining goals. These data are the actual daily consumption of cardholder acquisition.

Logical model design is a theme in the data warehouse describe. It is a conceptual model design refinement. Typically, data warehouses are developed on the basis of existing relational databases on the up. So the data in the data warehouse is still in the form of a two-dimensional table organized. Logic model is to take the different topics and dimension information is mapped to a data warehouse specific table. This phase of the design include: analysis of the subject field and dimension information to determine the level of granularity delineation stage. Design of database table was shown in Figure 3.

Fig. 3. Design of database table
4 Summary

Data Mining in Customer Relationship Management System has a very broad prospect, it is being more and more attention. Consumer information system through the use of online surveys and direct use of consumer records, etc., from different angles improve the content of the customer database, establish the appropriate on the basis of the data warehouse, data mining. The results can be used for mining visual interface image that out, clear and intuitive to show in front of the user.

References