USE OF DATA MINING IN FINANCIAL DATA ANALYSIS

Sharmila*, Ganesh Kumar**

ABSTRACT

This paper will be discuss that how can Data mining help in Finance Sector. As, We know that Data mining is an extraction process used in so many areas to find out the most valuable information from the given database. Mostly Banks and Finance companies first of all check the full customer information before financing and giving loans of any kind. Data mining involve three methods to find valuable information involve Classification, Clustering and Association Rule Discovery. Classification and clustering methods can be used for customer group identification and targeted marketing.

KEYWORDS:- Data Mining, Data Warehouse, Classification, Clustering.

INTRODUCTION

Most Banks and Financial Institution offer a wide variety of Banking Services (such as checking, savings, and business and individual customers transaction), credit (such as business, mortgages, and automobile loans), and Investment services(such as mutual funds). Some also offer insurance services and stock investment services.

Financial data collected in the banking and the financial industries are offered relatively complete, reliable and of high quality, which facilitates systematic data analysis and Data mining to improve a company's competitiveness.

In the Banking industry, Data mining is used in following ways:-

- In modeling and predicting credit fraud.
- In evaluating risk.
- In performing trends.
- In analyzing profitability.
- In helping with direct-marketing campaigns.

* Ex-Programmer, MCA Course,Univ. Deptt. of Mathematics, B.R.A.Bihar University, Muzaffarpur.
** Prof. & Ex-H.O.D,Univ. Deptt. of Mathematics,B.R.A.Bihar University, Muzaffarpur.

Design and construction of data warehouses for multidimensional data analysis and Data mining:-

Like many other application, data warehouses need to be constructed for banking and financial data. Multidimensional data analysis method should be used to analyze the general properties of such data. For example, one may like to view the date and revenue changes by month, by region, by sector and by other factors, along with maximum, minimum, total, average, trend and other statistical information.

Some of the techniques that play important roles in Financial Data Mining are given here:-

- Data warehouses
- Data cubes
- Discovering-driven data cubes
- Multifeature
- Outlier Analysis
- Characteristic and comparative analysis

Classification and Clustering of customers for targeted marketing:-

Classification and clustering methods can be used for customer group identification and targeted marketing. For example, Customers with similar behaviors regarding banking and loan payments may be grouped by multidimensional clustering techniques.

Loan payment prediction and customer care policy analysis:-

Data mining methods, such as feature selections and attribute relevance ranking, may help identify important factors and eliminate irrelevant ones. Analysis of the customer payment history may find that, say, payment -to- income ratio is a dominant factor, while education level and date ratio are not. The bank may then decide to adjust its loan granting policy so as to grant loans to those whose application was earlier denied but whose profile shows relatively low risks according to the critical factor analysis.

Detection of money laundering and other financial crimes:-

To detect money laundering and other financial crimes, it is important to integrate information from multiple databases as long as they are potentially related to the study. Multiple data analysis tools can then be used to detect unusual patterns such as large

amounts of cash flow at certain periods by certain group of people and so on. These tools may identify important relationships and patterns of activities and help investigators focus on suspicious cases for further detail examination.Useful tools include:-

- Data visualization tools(To display transaction activities using graphs by time and by groups of peoples),
- Sequential pattern analysis tools(to characterize unusual access sequence)
- Classification tools(to filter unrelated attributes and rank the highly related ones),
- Outlier analysis tools(to detect unusual amounts of fund transfer or other activities) and
- Clustering tools(to group different cases)

CONCLUSIONS

Data mining gives financial information about loan information and credit reporting. By building a model from previous customer's data with common characteristics, the bank and finance can estimate what are the good and/or bad loans and its risk level. In addition, data mining can help finance companies to detect fraudulent credit card transaction to help credit card's owner prevent their losses.

REFERENCES

[1] Concepts & Techniques (Second Edition) Jiawei Han & Micheline kamber (Morgan kaufman Publisher, 2006).

[2] [Man00] Mannila, H. Theoretical frameworks for data mining, SIGKDD Explorations, 1, 30-32, 2000.

[3] Hand, D. J., H. Mannila, et al., 2001, "Principles of Data Mining," Bradford Books.

[4] Rao MR. Cluster analysis and Mathematical Programming, Journal of the American Statistical Association 1971;66;622-6.