KNOWLEDGE BASE DATA MINING FOR BUSINESS INTELLIGENCE

Dr. Ruchira Bhargava[1] and Yogesh Kumar Jakhar[2]

[1]Associate Professor, Department of Computer Science, Shri JagdishPrasad Jhabarmal Tibrewala University, Jhunjhunu (Rajasthan)
Email: dr_ruchira@yahoo.in
[2]Assistant Professor, Department of Computer Science, Shri JagdishPrasad Jhabarmal Tibrewala University, Jhunjhunu (Rajasthan)
Email: yogeshjakhar@gmail.com

ABSTRACT

Every business must depend on data analysis to increase output and want to establish in competition market. Data mining techniques are used for analyzing large data. Data Mining (DM) offers a variety of data processing techniques for Business Intelligence purposes. At present time the data mining is being gradually more used and rooted in vertical solutions for business intelligence. Data mining for business Applications like Balanced Scorecard, Fraud Detection, Market Segmentation, retail industry, telecommunications industry, banking & finance and CRM etc. The purpose of this paper is to provide users data mining concepts and business intelligence and about benefits of integrating business intelligence with data mining for their business.

Keywords: Business Intelligence, data mining, Business origination, Targeted Marketing, Risk Analysis, Customer Retention.

INTRODUCTION

Business Intelligence has become increasingly popular over the years and is currently a hot topic among many companies around the world. The Business Intelligence enhances the integration of the innovation–creation processes, articulating the initiatives and operations designed for accelerating the business practices [1]. The research and debate in this field allow the identification of contours and offensive or defensive methods of Business Intelligence, promoting the innovation and optimization and control of the technology transfer (geographically, interdisciplinary or cross-cultural) [4].

In a knowledge-based society, the term "intelligence" is becoming more and more important for every level of the business society at every level in any organization.

Data mining is a method for analysis observational data sets to find unsuspected relationships and to summarize the data in novel ways that are both understandable and useful to the data owner [3].

Business intelligence is based on company's past performance that is used to help forecast the company's future performance. It can reveal emerging trends from which the company might profit. Data mining allows users to sift through the enormous amount of information available in data warehouses; it is from this sifting process that business intelligence gems may be found [6].

Data mining provide a framework for Business intelligence to analyze and uncover information about past performance on every level. Data warehousing and business intelligence provide a method for users to predict future trends from analyzing past organizational data. Data mining is more innate, allowing for increased insight beyond data warehousing. The use of data mining in an organization will help to uncovering inborn trends and tendencies in historical information.

Data mining techniques can be applied on running software and hardware platforms to increase the result of existing information system. Data mining software's are used to analyze large databases to make decision-making and solve problems

The information systems have evolved from traditional Management Information Systems (MIS) to highly intelligent Business Intelligence systems for. The various information systems are: [2]

1. Management Information Systems (MIS)
2. Decision Support Systems (DSS)
3. Enterprise Systems (ES)
4. Enterprise Intelligent Systems (EIS)
5. Business Intelligent (BI) Systems

Business Intelligence has become more and more popular over the years and is currently a hot topic among many companies around the world. BI is often by companies considered to be a tool for tuning their way of doing business by guiding their decision making business-wise. In this way, the individual company can make more profitable decisions based on intelligent analysis of their data depots. The main reason for using BI among companies is almost certainly to increase profitability [7].

The difficulty of discovering and deploying new knowledge in the BI context is due to the lack of intelligent and complete DM system. Most DM packages are comprised of learning algorithms integrated into a visual environment. Such graphical environment is a useful facility for experienced data analysts or data miners, but it provides limited functionalities for a novice to interpret and evaluate significance of the mining results.

Starting Of Data Mining

Data mining techniques provide a long process of research activity and product development to get a result. The process of data mining starts when business data is stored on computers. The following diagram shows the workflow of data mining.

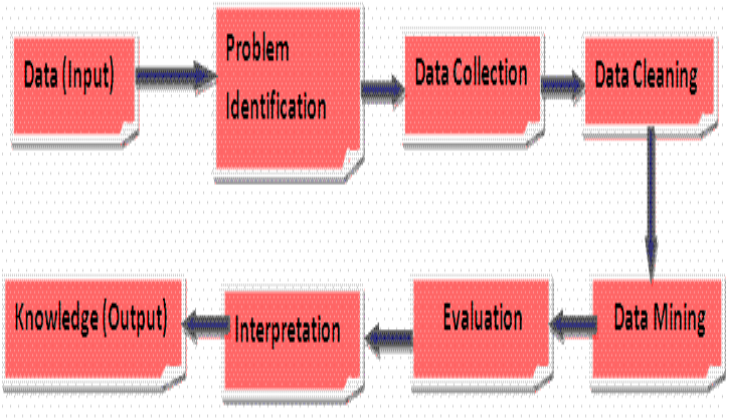

Fig. 1. Workflow of Data mining

Data mining is ready for application in the business community because it is supported by three technologies that are now sufficiently mature:

- Gigantic data collection
- Leading multiprocessor computers
- Latest Data mining algorithms

The main components of data mining technology have been under development for decades, in various research departments like statistics, artificial intelligence, neural network and machine learning. In the parent scenario the data mining techniques, coupled with good relational database engines.

The aims of data mining to identify valid, novel, potentially useful, and understandable correlations and patterns in data by combing through copious data sets to sniff out patterns that are too subtle or complex for humans to detect . The results depend on how quickly company responds to rapidly changing market conditions.

Data mining refers to a mathematical modeling techniques and combination of software tools which are used to find future forecasting.

The top three techniques used in data mining are:

- Classification
- Clustering
- Association Rules

Knowledge Base Data Mining For BI

The technique that is used to perform these achievements in data mining is called modeling. Modeling is used to building a model in one situation where you know the result and then applying the same model in another situation where you don't know the result.

The starting in data mining has never been easier. When we go for analyze company data in-house we have the option of using best statistical analysis packages and this package must have SAS, IBM SPSS, and Relational databases, Oracle and Microsoft SQL Server.

The process of design an appropriate data mining model is directly dependent on the methodology used to provide for the entire data mining process. In fundamental nature, the method which is used to make data accessible to be mined governs the process used to create the data model. If we designed a particular OLAP data cube in Analysis Services to serve as the primary source of data mining data, then an OLAP data mining model would be created, as different to a relational data mining model. The following diagram shows a Knowledgebase Data mining framework for Business intelligence.

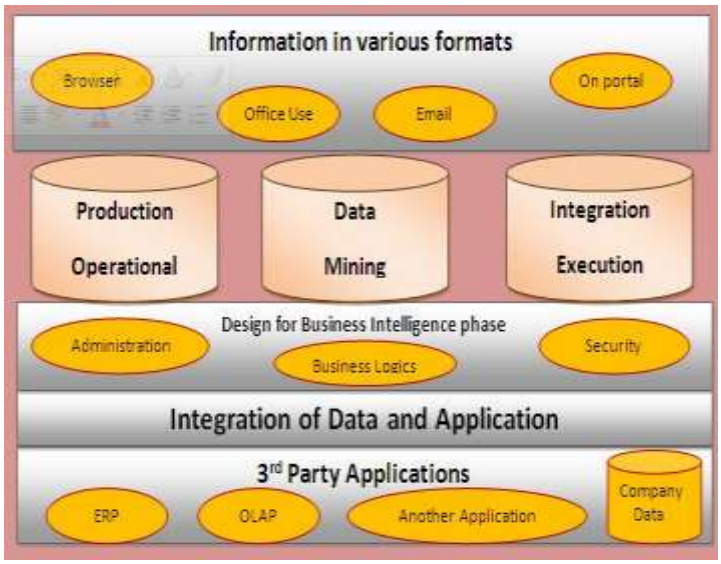

Fig. 2. Framework of Data mining for Business Intelligence

This method of model building, peoples have been using for a long time, definitely before the beginning of computers or data mining technology. Building model on computers is same as the way people build models. Computers are loaded up with lots of information about a variety of situations where a result is known, and then the data mining software applying on data and extract the characteristics of the data that should go into the model. When the model is built it can then be used in similar situations where we don't know the result.

FUTURE SCOPE

Business Intelligence (BI) provide a framework to the use of technology to collect data and use information effectively to improve business potency. The best business intelligence system gives easy access and provides information at any level of an organization as they need to effectively do their jobs. Business transactions, customer demographics, seasonal flows, retail data and inventory levels all have to be carefully coordinated to enable BI enabled distribution chain solutions.

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