

Data warehouse



Data Mining is often considered to be the process of discovering new knowledge, which previously doesn't exist. Thus, DM provides new ways of analyzing data, with different trends and patterns. Because of its strong computing power, DM helps in forecasting patterns by analyzing present information. DM consists of four main relationships: Classes, Clusters, Associations and Sequential patterns. The key features of DM are that it is data-driven, classifies data with the decision-trees. It also composes historical data with help of Memory-based Reasoning (MBR). DM also provides multi-dimensional feature of analyzing data by data-visualization.

Besides, this DM capabilities facilitates the Data Warehousing perform. The DM is now very much used in the different forms of Business Intelligence such as Neural Networks, Genetic Algorithms etc. One of the industries in which DM has been successfully used is the Retail store industry. As large volume data has to be stored daily, DM provides the convenient analysis of information. With the help of DM algorithms, the analysts can predict future sales. By further analyzing the sales, the retailers can plan their marketing and promotional strategies for the future.

By analyzing sales, the retailers can follow the buying behavior of the customers for instance the market-basket analysis. Besides this information regarding purchase frequency, profitable market segment, seasonal trends, sales from promotional activities etc can also be collected. Data Warehousing (DW): Traditional data-base systems were being used for the storage and retrieval of data, however, the problem with these systems were that they are not suitable for strategic decision-making purpose. So in order

to overcome this problem, a technology was desired that could provide data-analysis and facilitate the decision-making process.

For this purpose DW was introduced. DW can be best described as “ It is a subject oriented, integrated, nonvolatile, and the time variant collection of data in support of management’s decision” (Bill Inmon). The key features of DW are that it is subject-oriented, i. e. data is stored in the form particular business subjects instead of separate applications, reducing the data redundancy. The DW also stores data in integrated data sets, removing inconsistencies and standardizing all the relevant information in integrated manner, which helps in better decision-making. The DW also contains time-variant data.

This means that each data is stored with the time snapshot, which helps in analyzing past data, processing of present data and speculate the future. The data stored in DW cannot be deleted in real-time, thus making data more non-volatile. One of the most significant features of DW is that it allows granularity i. e. the user can seek to the lowest point of detail as well. The concept of DW has been implemented quite successfully in the Stock Exchange market. Over the past few years, the broker, traders, investors are using the DW for the buying and selling of stocks.

All the big brokerage houses are designing specialized systems with warehousing capabilities that can help them in facilitate in the stock trading decisions. With the help of DW, the future value of the stocks can be forecasted by assuming different scenarios. The DW also gives the real-time information related to the volumes and value of the stock. It can also give patterns and trends by analyzing the huge past data. The DW can provide

answer to thousands of complex stock-related user generated queries within seconds.