

Commercial Application of Data Mining

Student Name

Course Code: Course Name

Professor's Name

Due Date

Data mining is the process of computerized classification of a large set of data into distinct data groups with similar properties. The process involves identification of any correlation in a set of data contained in large relational databases using specialized computer software. The software eventually presents data in a format that is easy for human interpretation and predictions. Today, small and medium enterprises (SMEs) and large organizations widely use data mining technology for various reasons. This paper is a comprehensive analysis of how different departments within an organization use data mining in their daily operation.

Research departments use customized data from the organization vast relational database to generate business trends and patterns.¹ Data mining applications used in this process have specialized inbuilt software algorithms that detect correlation by sifting through the data.² The software presents the correlated data as statistical trends and patterns. Data analysts later use these statistical elements to predict the forthcoming business environment.³

Marketing departments use data mining in both direct and interactive marketing. Direct marketing is the process of developing a comprehensive business mailing list containing addresses of the all business stakeholders.⁴ On the other hand, interactive marketing entails optimizing the business web accessibility. Interactive marketing, therefore, ensures that business website provides users with comprehensive information. As a result, it improves both online purchases and customer loyalty.⁵

¹ Zhou, Zhenguo. "OmicsMiner: A Biological Data Mining Framework." *Journal of Data Mining in Genomics & Proteomics* 03, no. 02 (2012): 127-268

² *Ibid.*, 136.

³ Azzalini, Adelchi, and Bruno Scarpa. *Data analysis and data mining: an Introduction*. Oxford: Oxford University Press, 2012.

⁴ Doganaksoy, Necip, and Gerald J. Hahn. "Data Mining: A Gateway to Better Data Gathering." *Statistical Analysis and Data Mining* 1, no. 4 (2009): 280-283.

⁵ Mo, Yi Min, Xin Shun Tong, and Li Hua Yang. "Data Mining Technology Applications in Tobacco Commercial Enterprise." *Advanced Materials Research* 461 (2012): 418-420.

Customer care departments use data mining technology to improve customer satisfaction by reducing the response time.⁶ Inbuilt automated emailing feature automatically responds to successful customer application or submission emails.⁷ On the other hand, an automated frequently asked questions (FAQs) tool provides customers with more information without visiting the premises.⁸ Additionally, the department uses product profiles at its disposal to facilitate catalogue marketing.⁹

The human resource departments use customized applications to monitor and plan employee's affairs. The tools provide information on employees' work history used in planning recruitment, training, promotion, and rewarding schemes.¹⁰ Human resource department also uses strategic management application to generated key performance indicators (KPI). HR managers use KPIs analysis to prepare seasonal performance reports.¹¹ Sales and production managers use KPIs trends to optimize performance and profit margin.¹²

Data mining technology is a moneymaking avenue for entrepreneurs. Software developers design and sell data mining software to organizations and individuals to earn a living.¹³ A recent survey reveals that hundreds of entrepreneurs have become millionaires from the sale, maintenance, and update of the data mining software.¹⁴ Other entrepreneurs use the available data mining software

⁶ Bramer, M. A.. Principles of data mining. London: Springer, 2007.

⁷ Ibid., 36.

⁸ Pivk, Aleksander, Olegas Vasilecas, Diana Kalibatiene, and Rok Rupnik. "On approach for the implementation of data mining to business process optimisation in commercial companies." Technological and Economic Development of Economy 19, no. 2 (2013): 237-256.

⁹ Ibid., 244.

¹⁰ Necip and Hahn., 282.

¹¹ Devore, Jay. 2007. "Making Sense Of Data: A Practical Guide To Exploratory Data Analysis And Data Mining". The American Statistician 61 (4): 370-371.

¹² Ibid, 373.

¹³ Bramer, 109

¹⁴ Necip and Hahn, 283).

to operate mining consulting agency to make money. Such agencies charge a standard consultation fee depending on the urgency, complexity, and workload.¹⁵

Web and Search Engine Optimization (SEO) designers use data mining improve website ranking. The designers use data mining software to identify the most researched keyword in their area of interest.¹⁶ Later, the designers use the identified keywords in website content development.¹⁷ Pivk et al. 2013 argue that designers and online websites using the above procedure receive many organic visitors.¹⁸ In that regard, webmasters and web marketers working on commission basis get high profits through clicks and signups.¹⁹

In conclusion, organizations use data mining technology across all departments. For instance, sales department uses data mining technique in customer churning. Secondly, the organization management uses customer-churning results to optimize production. Thirdly, marketing department uses the data mining for direct and interactive marketing. Customer care department uses data mining technology in catalogue marketing and customer satisfaction. Human resource department widely use the technology in employee planning, strategic management, and performance appraisal. Entrepreneurs use data mining technology to earn living through design, operating and maintaining data mining software and agencies. Finally, data mining is essential in website optimization and ranking. Therefore, data mining is widely used for commercial purposes.

¹⁵ Aleksander, Vasilecas, Kalibatiene, and Rupnik, 241

¹⁶ Adelchi and Scarpa., 34

¹⁷ Ibid., 35

¹⁸ Aleksander, Vasilecas, Kalibatiene, and Rupnik, 241

¹⁹ Jay, 271

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