Chapter XI

Implementing a Data Mining Solution for an Automobile Insurance Company:
Reconciling Theoretical Benefits with Practical Considerations

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EXECUTIVE SUMMARY

The insurance company in this case study operates in a highly competitive environment. In recent years it has explored data mining as a means of extracting valuable information from its huge databases in order to improve decision making and capitalise on the investment in business data. This case study describes an investigation into the benefits of data mining for an anonymous Australian automobile insurance company.[1] Although the investigation was able to demonstrate quantitative benefits of adopting a data mining approach, there are many practical issues that need to be resolved before the data mining approach can be implemented.

BACKGROUND

Melbourne Automobile Insurers (MAI) is a leading car insurer in Australia. It was established in the early 1970s. Today it has more than 40 branches and has nearly 2 million policy holders with an underwriting profit of over $50 million.

MAI, like all insurance companies, operates in a highly competitive environment. In recent years, there has been a proliferation of non-traditional retailers of car insurance that has caused great concern for MAI. Banks and finance companies are now joined by manufacturers and distributors of cars in the marketing of car insurance. Many of MAI's competitors have been intent on maintaining their market share and have kept premium rises to a minimum, thereby discouraging their policy holders from shopping around for a better price. The competitive environment extends beyond premium pricing issues to include a range of value-added products and incentives such as "liftetime rating 1" and discounts on multiple policies.

The Australian general insurance market went through a turbulent year in 2000. General business issues such as Y2K, the implementation of a new tax system, including the introduction of a goods and services tax, and corporate law reform program (CLERP) consumed a great deal of non-productive time and resources.

SETTING THE STAGE

In 1999, MAI established a SAS data warehouse. Periodically, data was extracted from their operational system and deposited into the data warehouse. The variables extracted included:

- Policy holders' characteristics such as age, gender.
- Vehicle characteristics such as age, category, area in which vehicle was garaged.
- Policy details such as sum insured, premium, rating, number of years policy held, excess.

The Information System Department is responsible for maintaining the data warehouse. The Business Analysis Department extract data from the data warehouse for periodic reporting and as well as statistical analysis. The statistical analysis is done using Excel spreadsheets and online analytical processing (OLAP).

MAI realised that their current method of premium pricing has its limitations. With increased competition, MAI knew that they needed better tools to analyse data in their data warehouse to gain competitive advantage. They hoped to obtain a greater leverage on their investment in the data warehouse.

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