DATA MINING AT WORK:

Telstra Mobile Combats Churn with SAS®

As Australia's largest mobile service provider, Telstra Mobile is reliant on highly effective churn management.

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In most industries the cost of <u>retaining a customer</u>, subscriber or client is substantially less than t_____ customer. Protecting this investment is the e _____ t really boils down to understanding customers -- what they wan _____ t they're likely to want in the future, according to SAS.

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"With SAS Enterprise Miner we can examine customer behaviour on historical and predictive levels, which can then show us what 'group' of customers are likely to churn and the causes," says Trish Berendsen, Telstra Mobile's head of Customer Relationship Management (CRM).

Modified from Slides of UNT DSCI 4520/5240

Data Mining in the telecom industry: RingaLing Telecom

Until recently, RingaLing, a large public telecommunications company, held the monopoly for the entire telecommunications market. Now privatized and without the advantages of the mo
competition is comin
foreign denationalized companies, new entrants, and cable companies who are o very tempting proposals to consumers.

RingaLing is losing 40,000 customers every month, and only winning a few of those customers back. They are painfully aware that the cost of keeping an existing customer can be up to ten times lower than the cost of acquiring a new one. They desperately need a cost effective way of decreasing customer churn rate.

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Data Mining in the telecom industry: RingaLing Telecom

The CEO of RingaLing is worried by his
company's falling share price and the
rate at which customers are leaving.
Despite substanti
reductions, loyal
by the thousands. The CEO gives th
marketing director
the situation under control.

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Subsequently, Martin Miner, a young and promising marketing analyst is
summoned to the Marketing Director's office and asked to solve this
problem. Working with the IT department, Martin explains that he needs a
way to be able to <u>access and analyze all the company data</u>.

Getting the lines crossed -- the difficulty of data access

RingaLing has over 50 million customer files in addition to billions of call records, and data from both the customer service and the billing departments. They also have some competitive information, including competitor pricing policies and market sh   different offices across the globe, in 12 differe   ifferent platforms.

Martin decides the first step is to develop   data warehouse, enabling him to have access to all the data   e place. Using SAS Institute's Rapid Warehousing Methodology, this takes only a matter of weeks. Thanks to the data warehouse, the quality and consistency of the data is much better. All the data is summarized and grouped in a way that makes it easy to get a singular view of individual RingaLing customers. Even if a customer has multiple accounts, for example a mobile phone as well as a fixed phone, the database is smart enough to know that this is one customer instead of two.

The Data Mining Process
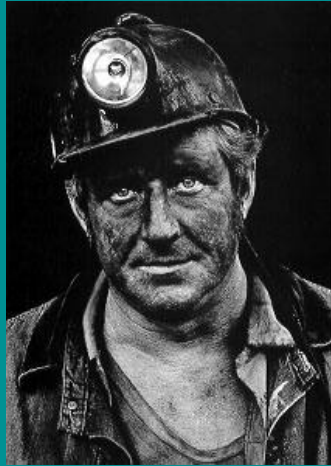
Now, Martin is ready to start mining.

Initially, he is interested in the probability that a given customer will cancel their contract within the next year and the controllable variables that might influence them.   le to manage the churn   rs cancel and subscribe).

variables = features

A sample of the data is taken using the sampli   f SAS software. This ensures that the 10% sample accurately represents the customer base as a whole. Initially, Martin plots the probability that a customer will leave over the next year, and finds it to be fairly consistent and somewhat depressing. Using geographical visualization he is able to highlight certain areas where the customers are most likely to leave, which appear to be around certain major cities. He then decides to explore the data using a 3D scatter plot to see the relation between the size of bill, area they live in, and likelihood to leave. He notes that most of the customers at risk for leaving tend to be those who have the highest and the lowest bills.

The Data Mining Process

Martin decides to <u>integrate some more data</u>. First, he looks at his company's <u>competitors</u> and areas in which they provide services, as well as the range of services provided (e.g. business, domestic, international). He then looks at their pricing policy and product details.

Martin now uses several   is information so he can predict whether a custom   <u>decision trees</u> to <u>eliminate variables which are not important</u>, and surprisi   come plays a much less important role than he would have expected. H   several key variables, he then uses <u>neural networks</u> to build a model   ct whether a person is likely to leave or not, given their characteristics.

Following this, he identifies that the people who are likely to leave are typically either those who have very large bills or very low ones. It appears that those who make international calls are more likely to leave. Another point is that people who make frequent calls to the same numbers are more prone to leaving.
At this stage he decides to review his findings and concludes that he needs to <u>introduce more data</u> on the pricing policies of the competitors for different types of products.

The Data Mining Process

Martin then creates a new model and suggests the following strategies:

• **Special tariff for frequent international callers, enabling them to pay a lower cost per time unit.**

• **Low usage tariffs, gi   e line rental and then possi   calls.**

• **High user tarriffs, giving higher fixed rental and lower costs for the actual cal**

• **Special prices for frequently called numbers**

Following the implementation of these strategies, there was a <u>drastic reduction </u>in the number of customers leaving. After only three months, customer churn fell from 40,000 to only 10,000. On top of this, they were able to target products to customers who fit certain optimal profiles. This resulted in a gain of another 20,000 customers a month. Martin Miner has played a key role in this process and is rewarded with a large bonus and pay raise. He is subsequently promoted, and it becomes obvious that the marketing director is grooming him to become his replacement.

Questions to Ponder

Q: What are the other possible "variables" that
- cannot be obtained from the company's own data,
- yet will affect whether a customer will leave RingaLing?

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(Hint: think about your   s')

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