

case
study

National Bank of New Zealand

New Dimension for Fraud-Busting Software



Overcoming credit card fraud is a significant challenge for all financial institutions. With fraudsters constantly changing their behaviors to avoid detection, the National Bank of New Zealand has added a new dimension to its existing fraud detection software, which has allowed it to better identify and learn new fraud behaviors. This will help the bank save further funds every year.

The software is called ACI Proactive Risk Manager™. Since launching in August 2002, it has helped the National Bank halve fraud losses as a percentage of total credit card sales. Already at 0.08 percent, this figure is dropping further still. In dollar terms, that's a AUS\$1.8 million saving in operation losses for the National Bank in under two years.

How Does the System Work?

Proactive Risk Manager compares transactions against recent customer behavior and known New Zealand fraud patterns. When something unusual is found, the system raises an alert, and a person assesses the transaction and contacts the customer if necessary. Every day, the system processes an average 60,000 National Bank credit card transactions and generates about 600 to 800 alerts.

Phase two introduced a new learning dimension of the software, which uses a technology called a neural network.

The neural component gives Proactive Risk Manager the ability to change the weighting of a fraud pattern depending on whether the transaction pattern turns out to be fraud. It can also “learn” new patterns as fraudsters attempt to change the way they behave.

“Although we’re already identifying 80 percent of all fraud using Proactive Risk Manger, with the neural network we’re aiming to catch over 90 percent,” said Darryl Spence, senior manager of card risk at the National Bank.

“Before Proactive Risk Manager, most fraud was not caught until a customer’s credit limit was reached. On this basis, we have seen credit line savings of approximately AUS\$5.3 million in possible fraud losses since the system was introduced. That’s good for customers and us,” Spence said.

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Implementing the neural technology involved sending nine months of good and fraudulent transaction data to ACI Worldwide, where it was analyzed and modeled. The neural model produced could then be tailored to the behavior of New Zealand credit card holders. New Zealanders have been found to be different from other countries where Proactive Risk Manager is used.

Proactive Risk Manager is one of the largest databases the National Bank has. It runs on SQL and cuts across a number of systems. The neural modeling software sits on a mainframe, the database on its own server, and the data center and its interface on Vision authorization and rules components. IBM® MQSeries® sockets also link the systems by temporarily holding transaction information when the system is not responding for any reason. As fraud is a round-the-clock problem, preventing downtime is essential and taken seriously by satellite systems who manage the database. Any outages are always treated at the highest priority.

The National Bank is part of ACI’s Proactive Risk Manager user group, which includes a number of international banks from Australia and Asia. Bank of New Zealand is also a member of the group. The group shares information about fraud patterns and ways to get the most out of the software. “This is one of the few areas where banks can collaborate — beating fraud helps everyone,” Spence said.

What Are Neural Networks?

A neural network learns from experience in a similar way to brains. Computers usually have trouble recognizing even simple patterns, but advances in biological research have allowed computers to mimic how brains store information. Neural networks allow computers to recognize patterns and learn from them — Proactive Risk Manager is such a system.

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*Darryl Spence
Senior Manager of Card Risk
National Bank of New Zealand*