



Real time credit card fraud detection

Swisscard, the joint venture between Credit Suisse and American Express, achieves exceptional card fraud detection and prevention performance using Alaric's Fractals product.

Operating in real time mode, Fractals feeds transaction scores to Swisscard's authorization system, enabling fraudulent transactions to be referred or declined in flight.

Background

Swisscard was established in 1997 as a joint venture between Credit Suisse and American Express to issue a wide range of different MasterCard, Visa and American Express products on behalf of Credit Suisse and American Express in Switzerland.

Swisscard has grown rapidly to become one of the leading issuers of credit cards in the Swiss market.

Together with all other Swiss card issuers, Swisscard faced a significant challenge from the ever increasing problem of credit card fraud. Switzerland has continued to experience significant growth in both domestic and international fraud, mainly due to counterfeit, skimming and card not present fraud and BIN range attacks were becoming increasingly more prevalent.

This, together with Swisscard's card growth, presented Swisscard with a problem requiring urgent attention.

Following detailed analysis, Swisscard's Risk Policies department decided that a sophisticated fraud detection



solution was required that not only would help Swisscard accurately differentiate fraudulent transactions from genuine ones but also would enable the business to decline or refer transactions as soon as the first fraudulent transaction had been detected.

Swisscard was also implementing a new authorisation system (CAMS2) and wished to introduce the new fraud detection capability at the same time.

Swisscard already had use of Aristion from MasterCard (a rules based fraud detection system) and the models maintained by American Express for detecting fraudulent transactions on American Express cards.

However, the fraudsters patterns changed too rapidly for a purely rules based approach to be effective and Swisscard required a system that could automatically identify fraudulent patterns across all card products whilst allowing it to apply its own, well established rules to check for known fraudulent behaviour.

Swisscard also realised that it needed a solution which was

customised to the fraud patterns within its own card base and which would adaptively track card usage patterns.

After an initial analysis, Swisscard's impression was that the only solutions in the marketplace that could meet these requirements were neural network-based systems. However, Swisscard was not convinced that neural network systems could produce accurate detection across its card base (it had less than 1 million cards). Also, Swisscard was concerned that the infrequent (and costly) retraining process necessary to enable neural systems to keep up to date with changing fraud patterns would mean that a neural solution would not be sufficiently dynamic and adaptive for Swisscard's needs.

Swisscard's Requirements

Swisscard decided that it needed a system which would:

- detect a high level of fraud with low false positives (good transactions flagged as fraud);
- allow Swisscard to easily incorporate its own rules via a GUI based interface;
- operate in real time with CAMS2;



- provide detection strategies customised to the usage and fraud patterns specific to Swisscard;
- be capable of maintaining its detection effectiveness continually with regular model updates which could be performed economically;
- profile cardholder usage;
- provide intelligible alerts which could easily be investigated (not a black-box solution);
- permit inclusion of third party alerts to further enhance the detection capability;
- operate on an open database to allow extensive management information to be extracted.

The solution needed to provide a return on investment in the first year and be flexible enough to allow Swisscard to catch a high percentage of frauds whilst continuing to build profitable business in its customer base.

Swisscard also required a partnership with a company that was responsive to its needs and which would provide the appropriate level of support and responsiveness to ensure its goals for managing the fraud problem were met.

Why Alaric?

Swisscard recognised that Fractals closely met its high level requirements and provided a more effective approach to fraud detection than the other available solutions.

Klaus Rixecker, Swisscard's Security Director summarised Swisscard's decision to select Fractals as follows:

- "Fractals uses statistical methods to build customised fraud detection models and therefore is less dependent on human knowledge
- Fractals is "more time-accurate" and provides quicker re-modelling to ensure that new patterns of fraud will be caught quicker
- Fractals allows us to easily enter both simple and complex User Rules to provide tactical defence against fraud attacks;
- Alaric, like Swisscard, sees the deal as a partnership and the concept of working closely together is attractive
- Alaric offers the potential to apply the statistical techniques used in Fractals to other business functions such as collections and Fractals is therefore a

solution that will deliver additional benefit to the business in years to come."

Fractals

Fractals is Alaric's award winning fraud detection system for card issuers and acquirers.

It uses probability theory and Bayesian inference to deliver cost effective fraud detection performance for the complete range of issuers and acquirers from the small to the very large while having an easy-to-use and open framework.

Summary

Swisscard had a significant challenge in confronting the rising fraud problem. After a thorough evaluation of the fraud detection marketplace, Swisscard chose Fractals and a partnership with Alaric to help it address the increasing fraud problem whilst continuing to grow profitable business in its customer base.

Alaric's History

Headquartered in London, Alaric is a leading supplier of advanced technology solutions for the card payments industry, offering solutions for card payments authorisation, integration of legacy and web payment systems and card fraud detection.



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