



Case Study: Fraud Detection

Bank reduces credit card fraud by 200% saving \$25,000 per day

Customer: Dışbank

Headquartered in Istanbul, Dışbank is one of the leading financial institutions in Turkey, operating an advanced distribution network with 162 branches, 254 ATMs, 94 kiosks, 65,000 POS's, six web portals, internet banking and a call centre. The company was founded in 1964 as a joint enterprise between Türkiye İş Bankası, the largest private commercial bank in Turkey, and Bank of America. The Doğan Conglomerate became the main stockholder in 1994. Dışbank has four strategic lines of business: corporate, commercial, small business and retail banking services. In late 1999, the company embraced an accelerated growth strategy to play a leading role in commercial and retail banking. Alternative distribution channels and credit cards play an important role for Dışbank, who just issued its 1,000,000th card. Taner Ayhan, Executive Vice President of Alternative Distribution Channels is in charge of all operations for alternative channels, including credit card fraud detection and prevention.

Business Problem:

Turkey is currently the third largest market for credit cards on the European continent. Fierce competition in the industry, especially in the credit card business, forces banks to grow their customer bases and target lower value segments. Credit card application volumes increase as banks reach out to acquire more customers. As a consequence, the number of fraudulent applications and transactions is rapidly increasing.

Fraudulent Applications

Dışbank's Credit Card Security Group wanted to find indicators for fraud before a credit card was issued. They had a manual process in place that allowed them to review at most 13% of new credit card applications. The team used reports to find indicators of potential problems with individual applicants, based on the applicant's demographic information and fraud agent's experience. However, the cost of fraud was increasing faster with an increasing number of issued cards.

Fraudulent Transactions

In September 2003, Dışbank had implemented a rule-based near on-line fraud monitoring system for individual transactions. This system allowed an agent at the click of a button to dial the card owner's cell phone number within seconds of the request for the transaction. The system flagged thousands of potentially fraudulent transactions, but Dışbank did not have the capacity to check each alert.

If Dışbank wanted to aggressively grow their customer base while reducing fraud rates, Mr. Ayhan knew that the bank needed to find a solution to manage both types of fraud. He wanted to acquire solid analytical and prioritization skills in order to reduce the number of fraudulent applications and at the same time increase the number of identified fraud cases.

KXEN Solution:

The speed of the analytical solution was very important as Dışbank wanted to move the new system into production in less than a month. Mr. Ayhan turned to Kratis, one of Turkey's premier boutique consulting firms and experienced KXEN partner. Key criteria for a potential solution were easy integration with Dışbank's existing IT systems without adding cost and ease-of-use for business managers and analysts without advanced technical knowledge.

Kunter Kutluay, Vice President of Kratis suggested a proof-of-concept that included back-testing of historic fraud data to determine the effectiveness of KXEN's Analytic Framework

for Dışbank's problem. In just one day, it was found that Dışbank's Credit Card Security Team was able to identify 92% of fraud cases with a high degree of reliability.

Fraudulent Applications

In less than 15 days, Kratis proceeded to implement a system, which created fraud models on a Windows desktop and scored all individual applications. Here the ability of KXEN to automate the modeling process was of critical importance. Models are based on demographic information and historic fraud data. The resulting reports include a fraud score for all individual applications and are forwarded to fraud agents, who now apply their experience only on reviewing those applicants most likely to commit fraud.

Fraudulent Transactions

Kratis improved the near real-time monitoring system, which produced far too many alerts. With KXEN, each credit card transaction is scored individually in real-time for its likelihood to be fraudulent. The models are based on past spending patterns combined with demographic information of the cardholders. Another improvement was to reduce the number of alerts from 300,000 to around 30,000 per quarter by fine-tuning known fraud rules and discovering unknown fraud patterns.

Results:

Dışbank increased the number of identified fraudulent applications by 200% from 7 to 21 per day. This represents savings of \$25,000 per day and returned more than the entire software investment within the first week. As of today more than 50 fraudsters using counterfeit cards at our merchant locations or made fraudulent applications have been arrested after April 2004 when the fraud modelling system was set.

The new system is used by 13 fraud agents within the Credit Card Security Department. It had an immediate positive impact on the morale of the team members, who became much more effective at their job. Rather than manually sifting through reams of non-fraudulent data to identify potential candidates, they spend their time working on actual fraud cases. They increased the number of fraud cases caught by a factor of three.

Credit card security agents can now call customers within seconds of a dubious transaction. In one case soon after the system went live, a customer had not even realized that his wallet was stolen, when a bank representative called the store where the transaction took place. The criminal was arrested on site and the customer received his wallet back, including the entire cash contents.

The improvement in service clearly helps to differentiate Dışbank in a highly competitive market. It brings the bank closer to its customers and enhances the value it provides by protecting its customer base against financial loss and identity theft. At the same time, cost savings from prevented fraud contribute directly to the bottom line.

As one of the next projects Dışbank will extend the use of KXEN to other divisions, such as the credit risk department, where they will seek to reduce the overall credit default exposure of applications while increasing the number of approved card applications.