

Application Scorecards for a mid-sized Retail Bank

A 'Hybrid' Approach due to Data Constraints



Client Profile

A mid-sized rapidly growing bank in UAE, offering a complete suite of retail banking products and services.

Business Objective

Our client was looking to improve its credit decisioning process, enhance credit expansion opportunities, as well as reduce credit losses and application turnaround time. They were also seeking greater automation and decentralization in their underwriting process. Dun & Bradstreet (D&B) collaborated with the client for an initial study of their existing process which involved using a set of business rules, and recommended using application scorecards for their key retail offerings i.e. Credit Cards and Personal Loans to achieve their business objectives.

Key Challenges

- **Data Paucity** - Non-availability of sufficient customer data in terms of total number of records (about 20,000 for cards and 30,000 for loans), number of variables & information on rejected customers.
- **Lack of Standardization in Variables** – Profession, occupation, employment sector, type of employer etc. were captured as free text, limiting their usefulness in analytical exercises.
- **Absence of a Loan Origination Platform** – The lack of a system to automate the implementation of application scorecard and underwriting process directly impacted the number of variables.

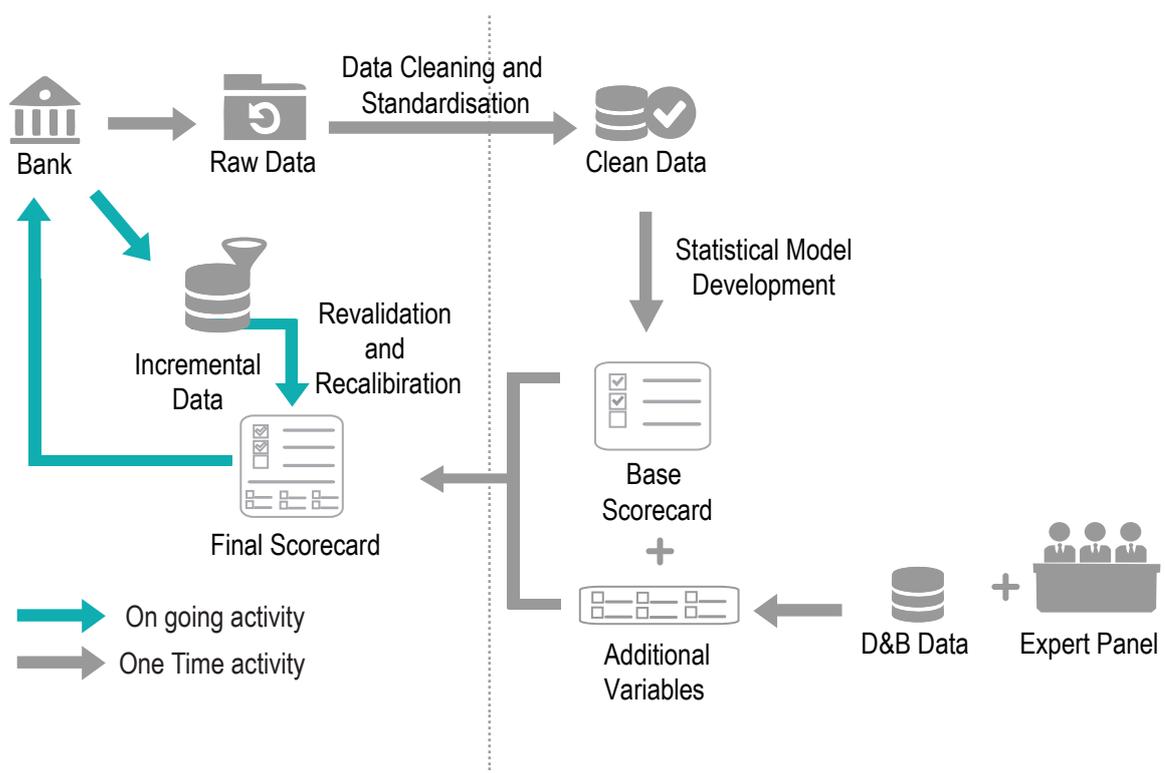
Summary

This case study details the methodology adopted by D&B to enhance the credit decisioning process at a mid-sized retail bank in UAE, who had insufficient data & lack of loan origination systems as major challenges. D&B's modus operandi & solution resulted in reduction of credit losses, increase in approval rate & reduction in TAT.

D&B Solution: A Five Step Approach

Preliminary data analysis revealed that the data provided by our client was insufficient to build a pure statistical model that provided accuracy and robustness. We, therefore, recommended a 'hybrid' approach wherein a statistical model complemented additional variables, that proved to be good predictors of risk profiles:

- ➔ **Step 1 – Data Quality Management:** High quality data is a pre-requisite for developing statistical models. We used a variety of techniques like data scrubbing, proxies and text analytics to fill in missing information and standardize irregular data entered as free text during the application capture process. After a one time data cleaning process, we recommended standard parameters to be captured as 'drop down' values instead of free text entry in future applications in order to prevent data related issues.
- ➔ **Step 2 – Statistical Build of Base Model:** We used advanced statistical techniques for variable selection, binning and weight allocation to develop a base model that comprised of seven out of ten variables made available by our client, based on their weight of evidence.
- ➔ **Step 3 – Inclusion of Additional Variables:** By leveraging our local experience and including three additional variables that were tested on our data of local customers using similar products, we enhanced the accuracy and robustness of the models.
- ➔ **Step 4 – Model Testing:** We tested the final hybrid model for accuracy on the bank's data as well as our data, before submitting it to our client's credit committee for approval.
- ➔ **Step 5 – Model Implementation:** To compensate for the lack of a loan origination system, we provided our credit scoring and loan origination platform 'D&B Tracer' for implementing scorecards and automating the underwriting process across branches.





Client Benefits

The key benefits accrued from the implementation of application scorecards are:

- Reduction in credit losses by 80 bps for cards and 70 bps for loans
- Improvement in turnaround time from 5 days to 2 days
- Higher approval rates – Early numbers suggest an increase of 15% in new customers acquired
- Reduction in transaction costs – Automated decision making and decentralized underwriting has reduced the operational time and costs

D&B estimates an increase of \$3-4MM in net customer revenue due to higher approval rates and lower credit losses

Ongoing Client Support

We signed an annual services contract to provide ongoing model monitoring and enhancement services for the models built during this engagement. The hybrid models require more frequent revalidations and recalibrations to improve accuracy and quality. Our in-built intelligent data library stores and transfers incremental future data for this exercise.

About D&B

Dun & Bradstreet (D&B) is the world's leading source of global business information, knowledge and insight with access to the most valuable commercial database containing more than 220 million business records. D&B South Asia, Africa and Middle East (DBSAME) has been working with regional banks, credit bureaus, government agencies and business owners with a vision of creating more transparent and robust economies and helping its clients to Decide with Confidence™.