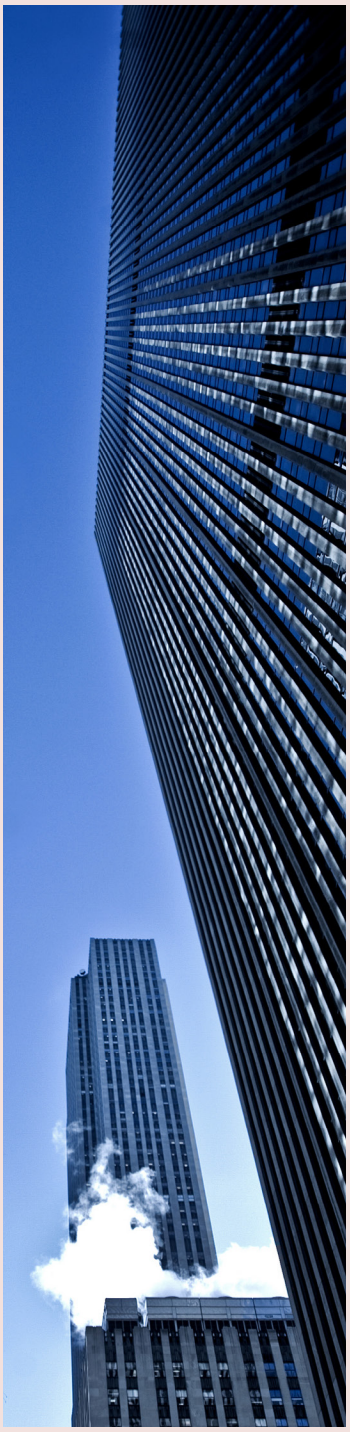
CASE STUDY



REDUCING MORTGAGE FUNDING LEAKAGE FOR A US-BASED BANK THROUGH CURABILITY ANALYSIS

Abstract

Infosys BPM Analytics helped a leading super regional bank identify systematic patterns and trends in their correspondent mortgage lending business. This led to the identification of potential mortgage funding leakage to the tune of USD 61 million.

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Missed opportunity, a costly business challenge

Our client – a leading US-based super regional bank that operates 1,500 branches across 12 southeastern states with over 400 approved correspondent lenders – buys mortgage loans from its designated correspondent lenders.

Mortgages are issued to home buyers by correspondent lenders through government-backed programs such as the Federal Housing Administration (FHA), Veteran Affairs (VA) and the United States Department of Agriculture (USDA). Mortgage loans come in different types depending on the size of loan (conforming or normal size vs jumbo).

The bank then purchases these loans from its correspondent lenders according to its in-house set of guidelines. As an example, the minimum credit score requirement is 680 points for the FHA Jumbo loans and 640 points for all FHA, VA / and VA-Jumbo loans.

The bank also purchases loans based on specific guidelines issued by the FHA, VA, Fannie Mae, and Freddie Mac. For example, it purchases loans having a minimum FICO score (a type of credit score) of 580 that qualifies for a down payment of 3.5% only (instead of having a higher down payment).

However, the loan rejection rate for the mortgage loans provided by correspondent lenders over the last two years was increasing month over month, leading to **an annual opportunity loss of USD 366 million** for the bank, on an average. The bank wanted to identify the reasons behind the opportunity loss and get complete visibility on the loan approval / rejection process by identifying key performance indicators.

Infosys BPM analytics solution

Our solution comprised three major steps: historical data analysis, 'look-alike' mapping, and quadrant analysis for curability.

First, our team performed a detailed due diligence on the bank's historical data going back to 11 months. This consisted of 62,000 rejected and funded mortgage loans (provided by the correspondent lenders). Then, the team carried out a 'look-alike' mapping of the rejected vis-à-vis funded loans on various parameters such as the Debt-to-Income ratio (DTI), the FICO score, the Loan-to-Value ratio (LTV), and the Cumulative Loan-to-Value (CLTV) to identify any trend or systematic pattern. The 'look-alike' mapping approach comprised of:

- Plotting the minimum, maximum and average values for DTI, LTV and CLTV parameters for various types of loans (such as FHA, VA Conventional, and Jumbo), on a similar linear scale for each parameter
- Comparing the different risk groups (identified by FICO scores) to identify loans with similar characteristics across funded and rejected loans

The mapping revealed that for conventional loans having FICO risk score of 700+, the minimum / average / maximum values of DTI / LTV / CLTV were comparable for funded and rejected loans and within respective guidelines. This helped identify the rejected loans which could be analyzed in detail for being good funding candidates.

A quadrant analysis of the rejected loans was then performed to identify the degree of curability of the rejected loans. The team analyzed the following:

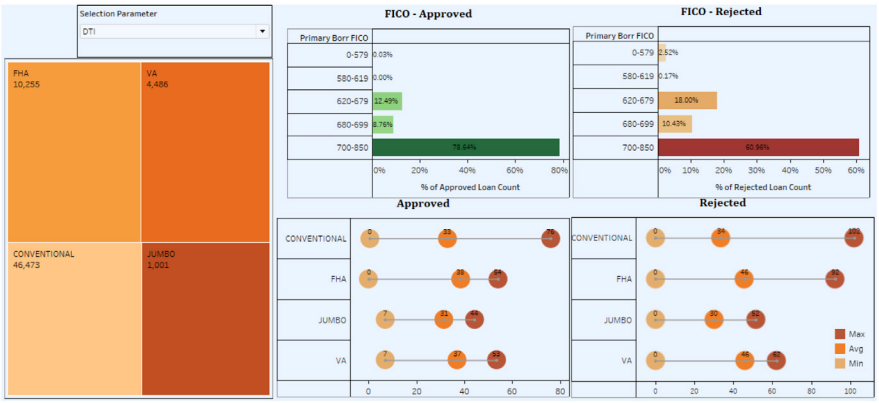
- 60+ variables (such as customer and lender information, risk factors, and rejection reason codes)
- 350,000+ rows of cumulative mortgage deals to identify data patterns

Post the analysis, the team integrated the siloed datasets and data marts to create a unified view and provide access to all relevant stakeholders.

Key insights developed:

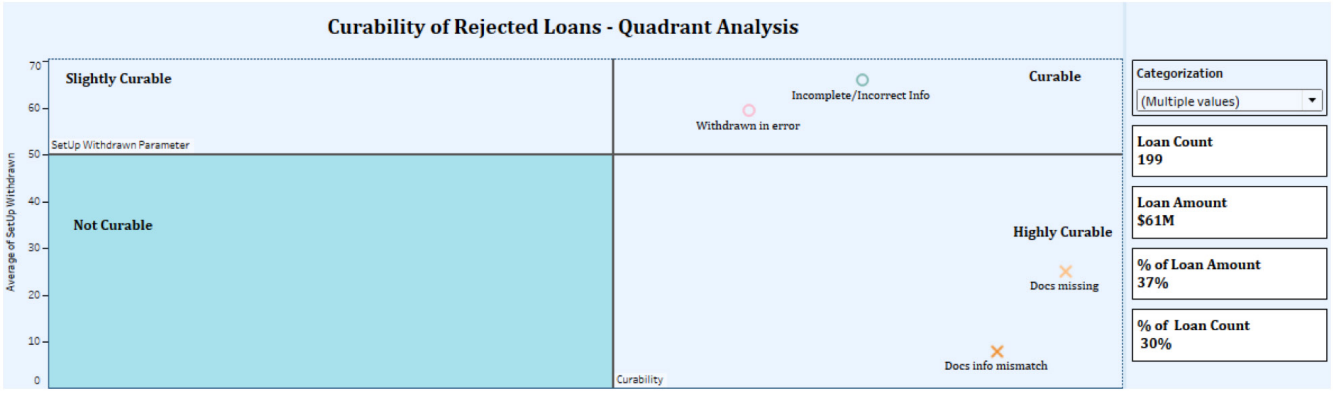
- **Rejected loans had good risk rating:** The 'look-alike' mapping helped identify 700 rejected loans (about 60% of total rejected loans) where the customers had a very good risk rating by way of a 700+ FICO score with other parameters being comparable to those having approved loans. Hence, these loans could have been purchased instead of being rejected.

'Look-alike' mapping of funded and rejected loans



- **Loans rejected for minor reasons:** Quadrant analysis helped identify the degree of curability of rejected loans on the basis of various reasons for rejection or withdrawal. About 30% of the total rejected loans had been rejected for minor reasons such as information mismatch, documents missing, incomplete information provided, or withdrawn in error and were found to be "Highly Curable" or "Curable".

Quadrant analysis of rejected loans based on the degree of curability



Business impact

Our approach led to significant benefits for the client. The Infosys BPM Analytics team:

- Identified potential mortgage **funding leakage opportunity of USD 61 million**
- Provided the ability to get a comprehensive view of key metrics throughout the loan process lifecycle such as 'approved vs. rejected loan%', 'loan status', 'time span', 'reason code analysis', 'lender's rating', etc. through an interactive Tableau dashboard for the correspondent mortgage lending business

For more information, contact infosysbpm@infosys.com

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