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Technology Fights Fraud: How Automated Fraud Solutions Can Help Lenders Reduce Fraud Losses

As the mortgage market prepares for a projected increase in default levels following the production boom of recent years and a changing economic climate, mortgage fraud continues to receive significant attention.

The Mortgage Bankers Association (MBA) defines fraud as a material misrepresentation, or intentional giving of false information that deceives or misleads a lender into extending credit beyond the limits of what would normally be extended if the facts were known. In the past, much fraud went undetected because loans did not immediately default even though fraud was present. High profile fraud cases and adoption of new fraud detection technology has triggered greater awareness of the mortgage fraud issue. These technologies, which are embedded in almost every originator's loan approval process, include mortgage fraud solutions that verify a borrower's identity and others that triage appraisals that may be at risk of over-valuation.

Background to Today's Solutions

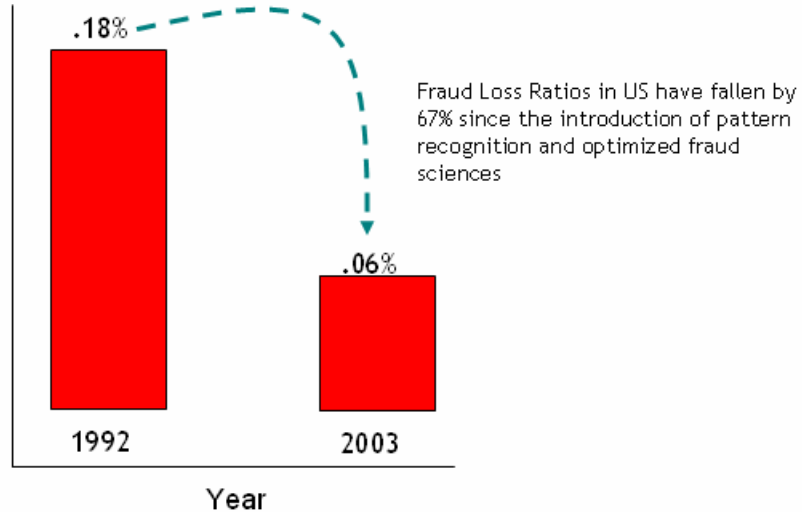
The development of automated fraud solutions in the mortgage industry has closely mirrored the earlier adoption of fraud detection solutions in many other areas of financial services, such as credit cards.

During the first stage of introduction, fraud detection processes were manual, relied on sampling and were deployed largely by quality control departments. Over time, the manual regimen became partially automated and later fully automated with predictive analytics embedded in the loan approval process. With this evolution, the quality control function moved into a more strategic role, allowing more time to proactively manage fraud threats.

Because manual review is so expensive and time consuming, the overall industry trend is moving towards using automated tools that can detect flaws and focus review efforts on transactions with a high risk of over-valuation or other forms of misrepresentation. By employing technology, lenders have seen processing gains and reduced costs while improving the quality of loans originated.

With each progressive stage of technology adoption fraud rates dropped considerably. Figure 1 shows that over ten-year period, fraud losses in the credit card industry dropped by two-thirds as predictive analytics gained widespread adoption.

Figure 1: Credit Card Fraud Losses 1992-2003



Source: Visa USA

Mortgage lenders are expected to see a similar containment as they deploy sophisticated analytical approaches to guard against all forms of mortgage fraud – whether it is inflated appraisals, illegal property flipping, double escrow or occupancy fraud.

Fraud Detection Technologies

Fraud detection technologies available in the market today can be classified under three broad areas:

- Data validation
- Valuation fraud
- Fraud pattern recognition

Data validation tools

- Data validation compares key elements from the loan application against public record and credit bureau data to ensure that the information being provided is accurate. Example: A social security number is checked to see if it belongs to the borrower. These tools therefore facilitate the verification of information.

Valuation fraud products

- The property address is checked against a detailed history of the neighborhood and prior sales to locate instances of property over-valuation and flipping. These tools are beneficial in determining the type of valuation product to order; for example, high-risk properties can be

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moved to an appraisal, medium-risk properties could require a Broker Price Opinion (BPO), and low-risk properties could be validated with an AVM.

Fraud pattern recognition

- Statistical models find hidden patterns of fraud in the data and provide a 'fraud score' for each application indicating its likelihood to contain misrepresentations. Data such as a borrower's income, assets and credit profile are checked against known fraud patterns. These tools are best used for precisely targeting loans when implementing fraud risk management policies.

Evaluating Fraud Solutions

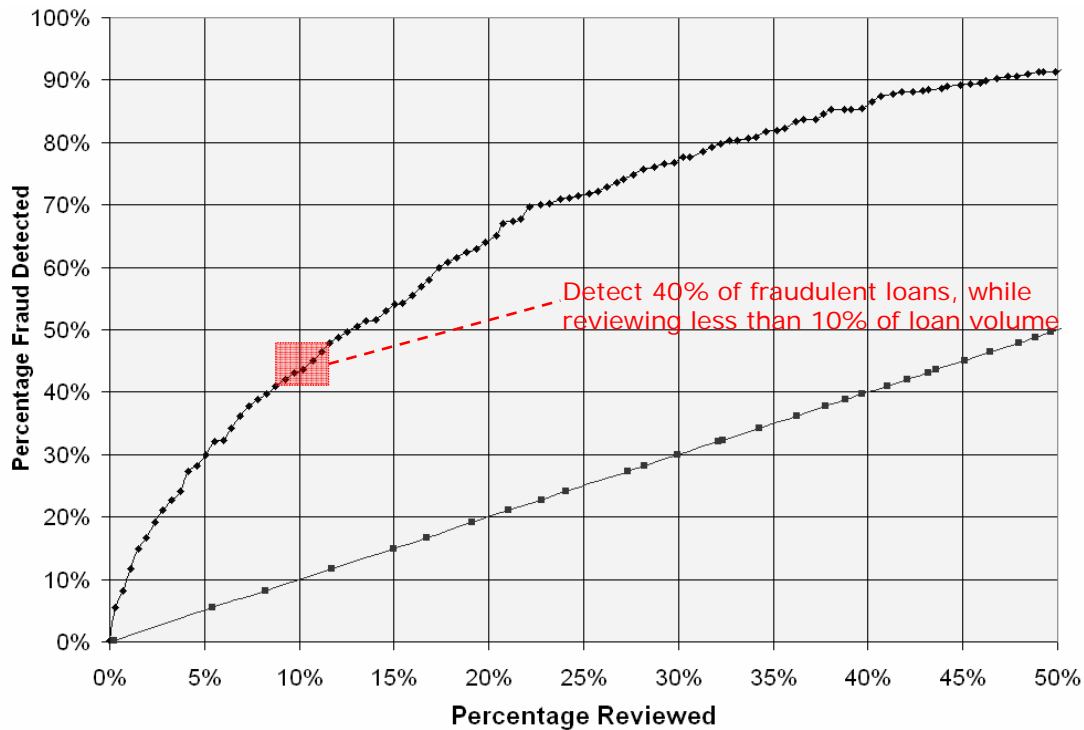
Performing an evaluation of a score-based tool is an important part of any assessment to determine how a particular solution will meet business needs. Automated fraud solutions need to be rigorously tested before implementation to ensure they can deliver business value measured against a set of performance criteria. The mechanism for executing this is usually a pre-implementation test based on historic production data containing known 'good' and 'bad' loans.

Among the many evaluation criteria lenders use, the following are generally accepted as fundamental:

- Coverage – What percentage of the test data does it provide a score for?
- Detection - How well does the tool detect known bad loans?
- False Positive Rate - Is there a low percentage of good loans incorrectly identified as high-risk?
- False Negative Rate - Is there a low percentage of bad loans incorrectly identified as low-risk?
- Lift - Does the review rate provide the desired risk mitigation?

Tool providers usually summarize analytical performance using a 'lift chart' where the bad rate (percentage of known bad loans) is measured against the review rate (percentage of loans reviewed). Figure 2 shows an example of a lift analysis. In this particular performance test, the results were obtained using the fraud score, 4 out of 10 bad loans could be detected by reviewing just 1 in 10 loans.

Figure 2: Example Lift Analysis



Performance against the above criteria can only be assessed by leveraging information yielded by the test in the context of a full return on investment analysis. The cost savings on reviews obtained by using a predictive score need to be set against the costs of tool implementation and support. Once an automated fraud solution is deployed, on-going testing is required to ensure that the solution's benefits are measured over time.

Meeting the Future

If mortgage fraud risk management follows the pattern of credit risk management, then we are likely to see more and more technology-based solutions that employ sophisticated analytical approaches. As with most technology solutions, the key to success will be delivering business value - the successful solutions will be those that solve for fraud detection but do so in a cost-efficient way.

As the industry looks towards tougher market conditions ahead, lenders are increasingly recognizing that taking concrete steps to minimize fraud losses will provide significant incremental value to their businesses in 2007 and beyond. Evaluating a fraud solution is the first step to realizing that value.

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