

Credit Decisioning Engines in the Cloud

Accelerating Lending and Reducing Risks





Market Overview

The global unbanked and underbanked market continues to grow exponentially each year, and will reach an estimated 3 billion individuals and over 250 micro, small and medium-sized enterprises (MSMEs) over the coming decade. This segment of the banking industry has the potential to reach over \$150bn, and both new and traditional banking entities continue to seek opportunities to provide competitive solutions to this underserved corner of the market.

The credit score is the lifeblood of the lending business, impacting many key drivers of a lender's business including risk management, speed and market competitiveness. These scores serve as the basis for constructing and maintaining a healthy loan portfolio, as underperforming/defaulted loans can hinder a lender's growth and long-term profitability. The ability to secure and process this information as part of the loan origination process is crucial to identify quickly and attract loan-worthy prospects before other competitors have the opportunity to target them.

Traditional credit scoring is built by establishing a prior lending history through established credit vehicles (i.e. small business loans, student loans, credit cards, etc.). However, there are areas in both established markets and emerging markets where individuals and businesses don't have access to these facilities in order to build that history. This lack of access has opened the door for companies to develop new methods for acquiring the necessary insights to determine a person's credit worth,

including heuristics, social media and psychometrics. What makes all of this information valuable is the ability to simplify how loan providers are able to view and make decisions based upon the aggregated data.

In this case study, we'll look at some of these sources and methods for building a credit history, and how upstart lenders can leverage Mambu's cloud banking platform to utilize these innovative credit sourcing scoring technologies in order to create opportunities and secure a competitive advantage. We'll also look at how these new scoring methods have opened up new markets, such as identifying good loan candidates who have been underserved as a result of poor credit scores under traditional methods.

Traditional Credit Scoring and Credit Bureaus

As we discussed earlier, most traditional credit scores are derived by the aggregation of existing credit history data that are reported to credit bureaus like Fair Isaac & Co., Experian and CallCredit. Utilizing scorecards, these companies use weighted values against the gathered data (i.e. late vs. on-time payments, size of average monthly payment, etc.) to develop a credit score that acts as the starting point for making a decision on a potential borrower.

In its efforts to create the first online credit union in the UK, My Community Bank (see sidebar 1) worked with Mambu to develop the UK Integration Hub, a component based

1) My Community Bank Case Study

ABOUT: My Community Bank is the first online-only Credit Union in the UK offering loans and term deposit products to underserved markets.

GOALS: To rapidly launch an agile, cost-effective 'bank in a box' that would allow rapid time to market, minimal IT costs and overhead and give the business flexibility in growth in the products and channels it would offer in the future.

APPROACH: Implement the Mambu cloud banking platform to manage loan and deposit products, customer relationships, workflows and reporting and accounting. Integrate into the website as well as services like CallCredit, EchoSign, FD Online and Rapidata in the UK.

RESULTS: The successful implementation of Mambu with the desired products and workflows including 6 third party services integrated in 3-5 man days each, 20 second automated loan decision, 100% digital paperwork and the launch of the credit union with zero internal IT staff and full agility to modify and launch new products as they grew.

Using Mambu's app extensions in conjunction with the hub, My Community Bank was able to expedite the loan origination process.

architecture that allows MCB to communicate with third party service providers to perform data validation and credit worthiness checks. Using Mambu's app extensions in conjunction with the hub, My Community Bank was able to expedite the loan origination process by connecting to CallCredit's BSB and CallValidate service offerings to aggregate and validate borrower information inputted through the company's online forms. In addition, the hub also allowed MCB to communicate with Equifax's Insight report service to better qualify that information.

Online Data Profiling

In geographies where access to credit information is scarce, the ability to quickly determine the credit worthiness of a potential borrower is crucial to ensure a profitable loan portfolio.

For micro and small enterprises, lenders have struggled to accurately develop a risk profile of the owners and directors of these businesses. For underbanked individuals in emerging markets, a lack of access to traditional credit building tools like credit cards makes it equally difficult to reliably assess and manage a borrower's potential risk exposure. In areas of the world where there is already an established banking industry, the challenge lies in processing the necessary borrower data quickly and efficiently to stay ahead of the competition while still maintaining an acceptable level of risk.

It's in these circumstances being able to tap into the network to leverage publicly available information sources like social media can give lenders a viable alternative for building accurate borrower profiles.

Online lending community Lenddo (*see sidebar 2*), for example, uses Mambu's open architecture to capture and create a credit score based on sentiment and character virtues, derived from publicly available data sources like Facebook, Twitter and LinkedIn. Using Mambu's API framework, Lenddo was then able to push and pull data directly into their lending platform, allowing their engineers to shift their focus and begin working on a powerful, proprietary credit rating methodology that takes into account past history, and future liability using the aggregated social data.

By leveraging social media and other publicly available information as part of their credit decisioning process, Lenddo is able to identify new customers that have gone unbanked because of either poor traditional credit scores or having no established credit score at all.

2) Lenddo Case Study

ABOUT: Lenddo is an online lending community that utilizes social media profiles to build credit ratings that enable the emerging middle classes to access loans and other financial services.

GOALS: To focus their internal engineering and development resources towards improving their innovative credit scoring algorithm rather than on their core banking system.

APPROACH: Utilized the Mambu cloud banking platform and API portal to automate and manage the loan transaction workflow, pushing and pulling data from the cloud platform to expedite the origination and decisioning process.

RESULTS: Mambu's open platform allows Lenddo to aggregate over 12,000 data points from social media including Facebook, Google +, LinkedIn, Twitter and Yahoo. Lenddo then uses these social data points to create character virtues such as "honesty" and "consistency" and the community to vouch for character and trustworthiness. This has allowed them to identify and approach new borrowers that have been overlooked by larger competitors.

Heuristics-Based Scoring

Another means of building an accurate credit score is by using the customer behaviour on the website, how they fill in data fields as well as past data from their own history to power proprietary heuristics scoring models. Any information that flows into and out of the lender's loan management platform could be used to identify patterns in customer behavior and verify information against databases (i.e. internal blacklists,

relationships to other customers and their credit information, past repayment history, etc.).

Kueski (*see sidebar 3*) utilized Mambu's Application Program Interface (API) platform as a gateway to manage their loan processing applications across their entire system, from basic transaction processing (including micropayments, and lending) to customer account creation updating and reporting. By automating and streamlining their data management workflow, Kueski was able to focus their engineering resources on improving their proprietary credit risk modeling capabilities, augmenting them with artificial intelligence and machine learning. These predictive capabilities gave them greater agility in their credit assessment process by allowing them to anticipate customer interaction with their system and to automate approvals to provide a faster decision to viable customers.

The automation of their loan origination workflow has allowed Kueski to identify new opportunities based on their customers' preferences, giving them the ability to create new products, as well as to offer better (and often cheaper) rates than other payday lenders.

Non-Traditional Credit Bureaus

In addition to both traditional credit bureau and external sources of credit data aggregation, non-traditional credit bureaus have begun to emerge that use a variety of different methodologies and data points to build credit risk profiles.

DemystData, for instance, leverages thousands of data points drawn from unstructured online data to more accurately evaluate loan suitability and creditworthiness. Lenders can use Demyst's analyses to evaluate an applicant's quality in real-time based on a range of different attributes including income consistency, reported red flags, appearance on watch lists (government, etc.).

Another example is EFL Global, a company that uses credit scoring algorithms built on top of an outcome-based psychometric database to evaluate a borrower's character, their abilities, and willingness to repay. The database uses criteria

such as ethics, honesty, intelligence, attitudes and beliefs to build an accurate depiction of a borrower's creditworthiness.

As companies with non-traditional credit look to take advantage of these external data resources, Mambu's open, flexible architecture has proven invaluable to bringing in the necessary data feeds. Mambu currently provides end-to-end integrations with DemystData and Creditinfo.com (a psychometric based credit-scoring tool).

The Results: A Holistic Streamlined Credit Decision Making Process

Cloud technology has made it possible to streamline and automate the entire loan workflow. It allows lenders to gather relevant data to establish internal scoring parameters at the onset of the loan process to feed more intelligent credit scoring models. By establishing a set of base loan criteria and weighing the collected data against those benchmarks within the underlying matching engine, lenders are able to speed and automate loan decisioning.

Mambu gives lenders a flexible and open cloud platform that allows them to quickly and efficiently capture data to feed unique credit rating models that define and manage borrower risk in new and innovative ways. Before working with Mambu a company like Kueski was coding their own loan management system, losing valuable time debugging it and was overly dependent on excel. Their model worked at 500 loans but would not scale well when Kueski needed to disburse 10,000 loans or more.

Now, loans are automatically categorized as either 'auto-approved' or 'auto-rejected' based on prioritized and predefined criteria through a simple online process that allows an individual to receive a loan in under an hour. As a result, Kueski has seen their loan portfolio increase tenfold since implementing Mambu in January 2013, with the number of defaults falling below the 20 - 40 percent rates commonly associated with payday lenders in Mexico.

3) Kueski Case Study

ABOUT: Kueski needed a highly-customizable, scalable and flexible loan management platform that could integrate with its proprietary risk management system.

GOALS: To complement Kueski's loan management system with software that could integrate with the company's proprietary predictive engine, interact 100% through APIs and scale to process millions of clients and loans.

APPROACH: Integrate the Mambu cloud banking platform and API Portal (used to automate all loan processes and manage all applications) with proprietary risk profiling technology to provide a scalable and flexible model to accommodate quick growth and new market opportunities.

RESULTS: A scalable platform that has enabled Kueski to disburse more than 9,000 loans in Mexico since its launch and whose high-level of automation has achieved a default rate of less than 15%. The achievement of an average 20% month-to-month growth rate and ten-fold increase in loans disbursed since launch.

Mambu gives lenders a flexible and open cloud platform that allows them to quickly and efficiently capture data.

Even with all the advantages of automated credit score generation and decisioning, there will always be a need for human input and intervention. While automation can streamline most of the loan application, lenders have an opportunity to use human decision-making to ensure smarter loan decisions (i.e. conducting due diligence, evaluation of business plans) while improving the customer experience (finding the right products and services to fit a customer's needs).

Mambu's simple workflow-driven interface provides lenders with a client-centric view of a borrower's credit information and offers greater flexibility in the loan management workflow to allow them to identify the products and services that fit a borrower's needs and ability to repay. Having this information available in one place makes the credit scoring and decisioning process simpler and more efficient for lenders.

The right combination of people, process and technology will depend on the organization and which credit rating model they take. In all of these cases, by leveraging Mambu's cloud platform, these lenders are able to speed the credit scoring process and create a distinct advantage against incumbent competitors inhibited by outdated manual and legacy processes and technology.

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About Mambu

Mambu enables financial institutions of any size to rapidly create, launch and service loan and deposit products through its agile, flexible and affordable cloud banking platform. An alternative to legacy in-house systems and cumbersome core banking systems, Mambu accelerates time to market for new consumer and SME banking products.

Mambu helps new institutions and business units to bring new products to new markets via new channels quickly and affordably. We also help transform smaller financial institutions from legacy in-house systems to give them the ability to digitize their business and better service their customers at the fraction of the cost, time and risk of traditional core banking system implementations.

Mambu is delivered in a SaaS model and can be deployed in any cloud environment. Our agile development process bring accelerated feature development to our customers, our technology infrastructure provides world-class security and scalability and our open integration protocol enables swift and simple integrations, extensions and automations.

Our vision is to enable institutions around the world to provide essential loan and deposit services to underserved individuals and emerging enterprises empowering them to pursue their own economic opportunities. We strive to be the trusted technology partner of our customers, allowing them to focus on rapid product, channel and business model innovation while we provide their core platform enabling them to manage and grow their business securely and cost-effectively.

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