

A New Pathway to Financial Inclusion; Credit-Scoring Models

History

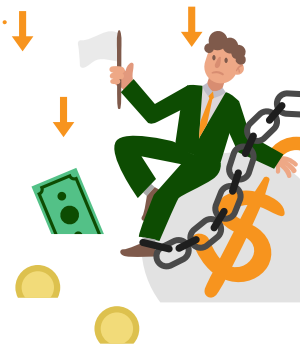


The year 2005 was proclaimed by the United Nations Economic & Social Council as the international year of micro-credit. This was the year right before Muhammad Yunus, founder of Grameen Bank in Bangladesh received his noble peace prize for his work in creating economic & social development. At the time, microfinance was perceived as a strong enabler for people in developing countries to gain access to capital and accordingly achieve a more sustainable improvement in income. This model has proved successful during the 1970 - 80 period in Bangladesh and East Asia at large.

In Europe, a similar model was adopted in the mid - 19th century in the form of cooperative banks. For example, Germany implemented the “Savings Banks” business model, which are small & mid-sized banks that are specialized in local deposits and micro-credits, and are geographically constrained to borrowers within the same administrative district. The banks serving the community have a more personalized relationship with community members and hence more accessible than other larger banks.

In Egypt, the first form of micro-credit was in the 1950's in the form of agricultural loans that are subsidized by the government to support farmers in need for seasonal capital. In the 1980's & 1990's, international donors made substantial investments in microcredit programs. As of June 2008, there were around 280 microfinance programs, offered by both microfinance institutions and banks, serving around 1 million active clients with a total outstanding portfolio of EGP 1.8bn. The market grew rapidly since the early 2000's till date, leading to a market size of around EGP 18bn in outstanding portfolio that is offered by more than 900 different entities.

Along the journey of microfinance growth in the world and in Egypt, the industry faced numerous challenges that led to the demystification of the success story of microfinance. At the global level, the most notable crisis was the 2010 Andhra Pradesh crisis in India, whereby more than 50 microfinance borrowers committed suicide due to failure in committing to debt. Similarly, in Egypt, the industry faced similar tragedies. Currently, there are around 30,000 delinquent microfinance clients that are imprisoned due to failure repay debts.



So, What Went Wrong?

And How Can Microfinance Institutions Overcome its Current Challenges?

Credit Risk Management Problem

One of the biggest challenges faced by the industry is its failure in risk management. Earlier, microfinance institutions were operating at a small-scale, and credit evaluations were largely dependent on the reputation of the client, his/her estimates of their working capital and liquidity at hand. Hence, even though the lending was not backed by collateral, the repayment rate was high reaching 95%-98% as microfinance clients were always keen to maintain their reputation in the area that they are working/living in and credit officers were more familiar with their customer base.

The rise in competition and investment appetite led to the development of a much bigger scale of lending that spanned across much larger geographic areas and customer base. Hence, the personalized relationships between the microfinance institution and the customer diluted, and the subjective scoring used to assess debt capacity became insufficient. **Responding to this, microfinance institutions took some measures to improve their credit risk management practices, including;**



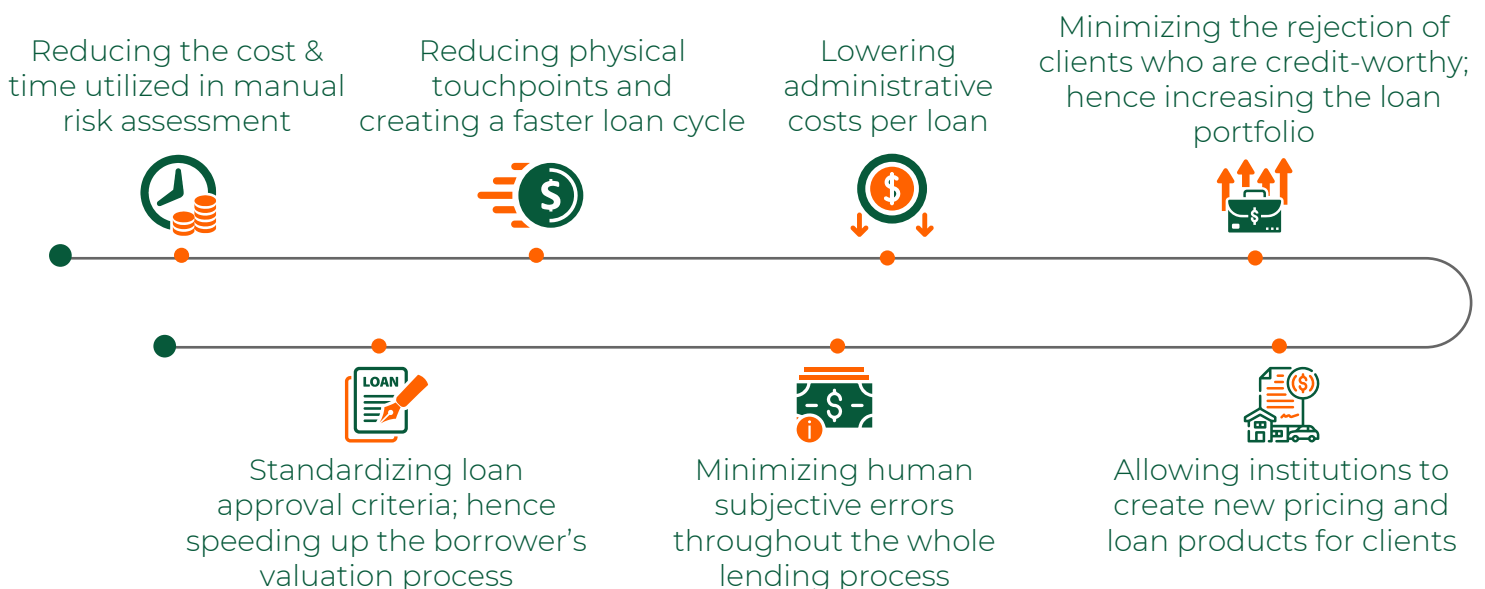
Microfinance institutions further enhanced their legal and collection capacity, which increased the pressure on defaulting clients to repay their loans. Unfortunately, this created the vicious cycle that led to tragedies similar to those that happened in Andhra Pradesh and in other areas of the world.












All of these initiatives enhanced portfolios quality, yet remained the problem of insufficient credit risk management prevalent!

The Lending Revolution: Credit-Scoring is the Next Technological Innovation in Microfinance

Considering the insufficiency of credit evaluation and the growth in scale, microfinance institutions are in need for empirical statistical data models to compensate for their current less reliable credit evaluations. This will eventually lead to minimizing default rates and put an end to some of the current tragedies in microfinance. Credit-scoring models won't only control credit risk and minimize default rates, **it can also be a powerful tool for improving the operating model of microfinance institutions as a whole through:**



How Can Microfinance Institutions Incorporate Credit Scoring Models into their Systems?

- 1 Map the existing end-to-end lending process, analyze the decision-making process, identify data requirements, define sources of data and diagnose the problem of data errors.
- 2 Map all systems and data sources to a data architecture to identify available information and decide on the use of historic data.
- 3 Define the variables and data discriminants to integrate into the credit scoring model.
- 4 Create an enabling IT infrastructure through streamlined enterprise architecture that ensures systems integration, access to real-time data, analytics support for the MIS and data sourcing to allow for building analytical models for behavior prediction and customer segmentation.
- 5 Identify the optimal customer characteristics by drawing correlations between default and customers descriptive data discriminants, i.e. age, residence (owned or rented), occupation, number of dependents, purpose & type of loan).
- 6 Validate the data model by iterating on data correlations. To ensure the validity of this data model, microfinance organizations should expect at least 100 default cases to iterate on data correlations and achieve a reliable predictive model.
- 7 Re-skill existing team/adopt new talents. This includes the re-skilling of loan officers, appointing data analysts to act as a liaison between IT data sources and the commercial business, appointing a database manager to be responsible for navigating database systems and sharing insights on how data is captured, stored and extracted.
- 8 Integrate the credit scoring model into the credit policy and operating procedures while defining the risk appetite of the organization in relevance to the credit scoring system.
- 9 Develop a data mart (a subset of enterprise-wide data warehouse) to access relevant information and compare the actual repayment data of the client with the score assigned.
- 10 Ensure C-level sponsorship and training to all relevant staff to ensure the success of the transformation across the institution.

What Changes are Required in the National Ecosystem & Infrastructure?

As stated by Sumair Farooqi, the Co-founder & Managing Director of Kashat, first Nano lending mobile application in Egypt, there is a need for a national data strategy to create **the right balance between data confidentiality and data sharing** to enable financial technology without compromising privacy. This entails creating clear guidelines for data use, re-use and publication.

Another significant infrastructural improvement is the need to create digital identity that is enabled by digital authentication. As stated by Farooqi, the absence of biometric authentication of identity creates a risk of capturing data of the wrong person that may be using a cell phone that is not necessarily owned by the same person that applied for financing using the online application. **The development of digital identity & authentication** will unlock financial technology innovation that is highly dependent on alternative data of users.

Finally, there is a need to create **richer systems of records and data on users**, which will also enable the creation of more reliable credit scoring models. Singapore has a successful example of building a block-chain credit scoring platform that incentivizes customers to share their data in return for digital token rewards that can be sold and/or exchanged.