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How Data science ishelping to address the NPA problem.

Ever since the Financial Industry has been adopting information technology (IT) process, industry as a whole has been generating large volume and variety of data. Most of the IT adoption process happened in the last 3 decades have been pertaining to digitization of the paper based process and this all pervasive digitization process has generated mammoth data and the industry continued to grow around increasing the processes' robustness and improving operational efficiency on various fronts.

Most of the data, which has been generated by the financial enterprises through this massive digitization process, pertain to the Customer, in terms of Customer demographics, transactions, buying, spending, borrowing etc. Also most of these customers also generate large volume and variety of data in the social digital space, which we call as Alternate data. In the lending side of the industry also, the digitization process has created large volume of data, be it regarding the customer demographics, transactions, borrowing, payment etc.

This mammoth amount of digital data of each customer generated both inside and outside the enterprise has the potential to reinvent the entire business functions of the banking and financial services industry should this data be used in the most scientific and meaningful way.

DATA SCIENCE IN LENDING INDUSTRY

Lending side of the Financial industry has been using Data science for a long time primarily for the Risk assessment of a borrower. Several statistical model building processes have been evolved in the last four decades in this regard. The whole industry of Credit Bureaus have been developed and evolved addressing the Risk assessment of the customers. Most of these statistical models are built for assessing the risk of a borrower during the loan origination stage and to assess the customers propensity to default once he become a borrower. However, usage of Data science/statistical models for

collection and recovery process has been a slow process across the financial industry even in the developed countries.

COLLECTION AND RECOVERY PROCESS

How many times have we received plethora of telephone calls from banks just for missing one credit card payment or an EMI while we were travelling or attending some personal/professional emergency ?

How many times have we wished that, the call centre agent who calls us to check whether we have paid the EMI has the correct information with her ?

How many times we are surprised that while the banks chase us continuously for payments even if we have been a regular payer, we are hearing lots of news about huge losses in banks due to large defaults and NPA's?

Even though Banking and Finance has been considered one of the most professionally managed industries , why such incidents are happening universally and frequently ?

Conventionally collection and recovery process in the Financial industry has been manual driven and not data driven. The process has been primarily driven by a large number of human resources who adopt various methods, channels and content for the collection process. Therefore the collection process has been lacking much of sophistication and many a times lack professional approach. This generic process of collection and recovery which is lacking focused approach has been resulting in accumulated non-performing assets , ever increasing cost of collection and dissatisfied customers. In general collection and recovery process has been kind of "Spray and Pray " process and lacks personalization .

DATA DRIVEN PERSONALIZED COLLECTION PROCESS

Conventional methods of statistical model building using training data and then applying the same on actual data has been a cumbersome process and hence the universal adoption of these statistical models for providing personalized services has been very slow.

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Performing advanced analytics using Data science driven machine learning along with the technologies like Cloud and Big Data engineering is enabling the platform based automation of the advanced analytical process. This platform driven automation process is industrializing adoption of Data science and one of the major applications of such platform based automation process is providing personalized services using Data science.

At a very basic level, advanced statistical analysis enables institutions to perform customer profiling based on their behavioral economics, and facilitates scientific customer profiling which goes beyond demographic segmentation to provide personalized services. By this process, the financial institutions can adopt and provide personalized follow up actions to the individual customer.

Also, after obtaining the consensus of the customer and by using Alternate data of customers which are digitally available, and automating the personalization process using ML, brings up increased opportunities for personalized collection and recovery process

By understanding the propensity of a borrower becoming a defaulter in the future on a real time basis and by adopting pre-emptive personalized follow up actions for the collection process, the risk of borrower moving into further delinquencies can be mitigated well in advance. Providing personalized services for the borrower after understanding her/his ability and willingness to pay through real time data analysis, the lender can create an eco system by which both lender and borrower work together to avoid the defaults.

The advancement in data engineering and data science which was witnessed during the last decade is facilitating very in-depth statistical analysis of Customer data. Various advanced tools which have been developed recently in

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Data Engineering, Data science driven machine learning (ML) and Advanced Statistical analysis have created the real potential in using the customer data to understand the behavioral economics of each customer and hence provide very personalized collection and recovery process.

Personalized collection process for sure helps financial institutions to provide data driven , pre-emptive, precise, focused and targeted collection process resulting in increased recovery and reduced collection costs. This in turn also helps enhanced customer satisfaction and much better customer engagement.

Automating the personalized collection process through Big data engineering and ML has enormous potential to reduce defaults and NPA's and early adaptors of this have been reaping enormous benefits.

And, the Institutions Are Embracing It – Here is How

A large Mortgage bank in India uses ML based platform for personalized collection and recovery process. By using the platform, the bank knows at any point of time the collection propensity of every defaulter and what kind of personalized follow up actions need to be applied on each customer to enhance the collection. The bank also knows for each customer, which collection agent is to be deployed, what personalized message needs to be sent, and which communication channel is most effective with a particular customer.

The Bank uses advanced ML driven algorithms built on both internal and external data and the whole process has been automated using the Big data engineering platform technologies and in a very short span of 10 months, the platform helped the bank in increasing the collection amount substantially and also reduce the collection costs enormously.

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CONCLUSION

Big Data Engineering and Data science driven machine learning applications have opened a plethora of opportunities for Data driven Automation of various business functions in the Financial industry. Personalization of collection process is one of the most promising area in the data driven automation processes and has already started delivering encouraging results to the early adopters.

Despite the challenges, such as massive data volumes, multitude of data sources, data quality, and data-related regulations, ML driven automated personalization platforms for collection process can surely reduce the occurrence of defaults and NPA's and hence are generating immense interest from the CXO's of financial industry.