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An Over View of Current Use of Advanced Analytics in Banking Sector

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Abstract: ***Data is the lifeblood of every banking institutions. However, the need for more complete and accurate data is greater than ever before. Stricter regulation regarding regulatory risk management pushes banks and other financial institutions to improve the quality of their data while pressuring their efficiency in handing large quantities of data. Banking Sector over the last few decade has undergone drastic changes, when it comes to the way they operate and provide efficient services. Increasing population worldwide overburden the existing banking infrastructure. This will in turn increases the number of customers, online transactions and also create huge amount of data when dealing with large segment of customers. . To tackle these challenges, banks should move away from the traditional approach and modernize their data gathering methods and internal process to ensure a complete inventory of the required customer information at all times. Banks are already realizing client profile enrichments based on internet search in their screening process. However, banks now use multiple internet sources to identify potential risks. Banks are now using advanced Analytics to handle this situation in every day. To address the above mentioned issues, this paper provides a detailed review of the role of Data and Analytics in Indian banking sector. Application of advanced analytics is a huge step towards the development of banking sector. So, applying Big Data analytics in banking sector in India would help banks in generating actionable insights to improve strategic and operational decisions and to stay on top of business and competition, every bank must be highly rich with technology and Analytics. Big Data is definitely going to make things easier for the banking industry.***

Keywords: Online Banking, Data Mining, Digitization, Predictive Analysis

1. Introduction

Doing the things the old way is too risky nowadays. The companies must evolve and grasp the new technologies if they want to succeed. Banking analytics, or applications of data mining in banking, can help improve how banks segment, target, acquire and retain customers. Additionally, improvements to risk management, customer understanding, risk and fraud enable banks to maintain and grow a more profitable customer base. It is concerned with turning raw data into insight for making better decisions.

Like ATMs and online banking before it, advanced analytics is quickly changing the playing field in the banking world. Banks are increasingly using analytics to gain a competitive advantage and to form conclusions and insights based on the information they have gathered through basic reporting and data collection. Analytics relies on the application of statistics, computer programming, and operations research in order to quantify and gain insight to the meanings of data. It is especially useful in areas which record a lot of data or information. For banking organizations that currently have data science projects at various stages of development, the most immediate challenge often is deciding where and how to allocate their available resources. Advanced data science applications offer promising benefits in a variety of areas including marketing and sales, operations, customer intelligence, portfolio management, and risk and compliance.

This paper delineates the various ways that banks can use Analytic. The importance of innovation and developing new solutions that take advantage of data, advanced analytics, digital technologies and new delivery platforms has never been more important. We are seeing organizations innovate in targeting, expanding services, re-configuring delivery channels, delivering proactive advice, integrating payments and applying block chain technology. These efforts will only increase in 2019, as global financial and tech giants revolutionize the financial services arena. As part of these mega-trends, banks will also experiment with new mobile applications and voice-enabled gadgets to enhance both delivery and contextual personalization. Ultimately, the consumer will be front and center. As technologies continue to evolve, the banking sector will continue to accelerate its investments in innovation and digital enhancements.

2. Meaning of Advanced Analytics

Advanced analytics is a part of data science that uses high-level methods and tools to focus on projecting future trends, events, and behaviors. It is concerned with turning raw data into insight for making better decisions. The major areas that make up advanced analytics are predictive data analytics, big data, and data mining. Data mining is a key aspect of advanced analytics, providing the raw data that will be used by both big data and predictive analytics. Advanced analytics can help banks revamp their existing monitoring systems by better predicting the probability of fraud that may occur

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3. Review of Literature

Big data: In the year 2005, Roger Magoulas had coined the term 'big data' for the very first time. Big data are extremely huge data sets that are so large or complex that traditional data processing system are inadequate to deal with them.

Data analytics is the science of analyzing raw data in order to make conclusions about that information. Many of the techniques and processes of data analytics have been automated into mechanical processes and algorithms that work over raw data for human consumption.

"Data Analytics is uniquely leveraged. Most software today can optimize existing process, but analytics if done right, should generate such insights tha bring to life whole new initiatives. It will change what you do and not just how you do it: Brain Balfour

4. Objectives of the Study

- To study the meaning and importance of data analytics.
- To analyses the meaning and components of advanced analytics.
- To focus on the use of advanced analytics in banking sector in the current period.

5. Scope of the Study

Data is the center of every meaningful decision. Banks grapple with large volume of data of all sorts-social, text, video, geospatial. Data analytics will play a leading role in the lending sense to data. this new data talent will define the future of banking. The banking and financial industry is very well aware of the fact that if the data can be used effectively they can fulfill the needs of customers accurately.

6. Methodology

In this research aspects specifies on the method of descriptive research. The study targeted developing banking sector that are at various stages of innovation efforts.

7. Components of Advanced Analytics

In order to adopt advanced analytics, banks have to understand the components that make up the technology. Advanced analytics solutions for banking are comprised of four different components

1) **Reporting:** Focuses on conversion of raw data into information, building data repositories using basic analytics. For example, reporting suspicious activity.
2) **Descriptive analytics:** Processing, identifying patterns, and summarizing the information gathered in reporting. For example, customer segmentation based on spending behavior
3) **Predictive analytics:** Using the above patterns to predict future actions or scenarios. For example, personalization of customer offerings based on customer segmentation
4) **Prescriptive analytics:** Gathering results from descriptive and predictive analytics to determine --what, why and how a situation is likely to occur. For example, decision optimization based on economic and consumer trends.

Analytics can help:

- Increase the ability to address and monitor regulatory compliance
- Increase transparency and understanding of risk exposures to manage the business more effectively
- Develop a risk-adjusted view of performance
- Manage fraud effectively
- Measure customer and product profitability
- Identify “high-potential” prospects and customers
- Improve the ability to target products and services to prospects or customers
- Enhance specific elements of the offer—product, pricing, channel
- Allow senior management to make informed operational decision

VIII.USE OF ANALYTICS IN BANKING SECTOR

Here are the 10 ways in which advanced analytics is helping the banking sector.

1) Fraud Detection

Digitization has paved way for the cyber criminals to commit more frauds. Thus banks need intelligent systems and tools to deal with them. Predictive analytics, Machine learning, Big data, Data mining and Stream computing are few tools that help in catching these frauds. Analytics can be used to recognize frauds that are not very obvious and then predictive analytics can be implemented on them to analyze them further.

2) Application Screening

Predictive analysis in banking can help process huge volumes of applications, without excluding important variables, without delays or errors, without growing tired-all of it with regularity and steadiness. The results are very much accurate and authentic to be used. So ultimately there doesn't have to be a comparison between traditional or manual screening and analytics.

3) Customer Acquisition & Retention

Predictive analytics help in the process for optimized targeting, making it easier for banks to instantly identify the high-value customer segments most likely to respond. The customer base can further expand by acquiring the right type of customer. Based on a report, it was seen the banks that adopted predictive analytics had an increase of about 10% in new customer opportunities over a year. Also predictive analytics helps banks and financial institutions retain their customers. It:

- Identifies the customers most likely to defect before they end their relationship.
- Keeps the right customers longer.
- Predicts which actions will earn their loyalty.

Applying this technology would also help discover the churn patterns and develop profiles of users who have left, to get an insight of why they left and discover strategies to keep them satisfied.

Customer retention is another area where banks need to focus more today in order to reduce customer sapping. Loyal customers need to be rewarded and customer attrition needs to be minimized. Sometimes it gets too late to retain a customer because they tend to have a large customer base and hence lose track of them. It's easy to look out for a new customer but the old ones are always valuable. Predictive analysis helps identify which customers are willing to switch to any other bank and the reason behind their decision.

4) Knowing Customer Buying Habits

Targeting the right product and tracking customer usage is a challenge before banks which they independently and in conjunction with retailers are trying to curb. With predictive analytics, banks can rapidly segregate various customer segments and replace it with highly relevant, individualized messages tailored to each customer's profile, resulting in a higher response rate. This ultimately helps deliver the right product to the right person.

5) Cross-Selling

Efficient cross-selling of products can happen by analyzing the existing customer behavior at places where multiple products are offered. Today, securing one profitable customer is a big task for banks, hence cross-selling another product to an existing customer helps a lot. Predictive analytics helps examine customers' usage, spending, and other behavior and leads to effective cross-selling of the right product at the right time.

6) Collections

Banks have a mix of customers who always pay on time and those who lag. It is a tricky task to keep a track and maintain records of all individuals and differentiate who to focus more. Predictive analytics offers clear benefits in this area. Banks can attain a better understanding of their portfolio risk and thus improve the productiveness of the collections process. Most importantly analytics helps identify the customers who would be at risk in the future and what actions banks should take to achieve positive results.

7) Better Cash/Liquidity Planning

Predictive analytics can help banks track the past usage patterns and the daily coordination between the in- and out-payments at their branches and ATM's, hence predicting the future needs of their potential customers. Optimal management of liquid assets can result in their extra income and a proper analytics plan can help obtain an overview of future changes in investment and liquidity options.

8) Marketing Optimization

Predictive analytics help marketers to plan marketing campaigns and programs and monitor the results closely. By providing an insight into customer behavior and attitudes, and a complete, current view of your customers, analytics help your marketing team deliver the right message at the right time to the right customers.

9) Customer Lifetime Value (LTV)

Customer's lifetime value is how long the organizations are able to retain their customers. Identifying who the best customers are, making them better in different ways, and once you win them over, securing their loyalty, are few areas that banks are focuses.

10) Feedback Management

Feedback management is really important. Predictive analytics allows banks and financial firms to keep up their relationship with the customers by giving them the right services and products for their need and matching individual preferences in the most sorted way.

8. Conclusion

Advanced analytics and inculcating it into the existing banking environment is one of the key elements of surviving from the market. The digital Banks have to evolve and understand the rapid changes in data analytics technologies. The future of banking revolves around leveraging data and advanced analytics towards enhancing the accuracy of predictive models. Banking has become customer-centric: knowing customers' needs and preferences are key to building customer loyalty and **customer retention** over the long term. Analytics can help banks to differentiate themselves and gain a competitive edge. By applying analytics to customer segmentation, customer profiles, and transaction patterns, banks have the opportunity to gain valuable insights into their customer base and can translate this knowledge into increased customer satisfaction and retention. They can also use analytics to offer customized products, services, and deals to customers based on their profiles and histories

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