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Impact of Big Data Analytics on Banking Sector: Learning for Indian Banks

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Abstract

The big data revolution happening in and around 21st century has found a resonance with banking firms, considering the valuable data they've been storing since many decades. This data has now unlocked secrets of money movements, helped prevent major disasters and thefts and understand consumer behaviour. Banks reap the most benefits from big data as they now can extract good information quickly and easily from their data and convert it into meaningful benefits for themselves and their customers.

Banks internationally are beginning to harness the power of data in order to derive utility across various spheres of their functioning, ranging from sentiment analysis, product cross selling, regulatory compliances management, reputational risk management, financial crime management and much more. Indian banks are catching up with their international counterparts; however a lot of scope remains.

This paper aims to capture how big data analytics is being successfully used in banking sector, with respect to following aspects:

1. Spending pattern of customers
2. Channel usages
3. Customer Segmentation and Profiling
4. Product Cross Selling based on the profiling to increase hit rate
5. Sentiment and feedback analysis
6. Security and fraud management

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The data used is secondary data from a bank while the analysis is of primary nature. This study reveals some of the best practices being adopted by banks globally, and can be replicated by Indian banks to enhance their financial service offerings to customers.

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1. Introduction

The big data revolution happening in and around 21st century has found a resonance with financial service firms, considering the valuable data they've been storing since many decades. And even though the collection of this data was unplanned, since accounting system has always been historical in nature, the potential unlocked by big data analytics exceeds any expectation previously expected from this historical record set. This data has now unlocked secrets of money movements, helped prevent major disasters and thefts and understand consumer behavior. Banks reap the most benefits from big data as they now can extract good information quickly and easily from their data and convert it into meaningful benefits for themselves and their customers.

Financial firms are looking forward to application of big data in spheres like front office risk management to back office trade operations.⁴ Before we delve into the most affected areas in BFSI, let us also have a look at what really is big data all about.

1.1. Impact of Big Data on Banking Institutions and major areas of work

Finance industry experts define big data as the tool which allows an organization to create, manipulate, and manage very large data sets in a given timeframe and the storage required to support the volume of data, characterized by variety, volume and velocity.¹²

Below we look at the major areas where big data is being utilized by financial institutions which are ramping up their enterprise risk management frameworks to help improve enterprise transparency, auditability, and executive oversight of risk.⁵

1.1.1. Customer Centric

Client experience closed feedback loop	Customer life event analysis
Next best offer	Real time allocation based offerings
Sentiment analysis-enabled strategy management	Sentiment analysis-enabled lead/referral management
Quality of lead analytics	Micro-segmentation
Customer Gamification	Sentiment analysis-enable sales forecasting

1.1.2. Risk Management

Following are the ways in which data analysis is being used to find out and evaluate financial crime management (FCM) solution rules, by early detection of the correlation between financial crime and attributes of the transaction, or series of transactions.

MIS/ Regulatory reporting	Disclosure reporting
Real time keyboard conversation tracking	Anti-money laundering

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