Let's Talk Digital Series #3

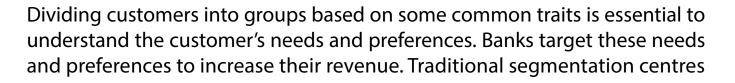# Big Data Analytics Applications In Banking & Finance

Banking customers create an enormous amount of data every day through millions of transactions. This data comes from the numerous touchpoints provided by the financial institutions, like online banking, e-commerce, phone banking, credit card swipes, and even face-to-face interaction.

Analysing this big data brings plenty of untapped possibilities - from understanding their customers to better risk compliance and more accurate purchase propensity - to grow the bank's revenue and profitability.

Let's review some of the most prevalent big data analytics (BDA) applications in banking and
finance.

## CUSTOMER SEGMENTATION

Dividing customers into groups based on some common traits is essential to understand the customer's needs and preferences. Banks target these needs and preferences to increase their revenue. Traditional segmentation centres

on demographics like age, gender, and income. BDA enhances customer segmentation by bringing in a variety of data from all customer touchpoints. BDA also enables banks to achieve micro-segmentation to uncover valuable information such as customer value, life stage, attitude, and behaviour. Examples of micro-segmentation: female millennials with degrees who don't own a home; high-income couples without children.

## CREDIT SCORING

Conventional credit scoring employs statistical models using the borrower's data – such as age, repayment history, income, and previous loans – to decide whether to accept or reject a loan. There is, however, increasing demands for scoring precision. Big data and AI can improve scoring accuracy by bringing in alternative data (social media, internet activity, and e-commerce transactions) and analysing them together with the conventional borrower's data. Online behaviour, for instance, can show if a person is likely to service their loans, and allows banks to factor this in when accessing potential borrowers.

## PURCHASE PROPENSITY

Customer data and previous purchase history are used to predict who would likely buy a product (purchase propensity). Like advanced credit scoring models, a bank can improve its purchase propensity model by incorporating alternative customer data such as social media, location, and online activities. All this data typically goes into the bank's Customer 360, which offers a single, unified view of its customers. With Customer 360, the bank can then use BDA to create highly sophisticated purchase propensity models and run targeted campaigns to increase its sales. A popular campaign that banks frequently run is targeting credit cardholders with the precise merchant offerings.

## ANTI-MONEY LAUNDERING (AML)

Money laundering is a threat to the financial world as criminals try to convert dirty money into clean cash. Detecting money laundering is tricky because criminals are always finding new ways to launder money. Standard anti-money laundering mechanisms cannot keep up and it ends up highlighting many routine and legitimate transactions. Auditing these flagged transactions wastes a lot of money and resources. Therefore, BDA provides an effective way in fighting money laundering. Advanced algorithms can uncover hidden relationships; they can identify individuals and their associations with one another. They can also detect behaviours as most customers don't commit fraud, and their actions are predictable. When these behaviours change, they potentially indicate fraudulent activities. Advanced analytics algorithms can easily detect them.

## ALGORITHMIC TRADING

Financial markets tend to be unpredictable and illogical. In the past, predicting stock prices was an extensive and arduous process because it was tough to find patterns. However, the power of BDA today allows traders to analyse large amounts of historical financial data and to find essential indicators that would guide them to make informed decisions. These advanced algorithms require as much unbiased data points as possible to generate outcomes. We can also give BDA the power to execute trades at optimal prices. Algorithmic trading reduces the possibility of mistakes by human traders by taking emotions and irrationality - like fear and greed - out of the way.

We have just scratched the surface with the BDA applications discussed in this article. The potential of big data analytics in banking and other financial institutions looks bright. Innovative BDA is critical to success. Banks need to continuously evaluate their data-driven strategy and deploy high-value BDA business cases that will positively influence their bottom line.

# BIG DATA ANALYTICS APPLICATIONS IN BANKING AND FINANCE

*Banking customers generate an enormous amount of data through touchpoints like online banking, e-commerce, phone banking, credit card swipes, and even face-to-face interaction. Analysing this big data carries lots of untapped potentials to increase the bank's revenue. We review some of the most popular big data analytics (BDA) applications in banking and finance.*

## CUSTOMER SEGMENTATION

Traditional segmentation focuses on demographics like age, gender, and income. BDA improves customer segmentation by bringing in a variety of data from all customer dealings. BDA also enables banks to achieve micro-segmentation to expose valuable information such as customer value, life stage, attitude, and behaviour.

## CREDIT SCORING

Conventional credit scoring employs statistical models on the borrower's data - like age, repayment history, income, and prior loans — to decide whether to accept or decline a loan. BDA improves scoring accuracy by bringing in alternative data (social media, internet activity, and e-commerce transactions). Online behaviour, for instance, can show if a person is likely to service their loans.

## PURCHASE PROPENSITY

Customer data and previous purchase history are used to forecast who would likely buy a product. A bank can increase purchase propensity by incorporating other customer data like social media, location, and online activities. The bank can then use BDA to create highly sophisticated models and run targeted campaigns to increase its sales.

## ANTI-MONEY LAUNDERING (AML)

Detecting money laundering is tricky because criminals are always finding new ways to launder money. Standard anti-money laundering methods cannot keep up. BDA provides an effective way to fight money laundering through its ability to uncover hidden relationships and detect suspicious behaviours.

## ALGORITHMIC TRADING

Financial markets tend to be unpredictable and illogical, and predicting stock prices in the past was tough. The power of BDA today allows traders to analyse large amounts of historical financial data to discover essential indicators. Algorithmic trading also lessens the possibility of blunders by human traders by taking away emotion and irrationality.

This article is part of the Digital Banking Learning Series, 'Let's Talk Digital', an initiative by the ABS Center for Digital Banking. It is written by industry practitioners and are aimed at educating the general public on the intricacies of digital applications in banking and other related industries, including the latest insights and trends of Digital Banking.

As the industry's preferred partner in learning and development, ABS offers relevant training programmes that covers a comprehensive list of banking areas that are designed and developed in-house by our Specialist Training Consultancy Team or in collaboration with strategic learning partners that includes some of the top business schools in the world. It also provides specialised consulting services and tailored learning solutions to meet the specific needs of its clients.

For more information, visit our website at **www.asianbankingschool.com** or email us at **digitalbanking@asianbankingschool.com**