

# Data Analytics in BFSI: Time to Unlock Value

## Abstract

Banking, financial services and insurance (BFSI) organizations hold assets whose value is not typically reflected in the balance sheet. One such asset is data. Converting the latent value of data assets into commercial value will help BFSI firms drive growth and unlock exponential value. However, achieving this goal requires organizations to become insights-driven to be able to harness data by design – deriving actionable insights from data is one of the foundational pillars of the operating strategy. These insights will help create a strong brand through competitive differentiation and deliver internal operational efficiencies, data monetisation, and enhanced customer experience. This paper discusses the challenges in transitioning to insights-driven organizations and details the capabilities that firms will need to acquire.

## Transitioning to Insights Driven Business and Operations

BFSI organizations hold more data than money, and this trend is set to grow over the next few years. Data is spread across business lines, corporate functions, and external utilities. Understanding and generating useful insights from enormous amounts of non-cohesive and scattered data is a big challenge. Let's review this challenge from three key lenses to gain a deeper understanding (see Figure 1).

- Front-to-back insights
- Predictive operations
- 'Zero-touch' data operations

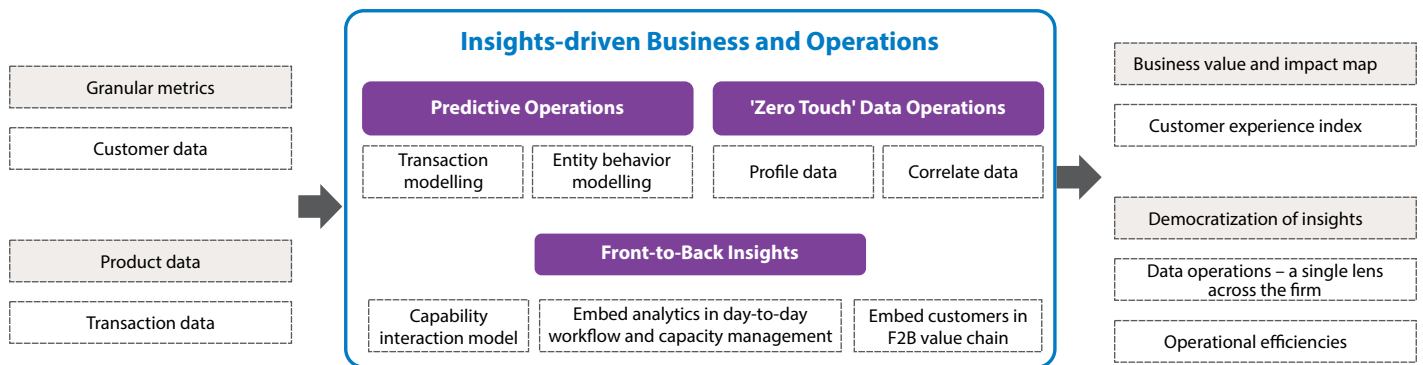


Figure 1: Key Building Blocks of Insights Driven Organizations

### Front-to-Back Insights

Driving a car with satnav best illustrates the concept of front-to-back insights in our daily lives. The satnav continuously recommends the next best action in terms of the best route, expected time of arrival, or a change in route based on analysis of real-time and historical traffic and weather data. It also provides correlational details like location of fuel stations, food courts etc. As a result, the drivers can continuously fine tune or reschedule their plans as needed.

Business decisions in the BFSI industry are largely based on individual experience, expertise, beliefs and some numbers. Extending the concept of front-to-back insights to BFSI firms, where Insights derived from front-to-back business processes can help complement such experience-based decisions or challenge the underlying assumptions, can be immensely beneficial. Investments in insights-based decisions are currently restricted to specific pockets such as anti-money laundering, surveillance, customer analytics and so on. Firms will fail to realise the full benefit of analytics if insights are not

embedded into all the day-to-day interactions and processes. In fact, data led insights need to be embedded into the culture of the organization.

Front-to-back insights involve analysing and correlating data across applications, functions, processes, controls, and lifecycle or events. The insights need not always be from sales or on-boarding but can also be derived from smaller series of functions. For example, the number of trades booked on a specific day with their profit and loss attribution grouped by risk type for flow versus structured business of rates desk correlated to individual desks against missed regulatory reporting provides a holistic view within product control. In addition, it also enhances transparency and enables cross assurance with front office, risk, and regulatory functions. Another example is creating a unified risk view of the customer across different surveillance data sets -- these insights provide important decision points across process improvements, benchmarking business performance, and product strategy. Minimized exceptions, harmonized data operations, elimination of waste and optimized work through risk-based profiling, enhanced customer service, and increased profitability and business value are some of the key benefits of using front-to-back insights.

### **Embedding analytics into day-to-day workflows and capacity management**

Uber has changed the way the world looks at work and capacity management. BFSI organizations have static workflows and many of these workflows are digitized. Analytics can deliver cross-functional insights on existing operations and identify strengths, inefficiencies, capabilities, and capacity on a continual basis. For instance, during an engagement with a large bank, insights gained from analyzing operations data helped rebalance operations team allocations to specific level 2 and level 3 processes and identify areas for improvement.

### **Capability interaction model**

Under this model, the focus shifts to interactions between capabilities rather than building standalone capabilities. Operating front offices in isolation would be short sighted. Relationship managers should be equipped with a 720° view of their customers<sup>1</sup>, their needs and investments, buying patterns, customers' interactions across the value chain, types of relationships, and the expectations of all the relevant internal functions of institutional customers. The data required to gain this understanding is spread across interconnected functions and processes, stored in data warehouses. To facilitate front-to-back insights, it is important to connect scattered data with business and technology capabilities.

### **Embed customers into the front-to-back value chain**

BFSI firms create products and perform functions for the benefit of customers – either to create value or to fulfil fiduciary or regulatory obligations aimed at consumer protection. It therefore becomes important to ensure customer focus across the entire value chain. Organisations are leaning towards mass-and-hyper personalisation by embedding customers into the front-to-back value chain. For example, wealth managers are segmenting their clients using machine learning (ML) to create detailed profiles and unlock new insights through predictive analytics.

## **Predictive Operations**

This involves combining past data with knowledge of current market conditions and other relevant situations to predict the future through scientific methods. BFSI organizations have successfully used this in some areas:

- Predicting potential fraudulent customer behaviour using random forest and gradient boosting methods
- Predicting failed trade settlements using ML algorithms
- Predicting success of client on-boarding requests, pricing of products, need for financial adjustments and so on

To facilitate a move from individual use cases to at-scale deployment, predictive modelling can be broadly classified into two categories:

### **Entity behaviour modelling**

This involves modelling the transition of an entity from one state to another. For example, understanding the characteristics of a customer moving from a healthy financial state to default state. There are several techniques for modelling this behaviour that require rich sets of historical and current data.

### **Transaction flow modelling**

This entails modelling the flow of transactions as they go from one state to another. The flow is influenced by a multitude of factors across the life cycle. These factors must be assessed for relevance before undertaking modelling. Predictive operations have a huge appetite for micro level data attributes. More the data, better the efficiency.

## **'Zero-touch' Data Operations**

Though digitalisation is growing at a reasonable pace, several functions use manual, paper based processes. While systems reengineering, workflow automation and robotic automation of

processes are driving efficiencies in these areas, firms are missing out on how insights can be used to continually improve and evolve business processes through minimized manual data operations (spanning processing exceptions and alerts, making corrections, and so on).

For example, one of our banking clients was able to reduce effort and improve productivity by 40% on customer data operations by employing ML. Another client employed ML to fix discrepancies in time series data used for risk modelling to reduce intrusion in data and increase straight-through processing. Capabilities required to enable this can be broadly classified as:

**Profile data**

Customer, instrument, product, transaction, emails, chats, and risk related data. Profiling entails understanding the type of data and its characteristics.

**Correlate data**

Data is never standalone but relates to other data through a network. For example, consider how legal entity identifier (LEI) links to underlying reference data systems and external data or how macro-economic scenarios link to market data. Several statistical and ML techniques can be used to generate insights through profiling and correlation of front and back office data.

**Capabilities Required**

To transition to future-proof, insights-driven businesses, BFSI organizations must establish robust data management platforms and processes and leverage enabling technologies (see Figure 2).

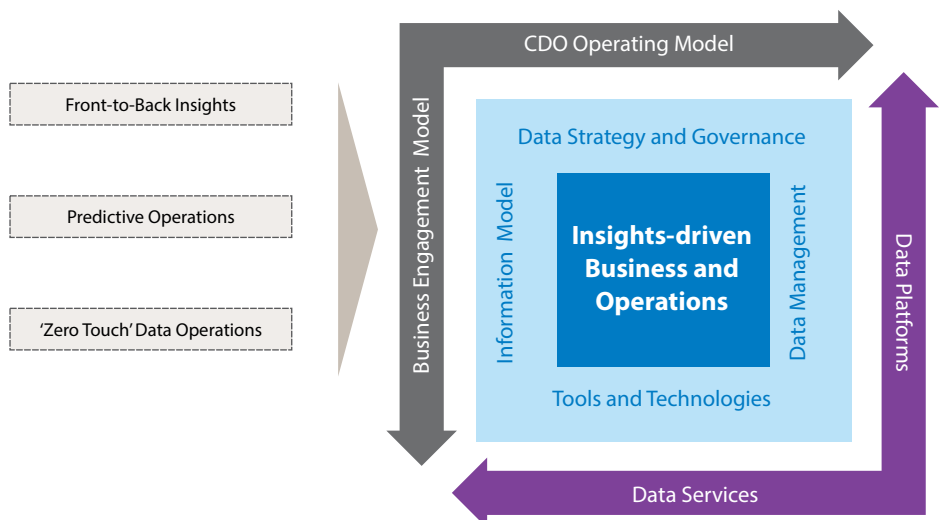


Figure 2: Key Components of a Data Platform Underlying Insights-driven Operations

BFSI organizations must consider the following key aspects while establishing the data management framework:

### **Data strategy and governance**

Data strategy deals with the ways data assets across the organization should be leveraged to generate insights. Governance deals with data policy and processes and the organization structure for data ownership and responsibility.

### **Data management**

Robust data management capabilities are required for successful execution of the data strategy. Aspects such as quality, traceability, security, integrity, effective consumption, and democratization of data are crucial to gaining actionable insights.

### **Information model and tools and technologies**

Standardization of data flow, its representations, platforms, architecture, design patterns, tools, and technologies are critical to ensure efficient utilization of investments and deliver expected value to business operations. The latest trends include creation of a 'speed data platform' to service operational needs, and the implementation of 'fit-for-purpose' tools (stream data processing, event studio, analytics studio). BFSI organizations should experiment and adopt cloud-based data and analytics capabilities in the analytics and ML space.

## **The Way Forward**

It is imperative for BFSI firms to transform themselves into data and insights-driven organisations to cope with shifting market conditions, meet changing customer needs, and spearhead innovation. To achieve this, BFSI organizations will need to proactively adopt a clear data analytics strategy using the three pillars of front-to-back insights, predictive modelling and 'zero-touch' data operations.

## **References**

- [1] TCS white paper, Contest Driven Personalisation: Redefining Customer Engagement as Digital Banking Gains Ground, Feb 2018, Nov 2018, <https://www.tcs.com/content/dam/tcs/pdf/Industries/Banking%20and%20Financial%20Services/Context%20Driven%20Personalization.pdf>

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