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How Big Data methods are revolutionizing the way BFSI firms utilize their customer data

What is Big Data?

Big Data is much more than just business data. It encompasses structured and unstructured data on demographics, psychographics, transactions, interactions, businesses, markets, etc; across online and offline sources; and in varied formats like numerals, text, voice and visual.

Its aim is to integrate these data to get a unified view of the client; identify patterns in client behavior; build predictive models using the patterns to gain intelligence of their changing needs; and use that to take strategic decisions to grow market share, create competitive advantages, push client acquisition/conversion, forecast sales and reduce opex and TATs.

Traditional data methods focus on "look-back" analysis using historical data trends. Big Data allows predictive analysis helping firms prepare/respond to changes, receive real-time analytics on large amounts of real-time data to deliver real-time client insights (Eg: pitching relevant products real-time at the touch-point)

Big data methods can collect, process, store and analyze large volumes of multi-format data. It can use data that was unusable earlier, due to limitations in processing. This means multiple service points, multiple communication modes, multiple devices and multiple storages. A TCS report divides Big Data usage into Harnessing and Harvesting. Harnessing means collecting, storing and managing the data. Harvesting means using techniques on that data to derive meaningful insights from it. The initial focus of companies has invariably been on cost reduction, and then has moved onto identifying ways for revenue maximization. **This article looks at how financial firms are trying to manage their data for Big Data purposes, why this is becoming imperative, the focus areas where firms are trying to get an advantage, and the challenges faced.**

What makes adoption so imperative?

- "Omni-channel" is the way businesses are engaging with clients today, i.e. engagement and fulfillment across multiple channels. Show-rooming is giving way to web-rooming, wherein one channel is used for marketing, one for examining, one for sales, one for servicing, etc. As clients interact across multiple channels, they leave behind a trail of information. This means a lot of client information must be collected from multiple channels in multiple formats to derive meaningful insights into buying behavior. The experience, brand message, promotions, pricing and payment options should be consistent across all channels, since clients expect the same convenient experience across channels.
- Count of digitally-comfortable clients is increasing. But they may still want personal assistance since money is a personal subject, and they want the comfort of talking before investing. **This means initiation is digital, but follow-up may be offline**. The online model has to focus on showcasing product features and payment options; while the offline model has to focus on servicing advisory and queries. Businesses have to rethink how they build these channels so that it meets the right experience/expectations. More importantly, it means both channels will co-exist and produce crucial data. If all these data sources are not taken into account, any analysis will be susceptible to wrong inferences
- When the market size is not expanding due to tough economic climate but competition remains intense, the focus moves towards gaining market share from competitors and wallet-share from existing clients. Big data methods help identify opportunities for both of these
- Given the recent economic challenges, firms are compelled to work on tight budgets. Low-cost digital channels are a way to rationalize costs. Big Data methods help leverage the data from these online channels better, and grow market share in a hyper competitive industry
- Availability and affordability of Big Data technologies has reduced the barriers to adoption. Many companies are exploring these options, and these new methods are in high-demand now. Those companies which choose to ignore this may risk falling behind in the race

Methodology typically used by most firms

Integrate data from multiple sources → *Roadmap based on capabilities, gaps & goals* → *Progress of the type of data being used*

Change in the organizational culture ← *Managing investments and resources* ← *Start with pilots which can be scaled up*

- **Integrate data from multiple sources:** Integrating all the data sources provides a holistic 360° view of the client, which can then be used to better understand client behavior and patterns, based on which behavior-based client micro-segments can be derived. Sources includes Online (website clicks, mobile apps, chats, social media, emails, blogs); Offline (stores, kiosks); Transactional/Interactional (CSE voice calls, event logs, account statements, KYC information, forms, payment history); and Sentiment (voice/speech analysis in calls or social media).
- **Draw a roadmap based on capabilities, gaps and goals:** Firms need to assess the gap between existing capabilities and their long-term strategic goals, so that they can analyze which data are required, which data has not been used, the pain-points in the exiting data analysis, and develop data management frameworks to formalize the collection, storage and use of structured and unstructured data. Since a lot of business data may be residing in silos with SBUs, this will include how the units can work together to enable an enterprise-wide view of data.
- **Progress of the type of data being used:** Firms typically start with internal data, then extend it to macro and market public data, then to web data (click data), and then to social network data. Since the extracted data is in different formats and has gaps/noise, it has to be cleaned and standardized into a suitable format to aid analysis. Cleaning it in the initial phase is cost-intensive, hence a trade-off has to be done between costs and objectives. Big Data involves some discovery since relationships between data cannot always be established before-hand between unstructured data, unlike structured data in traditional data methods. In repeatable processes, the data can be cleaned in the loading stage itself. Otherwise, it may be better off being cleaned in the usage stage, since it may reduce unnecessary initial costs. Since Big Data is used more for analytics rather than for reporting, hence it need not always be in a standardized format at the time of loading.

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- **Start with pilots which can be scaled up:** Most start with pilot projects using small clusters of data (for a specific SBU/activity) to gauge the efficiencies/complexities. Pilots are based on pain-points distressing the company or the core objective it is trying to achieve. It could focus on fixing organizational bottlenecks, improving customer connect, bringing in business efficiencies or product differentiation, exploring new sales opportunities or new business models, etc. These are typically implemented in pilot-branches and then the delta/change in their performance vs. other branches is measured. The progress of the implementation is matched against KPIs, in order to demonstrate its value to the business and ensure their acceptability. Based on the outcome, these pilots can be scaled up into enterprise-wide projects. A pilot approach helps demonstrate its value for enterprise-wide adoption, yet in a controlled and low-cost way. It avoids large amount of data restructuring in the initial phase, since that could increase initial investment and risk. Multidisciplinary teams encompassing IT/data and business implement Use Cases to create actionable insights. This 'top-down' approach Use Cases helps develop Big Data Proof of Concepts
- **Managing investments and resources:** Investment into high-cost technologies will depend on the firm's ability and comfort. Big Data methods can involve some amount of innovations, which means investing into resources which can create those innovations. In order to minimize the pressure of initial outlay, the priority has been to invest into flexible systems that can scale exponentially while maintaining a linear increase in costs. Using cloud technology and mobile techniques helps reduce costs, yet enables consumption. In terms of managing talent, firms have found it best to consolidate the dispersed data analytics people, and give them dotted reporting lines to both a central data team and the respective business units. Firms also need to invest into skill creation and training, since some technologies are still evolving. If the firm does not invest in experienced talent and skill-upgradation, any big data project will fail.
- **Bring a change in the organizational culture:** The initial push has to come from the top, for the adoption and support for Big Data initiatives. A lot of internal business data resides in individual SBUs in silos. Support by business teams to the data team to ensure data flow is critical for implementing an enterprise-wide big data initiative. If the organization does not have the enabling culture wherein business and data teams can work together, any big data project will fail. If the company cannot overcome impeding legacy systems/processes, any big data project will fail. The rationale given by company strategists earlier was impacted by the limitations of data availability/processing. Big Data solutions overcome those limitations. This means the employee's work increases since he now has a larger volume of data at his disposal to work out and redo his strategy rationale. This can raise resistances from certain employees who fear leaving their earlier comfort-zone.

Focus areas where firms are trying to get an advantage using Big Data

- **Client micro-segmentation based on behavior/affinity/interests**
  - Bottom-up behavior/affinity/interests segmentation is more relevant, as compared to top-down demographic/lifestyle segmentation.
  - It is an individual-based analysis which takes into account the entire client base, not just a sample set which is fitted on the entire base
- **Pitching relevant products and personalized products**
  - Pitching products based on behavior, affinities, motivation, spending and wealth-building objectives, has a better chance of converting
  - Making real-time investment contextual recommendations as per the client's profile and his need-analysis, helps in winning market share
  - Real-time analysis of speech in voice calls or text analytics in social media/chats enables sentiment-analysis, which helps in "Up-Selling" and "Cross-Selling" by indicating when to pitch and when not to pitch. This converts the call-desk into a profit center
  - Re-creating the preferred experience of customers using customer behavior/past transaction data at the moment of truth itself
  - Avoiding 'client-fatigue' to new product pitches, as the pitches are now fewer and more relevant. It avoids unnecessary, irrelevant pitches which only irritate (and exhaust) the client's interest level with the company's pitches, and hence its brand eventually
  - Offering the favoured payment channels and convenient options during that payment process, can help speed up the transaction closure
  - Developing virtual products for clients who may be comfortable with it, may speed up the fulfillment process (ex: virtual cards, wallets)
  - Social media analytics helps in product recommendations, and assess pre-launch sentiments to adjust marketing campaigns
  - It can be extended to enable clients engage in product co-creation as per his needs (by individually pricing the unbundled components)
  - Predictive analysis using transactional, market and responses to previous pitches, helps pitch relevant/re-designed products
  - Creating personalized customer experiences based on client life-cycle and past behavior makes the client feel valued, ensuring stickiness
- **Better client engagement**
  - Developing personalized communication and one-to-one marketing campaigns helps in better connect, as it speaks to that client alone
  - Loyalty programme based on relevant offers that interest the target client, helps in retaining client interest and ensuring repeat business
  - Using sentiment analysis helps in more intuitive (and thus, better) customer servicing, which helps in positive branding in client's mind
  - Data-driven insights to refine website, app content and store's visual design helps in generating better client interest
  - Helps to time and space out the pitches better, and avoid excessive and irrelevant pitches. This helps reduce instances of client irritation
  - Real-time transformation of client feedback into client delight, by offering rectification pitches even before the client posts his complaints
  - Sentiment analysis and data-backed branding strategies helps in enhancing the overall client experience, and can lead to repeat sales
  - Understanding which channel is preferred by the client for which need, helps in building more relevant channel structures
  - Using data-driven gamification tools helps in generating client pull for the brand
  - Customer surveys using structured and unstructured sources helps make it more holistic and 360^{o}
  - Using follow-up mechanisms with those channels which are more convenient for the client, has a better chance of closing the sales/query
- **Personalized promotions in real-time**
  - Helps develop "Personalized Offers", "Next-Best Offers" and "Situational-marketing Offers", which have better chance of being utilized
  - Using account statement data helps to push repeat sales or promotional messages
  - Developing cash-back offers to credit card clients based on previous purchases, rather than just give a universal offer
  - Propensity to save models that predicts the probability of the customer to invest in savings products, helps in increased cross selling
  - Firms can experiment with specific targets and then use the findings for a nation-wide promotion, helps in better promotional planning

- **Improved lead generation and conversion**
  - Focused marketing campaigns using various data sources, helps in more relevant lead generation and in maximizing lead conversions
  - Sentiment analysis enabled lead management also helps in maximizing lead conversion
  - Shifting to a more "inbound" marketing campaign focused on the client itself, helps give a more personalized experience to the prospects
- **Intuitive retention tactics**
  - Generating indications of dissatisfaction so that prior action can be taken to prevent possible attrition/outflows, helps in client retention
  - Tracking data of clients calling competitors or visiting peer websites for potential attrition, and then pitch communication to retain them
  - Using logistic regression and decision tree analysis for early identification of churn risks and probability of churn, helps control outflow
- **Enabling business decisions**
  - Allows more accurate decisions by the firm, reduces the latency in its decision making, and helps gain market share and client satisfaction
  - Insights on client behavior and patterns, reasons for client shifting to competitors, client responses to offers, tenure and sentiment during the client call, are all being incorporated while devising future business strategies
  - Move towards a more demand-driven buying process based on who's buying, and predict the approximate demand per region/product
  - While digitization of the delivery channel can help reduce the need for intermediaries for financial product manufacturers (and hence, save on long-term intermediary costs), Big Data analytics can help develop these digitization channels in a much better manner
  - Structure back-tested trading strategies, real-time redesigning of strategies, best trade analysis and trading sentiment analysis
  - Build predictive models to monitor interest rate risks on loans, manage exposure risks across markets, instruments and geographies
  - Build propensity models to determine which loan clients of the firm can benefit from refinancing for their loans

Challenges to counter

"Need-assessment" is essential since Big Data is synonymous with business decision-making, and investments have to be accordingly. Companies need to understand which technology will solve which problem, based on the core business problem it wants to address. They also need to understand the long-term goals and the strategic direction they want to achieve, since the usage of Big Data would depend on the long-term strategies. Companies also need to think through the ways their business model, processes and skills may change, so that the Big Data methods are prepared accordingly

"Investment in talent" is a must, since data is useless without the skills to analyze it. This includes a Chief Data Officer who focuses on execution of Big Data projects; data analysts who understand the company's data first; talent skilled in statistical analysis, data mining, econometrics, business analytics, visualization, to execute projects; training them on new technologies; technology research team which analyzes new technologies; training the end-users who are not data experts. Supply of talent conversant with both IT/data analytics and business knowledge is short, hence its price will be dear. Outsourcing may be an option, but it can put data at security risk

"Channel-assessment" is needed since different people have different affinities for different channels. This makes it tough to assess which channel is appropriate for which need for which client. Some channels are better used for acquisition, some for marketing, some for sales delivery, some for retention, and some for servicing. The channels have to be robust as per the main objective they serve, since repeated issues face by the client at the touch-point may make him move to another company. Promotions and brand messages also have to be consistent across channels

"Data management" and "Benefit monitoring": Volume, Velocity and Variety describe the data to be processed for Big Data. Volume means parallel processing of large volumes of quantitative and qualitative info; Velocity means processing real time data at high speed for real time insights; Variety means a diverse data across multiple devices and formats. However, firms must be careful that the data used does not denote "invasion of privacy" in the client's mind. Firms need to monitor the costs vs. benefits, even if benefit is measured indirectly. But the value has to be measured at every step, if possible; so that one can "fail fast and discard" if a specific method isn't showing value

Conclusion

BFSI businesses are facing challenges to grow in a competitive and volatile economic scenario. Big Data can help by showcasing opportunities for improving market share, acquiring clients, reducing costs or new sales. While the reliability and consistency of the processed data is critical, its enterprise-wide implementation is a key challenge. Data resides in silos with individual SBUs, and unless SBUs support the data team to join these into an enterprise-wide data set, any Big Data project will die in its pipeline. A transformation in the organization culture is needed for this.

Little Data (basic data with business) has to be manageable, accurate and sufficient; as only then will the Big Data process be manageable and its output would be relevant