



# Big Data in India

-by Sanjay Abraham



Big Data comes to **India** naturally. The population, the variety in culture, demography, religions, languages ( In India every 7 miles we have a new language so there are hundreds of languages and thousands of dialects).

India has seen successes in many areas of business during the last decades across verticals like Banking, Insurance, IT & ITeS, Retail, Manufacturing, Government, Health Services, Telecom, Media & Entertainment etc. Like any other country, India too has its own business problems which need to be addressed for better growth. Understanding India is important especially while we present any solution. India is different and so are her problems. The use cases which seem fit for the US & UK customers will intrigue the Indian customers too provided they are presented in the right context & connect.

Currently, India accounts for 2.5 per cent of the global Big Data market of \$8 billion and is expected to grow to \$1 billion by 2015. The average amount Indian companies spent on Big Data in 2012 was \$ 9.5 million (about Rs 52 crore), according to a 2013 TCS study. Big Data is set to grow in the Indian Enterprise in 2013. According to State of the Indian CIO Survey, 40 percent of Indian IT leaders plan to implement big data analytics over the course of this year—while 16 percent say they are already in the process of implementing it. Given the potential in India, I feel if we take the right approach, this milestone could be surpassed faster, provided we understand the Indian customer's needs.

**Based on my years of experience understanding customers business, am presenting some key business drivers for Big Data in India and also How Big Data would work for India across various vertical businesses in the coming times.**

## Big Data in Government

There are around 50 ministries under the Federal (Central) government and same numbers under the state government. Approximately 1000 departments all having data at different levels from the block, district, directorate to the state and country head quarters. Imagine the type of data these government entities have spread across locations in varied formats like Word, Excel, text, video, geo-spatial data so and so forth. Some still have it on COBOL, Foxpro etc.

I had presented Big Data use cases to couple of IT heads of state during the last couple of months, where in data spread across many departments/ directorates like Health, Women & Child, Agriculture, IT etc will be used to get valuable insights. Say for instance where should 'water hand pumps' be installed on priority? Obviously where there is more of water borne diseases. Similarly where should the Education Department open a new school or the Health Department a new Primary Health Center (PHC)? Currently there isn't any intelligence involved in taking these decisions. Big Data analytics would enable them identify areas which have more cases of diseases for opening a new PHC or areas not having any school within 3 kms radius to open a new school in priority. Where would this analytics come from?

Government of India has started the project to provide unique ID (Aadhar) to every Indian citizen through **Unique Identification Authority of India (UIDAI)**. While Aadhar would be a Big Data source, there is a huge load of other legacy source systems too like Electoral Roll, Census Data, National Population Register (NPR), PAN, NREGA etc. Analytics on these data could help a great deal in the successful execution of projects like under **Food Security Bill** using predictive analytics which could improve the PDS (Public Distribution System).

Similarly, crime details of last 30 years are now digitized by the Delhi Police department. This has varied types of data- FIRs (First Information Report), video, case diaries, criminal & crime details like -modus operandi, court proceeding, witnesses etc. This data could be used to understand crime & criminal psychology to empower both police and the citizens.

**Indian Railways** employs 1.4 million persons, runs around 11000 trains and serves more than 13 million passengers daily. Big data analytics could help manage trains better, enhance safety, give better passenger service, use staff efficiently etc. Predictive analytics

could help cater to passengers better (especially during festive seasons), start new trains, new stops/stations etc.

There are thousands of such use cases which could directly impact peoples lives. No doubt Big Data analytics could play a great role in the identification of 'patterns of life' to provide better citizen services in India.

### **Big Data in Banking, Insurance & Financials (BFSI)**

Banking & Financial sector in India are the early adopters of IT solutions and especially Data Warehousing & Business Intelligence. Almost all banks now have core/ internet banking facilities. There are around 40 banks in India and 50 insurance companies (while these companies are yet to reach out to 85% of the uninsured Indian population). There are around 15 new banks in the pipeline too which are in the process of getting licenses to operate. One of the focuses of the government is to make banking & insurance facilities available to as many people possible at the earliest. This has put the sector exposed to more risks.

Risk modeling could help Indian banks take calculated risks and mitigate it too. Predictive modeling for Mortgage management could be great as the bullion, equity, commodity & real estate markets in India show strong variations due to internal & international factors. KYC (Know Your Customer- the **due diligence** activities the banks must perform with the customer before they do any business.) norms are mandatory for the Banking sector to prevent money laundering & financial frauds. Big Data analytics could augment this initiative.

It could also be useful for improving the subrogation yield as its quite low in India despite adequate laws being in place. The claims recovery process needs lot of documents and they are to be thoroughly scrutinized too. Check my blog "**Big Data – Adding Big value to the Insurance industry**".

Personalization of banking & insurance portfolios for customers based on spend patterns, financial goals and other parameters is also an important area of focus.

## **Big Data in Telcos (CSP)**

India has around 900 million mobile users which is second largest in the world. An interesting fact about India is while most of the countries have maximum 2-4 telco operators, India has around 12. Also unlike US & UK, the prepaid customers are quite large (around 90%) of the total customer base. Also no other industry in India has its IT ecosystem as complex as the Telcos. They have scores of OSS and BSS to keep the business running.

While the market is huge, with number portability allowed now, Customer churn is a major problem. Customer poaching is on and retention is a big challenge. Big Data Analytics could help a lot in offering 'right' packages to the customers. The prepaid customers usually recharge for as low as Rs. 10 (1/6 of a USD), they change the CSP quite often based on offers they get. This customer base though being huge is quite volatile. If a prepaid customer is 'burning' his minutes fast its likely he is about to move to other CSP. Big Data analytics could help in offering better deals and retain such customers.

Fact of the matter is, the idea of ARPU has lost its sheen across the globe today. It makes more sense to use ARPA (Average Revenue per Account) in today's context. Deals for the company, Family, Community etc make much more sense. Big Data Analytics could help in offering 'smart' group packages.

## **Big Data in Energy & Utilities**

Energy & Utilities is all the more important for an Agriculture based country like India. The sector has been plagued by high distribution losses (30% overall) along with theft of electricity, low metering levels and low recovery. Analytics around usage patterns and 'sensor' data from various electrical equipment & technologies like EMS/ SCADA could help in identifying such 'leakage' of power. Operations & Maintenance is critical as it directly impacts on the 'outage'.

Power is necessary not only for lighting the households & running the industries but also to irrigate the land meant for agriculture. India has multiple crop cycles, which have different irrigation requirements. Is the present power supply in sync with the crop cycles? Are valuable insights being drawn from irrigation & agriculture data to make power supply more

efficient?

During break-down, how to minimize 'call-to-repair' is another important area of concern. Electricity companies had started the BSK (Electricity facilitation centers) to resolve consumer problems like faults, new applications, load enhancement requests etc. These centers over the period of 8-10 years have huge accumulated data and its growing fast. This could be used (along with departments Operations & Maintenance (O&M) and Transmission & Distribution (T&D) Data for better customer care.

### **Big data in IT, ITeS & Captive contact Centers**

India is the Back Office of the world. There are 1497 software companies in India (as per **NASSCOM** 2013). Software & services exports contribute around 8% of the GDP. While IT/ ITeS companies are considered good paymasters, this industry has the highest employee churn at around 40%. For almost all companies, I have interacted with; the most important area of concern is "Employees productivity & Retention".

Big Data could directly improve call center metrics like AHT (Average Call Handle Time), ACW (After Call Work) etc by presenting consolidated view of information to the agents which is spread across multiple applications in the organization, while they handle calls.

Similarly millions of Line of Code (LOC) is written by software engineers daily in software companies in diverse platforms and languages. Software techies study, spend hours and days to build 'logic' and write codes. How efficiently are these resources reused in order to solve similar software problems in future? How is software configuration managed & reused? Do the software companies use Big Data analytics to understand which, where and how a logic to be used in an algorithm? Shouldn't they have access to intelligence which tells which logic or methodology is suitable for solving a particular type of software problems? I have seen software engineers of software companies ( with more than 50k of head count) searching Google, books, putting questions in external forums to get answer to their technical questions. Big data analytics could give them insights to solve these problems better and enhance there productivity.

This could directly address the attrition problem of the industry as it makes the lives of the engineers 'easy'.

## Big Data in retail

A retail revolution is on the anvil for India. With almost 95% of the retail segment under unorganized sector (small shops & groceries) lot many new retail giants are beginning to open their stores in India. FDI in retail is also in the pipeline. Within a short time we would see new players in the market with stores across urban and rural areas too. The government too is seeing a lot of value in retail as this would enable the farmers and customers both getting better deals.

Since the organized sector in Retail is quite small in India, this sector still lags behind in terms of technology. Necessary POS and standard software like inventory, payroll, billing etc are used but very less of any analytics. Check my blog "**Retail should be dataSmart**" which presents how Indian retailers unknowingly get disengaged with customers due to lack of data insights.

India is in a Retail growth phase when many new stores are to be opened in the coming years. Opening a new store requires a lot of study based on areas demand, demography and other details. Analytics could also help retail giants in taking such decisions based on hard data.

India is the land of festivals & social events. Most of the family shopping/ outing/ gifting happen during these festive seasons. Retail vendors could listen to social media to know about such events in different locations and 'Predictive demand management' could help maintain stocks accordingly. Similarly they could offer 'location based' pricing of products to customers.

Giving customers a consistent experience via omnichannel is gradually becoming a trend worldwide. Big Data Analytics could help in providing a seamless connect with customers across channels. Better customer insights increase cross-sell and up-sell, customer retention etc.

## Quick Tips for Big Data companies

Following are my quick inputs for all companies which want a share in the Indian Big Data market.

- 1) Eschew clichés: No one buys clichés like '360 customer view', 'enhanced customer loyalty' etc. anymore when every other software vendor is using these catch lines to sell all types of products like CRM, BI, ERP etc. People in India too want Big Data to solve their real life problems.
- 2) Instead of presenting a big new project which would need huge initial investment and a long deployment time, Identify low hanging fruits, processes & pain points to start.
- 3) Don't declare the entire existing infrastructure with the customer as useless. Many of the top Indian customers already have Data warehouse solutions in place. Best way to start is to help the customer augment the existing ones with Big Data.
- 4) Don't jump the gun discussing technology. Open Source or proprietary, SQL or NoSQL these discussions at the initial level just put the initiatives on the back burner. Instead try and intrigue the customer. If he sees value business is certain.
- 5) Businesses in India often tend to formulate analytics strategy based on 'intuition', 'personal experiences' & 'gut feelings'. It's important to educate customers that hard data could be more reliable when it comes to taking business decisions. One way could be to conduct workshops and boot camp training for customers to 'experiment' with data and discover themselves.

Big Data initiatives should also be driven by the top bracket of the organisation. I have always promoted the idea to have a single custodian of all data across departments and applications. You might call him a CDO ( Chief Data Officer) Or the Chief Data Scientist but he should have the mandate to use data for delivering 'business value' for the entire organisation. Check my blog ["Why enterprises need a CDO \(Chief Data Officer\)"](#) Big Data definitely has some [karmic connections](#) with India. All would depend on how we show Value to the Indian customers while India Inc. naturally has the Volume, Variety & Velocity. After all, every thing about India is Big.

**Analytics and Data Visualization could add lot of value to any enterprise in India. There are many more ways Big Data analytics could help Indian enterprises. I would be glad to share more on this. Hope the idea intrigues you too. How about giving me a shout?**



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