Article

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Reaping ROI from Big Data

Abstract—The current dramatic underperformance of Big Data with respect to the hype that is in the air is due to less knowledge of Big Data and lack of alignment of the Big Data Analytics to the Strategic objectives of the organization. Also, Mid-Market segment needs to introspect and ask right questions before implementing Big Data. Finally, breeding an Analytics Culture and having Data Scientists who can see the Big Picture will decide the swing of ROI in any enterprise.

A recent Gartner report that came out September this year made a not so surprising revelation that, most companies are still not generating positive ROI on Big Data. As per the report, big data investments currently earn 50 cents for every dollar invested.

Fig. 1: Big Data ROI
[*Source*: Wikibon Research, 2013]

A big reason for this underperformance is that, companies just want to follow the herd without understanding its true purpose. As Gartner report points out, enterprises which had no clue about Big Data are actually running Big Data projects.

A survey conducted by Gartner revealed that, determining how to get value from Big Data, defining a strategy and obtaining skills and capabilities to be three most compelling challenges faced by the adopters of the Big Data technology.

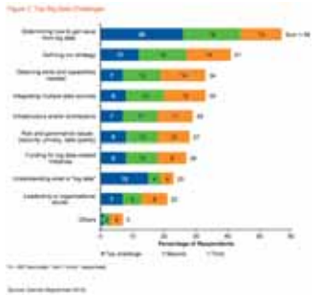

Fig. 2: Top Big Data challenges
[*Source*: Gartner, September 2013]

Although from the above statistics and reports, there would be an immediate temptation to term Big Data a hype than a practical business reality; one must try to study case studies of those enterprises which have used and are using Big Data successfully. Examples include, Amazon, T-Mobile, eBay etc. to name few known biggies.

While, there are lots of case studies appearing in business reviews, blogs, articles, practitioners opinions etc. touting the success of Big Data technology; there are hundreds of smaller players who are tumbling, fumbling and looking confused over the implementation of Big Data and its expected ROI.

After analyzing some of the successful implementations of Big Data Analytics; I believe, following are some of the points that can be kept in mind while contemplating on the integration of Big Data Analytics to enterprise decision making.

Why you need Big Data?

As per the recent Gartner report, more than 60% of the respondents do not even have a clue on what to do with Big Data. This is in parallel with the findings shown in Fig. 2, which enlists 'determining how to get value from big data' and 'defining strategy' to be the biggest two challenges in Big Data implementations.

Amassing huge volume of data is one thing (perhaps, easier with the plunge in storage costs), analyzing those data is another thing and finally, integrating the insights into the decision making is a totally different thing!

Any enterprise must begin by identifying a business problem! What is it that you are trying to achieve? Are you planning to expand your business market? Or are you concerned about the high customer attrition rates? Both of these require different analysis on different datasets. Just amassing huge volumes of data from multiple sources is not profitable, without having or knowing a business problem. Also, analyzing data just because, there is huge data without a clear goal will make reaping ROI all the more difficult. Thus, asking right business questions is critical in giving a business context to the Big Data technology, in giving clarity on WHAT data is to be analyzed and HOW it should be analyzed.

Finally, it is equally important to have a positive culture within the enterprise for data-driven decision making so that, the insights drawn from voluminous data using different complex statistical packages are not pushovers. It is important that the BIG Data Analytics is integrated with the decision making process.

Thus, aligning Big Data Analytics with the enterprise's core business strategies is the most critical ingredient in reaping the maximum ROI.

ERP is not One of the Options but, the Only Option!

For drawing insights which can influence critical decision making, the complex analysis must be made on data which is of high quality and highly consistent. Otherwise, the scenario would resemble, 'Garbage In Garbage Out'!

For collecting data which is of high quality and is highly consistent at the same time, it becomes necessary to adopt an enterprise-wide system which integrates all the business processes of the enterprise. Without which, it would be independent 'silos' (systems) for each process and extracting and organizing data in such an environment is intensely complex and the cost would be prohibitively high.

Although the adoption of ERP systems in India is on the rise, the SMB's are finding the path more of thorns than roses! But, the reasons seem genuine. Firstly, the most deterrent factor is the cost with most of the ERP solutions being priced exorbitantly. But, the advent of SaaS based ERP solutions has provided the mid-market companies with a great opportunity to leverage ERP systems to stay competitive. Gartner estimates SaaS ERP in India to grow at a CAGR of 28 per cent. Also, the survey concludes that the adoption has been more in the SMB segment than the large enterprises.

The second deterrent factor is the customization. Every enterprise has a unique set of business processes and finding a single suite which meets every requirement is impossible. Also, customization can be a complicated and expensive activity which may even result in making compromises in the 'best practices' embedded system.

However, despite the challenges, it becomes imperative for enterprises in this highly competitive market to have an enterprise-wide system so that, they can increase the value of data by providing for analysis data which is correct, complete, current, consistent and is in context.

Small is Beautiful

The American Marketing Association's first conference which happened in the first quarter of this year, thrown a startling story that, very few are actually working with anything approaching Big Data! In fact, a survey by Tom H.C. Anderson coined a new terminology of what is a 'MID DATA'.

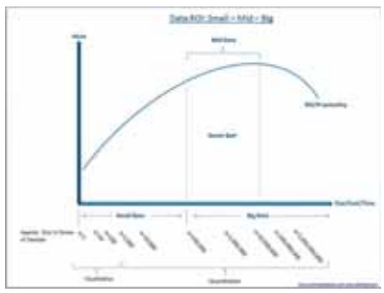

Fig. 3: ROI versus size of Data
[*Source*: Tom H.C Anderson, March 2013 Edition]

As can be seen in the figure, the size of Mid Data sample is between 100,000 to 10,000,000 which by the way is huge. Also, as the research output in the figure exemplifies that, as the size of the underlying data sample reaches the Big Data horizon, the ROI as well as the practicality of the implementation starts dropping.

If one thinks, this does make sense, for example, if an enterprise wants to understand the purchase patterns of the customers, it can achieve so by focusing on the customer data extracted of POS, social media etc. It would be make less sense to club this data with accounting data or purchase data! Also, it may make little sense to compare customers in US with customers of India.

Thus, by focusing hard on 'WHAT', it becomes clear about the 'WHICH' smaller datasets (MID DATA) to be considered for the mining process. Focusing on relevant datasets instead of being carried away by the idea of building a BIG data source; the enterprise can, not just make the implementation practical but, also allows reaping a higher ROI.

Build an Analytics Culture

Analytics is not just Stats,Quants or Statistical Tools; it definitely boils down you how an enterprise integrates it into everyday decision making. For this, the leaders must be leading from the front to foster a culture of analytics in the organization.

Leaders in the C-Suite must have a passion for collecting objective data and basing them for everyday decision making; they must set an example for the rest of the enterprise. The top-level management must be able to translate this culture to the mid-level managers because, ultimately, for data-driven decision making, it not just enough to have the C-suite executives but also, every staff member must be incorporating analytics in their every-day working.

One widely adopted practice is to have an internal/external analytics team consisting of Data Scientists who will work cross-functionally in the enterprise. They will do the job of collecting data, determining the quality of data required for building predictive models, building statistical models and presenting the insights with effective data visualizations to key business stakeholders. However, for producing any critical impact in the business; it becomes important not be make them a 'silo' and integrate them with rest of the business units of the enterprise.

See the Big Picture

Analytics is all about solving business problems using knowledge discovered from massive amounts of data (in terabytes or even petabytes) using various statistics, data mining, machine learning etc. Thus, it becomes pivotal to align analytics to business.

Organizations often have this challenge wherein, employees who are good quantitatively lack business knowledge; and those who have good business know-how may not be good with numbers. The attempt must be to close the gap.

Analytics is an inter-disciplinary data science and demands a unique blend of business knowledge and quantitative knowledge. Working on data without understanding the underlying business will reap misleading results which definitely will impact the business. For example, a statistician working on building predictive models for marketing campaigns must understand that, all media's behave differently and one media may even influence the other, like, a potential customer who sees an ad frequently in the television may relate easily to the hoarding along the highway.

Thus, an enterprise requires resources who are not just statisticians but, those who have a holistic view of the business as well so that, they will be in a position to distinguish relevant and irrelevant patterns. Insights would not be obvious but, something which was unknown in the past and prompts the decision makers to incorporate it in how business is done!

Conclusion

Reaping a positive ROI from Big Data maybe a slow process but, a definite one! The learning curve for the organizations that do not have an analytical culture may have a steep learning curve but, I believe, the above five points are critical for reaping success with Big Data.

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