BIG DATA: A MARKETERS PERSPECTIVE OF EMERGING MARKETING APPROACH

Dr.S.Ramanathan*,1, N.Sarulatha2

1Dean, CARE School of Business Management, Trichy, India.
2Asst Prof, CARE School of Business Management, Trichy, India.

ABSTRACT

The world information is measured in Exabyte as of 2012. This information is the biggest asset for any kind of marketing activity in the organization. The diverse information is generated from the touch points of the customer and has grown exponentially with growth in digital universe through Email; you tube, networking sites, security footage at events to instagams and so on. Recording, handling, storing and analyzing the huge voluminous of data is a key challenge for a marketer. Big Data provide organizations, an opportunity to turn this data into an insight. It offers beyond what business intelligence and data warehouse were lacking. The whole idea of big data is to use all the likely dimensions of analysis. This paper explores the role of big data in today’s marketing world. It provides insights about how it is transforming the business with practical examples. The paper details, how the marketing teams will take actions on valuable insights such as time sensitive decisions, customer preferences and behaviors from analysis of data sets which are really “The Big”. Also, discussed in the paper are the opportunities and challenges posed by big data to the organization from the view point of management and technical aspects. According to ‘The 2012 BRITE-NYAMA Marketing in Transition Study’, 91% of senior corporate marketers believe that successful brands use customer data to drive marketing decisions, and hence the importance of Big Data. Marketers are to gain the most from the capabilities of big data.

Keywords: Big Data, Business Intelligence, Data Warehouse, Exabyte, Marketing Analytics.

INTRODUCTION

The information is the biggest asset for any marketer. Marketers of twenty first century are posed with a bigger challenge of exploring & managing huge voluminous of information. This is in contrast to the previous centuries where data collection by itself was a herculean task. And analytics took hours or days together. Today’s, businesses are driven to make viral decisions (i.e. really fast) and on the other side any business cannot ignore the data drowning that happens in digital space. This emphasizes the need for data analytics capable of processing huge voluminous and unstructured data. Hence, Big Data came into being. It provides insights almost instantaneous for viral decisions and this helps to gain competitive advantage in the market. It aids in developing better products, services and understand customer analytics.

*Corresponding Author
The 2012 BRITE-NYAMA Marketing in Transition Study was conducted in early 2012. The aim of the study was to gain a better understanding of changing practices among large corporate marketers in the following areas: data collection and usage, marketing measurement and ROI, and the integration of digital and traditional marketing. The survey found both widespread adoption of new digital tools, and support for the use of new data to drive marketing decisions and measure marketing ROI. No doubt, this is an era where Obama’s campaign team uses data mining techniques which helped him to develop strategies and win 2012 US presidential elections.

BIG DATA

The world information is measured in Exabyte as of 2012. Such voluminous information is posed from various touch points of the customer. This information is growing exponentially with growth in digital universe. The example of touch points include Email, You tube, smart phones, GPS devices, networking sites, call center logs, web logs, banking data swiped at ATMs, transponders recording highway tolls, security footage at events to instagrams and so on. Traditional data analytics does not have the capability to handle this voluminous, unstructured data. The growth of technology has provided ‘BIG DATA’ as a means to dig out business insights.


According to an IDC paper sponsored by EMC Corporation, 161 Exabyte of data were created in 2006, “3 million times the amount of information contained in all the books ever written”.

One million bytes = GIGABYTE
1024 Gigabytes = TERA BYTE
One million terabytes = EXABYTE

The world information is measured in Exabyte as of 2012.

The dimensions of big data include:

- **Volume**: The amount of data
- **Variety**: Different type of data and data sources
- **Velocity**: Data in motion. The data will be analyzed in real time.
- **Veracity**: Data uncertainty. It refers to level of reliability associated with certain type of data.

BIG DATA ANALYTICS

Traditionally, marketers analyse customer data in a specific dataset. However, a customer interaction with a brand happens across marketing, sales & service and through various...
channels. The uniqueness of big data is to analyse every interaction with every customer collectively for better insights & patterns in real-time.

Structured data has a standard format. Unstructured data cannot fit in to a structured. Twitter tweets or messages posted in face book are example of unstructured data. The structured data can be exploited to provide maximum benefits through a relational table from a highly structured database, which is not possible with unstructured data. The ratio of unstructured data and structured data depends on the organisation. However, the proportion of unstructured data is growing exponentially. The structured data may be smaller in size compared to the unstructured data but it is also not less significant. Presently, only a very small fraction (almost insignificant) of the unstructured data is explored to understand the analytics.

Relational databases were built to handle workloads built based on transactions which are usually structured. Later, the same database was also used to handle analytic workloads. The relational technology does not provide a platform to handle the analytic workloads to its full potential. The challenge posed in handling this unstructured data is addressed with big data which operate in more advanced technology infrastructure such as Hadoop. And big data brings together structured and unstructured data for analysis beyond conventional data management.

Beyond Business Intelligence

Big data techniques complement business intelligence (BI) tools helps companies realize business value. Data volumes in warehouse do not exceed multiple terabytes, beyond which it is not capable to handle. Also, BI tools handle reporting and drill-down analyses. However, it does not have the capability to handle datasets which are unstructured & real-time in shorter period of time. Big data can handle more complex analysis which involves advanced statistical and mathematical models for predictive analytics. Unlike BI, the analysis does not limit itself to the business and extends in giving solution of what can be done.

Evolution of big data does not mean it is end for data warehousing. In fact, data warehousing complements big data. The data stored in the data warehouse goes through a lot of severity before it is stored in the warehouse.

BIG DATA: MARKETING ANALYTICS

Of all the functional areas, marketing is supposed to reap significant value from big data.

Ideally, they are to be used for customer insights, segmentation or targeting, customer sales, service/support, new product strategies, marketing mix, automation of decisions, internal/external activities, competitive insights to customers etc.,

- **Consumer Behaviour insights**

  According to The 2012 BRITE-NYAMA Marketing in Transition Study, large firms are much less likely to collect new forms of digital data like mobile data (19%), than they are to collect traditional customer survey data such as on demographics. This demonstrates the untapped information in understanding the customer preferences and demands through analytics of customer related information available by means of transactions & multi-channel
interactions. An insight to this behavior helps in target centric outcomes. Companies like Amazon, where their ability to determine customer preference and behaviour stems from analysis of huge data sets. They are making decisions on automated data analysis, which were done using focus groups.

- **Improved customer experience**

Fraud is the biggest challenges posed to traditional companies in the universe. It also results in poor operational efficiency. The traditional techniques are time consuming and costly. The traditional analysis uses the models based on specific profile of customer segment to detect fraud. Big data, predictive analytics and risk segmentation helped companies to identify patterns that led to fraud detection. For example, if there is a suspicion on a credit card transaction to be fraudulent, the marketer must be able to stop the transaction taking place. A complete analysis of user’s purchase history is not practically feasible within the short span of time to prevent a transaction from happening. Decisions are made from voluminous individual patterns of each individual rather than models of specific segment. Index structures are created in advance to arrive at quicker results and hence improve customer experience.

- **Gaining Insights :Improving products/services**

Example, Ford Focus Electric Car produces vast amounts of data while being driven and when it is parked. The driver is constantly updated with information about vehicle’s acceleration, braking, battery charge and location which is useful for the driver. Also, the data about the car system during idle time such as tyre pressure or battery charging is forwarded to engineers. Information of driving behaviour helps to gain customer insights and plan products improvements. It also results in strategic insights where to locate new charging stations.

Adding a speech analytics solution to traditionally analyzed structured data helps analyse customer centre calls improved customer satisfaction and savings. Or this also provides insights for dynamic pricing of data in airlines to segment the customers.

Hertz, the world’s largest car rental company is operated in 146 countries and 8300 locations. Earlier the customer survey was taken and processed at every location separately. Big data tools helped to analyse the customer survey data at a centralised location. It reduced the data processing time to 50% and identified real opportunities in improving customer satisfaction. One such solution was to adjust their staffing levels in a particular area during peak times. This helped to reduce the delays occurring for returns during specific times in a day.

It helps to improve services with weblog analytics. For example, if an error occurred during transaction, the web log analytics help to detect the source of problem rather building a additional component in monitoring the transaction.

- **Custom development approach in multi-channel marketing**

Selecting a custom developed approach to multi-channel channel marketing poses a challenge for marketers with big data. Based on IBM white paper on choosing a big data technology stack for digital marketing provides a decision framework for tool selection based on multi-channel requirements. It also helps to provide a strategic insight for marketers to leverage in which means. For example, if email targeting is top priority for the company, then selection
criteria for big data platform should emphasize easy data integration and support for the chosen statistical analysis tools and integrated marketing systems are of high importance. However, if site personalization is your top priority, a big data platform with real-time support should be of high importance.

Source: IBM Software White Paper, Choosing a big data technology stack for digital marketing

- **Real time analytics**

  Marketers depend on statisticians and IT for analytics which usually takes hours or days together. Sometimes, the sampling becomes dead before the analysis is complete. Big data aids marketers to provide data analysis in real time. The combination of processing power and innovative new data transportation languages provide real-time data visualization tools for marketers through a user friendly interface. The real time analysis of data also aids marketers to reach the right customer through the most appropriate channel with a customized targeted message in a timely manner. This real time analytics with a customized marketing solution helps in building higher ROI for an organization.

  One such real time analytics is used in call centers. The streaming data helps to identify the pulse of the customer and provide immediate response to the customer. For example, when a customer points about a competitor during his conversation, a next best offer is placed for the customer.

- **Competitive advantage**

  Traditionally, the companies predict future purchase decision of a customer based on purchase histories. Using real-time information from social media and using it for future purchase predictions gives the company a competitive edge. For example, Wal-Mart tracked Twitter users’ interest on a particular day. It used the information to influence features such as predicting customer’s future purchases. Also, an insurance company offered discounts to
safe drivers based on current driving behaviours and not based on past driving records. Customers install a plug-in-device in their car that tracks the distance driven, time of day customers typically drive and how often they brake hard. Based on this information drivers were given discount. The basic driving data was used in an innovation manner and was able to attract more customers.

- **To empower consumers**

Pecan Street, a consumer management company’s primary goals is to drive new products, services based on consumer energy management. They track consumer actions at home with change in environment conditions. They also collect data from home automation systems, security systems, solar panels, charging stations etc., their research provides people with knowledge and tools to manage and reduce their energy consumption, as well as make their homes more comfortable to live in. Also, this information is used by the utility companies in managing the grid and make infrastructure related investment decisions. It’s critical for the company to understand how consumers engage with the data collected. The data can also be accessed by participating consumers via websites or apps.

- **Integrated advertising**

In most business, impact of advertisement across each channel (Print, Television, Online etc.,) are measured independently called as Swim-Lane measurement. This type of measurement ignores the role played by advertisement in other channels. However, an integrated approach has proved 10% to 30% improvements in marketing performance.

Source: Advertising analytics 2.0, HBR, March 2013.

The above fig depicts the assisted effects of each channel when one ads in a channel can influence in other channel. And the effect of advertising on consumer behaviour and business results is based on variables related to market conditions, marketing actions and competitive activities. This involves processing of terabytes of data simultaneously and instantaneously. It helps advertisers to make important decisions for optimal investment in right channels and how effective are these combinations to influence the customer.
Challenges

- **Data collection & sharing**

Marketing is a data driven activity. However, the marketers are not collecting the extensive data that is available to explore. If collected, they are not shared across departments. Focus on objective. In earlier periods, every department have own datasets and was not integrated together. But Big data analytics does not work in that way. It requires complete integration of datasets across departments to turn the data collected into insights. Lack of extensive collection of data and effective sharing across departments will result in failure of big data. According to *2012 BRYTE NYAMA Marketing Transition Study*, 39% of the marketers are not able to convert the data collected into actionable insights for this reason.

![Survey Results Chart](image)

Source: *2012 BRYTE NYAMA Marketing Transition Study*

The study suggested collecting real time & meaningful data from various sources, sharing across organisation, linking datasets at customer level, utilise to effectively target and personalise marketing efforts to customers.

- **Focus on objective**

The primary challenge in big data analytics is to know the objectivity of data analysis and focus data into it for determining business strategy and actions. The data has to be captured and analysed within the context and should involve the human element aspects like cultural significances etc.. With lack of objective, data will be approached and analysed with a determined mindset what the conclusion is to be. Most companies make important decisions by “HiPPO” – the highest paid person’s opinion based on their intuition style of decision making when the data does not match and shift from its objective. To focus on objective, it requires a shift in decision making style.

- **Data Perspective**

One of the challenges for a marketer is to understand the context in which the data was collected before it is set for any analytics. Else, the analytics will give rise to wrong information. Hence, it is important to understand the context and also necessary validation should be done with other data sets. The other data perspective challenge for marketer is to know the representative of population of data sources. For example, if you are looking at a
social media network to provide strategic insight. The marketer should be in a situation to justify the sample from social media network represent your business population. But most often it is the practice in driving our mind to preset thoughts.

- **Big data requires strong analytic capabilities**

Big data does not create value until it is put to use to solve important business challenges. Software tools and skills are required for strong analytic capabilities to interpret data collected. For example, a post in social media website cannot be interpreted with the exact meaning or a speech analytic solution used in a call centre must be able to interpret with the language used, intentions, background, mindset of the customer etc., The biggest challenge is for organisation to understand this unstructured data and it lacks people with such advanced analytical skills.

It goes beyond the conventional systems approach. For example, an insurance company installs a claim processing system improves the efficiency of the process. It will also yield information in developing models for detecting fraudulent claims and gain knowledge about driving habits of people, used for assessing the probability of accidents to take place. A new profession ‘Data scientist’ has emerged in the new field Data Science for developing models in strong analytics.

**CONCLUSION**

Big data claims big hopes & big challenges. The success requires an integrated approach across people, process and technology. This cannot be treated as a core IT project where data collection and analysis are streamlined and data analysis will no longer be confined only for specialist. With rise in the emerging field of data scientist, data analysis will be part of every business process. Some of the challenges in privacy concerns in accessing and using personal data have spurted recently and will grow significantly in future which has not been addressed or framework has been developed. However, organisations cannot tend to wait to lose something to rivals if not for big. To grow big and be big we have to race really big.

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