Influence of Big Data Analytics on Indian E-Commerce : A Study

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ABSTRACT

This era of globalization has made a great revolution in e-marketing all over the world. Indian economy is also growing faster with e-commerce. Many e-commerce websites have emerged and retailers are devising plans to meet the demands of online shoppers; they are analyzing the consumer behavior to provide them a satisfiable shopping experience. The data exchanged during the online transactions, search history and social media could be of great help for business managers to make customer-centric decisions. Since huge amounts of data are being exchanged, the Big Data Analytics influences the ecommerce sites in digging out insights to develop specific strategies to improve customer online shopping experience. This paper presents the effects of BDA on customers' online Shopping behavior to examine whether Indian ecommerce sites are successful with this.

Keywords: Big Data Analytics, Online shopping behaviour, E-commerce, Indian E-market

I. INTRODUCTION

These days as we could see huge amounts of data are being exchanged and collected in the business world every minute. Online businesses are progressively investing in Big Data Analytics as it not only allows them to gain deeper understanding of customer behavior and industry swings, but also lets them to make more accurate decisions to improve marketing and merchandising aspects of their business.

Today, Big Data is not just about the data itself; it is about analytics where several accessible technologies are used to quickly store, discover and analyze large datasets. Big Data Analytics is becoming feasible at affordable cost. Many ecommerce organizations are depending on Big Data Analytics in the real time so as to gain valuable insights that drive profitability and intelligent business decisions.

In India, e-commerce is growing rapidly as many customers are using e-marketing facility because of the fall in the rates of data and also increase in the offers provided by all the competing Internet Service Providers. The number of online users has crossed more than 450 million of which most of them are browsing through online shopping sites spending hours

together for shopping. Hence a huge amount of data is being generated during this user activity and is tracked by the e-commerce business giants to provide better shopping experience to the users.

A. Definition of Big Data Analytics

Big data analytics can be defined as the process of exploring big data- which consists of huge and varied datasets so as to uncover the hidden relationships or patterns, unknown correlations, trends in the market, customer priorities and other vital information that can help organizations in managerial decision making process.

The Big Data Analytics provides the following benefits to the users of e-commerce

1. The merchants are broadcasting Real-time and targeted promotions directly to the customers' smart phones while they shop by studying purchase history, online travel, likes via social networks, geo-location etc.

The retailers can now spot which merchandise should be stocked at precise locations and where items should be placed throughout the store by analyzing the data generated from the online sources.

By providing offers to each individual customer, retailers are seeing an increase in returning clients. These days Customers are looking for the effortless and most handy ways to shop and the Big data is allowing the retailers to learn their customers' preferences before they even enter a store.

Figure1. Benefits of Big Data Analytics

B. E-Commerce Scenario in India

India has a huge e-market as it was the second largest among the population in the world. There are tremendous growth opportunities for Indian businesses. Indians are the best when it comes to technical skills since all the major IT giants have skilled people from India. Also, the government is trying their best to promote digital India through various initiatives which will be just an addition to this growth. There are certain factors that have led Chinese retailers like Alibaba to come to India. They are looking forward to establish a new retail venture, which would make things more fascinating in the Indian market.

Indian e-commerce allows customers to evaluate goods according to their choice much before making the payment and acquiring it which is not seen in other western markets. India's largest online retailer Flipkart is a great example of how one can own the market, given they know the pulse of Indian customers. They have more than 46 million registered users and have recently acquired their third acquisition in the payment solutions – PhonePe.

According to recent market research, over 30 - 40 TB (Terabytes) of data is generated by Indian e-commerce users daily which is an equivalent of the content in 50 lakh Yellow Pages books. E-commerce platforms receive tens of millions of visits and 100s of millions of product page views on a daily basis.

This paper presents the influence of the Big Data Analytics on the major e-commerce giants of India such as Amazon and Flipkart and discusses about the technologies incorporated by them to provide better services to their customers.

II. LITERATURE SURVEY

Several recently published research literatures on Big Data Analytics on online shopping are reviewed to explore their current state, issues and challenges. Customers are generally particular about their needs and wants. [1] stated that the main change itself is observed not in the shift in consumer preferences, but rather in a way each of us gets hands on the product desired. They usually search as much information about the products as they can, such as price, functions, from different sources (e.g. friends, Internet). After that, customers would evaluate the alternatives based on their preference. Finally, the purchasing decision is made. Every customer who performs online shopping or makes transactions via online payments leaves so-called digital footprint, a trail of data that is created when performing actions online [2]. Big Data Analysis is a powerful tool to tackle these challenges and utilize the opportunities [3].

Nowadays, [4] stated that online shopping is speedily moving towards mobile devices, 54.8% online customers shop on the mobile in China among 410 million online customers by the end of 2015. Online customers complete the whole process on the Internet, searching, questioning, purchasing, making payment and tracking the delivery, etc. Also, the number group of customers who pay online and shop offline is gradually becoming bigger, such as Alipay and WeChat Pay. Once customers make the payment online through scanning the QR code, the relevant official accounts are automatically followed. All these online performances are conducted through exchanging information between both customers and firms [5].

Nowadays, it has become a data-driven business world. The use of big data is not only restricted with the field of IT, but also the whole value chain of an industry [6]. Acquiring data is the first step, which means the use of all kind of intelligent networking terminal toward

users" information carries out a full range of data collection in order to achieve B2C customized [7]. Next could be further separated into two stages: back stage and front stage. And the next step of back stage is data mining to extract important information from the mass data and keep data in the data warehousing system with collected offline data [7]. For the front stage, digitalized marketing would allow personalization in terms of the online services to achieve the best shopping experience [7]. Then, distribution system allows firms to control the supply and provide customers with the accurate information. Digital logistics allow both firms and customers track the real-time logistics based on the online and offline data docking, which can achieve the efficient and transparent logistics system [8].

In the process of the data-driven marketing, offline and online data exchanging is involved through the system and process, which strengthen the relationship between customers and firms [8]. Big data analytics could precisely capture the intention and preference of consumers, offer recommendations fitting the demand of consumers and thus improving purchasing power [9].

III. DISCUSSION

A small case study is presented on Amazon and Flipkart services in Indian online market.

There are many online shopping giants ruling Indian ecommerce such as Snapdeal, Flipkart, Amazon, eBay, Paytm and ShopClues. All these are already ruling the Indian online market space using Big Data Analytics, while every day, we see newer ventures emerging on the scene as well. These e-commerce portals are hosting approximately an average of 25-30 million potential customers on a monthly basis. By considering consumer purchases, their page visits, earlier product searches and reviewed/rated items, e-commerce companies gain a lot of information on. This is where big data comes into the play. By learning this huge store of information, big data analytics helps businesses to gain deep insights into customer-centric business and they optimize business operations across almost all verticals. Be it marketing, sales, supply chain or inventory management, any and every aspect of a business can be enhanced by implementing big data insights.

Big data converts each and every action of the individual user into quantifiable data which can then be used to break the target consumer demographic into smaller segments. For example, instead of dealing with one market containing 10,000 consumers, businesses now have access to 10,000 markets of one consumer. This leads to better personalization, more tailored offerings, targeted marketing, optimized functioning and better business conversions.

A. Case Study: Amazon India

Among the e-commerce competitors in India, Amazon is the undisputed king, ruling the e-commerce space not only on the home land but in India as well. Moreover, Amazon is the most customer-centric company which uses a Collaborative Filtering feature.

Amazon uses the analytics platform Hadoop with Elastic Map Reduce. The database S3 is used which computes large amounts of data across EC2 instances. The major divisions where analytics is used are — customer analytics, seller analytics, trust analytics and supply chain analytics. A recent report states that Amazon generates around 29 per cent of the sales from the Hybrid Recommender Systems.

Some of the major metrics in use by Amazon's Recommender Systems are:

1. The past purchases of the customers
2. The items that customers have rated and liked
3. The items in virtual shopping carts
4. The purchases that are found to be resembling the similar purchases by other competitors

Amazon's uplift can also be ascribed to its extensive cloud business – AWS that is supposed to make more revenue than Microsoft.

B. Case Study: Flipkart

On the other hand, Flipkart is levelling the field by making regular updations to its computing infrastructure. Flipkart uses software called Computerized Maintenance Management Software (CMMS), which enables the e-retailers to implement solutions and get immediate results. On the Artificial Intelligence end, by noticing an enormous shift in search patterns, Flipkart launched a conversational search experience, which is known to guide users with broad intent. At the dawn of this year, Flipkart announced Project Mira, the Artificial Intelligence-focused project that is launched with an intention to get a better, deep understanding of the customer. The

Artificial Intelligence -led project was populated with local Indian data that helps in resolving the customer's intent.

Here's where Flipkart leverages Big Data Analytics:

- ✓ Data and analytics is used to predict region wise demand, thus stocking inventory as per the demand
- ✓ Automation of certain capabilities in warehouse and fulfilment centre which led to faster dispatches and accuracy
- ✓ New algorithms are being created to accurately read date of delivery by calculating user and product location – thus setting more realistic customer expectations
- ✓ Better use of data analytics which helps predict demand according to regions so that we can plan our inventory storage more accurately
- ✓ Flipkart owned fashion giant Myntra has also developed several technologies in-house to grow faster and expand its customer base.

IV. CONCLUSION

This study focuses on the impact of Big Data Analysis on the current marketing operations in India and how BDA is used for learning customers 'online behavior. By the capabilities provided by BDA, firms are able to:

- ✓ Deeply understand the changes among customers' needs
- ✓ Respond to customers and supply chain quickly
- ✓ Get feedbacks of products from customers easily
- ✓ Develop the comprehensive understanding of the products and services
- ✓ Improve the strategy to fit the market speedily.

BDA brings great effects on customers'' online behavior in Indian e-commerce in terms of customer satisfaction and impulsive purchasing behavior. On the one hand, big data analytics could precisely capture the intention and preference of consumers, offer recommendations fitting the demand of consumers. On the other hand, big data analytics aids the marketers in understanding the customers comprehensively by which firms could develop more personalized promotion strategies to increase the purchasing rate, which increases the more impulsive purchasing behaviour.

V. REFERENCES

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