A Comparative Study on Online Shopping sites Amazon Flipcart &Snapdeal

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Abstract

Today many e-commerce websites are using recommendation systems to provide relevant suggestions to their customers. The recommendation could be based on various parameters such as items popular on the companies' websites, seasonal festival like Christmas toys, gifts, and decorative items. Consider buying a book where reader usually goes to book store personally and selects a book, it takes so much time to go through all the books and select one book out of it. This is very time consuming process and after that also there is no guarantees that the person will get the book he really wanted. There is requirement of system which consumes less time and gives higher probability of what reader wants. Hence we are proposing a web recommendation system for book readers, which will recommend book depending upon previous choices made by reader and readers profile.

The proposed recommendation system will give its users the ability to view and search books as well as novels which will be use to draw out conclusions about the stream and genre of the books liked by the user. The system will analyze the user behavior by using multiple recommendation techniques like content based algorithm, Time sequence based collaborative filtering.

Introduction

There are multiple ways which are used to recommend products by the multinational company like Amazon. Multiple algorithms like collaborative filtering are used to personalize the online store for each customer. The store radically changes based on customer interest, like showing programming titles to a software engineer and baby toys to a new mother.

The e-commerce recommendation algorithm operate in a challenging environment as the scenarios change with respect to new customer. Most recommendation algorithms typically start by finding a set of customers whose purchased and rated items overlap the user's purchased and rated items.

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The algorithm aggregates items from the similar customers, eliminates items that the user has already purchased, and recommends the remaining items to a user. These algorithms are typically seen in multiple company based E-commerce websites. The most primary examples are Amazon, Flipkart.

II. REVIEW OF RELATED LITERATURE

E-commerce websites survey:

[1]Amazon.com uses recommendation as a target marketing tool in many e-mail campaigns and on most of its website pages including the high traffic amazon.com home page. Clicking on the "Your Recommendations" link leads customers to an area where they can filter their recommendations by product line and subject area, rate the recommended products, rate the previous purchases. Amazon.com extensively uses recommendation algorithms to personalize its websites to each customer interest. The shopping cart recommendation offer customers product suggestions based on the items in their shopping cart. The feature is similar to the impulse items in the Super Market check outline. But, in Amazon, the impulse items are targeted to each customer.

[3]Flipkart.com gives recommendation based on multiple usage instances. Primarily, it focuses on customer's searched keywords, previous purchases and the wish list and similar products. It is also seen that Flipkart recommends products last viewed by the user. The viewing history is stored in the form of cookies on the user's machine.

Framework

Need of personalization: Personalization is used in many fields of online marketing but the underlying ideas is the same collect as much information as possible about the potential customer and use this knowledge to create content that is tailored to him or her. [2]Personalization must have for many e-commerce websites, Several studies have been made about internet user's attitudes towards personalization in the last few years and results are quite similar. The majority of users like personalized shopping experience and believe it is easier to find interesting products on e-commerce websites that use some kind of recommendation systems.74 percent of users feel frustrated when content or advertisement is presented to them and it's not related to their interest. At the same some users are not comfortable with the methods some e-commerce websites. The majority said they are against sharing the browser history or current location with the retailers and would like to have an option to control how the data is used.

III Discussions

Amazon is well positioned to overtake flipcart

Amazon overtook Flipkart in customer preference for the first time last year, when the number of consumers shopping at Amazon hit 75%, but stood at only 70% for the Indian e-commerce company.Amazon Prime's benefits are a huge value proposition to customers in India:

Factors like fast and cheap shipping, low-cost products, and a good return policy are crucial factors to Indian consumers when choosing an online retailer. So, the perks of a Prime membership — such as free shipping and exclusive deals — resonate strongly with these customers.Moreover, Prime Video is especially valuable in India, where 90% of households have only one television and mobile devices are often used for individual entertainment. This makes the video streaming service in Amazon's app a huge draw for customers and Prime's fee of 499 rupees ($7.79) per year a better deal.

Amazon is also closing the gap with Flipkart on mobile — a key indicator of overall engagement in India. Amazon accounted for 30.3% of mobile e-commerce users in March, up 46% year-over-year (YoY), and putting it on track to overtake Flipkart, at 30.7%, in the near term. Mobile devices are the primary source of internet for most Indians, and mobile accounts for 79% of all web traffic, meaning almost all customer engagement will take place on a mobile device.

As Flipkart struggles to drive growth, it is likely that Amazon will lead in market share soon.The US company has made immense progress in the country — the number of products ordered through Prime in India has grown 70% since it debuted a year ago, while unique purchasers increased 113% YoY in Q1 2017. Meanwhile, Prime Day in India was a huge success this year, as its 23,000 sellers saw their sales volumes double from 2016's edition.

Amazon is now poised to outgrow Flipkart in its own market, and with a $5 billion capital infusion promised to its efforts in India, it's likely to take the lead sooner rather than later.Brick-and-mortar retailers are caught on the wrong side of the digital shift in retail, with many stuck in a dangerous cycle of falling foot traffic, declining comparable-store sales, and increasing store closures.

Over 8,600 retail stores could close this year in the US — more than the previous two years combined, brokerage firm Credit Suisse said in a recent report. Meanwhile, e-commerce pureplays are riding the rise of digital commerce to success — none more so than Amazon, which accounted for 53% of online sales growth in the US last year, according to Slice Intelligence. In response, many brick-and-mortar retailers have started to use omnichannel fulfillment methods that leverage their store locations and in-store inventory in order to better compete in e-commerce. These omnichannel services, including ship-from-store and click-and-collect, can help retailers manage the transition to digital by:

- Increasing online sales by offering cheaper, more convenient delivery options for online shoppers.

- Limiting the growth of shipping costs as online sales volumes

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increase by leveraging store networks for delivery.

- Keeping stores relevant by turning them into fulfillment centers that pull customers in to pick up online orders.

However, few retailers have mastered these new fulfillment services. While these companies have spent years optimizing their supply chain and logistics networks for delivering goods to their stores or directly to customers' doorsteps, most have yet to figure out how to profitably bring their store locations into the e-commerce delivery process.

By the end of this year, mcommerce-to-wallet company Paytm will have all its category pages made by machines. Paytm wants to respond to each customer who visits its website looking for fashion wear or sports gear or iPhone covers in a personalized way. The website will offer customer choices based on past usage and social media posts. For example, if you recently went to Goa on a holiday and posted photos of the trip on Facebook.

"The goal is to improve conversion rates and help the industry become profitable," says Vijay Shekhar Sharma, founder, Paytm. How does it work? Internet merchants are swamped with mind-boggling flow of data for example, Paytm has about 30 lakh visitors every day with about 3 million page views daily. Algorithms help it crunch data onPaytm has about 30 lakh visitors every day with about 3 million page views daily. [6] discussed about microwave linear beam tubes including Klystrons , reflex klystrons tubes (TWTs)and it studies microwave cross field tubes such as magnetrons and microwave measurements

Algorithms help it crunch data on customer preferences and increase sales. "Algorithms are the base for everything online - shopping, shipping, packaging, payments, price points etc," says Sandeep Aggarwal, founder, Shopclues.com, an e-commerce marketplace. The importance of algorithms becomes stark looking at the current online marketplace conversion rates. It is at less than 3% compared with that of offline ret

Data as a Weapon

At any given time, there are 3 to 4 million visitors online. They spend an average of seven minutes viewing 8-10 pages. By the end of the day, about 15 million records are generated. ComScore data for February for all etailers shows 52.98 million unique visitors, 4.42 billion page views and about 55 minutes a visitor a month. The minutes spent on e-shopping leave a trail and clues that companies want to dive into. Cancellations,the cash on delivery

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option for him is automatically disabled (the customer might be doing it just for fun)," says Aggarwal. Generating traffic is not the problem for etailers. Getting customers to buy is. "We are super ambitious about using data to help a person find what he is looking for. This will increase conversion rate and improve profitability," says Rajiv Mangla, CTO, Snapdeal. "We want to detect patterns in user behavior to improve conversion."

[5]According to Rana Alae, all types of data is useful and outside the platform as well, in logistics, shipping, warehouses 5-10% can be saved if data is correct. Algorithms help a logistics firm to decide on the best delivery route. Most companies use Hadoop hbase (server software) to analyse big data, machine learning tools like R & Python, which use data to create business models and web traffic data analytics from Alexa, Google Analytics or Adobe's Omniture. Besides the big data analytics to Snapdeal has a 25 people data engineering team—which essentially determines what kind of data to collect and a 25 people data science team which analyses the data collected and tweaks the algorithm.

At a broad level, it could be to push cricket memorabilia or IPL gear in the current season and at micro level, it could mean wooing a Chennai Super Kings fan with a CSK T-shirt, a taste picked up from Facebook. "We have to create that intelligence in conversion; else it could misfire," says Mangla HowFlipkart, Snapdeal and Amazon redefined the festive season for consumers. The festive season was all about fire crackers, sweets, new clothes, gifts and family for Indians. But consumerism established itself with

liberalization,and festivals became a reason to celebrate it. With changing times came changes in consumer behavior too.

Shopping for new clothes and home décor is not a once-in-a-year event anymore. The latest entrant in the retail business to exploit that trend is the online channel.Over the past couple of years, the online players have shown that they are here to stay, and are assured of getting a chunk of festive season sales, which Indians celebrate as much as the festival itself. With a huge seller base, variety in products, efficient logistics and tens of thousands of delivery boys, and even financial startups to back their customers, market leaders Flipkart, Snapdeal and Amazon are each putting their best foot forward to attract customers.

Bigger baskets and marketing tricksThe Great Indian Festival, which Amazon has re-christened Tyohaar Bade Dilwala this year, has offers on a considerable variety of products like smartphones, consumer electronics, stationery products, books, baby products and beauty products. Manish Tiwary, VP – Category Management, Amazon India, had said that the basket size this year would increase significantly, with customers buying at all price points, and in a greater number of items from multiple categories like home and kitchen, electronics, fashion, beauty, health and personal care. Sure enough, their consumer electronics, smartphones and fashion categories have grown sevenfold already, a statement from the company has claimed.

Financial support

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According to a survey conducted by Hitachi Capital Consumer Finance, for 83 percent of e-buyers, financing offers strongly influence their decision to buy. Credit cards are still a luxury in India, but e-commerce companies have to get their GMV up. Hence, marketplaces have tied up with multiple platforms to ensure that their customers are not short of resources for the purchase of high ticket items. Since the Reserve Bank of India has banned banks from providing zero-interest EMIs, citing a lack of transparency with hidden service charges and processing fees, online retailers are collaborating with non-banking finance companies (NBFCs) such as Bajaj Finserv.Flipkart and Snapdeal give interest-free EMIs from Bajaj Finserv for products worth Rs 5,000 and aboveFlipkart has tied up with SBI and Amazon with HDFC for extra discounts on their credit cardsShopClues gives a 10 percent additional discount through its partnership with ICICI Bank, Standard Chartered and American Express, and a 10 percent cashback on MobiKwikCashback offers are also believed to help customer retention as they offer an extra incentive besides discounts. They refund a part of the paid amount into the buyer's wallet, which can be used again on the same platform. Players like Coupon Dunia and CashKaro are exploiting the coupons' market as well. In fact, CashKaro is expecting to drive Rs 500 crore worth of GMV this festive season (October-December).

Customer is Asset

Post 2010, we have witnessed 2G, then 3G and now 4G internets penetrating to the nooks and corners of the country. Online players are always in fierce competition against each other. Arvind Singhal, chairman of Technopak consultancy, says, "With seven percent GDP growth and five percent nominal inflation, overall customer spending has increased by 12 percent from last year. E-commerce is estimated to be growing at 30-40 percent annually; so the online market will get a larger share of consumer spending."The first five days are just the beginning of the festive season sale. The real winner will emerge only by late November or early December. Despite the seven digit SKUs these players boast of, the metrics to watch out for are GMV, commission and profit.Although Snapdeal has rebranded itself and made some noise in the last few weeks, this festive season sale is widely viewed as a battle between Flipkart and Amazon. The fight is also against offline players. Will the customer emerge as the king?How recommendation algorithms know what you'll likeOne of the biggest innovations in online shopping - first introduced by Amazon - was the automatically generated recommendation. You logged onto the site and, right there on the home page, the site would make suggestions for products you could purchase.

For example, if you were a JavaScript developer like me, you'd see recommendations for programming books using that language, whereas if you were a mother with young kids, you'd see mentions of toys and children's books.This personalization of the home page has a big benefit for the online store compared to just displaying top 10 lists or banner ads: the click-through and conversion rates are far

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higher. Customers are more likely to view and buy the suggested products.

The prediction algorithms then are of huge importance to online stores - the more accurate they are, the more the online store will sell.Consider though the problems that must be solved by such a recommendation algorithm. A large online store like Amazon may have millions of customers and millions of items in stock. New customers will have limited information about their preferences, while more established customers may have too much.The data on which these algorithms work is constantly updated and changed. Customers are browsing the site and the prediction algorithm should take the recently browsed items into consideration, for example - it doesn't help if I'm looking for a toy for my youngest niece and all I get are recommendations for jQuery.

The biggest and most important criterion for these systems (apart from accuracy) is speed. The recommendation algorithm must produce suggestions within a second or so. After all, the user is in the process of displaying the store's home page where the recommendations will appear.Traditionally, these recommendation algorithms have worked by finding similar customers in the database. In other words, they work by finding a set of customers who have bought or rated the same items that you have. Throw out the items you've already purchased or commented on, and then recommend the rest.For example, if I've already bought A and B, and the set of such customers also includes purchases for C, then C is recommended to me.

Customer clusters

Another traditional prediction algorithm involves the use of cluster models. Here the goal is to prepare the customer base by dividing it into clusters and then to assign the current customer to one of the clusters, in theory choosing the cluster with the most similarity. Once the cluster has been identified, the recommendations come from the purchases and ratings from other customers in that particular cluster.

Although the choice of cluster works in roughly the same way as the classification algorithm (we assume that we can calculate a characteristic vector that describes the cluster in much the same way that there is a vector per customer), the real meat of the algorithm is in the creation of the clusters.In general, clustering of customer data is done through a heuristic: start off with some number of empty clusters, assign a randomly selected customer to each, and then assign the other customers to the clusters according to similarity. Since the initial clusters are essentially randomly created, sub-algorithms must be used to merge or split clusters as they are being built up.

Using cluster models is less computationally intensive at the point where you need to make recommendations quickly for a customer. After all, there's less work to be done to find a similar cluster rather than a similar customer. If you like, most of the work is done up front in the creation of the clusters themselves.Unfortunately, this particular method tends to result in low quality recommendations since the purchases/ratings are averaged out within a cluster. No longer is a particular customer

matched to the most similar customer, but instead to the average of a large group of customers. Certainly the number of clusters can be increased to refine the matching, but then you run into the possibility of increasing computation time.

Item-to-item

What Amazon did to improve its recommendations was to turn collaborative filtering on its head. Instead of trying to find similar customers, it matched up items. Its version is called item-to-item collaborative filtering.This algorithm matches each of the current customer's purchased and rated items to similar items and then builds a list from those matched items. First of all, then, the web site must build a 'similar items table' by analyzing the items customers tend to purchase together.

Here's how this works: for each item X in the catalog, find all customers C who purchased X. For each of those customers, find all items Y purchased by C and record that a customer bought X and Y. Then, for all pairs X and Y, calculate the similarity between X and Y in the same manner as for the collaborative filtering algorithm.Although this calculation is fairly computationally expensive, it can be done beforehand. Once the similarity between every pair of items has been determined, the recommendation list follows easily.

IVConclusions

Personalization creates a huge impact such that customers will be much attracted and the website will have many hits. A web based recommendation system with content tailored to the visitors is actually a better and efficient to extensively market multiple products by understanding the exact requirements of the customers.The previous purchases and interest categories are taken into account to explicitly notify the clients about the latest products for their liking. The micro enterprises which are using multiple algorithms to give customers a better and attractive content according to their preference. This actually creates businesses to be more competitive yet more profitable.

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