

ONLINE SHOPPING SYSTEM USING MERN STACK AND DATA SCIENCE

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Abstract - The Online Shopping application is a web-based tool for online shops. This application's major goal is to make it interactive and simple to use. It would make product searching, viewing, and selection easier. It has a powerful search feature. Users can use this search engine to find products that are tailored to their needs. The search engine makes available a simple and convenient method of product search in which a consumer can search for a product interactively, and the search engine would improve the offered products based on the information provided. Input from the user. The user can then view each product's detailed specification. They are able to They can also read product reviews and write their own. In addition, the application features a drag-and-drop feature to make it easier to use

Key Words: e-commerce, online-shopping, filtering of data amazon, Service provider, templates, journals

1. INTRODUCTION

An online shopping system is a method of providing individuals (namely customers) with the option of purchasing goods and services directly from the vendor in a real-time setting. Online shopping is a type of electronic commerce that uses the internet. From a business standpoint, clients frequently find things more appealing on websites since they can receive all the information they need there. People are doing a lot of online shopping these days, and it's not just because it's convenient to purchase from home, but also because there's a lot of variety, there's a lot of price competition, and it's simple to browse for searching for any certain item.

For merchants, this means that their goods has access to a large number of people.

2.1 What is E-Commerce?

Although it may also use other technologies such as e-mail, e-commerce normally employs the web for at least a portion of the transaction's life cycle. Purchases of products (such as books from Amazon) or services are common e-commerce transactions (such as music downloads in the form of digital distribution such as iTunes Store). [1] E-commerce is divided into three categories: online retailing, electronic markets, and online auctions. Electronic business helps to boost e-commerce. [2] Some or all of the following may be used by e-commerce businesses: Online retail sales to consumers via websites and mobile apps, as well as conversational commerce through live chat, chatbots, and voice assistants;

Customers can access an online store to browse through and place orders for products or services using their own devices, which is powered by the internet.

The customer's web browser will communicate with the server hosting the online store website as the order is placed. The order's data will then be relayed to a central computer known as the order manager, which will then forward it to databases that manage inventory levels, a merchant system that manages payment information (using applications such as PayPal), and a bank computer before returning to the order manager. This is done to ensure that the store's inventory and customer cash are sufficient to complete the order. After the order has been validated, the order manager will contact you.

2.2 Growth Of Online Retailing In India

By 2026, India's e-commerce business is predicted to have grown from US\$ 38.5 billion in 2017 to US\$ 200 billion. By 2034, India's e-commerce business is predicted to be the world's second largest. On the other side, India's e-commerce business is expected to grow to about 300 to 350 million shoppers in the next five years, bringing online GMV to \$100 to 120 billion by 2026. India's retail market, at \$850 billion, is the world's fourth largest. The increasing number of first-time internet and smartphone users, as a result of the 'Digital India' push, is fueling the industry's massive expansion. India had 760 million internet connections as of August 2020. Along with the rising online community, the unorganised nature of the home essentials market has also contributed to the expansion of these industries. It has created new opportunities for e-retail/ e-tail/ e-commerce enterprises that can not only comprehend the consumer psyche but also curate high-quality products and services that are in tune with the needs of today's new-age customers, bringing them into the organised sector. As businesses continue to innovate and onboard millions more customers, it's worth looking into the big themes that will dominate this industry in 2021.

2.2 The Shopping Experience Will Be Improved by Chatbots

Chatbots will soon be able to perform the functions of a storefront, a greeter, and a salesperson. They will not only be of great assistance to the firm since they will be able to contact with hundreds of customers, but they will also provide them with a sense of personal attention and insightful recommendations based on their responses. People prefer to communicate with bots and other digital self-serving tools because they respond faster, according to a study. They will have a significant impact on how consumers shop online and will become one of the most essential marketing strategies available.

Use the following information to answer question 18 to 20.

Suppose there are two tables in a database for an e-commerce website. One table is called Products. The other one is called Orders. Their structures and data records are showed below:

Products Table

ProdID	ProdName
1	iPhone
2	Android
3	Windows

Orders Table

OrdID	ProdID	Quantity
1	1	1
2	1	1
3	2	2
4	4	1

2.3 Analytic System Based On Prediction Analysis Of Social Emotions From Users On E-Commerce

Market analysis and political decision-making benefit from social emotion prediction. People are becoming more interested in online communication as a result of the internet's free and convenient communication environment. Meanwhile, internet users want to produce and disseminate online knowledge by expressing personal viewpoints rather than simply obtaining it. Numerous news pieces and comments have been published and circulated quickly via social media services as a result of this method. As a result, a large amount of underlying good or negative emotion data circulates and reflects the social mood trend. Emotional label has been commonly utilised in social online services, which makes sense.

The result of voting for a news story using emotion labels from a major news portal is shown in Fig. 1.

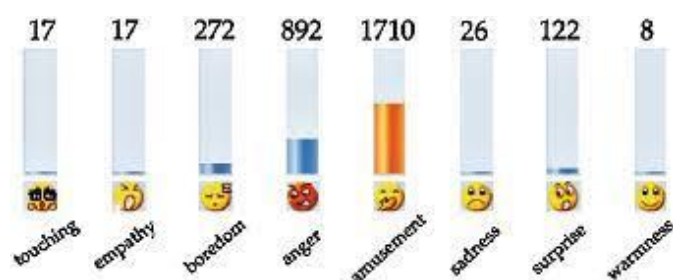
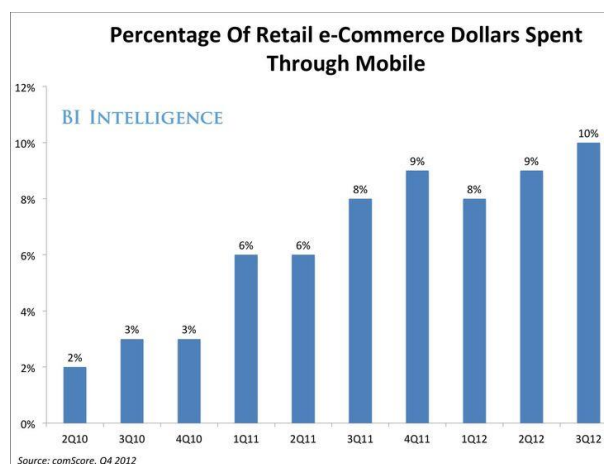


Fig -1: An example of emotion labels and users ratings

A large number of people are concerned by recent web news. As a result, significant and readily available emotional data is constantly made available for scientific research. Furthermore, when compared to traditional approaches, which require conducting large numbers of surveys offline, data processing technology has become more viable in the field of emotional extraction, analysis, and prediction, with benefits such as reduced cost, higher efficiency, and greater accuracy. Readers' emotions prediction has a lot of study possibilities in this situation.

Unlike the traditional tasks of sentiment analysis, opinion mining, or affect recognition, which are all based on subjective text, social opinion prediction focuses on objective text, such as news items, which may or may not contain any opinions but

can elicit a specific emotion in readers. Because of the unique nature of the task, social opinion prediction has various potential applications than writer-sentiment analysis. Given the impact of social media on public opinion, social emotion analysis can help with a variety of social and economic challenges, including political difficulties and brand impression. We use a real-time social opinion network to implement social opinion prediction in this research. To be more specific, we first train word vectors using the most recent Wikipedia word corpus. Second, we use word vectors to calculate semantic distance between news items. As a metric for comparing opinions, semantic distance allows us to build a growing network of opinions to describe dynamical social opinions. Finally, we use the network to forecast the social sentiment of follow-up news.



2.4 Advantages Of Online Shopping System

2.4.1-Convenience :- It is the most significant advantage of online shopping. Customers can shop from the convenience of their own homes or offices. In internet buying, it is simple to cancel transactions. Online shopping has simplified purchasing because there are no lines to wait in and we can complete our purchases in minutes. We can shop online 24 hours a day, seven days a week. Shopping over the internet saves time and effort. We can acquire thorough information about a product as well as good discounts and reduced pricing when we purchase online.

2.4.2-No Crowds:- It is typical to observe crowds at shopping locations during festivals, weekends, or holidays; purchasing things in this type of setting will be a tremendous hassle and stressful. However, we do not have to deal with crowds when purchasing online, nor do we have to fight weird parking wars.

2.4.3-No Pressure:- Shopkeepers might sometimes put pressure on us or use their expertise to persuade us to buy stuff we don't need. As a result, we end up buying items that we don't really need. However, there is no compulsion to buy unneeded items when shopping online.

2.4.4-Saves Time:-Customers who shop online do not have to wait in lines to pay for the items they have purchased. Online shopping allows people to shop from their office or home, saving time on travel. It also makes it easier for us to find things by typing in some keywords or using search engines.

2.4.5-Reviews Of Products:-Most people read product reviews online to get basic information from others who have actually tried it. Online reviews assist us in learning more about the product in which we are interested. For example, if we want to buy cloth, we can look at the evaluations for that product; we'll notice that some consumers also upload images of themselves wearing the fabric. As a result, we can shop wisely. Future buyers will be better able to make informed purchasing decisions as a result of the reviews.

2.4.6-Multiple Varieties :- It's one of the best things about shopping online. When purchasing online, the buyer has a wide range of options and brands from which to choose. There is a great amount of stock available on the internet. We may receive the latest foreign trends without spending money on airfare by searching for an item or a brand online. We can acquire the things we want from stores in distant sections of the state, country, or even the world.

2.5 Application of Online Shopping System

2.5.1-Retail and Wholesale :- In this field, ecommerce offers a wide range of applications. E-retailing is a business-to-consumer (B2C) and business-to-business (B2B) sale of goods and services via online storefronts that use virtual shopping carts and electronic catalogues. M-commerce, or mobile commerce, is a subset of retail ecommerce in which a customer purchases goods and services through a retailer's mobile optimised site using their mobile device. These merchants employ the electronic payment method, which allows them to take payments by credit or debit cards, online wallets, or internet banking without having to print paper invoices or receipts.

2.5.2-Online Marketing :- This refers to the collection of information on consumer habits, preferences, needs, and purchasing patterns, among other things. Because this data may be used to provide customers with a personalised and enhanced buying experience, it aids marketing operations such as price fixing, negotiation, enhancing product features, and creating strong customer relationships.

2.5.3-Finance :- Banks and other financial firms make extensive use of e-commerce. Customers can use internet banking to monitor account balances, transfer money to other accounts owned by them or others, pay bills, and pay insurance premiums, among other things. Individuals can also trade stocks online and obtain information about stocks to trade through websites that offer company news, charts, performance reports, and analyst ratings.

2.5.4-Manufacturing :- Ecommerce is also used in supply chain operations; typically, a group of enterprises forms an electronic exchange to enable the buying and selling of items, the exchange of market information, and back office information such as inventory control. This facilitates the flow of raw materials and completed goods between member companies as well as between corporations.

2.5.5-Digital Advertising :- Online advertising involves a publisher and an advertiser, and it uses the internet to provide promotional content to customers. Ads are provided by the advertiser, and they are integrated into online content by the publisher. There are often creative agencies that produce the ad and even assist with placement. Banner ads, social media ads, search engine marketing, retargeting, pop-up ads, and other sorts of ads exist.

2.5.6-Online Booking :- Almost everyone has done it at some point - booked hotels, vacations, airline tickets, travel insurance, and so on. An internet booking engine, or IBE, is used to make these bookings and reservations. Aviation, tour operations, and the hotel sector are the industries that use it the most.

3. CONCLUSIONS

E-commerce isn't just a technical problem; it's a full-fledged commercial venture. Companies who utilise it as an excuse to fully re-design their business operations are most likely to benefit. Furthermore, E-Commerce is a beneficial technology that allows customers to connect with businesses and enterprises all over the world. Ecommerce, often known as electronic commerce or online commerce, is the purchasing and selling of goods and services through the internet, as well as the financial and data transfers required to complete these transactions.

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