International Journal of Research Publication and Reviews

E-COMMERCE WEB APPLICATION USING MERN TECHNOLOGY

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ABSTRACT

In today's generation, most people are using technology for leading their live sand fulfilling their daily needs. In this generation most of us using E-commerce web-sites for shopping for clothes, groceries, and electronics [1]. We have developed oneE-commerce web application by using MERN tack echnology as it contains Mon-goDB, Express.JS framework, React.JS library, Node.JS platform. This application is fully functional with different views for user and admin and it also has integrated with payment gateway for checkout. By using this website we can buy different types of t-shirts and we can choose different styles of t-shirts based upon customer interests. In this project, we can add different products and can delete them also. We have developed administrative functions for the website such as create a product, create categories, Admin dashboard, Manage products, Manage categories. For customers, they can quickly add their items to the cart. Based on the items in the cart then the bill gets generate and the customer can pay by using stripe

Keywords— JavaScript, Software Stack, Framework, Library, Performance Analysis, React.js, MongoDB, Node.js, Express.js .

1. INTRODUCTION

We all know that technology has become an essential tool for online marketing these days. If we see all over the world most of the people are showing interest to buy things in online. However, we can see that there are many small shops and grocery stores are selling their things offline. With this type of selling most of us will face bad experience. for instance, in some shops seller has the product to sell in the offer but the buyer may not know about it, or the customer may need the product urgently then he will go to the shop, but the product is out of stock, in that case, he will face bad experience. Moreover, in online shopping customers can select a wide range of products based upon their interests and their price also, one can compare prices also from one store to another by using online shopping [3]. By encountering the all problems and weaknesses of the offline shopping system, creating an E-commerce web-application is necessary for searching and shopping in each shop. These days we have seen so many e-commerce websites are created like Flipkart, Amazon, Myntra one can easily buy their necessary products by using these websites. By using these types of websites one can buy their products by staying in their home. Eventually, we can see the ABSTRACT 2 International Journal for Modern Trends in Science and Technology difference between the prices of products also as if we see the cost of the product will be slightly high in offline shopping when compared to online shopping. For creating these types of E-commerce web applications MERN stack will be the best option that can help us for creating the most effective and powerful web applications

2. PROBLEM STATEMENT

The purpose of this project is to makes a web application which will be easier to find interesting clothes and easier to sell goods. This E-commerce web application admin can add some categories like summer sales, winter festival, etc. which will by attracting customers. Customers also can easily search for their favorite goods. They can also buy them easily by just adding to the cart and they can increase or decrease by clicking on the "+" sign and "-" sign. After adding they can check the total amount of the thing which have been added to the cart. A successful payment gateway way enabled so payment can be done by debit card, credit card, and net banking.

3. BENEFITS ECOMMERCE OF TRANSACTION COST

Three cost areas are significantly reduced through the conduct of B2B e-commerce. First is the reduction of search costs, as buyers need not go through multiple intermediaries to search for information about suppliers, products and prices as in a traditional supply chain. In terms of effort, time and money spent, the Internet is a more efficient information channel than its traditional counterpart. Second is the reduction in the costs of processing transactions (e.g. invoices, purchase orders and payment schemes), as B2B allows for the automation of transaction processes and therefore, the quick implementation of the same compared to other channels (such as the telephone and fax). Efficiency in trading processes and transactions is also enhanced through the B2B e-market's ability to process sales through online auctions. Third, online processing improves inventory management and logistics. Disintermediation. Through B2B e-markets, suppliers are able to interact and transact directly with buyers, thereby eliminating intermediaries and distributors. However, new forms of intermediaries are emerging. For instance, e-markets themselves can be considered as intermediaries because

they come between suppliers and customers in the supply chain. Transparency in pricing. Among the more evident benefits of e-markets is the increase in price transparency. The gathering of a large number of buyers and sellers in a single e-market reveals market price information and transaction processing to participants. The Internet allows for the publication of information on a single purchase or transaction, making the information readily accessible and available to all members of the e-market. Increased price transparency has the effect of pulling down price differentials in the market. In this context, buyers are provided much more time to compare prices and make better buying decision

ADVANTAGES

1. A HUGE MARKET: E-commerce will give you an option to reach customers all over the world, you can buy anything that you want to from your home. Nowadays people are used to doing shopping with their mobiles only. So, it will add an advantage for E-commerce.

2. WIDE PRODUCT VARIETY: In this large world, customers can buy different types of products from different places, we can buy electronics from Russia, shoes from japan, clothes from London and good old international products, the depth and advantage of E-commerce is uncountable.

3. TRACKING: If you order any product in e-commerce you will get the details of where the product is shipping and when it will reach you, you can cancel the product also if you don't like that product after order.

4. LESS PRICE: In E-commerce websites, we can compare the prices of products from one website to another website. In that way, we can easily know that where we will get the product for a lesser price and we will get the basic idea that how much money we can spend to buy a particular product.

5. MORE CHANCES TO "SELL": In the physical stores' merchant can not give the full information about the product, but in the E-commerce store customer can get full information about that product and he can see the reviews of another customer who bought that product previously. In this way, if the product is good it will get more chances to get that product

DISADVANTAGES

1. SECURITY: Even though E-commerce providing more benefits to customers. People are having fear about giving their data to website owners, so it will give securit issues when we use e-commerce websites for shopping.

2. TAX: If we want to buy a product from e-commerce we will have to pay taxes like GST, it will be different from place to place based upon your distance between you and the product, it will be high when compared to buy in physical stores.

3. DELAYING IN DELIVERY: If we order a product in e-commerce, the order may or may not reach you on time, this is one of the common problems in e-commerce, it will take time-based upon your distance between you and the organization from where you ordered.

4. TECHNOLOGY COST: To create a website will take so much amount, one needs to spend so much money on building an e-commerce website because he needs to check all the possibilities and provide a good security system to that website.

4. RESEARCH AND DEVELOPMENT

There are so many applications to build a web application and, in this research, we have taken MERN technologies to use for building a web application. MERN: MERN stands for MongoDB Expressjs Reactjs Nodejs. These are the four technologies that help us to construct or to build this web application. MongoDB: It is an open-source cross-platform program. It comes under the NoSQL database classification. It was a document-oriented database. It uses JSON format documents with optional Schemas * Data Flexibility available means we can any every data in a separate file * Large data can be distributed into several connected applications * High speed of fetching of data possible because it only depends on indexing. * It is a horizontally scalable database so it can handle the data make us easy to distribute to serval machines. NodeJS: NodeJS is a runtime javascript environment that works outside the web page. It is mainly used for server-side applications. * NodeJS is open source and it is free of cost

5. CONCLUSIONS

The main them is to build an e-commerce t-shirt selling web application with all three i.e., Front end, back end, and database. This web application is a fully pledged working web application right from the login authentication, admin authorization, add items to cart, using payment gateway. It can be used by any textile industry on either a small scale or a larger scale. The web application is easy for them to access and without any effort categories can be created and products can be added by them. It will be very attractive for the customer to see the products by sitting at home or office. It will be very helpful for the small-scale industries without selling to wholesales, large retails mediators they can directly sell to the customer by saving money for both.

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