

A Review & Development of E-Commerce Website

Amadeep¹, Ashwini Verma², Satyam Chaudhary³, Vikram Thakur⁴

1,2,3,4 Student, Dept. of Computer Science, Lovely Professional University, Punjab, India

Abstract - *The Internet has been the greatest invention of mankind which has changed the life of every individual on this planet. Finally, long distances don't feel so long and everyone can keep in touch with anyone without any boundaries. Every app which is mostly used on the internet today is trying to reduce the distance from each other in one way or another. From social media to online shopping every app is trying to sell comfortableness to people from the convenience of their homes. One Particular sector in which players are working on this will always be e-commerce. The main purpose of e-commerce is certainly to sell products at very fair prices because the ease of doing business is certainly a blessing in this busy world. With greater penetration of smartphones and the internet growth of e-commerce has been like never before. Moreover, this business has contributed to the economy tremendously and provided thousands of jobs all over the world.*

Key Words: E-Commerce Website Development, Internet, Self-service, m-commerce, Development.

1. INTRODUCTION

The Internet has been the biggest revolution for mankind which has led to the development of some of the most unrealistic development of technologies which was deemed possible. The internet has broken barriers of many things such as social media, entertainment, and quite certainly e-commerce, and revolutionized the process of doing business [1].

Ecommerce is the process of doing business on a network, especially on the internet where a person who wants to sell can gain exposure. The goal of eCommerce is to provide comfort to the seller as well as the customer. In e-commerce, a person can sit inside their house and list their product and the customer doesn't matter where they are. They can order the thing which will be delivered to their home. The Online Shopping System helps in buying products, products, and services online by choosing the listed products from a website(ECommerce site). With the development of e-commerce many things about online businesses such as better infrastructure and better technology. Moreover, e-commerce from mobile has been a much bigger game changer as it has become much more accessible [2]. In this decade Ecommerce is moving to customers centric and becoming more customizable with help of machine learning and artificial intelligence.

E-Commerce is considered a paradigm shift for the innovation it brought as it fulfilled the gap that was left by traditional businesses such as low exposure and inability to sell outside as they were limited with the technology, money, and logistics. Moreover, it has also improved relations between customers, product promotion, and cost savings.

The key contribution of this paper is:-

- A review paper that dives into the depth of the state of e-commerce around the world, especially in India.
- A detailed explanation of the development of e-commerce sites and technology is required.

The rest of this paper is formulated as follows: Section 2 presents a comparative analysis of the existing e-commerce review papers. Section 3 describes the objective of the project. Section 4 details the state and growth of e-commerce in India. Section 5 provides the process of developing an e-commerce website and the process used by us .

2. LITERATURE SURVEY

In his research paper, Shoewu et al. [2] has suggested the process of development of an eCommerce website with the help of HTML, ASP.NET, and MySQL and also advised on security risks which can be critical while proposing the website to the customer as it can be a major risk. He has also proposed a detailed database design and what can be included in the tables of the database in a detailed manner.

Aftab et al. [3] in his research paper has published the review and state of e-commerce all around and helped us understand the process of development of an e-commerce website with the help of Javascript, HTML, and CSS. He has also provided the payment solution for the proposed website and concluded the paper with advice on the improvement of the e-commerce industry in the coming years .

Rajasekar et al. [4] in his research paper published the impact of e-commerce in India, the timeline of development, and shared the impact of e-commerce on the economy and suggestions for improving the infrastructure in India and has also shared the challenges faced by companies in India.

Abdul. [6] in his research shared his view on the impact of e-commerce in emerging economies such as India and Bangladesh he has shared his view on the development, growth, and challenges faced by e-commerce businesses in this type of country and he has also shared his view the benefit such reduced cost, faster transportation, and better exposure through different seller can reach especially in the emerging economy which this business can provide in this type of economy.

Shahid et al. [7] in his paper shared his view on the situation of commerce in this country and the fast development of the infrastructure of e-commerce in this country. He also shared the trend of buying the product by users in this country.

3. ECOMMERCE IN INDIA

E-commerce is one of the fastest-growing technologies in India. Many new companies have emerged which have helped e-commerce to grow exponentially. E-commerce which had a business of, merely 14 billion dollars in 2011 has grown more than six times in 2021 to 84 billion dollars and is expected to grow more than twice in five to six years.

3.1 Underlying Factors in E-Commerce

Higher penetration of internet and mobile services has been a game-changer for India because of which more and more people are joining as a customer every minute [8]. It has been observed about 60-70 percent of shopping has been done through smartphones in India. Currently, the penetration of smartphones is at fifty percent which is going to double in the next twenty years. Cash on delivery is also one of the prominent underlying factors that have contributed to the growth of the e-commerce industry in India according to the times of India even in 2021 approx fifty percent of payments in tier-1 cities of India are done via cash on delivery whereas more than seventy percent payments are done through cash on delivery through tier-2/tier3 cities [11].

3.2 Growth of e-commerce in India

The Indian e-commerce industry is the fastest-growing e-commerce industry in the world. It is expected to grow more than twice by 2027 and is expected to become the biggest eCommerce industry in the world by 2050. Lucrative offers and cash on delivery have lured Indians greatly to get invested in this industry while not meddling with the trust of the people. Moreover, According to ASSOCHAM apparel, jewelry and footwear are the most purchased items through eCommerce in India thanks to cheaper rates and doorstep delivery [4].

Table 1: Growth of market cap from 2015 to 2021 with forecasting

Year	Market Cap of Ecommerce in India(in billion US dollar)
2015	14
2016	14.6
2017	39
2018	21.9
2019	24.6
2020	30
2021	84
2025	188
2027	200

3.3 Challenges of e-commerce in India

With such astounding growth of e-commerce in India there has been a growth of challenges which was faced by companies in India which include [8].

- Connectivity - Many parts of India are still very rural and delivery there is very far fetched
- Fraud - In recent years there has been an increase in online fraud where some websites which claimed to be something other have phished users into logging their credit card information and resulting in monetary fraud.
- Fake Products - There are hundreds of thousands of sellers registered with different e-commerce websites and it has become very difficult to scrutinize all their products which has resulted in many fake deliveries which do not have the products which are promised.
- Missing Products - In recent years there has been an increase in such cases where people are not receiving products that they ordered which has resulted in a loss of trust.

4. SYSTEM DESIGN

System design refers to the process and shaping of the creation of an e-commerce website and modules that are going to be used in the process of making the website i.e., Nodejs, HTML, CSS [3].

System Module Description:

1. Coding
2. Seller
3. Customer
4. Management
5. Delivery

4.1 Coding

Coding refers to the process of building a website that can be later used to process the request of customers. It is a standalone site that can handle multiple requests of people at once so that the seller can fulfill the order [3].

4.1.1 HTML

The hyperText markup language is the skeleton of any website that is to be created. It is used structurally to devise a road to develop a site so that later designers can use it to develop a better layout of the website. It can also be used to separate different tags such as graphical contents, hyperlinks, and words so that it does not cause an entanglement later and can be separated easily [3].

4.1.2 CSS

Cascading Style sheets often referred to as CSS is a formatting language that is used to standardize and improve the quality of a website. While HTML lays the skeleton of the website CSS can use those attributes and improve the layout of the website [3].

4.1.3 JavaScript

JavaScript is a client-side rendering standalone programming language that can be used in the backend as well as frontend. The main purpose of the JavaScript in the frontend is to provide more functionalities and make the website much more dynamic which cannot be obtained with HTML or CSS alone whereas in the backend it is used to write API which is used to connect the backend with frontend.

4.1.4 Node.JS

Node.js is a backend framework written in JavaScript which is used to write the code for many asynchronous networks in a website. It can serve multiple requests synchronically where other frameworks use an os-based concurrency model where threads are employed.

Node.js directly uses I/O so the process never ends up deadlocked except when it is explicitly using an asynchronous library [4].

4.1.5 Database

When we consider mammoth e-commerce websites, data can be huge, and every data like items list, customer info, delivery address, etc. need to be stored in a database. A Database is a place where information on all the things associated with eCommerce is stored. Everything is stored in the form of a table or key-value pair.

Databases can be of various types, but they are typical of two types:

4.1.5.1 SQL Databases

SQL type databases are those databases in which data is stored in the form of a table [3].

Ex- SQLite, MySQL

4.1.5.2 NoSQL Databases

No SQL databases are typical databases in which data is stored in the form of key-value pair [3].

Ex- MongoDB

4.2 CUSTOMER

The reason e-commerce boomed across the world is because it was huge relaxation customers itself as the ease of ordering something within a few clicks and it getting reached in a week or so was the very big relaxation and that has been a unique selling point of this kind of website [6]. Customized advertising and increase in number of sellers as well as variety of sellers which increased the variety of products have also made the customer experience very good more sellers with different price segments have saved them from forming a monopoly within the site and provided more option which in turn provides more reasonable price and an experience of negotiations for every customer gets far more opinion than any shop in the world as eCommerce is the combination of shops rather than being one [8].

Customers are the ultimate goal of any business to which products are sold and with this ever-growing population and life getting busier each day the demand for e-commerce is increasing as time is something very limited in this new generation[10].Also one of the most important factor in a ecommerce website is customer engagement is the emotional and ethical connection with company. Good customer engagement means there will be more customer purchasing from that website and they will promote the product more which will in turn benefit the company. According to Rithika Sirvi her research paper she mentioned the fact good customer engagement can boost up to 24 percent sales of ecommerce websites.

Table 2: Growth of e-commerce customer base

Year	Growth of Customer Base World Wide in billions
2014	1.32
2015	1.46
2016	1.52
2017	1.66
2018	1.79
2019	1.92
2020	2.05
2021	2.14

4.3 DELIVERY

When e-commerce was established especially in a country like India one of the major problems faced was delivering products home to home as there was very little to no infrastructure available lack of private players was a major setback and government agencies were already overloaded and less reliable to accommodate the demand so the companies decided to lay their own infrastructure which has been more than successful in fulfilling the demand and also helped for cutting the cost [10].

Delivery is the final stage of the e-commerce system. According to Jehangir in his research in 2017, he proposed that 52 percent of people opt for home delivery keeping in mind ease of home delivery from the shop and some of the issue faced by the business and customer is Unavailability of respondents, Cost of delivery and time of delivery as most of the people are at work during a weekday during the day [12].

Delivery is the most extensively demanded and important job out of all the processes in e-commerce as it requires extensive networking, logistics, and manpower support. There is a need for extensive technology to track and support the process and one of the biggest barriers is international orders and their limitations [7]. A more open environment could improve efficient access to global networks for home-grown small businesses. Competition between service suppliers can reduce prices and lift the standard of services offered. A facilitative regulatory environment can rapidly increase these trends and makes the business case for operating in smaller or more remote markets that way more appealing [3].

5. CONCLUSION

This research paper provides insight into the development of e-commerce and some insight into the latest trend and technology which attract customers and provide management with some useful information on e-commerce. While understanding the bits and pieces of e-commerce we have also tried to understand complete system design as well as the basics of the flow of information of operating e-commerce.

A more sustainable way would be to develop e-commerce and traditional business side by side because as the population is increasing it would be very difficult to accommodate the needs of such a vast and diverse population with only E-commerce. With the increase of penetration of mobile, there is going to be an indefinite increase in usage of e-commerce throughout the world which would push the limit of technology which would again push the limit of firms to develop a safer and compatible Environment.

REFERENCES

1. Roxana Maria Bădîrcea, Alina Georgiana Manta, Nicoleta Mihaela Florea,, Jenica & Popescu, Florin Liviu Manta, Silvia Puiu. E-Commerce and the Factors Affecting Its Development in the Age of Digital Technology: Empirical Evidence at EU-27 Level
2. 2.Dr. Oluwagbemiga Omotayo Shoewu & Olusegun O. Omitola (2014,October) . Development of an Electronic Commerce WEB Application
3. 3.Aftab Aalam,Shivansh Mishra,Satyam Sharma & Richa Gupta (2020,May).Study & Development of E-Commerce Website
4. Dr. Rajasekar & Sweta Agarwal. (2016,March). A Study of Impact of ecommerce on India's Commerce
- 5..Lulu Cai,Xiangzhen He & Yugang Dai (2018).Research on B2B2C E-commerce Website Design Based on User Experience
- 6.Abdul Gaffar Khan.Electronic Commerce. (2016) A Study on Benefits and Challenges in an Emerging Economy
7. Dr. Shahid Amin,Prof. Keshav Kansana & Jenifur Majid (2016,February) .A Review Paper on E-Commerce
8. .Dr. (Smt.) Rajeshwari M. Shettar. (2016,September). Emerging trend of Ecommerce in India: An Empirical Study.

9. .Reena Budhathoki & Mohan adhikari (June,2021)
.Ecommerce Website Development For Electronic Store.

10. Ritika Sirvi, Gundla Ranga Ram,Varun Revelli,Gv
Santosh Kumar & Dr Chandra Sekhar Pattnaik. (June,2021)
.The Role of E-commerce on Customer Engagement in
2021

11. Swati Gangawane, Dr. D. N. Padole. Study of
Ecommerce in India.

12. Jehangir Bharucha. (2017,February) .Issues in the
Home Delivery Model in India

13. Lalit Gaikwad, Abhijeet Parate, Badal Sahare ,Akshay
kshirsagar & Bharat Dhak. (2017,March). E-Commerce Site
and Its Development.