International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 07 Issue: 10 | October - 2023 SJIF Rating: 8.176 ISSN: 2582-3930

Review Paper on E-commerce Systems

Raj Desai, Aditi Shah, Ananya Singh, Harsh Singh

Department of Computer Engineering
Thakur College of Engineering & Technology

Abstract - The rapid evolution of the digital landscape has transformed the way businesses and consumers engage in commercial activities. E-commerce systems have become pivotal in this dynamic environment, shaping the future of online retail and transactional processes. This survey paper offers a comprehensive analysis of the current state of e-commerce systems, focusing on key trends, technologies, challenges, and future directions. By synthesizing insights from a variety of scholarly sources, this survey provides a holistic view of the field, facilitating a deeper understanding of the complexities and opportunities in the e-commerce ecosystem.

***Key Words*:** e-commerce, e-commerce systems, online retail, digital commerce, trends, technologies, challenges, survey paper

1. INTRODUCTION

In the 21st century, the digital revolution has redefined the way individuals and organizations conduct business[1]. E-commerce, short for electronic commerce, has emerged as a cornerstone of this transformation, offering a platform for online buying and selling that transcends geographical boundaries and time constraints. E-commerce systems, the focus of this survey paper, represent the intricate network of technologies, processes, and strategies that underpin the online commercial landscape.

The purpose of this survey is to shed light on the multifaceted world of e-commerce systems. The e-commerce sector is not only pervasive but also dynamic, with rapid advancements in technology and changing consumer behaviours continually reshaping its contours. This paper aims to provide a comprehensive overview by aggregating knowledge from various academic sources, offering an essential resource for academics, practitioners, and researchers seeking to navigate the intricate landscape of e-commerce.

2. LITERATURE SURVEY

The literature survey section of this paper provides an in-depth analysis of the existing body of research on e-commerce systems. It aims to capture the key themes, trends, and contributions from previous studies in the field. The survey is organized into several subsections to facilitate a structured overview.

2.1 Historical Evolution

The initial documented occurrence of e-commerce can be traced back to 1971, when students at Stanford University utilized the ARPANET, a precursor to the modern internet, for purchasing and vending marijuana. However, this early experiment had a short-lived existence due to the university's prompt intervention, leading to its closure. The first verifiable online commercial transaction did not occur until 1979 when a company known as NetMarket facilitated the sale of a Sting album[2].

With the growing popularity of online sales among the public, investors and businesses became increasingly interested in the internet as a viable platform. This era marked the ascent of the internet and witnessed a surge in speculative investment in the market. This speculative frenzy eventually culminated in the dotcom collapse, alternatively known as the dotcom crash or dotcom bubble, which commenced in the late 1990s and persisted until 2004[3].

2.2 Current trend in E-commerce systems

The landscape of e-commerce is dynamic, with emerging trends shaping its future. Mobile commerce (m-commerce), as examined by Liébana-Cabanillas et al. (2021), has seen substantial growth due to the ubiquity of smartphones. Social commerce, as explored by Hajli (2014), discusses the integration of social media platforms into e-commerce, allowing for a personalized shopping experience.

3. COMPARATIVE STUDY

3.1 Analysis and Design of Online Stores[4]

3.1.1 History of Waterfall Model

Royce introduced the Waterfall Model in 1970, which he criticized as deficient. In his paper, he explored the transformation of the initial model into an iterative or interactive model, where feedback from each stage influenced the preceding stages. Many of the techniques he proposed in this context have gained widespread and high regard in today's practices. Interestingly, it is often the initial models that receive the most attention, with the feedback he collected on his original model largely overlooked. The term "waterfall model" has come to refer not to Royce's final iterative design but rather to his sequentially ordered model (Royce, W. W., 1970, August).

3.1.2 System Structure

The internal organization of the system and its components is such that these elements are closely interconnected, functioning collectively in response to external conditions and interactions with other systems. A component can be defined

as the smallest unit responsible for executing a specific function within the overall system, as illustrated in Figure 1.

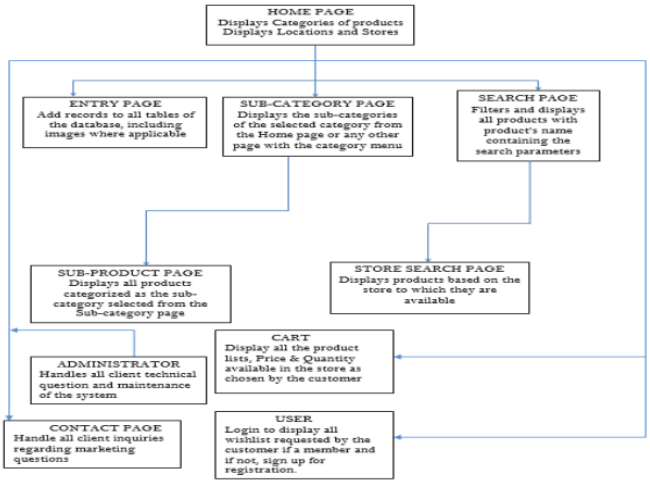

Figure 1: Functional Decomposition Diagram

3.2 Review on E-commerce[5]

3.2.1 ASSOCHAM (2015)

According to a study by ASSOCHAM (2015), the apparel segment experienced the highest growth rate at approximately 69.5% in 2014. This was followed by electronic items, which saw a growth of 62%, baby care products at 53%, beauty and personal care products at 52%, and home furnishings at 49%. The rapid expansion of digital commerce in India can be primarily attributed to the increased usage of smartphones. The study also noted that mobiles and mobile accessories dominated the digital commerce market in India. Surprisingly, nearly 45% of online shoppers preferred cash on delivery, while credit cards (16%) and debit cards (21%) were the choice of a smaller percentage. Only 10% opted for internet banking, and a mere 7% showed a preference for cash cards, mobile wallets, and similar payment modes.

3.2.2 Abhijit Mitra (2013)

Abhijit Mitra (2013) suggests that E-Commerce has initiated a revolution that is altering the way businesses conduct the buying and selling of products and services. New methodologies have emerged, diminishing the role of geographical distances in forming business relationships. E-Commerce is poised to be the future of shopping, especially with the deployment of advanced wireless communication technologies like 3G and 4G. It is predicted that India will have 30 to 70 million internet users in the next 3 to 5 years, potentially surpassing many developed countries.

3.2.3 Nisha Chanana and Sangeeta Goele (2012)

Nisha Chanana and Sangeeta Goele (2012) propose that predicting the future of E-Commerce is challenging. Several segments are anticipated to grow, including Travel and Tourism, electronic appliances, hardware products, and apparel. Several key factors will significantly contribute to the growth of the E-Commerce industry in India, such as replacement guarantees, M-Commerce services, location-based services, multiple payment options, the availability of the right content, shipment choices, legal requirements for generating invoices for online transactions, quick service, clear and realistic terms and conditions, maintaining product quality as displayed on the portal, and the presence of a dedicated 24/7 customer care center.

3.2.4 Blasio (2008)

In a study by Blasio (2008), there was no substantial support for the argument that the Internet diminishes the role of geographical distance. Internet usage is notably more frequent among urban consumers than non-urban ones. The size of the city where a household resides does not significantly affect the use of e-commerce. Geographically remote consumers may refrain from online purchases due to their inability to inspect products beforehand. However, e-commerce is more frequently utilized in isolated areas for leisure activities and cultural items like books, CDs, and tickets for museums and theaters. E-banking does not exhibit a significant relationship with city size.

3.2.5 Chou and Chou (2000)

Chou and Chou (2000) reveal that the rapid growth of electronic commerce has led banks worldwide to recognize the vast potential of internet banking. To provide efficient services, banks must develop and implement a robust internet system. Several technological considerations, including network technologies, platforms, standards, scalability, security, and intelligent software agents, must be addressed before adapting to a specific internet environment. The banking industry needs to carefully select appropriate networking technologies to serve the global business community effectively.

4. CONCLUSIONS

In conclusion, the landscape of e-commerce in India has witnessed significant growth, with diverse segments experiencing remarkable expansion. The rapid proliferation of digital commerce can be attributed to the widespread adoption of smartphones, notably in payment processing. While the future of e-commerce in India appears promising, the prediction of specific growth areas and the industry's evolution remain complex.

Notably, the role of geographical distances in e-commerce interactions varies, with certain goods and services, such as leisure activities and cultural items, seeing higher utilization in isolated areas. The banking industry recognizes the vast potential of internet banking in the context of global business communities, necessitating the development of robust internet systems. As the internet economy continues to grow with advanced wireless technologies, India is poised to become a significant player with a burgeoning number of internet users.

ACKNOWLEDGEMENT

We would like to express our sincere appreciation and gratitude to all those who have supported and contributed to the completion of this survey paper on "E-commerce systems." We extend our heartfelt thanks to our academic guide for their invaluable guidance, feedback, and mentorship throughout the research process. Their expertise and encouragement have been instrumental in shaping the content and direction of this survey.

REFERENCES

1. https://medium.com/@nicholaspcarlone/the-power-of-advocacy-and-lobbying-shaping-policies-empowering-voices-strengthening-communities-f4acf2caeff0
2. https://www.mayple.com/blog/history-of-ecommerce#:~:text=company%20before%20Amazon%3F-,Online%20shopping%20was%20invented%20by%20entrepreneur%20Michael%20Aldrich%20in%20the,across%20Europe%20to%20B2B%20businesses.
3. https://translatebyhumans.com/blog/history-and-evolution-of-ecommerce/
4. Emeka Joshua Chukwuemeka, Samson Oluwaseun Fadiya, Odeh Acheme Okolobia - CONCEPT OF E-COMMERCE: SYSTEMS ANALYSIS AND DESIGN FOR ONLINE-STORES
5. S. A. Bhat, K. Kansana, J.M. Khan - A REVIEW PAPER ON E-COMMERCE