

# Opportunity and Challenges in UX Design for E-Commerce Website

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**Abstract** – The study of this research focuses on a review approach based on the information collected on the opportunities and challenges in user experience (UX) design for e-commerce websites. The foundation of the study is based on the global expansion of e-commerce which demonstrated the people's acceptance of e-commerce. Recognizing where there is room for improvements in the UX design is therefore critical. Overcoming the challenges is also important to create the best UX design that answers the user's need for an e-commerce website. Understanding what users need through the user experience may determine the success of the companies' e-commerce website, as UX and e-commerce reviews have a very strong correlation. Understanding the main reason that brings customers to make their purchases in an online market is important. Experiencing a good user experience may lead to customer satisfaction and loyalty, which motivates them to return and make more purchases, as well as to recommend the website to other customers. Companies should make sufficient investments in UX noting that a successful e-commerce website highly depends on a positive UX. Examining earlier well-known research studies of UX design for e-commerce websites is the aim of this study, which will serve as a basis for further extensive research into this topic. Using the review approach, the study determined and evaluated the opportunities and challenges of UX design to improve user satisfaction to increase sales on e-commerce websites. Improving the user experience and user satisfaction will lead the customer to be more motivated in making orders and purchases. Having awareness on the website's aspects that could have a negative impact to customers may improve the companies' business process. Hence, research to improve the e-commerce website is key to providing users with a better online purchasing experience. The practical

implication of this research is expected to serve as a guide for the development of e-commerce strategies. The findings are expected to enhance the efficacy of the e-commerce website as well as user satisfaction.

**Keywords:** User Experience (UX) Design; e-Commerce; Website; User Satisfaction

## I. INTRODUCTION

Internet users have been increasing and growing exponentially throughout the last 20 years. Companies may gain an advantage from this by expanding their business to trade online. Electronic commerce or trade online for business is a creative approach to conducting business and an alternative approach to increase the number of sales.

E-commerce is more efficient and cost-effective where vendors benefit by expanding their client base and distributor profit from finding new suppliers and lowering the price of their products (Davidavičienė et al., 2020). The digital economy in e-commerce is more than just a conventional method of buying and selling where building relationships between partners and clients is also considered important (Mangia & Quaresma, n.d.).

As a response to the digital economy, an e-commerce website as an online marketplace platform needs to be developed so that it can optimize sales, understand what the user needs, and most importantly convert visitors to customers, aiming to increase revenue. In addition, it should also be able to retain users. This can be achieved by tailoring the user's product recommendations by utilizing the user's browsing and record of previous purchases (Davidavičienė

et al., 2020).

UX is vital to the success of an e-commerce website and therefore is important to the success company. The e-commerce website design can serve as the company's digital marketing. Therefore good UX is a key enabler and helpful for e-commerce businesses in building relationships with their customers.

In improving user productivity, UX is built to effectively allow users to interact with the system, including the ideas and feelings that users have about the interaction through the online customer journey. Many UX elements are integrated into search engine optimization strategies, which include photo compression, the simplicity of user navigation, system responsiveness, and speed.

Identifying the opportunities and challenges of the UX design to optimize the e-commerce website is the focus of this research. Understanding more about usability and how it can be applied to online customer journeys to improve the UX will also be discussed.

Customer journeys are important in enabling users to navigate the e-commerce website easily. It will enable users to effectively complete their tasks, and reach their objectives, and it can also assist users in making decisions. Therefore, it is important to plan the customer journey.

The objective of this research is to improve the UX on e-commerce websites by identifying and focusing on the opportunities and challenges impacting the UX. The following research questions were prepared to reach the objective:

- What are the opportunity findings of good UX design for e-commerce websites to support their business objectives?
- What are the challenges in applying good UX design to e-commerce websites?

Both theoretical and empirical research methods will be used to address the above research question.

## II. METHODS

Several factors need to be considered for the success of e-commerce. E-commerce has several business models such as business-to-business (B2B), business-to-consumer (B2C), consumer-to-consumer (C2C), business-to-government (B2G), etc. It is therefore necessary to identify the opportunities and challenges so that the e-commerce website can be developed and designed to meet the needs of its target customers.

A review methodology has been applied to this research to determine the opportunities and challenges of applying a good UX design for e-commerce websites. Comprehensive research was conducted to examine earlier studies on e-commerce websites and UX design which included secondary sources of data (research papers/articles from journals, marketing books, trend-predicting publications, etc). E-commerce as a marketplace platform

that has conducted transformation by applying the key elements of the UX design process also has been evaluated.

To reach the objective of this research purpose, the following activities were conducted:

- Reviewed key literature and earlier journals to identify the opportunities and challenges that are essential to the development and design of an e-commerce website.
- Reviewed the advantages and disadvantages of applying UX design to an e-commerce website.
- Evaluated the key elements that influence the UX design of an e-commerce website.

Multi-criteria decision analysis and literature analysis as the research approaches were conducted to achieve the above objective with several stages carried out:

- *Phase 1:* Identify the opportunities and challenges
- *Phase 2:* Suggested strategies for maximizing the benefits of integrating UX design into e-commerce websites and resolving issues that arise throughout this process.
- *Phase 3:* Evaluate that these suggestions for UX design are important for e-commerce websites.

UX design for e-commerce websites should use a customer-oriented approach. This research adopted a qualitative technique combined with a design-based approach to attain deeper understanding of the users' needs and affective processes.

The findings of this research are expected to assist developers and companies in applying the best UX design to improve the effectiveness of their business processes

## III. RESULTS AND DISCUSSION

E-commerce plays an important role in fulfilling the demands of the business exchange process and simplifying the purchasing process via online market platforms. In comparison with conventional business processes, e-commerce provides many options and advantages, yet it is cost-effective. Many companies advantage of e-commerce as it allows them to leverage their sales of products and services to wider customers across the globe (Davidavičienė et al., 2020b). On top of that, e-commerce also enables companies to extend their customer base and enable customers to make purchases depending on their needs (Chettri & Page, 2022).

Online strategies and resources that enable diverse data regarding the purchasing process have boosted the growth of e-commerce, especially since e-commerce can be used by all types of customers with adverse knowledge of technology usage (Santos et al., 2022). Throughout the last few years, there have been significant changes in the consumption patterns of customers with increased levels of interaction.

Online customers gain benefits from having access to the newest technology. They have many options to

select different products just through different e-commerce websites that they visit. They are the core of the purchasing process. Product reviews available in e-commerce platforms are now becoming increasingly important as user feedback can be obtained from here. Customers who shop online tend to read other consumers' reviews.

### 3.1 Opportunities and challenges of e-commerce

To achieve the goal of this research, firstly it is important to understand the idea of e-commerce. Various definitions are available for the term "e-commerce" based on the observations conducted through the literature review.

**Table I.** Comparison of definition of the term "e-commerce"

Source	Definition
(Koyani, n.d.)	Purchasing and selling of products and services over the Internet, as well as the exchange of money and information.
(Rosário, 2021)	Business transactions that are carried out via the Internet.
(Beyari, 2021)	Automation of computing and communication technologies in business transactions.
(Asbari, 2023)	Digital commercial exchanges between companies and individuals.
(Attar et al., 2022)	Purchase and sale of products and services using the Internet.

Regarding the above definition of e-commerce, transactions that are conducted online and offline are rather similar, only differentiating most on the technology and usage of the internet.

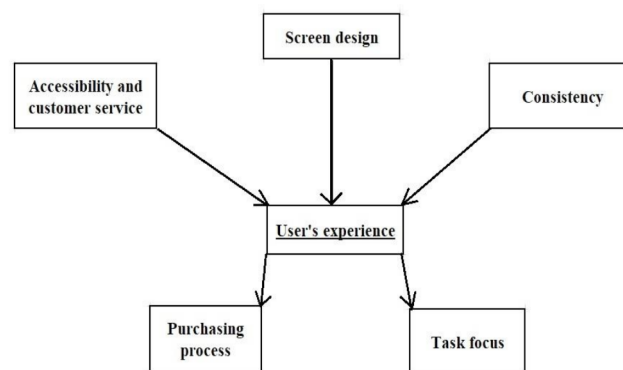
Transactions that are happening offline are still required to influence decision-making authority, however, companies must also put into consideration using the most recent marketing techniques with the usage of e-commerce (Santos et al., 2022).

### 3.2 Opportunities

The usability of e-commerce may become challenging when human-computer interaction and user-experience are involved. Several factors need to be considered, such as slow response time, poorly designed graphics, invisible features, and links that are not well connected to the web. These are among other several issues that can lead to customer patience before deciding to make a purchase and can also cause them to leave the website before the purchase is completed.

While one of the important factors in accelerating business processes is to have effective e-commerce, earlier research showed that effective usability testing is both time-consuming and expensive, which is why it is often neglected during the development of e-commerce websites (Travis, D., 2002).

Figure one below shows the different important elements that impacts users' perceptions during their online interaction:



**Figure 1.** Elements that influence an online shopper's experience (Tarafdar and Zhang, 2007)

The key elements that influence users' perception ensure that there are specific design criteria and features in the website that are considered vital in influencing the performance of the website (Tarafdar and Zhang, 2007).

Applications or software that have interaction with their end-users, including websites, must be usable and easy to use. UX determines whether the product is usable or not (Panda et al, 2015). A software or application is considered usable when its users can complete their tasks.

UX is important to keep users using and or returning to the website. The following elements influence an e-commerce's success:

- The quality of the product or service
- The method used to present customers
- The layout of the e-commerce platform

As customers engage directly with the platform, they are directly impacted by the design that they use, and this leads them to either make or not make the conversion. The purchases being made using e-commerce as the marketplace platform are highly influenced by design factors. Samples of design factors include responsive feedback and easy navigation. Good website design will attract new customers and leave a good impression on the existing ones, as they can only assess the product based on what they see on the screen.

When the customer journey is optimized, this can make users work more productively, make better decisions, and complete their objectives. Customer UX satisfaction is impacted by the user's enjoyment and task performance leading them to make the purchase. Therefore, when designing an e-commerce website, the goals should include increasing sales revenues and improving customer satisfaction (Ritonummi & Niininen, 2021).

### 3.3 Challenges

through e-commerce businesses could reach consumers, however, challenges also persist. Websites that are efficiently accessible using different types of devices should also be considered if the companies want to reach wider customers. Earlier research studies showed that for business to maintain their competitiveness, they have to offer users different experiences on their websites (Djamasbi et al., 2014).

Companies should also examine the web and sales data to better understand the financial impact of the website usability. To understand the changes in customer behavior, companies can compare the website traffic and transaction volume before and after the e-commerce site was optimized (Djamasbi et al., 2014).

UX and website usability are strongly related. For e-commerce websites to be successful, their user interface (UI) must be easy to use including the process of drawing users' attention to e-commerce websites, usability, and speed. Earlier studies show that almost all user interfaces for e-commerce websites struggle to provide accountability (Zhao et al., 2007, Davidaviciene et al., 2019).

A valuable user experience enables a business owner to understand which online customer journeys are most important to the success of their company. Since customer satisfaction is the primary driver of success for e-commerce websites, having the most effective design is essential. Learning from and interacting with users is the best approach to having direct access to understand what the user needs.

Requirement uncertainty is also considered a website design challenge. Understanding the difference between design elements and features to improve UX has been more challenging since mobile devices dominated e-commerce. Although responsive themes have been around for a while, most of the traffic to an ordinary e-commerce website comes from mobile devices. Building a responsive website will be challenging and requires expert of UX developers.

E-commerce has also been impacted by the COVID-19 epidemic where consumption patterns have changed significantly. Consumer behavior has changed from a passive state to a participatory state and has begun to voice opinions and feelings because of new technical advancements and the expansion of the internet (Santos et al., 2022).

Additionally, a consumer's simple opinion or comment today has a relevance never seen before because it can reach other consumers. Consumers read other consumers' comments and share their experiences. Online shoppers are now far more demanding than traditional shoppers and are at the core of the decision-making process when making a purchase (Santos et al., 2022).

The challenge facing UI/UX designers today is coming up with innovative ways to constantly make the development of digital material more user-engaged.

In terms of online shopping sites, perceived irritation refers to how disorganized and annoying they seem to the users (Hasan, 2016). Websites need to provide relevant, up-to-date, and easily accessible information since customers seem to prefer purchasing on sites with easy-to-use navigation and a visual layout that makes activities easier to accomplish.

Irritation can lead to both immediate actions (like giving up on the shopping cart) and long-term consequences, a customer's attitude, level of satisfaction, the likelihood of returning, and purchasing behavior are all impacted by

perceived irritation (Hasan, 2016). It is better to start with good UX and customer experience than to risk irritating or frustrating consumers of the website (Lemon & Verhoef, 2016).

The easiest ways to navigate and interact with an e-commerce website are through visual design, navigation, and information design. Websites with poor design have a higher chance of irritating their users. The terms aesthetics, attractiveness, and consistency in design are referred to as visual design. The perceived usefulness, acceptance, ease of use, and enjoyment of online purchasing are all impacted by these design features, which also have an impact on customer behavior (Hasan, 2016).

E-commerce plays a significant role in customer relations and marketing strategy. Cart abandonment is the most common topic in non-buyer behavior. It is the act of starting a website shopping session, adding products to your basket, but not finishing the purchase, and then leaving the website. Cart abandonment is frequently caused by website technical issues and unsuccessful payment processes, (Paytrail\_Finnish\_E-Commerce\_2018, n.d.) Therefore, rather than focusing largely on acquiring new customers, marketing and design efforts should be directed toward current online consumers.

### 3.4 Customer journey

To better understand the customers and companies interaction, customer journey mapping is used. During the customer journey, interactions occurred between the brand and the customer at various phases (Lemon & Verhoef, 2016). Like user experience, customer journeys need to consider emotions to identify problems and overcome the solutions. Based on different patterns of user behavior, customer journeys can be divided into categories: consumers rely more on past experiences, referrals, or product trials as their primary information sources so that they can spend less time researching (Wolny & Charoensuksai, 2014).

Customer journey analysis aims to gain insight. An e-commerce website's customer experience is important since companies are losing control over the consumer journey (Beyari, 2021; Sdreatech, n.d.) Good customer experience, is therefore crucial to supporting the purchase choice (Wolny & Charoensuksai, 2014).

Providing consumers with information to help them make decisions is the main goal of an e-commerce website, therefore selecting the right facts to provide is very important (Ariely, 2000).

Researchers have different views on how websites can be further improved through user satisfaction and information richness, especially for experienced users, or whether simple websites are the most successful. Customers can look for information because of the control over the flow of information (Ariely, 2000).

Customers who can customize their information flow to their preferences are more assured of the choices they make. Users have control over the information flow that allows them to decide what information to display or present. The effort that the user needs to manage the flow of

information will decrease as a user consistently performs an activity that gives the user greater control over the flow of information (Ariely, 2000).

Customers are more confident in their choices when they have more influence over their surroundings. Consumers typically start with a smaller set of options since they tend to be more conscious of their preferences. This reduces the total amount of time needed to decide. Navigation is a key feature of e-commerce websites (Koyani, n.d.).

In the context of e-commerce, website quality can predict client satisfaction. User experience and usability are closely related to customer satisfaction. A user may find fun and flow on a website for a little time, but they may also become nervous or bored if they spend a lot of time on it. The user experience and quality of websites can be enhanced in a variety of ways (Ritonummi & Niininen, 2021).

The user journey should be considered while designing a website to support the user experience and the customer's expectations. Improved consumer trust and loyalty can be leveraged by good UX.

#### IV. CONCLUSION

Websites for e-commerce make it easier for customers to perform transactions. Developing a website that attracts and retains customer is important. The success of an e-commerce website is determined by its ability to attract customers, entice them to stay on the page, finish the payment process, and complete a transaction. It will also depend on how well the website draws users in and encourages them to explore it again.

A good e-commerce website should be able to keep its users coming back. Creating an interface that draws consumers in and offers the best experience as compared to a competitor's website is one of the main strategies to grab their attention. Providing a seamless and enjoyable purchasing experience for customers can be achieved through optimizing the e-commerce website.

Customers may purchase more easily and conveniently even when they're on the go when a website is optimized for mobile devices. A website that loads more quickly not only enhances the user experience but also raises its search engine rankings, which makes it simpler for prospective buyers to locate. Additionally, making navigation improvements to the website can encourage visitors to stay longer. Above all, make sure that clients can easily complete the payment procedure.

A positive UX increases user satisfaction and loyalty, while a negative UX can result in frustration.

UX has become an increasingly important component of product development. Improving the UX on e-commerce websites contributes positively to key performance measures. UX design is not only essential for creating strong connections with customers but also a profit toward long-term financial success.

E-commerce websites must sustain their strong user engagement by planning thoroughly their customer journey mapping. The recommendations from the opportunities and challenges of applying UX design are expected to provide contribute to better e-commerce websites and beyond, future work could benefit from this research

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