

The Role of UX/UI Design in Improving E-Commerce Performance

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Introduction

The project's goal is to make it easier for people to use the website by making it more usable, accessible, mobile-friendly, and easy to look for products and navigate. It will also make the checkout process easier overall.

Leadership for each project component will be assigned according to the nature of the problem, the direction of the research, the proposed solutions, collaboration skills, planning ability, testing responsibilities, budget considerations, risk awareness, community impact, and the required next steps.

The project will show the prototype, describe the technical method, and make it clear which features should be implemented first.



Problem Identification and Proposal

Online shoppers sometimes struggle to:

It can be hard to find the right product and complete a purchase on a mobile phone or desktop, especially for customers with accessibility needs. This is because they may find it hard to understand product information, find their way around the online store, fill out long or confusing checkout forms, read small or low-contrast text, and fix mistakes, all of which can cause frustration, mistakes, and abandoned purchases [1] [2].

Problem statement

Many e-commerce interfaces do not provide a simple, accessible and mobile-friendly shopping experience. This project will investigate how improved UX/UI design can help users find products and complete simulated purchases more easily [1].

Research question

How can UX/UI design improve the usability, accessibility and performance of an e-commerce shopping experience? [4].



Research and User Requirements

Initial research findings

Academic literature, interviews, and behavioural studies, along with quantitative surveys that measure customer happiness and repeat purchase behaviour, all show that website design, usability, and trust have a big impact on customer satisfaction and loyalty. Quantitative testing is used in mobile-first usability studies to show that responsive layouts and easier navigation are needed for smaller screens. WCAG's advice on accessibility is based on research that is driven by standards. Recent study in the industry, which used both analytics and user feedback, shows that unclear error messages and complicated checkout processes are two of the main reasons why people abandon their shopping carts [3].

Target users

The target users include university students and people with disability who buy on mobile devices, customers with low technical experience, those with visual, motor, or cognitive accessibility needs, and customers who want to find economical products quickly and effortlessly [5].

User needs

Users need easy-to-understand product groups and navigation, descriptions and prices that are easy to read, search and filtering tools that work well, and quick and easy ways to add items to their basket and check out. Also, the online store needs error messages that are clear and colours, text, and buttons that are easy for everyone to see [1].

Proposed Solution and Scope

Proposed solution

The group will create a prototype of the BuyShop e-commerce website, an accessible online-shop prototype with a clear homepage and navigation menu, product categories, search and filter tools, detailed product pages, a shopping basket, a short and easy checkout process, clear error and confirmation messages, and controls for people with disabilities [1].

MoSCoW Requirement

Must Have	Should Have	Could Have	Will not
➤ Homepage and product catalogue. ➤ Clear navigation and search. ➤ Product information. ➤ Shopping basket. ➤ Simulated checkout. ➤ Mobile-friendly and accessible design.	➤ Product filters. ➤ Guest checkout. ➤ Helpful error messages. ➤ Order-confirmation screen.	➤ Smart natural-language search. ➤ Dark mode. ➤ Wishlist. ➤ Product recommendations.	➤ Real payments. ➤ A live product database. ➤ User-account integration. ➤ A functioning AI system.

Prototype, Testing and Project Plan

Prototype development

The prototype will be created as mobile and desktop interface screens in **Inkscape**. The screens will be exported as images and placed in PowerPoint. Hyperlinks between slides can simulate buttons and navigation [6].

Planned prototype screens

The planned prototype will include a homepage, product catalogue, search and filtering page, product details page, shopping basket, checkout page, error-message screen and order-confirmation screen [6] [1].

Testing method

Participants will be asked to find a product costing less than a specified amount, add it to the shopping basket, change the quantity and complete a simulated purchase. After completing these tasks, they will describe any parts of the prototype that they found confusing or difficult to use.

We will record task completion, errors, completion time and user feedback. The interface will then be improved and tested again [3].

Week	Planned Activity
Week 1	Topic & identify the Problem
Week 2	Conduct academic & research
Week 3	Develop requirements & sketches
Week 4	Deliver Progress Presentation 1
Week 5 & 6	Create the Inkscape prototype
Week 7	Test, evaluate and present development progress

Name	Roles	Responsibility
Guilherme	Project Manager	Coordinates Meetings, deadlines and tasks
Danu	Research lead	Finds and evaluates academic
Oyebamiji	UI/UX Designer	Produces Sketches and Inkscape screen.
Eden	Testing Lead	Plans user testing and record results



Conclusion

BuyShop is going to look into how UX/UI design can make shopping online better. The project will focus on making the site easier to use, accessible, mobile-friendly, and easy to navigate.

The suggested prototype can be made because it will be designed in Inkscape and shown on the browser. The next steps are to make the first wireframes and do a basic usage test.

A decorative graphic on the left side of the slide consists of a cluster of hexagons in various shades of blue, orange, and white, arranged in a honeycomb-like pattern.

References

[1] **H. Singh and R. Patel**, “Evaluating UX/UI Factors Influencing Customer Loyalty in Modern E-Commerce Platforms,” vol. 14, pp. 11245-11260, 2026.

[2] **S. R. Ahmed and P. Kowalski**, “Checkout Usability Challenges in E-Commerce: A Mixed-Methods Analysis of Error Messages and Form Design,” *Engineering Management*, vol. 73, no. 2, pp. 210-225, 2026.

[3] **J. Martins and E. Silva**, “Trust, Interface Clarity, and Purchase Intent: A Behavioural UX Study of Online Shoppers,” vol. 14, pp. 15001-15015, 2026.

[4] **A. Ibrahim and K. O'Donnell**, “Assessing Web Accessibility Compliance with WCAG 2.2 Across Retail Websites,” vol. 14, pp. 9850-9865, 2026.

[5] **L. Chen, M. Torres, and S. Gupta**, “Mobile-First Interaction Patterns: A Quantitative Study of User Behaviour on Small-Screen Interfaces,” *Human-Machine Systems*, vol. 56, no. 1, pp. 33-47, 2026.

[6] **C. Mensah and D. Wright**, “User-Centred Design Approaches for Inclusive Digital Retail Experiences,” *Professional Communication*, vol. 69, no. 1, pp. 55-70, 2026.