

DEVELOPING AN E-COMMERCE WEBSITE TO PROMOTE LOCAL BUSINESS USING HTML, CSS, JAVASCRIPT, PHP

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Abstract

In today's digital age, shopping has become convenient and easy for people due to the rise of e-commerce. However, because of the dominance of the popular global e-commerce giants it has become difficult for local businesses to promote and sell their products effectively in the digital world. The proposed e-commerce shopping website will serve as a local online marketplace, which can help promote and sell the diverse range of products and services offered by local businesses so customers are encouraged to buy from the local businesses, and the economy of the local community is boosted which is the main goal of this e-commerce website.

Keywords - E-Commerce Website Development, Promoting Local Business, Boosting Local Economy, Internet, Web Technologies.

1. INTRODUCTION

The internet has been the biggest advancement in technology in the digital age. The Internet has been used in various fields such as communication, research, learning, and also shopping. E-commerce (Electronic Commerce) has made the shopping experience less time-consuming and more comfortable for both the seller and the customers.

Various e-commerce giants are occupying the global market and this is harming the local markets as they are not able to stand in the digital world and are becoming dependent on these global e-commerce giants to promote and sell their products.

The primary profit of these e-commerce companies is product sales, advertisements, and commission fees. The commission fees can vary based on various companies. On average a commission fee of 10% - 15% is taken from the seller as a service charge to market and sell their products, so it has become difficult for the sellers to bear these charges.

Another negative impact of global e-commerce companies is on the environment as the products are shipped or transported from all over the world and there can be a large distance to be traveled to deliver the products or services to the customer which would burn a huge quantity of fuel and thus resulting in releasing of harmful gases into the atmosphere, maintenance of warehouses to store products which would also emit harmful gases as waste products thus these factors are contributing to air pollution and causing a reduction in the air

quality globally, which can harm the environment negatively and hence speed up the process of global warming.

Especially, the carbon dioxide emission is far greater when the product or service needs to be delivered as fast as possible. The facility to deliver products or services in a short amount of time is being provided by numerous global e-commerce companies to boost their profit and provide a comfortable experience to the sellers and customers by transporting the products and services in a short amount of time but the carbon dioxide emitted by the transportation used to deliver the product or service in a short amount of time is far greater compared to in-person shopping or online shopping with a normal amount of time for delivery of products or services.

Here is a base case scenario of the year 2030 where the emission of carbon dioxide in the top 100 cities all over the world was noted and is represented in the graphical format showing that it is estimated that the carbon dioxide emission from the transportation used by the e-commerce companies during the year 2019 was 19 million tons and it is estimated that this can increase to 23 million tons by the year 2030. This information was taken from the article “Online Shopping and Its Environmental Impact” written by Martina Igini and published on the website www.Earth.org.

The solution to these issues can be made by developing an e-commerce website that promotes local businesses so that the customers are encouraged to buy the products and services which are available locally such that the transportation distance to deliver the products or services to the customers is reduced and the issues such as pollution and traffic congestion caused due to the vehicles can be resolved and the carbon emission can be also reduced.

While countering these issues various advantages are provided by the e-commerce website that promotes local businesses such as boosting the economy of the local community, providing more employment opportunities, spreading awareness about the local businesses, and creating a sense of community. These are the reasons for the necessity of developing an e-commerce website to promote local businesses as they play an important role in boosting the economy.

2. LITERATURE SURVEY

In their research paper, Amandeep et al. [1] suggested that various factors need to be considered while designing a system for the e-commerce website that is implemented in India. There are various challenges of e-commerce in India such as connectivity, fraud, fake products, and missing products.

Dr. Rajeshwari. R.R. et al [2] in their research papers reveal the importance of e-commerce and its impact on the Indian economy. They suggest that the current e-commerce is driving entrepreneurship and encouraging businesses of all sizes to compete. This sustained growth and activity leads to more online experience for all customers.

Elham Mohammed Thabit AbdAlameer et al [3] in their research papers have provided the technical details to securely host an e-commerce website and also the requirements to develop and maintain a functional e-commerce website.

Shruti Kalaskar et al [4] in their research papers have described the web technologies that are required for the development of e-commerce websites such as front-end technologies such as HTML, CSS, and Javascript are suggested to be used to create the structure, layout, and interactivity of the e-commerce website. And to build the back-end logic and functionality of the e-commerce website appropriate server-side technologies such as PHP, Python, Ruby, Java, or Node.js are recommended.

Tran Nham et al [5] in their research papers have provided details about various types of e-commerce such as Business to Business, Business to Consumer, Consumer to Company, and Consumer to Consumer, also there are more variations such as G2C, G2B, etc., although they are less common than these four.

Roxana Maria Badircea et al [6] in their research papers have provided useful statistics and analytical methods to prove that there is a clear influence of education level, consumer's residence, consumer's labor market status, internet banking, mobile and non-mobile users on the development of e-commerce.

Lulu Cai et al [7] in their research papers have given some useful insights into the B2B2C model which is a new network communication sales method. It originates from the evolution and improvement of the current B2B and B2C models. The e-commerce enterprises build their own logistics supply chain system through the B2B2C model and provide a unified service.

Thao Huynh et al [8] in their research papers describe the various features the e-commerce website can offer such as enabling users to do several actions like seeing the list of products with thumbnails and full-sized images, sorting the list in an ascending or descending order, filtering the products by size, adding preferred items to cart or removing them.

Jenny Grannas et al [9] in their research papers describe the factors that need to be considered for the graphical design of the e-commerce website such as, the layout should harmonize with the content of the website, the color should harmonize with the content of the website, the layout should be consistent throughout the website, the colors should be consistent throughout the website, consider using web safe colors, the width of the website should be smaller than the browser window, use common fonts, do not mix more than three fonts, make sure there is contrast between text and background, and do not use small font sizes.

3. PROBLEM STATEMENT

Due to the rise of e-commerce in today's digital age, shopping has become very easy and convenient. A handful of e-commerce giants dominate the e-commerce market. These

popular e-commerce companies deliver products globally.

This is causing a lot of consequences such as damaging the sales of local businesses which will also negatively affect the local economy there is also an increase in carbon footprint due to the transportation used to deliver products globally so such problems can be countered by developing an e-commerce website that promotes local businesses where the sellers or retailers from the local marketplace can enter the digital market or e-commerce to promote and sell their products and customers can browse through a diverse range of products and services which are provided by local businesses and various search and filter options are also provided to the customer to discover nearby businesses and buy products of their preferences.

By promoting local businesses through this e-commerce shopping website, several significant impacts can be expected such as creating employment opportunities, and customers becoming aware of the various types of local businesses, it will help reduce the carbon footprint caused by long-distance shipping and help support local production. The development of an e-commerce shopping website to promote local business can change the way communities engage with their local economies. By the power of technology and creating a sense of community, this e-commerce website can act as a platform for local businesses and customers to interact, help in economic growth, and empower local businesses to succeed in the digital era.

4. EXISTING SYSTEMS

People use existing e-commerce websites to shop online from the global marketplace places there are many such e-commerce websites or companies that provide delivery all over the world and it also gives some advantages to the users like one-day delivery, discounts, coupon codes, etc. People are also attracted to such advantages but when it comes to delivering products around the globe can have some negative impacts as well such as increased carbon footprint, negatively impacting the local economy as most people are shopping and buying products from the global marketplace, as a result the local businesses struggling to survive in the digital age. Some websites or companies promote local businesses but are not popular among the people; they offer limited functionalities don't have a user-friendly interface design and mostly provide sellers information and their products but the customers cannot directly purchase from the website. In conclusion, these existing websites have limited functionalities and services that are provided to their users.

5. PROPOSED SYSTEM

The proposed e-commerce website is aimed to counter the issues that exist in the existing systems such as poor user interface, limited functionalities, dominance of global e-commerce giants, increased carbon footprint, local businesses struggling in the digital age, etc. The proposed e-commerce can help counter these issues by promoting local businesses, developing a user-friendly interface, and adding more functionalities. This can have several advantages such as there would be reduced carbon footprint as the products or services are delivered locally (i.e. the distance is shorter to deliver the products or services), the local economy will be boosted and there would be new employment opportunities, this can change

the way people interact with their local communities.

6. REQUIREMENTS

6.1 Software Requirements

Server

Minimum

- Windows 7, Windows Server 2008 R2 or equivalent Operating System
- Apache: 2.4.x, MySQL: 5.7.x, PHP: 7.2.x

Recommended

- Windows 10, Windows Server 2019 or equivalent Operating System
- Latest stable versions of Apache: 2.4.x, MySQL: 8.0.x, PHP 8.0.x

Client

Minimum

- Windows 7 or equivalent Operating System
- Modern web browsers

Recommended

- Windows 10 or equivalent Operating System
- Latest versions of modern web browsers

6.2 Hardware Requirements

Server

Minimum

- 1-2 vCPUs
- 1-2 GB RAM
- 10-20 GB Storage
- Basic plan with limited bandwidth

Recommended

- 2-4 vCPUs (or more for high traffic)
- 4-8 GB RAM, 50-100 GB SSD Storage (or more, depending on the website size and backups)
- Higher Bandwidth or unmetered bandwidth

Client

Minimum

- Basic modern CPU (e.g., Intel Core i3 or equivalent)
- 2-4 GB RAM
- 1-5 Mbps internet connection speed

Recommended

- Modern multi-core CPU (e.g., Intel Core i5 or equivalent)
- 8GB or more RAM
- 25 Mbps or faster internet connection speed

6.3 Development Requirements

6.3.1 Front End:

- a. HTML
- b. CSS

c. Javascript

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 [1].

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 [1].

JavaScript: Javascript is a client-side rendering standalone programming language that can be used in the backend as well as the front end. The main purpose of JavaScript in the front end 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 the front end [1].

6.3.2 Back End:

a. PHP

b. MySQL

PHP: PHP is a general-purpose scripting language geared towards web development. PHP code is usually processed on a web server by a PHP interpreter implemented as a module, a daemon, or a Common Gateway Interface (CGI) executable.

Database: When we consider mammoth e-commerce websites, data can be huge, and every data like items list, customer info, delivery address, etc. needs to be stored in a database. A database is a place where information on all the things associated with e-commerce is stored. Everything is stored in the form of a table or key-value pair [1].

SQL Databases: SQL-type databases are those databases in which data is stored in the form of a table [1].

WAMP Server: WAMP (Windows, Apache, MySQL, and PHP) is a popular software stack used for web development on Windows operating systems. It is an integrated platform that includes Apache as the web server, MySQL for database management, and PHP for server-side scripting.

The combination of these components allows developers to create dynamic web applications locally before deploying them to a live server. WAMP simplifies the development process by providing an easy-to-install package that handles all the necessary configurations for running a web server, managing databases, and executing PHP scripts.

7. MODULES

After careful analysis, the system has been structured into the following modules:

- **Administration**
- **User**

Admin Module

The Admin module enables the system administrator to manage the back-end operations and perform essential configurations. This includes defining predefined passwords, establishing time schedules, and more. A key component of the admin setup is user management, which allows the administrator to create user accounts with customizable access levels and roles, including access to one or multiple branches.

Additionally, the admin can configure overall system security settings, such as required password strength, session timeout for inactivity, account lockout policies for inactive accounts, and options for password resets. This module ensures that the system is secure and efficiently managed.

1. **User Management:** Administrators can create and manage user accounts with specific roles and access levels. This includes granting access to different branches or features based on user needs.
2. **Security Configuration:** Admins can set system security settings such as:
 - a. **Password Strength Requirements:** Define the complexity needed for user passwords.
 - b. **Password Reset Options:** Provide methods for users to reset their passwords securely.

User Module

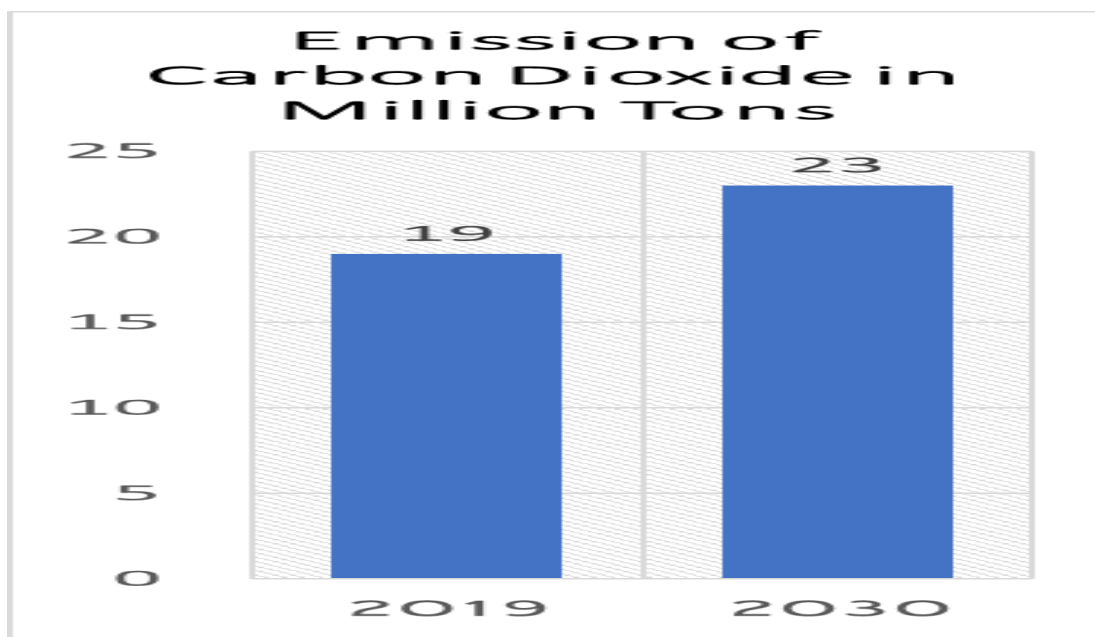
The User module provides users with access to the system's functionalities. The administrator assigns password details to each user, allowing them to log in and utilize the system. By entering their password, users can gain access to the features and resources available, enabling them to interact with the platform effectively. This module is designed to be user-friendly, ensuring a seamless experience for all users.

1. **User Authentication:** This covers the processes related to user access:
 - a. **Registration:** Allows new users to create accounts.
 - b. **Login:** Provides access for existing users to log in using their assigned passwords.
 - c. **Profile Management:** Users can update their personal information and passwords.
2. **Product Catalog:** Users can browse products and get details:
 - a. **Product Details:** Includes descriptions, prices, images, and specifications for each product.
 - b. **Category Management:** Products are organized into categories for easier navigation.
3. **Shopping Cart:** Users can manage items they wish to purchase:
 - a. **Add to Cart:** Users can select products to add to their shopping cart.

- b. **Update Cart:** Allows users to change quantities or remove items.
- c. **Cart Summary:** Displays a summary of items and the total cost in the cart.
- 4. **Search and Filter:** Enables users to find products easily:
 - a. **Filters:** Users can filter products by categories, price, etc.
 - b. **Sort Options:** Provides various sorting options for better product organization.
- 5. **Wishlist:** Users can save products for later consideration:
 - a. **Add to Wishlist:** Allows users to save products for future reference.
 - b. **View Wishlist:** Users can view and manage their saved items.
 - c. **Move to Cart:** Users can transfer items from the wishlist to the shopping cart for purchase.

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

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



8. SCREENSHOTS

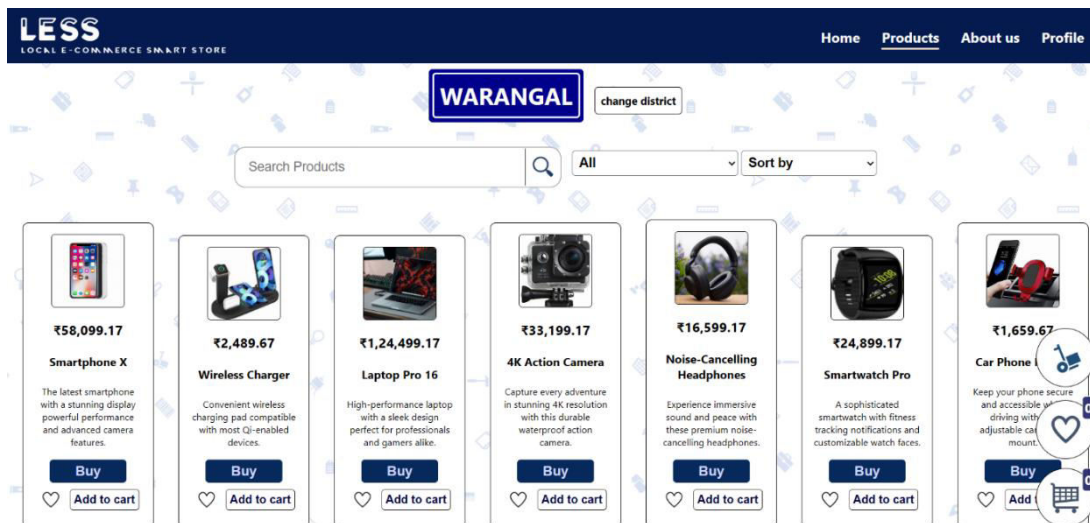
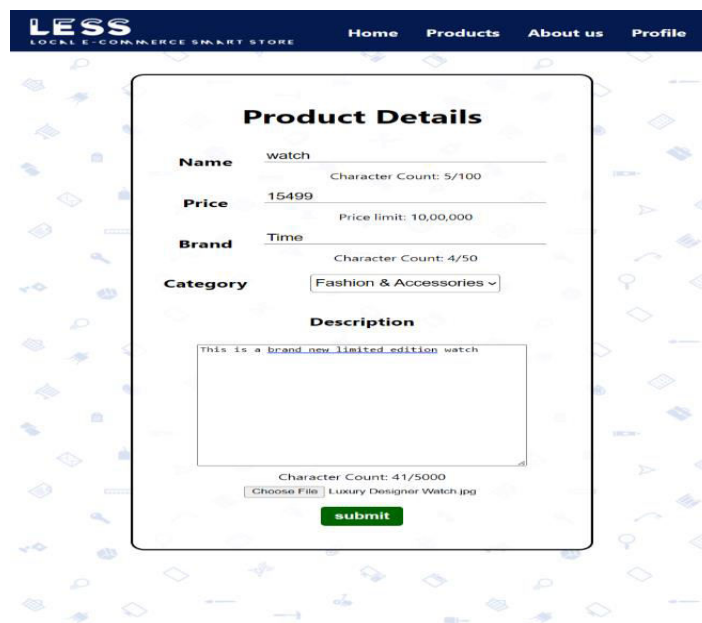


Fig: Browse products page (Desktop View)



Product submission page i.e. Sell products (Desktop View)

9. CONCLUSION

By promoting local businesses through this e-commerce shopping website, several significant impacts can be expected such as creating employment opportunities, and customers becoming aware of the various types of local businesses, it will help reduce the carbon footprint caused by long-distance shipping and help support local production. Developing an e-commerce shopping website to promote local business can change how communities engage with their

local economies. By using technology and creating a sense of community, this e-commerce website can act as a platform for local businesses and customers to interact, help in economic growth, and empower local businesses to succeed in the digital era.

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AUTHORS



I am the Syed Ishtiyahq Ahmed, currently pursuing a Bachelor's degree in Computer Science Engineering at Balaji Institute of Technology and Science. My research in Web Technologies and Business was focused on the project "Developing an E-Commerce Website to Promote Local Business Using HTML, CSS, JavaScript, and PHP." As the Web Developer, I was responsible for overseeing the design and development of the website, ensuring it was functional, user-friendly, and optimized.



I am Penta Mukesh, a third-year Computer Science Engineering student at Balaji Institute of Technology and Science. In my role as Quality Assurance, I ensured the website's performance, security, and usability by conducting thorough testing and identifying and fixing bugs to maintain a seamless user experience.



I am K. Rithish, currently in my third year of the Bachelor's degree program in Computer Science Engineering at Balaji Institute of Technology and Science. As the Data Analyst, I focused on gathering and analyzing user data to understand behavior and improve the website's functionality, driving better results for local businesses through informed decision-making.



I am U. Shiva Sharan, a third-year student pursuing a Bachelor's degree in Computer Science Engineering at Balaji Institute of Technology and Science. As the Graphic Designer, I was responsible for the visual design of the website, ensuring an attractive and engaging interface that aligned with the goals of promoting local businesses.