



E-Commerce Website for Artisans

Raghavendra P¹, Sahana H S², Prasad M D³, Srinidhi Kulkarni⁴, G V Bhavana⁵

¹Department of Computer Science and Engineering, Jyothy Institute of Technology, Bengaluru, India, raghavprasanna515@gmail.com

²Department of Computer Science and Engineering, Jyothy Institute of Technology, Bengaluru, India, sahanasuresh245@gmail.com

³Department of Computer Science and Engineering, Jyothy Institute of Technology, Bengaluru, India, prasaddhonagadi124@gmail.com

⁴Department of Computer Science and Engineering, Jyothy Institute of Technology, Bengaluru, India, srinidhi.kulkarni@gmail.com

⁵Department of Computer Science and Engineering, Jyothy Institute of Technology, Bengaluru, India, gvbhavana2001@gmail.com

ABSTRACT—

We are developing an E-commerce platform for Indian handicraft artisans to sell their products online and promote the industry globally. The platform will provide demand forecasting, sentiment analysis, and recommendations to help artisans grow their businesses. This will help them maximize their profits and reach a wider audience, while eliminating the need for a middle-man. The platform will have a user-friendly front-end and a backend for data processing and storage.

Keywords—*Handicrafts, Artisans, E-commerce, Demand forecasting, Sentiment Analysis, Recommendation action, Artificial Intelligence and Machine Learning*

Introduction

The e-commerce industry in India has not yet fully embraced the handicrafts sector, which is the second largest employer in the country. This presents an opportunity to create a digital platform for handicraft sellers and artisans to promote and sell their products. With the recent focus on "Make in India" products, this platform could be particularly beneficial for local artisans. Additionally, by allowing individual artisans to apply directly to sell their products on the platform, they can directly receive financial benefits. This project aims to provide a way for sellers to register and sell their products online to a wide audience.

Indian artisans are instrumental in promoting regional art and craftsmanship in domestic markets. Their handmade products, such as pottery, baskets, jewelry, wooden handicrafts, and textiles, showcase the skills and traditions of the country. These handicrafts are an important part of India's non-agricultural rural economy and employ a significant portion of the country's manufacturing workforce, estimated at 15-20%. These artisans are responsible for maintaining and sharing the cultural heritage of India through their craftsmanship and dedication to preserving traditional techniques.

The online store for handicrafts is a digital platform that has been specifically designed to support and empower local artisans. By providing them with a way to showcase their skills and sell their crafts online, the platform aims to help these artisans reach a wider audience and increase their profits.

To use the platform, artisans can simply register and create a profile where they can share details about their crafts, including pictures and descriptions. This allows customers to browse and discover a wide range of handmade products.

In addition to supporting individual artisans, the online store also provides a space for small-scale manufacturers to sell their handmade products. This allows customers to browse and purchase products directly from the creators, rather than having to go through a middleman.

Overall, the goal of the online store for handicrafts is to create a direct and convenient way for artisans and small-scale manufacturers to sell their crafts, while also providing customers with access to a wide range of unique and beautifully crafted products.

The E-commerce for handicrafts is a project that has been developed with the aim of supporting and empowering local artisans. These artisans often rely on middlemen to handle the sales and distribution of their crafts, but this can result in a significant portion of their profits being taken as a commission.

The digital platform provided by the online store allows artisans to bypass this middleman and sell their products directly to customers. This gives them the opportunity to showcase their talents and skills to a wider audience, while also retaining a greater share of the profits from their sales. In addition to providing a space for individual artisans to sell their crafts, the online store also supports small-scale manufacturers who create handmade products. By providing a direct connection between these creators and their customers, the online store helps to ensure that these artisans and manufacturers are able to earn a fair and reasonable profit for their products.

Overall, the main goal of this project is to provide artisans with the tools and resources they need to succeed in the modern world. By giving them a platform to showcase their skills and sell their crafts directly to customers, the online store aims to empower these artisans and help them achieve the recognition and financial success they deserve.

II. USE OF AI/ML IN THIS PROJECT

This e-commerce website utilizes AI and machine learning to enhance the customer experience and provide innovative solutions. AI can be used to analyze customer data and make informed business decisions, as well as accurately predict customer needs and preferences. By leveraging the power of AI, the website aims to deliver an optimized and personalized experience for its users.

Implementing artificial intelligence in an e-commerce business can bring two types of benefits. The first type is the functionality provided by AI itself, such as the added convenience of an AI-powered voice search feature for customers. The second type of benefit is increased productivity, which can be achieved through the use of AI to automate certain tasks and processes. Overall, integrating AI into an e-commerce business model can lead to improved customer experience and increased efficiency.

Few AI/ML features used are:

- Demand Forecasting - Accurately predicting the demand for a product is a key challenge for e-commerce companies. This can be done effectively using machine learning techniques by analyzing historical data that includes various attributes of the product such as category, brand, price, launch date, and past demand. By analyzing this data, it is possible to make more accurate predictions about future demand for the product.
- Price Forecasting - Traditionally, product pricing has been determined using methods such as considering competition and setting a maximum retail price (MRP). However, using machine learning to analyse historical price and purchase data has proven to be more effective in price forecasting. Machine learning teams are now heavily involved in this process, using advanced techniques to make more accurate predictions about the appropriate price for a product.
- Product Recommendations - Recommendation generation involves finding ways to suggest products to users based on their interests and past behavior. One common approach is to identify similar users and recommend products that they have purchased or expressed interest in. Recommendations can take various forms, such as suggesting products that are frequently purchased together or recommending products to a specific user based on their past behavior. This process is also known as collaborative filtering or user-product matrix completion.
- Search Result Ranking - Search Result Ranking - A search engine's ability to predict what a user is looking for depends on its ranking algorithm, which can learn from user behaviour such as which results are clicked on for a particular keyword. The algorithm can also use word embeddings to understand similarities between terms and improve the accuracy of search results.
- Voice Search - This feature allows users to search for products using only their voice, without having to type anything. This is possible through artificial intelligence speech recognition.
- Conversational Chatbots - An AI-powered virtual assistant can be used to improve the customer experience by interacting with them at various stages of their journey. This can help to enhance the overall user experience.

III. Literature Survey

A Preliminary Study on Popularizing Indian Handicrafts Using Internet Technology – A Bengal Specific Study

[1] A conceptual model has been designed to bridge the gap between producers and customers in India, particularly in West Bengal, with the goal of creating value for both handicraft producers and consumers. The model is based on identified parameters and aims to improve the relationship between producers and customers in the region.

1. An intelligent system that will match the proper group of suppliers with the appropriate artisans based on the techniques and raw materials used to produce the particular crafts.
2. A system has been proposed that will promote relevant products to customers based on their usage patterns, purchasing history, and browsing history. This system will function similar to the recommendation tools used on established e-commerce sites, and will aim to increase customer engagement and sales by presenting personalized product recommendations.
3. Both craftsmen and suppliers will have access to customer feedback and suggestions about the offered arts and crafts. Suppliers can use this feedback to understand customer needs and provide raw materials to the artisans. The feedback from suppliers to artisans will facilitate better communication and understanding between the two groups.

EPICRAFT – WEBSITE FOR ARTISANS

[2] Implementing a business-to-consumer (B2C) ecommerce model can help the handloom and handicraft industry to grow and generate revenue more quickly. Ecommerce can be developed through both business-to-business (B2B) and B2C methods, and helps customers to meet their needs. The Epicraft community consists of entrepreneurs who sell their products on the platform, customers who are interested in purchasing Indian traditional and cultural art and goods, and employees who maintain and support the platform. Epicraft helps these individuals and businesses to grow by providing a platform for them to sell their products and creativity.

Filtering relevant products from irrelevant ones becomes challenging when the number of products being considered exceeds a certain manageable amount. Reviewing these products can also be time-consuming. At present, all of these processes are done manually and records are kept on paper, which can be difficult to maintain and check. As a result, processing results can be slow due to the need for paperwork and additional staff.

E-COMMERCE AND RURAL HANDICRAFT ARTISANS

[3] This analysis explains the concept of rural artisans and rural handicrafts, highlight the role of e-commerce in the development of these artisans, and illustrate the efforts of various government and non-government agencies, groups, and individuals in improving the socio-economic status of rural artisans through e-commerce. Additionally, this analysis aims to assess the strengths, weaknesses, opportunities, and threats/challenges faced or anticipated by rural handicraft artisans in adopting e-commerce.

Limited proficiency of producer groupings in e-commerce. inadequate equipment and infrastructure. insufficient knowledge of new designs, current trends and fashions, innovation, and technology advancement. a rather fragmented market. unique, unstructured production processes. absence of robust sector umbrella organisations, groups, or clusters. Low investment capacity and limited funding for craftspeople. inadequate market data on export potential, trends, and prices. Limited resources for manufacturing, distribution, and marketing as well as restricted access to credit

E-Commerce Website For Handloom

[4] An online shopping website for handicrafts is a platform that allows consumers to purchase handmade goods directly from sellers over the internet. Unlike many other e-commerce websites that focus on electronic gadgets, clothes, footwear, furniture, and home appliances, this type of website specifically caters to handmade products. It provides a direct connection between buyers and artisans, enabling customers to easily find and purchase a wide variety of handmade products from a single location. This type of website is beneficial for both buyers and artisans as it allows for easy access to handmade products and provides a profitable sales channel for artisans. This online store provides a direct link between consumers of handlooms and craftsmen. Handicrafts, which have their roots in rural areas, can be used by a variety of users such as weavers, retailers, and exporters.

E-Commerce for Rural Micro-Entrepreneurs: Mapping Restrictions, Ecologies of use and trends for Development

[5] This research paper examines the challenges that rural micro-entrepreneurs in India face in using e-commerce to access wider markets. It focuses on the adoption of e-commerce as a sustainable marketplace by micro-entrepreneurs from lower socio-economic rural communities in India, a rapidly growing digital economy in the Global South. The research aims to understand how technology and trade impact micro-entrepreneurs in rural areas and to provide recommendations for building e-commerce as a sustainable marketplace for these individuals. The study is timely and relevant given recent economic policy changes and the expansion of mobile infrastructure and user base in rural regions of India. By analyzing the infrastructure and assessing the information needs and challenges of users, the research will identify gaps that hinder sustainable economic development and information asymmetries that prevent rural micro-entrepreneurs from selling online.

Inspiring Digitalization of Handicraft Market: An empirical approach

[6] There have been numerous research studies that have shown that the market for handloom and handicraft products is on the decline. This decrease in demand can be attributed, in part, to a lack of sales promotions and advertising for these products. As a result, many customers are simply not aware of the existence of these goods, which further contributes to the decline in market demand. One way to address this issue is to utilize online channels to promote and advertise these products, which can increase customer awareness and potentially boost sales. By increasing the visibility of these products through online marketing efforts, it may be possible to reverse the trend of declining demand and revitalize the market for handloom and handicraft goods.

Handicraft and handloom products are experiencing a lack of sales promotions and advertising, which has led to poor customer awareness across a wide area. As a result, the market for these products in West Bengal is declining, primarily due to a lack of sales promotions, advertising, and customer awareness.

Online Handicrafts Store

[7] Individual artists' talented creations can easily be made available to those in need with the correct strategy. The common theme of capitalism, or the potential for small profits, was evident when looking at the numerous existing platforms. On the website, sellers can sign up and offer information about their various products. After authenticity has been verified, their products will be easily accessible on the web.

Role of E-Commerce in Promoting Handicrafts of Odisha

[8] There are several challenges facing the handicrafts sector, including inadequate infrastructure, logistical issues, and lack of network connectivity. Many state governments do not prioritize this sector in their planning. There is also a lack of proper systems in place for identifying, documenting, and mapping crafts, and increasing competition from factory-made products and foreign competitors.

Consumers are becoming more sophisticated and have higher expectations, and there is a lack of institutional support and poor implementation of government programs to encourage e-commerce activities among rural artisans. Globalization of the art industry has not benefited artisans, and there is also a threat of exploitation by cyber intermediaries.

Systematic Literature Review the Role of E-Commerce in Reog Ponorogo Art Crafters

[9] In Indonesia, e-commerce has had a significant impact on society as a means of fulfilling needs. It has had a positive effect on the economic sector, particularly for craftsmen in the Reog Ponorogo region. E-commerce can promote the products of small and medium-sized enterprises (SMEs) in this region and increase their productivity. Information technology products can also be used to improve the management of small businesses and empower them.

IV. Proposed Methodology

Our primary focus is to assist local artisans in growing their businesses and increasing their profits through the use of our e-commerce website. We understand the importance of providing these artisans with a platform to showcase and sell their handmade crafts to a wider audience, and we hope to make it as easy as possible for them to do so through the incorporation of advanced technologies such as artificial intelligence and machine learning. With features such as chatbots, product recommendations, and voice search, we aim to make our website user-friendly and easily accessible to all. By supporting these artisans and helping them reach more customers online, we hope to contribute to the development and success of the artisan community in India.

This project will be developed with the objective to reduce the gap between the producers and customers across India. It will be having AI/ML features. AI/ML will be implemented in the application.

A. Demand Forecasting

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D. Conversational Chatbots

An AI-powered virtual assistant can be used to improve the customer experience by interacting with them at various stages of their journey. This can help to enhance the overall user experience.

There are several ways that chatbots may be included into e-commerce

- Chatbots can be employed to respond to commonly asked inquiries and guide site visitors around the website.
- They may be trained to customise their replies depending on the reader's preferences and past interactions, giving the user a more tailored experience.
- They may be used to quickly respond to specific inquiries, such as where to find a specific blog post or whether a product is currently available.

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