AI Enabled App For Artisans To Facilitate Market Linkage

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Abstract- *This project aims to develop an innovative mobile application empowered by artificial intelligence (AI) to enhance market linkage for artisans. Artisans play a crucial role in preserving cultural heritage and creating unique handcrafted products, yet they often face challenges in reaching wider markets. The proposed AI-enabled app seeks to bridge this gap by leveraging cutting-edge technologies to connect artisans with potential customers and create a more efficient and inclusive marketplace. Moreover, the application will include a feedback system to ensure the quality of products and services. By employing natural language processing (NLP) and sentiment analysis algorithms, the application identifies key sentiments, preferences, and trends expressed in user comments related to artisan products. This valuable information is then utilized to optimize product listings, improve marketing strategies, and tailor offerings to meet customer expectations. To facilitate market linkage, the app will integrate features such as secure payment gateways, order tracking, and a user-friendly interface. Through this platform, artisans can showcase their skills and products to a global audience, leading to increased visibility and economic opportunities. The app will also enable direct communication between artisans and buyers, fostering a sense of community and transparency in transactions.*

Keywords- Artificial Intelligence, Natural Language Processing, Artisan, Market linkage, App, Handicrafts, Small-scale production, E-commerce, Digital platform, Supply chain, Market access

I. INTRODUCTION

In recent years, the integration of artificial intelligence (AI) technologies into various industries has revolutionized traditional methods of market linkage and business operations. In particular, the artisan sector, comprising small-scale producers of handicrafts and unique products, has witnessed significant transformations with the advent of AI-enabled applications. These applications serve as invaluable tools for artisans, facilitating market linkage by providing access to digital platforms and e-commerce channels. This method explores the role of AI in empowering artisans and enhancing their market connectivity, ultimately contributing to the sustainability and growth of the artisan sector. After exploring AI's impact on market linkage for artisans, an analysis of key challenges and opportunities inherent in this paradigm shift is to be undertaken. Issues such as access to technology, digital literacy, ethical considerations, and the potential for inclusive growth are to be scrutinized. Additionally, best practices and innovative approaches that harness AI to empower artisans and promote sustainable development are to be highlighted. By synthesizing empirical evidence and expert opinions, actionable insights are to be provided for stakeholders seeking to navigate the intersection of AI and artisanal economies effectively.

II. EXISTING SYSTEM

Online product shopping platforms have revolutionized the way consumers purchase goods, offering convenience and accessibility at a click. These platforms provide a vast array of products, allowing users to browse and buy from the comfort of their homes. The benefits include time- savings, competitive pricing, and a wider selection than traditional brick-and-mortar stores. Key aspects include the convenience of browsing, ordering, and delivery, which have reshaped traditional shopping experiences. Additionally, these platforms facilitate comparison shopping, enabling consumers to make informed decisions based on price, reviews, and product specifications. However, challenges persist, such as cyber security risks, data privacy concerns, and the impact on brick-and-mortar stores. One key issue is the inability to physically inspect products before purchase, leading to dissatisfaction upon delivery. Moreover, reliance on digital transactions raises concerns over data security and privacy. Delayed delivery times and the environmental impact of packaging and shipping are other significant concerns. Additionally, online platforms may lack personalized customer service compared to in-store experiences.

DISADVANTAGES

- It is challenging to get detailed information or recommendations about products.

- It may offer limited customer support.
- Limited products are shown in this application.

III. PROPOSED SYSTEM

The proposed AI-enabled app for artisans aims to revolutionize market linkages by leveraging cutting-edge technology. This platform will have three key user roles: administrators, artisans, and users. Administrators will oversee the app's operations, manage artisan profiles, and ensure a seamless user experience. They'll have access to analytical tools for tracking market trends and user preferences. Artisans will create personalized profiles showcasing their craft, including images and descriptions. The app will use sentiment analysis to gather user feedback on artisan products, helping them tailor offerings to market demands. Users will browse artisan profiles, discover unique products, and provide reviews through sentiment analysis. Based on this feedback, the app will generate personalized recommendations, improving the overall user experience. Sentiment analysis will play a pivotal role in the app's functionality. By analyzing user reviews and sentiments, the app will offer tailored product suggestions to users and constructive feedback to artisans, enhancing market engagement. The app's goal is to foster a vibrant artisanal marketplace, bridging the gap between creators and consumers through AI-driven insights.

ADVANTAGES

- Enhances the user experience and increases the likelihood of sales.
- AI can automate the process of analyzing reviews and generating recommendations, saving time and effort for artisans.
- AI-driven recommendations based on sentiment analysis can improve customer engagement.
- It helps artisans understand what products are in demand and what features are appreciated by users.

SYSTEM DESIGN

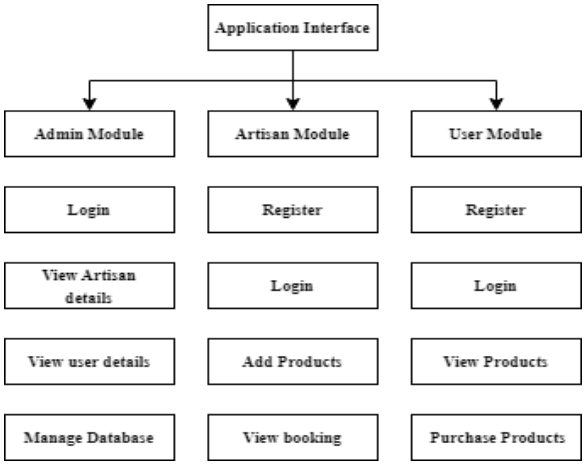

Fig. 1 System Design Diagram

Systems design is the process of defining elements of a system, like modules, architecture, components, and their interfaces and data, based on the specified requirements. Systems design interfaces and data for an electronic control system to satisfy specified requirements. System design could be seen as the application of system theory to product development. There is some overlap between the disciplines of system analysis, system architecture, and system engineering.

MODULES

Admin Module:

- Login
- View Artisans
- View User details
- Manage Database

Artisan Module:

- Register
- Login
- Add Products
- View Bookings

User Module:

- Register
- Login
- View products
- Purchase Products

IV. MODULES DESCRIPTION

Admin Module:

Login:

Fig. 2 Admin Login

The login feature provides secure access for authorized administrators to the app's backend system. Through a secure authentication process, administrators can log in using unique credentials, ensuring data integrity and privacy.

View Artisans:

Within the admin module, administrators can access a comprehensive list of registered artisans. This feature enables administrators to review and manage artisan profiles, ensuring that the platform showcases a diverse range of skilled individuals.

View User Details:

Another crucial functionality is the ability to view user details. Admins can access user profiles and understand their preferences, buying behavior, and interactions within the platform. This insight aids in tailoring market strategies and improving user engagement.

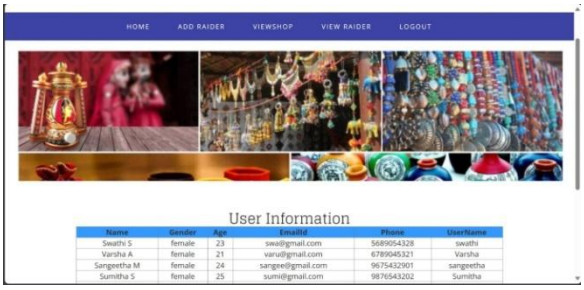

Fig. 3 User Information

Manage Database:

The admin module allows for efficient database management. Administrators can add, modify, or remove data related to artisans, users, products, and reviews. This capability ensures that the platform's database remains updated and organized, supporting seamless operations.

Artisan Module:

Register:

Fig. 4 New Owner Registration

The first step for artisans engaging with our platform is the seamless registration process. Through a straightforward interface, artisans can sign up by providing essential details such as personal information, craft specialization, and contact details. This registration not only enables access to the app but also initiates the process of building a robust artisan profile within our ecosystem.

Login:

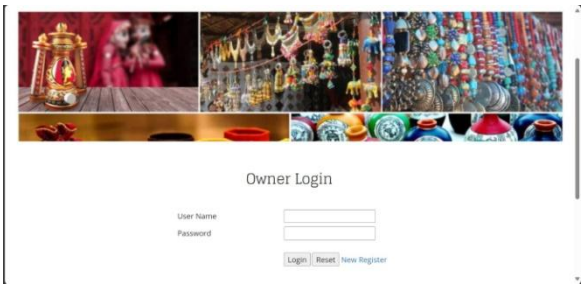

Fig. 5 Owner Login

Upon successful registration, artisans gain secure access to the platform through a personalized login mechanism. This feature ensures data privacy and provides a tailored experience for each artisan. By logging in, artisans can manage their profile, update product listings, and track bookings effortlessly.

Add Products:

Empowering artisans to showcase their craftsmanship is at the core of our platform. The 'Add Products' feature allows artisans to upload detailed listings of their creations. From handcrafted jewelry to artisanal textiles, artisans can upload images, descriptions, and pricing information. Leveraging AI capabilities, the platform offers guidance on optimizing product listings to enhance visibility and attractiveness to potential buyers.

View Bookings:

Tracking bookings and managing orders is simplified through the 'View Bookings' feature. Artisans can access a

comprehensive overview of current and past orders, enabling efficient order management and logistics planning. Additionally, the sentiment analysis-driven recommendations highlight popular products and customer preferences, empowering artisans to make informed decisions to optimize their offerings.

USer module:

Register:

The registration process within the app is designed to be seamless and user-friendly. New users can effortlessly create their accounts by providing essential details such as their name, email address, and password. This step ensures a personalized experience tailored to the user's preferences. By registering, users unlock the full potential of the app, gaining access to a curated marketplace of artisanal goods.

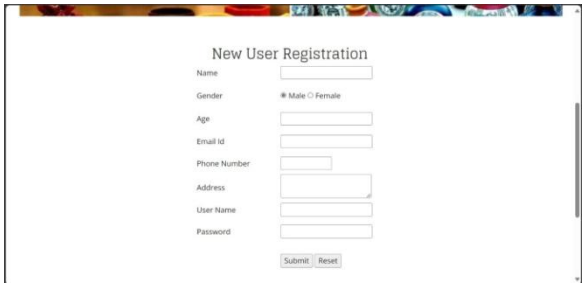

Fig. 6 New User Registration

Login:

Fig. 7 User Login

Upon successful registration, users can log in securely using their credentials. The login mechanism is fortified with robust security measures to safeguard user data and transactions. Once logged in, users can enjoy a personalized interface where they can explore recommended products based on their preferences and previous interactions.

View Products:

Fig. 8 View Products

The app offers users a visually appealing and intuitive interface to browse through a diverse array of artisanal products. From handmade crafts to traditional artworks, users can explore detailed product listings accompanied by high-quality images and informative descriptions. The product categories are thoughtfully organized, enabling users to easily navigate and discover items that resonate with their tastes.

Purchase Products:

The purchasing process is streamlined to provide users with a hassle-free shopping experience. Upon selecting desired items, users can proceed to secure checkout, where they have multiple payment options available. The app ensures transparency and reliability throughout the transaction, with real-time updates on order status and delivery. Additionally, users can benefit from review-based recommendations powered by sentiment analysis, enhancing their shopping journey.

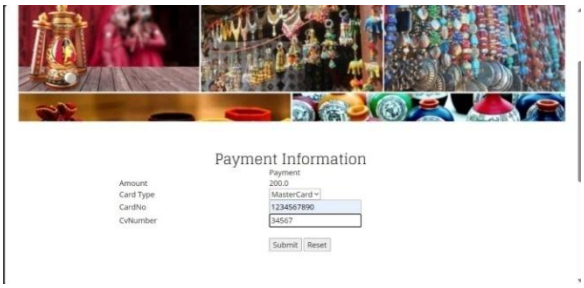

Fig. 9 Purchase Products

V. CONCLUSION

The development and implementation of an AI-enabled app for artisans to facilitate market linkages through review-based recommendations using sentiment analysis hold immense promise for empowering artisans and enhancing user experiences. This innovative technology not only streamlines access to markets but also fosters trust and engagement among stakeholders. Firstly, the utilization of sentiment analysis allows for personalized and targeted recommendations based on user preferences and artisan quality. By harnessing the

power of AI, the app can sift through vast amounts of data to provide tailored suggestions that resonate with users' sentiments, thereby increasing the likelihood of successful transactions and repeat business. Secondly, the app serves as a pivotal tool for artisans, enabling them to gain visibility and recognition in competitive markets. Through positive reviews and sentiment-driven recommendations, artisans can build credibility and expand their customer base, leading to sustainable livelihoods and economic growth. Furthermore, from an administrative perspective, this AI-driven approach offers valuable insights into market trends and user behaviors, facilitating informed decision-making and strategic interventions to support artisans and enhance overall user satisfaction.

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