

# **VCOM: Empowering Rural Artisans Through an Intuitive and Inclusive Mobile Application**

## **Abstract**

This research paper focuses on addressing the challenges faced by individuals in rural areas who possess crafting skills but lack effective platforms to sell their goods. Representatives from Self-Help Groups (SHGs) visit various villages to impart crafting skills to residents, and subsequently, a mobile application named "VCOM" was developed to provide a platform for individuals to sell their products online without intermediary charges. The paper also discusses the software system design, software architecture, and software technologies employed in the development of VCOM to support the registration of users and enhance user interaction. The use of Flutter, Dart, Node.js, and MySQL in VCOM's development is also highlighted.

## **Introduction**

The introduction section of the research paper addresses the challenge faced by individuals in rural areas who lack effective platforms for selling their crafted goods. The proposed solution involves the development of a mobile application named "VCOM" to facilitate the online sale of products without intermediary charges, providing insights into the product's origin and the village where it was crafted. The importance of empowering rural artisans, enhancing accessibility to markets, and promoting economic sustainability is highlighted, along with the need for user-friendly platforms tailored to the unique requirements of individuals with varying levels of education and technological experience. The introduction outlines the objectives, methodology, and key research questions, setting the stage for the comprehensive analysis and design of the VCOM platform.

## **Related works**

The problem statement revolves around the lack of platforms for individuals in rural areas to effectively sell their crafted products. The proposed solution involves imparting crafting skills to residents and the development of a mobile application called "VCOM" to enable the online sale of products without intermediary charges. The software system design focuses on creating a suitable UI and screen flow to support user registration and roles, with a linear application workflow to accommodate users unfamiliar with mobile applications, including elderly individuals. The software architecture is inspired by a client-side system and server-side component, while the chosen software technologies include Flutter, Dart, Node.js, and MySQL for a user-friendly interface tailored for ease of use by individuals with varying levels of education.

## **Software system design**

The software system design for a mobile application in rural areas focuses on creating a suitable UI and screen flow to support user registration and roles. The application workflow emphasizes linear navigation to accommodate users unfamiliar with mobile applications, particularly the elderly. Visual elements, such as universally recognizable icons, are essential for enhancing user interaction. The architecture of the mobile application includes a client-side system for the user interface and application logic, as

well as a server-side component handling client requests and interacting with the database. Flutter and Dart were chosen for visually appealing cross-platform development, while Node.js was selected for scalability and efficiency. The use of a MySQL structured database ensures data integrity and cost-effective visualizations through table-based representations.

## **System architecture**

This is a software system designed to address the challenge of individuals in rural areas lacking platforms to sell their crafted products. A mobile application named "VCOM" has been developed to enable individuals to sell their products online without intermediary charges. The application also provides insights into the product's origin and the story of the village where it was crafted, fostering a sense of connection and community engagement. The architecture of the mobile application comprises a client-side system, a server-side system, and uses Flutter, Dart, Node.js, and MySQL for its development.

## **Software implementation**

The software implementation for the rural product selling mobile application "VCOM" involves the development of a user-friendly platform for individuals in rural areas to sell their products. The primary focus is on creating a suitable user interface (UI) and screen flow to support user registration and provide a seamless experience for users with varying levels of technological familiarity. Additionally, the high-level architecture of the application comprises a client-side system managing the user interface and application logic, as well as a server-side system responsible for handling client requests and interacting with the database. The choice of software technologies includes Flutter, Dart, Node.js, and MySQL, prioritizing a user-friendly interface design tailored for ease of use by individuals with varying levels of education and technological familiarity. If there are specific aspects you would like to include in the software implementation section, please feel free to provide additional input.

## **Software technologies**

We have developed a mobile application named "VCOM," which enables individuals in rural areas to sell their handcrafted products online without intermediary charges, ensuring they receive maximum returns. Additionally, VCOM provides insights into the product's origin and the story of the village where it was crafted, fostering a sense of connection and community engagement. The system design focuses on creating a suitable UI and screen flow to support user registration and roles. The architecture comprises a client-side system and a server-side component responsible for handling client requests and interacting with the Database to manage data. The software technologies used include Flutter for cross-platform application development, Dart for frontend and backend development, Node.js for scalability and efficiency, and MySQL for data integrity and cost-effective visualizations.

## **Conclusion**

The software system design and architecture for the VCOM mobile application offer an innovative solution to the challenge of facilitating the online sale of goods in rural areas. The use of Self-Help Groups to impart crafting skills and the development of the VCOM mobile application demonstrates the potential to empower residents to sell their products online without intermediary charges. The emphasis on user-friendly UI and screen flow design, as well as the selection of suitable software technologies such as Flutter, Dart, Node.js, and MySQL, further enhances the accessibility and usability of the application. Overall, the research presents a comprehensive and practical approach to bridging the gap between rural artisans and the digital marketplace, fostering economic opportunities and community engagement. The VCOM mobile application is an effective tool for empowering rural artisans, facilitating online sales, and fostering community engagement, while also highlighting the importance of user-centric design and the selection of appropriate software technologies.