

Digital Platform to Connect Goldsmiths with Customers using AI

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<https://doi.org/10.55041/ijst.v2i3.185>

Cite this Article: KUMAR, C. V. (2026). Digital Platform to Connect Goldsmiths with Customers using AI. International Journal of Science, Strategic Management and Technology, 02(03). <https://doi.org/10.55041/ijst.v2i3.185>

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Abstract : Goldsmiths play an important role in the jewellery industry by creating unique and customized ornaments for customers. However, many skilled goldsmiths face difficulties in reaching customers directly due to the lack of digital platforms and market visibility. The development of a digital platform can help bridge the gap between goldsmiths and customers by providing a common online space for communication and transactions. This study focuses on the development of a digital platform to connect goldsmiths with customers using Artificial Intelligence (AI). The platform allows customers to explore jewellery designs, interact with goldsmiths, and place customized orders based on their preferences. Artificial Intelligence helps analyze customer behaviour, recommend suitable jewellery designs, and improve the overall user experience. By combining digital technology with AI-driven data analysis, the platform can enhance transparency, efficiency, and accessibility in the jewellery market while supporting skilled goldsmiths in expanding their business opportunities.

Keywords: Digital Platform, Goldsmith, Jewellery, Customer Interaction, Artificial Intelligence

1. INTRODUCTION

Artificial Intelligence (AI) has become an important technology in modern digital platforms by enabling intelligent decision making based on large volumes of collected data. In recent years, AI has been widely used in various industries to improve communication between businesses and customers. The jewellery industry, particularly the goldsmith sector, can greatly benefit from the integration of digital platforms and Artificial Intelligence technologies. Many skilled goldsmiths possess exceptional craftsmanship but often face difficulties in reaching customers directly due to limited digital presence and market exposure. A digital platform that connects goldsmiths with customers can help bridge this gap by creating an online environment where artisans can showcase their jewellery designs and customers can easily explore and purchase customized products. Artificial Intelligence algorithms can analyze customer preferences and browsing patterns to recommend suitable jewellery designs, improving the overall user experience. The platform also enables direct interaction between goldsmiths and customers, allowing personalized communication and customized order placements. AI technologies also

contribute to design visualization, product recommendations, and customer engagement. Through intelligent data analysis, the system can track customer interests, suggest trending jewellery styles, and help goldsmiths plan production based on demand. AI-driven recommendation systems enhance customer satisfaction by offering personalized jewellery options and improving decision-making processes.

2. SCOPE OF THE STUDY

Artificial Intelligence is transforming many industries by improving efficiency, automation, and decision-making processes. In the jewellery industry, particularly among goldsmiths, the integration of digital technology can create new opportunities for connecting artisans directly with customers. A digital platform that connects goldsmiths with customers can help skilled artisans showcase their jewellery designs, receive customized orders, and communicate directly with buyers. The proposed system uses Artificial Intelligence to analyze customer preferences and recommend suitable jewellery designs based on their interests. This platform can improve accessibility, transparency, and efficiency in the jewellery market while reducing dependence on intermediaries. By providing an online space for interaction and transactions, the platform supports goldsmiths in expanding their business opportunities and helps customers discover unique and customized jewellery products. The scope of this study focuses on developing a digital platform that integrates Artificial Intelligence to improve communication, enhance user experience, and strengthen the relationship between goldsmiths and customers in the modern digital marketplace.

TABLE I — System Development Technologies

Component	Technology Used
Frontend	Next.js / React
Backend	Flask
Database	SQLite
Styling	Tailwind CSS
API Integration	Gold Price API
Development Type	Web-Based Platform

TABLE II — Types of Users in the Platform

User Type	Role in the System
Customer	Search for goldsmith services and submit requests
Goldsmith	Register skills and provide jewellery services
Platform System	Stores data and connects customers with goldsmiths

TABLE III — Features of the Platform

Feature	Description
Goldsmith Registration	Goldsmiths can create profiles and add service details
Service Search	Customers can search for jewellery services
Service Request	Customers can submit jewellery work requests
Gold Price Display	Shows updated gold market price
Communication	Customers contact goldsmiths for service discussion

TABLE IV — Benefits of the Platform

Improvement	Description
Mobile Application	Develop Android and iOS versions
Online Booking	Customers can schedule appointments
Customer Reviews	Rating system for goldsmith services
Online Payments	Secure digital payment options

TABLE V — Future Improvements

Benefit	Description
Easy Service Discovery	Customers can quickly find goldsmiths
Digital Visibility	Goldsmiths get online exposure
Time Saving	Reduces time spent searching for services
Better Communication	Improves interaction between users

3. RESEARCH METHODOLOGY

3.1 Research Design

This study uses a descriptive and system development approach to create a digital platform that connects customers with goldsmiths in Coimbatore.

3.2 Data Collection

The study uses both primary and secondary data.

Primary Data:

Primary data were collected through discussions and interactions with local goldsmiths and jewellery customers in Coimbatore. These discussions helped us understand common issues such as difficulty in finding trusted goldsmiths, lack of online presence for goldsmiths, and dependence on personal references.

Secondary Data:

Secondary data were collected from online articles, industry reports, journals, and websites related to the jewellery industry and digital platforms. These sources helped us understand the market and the importance of digital solutions.

3.3 System Development Process

The development of the platform was carried out in the following steps:

Requirement Analysis – Understanding the needs of customers and goldsmiths.

System Design – Planning how the platform will work and designing the interface and database.

Platform Development – Building the website using web technologies.

Testing – Checking whether all features work properly.

Implementation – Making the platform ready for users. Tools and Technologies Used

The platform was developed using the following technologies:

Frontend: Next.js and React for building the user interface

Styling: Tailwind CSS for designing the layout

Backend: Flask for server-side development

Database: SQLite with SQLAlchemy

External APIs: APIs for gold price and currency rate updates

Matching System: A simple skill-based system to help customers find suitable goldsmiths

3.4 Scope of the Study

This study focuses on developing a digital platform for the goldsmith community in Coimbatore. The platform helps customers easily find skilled goldsmiths and helps goldsmiths reach more customers through an online system.

4. SOCIAL IMPACT OF PLATFORM

The developed digital platform not only helps customers find goldsmith services but also creates positive benefits for society, especially for local artisans and small businesses. The system supports traditional craftsmen and improves accessibility to jewellery services.

1. Supports Local Goldsmith Communities

The platform helps local goldsmiths promote their skills and services through a digital system. Many

goldsmiths work in small workshops and depend on local customers. By using this platform, they can reach more people and increase their work opportunities.

2. Helps Small Artisans Reach More Customers

Small-scale goldsmiths often face difficulty in advertising their services. The platform provides them with an online space where they can display their skills, experience, and services. This helps them attract new customers and grow their business.

3. Encourages Digital Adoption Among Traditional

Many traditional craftsmen are not familiar with digital technology. This platform encourages them to use digital tools and become part of the growing online service economy. It helps them adapt to modern technology while continuing their traditional craft.

4. Improves Customer Access to Skilled Services

Customers often find it difficult to locate reliable goldsmiths for jewellery repair or custom designs. The platform makes it easier for customers to search and connect with skilled goldsmiths quickly. This saves time and provides more options for customers to choose the best service.

5. RESULTS AND DISCUSSION

The developed platform was tested to understand how effectively it connects customers with goldsmiths. The results show that the system helps improve accessibility, communication, and service discovery for jewellery-related work.

5.1 Goldsmith Registration

The platform allows goldsmiths to register their details such as name, shop name, location, skills, and experience. Once the registration is completed, the information is stored in the system database. This enables goldsmiths to create an online presence and helps customers easily identify available goldsmith services in their area. The registration feature supports skilled artisans who usually rely on traditional word-of-mouth methods to find customers.

Customer Search for Goldsmith Services

Customers can search for goldsmith services based on their jewellery requirements. The platform displays goldsmiths who provide services such as jewellery repair, custom design, and ornament making. This feature allows customers to quickly identify suitable goldsmiths without spending much time searching through multiple sources.

5.2 Service Request Submission

Customers can submit service requests through the platform by entering their basic details and describing the type of jewellery work required. The system stores these

requests and helps customers connect with goldsmiths who provide the required service. This feature simplifies the process of requesting jewellery services and reduces the time required to find skilled professionals.

5.3 Gold Price Information

The platform also provides updated gold price information. Customers can view the current gold price levels for different purity categories such as 24K, 22K, and 18K gold. Providing this information helps customers stay aware of market rates and make better decisions when planning jewellery purchases or repairs.

5.4 Platform Benefits

The testing results show several advantages of the developed platform. It improves visibility for goldsmiths and provides customers with an easier way to locate skilled artisans. The system also reduces dependency on traditional methods of finding goldsmith services. Overall, the platform supports better communication between customers and goldsmiths and creates a more convenient way to access jewellery services.

6. STATEMENT OF THE PROBLEM

The jewellery industry includes many skilled goldsmiths who create unique and customized ornaments. However, many goldsmiths face

difficulties in reaching customers directly due to limited digital presence and dependence on intermediaries such as jewellery shops and dealers. This situation reduces market visibility for skilled artisans and limits opportunities for direct interaction with customers. At the same time, customers often find it difficult to identify reliable goldsmiths who can provide customized jewellery designs based on their preferences. The lack of a dedicated digital platform creates communication gaps between goldsmiths and customers and restricts the growth opportunities for artisans in the jewellery sector.

7. FUTURE ENHANCEMENTS

The developed platform provides a basic system to connect customers with goldsmiths. However, several improvements can be made in the future to enhance the functionality and user experience.

1. Mobile Application Development

In the future, the platform can be developed as a mobile application so that users can easily access the service through smartphones.

2. Online Booking System

An appointment booking feature can be added so that customers can schedule visits with goldsmiths at convenient times.

3. Customer Rating and Review System

A review and rating system can be introduced to help customers evaluate the quality of services provided by goldsmiths.

4. Online Payment Integration

Secure online payment options can be added to allow customers to make payments directly through the platform.

5. Advanced Search and Filtering

Additional search options such as location, experience level, and service type can be added to help customers find suitable goldsmiths more easily. Expansion to Other

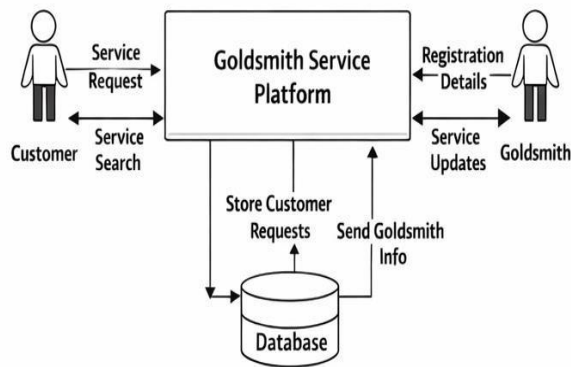
Cities

The platform can be expanded to other cities so that more goldsmiths and customers can benefit from the system.

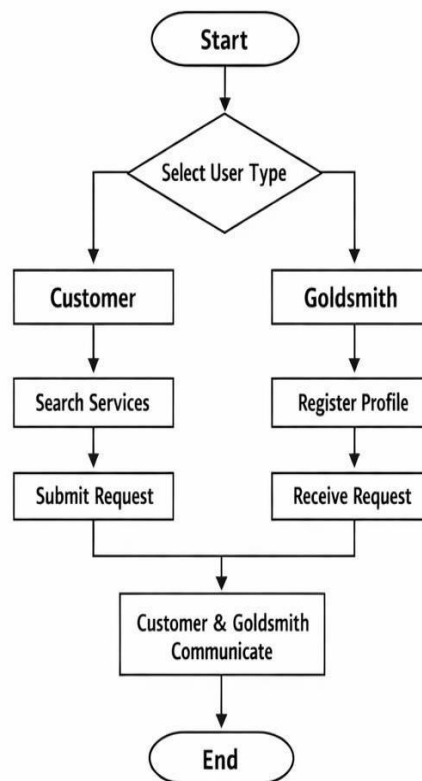
8. FLOW DIADRAMS AND CHARTS

Data Flow Diagram (DFD) of the Goldsmith Service Platform

System Flowchart of the Digital Platform Connecting Customers and Goldsmiths



A) Data Flow Diagram (DFD)



B) System Flowchart

CONCLUSION

The integration of Artificial Intelligence (AI) and digital technology in the jewellery service sector creates new opportunities to improve the interaction between customers and skilled goldsmiths. The developed digital platform helps customers easily access jewellery services, communicate with professional goldsmiths, and request customized designs through an online system. This approach improves convenience and reduces the time required to find reliable jewellery service providers.

The system also improves service efficiency by providing a structured platform where customers can explore different jewellery options, compare services, and clearly communicate their design requirements. By simplifying the service process and improving accessibility, the platform supports both customers and goldsmiths in achieving better service outcomes.

Another important advantage of the platform is that it provides digital visibility for local goldsmiths. Many skilled artisans depend mainly on traditional methods such as personal references and local networks to attract customers. Through this platform, goldsmiths can showcase their skills and reach a larger number of potential customers. The platform also contributes to better communication between customers and service providers. Customers can easily share their jewellery requirements, while goldsmiths can understand the design expectations more clearly. This helps reduce misunderstandings and improves the quality of service delivery.

In addition, the system promotes digital transformation in traditional industries. By introducing modern technology into the jewellery service sector, the platform supports the growth of local craftsmanship while adapting to modern digital practices.

Overall, the developed platform demonstrates how

modern technology can support traditional craftsmanship. By continuing to improve system usability, service transparency, and communication features, the platform can further strengthen customer trust and create a more efficient and accessible environment for jewellery service interactions.

Future improvements such as mobile application support, online booking systems, customer reviews, and secure payment options can further enhance the functionality of the platform and increase its usefulness for both customers and goldsmiths.

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