



Smart DM-Based Order Tracking And Revenue Automation System For Instagram Small Businesses

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Abstract

The growth of Instagram-based businesses has led to an increase in customer interactions through Direct Messages (DMs). However, managing orders through DMs is mostly done manually, which causes issues such as missing orders, duplication, and inaccurate revenue tracking. This paper presents a Smart DM-Based Order Tracking and Revenue Automation System that converts unstructured DM interactions into structured digital records. The system provides a centralized platform for order management, payment tracking, delivery updates, and revenue analysis. It helps sellers manage orders more efficiently and allows customers to check their order status using a unique Order ID. The proposed system improves accuracy, reduces manual work, and supports better management for small Instagram-based businesses.

Index Terms - Instagram-based business, Direct Message (DM) order management, revenue automation, customer order tracking, MERN stack (MongoDB, Express.js, React Native, Node.js), mobile application, centralized dashboard, scalable system design.

I. Introduction

Instagram has become a popular platform for small-scale businesses, where sellers interact directly with customers through Direct Messages (DMs). These businesses usually manage orders manually by noting customer details such as name, product, quantity, and payment information.

However, handling orders through DMs is not efficient because information is spread across multiple conversations. Sellers have to manually collect and store this data using spreadsheets or notebooks, which increases the chances of errors and missing orders. There is also no proper system to track revenue or monitor order progress.

To solve these issues, this project proposes a Smart DM-Based Order Tracking and Revenue Automation System. The system provides a structured and centralized platform to manage orders, track payments, and generate revenue insights more efficiently.

II. Literature Review

Social media platforms, especially Instagram, are widely used by small businesses for selling products. Most transactions are carried out through Direct Messages (DMs), which leads to unstructured data and inefficient order management.

Existing order management systems provide features such as tracking and analytics, but they are mainly designed for large businesses and are often complex and costly. This makes them unsuitable for small Instagram-based sellers.

Some studies have focused on automating business processes using web and mobile applications. However, very few systems specifically address order management through social media DMs. This shows the need for a simple and user-friendly system that can convert unstructured DM data into organized order records.

III. Existing System

Instagram-based small businesses currently manage orders manually through Direct Messages (DMs). Sellers collect customer details such as name, product, and address from chat conversations and record them using spreadsheets or notebooks. Payment confirmation and delivery tracking are also handled manually. There is no centralized system to manage all orders, which makes the process difficult and less efficient.

III-A. Disadvantages of Existing Systems

- Order details are not organized properly, leading to confusion
- There is a risk of missing or duplicate orders
- Revenue calculation is done manually and may be inaccurate
- No centralized dashboard to track orders and payments
- Sellers spend more time answering repeated customer queries
- Difficult to manage as the number of orders increases
- Lack of automation and analytics makes it hard to understand business performance

IV. Proposed System

This paper proposes a mobile-based Smart Direct Message (DM) Order Tracking and Revenue Automation System designed for small businesses operating on Instagram. The system addresses the problem of managing customer orders received through unstructured DM conversations. It converts these conversations into structured order records through manual entry and provides a centralized platform for order management, payment tracking, delivery updates, and revenue analysis.

The system is divided into key modules. The Order Tracking Module allows sellers to create and manage orders, where each order is assigned a unique Order ID. The Revenue Analytics Module calculates total

revenue, monthly income, and pending payments automatically. The Customer Tracking Module allows customers to check their order status using the Order ID.

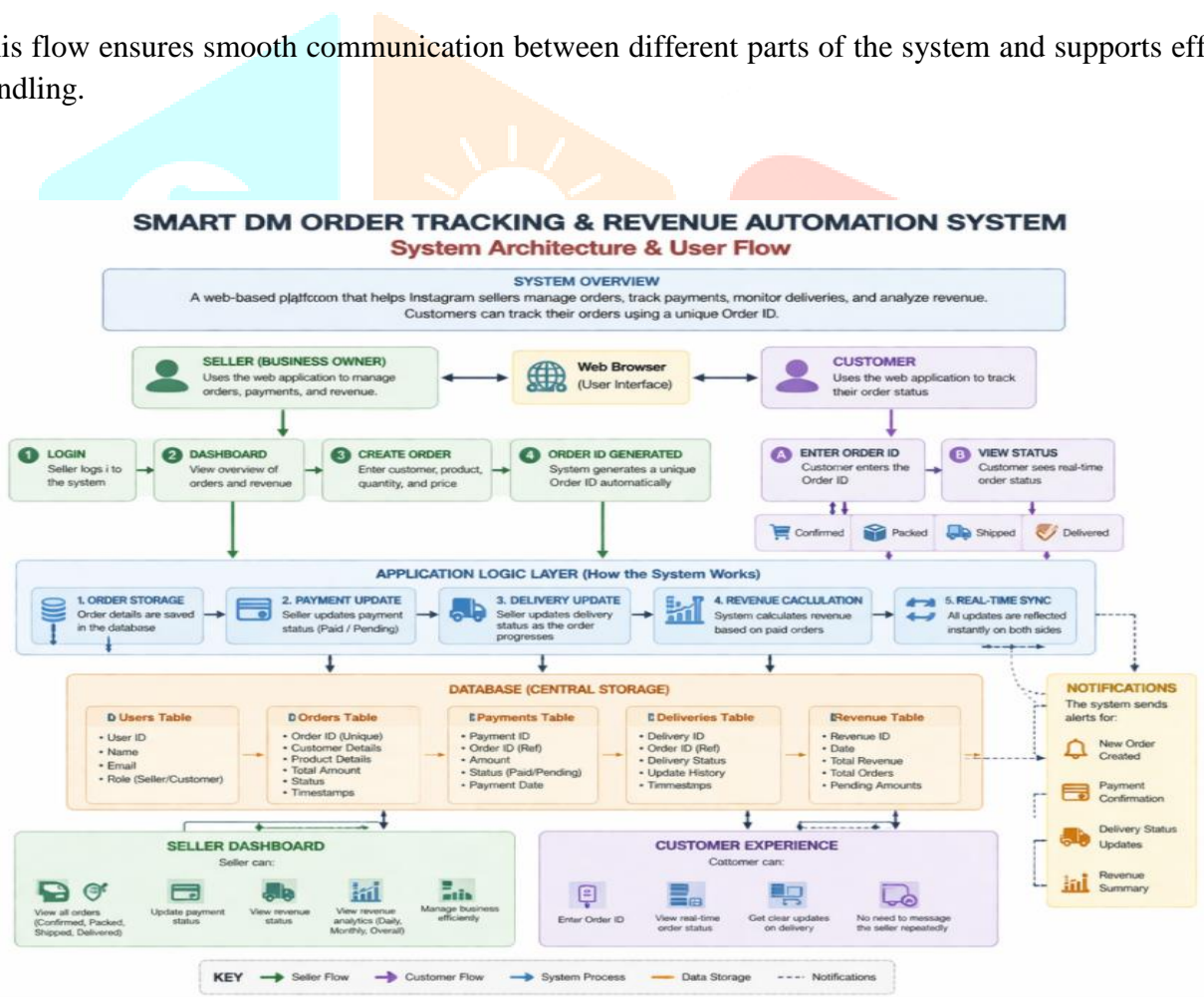
The system improves accuracy in order handling, reduces manual work, and helps sellers manage their business more efficiently as the number of orders increases.

V. System Architecture

The system follows a client-server architecture with three main components: frontend, backend, and database.

The user interacts with the mobile application (frontend) to perform actions such as login, order creation, and order tracking. The frontend sends requests to the backend server, where the main logic is processed. The backend communicates with the database to store and retrieve order details. The processed data is then sent back to the frontend and displayed to the user.

This flow ensures smooth communication between different parts of the system and supports efficient data handling.



VI. Methodology

The proposed system follows a structured workflow to manage orders efficiently and track revenue accurately. The overall process is described below:

1. **Seller Authentication:**

The seller logs into the application using valid credentials to access system features.

2. **Order Creation:**

After login, the seller creates a new order by entering customer details and product information.

3. **Order Processing:**

The system generates a unique Order ID for each order and calculates the total amount based on quantity and price.

4. **Data Storage:**

The order details are stored in a centralized database, ensuring proper organization and easy retrieval.

5. **Order Status Management:**

The seller updates payment status and delivery status as the order progresses.

6. **Revenue Analysis:**

The system automatically computes total revenue, monthly income, and pending payments based on stored data.

7. **Customer Order Tracking:**

Customers can enter the Order ID to view their order status in a read-only format.

This methodology ensures efficient order handling, accurate data management, and improved customer interaction.

VII. System Implementation

The system is developed using a modular approach and consists of two main parts: Seller Module and Customer Module.

VII-A. Seller Module

The Seller Module allows sellers to manage orders and track revenue.

1. **Create Order:**

Sellers can create a new order by entering customer and product details.

2. **View Orders:**

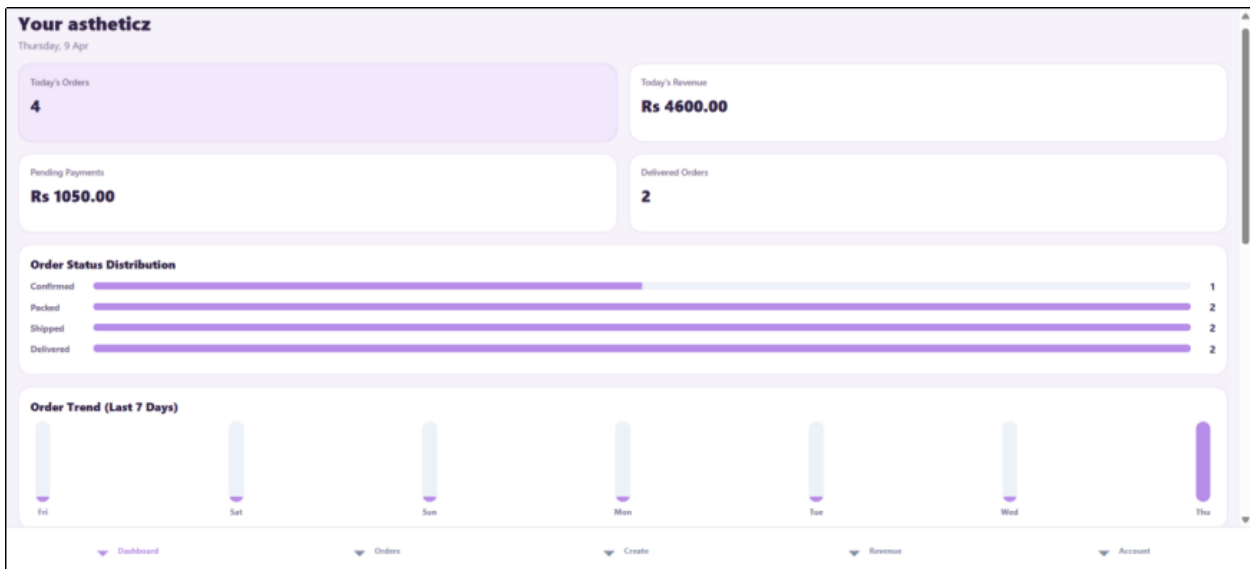
Sellers can view all orders in a list format and check their details.

3. **Update Order Status:**

Sellers can update payment and delivery status as the order progresses.

4. **View Revenue Summary:**

Sellers can view total revenue, monthly income, and pending payments.



VII B. Client Module

The client Module provides a user-friendly interface for guests to track the status of their orders. crucial functionalities include

- 1. Enter Order ID:** Guests can input their unique order ID to access order details.
- 2. View Order Status:** Upon entering a valid Order ID, guests can view the current status of their order, including applicable details similar as the estimated delivery date.

Track Your Order
Enter your Order ID or courier tracking ID to check delivery progress.

Order ID / Tracking ID
SDM-131347718

[Check Status](#)

Order Details
Order ID: SDM-131347718
Customer Name: Rea Chowdry
Product Name: Necklace
Quantity: 4
Paid

Order Progress

- Confirmed - 9 April
- Packed - 9 April
- Shipped - 9 April
- Delivered - 9 April

[Back to Home](#)

VII C. Technologies Used

The system is developed using the following technologies:

1. React Native:

React Native is a JavaScript framework used for building mobile applications. It is used to develop cross-platform applications (iOS and Android) using a single codebase, which helps reduce development time and cost.

2. Node.js:

Node.js is a JavaScript runtime environment used for executing code on the server side. It is known for its non-blocking and event-driven architecture, which allows efficient handling of multiple requests.

3. **Express.js:**

Express.js is a web application framework for Node.js. It simplifies backend development by providing features for routing, middleware handling, and server-side logic.

4. **MongoDB:**

MongoDB is a NoSQL database used for storing and managing data. It provides flexibility and scalability, and its document-based structure is suitable for storing order-related information.

VIII. Results and Discussion

The system successfully converts unstructured DM data into structured order records. It reduces manual work and minimizes errors in order handling. The system also provides real-time revenue information, helping sellers understand their business performance better.

Order tracking improves customer experience by allowing users to check their order status easily. The system was tested using API requests, and all functionalities such as order creation, data storage, and revenue calculation worked correctly.

IX. Conclusion

The Smart DM-Based Order Tracking and Revenue Automation System offers a compelling solution to the challenges inherent in managing Instagram-based businesses. By strategically implementing structure and automation, the system demonstrably reduces the manual workload associated with order processing, minimizes the potential for human error, and enhances overall operational efficiency. This is achieved through features such as order tracking, automated revenue summary generation, and customer order status checking using a unique Order ID. The system's user-friendly interface and cost-effective nature make it a particularly valuable asset for small-scale sellers seeking to optimize their business processes and improve revenue capability. Further research could explore the system's scalability for larger businesses and its adaptability to other social media platforms.

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