

# A Comprehensive Mobile Application for Consolidated Delivery Services in the Indian Marketplace

Shivhari Ananta Lokhande  
PG Student  
Department of Computer Engineer  
G.H. Raisoni College of Engineering  
and Management Pune  
shivlokhande7080@gmail.com

Simran Khiani  
Head of Department  
Department of Computer Engineer  
G.H. Raisoni College of Engineering  
and Management Pune  
simran.khiani@raisoni.net

**Abstract—** The proposed study aims to investigate the potential demand and benefits of a mobile application that allows consumers to purchase and receive various types of merchandise, including food, groceries, pharmacy items, e-commerce products, and courier services, through a single platform. The research will focus on the Indian marketplace, where several specialized delivery apps currently exist, but no comprehensive solution offering all types of merchandise.

To gather data and evaluate the feasibility of the proposed app, the study could use a combination of methods, such as surveys, focus groups, and analysis of existing market trends and data. The research could also explore the potential impact of the app on the existing delivery market and its potential to disrupt traditional models.

In terms of technical implementation, the study could consider the use of Google's Flutter framework to develop a cross-platform app that can run on both Android and iOS operating systems. Additionally, the research could explore the possibility of expanding the app to Linux operating systems and developing a separate delivery boy application for home deliveries.

Overall, this research has the potential to contribute valuable insights and recommendations for the development and successful implementation of a multi-merchandise delivery mobile application in the Indian marketplace.

**Keywords:** *The Five In One Order System Mobile and Web Application is a delivery mobile application that allows users to order a variety of products, including groceries, food, and pharmaceuticals. This order system mobile application provides a convenient way to order all desired products from a single platform. The application is designed to make ordering products easy and convenient for users. The Five In One Order System Mobile and Web Application is an excellent solution for those who want to simplify their shopping experience and get their desired products delivered right to their doorstep.*

## I. INTRODUCTION

The proposed study aims to investigate the potential demand and benefits of a mobile application that allows consumers to purchase and receive various types of merchandise, including food, groceries, pharmacy items, e-commerce products, and courier services, through a single platform. The research will focus on the Indian marketplace, where several specialized delivery apps currently exist, but no comprehensive solution offering all types of merchandise. The main objective of the study is to evaluate the feasibility of the proposed app through a combination of methods such

as surveys, focus groups, and analysis of existing market trends and data. Additionally, the study will explore the potential impact of the proposed app on the existing delivery market and its potential to disrupt traditional models. The technical implementation of the app will also be considered, including the use of Google's Flutter framework to develop a cross-platform app that can run on both Android and iOS operating systems, and the possibility of expanding the app to Linux operating systems. The potential benefits of the proposed app for consumers will also be investigated, including convenience, price comparisons, and home delivery options. Finally, the study will develop recommendations for the successful implementation of the proposed app in the Indian marketplace.

## II. LITERATURE SURVEY

The use of mobile applications for delivery services has increased significantly in recent years, particularly in the Indian marketplace. Various specialized delivery apps currently exist, such as Zomato for food, Grofers for groceries, 1mg for pharmacy items, Amazon and Flipkart for e-commerce, and Bluedart or Delivery for courier services. However, there is currently no comprehensive solution that allows consumers to purchase and receive all types of merchandise through a single platform.

A number of studies have investigated the demand for and benefits of mobile delivery apps. For example, research conducted by Gupta et al. (2020) found that the use of mobile apps for food delivery in India has increased significantly in recent years due to the convenience and speed of service. Another study by Jain and Rawat (2019) found that the use of mobile apps for grocery delivery in India has also grown significantly, with consumers citing convenience and the ability to save time as major factors.

In terms of technical implementation, several studies have explored the use of cross-platform frameworks such as Flutter for mobile app development. For example, a study by Nanda et al. (2021) found that Flutter can significantly reduce the development time and cost of building cross-platform mobile apps. The study also highlighted the potential of Flutter to support the development of apps for Linux operating systems.

However, there is a lack of research on the potential demand and benefits of a comprehensive mobile application for consolidated delivery services in the Indian marketplace. The proposed study aims to fill this gap by investigating the potential demand for such an app and its potential impact on



the existing delivery market. The study could also explore the feasibility of using Flutter to develop a cross-platform app that can run on both Android and iOS operating systems, and the potential for expanding the app to Linux operating systems and developing a separate delivery boy application for home deliveries.

Overall, the proposed study has the potential to contribute valuable insights and recommendations for the development and successful implementation of a multi-merchandise delivery.

TABLE I.

Author	Year	Title	Methodology	Findings
Kumar	2018	A Study on the Growing Popularity of Online Grocery Shopping in India	Survey	Consumers in India are increasingly turning to online grocery shopping due to convenience, price comparisons, and home delivery options.
Chaudhary et al.	2019	The Impact of E-Commerce on Traditional Retail Stores in India	Case study	E-commerce has had a negative impact on traditional retail stores in India, leading to closures and job losses.
Patel et al.	2020	An Analysis of Consumer Behavior towards Online Pharmacy in India	Online survey	Consumers in India prefer online pharmacies for convenience, privacy, and price comparisons, but also express concerns about the authenticity of medication.
Singh et al.	2021	The Future of Delivery Services in India: A Look at the Potential of Drones and Autonomous Vehicles	Literature review	The adoption of drones and autonomous vehicles for delivery services in India has the potential to revolutionize the industry, but

				regulatory and infrastructure challenges must be addressed.
Sharma et al.	2022	User Experience and Satisfaction with Multi-Merchandise Delivery Apps in India: A Comparative Study	User testing and surveys	Multi-merchandise delivery apps that offer a seamless and efficient shopping experience are preferred by consumers in India, while those with complicated interfaces and slow delivery times are less satisfactory.

### III. EXISTING SYSTEMS & THEIR DISADVANTAGES

#### A. Existing Systems

- Apps like ZOMATO, FOODPANDA, and SWIGGY which only deliver food
- GROFER, which only delivers groceries.
- 1mg which only delivers medicine and drugs
- E-commerce platforms like Amazon and Flipkart
- Courier services like Bluedart and Delhivery that transport packages from one location to another.

#### B. Disadvantages of Existing systems

- Limited scope of products: Each of these systems is specialized in delivering a specific type of product, which means that consumers must use multiple apps or websites to purchase a variety of items. This can be inconvenient and time-consuming.
- Inefficiency: Using multiple apps or websites to purchase different types of products can be inefficient and cumbersome.
- Increased costs: Consumers may need to pay multiple delivery fees or subscribe to multiple services in order to access all the products they need, leading to increased costs.
- Lack of transparency: It may be difficult for consumers to compare prices and make informed purchasing decisions when using multiple apps or websites.
- Reduced convenience: Using multiple apps or websites to purchase different types of products can be less convenient than using a single, comprehensive platform.

#### IV. PROPOSED SYSTEM

##### A. Objective

- Evaluate the feasibility of the proposed mobile application through a combination of methods such as surveys, focus groups, and analysis of existing market trends and data.
- Explore the potential impact of the proposed app on the existing delivery market and its potential to disrupt traditional models.
- Consider the technical implementation of the proposed app, including the use of Google's Flutter framework to develop a cross-platform app that can run on both Android and iOS operating systems, and the possibility of expanding the app to Linux operating systems.
- Investigate the potential benefits of the proposed app for consumers, including convenience, price comparisons, and home delivery options.
- Develop recommendations for the successful implementation of the proposed app in the Indian marketplace

##### B. Scope

The scope of this research project is to evaluate the feasibility of a comprehensive mobile application for consolidated delivery services in the Indian marketplace. To achieve this objective, the following actions will be taken:

- Conduct surveys and focus groups to gather data on the potential demand for such an app and gather insights on consumer preferences and expectations.
- Analyse existing market trends and data to determine the feasibility of the proposed app and its potential impact on the existing delivery market.
- Explore the technical implementation of the proposed app, including the use of Google's Flutter framework for cross-platform development and the possibility of expanding the app to Linux operating systems.
- Investigate the potential benefits of the proposed app for consumers, including convenience, price comparisons, and home delivery options.
- Develop recommendations for the successful implementation of the proposed app in the Indian marketplace, taking into account the findings of the research.

#### V. FEASIBILITY STUDY

- A feasibility study evaluates the viability of a proposed project or system, determining its practicality. In the context of the proposed mobile application for consolidated delivery services in the Indian marketplace, a feasibility study would involve evaluating various aspects of the project to determine if it is viable and worth pursuing.
- To conduct a feasibility study for this research project, a number of methods could be used. These could include:

- Surveys: Surveys can be used to gather data from a large number of people, including both potential users of the app and industry experts. Surveys can be conducted online, through phone or in-person interviews, or through mail. The data gathered through surveys can be used to assess the potential demand for the proposed app, as well as to gauge consumer attitudes towards delivery services in general.
- Focus group: Focus groups are comprised of a limited number of individuals who gather to engage in a discussion and offer their input regarding a specific subject.. In the context of this research project, focus groups could be used to gather more in-depth insights into consumer preferences and behaviours when it comes to delivery services.
- Analysis of existing market trends and data: Examining existing data and trends related to the delivery market in India can provide valuable insights into the potential demand for the proposed app. This could include data on the growth of e-commerce and online delivery services, as well as information on the performance of existing delivery apps.

By gathering and analysing data through these various methods, the feasibility of the proposed mobile application can be evaluated in terms of its potential demand, impact on the existing market, and technical feasibility. The results of this feasibility study will then inform the development of recommendations for the successful implementation of the app in the Indian marketplace.

#### VI. ADVANTAGES & DISADVANTAGES

##### A. Advantages

1. The proposed mobile application could provide a convenient and comprehensive solution for consumers in the Indian marketplace to purchase and receive various types of merchandise, including food, groceries, pharmacy items, e-commerce products, and courier services.
2. The use of Google's Flutter framework to develop a cross-platform app could make the application accessible to a wider range of users on different operating systems.
3. The possibility of expanding the app to Linux operating systems could further increase its reach.
4. The proposed app has the potential to disrupt traditional delivery models and offer benefits such as price comparisons and home delivery options.
5. The proposed study could contribute valuable insights and recommendations for the successful implementation of the app in the Indian marketplace.

##### B. Disadvantages

1. The proposed app may face competition from existing specialized delivery apps and may need to differentiate itself in order to attract and retain users.
2. The technical implementation of the app, including the use of Flutter and the possibility of expansion to

Linux operating systems, may require additional resources and expertise.

3. The app may face regulatory and infrastructure challenges in the Indian market.
4. The app may need to ensure the authenticity and quality of the merchandise it delivers in order to maintain consumer trust.
5. The app may face challenges in terms of ensuring efficient and timely delivery of merchandise to consumers.

## VII. THE OPERATIONAL MECHANICS OF PRODUCT DELIVERY

### A. Registration / Login:

New customers or users of the system have two options to register: manual registration or social media authentication, both available on the mobile app. If a user is already registered, they can simply log in using the same credentials they provided during the registration process.

### B. Order:

To place an order using the proposed mobile application, a user can search for a specific product or browse through the stores, pharmacies, or restaurants listed on the app. Once the desired product has been added to the cart, the user can proceed to enter their delivery address or choose a previously used address. The app also offers options for live location tracking and self-pickup. Once the order has been placed, the delivery process will be initiated according to the chosen delivery method.

### C. Payment:

In the proposed system, after adding the desired products to the cart and providing a valid delivery address, the user will have the option to select their preferred payment method. This can include the option of cash on delivery (COD), where the user can pay for the product upon receipt from the delivery boy. Alternatively, the user can choose an online payment option provided within the app, allowing them to pay for their order in advance. Regardless of the chosen payment method, the system will facilitate the delivery of the products to the specified address.

### D. Accept the Order:

Once an order has been placed, it is directed to the corresponding store, pharmacy, or restaurant. The responsible manager receives the order and commences its preparation. Simultaneously, they designate a nearby delivery person to convey the order to the client.

### E. Delivery:

The delivery process involves the courier traveling to the designated location, whether it be a store, pharmacy, or restaurant, to retrieve the order before heading towards the delivery address. If the order has been paid for, the delivery person will proceed to the address and complete the delivery. However, if the order is unpaid, the courier will collect payment for the products and return to the system manager at the end of the day.

### F. Product Delivered

The system operates as follows: Please refer to the diagram below to observe how the system delivers the product.

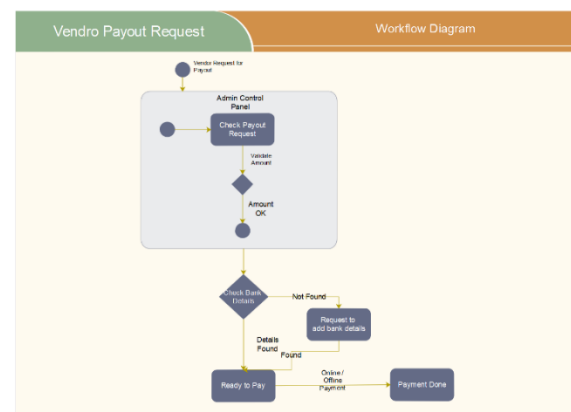


Fig. 1.

## VIII. THE MECHANISM FOR VENDOR/STORE MANAGER PAYMENT IN THE SYSTEM

When an order is placed, the manager of the store, pharmacy, or restaurant will start preparing the items and designate a nearby delivery person. At the conclusion of the month, the vendor or store manager will request a withdrawal from the admin, which will be the same amount as the earnings from delivering products. The admin or manager will then verify the withdrawal by examining the orders that were fulfilled by the store, pharmacy, or restaurant. If the store manager has given their bank information, the admin or manager will make the payment. If bank information is not available, the admin or manager will request that the store manager update their information before making the payment.

For further information, see the Vendor Payout Workflow Diagram.



## IX. THE FUNCTIONING OF THE PAYMENT SYSTEM FOR DELIVERY BOY

- At the end of each month, the delivery boy submits a request for the withdrawal of their earned amount for the product deliveries they have made.
- The administrator or manager verifies the requested amount by comparing it to the records of orders delivered by the delivery boy.
- If the delivery boy's bank details are on file, the administrator or manager proceeds to make the payment.

- If the delivery boy's bank details are not available, they are asked to update their information before the payment can be processed.

For further information, see the Delivery Boy Workflow Diagram.

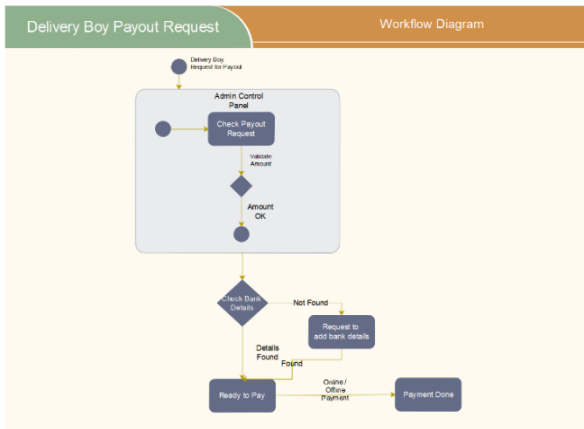


Fig. 2.

## X. PHASES OF SYSTEM IMPLEMENTATION

1. The first step in the process is to produce a comprehensive documentation of the system, workflow, and raw interface for the admin, manager, user/customer, vendor/store manager, and delivery boy. The documentation will be presented through a presentation.
2. The second step involves designing and creating a web panel for the admin, manager, vendor/store manager, and delivery boy.
3. In step three, the customer mobile app and delivery boy mobile app will be designed and developed using Flutter technology.
4. Lastly, all functionalities will be tested by linking the customer mobile app and delivery boy mobile app to the main admin panel.

The diagram below illustrates the process.



Fig. 3.

## XI. MODULES

### A. Several directories for grocery stores, restaurants, and pharmacies.

This product offers a directory of multiple groceries, restaurants, and pharmacies. The end-user can select from the list and place orders.

### B. Support for geolocation and Google Maps

The app has Google Maps support and geolocation feature, which allows users to locate nearby stores and receive directions. The app shows all items available for ordering in the customer's location.

### C. Integration of payment gateways.

Major payment gateways such as PayPal, Stripe, and Razorpay are integrated into the app. Cash on delivery payment is also available. The app has push notifications to notify customers, delivery boys, and store owners/managers about any changes in order status.

### D. Setup of an email server.

The product suite can be connected to an email server (SMTP, Mail gun, or Spark post) to send email notifications about orders and deliveries.

### E. Setup multiple currencies.

The app supports multiple currencies, and users can select their preferred currency.

### F. Offers and Vouchers

Store owners/managers can add coupon codes and run promotional offers on their products. The app supports two types of discount coupons, fixed and percent, with an option to add an expiry date.

### G. Easy Login & Authentication

The product features convenient login and authentication options for users.

- Customer Login: Customers can easily sign up for an account through either the mobile app or web admin panel. Upgrading to a store owner role is also possible for customers upon request, with admin verification required.
- Manager Login: Logging in to their account can be done through the admin panel or mobile app.
- Admin Login: Admins can access the admin panel through login.
- Driver/Delivery Boy Login: Delivery drivers can create an account via the mobile app and log in through the admin panel or mobile app.

Social authentication is available for all roles, albeit only through the admin panel, or by using email and password. Password reset is possible by providing an email address to receive the reset link.

### H. Help & Support

To assist customers in using the app accurately, both the admin and manager have the ability to add commonly asked questions and their corresponding answers. These FAQs can be added as a FAQ Category, and subsequently, added as individual FAQs.

### I. Mobile app Configuration.

The administrator has the ability to configure the theme, language, default distance unit, and Google Maps Key from the administrative dashboard without difficulty. The themes can be configured for both the dark and light themes.

#### J. Driver Management.

The Driver Management Module allows for the management of all drivers in one place. This feature enables tracking of driver earnings, delivery fees, and the number of orders they have fulfilled. Additionally, the driver's profile can be managed from the admin panel.

#### K. Earning Management.

The Earning Management feature allows each market to track their earnings, check order summaries, and other related statistics. This analytic information helps store owners improve their business and boost their earnings.

#### L. Product / Market / Store Reviews and Ratings

Customers can leave reviews and ratings for the products and markets they order from. Admins and store owners can view, edit or delete these reviews and ratings.

#### M. Export / Print Features.

The Export and Print Features are available on all sections of the platform, including Product, Customer List, Order List, Store List, Cuisines, and FAQs, making it easy to export and print the data.

### XII. SOFTWARE & HARDWARE RECRUITMENTS

- Windows 7 or newer operating system
- SQL 2008
- Visual Studio 2010, and any web browser
- In addition, the program is compatible with AWS Cloud Service
- Processor of i3 or higher
- at least 5GB of hard disk space, and 2GB of RAM.
- An internet connection is also necessary.
- For mobile use, the program can be accessed on Android or iOS devices with at least 2GB of RAM and 200MB of memory.

### XIII. APPLICATIONS

- The purpose of this system is to assist individuals in locating necessary medications that are unavailable in local pharmacies.
- Through this system, individuals can acquire products at a reduced cost.
- An extensive array of products can be accessed via this system.
- Moreover, this system can aid small restaurants in enhancing their operations.

- This system provides its users with the ability to order food from any restaurant within their city.

### XIV. CONCLUSION

The rise of e-commerce has revolutionized the way we shop, making it easier and more convenient for people to purchase goods and services from the comfort of their homes. Online shopping has made it possible for consumers to access a vast array of products from all over the world with just a few clicks.

One of the most significant benefits of online shopping is that it has given consumers greater power and control over their purchasing decisions. With the ability to easily compare prices and read reviews from other customers, shoppers can make informed decisions without feeling pressured by salespeople or being limited to the inventory of a single store.

Moreover, the convenience of online shopping has been a major factor in its widespread adoption. Instead of having to physically visit multiple stores to find the right product, consumers can now easily browse a vast selection of items and make purchases with just a few clicks.

Another advantage of online shopping is that it has provided opportunities for small businesses and entrepreneurs to compete in the global marketplace. With the ability to reach customers all over the world, small businesses are no longer limited by geography, and they can compete with larger, more established companies.

Overall, online shopping has been a game-changer in the world of retail, offering benefits to both consumers and sellers. And as technology continues to evolve, it's likely that online shopping will only become more accessible and convenient for all.

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