Swiggy Scheduled Delivery
A Thought

📌 About Swiggy

Swiggy, founded in 2014 by Sriharsha Majety, Nandan Reddy, and Rahul Jaimini, has revolutionized online food delivery. Swiggy is headquartered in Bangalore and operates in more than 500 Indian cities as of September 2021With a simple platform, Swiggy connects users to a wide range of restaurants, making it easy for customers to enjoy their favorite meals. Through user-friendly features and efficient delivery, Swiggy ensures timely service, delighting customers across India. As a leader in the industry, Swiggy continues to innovate and set new standards for food delivery services. Besides food delivery, the platform also provides on-demand grocery deliveries under the name Instamart, and a same-day package delivery service called Swiggy Genie.

🔢 Key activities of Swiggy

- **Platform Management**: Operating an online platform where users can browse menus, place orders, and make payments seamlessly.
- **Partner Onboarding**: Collaborating with restaurants, cafes, and eateries to onboard them onto its platform, expanding its selection of dining options for customers.
- **Order Processing**: Efficiently processing incoming orders, ensuring accuracy and timely communication with both customers and restaurant partners.
- **Delivery Logistics**: Managing a network of delivery partners who pick up orders from restaurants and deliver them to customers' doorsteps, ensuring timely and reliable service.
- **Technology Development**: Investing in developing and improving its technology infrastructure, including its website, mobile app, and backend systems, to enhance user experience and operational efficiency.
- **Customer Support**: Providing customer support services to address inquiries, resolve issues, and ensure customer satisfaction throughout the ordering and delivery process.
- **Quality Assurance**: Ensuring food quality standards are met by partnering with reputed restaurants and implementing quality checks throughout the delivery process.
- **Marketing and Promotions**: Running marketing campaigns and promotions to attract new users, retain existing customers, and increase order volume on the platform.

🎯 Problem Definition

Restaurants and customers alike are encountering notable hurdles in coordinating food deliveries to align with specific time preferences. This challenge stems from the absence of a reliable platform that seamlessly facilitates scheduled delivery services, catering to varying schedules and preferences. The current landscape lacks a solution that offers intuitive scheduling options, ensuring timely deliveries while accommodating users' busy lifestyles. The growing demand for personalized and convenient dining experiences underscores the urgency to address this issue promptly. Swiggy recognizes the need for a user-friendly feature that enables customers to schedule food deliveries according to their desired time slots, thereby enhancing convenience and satisfaction for both users and restaurant partners.

🌍 Target Users:

- **Customers**: This includes individuals who frequently order food for delivery, ranging from busy professionals and families to students. These users seek convenience and flexibility in scheduling their food deliveries to align with their daily routines, work schedules, or special occasions. By offering scheduled delivery services, Swiggy aims to cater to the needs of these users by providing a convenient and reliable solution for ordering food at their preferred times.
- **Restaurant Partners**: Restaurant owners and managers constitute another vital user group. These stakeholders face challenges in managing peak hours and ensuring timely delivery of orders during busy periods. By incorporating scheduled delivery features, Swiggy aims to empower restaurant partners with tools to better manage their operations, optimize delivery logistics, and provide enhanced customer service. This feature can help restaurants streamline their workflows, minimize delivery delays, and improve overall customer satisfaction, thereby fostering stronger partnerships with Swiggy.

💼 Business Value:

Addressing the problem of scheduled delivery through Swiggy offers several business benefits:

- **Enhanced Customer Satisfaction**: By providing scheduled delivery options, Swiggy can meet the diverse needs of customers, leading to higher satisfaction levels. Customers appreciate the convenience of choosing delivery times that align with their schedules, resulting in positive experiences and increased loyalty.
- **Increased Order Volume**: Scheduled delivery encourages customers to plan their meals in advance, leading to more frequent orders placed through the Swiggy platform. This can contribute to an uptick in order volume and revenue for both Swiggy and its restaurant partners.
- **Improved Operational Efficiency**: With scheduled deliveries, restaurants can better manage their kitchen operations and delivery logistics. By receiving orders in advance, restaurants can allocate resources more effectively, reduce peak-hour congestion, and ensure timely preparation and delivery of orders.
- **Optimized Delivery Routes**: Scheduled delivery allows Swiggy to optimize its delivery routes based on pre-planned orders. This optimization can lead to reduced delivery times, lower fuel costs, and improved overall efficiency in the delivery process.
- **Differentiation in the Market**: Offering scheduled delivery sets Swiggy apart from competitors and positions it as a leader in catering to customer preferences. This feature can attract new users and drive customer retention by providing a unique value proposition in the crowded food delivery market.
- **Stronger Relationships with Restaurant Partners**: By addressing the scheduling challenges faced by restaurant partners, Swiggy can strengthen its partnerships with them. Restaurants appreciate tools and features that help streamline operations and improve customer satisfaction, fostering long-term collaborations with Swiggy.
- **Data Insights and Analytics**: Scheduled delivery generates valuable data on customer preferences, peak ordering times, and popular delivery slots. Swiggy can leverage this data to optimize its platform, tailor marketing campaigns, and make data-driven decisions to further enhance its services and offerings.

🚀 Benefits for Target Users:

Scheduled delivery through Swiggy empowers users by offering flexibility to plan their meals according to their schedules, ensuring convenience and reducing the stress of last-minute orders. By allowing users to choose their preferred delivery times in advance, Swiggy enhances their overall dining experience, providing greater control and satisfaction. This feature enables users to seamlessly integrate food delivery into their daily routines, saving time and effort while enjoying their favorite meals at their convenience.

🎯 Goals

To offer a seamless, convenient and personalized experience for users by allowing them to plan and receive their food orders at their preferred times.

💼 Business Objectives:

- **Enhanced User Engagement and Satisfaction**: Attaining high Customer Satisfaction (CSAT) and Net Promoter Scores (NPS), indicating successful user interaction and positive feedback on the scheduled delivery feature's convenience and reliability.
- **Increased Restaurant Participation:** Onboarding a growing number of restaurants and maintaining a steady influx of new partnerships, showcasing effective outreach efforts and alignment with restaurant needs and preferences.
- **Revenue Growth**: Generating substantial revenue through premium scheduling features, and achieving a high conversion rate for upselling additional services or premium scheduling options, ensuring the financial viability and success of the scheduled delivery feature.
- **Market Expansion**: Accelerating user acquisition and increasing market share in both existing and new geographies, crucial for the long-term scalability and sustainability of Swiggy's scheduled delivery service.

👤 User Objectives:

- **Convenient Meal Planning:** Users aim to conveniently plan their meals by scheduling food deliveries according to their preferred times, aligning with their busy schedules or special occasions.
- **Flexibility and Control:** Users seek flexibility and control over their dining experiences, enabling them to choose delivery slots that suit their needs, whether it's for breakfast, lunch, dinner, or snacks.
- **Time Savings:** The objective is to save time and effort by eliminating the need for last-minute orders or waiting for delivery slots to become available, allowing users to focus on other activities without compromising on their meal preferences.
- **Enhanced Satisfaction:** Users aim for an enhanced dining experience with timely and reliable deliveries, leading to increased satisfaction and a positive perception of Swiggy's services.

- **Integration into Daily Routines:** The goal is to seamlessly integrate food delivery into users' daily routines, making it a hassle-free and convenient option for meeting their culinary needs.

📊 Competition Analysis:

Current platforms offering features like Swiggy scheduled delivery and their USP and Pain points :

	USP	Pain Point
Zomato	- Extensive restaurant network, offers scheduled delivery options, user-friendly interface	- Delivery delays during peak hours, limited availability in certain areas
Dunzo	- On-demand and scheduled delivery for groceries and essentials	- Higher delivery fees for scheduled services, limited restaurant options for food delivery
Uber Eats (when active)	- Seamless integration with Uber rides, scheduled delivery feature, extensive restaurant options	- Higher costs during peak times, issues with delivery accuracy
Foodpanda	- Wide range of cuisine options, scheduled delivery, special discounts	- Inconsistent delivery times, limited presence in certain regions

🤯 Assumptions :

- Users will prefer scheduled delivery for convenience and to align with their busy schedules.
- Restaurants will benefit from receiving orders in advance, allowing for better preparation and resource management.
- Scheduled delivery will attract a new segment of users who prioritize planning and reliability.
- The feature will lead to increased user engagement and satisfaction, thereby boosting Swiggy's market share.
- Technological infrastructure and delivery logistics can handle the additional complexity of scheduled deliveries.

💬 User Stories:

Persona	User Stories	Acceptance Criteria
Busy Professional	As a busy professional, I want to schedule my dinner delivery in advance, so I can avoid the hassle of last-minute ordering after work.	Delivery arrives within the scheduled time slot with correct order details.
	As a busy professional, I want to schedule my lunch delivery to arrive exactly during my lunch break, so I can eat without delays.	Lunch arrives within the scheduled time slot, allowing a full lunch break for the user.
	As a busy professional, I want to receive notifications about my upcoming scheduled delivery, so I am reminded to be available.	User receives a notification 15 minutes before the scheduled delivery time.
Student	As a student with a hectic schedule, I want to schedule my lunch delivery around my class timings, so I don't miss meals and stay energized.	Lunch arrives on time as per schedule, helping the student maintain their routine.
	As a student, I want to schedule a snack delivery during my study breaks, so I can stay focused and refreshed.	Snack delivery arrives exactly during the chosen break time.
	As a student, I want to be able to reschedule my delivery if my class schedule changes, so I can still receive my meal at a convenient time.	User can reschedule the delivery up to 30 minutes before the original scheduled time.
Family	As a parent, I want to schedule family meals in advance for the evenings, so we can have timely dinners together without the stress of cooking after work.	Family meal is delivered at the chosen time, with all items intact and hot.
	As a parent, I want to schedule a weekend breakfast delivery, so we can enjoy a relaxing morning meal together without the need to cook.	Breakfast arrives on time, allowing for a stress-free morning.
	As a parent, I want to be able to set recurring scheduled deliveries for our favorite restaurant, so I don't have to manually order each time.	User can set up recurring orders for the same time and restaurant every week.

Fitness Enthusiast	As a fitness enthusiast, I want to schedule my post-workout meals to be delivered right after my gym session, so I can adhere to my nutrition plan without delay.	Post-workout meal arrives exactly after the gym session as per the schedule, maintaining nutritional value.
	As a fitness enthusiast, I want to schedule healthy meal deliveries for the entire week, so I can stay on track with my diet plan.	All scheduled meals for the week are delivered on time and as per the user's diet preferences.
	As a fitness enthusiast, I want to receive notifications if a scheduled delivery is going to be delayed, so I can make alternate arrangements.	User receives a notification if the delivery is delayed by more than 10 minutes.
Party Planner	As an event planner, I want to schedule food deliveries for events well in advance, so I can ensure everything is ready and timely for my guests.	Event meals are delivered on time, with all items correctly delivered and well-presented.
	As an event planner, I want to schedule multiple deliveries throughout the day for different meal times, so each part of the event is well-catered.	Multiple deliveries are made at the correct times without overlap or delay.
	As an event planner, I want to receive a confirmation from the restaurant and delivery partner a day before the scheduled delivery, so I can ensure everything is in place.	User receives a confirmation message 24 hours before the scheduled delivery.
Restaurant Owner/Manager	As a restaurant owner, I want to receive scheduled orders well in advance, so I can plan and prepare meals without last-minute rushes.	Orders arrive in the system at least one hour before the scheduled delivery time, with all details accurately captured.
	As a restaurant owner, I want to manage scheduled deliveries separately from real-time orders, so I can allocate resources efficiently.	The restaurant dashboard clearly differentiates between scheduled and real-time orders, allowing for resource allocation.
	As a restaurant owner, I want to receive notifications about upcoming scheduled deliveries, so I can ensure the kitchen is prepared.	Notifications are sent 30 minutes and 10 minutes before the scheduled delivery time.
	As a restaurant owner, I want to be able to update or cancel a scheduled order if there are unforeseen issues, so I can maintain service quality.	The system allows order modifications or cancellations up to 30 minutes before the scheduled delivery time, with automatic notifications sent to customers.
	As a restaurant owner, I want to review analytics on scheduled deliveries, so I can understand peak times and improve operations.	The dashboard provides detailed analytics on scheduled deliveries, including peak times, popular items, and customer feedback.

🔍 Product Scope

☑ In Scope :

- Development and integration of a scheduled delivery feature within the Swiggy app.
- User interface updates to allow for scheduling delivery times.
- Backend support for handling scheduled orders and optimizing delivery logistics.
- Notifications and reminders for users about their upcoming scheduled deliveries.
- Support for restaurant partners to manage scheduled orders efficiently.
- Analytics and reporting for tracking scheduled deliveries and user engagement.

✖ Out of Scope :

- Real-time tracking of delivery partner location (existing feature).
- Integration with third-party calendar applications.
- Support for scheduling deliveries beyond a certain time window (e.g., more than 24 hours in advance).

⚒ Technical Specifications

📋 Functional Requirements :

- Scheduled Delivery Option: Allow users to select a specific delivery time for their orders.
- Time Slot Availability: Show available time slots for scheduled delivery based on restaurant and delivery partner availability.
- Order Modification: Allow users to modify or cancel their scheduled orders within a certain time frame.
- Notifications: Send reminders to users about their upcoming scheduled deliveries.
- Restaurant Dashboard: Provide a dashboard for restaurants to view and manage their scheduled orders.
- Recurring Orders: Allow users to set up recurring scheduled deliveries.

🔧 Non-Functional Requirements:

- Scalability: Ensure the system can handle increased load during peak times with scheduled deliveries.
- Reliability: Maintain a high uptime and reliable service for scheduled delivery features.
- Performance: Ensure that scheduled deliveries do not significantly impact the performance of real-time deliveries.
- Security: Protect user data related to scheduled delivery preferences and timings.
- User Experience: Ensure the scheduling interface is intuitive and easy to use.

🚨 Edge Cases :

- User Not Available: Handling scenarios where the user is not available at the scheduled time.
- Restaurant Closure: Managing scheduled orders if the restaurant is unexpectedly closed.
- Delivery Partner Unavailability: Dealing with situations where no delivery partners are available at the scheduled time.
- Order Cancellations: Process cancellations or changes to scheduled orders efficiently without impacting other deliveries.
- System Downtime: Handling scheduled deliveries during system maintenance or unexpected downtimes.

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🏮 User flow

→ User Flow :

User's perspective

1) Arrival to Swiggy App/Website:
   a) The user opens the Swiggy app or visits the website.
2) Login/Sign-up:
   a) If the user is not already logged in, they log in to their Swiggy account or sign up for a new account.
3) Browsing and Selecting Items:
   a) The user browses through the list of restaurants and food items available on the platform.
   b) After selecting the desired items from their preferred restaurant, they proceed to the checkout page.
4) Delivery Options:
   a) On the checkout page, the user selects the "Schedule Delivery" option instead of immediate delivery.
5) Choosing Delivery Time:
   a) The user selects their preferred delivery date and time from the available time slots.
   b) They may choose a specific time slot based on their convenience or schedule.
6) Confirming Order:
   a) After selecting the delivery time, the user reviews their order details, including the items, delivery address, and scheduled time.
   b) They confirm the order and proceed to the payment page.
7) Payment:
   a) The user provides payment details and completes the transaction to confirm the scheduled order.
8) Order Confirmation:
   a) Upon successful payment, the user receives an order confirmation message on the app or via email.
   b) The confirmation includes details such as the order number, scheduled delivery time, and restaurant information.
9) Notification Reminder:
   a) Prior to the scheduled delivery time, the user receives a notification reminder, typically 15-30 minutes before the chosen time slot.
   b) This reminder helps the user prepare for the delivery and ensures they are available to receive the order.

10) Receiving Delivery:
   a) At the scheduled delivery time, the user receives the food delivery from the Swiggy delivery partner.
   b) They verify the order contents and provide any necessary feedback or ratings for the delivery experience.
11) Post-Delivery Experience:
   a) After receiving the delivery, the user may choose to provide feedback on the order quality and delivery experience through the Swiggy app.
12) Optional: Managing Scheduled Orders:
   a) If the user needs to make changes to the scheduled order, such as modifying the delivery time or canceling the order, they can do so within the specified timeframe before the scheduled delivery.

Restaurant Owner/Manager's perspective

1) Login to Swiggy Partner Portal:
   a) The owner logs into the Swiggy Partner Portal using their credentials.
   b) They are directed to the Dashboard upon successful login.
2) View Scheduled Orders:
   a) The owner clicks on the 'Scheduled Deliveries' tab from the Dashboard.
   b) They see a list of scheduled orders displayed on the screen.
3) Order Preparation Planning:
   a) The owner reviews the list of scheduled orders to plan the preparation schedule for the upcoming deliveries.
4) Receive and Act on Notifications:
   a) The owner receives 30-minute and 10-minute reminders before the scheduled delivery times to ensure timely preparation.
   b) They take necessary actions to ensure orders are prepared and ready for delivery.
5) Modify or Cancel Orders (if needed):
   a) If there are any changes required, such as modifications or cancellations of orders, the owner makes the necessary adjustments.
   b) Upon modification or cancellation, automatic notifications are sent to the respective customers to inform them of the changes.
6) Order Handover:
   a) The owner packs the prepared orders and hands them over to the Swiggy delivery partner assigned for each order.
7) Post-Delivery Review:
   a) The owner receives feedback from customers after the deliveries are made.
   b) They address any concerns or issues raised by customers to ensure satisfaction.
8) Review Analytics and Insights:
   a) The owner analyzes delivery data, including order volumes, delivery times, and customer feedback, to gain insights into performance.
   b) They use this data to make informed decisions and improvements to the restaurant's operations.
9) Implement Improvements:
   a) Based on the analytics and insights gathered, the owner adjusts workflows, inventory management, and other processes to improve service quality and efficiency.

✏️ High Level Design :

1) Local Databases (SQLite DB) for Restaurants and Customers:
   a) Purpose: Store user settings, preferences, and temporary data on the device for quick access and offline capabilities.
   b) Functionality: Caches scheduled delivery orders, preparation schedules, and notifications for seamless user experience even without constant internet connectivity.
2) User Interface (UI):
   a) Restaurants:
      i) Dashboard: View and manage scheduled delivery orders.
      ii) Order Details: Detailed view of each scheduled order with customer instructions and preparation timings.
      iii) Notifications: Alerts for order preparation and delivery handover.
      iv) Analytics: Visual representation of scheduled delivery performance.
   b) Customers:
      i) Schedule Delivery: Interface to select delivery date and time.

  ii) Order Summary: Review and confirm scheduled order details.

  iii) Order Tracking: Track the status of scheduled delivery.

  iv) Feedback: Provide feedback after delivery is completed.

3) Server/Backend Logic:

 a) Order Management: Handles order scheduling, updates, and cancellations.

 b) Notification System: Manages the dispatch of preparation and delivery reminders.

 c) Data Syncing: Ensures real-time synchronization between the customer's app, restaurant portal, and delivery partners.

4) Integration with Custom Server Clusters:

 a) Real-Time Communication: Manages order updates, status changes, and notifications in real time.

 b) Load Balancing: Distributes requests across servers to maintain performance and reliability.

5) Database Systems:

 a) Relational Database (MySQL/PostgreSQL): Stores persistent user data such as order history, user profiles, restaurant menus, and schedules.

 b) NoSQL Database (MongoDB/Cassandra): Manages high-availability data like live order tracking and session information.

6) Content Delivery Network (CDN):

 a) Media Distribution: Efficiently distributes images, menus, and promotional content to reduce load times and improve user experience.

7) Notification System:

 a) Push Notifications: Utilizes services like Firebase Cloud Messaging (FCM) for Android and Apple Push Notification Service (APNS) for iOS to manage alerts for preparation reminders, delivery status, and customer feedback requests.

8) External APIs Integration:

 a) Payment Gateway APIs: Manages scheduled payment processing securely.

 b) CRM APIs: Connects with CRM systems to manage customer data and personalized marketing campaigns.

 c) Analytics APIs: Processes and visualizes engagement and feedback data to provide actionable insights.

9) Offline Users Handling:

 a) Fallback Mechanisms: Push notifications and SMS alerts to ensure customers and restaurants are informed even when offline.

 b) Local Storage Sync: Syncs local changes with the server once connectivity is restored to ensure no data is lost.

10) Security and Compliance:

 a) Data Encryption: Ensures all user data and transaction details are encrypted both in transit and at rest.

 b) Privacy Compliance: Adheres to global data protection regulations like GDPR, ensuring user consent and data privacy.

 c) Authentication and Authorization: Implements robust authentication mechanisms (e.g., OAuth) to secure access to the application.

� Release Criteria

Category	Criteria	Metrics
Functionality	The system must allow customers to schedule a delivery at a future date/time	- Successful scheduling of deliveries (>= 99% success rate)
	The system must notify restaurants of scheduled orders in advance	- Timely notifications sent (>= 99% on-time)
	Restaurants must be able to modify/cancel scheduled orders	- Successful modifications/cancellations (>= 95% success rate)
	Customers must be able to track the status of their scheduled deliveries	- Accurate status updates (>= 99% accuracy)
	Restaurants must receive feedback from customers post-delivery	- Feedback submission rate (>= 80%)
Performance	The feature must not degrade the overall performance of the Swiggy platform	- Page load times (<= 2 seconds increase)
	The scheduling process must be quick and responsive	- Average scheduling time (<= 5 seconds)
	Notification delivery time must be minimal	- Notification delivery time (<= 1 second delay)
Usability	The user interface must be intuitive and easy to navigate	- User satisfaction score (>= 90%)
	The scheduling process must be simple for customers and restaurants	- Task completion rate (>= 95%)
Reliability	The system must handle peak loads without failure	- Uptime (>= 99.9%)
	The feature must be robust against common errors	- Error rate (<= 0.1%)

Security	All data must be encrypted and secure	- Data breach incidents (0 incidents)
	The feature must comply with relevant data protection regulations	- Compliance audit pass rate (100%)
Compatibility	The feature must be compatible with all supported devices and platforms	- Compatibility testing pass rate (100%)
	The feature must integrate seamlessly with existing Swiggy systems	- Integration testing pass rate (100%)
Scalability	The system must be able to handle an increasing number of scheduled deliveries	- Successful handling of increased load (>= 99%)
Customer Support	Customers and restaurants must have access to support for scheduling issues	- Support request resolution time (<= 24 hours)
	There must be documentation and FAQs available for the new feature	- Availability of documentation (100%)

🪝 Metrics

Metrics to Track

North Star Metric:
Number of scheduled deliveries completed successfully.

- Formula: (Total Scheduled Deliveries Completed Successfully / Total Orders) * 100

Leading Metrics:

- User Engagement: Number of users utilizing the scheduled delivery feature.

  Formula: Number of Users Using Scheduled Delivery / Total Active Users

- Order Volume: Increase in total orders due to the availability of scheduled delivery.

  Formula: (Scheduled Delivery Orders - Baseline Orders) / Baseline Orders

- Customer Satisfaction: CSAT and NPS scores specific to the scheduled delivery feature.

  Formula (CSAT): (Total Positive Responses / Total Responses) * 100

  Formula (NPS): % Promoters - % Detractors

Lagging Metrics:

- Revenue Growth: Additional revenue generated from scheduled delivery orders.

  Formula: (Revenue from Scheduled Deliveries - Baseline Revenue) / Baseline Revenue

- Market Share: Growth in market share due to the competitive advantage of the feature.

  Formula: (Swiggy Scheduled Deliveries / Total Market Scheduled Deliveries) * 100

- Restaurant Participation: Increase in the number of restaurants offering scheduled delivery.

  Formula: (Number of Restaurants with Scheduled Delivery - Baseline Number of Restaurants) / Baseline Number of Restaurants