

Tech Saksham

Case Study Report

Data Analytics with Power BI

“360 degree business analysis of online delivery apps using power BI ”

“ APC MAHALAXMI COLLEGE ”

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ABSTRACT

In the digital age, data has become an invaluable asset for businesses, particularly in the banking sector. The proposed project, “Real-Time Analysis of Bank Customers,” aims to leverage PowerBI, a leading business intelligence tool, to analyze and visualize real-time customer data. This project will enable banks to gain deep insights into customer behavior, preferences, and trends, thereby facilitating data-driven decision-making and enhancing customer satisfaction. The real-time analysis will allow banks to respond promptly to changes in customer behavior or preferences, identify opportunities for cross-selling and up-selling, and tailor their products and services to meet customer needs. The project will also contribute to the broader goal of digital transformation in the banking sector, promoting efficiency, innovation, and customer-centricity.

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CHAPTER 1

INTRODUCTION

1.1 Problem Statement

The rapid growth of online delivery apps has created a competitive landscape where businesses must continuously optimize their operations to stay ahead. However, many businesses struggle to effectively analyze the vast amount of data generated by these apps to make informed decisions. This study aims to address this challenge by conducting a comprehensive 360-degree analysis of online delivery apps using Power BI. The analysis seeks to identify key areas for improvement in customer experience, delivery efficiency, and financial performance, ultimately enabling businesses to enhance their competitiveness and profitability in the online delivery market.

1.2 Proposed Solution

The proposed solution involves leveraging Power BI for a comprehensive analysis of online delivery apps. By collecting and preparing data from various sources, creating interactive dashboards, and utilizing analytical features such as customer segmentation, market basket analysis, and predictive modeling, businesses can gain actionable insights into key areas such as delivery performance, customer behavior, and financial metrics. This holistic approach enables businesses to optimize their operations, enhance customer satisfaction, and drive profitability in the competitive landscape of online delivery.

1.3 Feature

Certainly, here are some key feature points for the real-time tracking system in the online delivery app:

1. ****Live Order Tracking****: Customers can track their orders in real-time from the moment it's placed until it's delivered, providing transparency and peace of mind.
2. ****Interactive Map Interface****: A user-friendly map interface displays the current location of the delivery driver along with the route and estimated time of arrival (ETA).
3. ****Delivery Status Updates****: Customers receive timely notifications about the status of their orders, including when the order is confirmed, out for delivery, delayed, or delivered.
4. ****Customizable Alerts****: Customers can customize their notification preferences, choosing to receive alerts via push notifications, SMS, or email.

5. ****Estimated Time of Arrival (ETA)**:** The system calculates and displays the estimated time of arrival based on real-time traffic conditions, ensuring accuracy and reliability.

1.4 Advantages

Here are some advantages of implementing the real-time tracking system feature in an online delivery app:

1. ****Improved Customer Experience**:** Real-time tracking provides customers with transparency and control over their orders, leading to higher satisfaction and repeat business.
2. ****Reduced Customer Inquiries**:** With access to live order updates, customers are less likely to contact customer support for order status inquiries, reducing the workload on support staff.

3. ****Increased Trust and Confidence****: Providing accurate and timely tracking information builds trust and confidence in the delivery service, leading to positive word-of-mouth recommendations and brand loyalty.

4. ****Optimized Delivery Routes****: Delivery drivers can use real-time tracking data to optimize their routes, reducing delivery times and fuel costs while improving overall efficiency.

5. ****Enhanced Operational Efficiency****: By streamlining the delivery process and reducing manual interventions, the real-time tracking system improves operational efficiency for the delivery service provider.

1.5 Scope

The scope of implementing a real-time tracking system in the online delivery app encompasses developing and integrating user-friendly tracking interfaces, enhancing backend systems for GPS integration and data management, ensuring data privacy and security compliance, conducting thorough testing, providing training and support, gathering feedback for iterative improvements, documenting processes, planning deployment, and establishing monitoring and maintenance protocols to ensure reliable and scalable performance.

CHAPTER 2

SERVICES AND TOOLS REQUIRED

2.1 Services Used

- **Data Collection and Storage Services:** Banks need to collect and store customer data in real-time. This could be achieved through services like Azure Data Factory, Azure Event Hubs, or AWS Kinesis for real-time data collection, and Azure SQL Database or AWS RDS for data storage.
- **Data Processing Services:** Services like Azure Stream Analytics or AWS Kinesis Data Analytics can be used to process the real-time data.

- **Machine Learning Services:** Azure Machine Learning or AWS SageMaker can be used to build predictive models based on historical data.

2.2 Tools and Software used

Tools:

- **PowerBI:** The main tool for this project is PowerBI, which will be used to create interactive dashboards for real-time data visualization.
- **Power Query:** This is a data connection technology that enables you to discover, connect, combine, and refine data across a wide variety of sources.

Software Requirements:

- **PowerBI Desktop:** This is a Windows application that you can use to create reports and publish them to PowerBI.
- **PowerBI Service:** This is an online SaaS (Software as a Service) service that you use to publish reports, create new dashboards, and share insights.
- **PowerBI Mobile:** This is a mobile application that you can use to access your reports and dashboards on the go.

CHAPTER 3

PROJECT ARCHITECTURE

3.1 Architecture



Features of Online Food Delivery App miro

tbhjHere's a high-level architecture for the project:

- 1. Data Collection:** Real-time customer data is collected from various sources like bank transactions, customer interactions, etc. This could be achieved using services like Azure Event Hubs or AWS Kinesis.

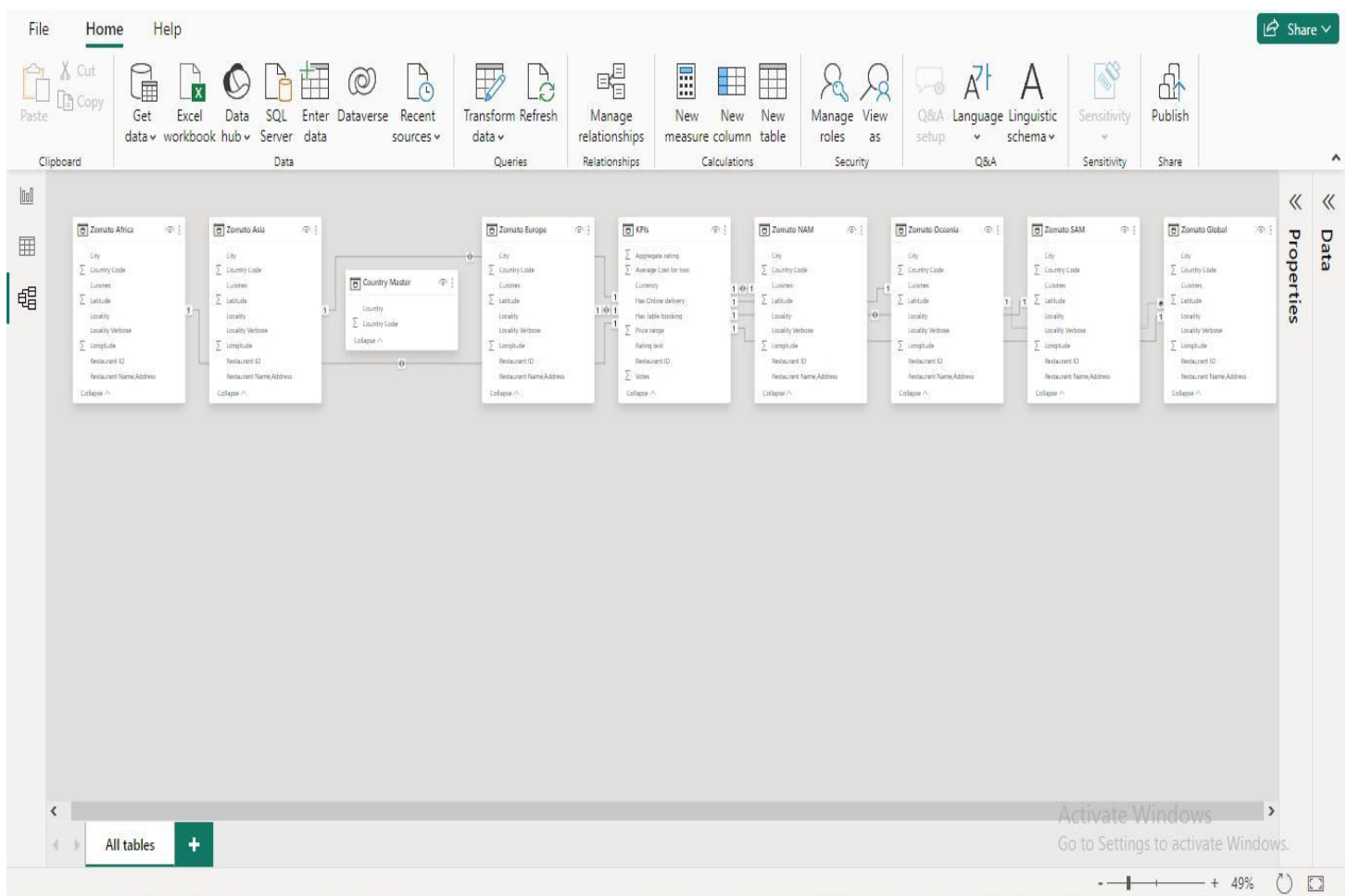
- 2. Data Storage:** The collected data is stored in a database for processing. Azure SQL Database or AWS RDS can be used for this purpose.
- 3. Data Processing:** The stored data is processed in real-time using services like Azure Stream Analytics or AWS Kinesis Data Analytics.
- 4. Machine Learning:** Predictive models are built based on processed data using Azure Machine Learning or AWS SageMaker. These models can help in predicting customer behavior, detecting fraud, etc.
- 5. Data Visualization:** The processed data and the results from the predictive models are visualized in real-time using PowerBI. PowerBI allows you to create interactive dashboards that can provide valuable insights into the data.
- 6. Data Access:** The dashboards created in PowerBI can be accessed through PowerBI Desktop, PowerBI Service (online), and PowerBI Mobile.

This architecture provides a comprehensive solution for real-time analysis of bank customers. However, it's important to note that the specific architecture may vary depending on the bank's existing infrastructure, specific

requirements, and budget. It's also important to ensure that all tools and services comply with relevant data privacy and security regulations.

CHAPTER 4

MODELING AND RESULT





Manage relationships

Active	From: Table (Column)	To: Table (Column)
<input checked="" type="checkbox"/>	Zomato Africa (Restaurant ID)	KPIs (Restaurant ID)
<input checked="" type="checkbox"/>	Zomato Asia (Restaurant ID)	KPIs (Restaurant ID)
<input checked="" type="checkbox"/>	Zomato Europe (Restaurant ID)	KPIs (Restaurant ID)
<input type="checkbox"/>	Zomato Global (Latitude)	Zomato Oceania (Latitude)
<input checked="" type="checkbox"/>	Zomato Global (Restaurant ID)	KPIs (Restaurant ID)
<input checked="" type="checkbox"/>	Zomato NAM (Restaurant ID)	KPIs (Restaurant ID)
<input checked="" type="checkbox"/>	Zomato Oceania (Restaurant ID)	KPIs (Restaurant ID)
<input checked="" type="checkbox"/>	Zomato SAM (Restaurant ID)	KPIs (Restaurant ID)

New...

Autodetect...

Edit...

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Close

Edit relationship

Select tables and columns that are related.

Zomato Africa

Restaurant ID	Country Code	City	Restaurant Name,Address	Locality
18395463	189	Cape Town	The Butcher's Wife,15 Belgravia Road, Athlone, Cape T...	Athlone
18337845	189	Cape Town	Coco Safar,Ground Floor, Cavendish Square, Claremont...	Cavendish Square, C
6401732	189	Cape Town	La Parada,107 Bree Street, CBD, Cape Town	CBD

KPIs

Restaurant ID	Average Cost for two	Currency	Has Table booking	Has Online delivery	Price range
18433852	300	Indian Rupees(Rs.)	No	No	1
18465871	300	Indian Rupees(Rs.)	No	No	1
18471268	300	Indian Rupees(Rs.)	No	No	1

Cardinality

Cross filter direction

One to one (1:1)

Both

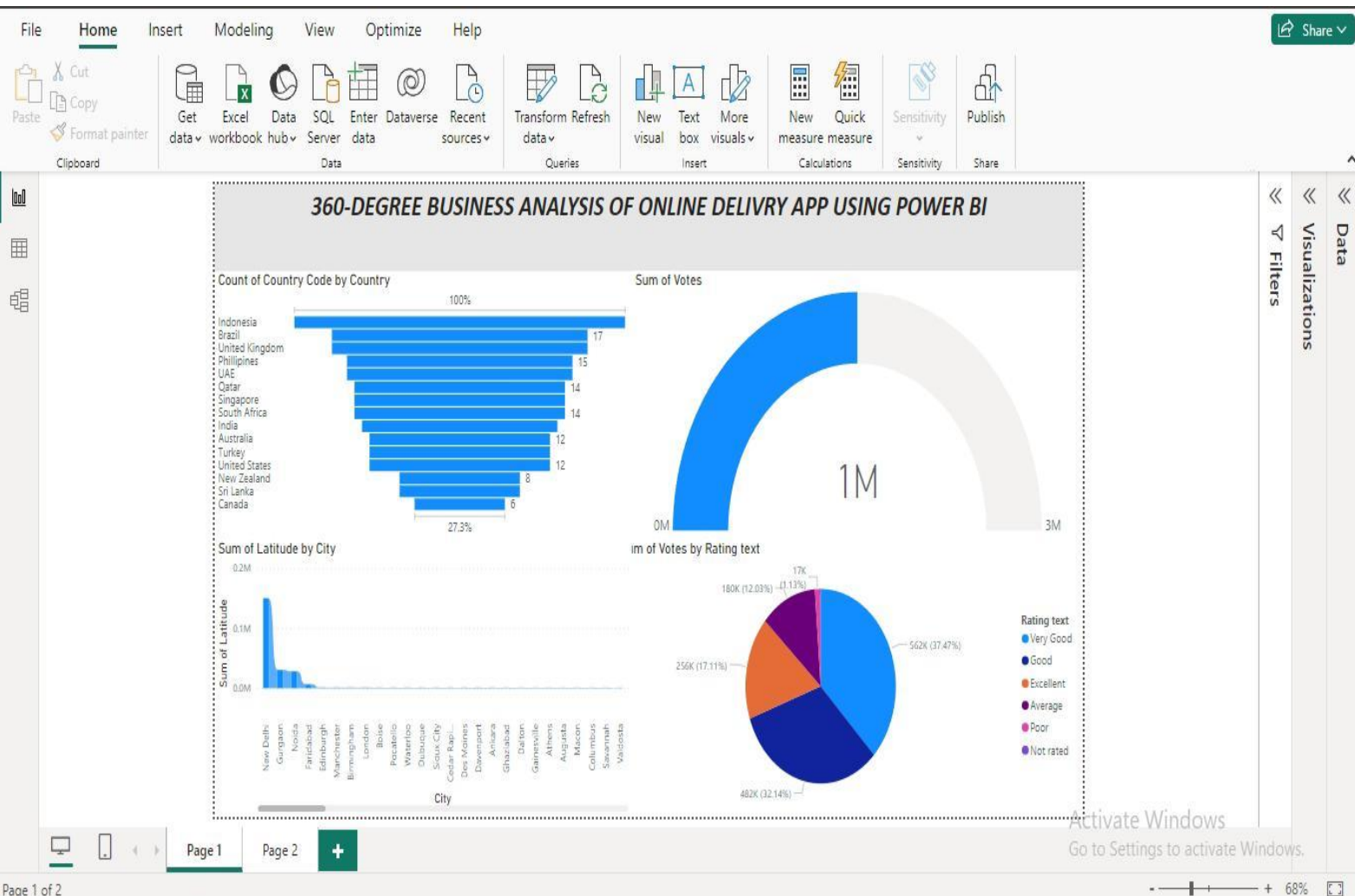
☒ Make this relationship active

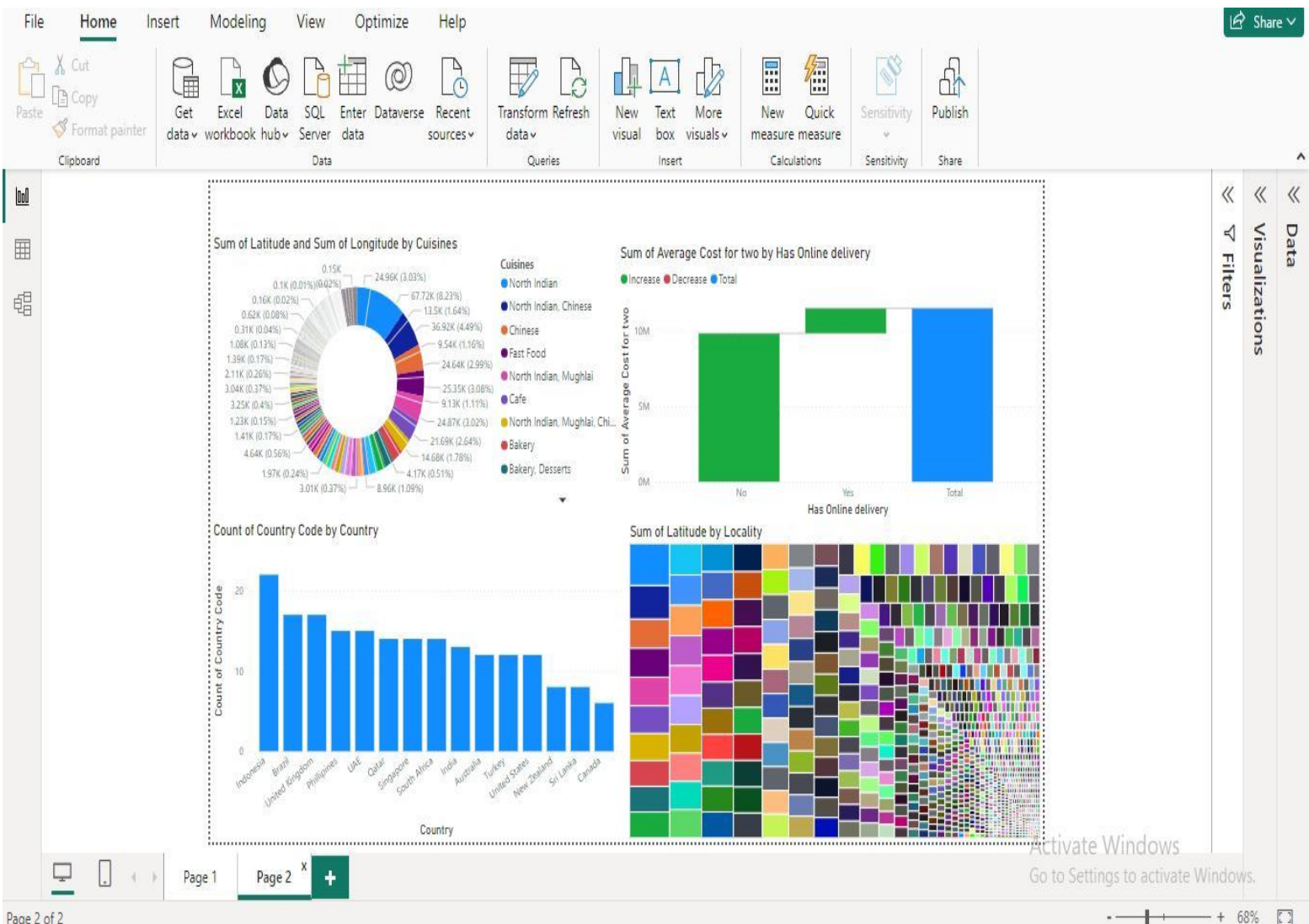
☐ Assume referential integrity

OK

Cancel

Dashboard





CONCLUSION

In conclusion, implementing a real-time tracking system in an online delivery app offers significant benefits for both customers and the delivery service provider. By providing transparency, improving efficiency, and enhancing customer satisfaction, the real-time tracking feature contributes to a positive user experience and strengthens the competitive position of the delivery service in the market. With careful planning, robust architecture, and ongoing iteration based on user feedback, businesses can successfully deploy and maintain a real-time tracking system that meets the needs of customers while driving operational excellence and business growth. As online delivery continues to evolve, investing in technologies like real-time tracking becomes increasingly crucial for staying ahead of the competition and delivering exceptional service in today's digital landscape.

FUTURE SCOPE

The future scope for the real-time tracking system in online delivery apps is promising and has several areas of potential growth and enhancement:

1. **Enhanced Personalization**: Leveraging machine learning and AI algorithms to personalize the tracking experience based on individual customer preferences, order history, and behavior patterns.
2. **Predictive Analytics**: Utilizing advanced analytics techniques to predict delivery times more accurately, anticipate customer demand, and optimize delivery routes in real-time to improve efficiency and reduce delivery times.
3. **IoT Integration**: Integrating Internet of Things (IoT) devices such as temperature sensors and humidity monitors into delivery vehicles to ensure the quality and safety of perishable or sensitive goods during transportation.

4. ****Augmented Reality (AR)****: Implementing AR technology to provide customers with immersive tracking experiences, such as visualizing delivery routes overlaid on real-world environments or viewing product information through AR interfaces.
5. ****Blockchain for Supply Chain Transparency****: Exploring the use of blockchain technology to enhance supply chain transparency and traceability, providing customers with verifiable proof of product origin, handling, and delivery.
6. ****Drone Delivery****: Integrating drone technology for last-mile delivery in select locations, enabling faster and more efficient delivery options, especially in remote or hard-to-reach areas.
7. ****Voice-Activated Tracking****: Introducing voice-activated tracking features that allow customers to check order status and receive updates hands-free, leveraging voice recognition technology for convenience and accessibility.
8. ****Environmental Sustainability****: Implementing eco-friendly delivery options and tracking features that prioritize environmentally sustainable practices, such as optimizing delivery routes to minimize carbon emissions and promoting reusable packaging solutions.
9. ****Partnerships and Ecosystem Integration****: Collaborating with third-party service providers and integrating with other digital platforms (e.g., e-commerce marketplaces, ride-sharing apps) to offer seamless end-to-end delivery experiences and expand the reach of the tracking system.

10. ****Continuous Improvement and Innovation****: Embracing a culture of continuous improvement and innovation by soliciting feedback from users, monitoring industry trends, and investing in research and development to stay ahead of emerging technologies and customer expectations.

By embracing these future opportunities and continuously evolving the real-time tracking system, online delivery apps can further enhance their competitiveness, deliver superior customer experiences, and drive sustainable growth in the dynamic and rapidly evolving delivery landscape.

REFERENCES

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