**CASE – 3**

**STRATEGIC LAST MILE DELIVERY ANALYSIS for THE KROGER Co. (NYSE: KR)**

***GROUP – 4***

**COURSE: LOGISTICS SUPPLY CHAIN MANAGEMENT**

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### **EXECUTIVE SUMMARY**

**Company Overview & Financial Condition**

The American grocery retailer Kroger Co. (NYSE: KR) maintains 2,800 stores and continues to develop its e-commerce operations and digital transformation initiatives while serving as one of the largest retail chains in the United States. Kroger continues to research drone delivery for last-mile operations because its brick-and-mortar sales decline while online grocery demand increases thus we need drone solutions to match Walmart and Amazon (Statista, 2024).

Revenue & Growth Trends (2010-2024)

1. Annual Revenue (2024): $150.039B - increased1.2% from 2023.
2. 2023 Revenue: $148.258B - increased 7.52% from 2022.
3. 2022 Revenue: $137.888B - increased 4.07% from 2021.
4. Q4 2024 Revenue: $33.634B - decreased 0.95% year over year. (Kroger, 2024)

**Key Insights:**

The passive revenue growth during 2024 exhibits a decreased rate of expansion when compared with past years thus requiring innovation in delivery and logistics systems. (Kroger, 2024)

Online commerce continues to grow rapidly, raising the need for drone-based last-mile delivery solutions because they offer speed and cost-saving capabilities. (FactMR, n.d.)

**Operating Income & Profitability Trends**

* Annual Operating Income (2024): $3.096B - decreased 24.96% from 2023 (Kroger, 2024).
* 2023 Operating Income: $4.126B - increased 18.67% from 2022.
* 2022 Operating Income: $3.477B – increased 25.07% from 2021.
* Q4 2024 Operating Income: $0.828B – decreased 9.21% Year over year. (Kroger, 2024)

**Insights:**

The 2024 operating income fell by 25%, indicating increased logistics and inflation costs and operational expenses. (Kroger, 2024).

The use of drones has the potential to decrease delivery expenses at the final stage, thereby augmenting earnings potential (FactMR, n.d.).

**2. Current Last-Mile & Delivery Strategy**

The expansion of delivery services at Kroger includes the Kroger Ship service along with Instacart partnerships and Ocado collaborations. Traditional delivery vehicles used in these models lead to high expenses due to the costs of traditional vehicles combined with their slow performance in dense traffic areas (ThomasNet, 2024)

**Existing Delivery Model:**

* Instacart & Ocado – Used for third-party grocery deliveries.
* Kroger Ship – Direct-to-home shipping service for non-perishables.

The company continues building its e-commerce growth through numerous automated warehouses labeled Micro-fulfillment Centers.

**Kroger’s Drone Delivery Pilot (2021) -** Partnership with Drone Express.

Pilot locations:

* Centerville, OH (Kroger Marketplace).
* Ralphs in California.

Capabilities:

* + Small items under 5 lbs (baby products, snacks, medicine).

Customers can obtain speed-based deliveries in less than 15 minutes through their smartphone location data.

**Key Insights:**

The initial drone pilot demonstration showed Kroger's predisposition toward drone technology despite its limited size.

A newer drone approach will enhance operations by enabling major city deliveries of large packages weighing 15 to 20 pounds.

**3. Competitive Landscape & Industry Trends**

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| --- | --- | --- |
| **Company** | **Region** | **Key Drone Strategy** |
| Amazon Prime Air | USA | Small drone deliveries in Texas & California. Focus on rural/suburban areas. |
| Walmart zipline and Drone Up | USA | The drone delivery service of Walmart includes two operations: Walmart Zipline operates in Arkansas Florida and Texas while Walmart Drone Up serves Virginia and grocery products. |
| JD.com | China | operates the biggest drone delivery infrastructure throughout China to support merchandise transport into rural markets. |

**Global Leaders in Last-Mile Drone Delivery Insights:**

* Drone grocery delivery leadership belongs to Walmart and Amazon among United States providers.
* Examples from across the world demonstrate that drone services can effectively expand within the market of grocery retail.
* The competitive situation requires Kroger to take swift action to maintain its position in drone delivery services (New York Post, 2024).

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| **Risk Factor** | **Challenges** | **Ideas to overcome challenges** |
| FAA Regulations | Commercial drone regulations limit businesses from expanding into larger markets. | Obtain regulatory waivers together with establishing partnerships that enable your organization to operate with regulatory support. |
| Weather Conditions | Heavy precipitation and windy conditions together with snowfall present disturbances for delivery operations. | The strategy focuses on implementing delivery methods for stable weather conditions in cities together with backup systems. |
| Consumer Adoption | The traditional delivery method continues to be a favored choice for specific customers. | Users can be encouraged to use the product through discounts or free trial deliveries. |
| Operational Costs | The operational requirements include workplace personnel for packing duties battery replacements and maintenance tasks. | The company should employ automated packaging solutions together with route optimization to minimize expenses. |
| Cybersecurity Risks | Drones are susceptible to hacking as well as GPS spoofing attacks. | The company should dedicate its budget to secured drone communication systems and encrypted data transmission. |

**Risks & Challenges of Drone Deployment**

* The company requires preparation against regulatory framework evolution and operational procedure development alongside customer retirement needs.
* The drone efficiency can be enhanced through collaboration between Kroger and the FAA together with automation development investments (FactMR, n.d.).

**5. The deployment structure and locations of drone fulfillment centers at Kroger**

*According to our assumption, Kroger keeps the locations of their drone fulfillment centers undisclosed to the public***.**

|  |  |  |
| --- | --- | --- |
| **City** | **Number of Drone Fulfillment Centers (Assumed)** | **Reason** |
| Cincinnati, OH | 1 | Kroger’s HQ has a strong e-commerce presence. |
| Houston, TX | 2 | Large metro area, high delivery demand. |
| Dallas, TX | 2 | Major urban center, logistics hub. (Walmart has started ops) |
| Louisville, KY | 1 | Strategic location for distribution. |
| Indianapolis, IN | 1 | Central location, major retail presence. |

**2. CURRENT STATE OF RETAIL LAST MILE DRONE DELIVERIES AROUND THE GLOBE**

Last-mile drone delivery operates as a fast-growing industry around the world through advanced technologies and urgent customer needs for speedy delivery services. The following review covers a complete assessment of worldwide retail drone deliveries in their current market state including major companies along with regional developments.

**Market Overview**

In 2022 the last-mile drone delivery market worldwide achieved a market value of USD 253.8 million. This market analysis shows that the drone delivery sector will grow to USD 2.77 billion during the time period from 2023 to 2032 with a Compound Annual Growth Rate (CAGR) of 27.5%.

Drone technology developed through innovation has accomplished substantial advancements which improve drone delivery capabilities by extending batteries and implementing automatic flight systems and enhancing weight-carrying abilities (FactMR, n.d.).

**Leading Companies in Last-Mile Drone Deliveries**

Multiple businesses have introduced groundbreaking innovations to the last-mile drone delivery industry through distinct contributions to its development process.

Amazon introduced Prime Air drone delivery as their pioneer drone service to expedite package deliveries. The drone delivery operations of Amazon began in California when the company started servicing small packages up to 5 pounds during June 2022.

The large-scale residential drone delivery system comes from Wing, a subsidiary company of Alphabet Inc. In the middle of 2024 Wing introduced its services across Dallas-Fort Worth to cover the entire local population of 8 million residents (Statista, 2024).

Zipline launched its drone-medical supply delivery service in 2014 with main operations across both U.S. and African regions. Zipline accomplished 100 million delivery miles through drones to showcase the healthcare potential of drone logistics systems during 2024.

**Regional Developments**

The North American region holds the top position in drone deliveries following its 43.0% market share during 2022 because it remains the principal location for drone delivery innovation. Amazon and Wing have established drone service testing programs across California and Texas among other U.S. states.

East Asian regions will show the fastest market expansion through a 26.4% Compound Annual Growth Rate from 2023 to 2033. The combination of supportive regulations and technological investments by China has established it as one of the major drone delivery stakeholders.

The European drone delivery market has expanded through successful operations in Ireland by Manna Drone Delivery and other companies. Drones can operate in commercial delivery networks because of the effective regulatory systems in this region (Kroger, 2024).

Challenges:

* Market-wide drone delivery expansion faces obstacles due to regulatory barriers which require companies to overcome airspace review procedures.
* The judgment of local residents about drone deliveries remains uncertain because they are worried about privacy threats along with noise disturbances and security threats.
* Retail last-mile drone deliveries continue to advance rapidly because both major corporations and startup companies put substantial resources into this sector. Developments in technology and regulatory updates position drone delivery systems to establish themselves as basic components of the logistics industry for providing rapidly efficient solutions which satisfy escalating consumer demands.

**3. HOW DOES PROJECT LOOK LIKE WHEN ITS DEPLOYED**

1. **Five Recommended Cities –** Houston, Cincinnati, Louisville, Indianapolis, Dallas
2. **WHY THESE CITIES?**

The selection of cities for drone delivery services considered their logistics components with drone regulations and market potential as main factors for choice (LocationsCloud, 2025).

1. Houston, TX (Best Overall)
   * 35 Kroger Stores (Highest store count) (LocationsCloud, 2025).
   * Texas maintains leadership status as a state which supports drone-friendly regulations within its boundaries (FactMR, n.d.).
   * Fastest-growing e-commerce market in the U.S (Statista, 2024).
   * While hurricanes and overheating conditions create weather risks the city provides solid infrastructure to enable risk mitigation strategies (Thomasnet, 2024).
2. Cincinnati, OH (Kroger HQ)

* 27 Kroger stores, strong market presence.
* Headquarters city, easier internal coordination.
* Moderate-High air traffic congestion risk.
* Good mix of suburban and urban neighborhoods for drone testing (Statista, 2024).

1. Louisville, KY (Best for Logistics)

* 25 stores, strong logistics hub (UPS Worldport).
* Fewer FAA restrictions = easier drone approval.
* Moderate weather risks but manageable (Thomasnet, 2024).

1. Indianapolis, IN (Strategic Midwest Expansion)

* 25 Kroger stores, well-connected transport hubs.
* Moderate e-commerce demand, favorable FAA conditions.
* Warm and cold seasonal temperatures create operational risks for drone operations (FactMR, n.d.).

1. Dallas, TX (Future Expansion Hub) (Walmart successfully operating for around 1.8 million consumers)

* 15 stores (Lowest count), but strong market demand.
* Favorable regulatory climate (Amazon Prime Air & Wing pilot projects).
* The operational protection measures need enhancement when dealing with extreme weather conditions which include storms and heat waves (Zilber, 2024).

**C. Period of time (quarters) deploying in each city, starting 1st quarter of next year**

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| --- | --- | --- |
| Quarter | City | Reasoning |
| Q1 (Year 1) | Houston, TX | Best city for drone expansion, large store network, high demand. |
| Q2 (Year 1) | Cincinnati, OH | The Kroger HQ serves as a controlled space to carry out testing improvements which employs existing operational control over the center. |
| Q3 (Year 1) | Louisville, KY | Leverages strong logistics & supply chain infrastructure. |
| Q4 (Year 1) | Indianapolis, IN | The operations will assess Midwest winter compatibility while increasing its service area across various regions. |
| Q1 (Year 2) | Dallas, TX | The company plans a final deployment phase which gives regulators time to adapt drone regulations. |

**D. Specific sites within these cities for the drone operation bases**

Drone facilities need to be placed near Kroger fulfillment warehouses and distribution centers at two locations for each city expansion.

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| **City** | **Proposed Drone Base** | **Reasoning** |
| Houston | Kroger Distribution Center, 701 Gellhorn Dr | Major regional fulfillment hub, close to suburban delivery zones. |
| Cincinnati | Kroger Fulfillment Center, Monroe, OH | HQ support, major Kroger distribution hub, close to urban areas. |
| Louisville | UPS Worldport Adjacent Site | Leverages UPS infrastructure for rapid distribution. |
| Indianapolis | Kroger Warehouse, 5350 W 38th St | Near high-demand residential zones, easier air traffic control. |
| Dallas | Kroger E-commerce Center, 4221 W John Carpenter Fwy | The location connects residential areas that suit drone technology needs with FAA rules that are manageable. |

**E. Bases in each city, considering needs for loading orders onto drone, takeoff and landing, and drone maintenance**

A drone hub network should include one to two facilities within each city based on a combination of population size and predicted delivery amounts.

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| **City** | **# of Drone Bases** | **Reasoning** |
| Houston | 2 bases | Large metro area, highest demand. |
| Cincinnati | 1 base | HQ control, moderate congestion. |
| Louisville | 1 base | UPS hub, strategic for Midwest logistics. |
| Indianapolis | 1 base | Midwest regional expansion. |
| Dallas | 2 bases | High-tech adoption, future scalability. |
| Total | 7 drone bases | Covers all 5 selected cities efficiently. |

**4. Setting up Fleet Operations considering training, incremental operational costs, and costs of order/delivery (Assumptions)**

Kroger wants to boost its last-mile delivery performance through drone delivery programs which will operate together with its already established retail and e-commerce functions (Last-Mile Delivery Drones, 2024).

**Fleet Setup & Integration into Kroger Operations**

The drone delivery system of Kroger functions between Fulfillment centres and warehouses and select retail locations to supply customers with rapid grocery services. The system aims to minimize expenses connected to final delivery while simultaneously raising operational effectiveness and customer satisfaction (Last-Mile Delivery Drones, 2024).

**Drone Fleet Overview**

| *Feature* | *Specification* |
| --- | --- |
| *Model* | *Wingcopter 198* |
| *Payload Capacity* | *Up to 20 lbs* |
| *Flight Range* | *20 miles (40-mile round trip)* |
| *Battery Life* | *45 minutes (with 15-minute reserve)* |
| *Max Speed* | *93 mph (Cruising at 60 mph)* |
| *Charging Time* | *1 hour (fast charge) or battery swap* |
| *Number of Drones Deployed Initially* | *200-250 (from a fleet of 500 available)* |
| *Drone Hubs* | *7 hubs across 5 cities (Houston, Cincinnati, Louisville, Indianapolis, Dallas)* |

Integration with Existing Kroger Infrastructure

1. The delivery drones at Kroger will depart from small MFCs (Fulfilment centres) and warehouses and additionally service some Kroger retail outlets (Statista, 2024).
2. The scheduling system based on artificial intelligence methods will synchronize with Kroger's current e-commerce infrastructure to build routing optimization (ThomasNet, 2024).
3. The company will create custom order packaging which combines lightweight materials with secure containers and insulation for drone delivery systems.
4. The delivery system includes three distinct final-mile service methods that provide adaptable options between pickup and regular delivery service and drone transportation (LocationsCloud, 2025).

**Daily Tactical Operations**

Drone Pre-Flight Checks & Readiness –

1. Battery Status, diagnosis tests etc
2. weather conditions and market demand and checks drone operational status.
3. The inspections meet FAA requirements (New York Post, 2024).

Order Processing & Loading

1. The fulfillment centers manage order packaging within a 20-minute period.
2. Check systems confirm that packages meet drone weight standards (Kroger 2023 Annual Report, n.d.).

In-Flight Monitoring & Real-Time Adjustments

1. Live GPS tracking & AI-powered route optimization.
2. Check unexpected weather events which include wind and rain conditions.
3. Delivery time: 10-20 minutes per order.
4. The delivery system provides instant messaging that lets users check delivery progress in real time (Time, n.d.).

Post-Flight Maintenance & Overnight Storage

1. A complete battery swapping application and drone diagnostic process.
2. The drones rest in weather-protected charging systems throughout the night.
3. The distribution center maintains standby drones as replacement assets in case of emergency needs (Fact.MR, n.d.).

**Weekly Tactical Operations**

Data Analytics & Performance Review

1. Evaluation of customer satistfaction and feedback.
2. The flight schedules should be adjusted for future demand patterns.
3. Delivery routes should be optimized to cut down flight mileage and conserve energy expenses (Statista, 2024).

Battery & Drone Health Audits

1. Deep diagnostics performed every 50 flights.
2. Performance evaluation of battery in defined periods
3. Regular software updates with security patches (ThomasNet, 2024).

Workforce Training & Adjustments

1. Regular retraining of drone operators & logistics staff.
2. Emergency simulation training based on artificial intelligence provides operators learning opportunities (Kroger 2023 Annual Report, n.d.).

**Monthly Tactical Operations**

1. Comprehensive drone inspections

2. Performance optimization:

3. FAA Compliance & Security Audits

4. Expansion & Scalability Planning

* Organizations need to determine the growing market potential for expanding their drone platform activities.
* Selecting new areas to establish fulfillment centers will help the business expand.
* The organization should maximize its maintenance cycles and operational systems (LocationsCloud, 2025).

**Training Cost Per City(Assuming based on unit cost)**

|  |  |  |
| --- | --- | --- |
| **Category** | **Per Employee Cost** | **Total (Per City)** |
| Training Materials | $500 | $20,000 |
| Flight Simulators | $1,500 | $60,000 |
| FAA Certifications | $2,500 | $100,000 |
| Total Training Budget Per City | $4,500 per employee | $180,000-$250,000 per city |

**OPERATIONAL COSTS(Assumptions)**

The main cost reduction stems from drone delivery services replacing traditional vehicle products because drones cut down expenses for staff support and fuel expenses together with maintenance costs (Fact.MR, n.d.).

Regarding drone deliveries we start with the assumption that Kroger would perform an initial 1.5M annual operations.

1. Traditional Delivery Cost (Car/Van)

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| --- | --- | --- |
| **Expense Category** | **Cost Per Order** | **Total Annual Cost (1.5M Orders)** |
| Labor Costs (Drivers, Loading) | $4.50 | $6.75M |
| Fuel Costs (Vans, Trucks) | $2.00 | $3.00M |
| Vehicle Maintenance | $0.75 | $1.13M |
| Total Cost Per Order (Traditional) | $7.25 | $10.88M |

1. Drone Delivery Cost

|  |  |  |
| --- | --- | --- |
| **Expense Category** | **Cost Per Order** | **Total Annual Cost (1.5M Orders)** |
| Labor (Drone Operators, Handlers, Engineers) | $1.50 | $2.25M |
| Battery Recharging & Replacement | $0.50 | $0.75M |
| FAA Fees & Cybersecurity Costs | $0.25 | $0.38M |
| Total Cost Per Order (Drone) | $2.25 | $3.38M |

1. Annual Cost Savings

|  |  |
| --- | --- |
| **Delivery Type** | **Total Annual Cost for 1.5M Orders** |
| Traditional (Car/Van) | $10.88M |
| Drone-Based | $3.38M |
| Annual Savings (Initial Phase) | $7.5M - $10M |

Now, let’s scale up the order volume to see larger cost reductions.

Scaling to Full Drone Operations (5M Orders Per Year)

|  |  |
| --- | --- |
| Delivery Type | Total Annual Cost for 5M Orders |
| Traditional (Car/Van) | $36.25M |
| Drone-Based | $11.25M |
| Annual Savings (Full Deployment) | $25M - $30M |

Yearly savings amounting to $50M become achievable when drone operations achieve maximum efficiency at handling 7M deliveries annually.

Drones will drive greater financial efficiency as they shift more delivery routes toward automation through time (Kroger 2023 Annual Report, n.d.).

Risk Mitigation Strategies

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| --- | --- | --- |
| **Risk** | **Challenges** | **Mitigation Strategy** |
| Weather | Rain, storms, heat impact flights. | AI weather tracking, backup delivery options. |
| FAA Regulations | Airspace restrictions. | Apply for drone airspace corridors. |
| Battery Limitations | Cold weather affects range. | Extra battery swap stations. |
| Cybersecurity | GPS hacking threats. | Encrypted communications, real-time monitoring. |
| Public Perception | Noise, safety concerns. | Community engagement, transparent communication. |

**5. Deployment that need to look like to increase total company sales (annualized) by 1%, 2% and 3% respectively.**

***For 1% Sales Growth***

Kroger requires successful expansion of its drone delivery network through five cities with inventory optimization and personnel management as well as locating flight efficiency points to reach a 1% increase.

**Average # of Orders Per City**

Kroger requires 15 million annual drone orders to achieve a revenue stream of $1.5 billion. Each city requires 3 million annual orders according to the revenue projection of 750,000 orders during each quarter.

**Average # of Flights Per Drone Per Day**

A single drone system will perform up to ten flights within every 24-hour period. Each city throughout the area requires 500 functional drones that will operate from two drone centers per metropolitan zone daily.

**Site-Specific Inventory Investments**

The micro-fulfillment centers operated by Kroger need to carry products that people frequently need including fresh food and basic household items and basic pantry items. The growing customer demand requires the company to improve warehouse picking automation systems.

**Dedicated Drone Fleet Inventory Personnel Per Site**

The establishment of one drone hub demands a workforce of at least fifty employees who will perform duties as operators and maintenance workers and logistics managers.

Number of Flights & Orders Required

* Per day: around 42,000 drone deliveries across 5 cities.
* Per month: around 1.26 million deliveries.
* Per quarter: around 3.75 million deliveries (LocationsCloud, 2025).

***2% Sales Growth***

To achieve a 2% sales boost Kroger must enlarge their drone presence from the current five cities while significantly growing their drone fleet.

**Average # of Orders Per City**

A total of 30 million drone orders must be achieved annually by Kroger which translates to 6 million orders per city yearly and 1.5 million orders per city quarterly.

**Average # of Flights Per Drone Per Day**

The required number of drones to achieve 10 daily flights amounts to 1,000 drones for each city.

**Site-Specific Inventory Investments**

Active drone delivery operations from Kroger will need warehouse storage space to double up while also investing more in automated inventory systems and predictive analysis systems to run the delivery operations effectively.

**Dedicated Drone Fleet Inventory Personnel Per Site**

The inventory handling team and drone pilots together with customer service personnel at each site must number between 80 to 100 employees.

Number of Flights & Orders Required

* Per day: around 83,000 drone deliveries across 5 cities.
* Per month: around 2.5 million deliveries.
* Per quarter: around 7.5 million deliveries.

***3% Sales Growth***

The development of drone delivery as a primary distribution system at Kroger needs to reach 3% annual sales growth to support these plans.

**Average # of Orders Per City**

Kroger will need 45 million annual drone orders at the rate of 9 million per city per year amounting to 2.25 million drone orders per quarter per city.

**Average # of Flights Per Drone Per Day**

The growth requires 1,500 operational drones for each city to deliver ten flights each day.

**Dedicated Drone Fleet Inventory Personnel Per Site**

Maintaining operational volume requires each city to employ more than 120 personnel who will handle drone operations and flight maintenance and inventory logistics (Kroger Revenue, n.d.).

Number of Flights & Orders Required

* Per day: around 125,000 drone deliveries across 5 cities.
* Per month: around 3.75 million deliveries.
* Per quarter: around 11.25 million deliveries.

**6**. **Model/simulation of what these operations would look like for revenues, cost of goods (cost of sales), and inventories over the remaining (respective) 8 fiscal quarters** **and Executive Dashboard**

The number of daily orders per store in each city will differ with larger cities receiving 10 orders daily whereas smaller cities receive only 5 orders according to our assumptions (LocationsCloud, 2025).

**Orders Per Day Per Store Based on City Size**

|  |  |  |  |
| --- | --- | --- | --- |
| City | Number of Kroger Stores | Orders Per Store Per Day | Reasoning |
| Houston | 35 | 10 | - Largest city in the group  - High population and demand for fast delivery  - Suburban areas favor drone adoption |
| Cincinnati | 27 | 8 | - Kroger headquarters city, so higher adoption expected  - Strong customer loyalty & early tech adopters |
| Louisville | 25 | 6 | - Mid-sized city with fewer high-income areas  - Steady adoption, but less demand than Houston/Dallas |
| Indianapolis | 25 | 6 | - Similar profile to Louisville  - Balanced urban/suburban market, lower overall demand |
| Dallas | 15 | 5 | - Fewer Kroger stores in this city, but higher average order value  - Extreme weather (storms, heat) reduces drone efficiency |

**Determine the number of daily orders per city through multiplication of stores with orders each store delivers per day.**

|  |  |  |  |
| --- | --- | --- | --- |
| **City** | **Stores** | **Orders Per Store Per Day** | **Total Orders Per Day** |
| **Houston** | 35 | 10 | **350** |
| **Cincinnati** | 27 | 8 | **216** |
| **Louisville** | 25 | 6 | **150** |
| **Indianapolis** | 25 | 6 | **150** |
| **Dallas** | 15 | 5 | **75** |

**The transformation from daily order volume to quarterly order volume requires multiplication by 90.**

We multiply the daily store orders by 90 since each quarter lasts for 90 days (MacroTrends, n.d.).

The demand projection takes into account these quarterly growth percentages:

* Total orders will experience a 5% quarterly increase during Q1-Q3 since adoption remains slow during this period.
* The period from Q4 through Q8 will experience quarterly sales growth at fifteen percent monthly



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| --- | --- | --- |
| **City** | **Total Orders Per Day** | **Orders Per Quarter** |
| **Houston** | 350 | **31,500** |
| **Cincinnati** | 216 | **19,440** |
| **Louisville** | 150 | **13,500** |
| **Indianapolis** | 150 | **13,500** |
| **Dallas** | 75 | **6,750** |

A screenshot of a computer

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A table of numbers with numbers on it

AI-generated content may be incorrect.

A graph of growth over quarter

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A group of graphs showing the growth of the company

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**Kroger Drone Delivery Executive Dashboard (above fig)**

Overview

This Executive Dashboard delivers a complete analysis of Kroger's drone delivery program extending across five essential cities from the first to the eighth fiscal quarter. Through these insights, executives obtain the ability to develop strategic decisions about market expansion as well as cost reduction and process optimization (Statista, 2024).

**Revenue Growth Over 8 Quarters**

The tracking of revenue growth across drone delivery territory constitutes the main purpose of this data point.

**Key Insights**:

Indianapolis together with Cincinnati demonstrate the fastest revenue expansion because they benefit from rising market needs.

During the first stages of operations Houston achieved significant revenue growth but afterward stagnated due to potential operational issues.

The revenue growth in Dallas stays at the lowest point because of reduced store density in that market area and the delayed adoption rate of customers (FactMR, n.d.).

**Net Profit Trend Over 8 Quarters**

The analysis evaluates the annual changes in profit levels among the establishment branches.

**Key Insights:**

Indianapolis and Cincinnati demonstrate superior profit margins which denotes operational efficiency in their performance.

Houston Q5 shows a profit drop which may be caused by elevated operational costs.

The city of Dallas maintains the worst position among the cities in terms of net profit performance (Kroger, 2024).

**Orders Fulfilled Per Quarter**

Purpose: Tracks the number of drone deliveries in each quarter.

**Key Insights**:

* Order fulfillment rates in Indianapolis have secured the city as the leading performer among the selected locations.
* Cincinnati and Louisville demonstrate continuous improvement which suggests their customer base remains healthy.
* The marketing and pricing strategies for Dallas need adjustment because it demonstrates the lowest order levels in the analysis.

**Inventory Turnover Rate Per Quarter**

* The inventory efficiency for drone shipments at Kroger is measured through this purpose.

**Key Insights:**

* Each city maintains a predictable inventory turnover rate close to 1.5 which allows effective inventory management.
* Houston and Cincinnati show slightly higher efficiency, likely due to better demand forecasting.

Additional KPIs for Strategic Decision-Making

1. Customer Satisfaction & Delivery Time Efficiency
2. Cost Savings from Drone Deployment
3. ROI Analysis for Each City.

The evaluation of drone deployment in a city depends on its potential for long-term financial sustainability (Kroger, 2024).

**7.SWOT ANALYSIS**

SWOT Analysis for Launching and Maintaining Kroger's Drone Fleet

Kroger needs to perform an intense SWOT examination for their planned eight-quarter drone delivery project through systematic examination of operational and supply chain planning requirements. The evaluation integrates Kroger store distribution data throughout different regions of the United States.

**1️. Operations Considerations**

*Strengths*

Kroger has established itself through 1,261 stores throughout 16 states while maintaining strong bases in Texas (210 stores), Georgia (167) and Ohio (147). The numerous stores enable Kroger to build a comprehensive base for implementing drone delivery solutions effectively (LocationsCloud, 2025).

The strategic alliances between Kroger and Drone Express place Kroger ahead in drone-based delivery innovation while boosting operational capabilities through these agreements (RetailITConnect, 2024).

*Weaknesses*

Managing drones across multiple locations poses operational complexity because it involves enhancing coordination systems as well as drone maintenance requirements alongside regulatory compliance needs (FactMR, n.d.).

The present drone delivery tests conducted in Centerville Ohio along with others have demonstrated restricted operational boundaries that necessitate scalable solutions (Supermarket News, 2024).

**2️. Supply Chain Planning Considerations**

*Opportunities*

The fast delivery capabilities of drones improve delivery speed which produces greater satisfaction among customers (Statista, 2024).

The future of drone delivery systems holds potential to reduce expenses regarding personnel costs together with shipping expenses from current delivery systems (FactMR, n.d.).

*Threats*

The process of following drone regulations requires persistent focus because their rules are undergoing gradual changes which affects operational safety and regulatory compliance (ThomasNet, 2024).

Technology reliability represents a key factor because drones need to work consistently in different terrains across all weather conditions to maintain service dependability (New York Post, 2024).

**Overlooked Factors & Executive Considerations**

The strategic selection of launch sites requires meticulous attention because Kroger operates most of its stores in certain geographic areas. Drone deployment sets favourable conditions in Texas Georgia and Ohio due to their high number of stores (FactMR, n.d.).

A diagram of swot analysis

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**8.Using fiscal 2021 and 2022 values potential projection(s) on TOTAL revenues, COGS, and inventory at the company level each quarter of the ensuing 8 quarters, based on your rollout schedule**

**CONSERVATIVE and and AGGRESSIVE forecast.**

We will build conservative and aggressive forecasts for Kroger's total revenues alongside Cost of Goods Sold (COGS) and inventory amounting over eight future quarters which includes planned drone delivery expansion. Predictions originate from financial data of fiscal year 2021 and 2022 and come directly from Kroger's official documentation (Kroger, 2024).

**Baseline Financial Data**

| **Fiscal Year** | **Total Revenue (Billion $)** | **COGS (Billion $)** | **Gross Margin (%)** |
| --- | --- | --- | --- |
| 2021 | 137.9 | 107.539 | 22.0 |
| 2022 | 148.3 | 116.48 | 21.4 |

*Data Sources: Kroger 2021 Annual Report and Kroger 2022 Annual Report*

**Projection Assumptions**

Revenue Growth: Conservative Forecast: Assumes a 0.5% quarterly revenue growth due to the gradual adoption of drone deliveries.An aggressive forecast predicts 1.5% quarterly revenue expansion because the drone service market will experience rapid growth rates (Kroger, 2024).

COGS: Maintained at approximately 78.5% of total revenue, consistent with historical data.

**Inventory Levels:**

According to current industry standards the business adopts inventory levels that account for 15% of its total revenue.

The predicted financial performance of the company covers eight successive quarters.

The conservative strategy and aggressive approach will yield these forecasted quarterly figures (Statista, 2024).

**Conservative Forecast**

|  |  |  |  |
| --- | --- | --- | --- |
| **Quarter** | **Projected Revenue (Billion $)** | **Projected COGS (Billion $)** | **Projected Inventory (Billion $)** |
| Q1 | 149.04 | 117.05 | 22.36 |
| Q2 | 149.79 | 117.64 | 22.47 |
| Q3 | 150.54 | 118.24 | 22.58 |
| Q4 | 151.29 | 118.83 | 22.69 |
| Q5 | 152.05 | 119.43 | 22.81 |
| Q6 | 152.81 | 120.03 | 22.92 |
| Q7 | 153.57 | 120.63 | 23.04 |
| Q8 | 154.34 | 121.23 | 23.15 |

**Aggressive Forecast:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Quarter** | **Projected Revenue (Billion $)** | **Projected COGS (Billion $)** | **Projected Inventory (Billion $)** |
| Q1 | 150.52 | 118.14 | 22.58 |
| Q2 | 152.28 | 119.52 | 22.84 |
| Q3 | 154.06 | 120.91 | 23.11 |
| Q4 | 155.85 | 122.30 | 23.38 |
| Q5 | 157.66 | 123.70 | 23.65 |
| Q6 | 159.48 | 125.10 | 23.92 |
| Q7 | 161.32 | 126.51 | 24.20 |
| Q8 | 163.18 | 127.93 | 24.48 |

Incremental Impact of Drone Delivery Operations

**Conservative Scenario:**

* The 8-quarter total revenue projection shows a $6.44 billion growth.
* Total COGS Increase: Approximately $5.06 billion over 8 quarters.
* The projected total inventory increase throughout eight quarters amounts to $0.97 billion (Kroger, 2024).

**Aggressive Scenario:**

* Inside an eight-quarter period this initiative would lead to $14.88 billion in additional revenue.
* Total COGS Increase: Approximately $11.69 billion over 8 quarters.
* The total inventory quantities would increase by $2.23 billion throughout the eight-quarter duration.
* The estimates show the complete additional effects resulting from drone delivery deployment (FactMR, n.d.).

**Conclusion**

Kroger announced drone delivery expansion because it aims to boost its last-mile services against dominant retail giants Amazon and Walmart. Operating income at the company demonstrated a 24.96% growth during 2024 though the revenue expansion reduced by 1.2% in the same year. The company has demonstrated its need for cost-saving innovations such as drones to maintain profitability.

The city groupings proposed for expansion consist of Houston jointly with Cincinnati and Louisville and Indianapolis together with Dallas. The chosen locations depended on their logistical infrastructure alongside their store density as well as approval regulations. The existing supply chain network of Kroger allows these sites to maximize their scalability while maintaining all required regulatory standards.

Drone system implementation across its full scale could potentially result in yearly cost savings ranging from $25 to $30 million. Sales will grow by 1-3% throughout the subsequent eight quarters because drone deliveries will reduce customer expenses from conventional truck rates at $7.25 to drone rates at $2.25.

**Recommendations:**

1. **Making the selection of strategic cities for deployment a top priority**  
   To guarantee a more seamless deployment, industry experts advise introducing drone delivery services in cities with strong demand and lax regulations. According to studies, cities with a high demand for e-commerce, a dense retail sector, and advantageous FAA regulations ought to be given priority (Last Mile Drone Delivery Market, n.d.). Since these cities offer strategic distribution hubs and optimised logistics infrastructure to support drone operations effectively, Kroger's choice of Houston, Cincinnati, Louisville, Indianapolis, and Dallas is in line with best practices (LocationsCloud, 2025).
2. **Resolving Public and Regulatory Issues**  
   Faust Metzinger reports that FAA regulations together with customer suspicion continue to block the widespread adoption of drone delivery services. The partnerships between Amazon and Walmart and government bodies have resulted in needed waivers and airspace restrictions compliance which reduces delivery challenges (ThomasNet, 2024). The public's fears regarding both privacy and security and noise problems can be minimized through community-based educational programs combined with trial testing programs. Drone delivery services have gained higher customer approval through promotional programs that offer free standard or highly discounted drone delivery services (Zilber, 2024).
3. **Improving Drone Fleet Performance and Economic Effectiveness**  
   Experts stress that growing drone delivery successfully requires automation, AI-driven logistics, and deliberate route optimisation. Businesses can minimise operating expenses and increase productivity by using AI-powered scheduling and automated packaging solutions (MacroTrends, n.d.). To stop hacker risks, cybersecurity methods including real-time AI monitoring and encrypted GPS tracking are also advised (Time, n.d.). Kroger's position as a leader in last-mile grocery delivery could be cemented and its competitiveness in the market increased if it scales to 7 million drone deliveries yearly, which could save $50 million in costs (Statista, 2024).

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