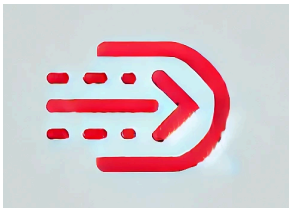

DASHOPS

PRD

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UX: Pat Pixels
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DS: Noel Numbers

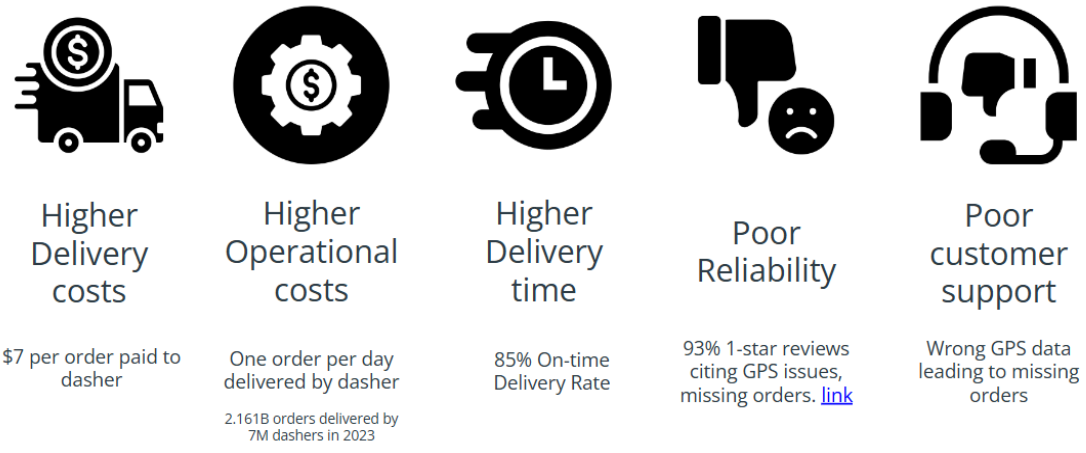
STATUS: READY FOR REVIEW

Background

The food delivery industry faces constant challenges related to cost efficiency and reliability. We face high costs, inconsistent service quality, and tracking challenges with traditional human- based delivery models. These issues impact efficiency and customer satisfaction, driving a need for innovative, technology-driven solutions to improve reliability and reduce operational expenses.

Problem

Relying solely on Dashers to deliver all orders creates several problems. Delivery cost and operational costs are higher. Due to the manual nature of this task, in some cases the reliability as well is very bad. Customer support is also not able to help in many cases due to poor quality and unreliable GPS data in some cases. All of this leads to higher operational expenses and more losses to the company. Competitors are exploring automated solutions, such as delivery robots, to mitigate these challenges. Adopting similar technologies can improve DoorDash's operational efficiency, reduce costs, and enhance delivery reliability.



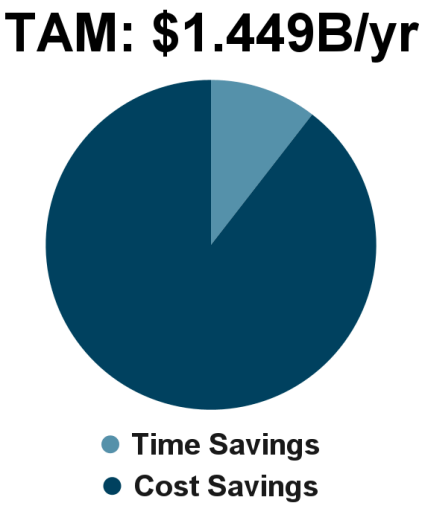
[1]

Goals

- Update the current customer facing app to enable customer for robot based delivery and provide feedback for the same.
- Update the current restaurant/partner facing app to enable restaurants for onboarding for robot based delivery.
- Build an internal management tool for helping in management of deliver robot fleet
- Increase the number of deliveries done under 2 miles radius to enhance speed and customer satisfaction
- Reduce the operational expense and increase reliability of order delivery.

Total Addressable Market (TAM)

- TAM = Cost Savings + Time Savings = **$1.449B/Yr**
- Cost Savings: Automating 25% of total deliveries as short-distance deliveries (540M orders/year) could save **$1.297 billion** annually by reducing OpEx from $4.05B to $2.75B (Robot CapEx of $2.1B)
- Time savings: 1300 operations staff x $75/hour x 30hours/week(frequency of use) x 52 weeks = **$152.1M/year**
- Opportunities:
    - Reduce delivery costs by 80% (from $7 to $1.5) [12]
    - Improve on-time delivery rates from 85% to 95%
    - Cut expenses by up to 20%



- Assumptions:
    - 2.161 billion total number of orders in 2023 using 7 Million dashers - [2]
    - Average employee salary - $150000/year (discounted by 12% as per data) - $75 per hour [3]
    - Current on-time delivery rates - 85%
    - Current Delivery costs - $7 per order [4] [13] [14]

Key Features

Priority	App	Feature	Description
P0	Customer App	Opt-in for faster delivery	This feature allows customers to choose robot-based delivery for faster service, enhancing convenience and efficiency.
P0	Internal App	Incident management	Provides remote control and automatic incident reporting through the robot. The feature includes inspection of incidents with video playback and location data, helping operators decide whether to reroute or take other actions.
P0	Customer & Internal App	Real time connectivity between delivery operator and customer for issue	A "Still facing issue" button connects the customer to the delivery operator via a chatbot that gathers initial information and then transfers the call to the operator for live support and rerouting if needed.

P1	Customer App	Confirm location marker for order	Customers can confirm their exact delivery location when placing an order, ensuring accuracy and reducing delivery errors.
P1	Customer App	Update location & find robot	Customers can update the delivery location after the robot arrives at a previously marked spot. The feature supports real-time location updates for more precise delivery tracking.
P1	Internal App	Send Help	Allows nearby dashers to be dispatched to assist the robot in case of incidents, ensuring smoother and safer operations during delivery.
P2	Customer App	Confirm after delivery by street view	After delivery, customers can view a live feed of the robot's camera to verify the delivery location, providing additional assurance of accurate delivery.

Success Metrics

- Business KPIs
    - ARPU
    - Average Delivery Cost
    - Average Operations cost per delivery
- Product KPIs
    - Average number of orders per user per week & Repeat orders
    - Average delivery time
    - Average on-time delivery rates
- Quality KPIs
    - Percent of orders delivered in high quality
    - Average user rating per delivery
    - Support contact rate
    - Percent of missing orders due to False telemetry related issues
- Development KPIs
    - On-time delivery of new features that are being developed along with average delay in timelines
    - Hardware & Safety issues per week
    - Average Manual Intervention calls

Target Market

For Customer App:

- User Demographics:
    - Age: 18-40 years
    - Location: Urban areas with high population density having more restaurants in higher density (Area 1, 3, 56, 21 in City A & Area 1, 3, 4, 5, 7 in City B)

- User Segments:
    - Busy Professionals: Seeking quick meal solutions
    - College Students: Valuing affordability and convenience
    - Families: Looking for time-saving meal options
    - Health-Conscious Consumers: Interested in fresh deliveries

For Restaurant Partners:

- Restaurant with High volume orders on DoorDash
- Local fast food chains
- Trendy food chains among the target customer age group: Vegan cafes, organic eateries, and trendy bistros known for innovative dishes
- Demographics: City A & B, locations near college campuses or business districts. (Area 1, 3, 56, 21 in City A & Area 1, 3, 4, 5, 7 in City B)
- Restaurants that use online ordering systems, digital payment methods.
- Local diners which serve walk-in customers and wish to expand the reach

For Internal App:

- DoorDash Operations team including operations associates as well as operations managers

Core UX Flow

Customer App Mock & Internal App Mock

Competitors

1. Postmates & UberEats
    - Delivering food via **Serve Robotics robots**
    - Revenue: $12.2B in 2023, increment of about 10% from previous year [5]
    - 2000 Robots deployed across US [6]
    - Users: The LA alone involved over 200 participating restaurants, with month-over-month growth reaching 30% since 2022 [6]
    - Sales: 30% monthly growth
    - Market Penetration 23% [5]
    - Key Features
        - Unlock Robot using phone
        - Real time tracking
        - Level 4 autonomy
        - Customer notification for delivery
2. GrubHub
    - Delivering food via **Yandex robotics & Starship Technologies** [7]
    - Revenue: $2.1B in 2023, decrease of about 15% compared to the previous year.
    - Starship is selling Robots as a service for other companies to plug into their existing system which means minimum capex from Grubhub. [8]
    - Starship has over 2,000 robots operating in various locations, including more than 25 college campuses. Notable universities involved include the

University of Kentucky, UNLV, Wayne State, and Fairfield University, where over 170,000 students have access to this service. [9]
    - The robot delivery program is available to students at Grubhub-partnered campuses, which encompasses over 250 institutions across the U.S., supporting both on-campus and off-campus orders.
    - Starship reported a 30% month-over-month increase in delivery volumes on select campuses since launching in partnership with Grubhub. [10]
    - Market share 17% [11]
    - Key Features
        - Unlock Robot using phone
        - Real time tracking
        - Level 4 autonomy
        - Customer notification for delivery

Acquisition Channel

Since Acquisition channels are meant mainly for B2C App i.e. the DoorDash customer facing app, Thus we are planning to move forward with following channels for customer acquisition

1. **SEO** using keywords such as “food delivery”, “quick meals” and “fast food delivery”
2. **Paid Advertisement** on Instagram and tiktok will help gain attraction for 18-40 age groups. Use engaging visuals and videos showcasing the convenience of robot delivery, targeting busy professionals, college students, and families.
3. **Campus Promotions** for targeting college students and their families will help gain brand awareness between the college driven communities
4. Collaboration with **local influencers** in urban areas to promote the app through authentic reviews and demonstrations of the robot delivery service. We plan to target influencers who resonate with busy lifestyle and health-conscious consumers.
5. **Co-Branding with local restaurants** will help us go long way. Using co-branded marketing materials with local restaurants will increase visibility and trust.

Marketing Guide

Marketing Guide

Pricing Strategy

We are setting to achieve a revenue target of $100 million in the first year of operation.

This goal is set based on market analysis indicating a substantial demand for efficient food delivery solutions, particularly in urban areas. With the growing trend towards automation and convenience in food delivery, capturing a significant market share is feasible. The revenue target aligns with projected user growth and average order values, considering competitive pricing strategies from existing players.

Restaurants:

- Free registration of restaurants to existing Doordash app for robot based delivery in high density urban areas
- Free training session of how to handle robot in case of urgencies
- Giving premium spot for restaurants supporting robot based delivery along with number of robot-based deliveries

Customers:

- **$3.0 delivery fee** instead of previous $7.0 to show an additional discount for fast delivery. This will help stablizing the product in market and building trust as a cost-effective and reliable alternative. [14]
- 10% service fees instead of 15-30% fees charged by major competitors as well only for fast delivery option. This will help build
- Dashpass holders can get early access, after thorough testing, this feature can be added to monthly subscription plan (e.g., $9.99/month with existing Dashpass) that offers users benefits such as free delivery on orders over $12 and reduced service fees(10%). This model can help generate consistent revenue while incentivizing customer loyalty.
- Dynamic pricing based on demand and distance, allowing for slight increases during peak times while ensuring transparency to customers regarding any additional costs.

Pre-launch Test Plan:

PMND C3 Project Starter

Pre-Launch Checklist

1. Team approvals for launch
    - ☐ **Legal**: Ensure compliance with all regulations and obtain necessary legal clearances.
    - ☐ **Marketing**: Finalize marketing strategies and promotional materials and ensure marketing team is ready with the buzz it needs before launch
    - ☐ **Engineering**: Confirm all technical aspects are ready for deployment and ready to handle the scale.
    - ☐ **Sales**: Confirm sales strategies and if the sales team is ready for product launch.
    - ☐ **Privacy**: Verify that all user data privacy measures are in place since we are dealing with user images, location, etc.
    - ☐ **Leadership**: Final approval from Leadership
2. Prepare and validate launch process
    - ☐ Finalize Launch Date
    - ☐ Collateral for sales
    - ☐ Criteria for launch
    - ☐ Known issues
    - ☐ What are we not launching

    - [ ] Launch city and restaurant partner sign up
3. Testing and QA
    - [ ] Functional testing
    - [ ] UAT
    - [ ] Regression
    - [ ] Performance testing along with autoscaling for market standard benchmarks
    - [ ] Automated testing
    - [ ] CI/CD integration and testing
4. Risk assessment and Mitigation
    - [ ] Legal & Privacy risks if any, workaround & long term mitigation backlog
    - [ ] Technical risks, workaround & long term mitigation backlog
    - [ ] Operational risks, workaround & long term mitigation backlog
5. Training Preparation
    - [ ] Training sessions with Sales and customer support
    - [ ] Training sessions with operations team and operators for live assistance
    - [ ] Distribute training guides, videos, User guides, etc.
6. Post Launch plan
    - [ ] Assess the defined KPIs and analyze the trend
    - [ ] Analyze the user feedback for the one particular city
    - [ ] Gradually increase the cities for launching the same model in multiple similar geographics

Training Guide for Sales and Marketing

- PMND C4 Product Launch Training Guide for Sales and Customer Support

User Guide

- PMND C4 Product Launch User Guide Template

Risk Factors

- Operational Risks
    - Potential network-dependent delays affecting delivery times and user experience.
    - Potential network delays and GPS inaccuracies may lead to control issues via operator.
    - GPS inaccuracies or connectivity issues may delay dashers from locating the robot quickly.
    - Potential delays in connecting with operators during peak hours.
    - Limited dasher availability in the area can cause delays in order completion in case of rerouting failure.
- Engineering Risks
    - System availability and Autoscaling related issues may lead to missed connections or delays in handling peak pressure during market expansion.

    - While testing robots, QA faced few issues during testing in rerouting, during this issue.
- Training Risks
    - Insufficient training for restaurant partners and operators may lead to operational issues.
    - Limited availability of operators during initial rollout could impact service reliability and availability during peak hours.
- Product Risks:
    - Users may experience issues with location marking during order placement.

Post-Launch User Feedback

The DoorDash Operations team is generally very happy with the product output, but in about 25% of the deliveries with the robots, there are some issues. It is believed that it is because the operations team misses some of the robots malfunction. Based on data below, customer acquisition strategy is working fine, we need to work with customer support team for betterment of the robot handling and order delivery.

Week:	Number of deliveries
week 1	100
week 2	300
week 3	500
week 4	500
week 5	600

Test Plan for Addressing Robot Malfunctions

Proposed Solution:

Implement an enhanced incident management feature that allows the operations team to receive real-time alerts about robot malfunctions other than battery updates, Lid status, food temperature, delivery delay, etc. This feature will include automated diagnostics and notifications to ensure timely intervention along with AI based obstacle detection and categorizing the obstacle.

Why It may solve the Problem:

By providing additional real-time alerts such as robot GPS speed, Robot odom speed, robot health params, GPS accuracy, LTE strength, LTE accuracy, battery health and diagnostics,

the operations team can quickly identify and address robot malfunctions, reducing the occurrence of delivery issues and improving overall reliability.

Success Metrics

- **Reduction in Hardware & Safety issue Rates:** Decrease the percentage of deliveries with reported issues from 25% to below 10%.
- **Response Time Improvement:** Aim for a mean response time to under 5 minutes for incidents reported through the new system.
- **Average user rating per delivery:** Increase customer satisfaction ratings related to delivery reliability by at least 20%.
- **Reduction in Average Manual Intervention calls** by 20%

A/B testing:

- Control Group: Current incident management system without enhancements, relying solely on limited data and manual robot health check by operator using video call.
- Variant Group 1: New incident management feature with automated alerts and diagnostics, allowing for quicker responses to robot malfunctions.
- Variant Group 2: New incident management feature without automated alerts and added diagnostics data, allowing for quicker data relay to operator to monitor robot malfunctions, this will help us understand whether additional automated alerts will be overwhelming or not.

Hypothesis:

Implementing the enhanced incident management feature will lead to a significant decrease in the number of delivery issues caused by robot malfunctions. We expect to see a reduction in malfunction rates, improved response times, improved incident visibility and increased customer satisfaction ratings as a result of quicker interventions. This test plan aims to validate the effectiveness of the proposed solution in addressing the identified problems from post-launch user feedback. By closely monitoring these metrics, we can ensure that Dashops continues to improve its service reliability and customer satisfaction.

Launch email

PMND C4 Product Launch Email

References

1. https://www.trustpilot.com/review/doordash.com
2. https://backlinko.com/doordash-users
3. https://www.glassdoor.com/Salary/DoorDash-Operations-Salaries-EI_IE813073.0,8_DEPT1016.htm
4. https://www.quora.com/What-is-the-average-hourly-pay-for-a-DoorDash-driver-How-many-deliveries-can-they-typically-make-in-an-hour
5. https://www.statista.com/statistics/1235816/revenue-uber-eats-worldwide/#:~:text=The%20success%20story,the%20online%20food%20delivery%20market
6. https://spectrumnews1.com/ca/southern-california/business/2023/05/31/serve-robotics-plans-to-deploy-up-to-2-000-sidewalk-delivery-robots
7. https://yandex.com/company/press_center/press_releases/2021/07-06-2021
8. https://www.starship.xyz/delivery-by-starship-delivery-as-a-service/
9. https://about.grubhub.com/news/grubhub-and-starship-technologies-partner-to-bring-robot-delivery-services-to-college-campuses/
10. https://www.starship.xyz/
11. https://www.datanyze.com/market-share/food-ordering-and-delivery--60/grubhub-market-share
12. https://www.pymnts.com/news/retail/2023/doordash-expands-grocery-offerings-as-supermarkets-tap-robotics/
13. https://www.appventurez.com/blog/doordash-business-revenue-model#:~:text=The%20delivery%20fee%2C%20charged%20by%20the%20user%2C,earns%20a%20variable%20commission%20from%20the%20restaurants.
14. https://www.valueappz.com/blog/doordash-business-and-revenue-model-explained
15. https://developer.doordash.com/en-US/docs/drive/overview/pricing_payment/