



Doordash Operations Tool

PRD

PM: Tanmay Murugkar
UX: Pat Pixels
EM: Casey Code
DS: Noel Numbers

STATUS: **DRAFT**

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Background

- Autonomous delivery is one of the important emerging technology for food delivery, e-commerce and retail companies.
- People living in cities expect immediate or schedule delivery of their food. There are bottlenecks as traffic is increasing daily. And with increasing orders we have to **increase delivery staff** as well, thus leading to **high operating cost** and increase in delivery time.
- It is stated that automated delivery can reduce the delivery cost by 80% to 90%. Companies are developing different type of ADV from sidewalk robot to autonomous truck with focus on solving the last mile delivery problem as it is considered to be 50% of the overall cost.

Problem

Why we are here?

- The operational cost for last mile delivery is considered to be very costly. Salary of delivery person, fuel expenses and late deliveries all affect the last mile delivery.
- This operating cost can be reduced by using automated vehicles such as robots for last mile deliveries.
- These robots can walk alongside walk, cross streets, stop at crossings and can even walk up or down the steps.

What are others doing? (**Competitors**)

- With companies like Uber which have already started testing of drone delivery and Grubhub in testing phase of delivery robots, it's about time we innovate and get into tech delivery space.

Grubhub:

- Grubhub is a customer acquisition company where they focus on getting restaurants and customers on their platform. Its an online food delivery platform that connects diners with local restaurants.
- Grubhub has less complex and more intuitive Grubhub central app where you can manage menu, process order, review operations and finances. Grubhub is pilot testing both drone and robot deliveries in urban environment.
- The market share of grubhub was 34% in 2018 and has decreased to 30% in 2019. It is been predicted that the market share will be decreasing moving forward with increasing competition. Grubhub has been acquiring smaller outfits and growing its logistics capabilities. Just take away may buy grubhub for \$7.5 billion.

Sources:

- <https://www.statista.com/statistics/1080850/market-share-grubhub-us/#:~:text=In%202018%2C%20food%20delivery%20company,to%2029%20percent%20by%202022>.
- <https://www.pymnts.com/news/delivery/2020/grubhub-mulls-sale-as-market-share-dips/>,
<https://fortune.com/2019/03/11/doordash-tops-grubhub-on-demand-food/>

Uber Eats:

- Uber eats is an online food ordering and delivery platform launched by Uber.

- Some features of uber eats include smart curation, ordering food in advance with pre order option, an analytics app which helps in data driven decision to finetune food quality, delivery strategy and optimize user satisfaction, real time GPS tracking.
- Uber eats has been experimenting robot delivery with help of Kiwi and drone delivery with VOXL. They are using cloud services and 4G to communicate between drone and Uber.
- The market share of Uber eats is 24% as of 2018 and is predicted to increase by 3% to 27% by 2022. The revenue of Uber eats in 2019 was \$1.9 billion. Although its revenue is increasing, its projected losses of \$1.1 billion. Although uber eats has sold its operations in India, it's still standing strong in Europe and USA and has been scaling its operation by moving to smaller cities.

Sources:

- <https://sifted.eu/articles/uber-eats-future-of-food-delivery/>, <https://www.statista.com/statistics/1080844/market-share-uber-eats-us/#:~:text=In%202018%2C%20food%20delivery%20company,to%2027%20percent%20by%202022.,https://www.businessofapps.com/data/uber-eats-statistics/>
- https://techcrunch.com/2020/05/07/uber-eats-grew-like-hell-in-q1-but-ubers-still-lost-nearly-3b/?guccounter=1&guce_referrer=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8&guce_referrer_sig=AQAAABGCuB0lf-HO2hqWMSl4usdyaKzUrf2b90ieYKXh6Us9KLdsXivFbcd2neTskgU8y6oLMBUcUR4qSwIDj-clrA-XaNobyok5LC2v_7usmQKcM_eL_dzRskj-yleZPQJEe7Yvx53drC6WndVeTgjXfZzSj-ko2V2RaKjb94pr0KO6/

What can we do?

- Using delivery robots instead of human personal we can save huge operating cost in terms of their wages and can also save in last mile delivery costs.
- As Doordash ventures into robot deliveries we need a tool to operate them in an increasingly complex environment make deliveries safely, efficiently and on time.

Goals

- Build an app that allows a user to Tele-operate.
- Tele operation consist of taking control of robot and re-routing robot.
- Re-route the robot when it faces an obstruction.
- Take control of robot when required.

Key Features

- Controlling the robot - This will help user control the robot as needed giving them functions such as moving forward, backward, turning left or right. This control option will be present on re-route and status page as well to help user navigate and re-route accordingly.
- Re-route the robot - This will help user select the re-routing options available according to specifications such as quickest, nearest and safest. This reroute option will be present on control and status page as well to help user navigate and control situation properly.
- Status - This lets user to view the status of delivery along with options of reroute and control if needed.
- Map screen - This lets user determine the routes to be selected more easily.

Success Metrics

- Successfully controls the robot and re-routes.
- The time taken to control and re-route is decreased.
- The amount of time taken by robot after re-routing to reach its destination is less.

Target Market

The product being created here is for operations team of Doordash and the user for the following would be part and member of the particular team. The customer can opt for a robot delivery (when available in their vicinity).

So how does this help Doordash?, We can significantly reduce our operating cost by automating our deliveries. Using delivery robots instead of human personal we can save huge operating cost in terms of their wages and can also save in last mile delivery costs.

Total Addressable Market: Here TAM is of salary money spent on dashers by Doordash per year.

No. of dashers working in 2019: 400,000 with an average pay (after expenses including cost of mileage) is \$5.39.

If a dasher works for 100 hours per month then,

$$\text{TAM} = 400000 \times 100 \times \$5.39 \times 12 = \$2.5\text{bn.}$$

Amount spend on salary of dashers per year is \$2.5bn which can be reduced by automating food delivery using robot.

If 30% of overall orders of Doordash are under 2 miles, considering salary money of 2.5 bn\$ of dashers we will be able to save 750mn\$.

Sources:

- <https://www.nytimes.com/2019/07/24/nyregion/doordash-tip-policy.html> ; <https://payup.wtf/doordash/no-free-lunch-report#:~:text=%E2%9E%A1%EF%B8%8F%20On%20average%2C%20DoorDash%20pays.from%20DoorDash%20of%20just%20%242>
- <https://techcrunch.com/2019/06/12/uber-will-start-testing-eats-drone-delivery/>
- <https://get.doordash.com/resources/industrygrowth#:~:text=Do%20over%20800%2C000%20deliveries%20per,3%2C000%20cities%20across%20the%20US>

Acquisition channel strategy:

The tool we are building will be used by operations team member. But its very important to understand the user of the robot delivery service i.e. customers using Doordash are comfortable with their delivery being handled by robot.

In order for them to opt for the robot delivery when available in their vicinity and how it helps them have quick delivery its very important to reach out to them. Often customers have waited for long time for deliveries of food from their nearby restaurants as the delivery personnel may be busy with other orders. The robot delivery will help them get quick deliveries.

So, to reach out to them some of the channels we are using are:

Advertising on tech and food blog: As Doordash is innovating and automating its delivery, we can reach out to curious customers through tech and food blog.

Advertising on YouTube: We can reach out to customers on YouTube advertisement showcasing delivery of food via robots thus reaching out to wide audience.

Reaching to existing customers through Doordash App: Doordash currently is the king of food delivery market and giving them quick nearby deliveries via robot will help us retain the customers.

Marketing Guide: [Link](#)

Pricing Strategy:

Here revenue generation is not directly.

Here the automation of delivery will help us reduce our operations cost and the cash spent on dashers will be retained.

The long-term goal is to create an ecosystem where last mile delivery robots will navigate sidewalks fully autonomously. The ecosystem comprises of robots that can do one delivery and assign itself to another close by delivery for grocery or food.

And with grocery option we will push our customers more towards robot deliveries and less of Dasher deliveries thus saving huge on operating cost.

Pre-Launch check list:

Customer support: Customer support is needed to help both customers as well as operations team member. We will need to prepare them to deal with potential problems or help users and operation team member may have.

Marketing team: It is important to let users know the technology and its benefits. The fast delivery program for users will help us gain new customers.

Technical writers: They will help in writing all the documents needed for release. They will help in updating help center to answer any questions users have.

Engineering and robot team: The features and tech stack are built by engineers for operation member to control or re-route robot. It's very important that they are on the same page as us.

Legal Team: It is important to have all the systems and technology used in compliance within legal limits. Also, with data collection and usage the laws are becoming complex and stricter, so they should be involved early on.

Sales: The sales team should be provided with all the details of the project so it will be helpful for them to onboard new restauranters on platform.

Anticipated Risks:

1) Robot mal functions: In case robot malfunctions, then it is important for operations team member to notify both robot team and customer support and update the delivery status. The customer support will not charge for the order and the dasher will be assigned and notified to pick up the order from the robot to deliver accordingly.

2) Robot theft: In case of robot theft, it is important to notify customer support, robot team and police. The customer support will handle the situation with respect to customer and robot team would be reached out to track the robot.

3) Robot accident: In case Robot gets in accident, customer support will reach out to customer and notify the delay and not charge for the delivery. A dasher will be assigned to pick up new order from the restaurant and the order would be given utmost priority.

Training Guide for Sales and Customer Support: [Link](#)

User Guide: [Link](#)

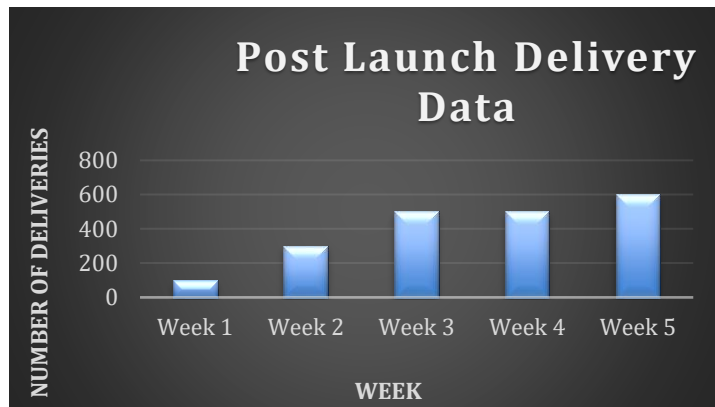
Core UX Flow



Post Launch Activities:

Data: The deliveries has been increasing every week.

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



The operations team has given positive review but there are few of the problems they are facing.

We have a feedback that in about 25% of robot deliveries, there are some issues.

Upon analyzing the problem has been situated to robot and deemed as both hardware and software problem.

Problem: Upon reaching the delivery address the customer isn't able to open the door of robot even after entering the code on it.

Assessment: This may be due to connectivity issues where robot cannot connect with the API to follow through the code and open the door.

Potential solution: We can send the customer a QR code, that can be scanned by the robot to open the door. The proposed QR codes would be fed into the robot beforehand.

A/B Test:

- For the users in the control group: we will do nothing (group A)
- For the users in the variant group: we will assign the robot with QR code scanning functionality (Group B)
- Our hypothesis is that the QR code functionality will make it easier for users to open and receive the delivery from robot so we will see more complete deliveries and less of malfunctions in Group B.