Doordash product pitch

Food delivery using self driving robots

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Background

Why Are We Here?

- Ever wonder how to use a food delivery system for small deliveries?
- As a responsible food delivery chain how do we contribute our best to the environment?
- Is there a way to reduce the operating costs especially for small orders?

[Self driving robotic dasher]

Business Case

Initial Focus - Background

- Doordash providing services to both restaurants and to the customers since 2012, serves over 50 states or close to 3300 cities in US
- Revenue streams based on
    - Delivery fee of an average of 5 to 8 USD per order based on the distance and time of order
    - Commission fee upto 20% from restaurants for every order
    - advertisements or marketing
- Offers high quality service, more value and reachability to the restaurant owners and timely delivery, food tracking and ease in ordering food to the customers

[https://www.investopedia.com/how-does-doordash-make-money-4587027]

[https://help.doordash.com/consumers/s/article/What-fees-do-I-pay?language=en_US]

Initial Focus

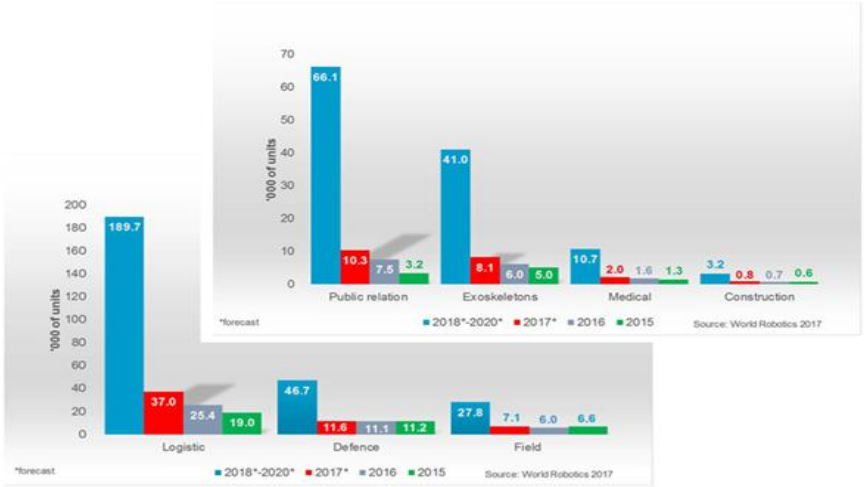
Pain areas

- Concerns from restaurants and customers on the comparatively higher delivery and service or commission fees
- Doordash has to come with a more competitive price than its competitors
- Need to reduce operation costs

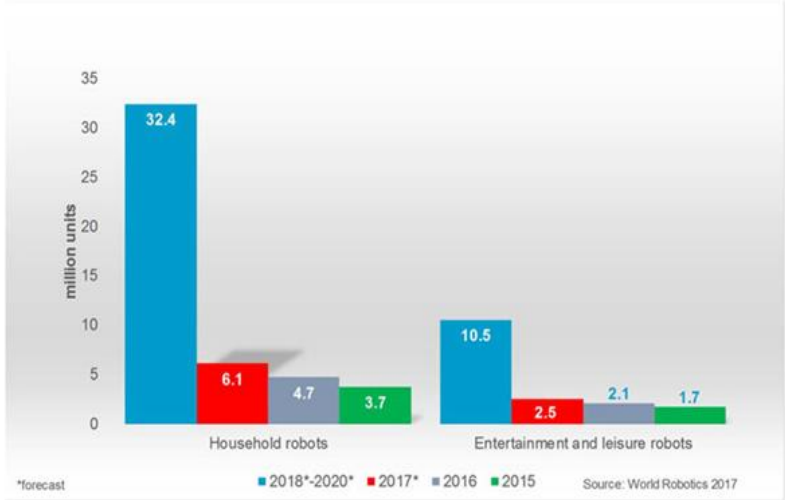
[https://www.seattletimes.com/business/technology/up-to-91-more-expensive-how-delivery-apps-are-eating-up-your-budget/]

Opportunity

- Increase in the automation and the usage of service robotics in customer service segments like health care facilities, banks, airports, retail, home,etc



Professional service robots main applications unit sales 2015 and 2016, forecast 2017 and 2018-2020.



Personal/domestic service robots unit sales 2015 and 2016, forecast 2017 and 2018-2020.

[https://www.robotics.org/content-detail.cfm/Industrial-Robotics-Industry-Insights/Service-Robots-on-the-World-Stage/content_id/7061]

Opportunity

- Projection in the growth in service robotics market from 37 billion USD in 2020 to 102.5 billion USD in 2025
- More funding for robotics project
- Consistency with the business goal on utilizing technology as much as possible in the operations

[https://www.marketsandmarkets.com/Market-Reports/service-robotics-market-681.html?gclid=CjwKCAjwgbLzBRBsEiwAXVIygM_O_40daQWhsAlUgJ4iL2CXaEbvWuhNwAtILFkc6X-NdD-x5WFgvRoC2-oQAvD_BwE]

Proposal

What's Our Solution?

- Replacement of human dashers with automated robot dashers for small deliveries within small radius.
- win-win situation
  - Human dashers to focus on big deliveries and longer distance deliveries. Better tips
  - Reduced operational costs for the company
  - Reduced delivery and service fee for small deliverables (better pricing)

Return On Investment

What can we do?

Costs:

- Identifying and ordering customized robotic vehicles from partner companies
- Development and maintenance of hardware and software for robots inhouse
- Development and maintenance of the tracking app
- Development of map data with side walks details

ROI:

- (An average fee payable to human dashers of 7-10 per order for delivery + fuel expenses – operating costs of robots per delivery) x number of small deliveries per year

Measurement

How will we know if we're successful?

- Increased positive reviews and ratings from the customers and the restaurants for small deliveries segment by 10%
- Increase in the booking orders for small deliveries by 20%
- Increase in the ROI by 20%
- Positive impact in the other delivery methods due to the change in the focus on bigger orders and long distance deliveries

Competitors

Postmates

- A San Francisco based logistics company that also focuses in deliveries other than food (pickup orders from supermarkets, restaurants, hardware stores, pharmacies, etc)
- Piloted with Starship's delivery robots in Washington D.C.

[https://craft.co/doordash/competitors]

https://techcrunch.com/2017/01/18/postmates-and-doordash-are-testing-delivery-by-robot-with-starship-technologies/

Ubereats

- An online food ordering and delivery platform launched by Uber that started with a fixed delivery fee and eventually ended up in a price model determined by the distance and the value of order
- Plans to launch food deliveries via drones
- Drone deliveries are yet to be matured enough for safe delivery of goods and products [Issues with crash landings / collision, damage of the product because of a drop]

[https://techcrunch.com/2019/10/28/heres-what-the-uber-eats-delivery-drone-looks-like/]

https://en.wikipedia.org/wiki/Uber_Eats

Grubhub

- A Chicago based online food ordering and delivery marketplace
- So far, no plans to go on service robots delivery (to be verified)
- Relatively cheaper delivery fees and commission towards the restaurant but not known for speedy delivery or a user friendly app like with Doordash (to track the orders and a near real-time updates)

[https://www.ridester.com/doordash-on-demand-food-delivery-service/#DoorDash_vs_Grubhub]

Our Advantages

Why are we better?

- Doordash, the leading food delivery service in the United states has a large customer base (the biggest on-demand food provider in the U.S. in February, surpassing GrubHub and Uber Eats)
- Holds 12% of market (15% by 2022) and leader in the total sales at 27.6%
- Wide area coverage within USA and catering
- Known for its transparent pricing model
- Better app compared to other competitors especially in tracking the food
- [https://secondmeasure.com/datapoints/food-delivery-services-grubhub-uber-eats-doordash-postmates/]
- https://www.statista.com/statistics/1080826/market-share-doordash-us/
- https://en.wikipedia.org/wiki/DoorDash

Our Advantages

Why are we better?

- On time deliveries
- Partnership with the company like Starship who has approval to test their robots on road
  - Quick possibility to deploy them in weeks in market. Early feedback
  - another potential mode of advertising restaurants
  - Safer compared to drone deliveries (Ubereat)

- [https://www.ridester.com/doordash-on-demand-food-delivery-service/]
- [https://medium.com/@DoorDash/bee-boo-bee-boop-testing-robot-deliveries-on-doordash-bcce554c6c9]

Roadmap and Vision

Roadmap Pillars

Where do we go from here?

	Q1	Q2	Q3	Q4
Development of prototypes of robots with the partner company	Camera and sensor fusion	• Integrating with the mobile app • Navigation	Security	E2E test drive in the field (road tests)
App development	Map update and Route calculation based on sidewalks	Optimized route recalculations	Code generation and SMS delivery	E2E test drive in the field

Software development

Updates in the existing software chain

- New map integration with sidewalks included (for both maps in app and for the robots)
- Software interface /fleet management for a human operator to oversee the robots
- New pricing model calculation – backend
- Sensor and camera feed data fusion software development
- Multiple Objects detection from the video
- Navigation software update – routing and rerouting
- Security software for robots – key handling, sending SMS, alarms, theft detection

Hardware development

- Prototype development with cameras
  - Mechanical
  - Embedded software solution (wheels as actuators ; camera as inputs and map data as constraint)
- Stress test
  - on the wheels using more weight
  - Running on more damaged surface
  - Simulation of theft scenarios

Where do we go from here?

Widening the scope

- Integration of sensors – RADAR and LIDAR for better and accurate collision and object detection algorithm
- Permissions to test robots delivery in all major cities in USA
- To widen the scope of delivery radius by one step every quarter
- To increase the load bearing maximum capacity and the speed of delivery by 10-20%
- As an advertising agent for pick-up restaurants on the way to delivery
- More intelligent interactions with human and with objects

Thank you

Backup Slides

Partnerships meanwhile

- Starship technologies
- Marble robots
- GM’s cruise
- Scotty labs