DoorDash: autonomous d2d program

Product Vision presentation

Product Owner: Mr. Tibor Zahorecz

Background

Why Are We Here?

Doordash is looking to automate food delivery using self-driving robots for trips that are less than 2 miles in order **to reduce its operating costs** and provide more **reliable delivery times**.

The long term goal is that these delivery robots will navigate sidewalks fully autonomously.

Our team has been tasked with building a tool for the operations team-- **to view the status of deliveries and remotely take control of robots** that need intervention (ie: rerouting).

Business Case

Initial Focus

Where are we starting?

I chose this focus because I am deeply interested in self-driving and I know how to develop self-learning algorithms, so I can communicate with the engineering team more easily and understand the technology limitations.

Opportunity_overview

What's the problem?

- **Macroeconomic changes**:
  - shortage of reliable labor supply
  - addressing global issues such as COVID-19 [1] [2]
- **Lifestyle changes**:
  - Foodie people with no time to go out
  - business people who wish to treat their team without wasting time and affecting their work routine
  - People who don't want to cook [3]
- **Technology landscape**:
  - Self-driving technolgy mature enough [4]
  - big technology firms started to operate on this field like Uber, Amazon

[1] What Does Social Distancing Mean for Social Businesses Like Restaurants? Link

[2] What Now? COVID-19 Survival Guide for Restaurants link

[3] How DoorDash Works | Business Model & Revenue Sources Explained link

[4] Starship Campus Delivery Service with Robots link

Opportunity_market drivers

Market landscape and scenarios

Kitchen is dead

Drone delivery and robotics push down the cost of delivery, meal ordering becomes a 2-3 times a week habit

TAM 2030E

Online food delivery	$815 billion	GMV
Impact on food retails	(12%)	Downside to 2030E global revenue pool
Impact on food services	+21%	Upside to 2030E global revenue pool

Winners	Neutral	Losers
Online food delivery platforms	Benefits and rewards	Food retail
Restaurants	Residential homebuilders	Food producers
Industrial focused REITs	Home appliances	Mall REITs
Subruban office focused REITs		Contract catering

- **Automation demand**: with a focus on limited menus and limited items, product (food) manufacturing can be standardized [5]
- **Market size and tendency**: the online food delivery market will grow ten times in the next ten years, from $35 billion currently to $365 billion by 2030 [5]
- **Drone delivery and robotics** can change the business modell completly: see attached scenario

[5] Serving Food From the Cloud link

Opportunity_targeted market size

Market landscape and scenarios

TAM (Total Available Market 2020-2022): $35billion

Targeted Market size for autonomous deliver: $180million

- **Online delivery market**: $20billion (from $35billion) with DoorDash 30% market share is $6billion
- **Autonomous robot fleets' penetration** will be in the first 2 years 3% of online delivery ($180million)

Proposal

What's Our Solution?

Build product team for the implementation of autonomous robot fleets at DoorDash to be ahead of competition and manage labour cost / fluctuation.

My goal in 2020

- to build a product for the operational team that can remotely monitor the robot's "life functions" and intervene when needed
- to build an app for our customers to order instantly, track robot movement, and give us an instant feedback

Return On Investment

What can we do?

Market Growth

By 2022, Digital Food Delivery May Comprise 11% of Total Market, vs. 6% Today (Morgan Stanley [6])

ROI calculation

- **Positive impacts**: labour savings, supercharging social media, attracting the press, accuracy, increased speed and efficiency, minimal waste, cleanliness
- **Costs**: Robots implementation and operational costs

[6] Alexa, what's for dinner tonight link

Return On Investment table

What can we do?

DoorDash ROI CALCULATOR 2020 San Francisco

COST	Cost	nr of Cost owner	TOTAL
Robot direct costs	$ 2 000	1	$ 2 000
Robot indirect costs	$ 1 000	1	$ 1 000
Developer cost / year	$ 30 000	3	$ 90 000
Development indirect cost / year	$ 10 000	1	$ 10 000
Marketing budget / year	$ 30 000	1	$ 30 000
			$ 133 000

IMPACT	Program goal	nr of Cost owner	TOTAL
Labor Savings (Courier)	$ 8 000	4	$ 32 000
Gained social media	$ 9 000	1	$ 9 000
Customer retentian gain (income)	$ 560 000	1	$ 560 000
			$ 601 000

ROI	Total cost	Total gained	Return %
Regular (amount gained - amount sp	$ 133 000	$ 601 000	352

Measurement

How will we know if we're successful?

Business metrics

Customer retention: 32% (Q4 2020)

Labor cost decrease: 16% (Q4 2020)

Product metrics

Average # orders completed per users per month: 7 (Q4 2020)

App rating: 4.6 (Q4 2020)

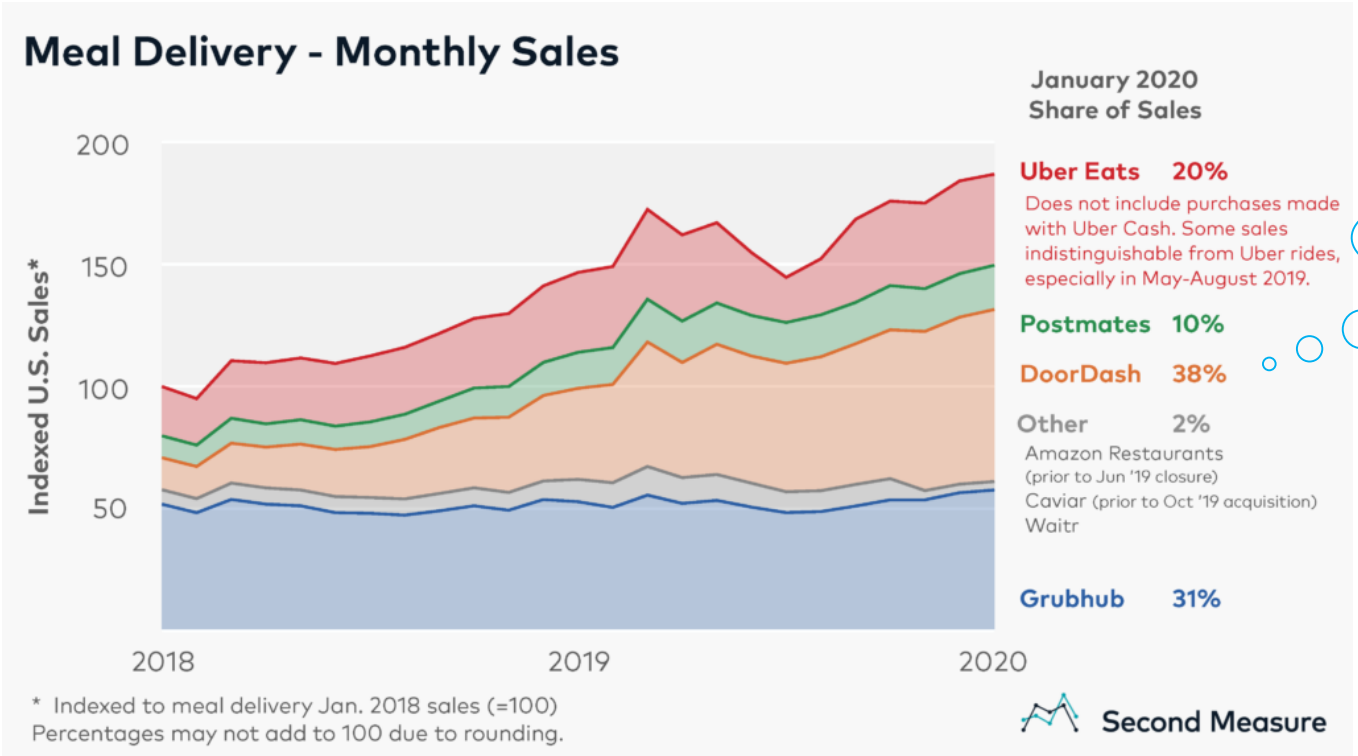
Quality metrics

Reduction of Robot's stopping time: 35% (Q4 2020)

Competitors

Competition overview

source: Second Measure



DoorDash position

UBER EATS

COMP. OVERVIEW [by Google]

- **revenue**: $1.46billion [8]
- **new delivery features**:
  - Uber Eats tests flying food to customers by drone in San Diego
  - delivery alternative with new pickup service
- Uber Eats announced that it would **expand** and by year-end cover 70% of the US population, thus doubling the number of cities that it operates in.
- an **exclusive partnership** with Starbucks, Popeye's, Subway and McDonald's
  - This has allowed Uber Eats to grow at over 200%

- [8] Uber Eats wikipedia link

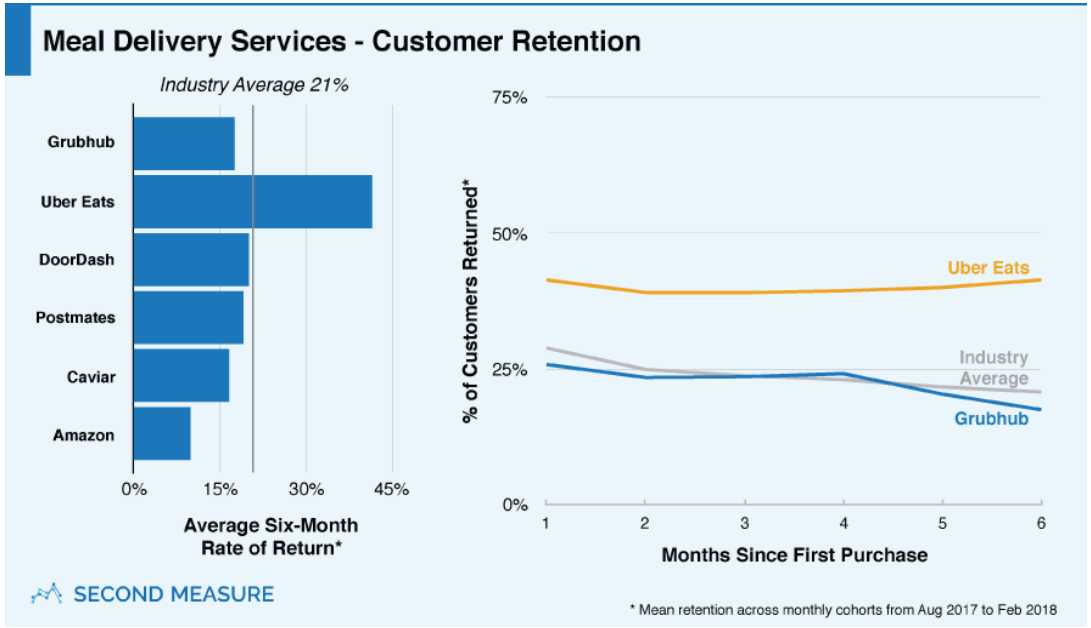
GrubHub

Analysis GrubHub's Premium Valuation Hard To Justify Considering Increasing Competition And Margin Contractions by Dominic Teo

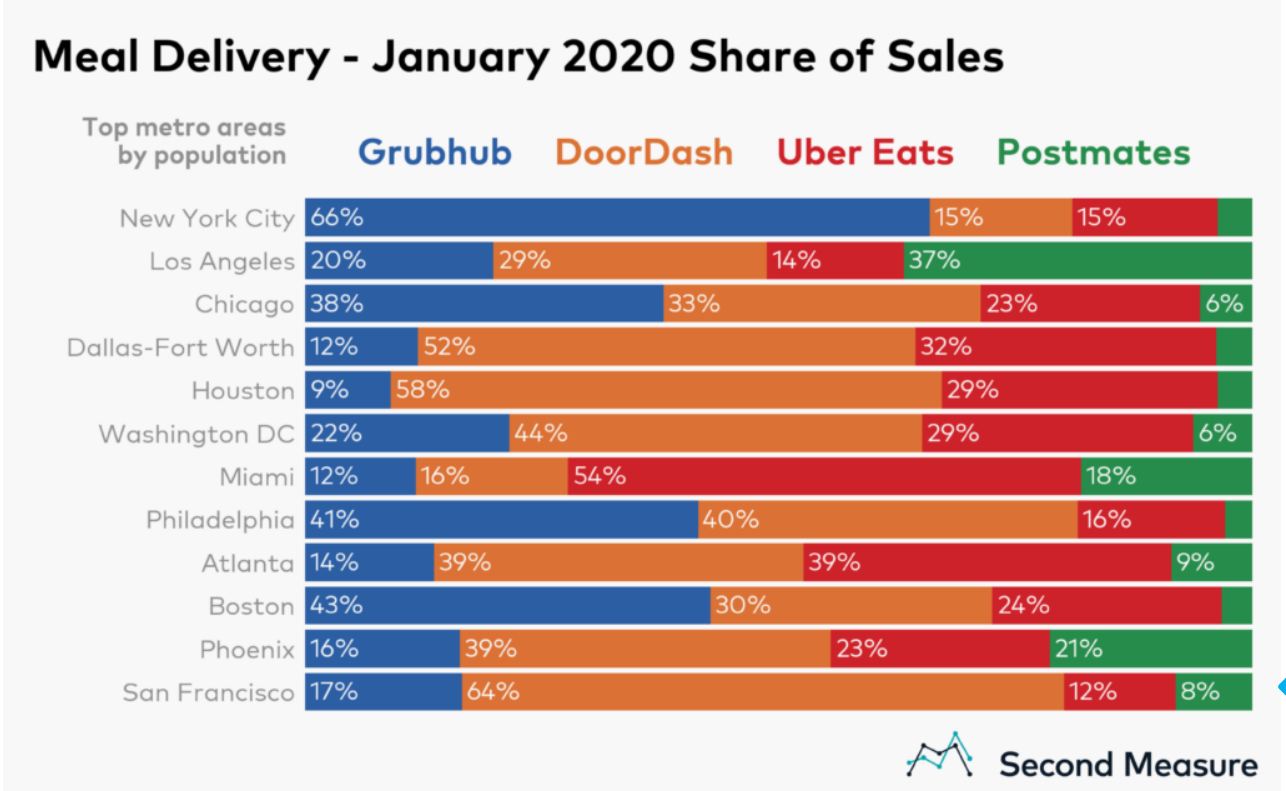
- GrubHub consistently tried to forge **new partnerships** with popular chain restaurants
- the online food delivery business in the US is that it might spiral into a full-out **price war** (GrubHub's management has already hinted that it would provide "incremental discount offers" when explaining the increase in marketing costs.)
- GrubHub is valued at a **slight premium** to Doordash despite Doordash being the fastest growing online food delivery company in the US

Key Metrics_customer retention

Analysis GrubHub's Premium Valuation Hard To Justify Considering Increasing Competition And Margin Contractions by Dominic Teo



Focus is on San Francisco



Source: link

Our Advantages

Why are we better?

DoorDash's **new autonomous d2d product** allows customers to be served by all restaurant within two miles immediately.

Customers can **easily order food within 2 miles** of all restaurants.

San Francisco is DoorDash's stronghold (heart of high tech)

Roadmap and Vision

Roadmap Pillars

Where do we go from here?

Product Vision

In 2 years DoorDash will serve their US customers with its own autonomous robot delivery system

Strategy

We need to develop autonomous robotic system in SF as a test field to reduce food serving time under 5 minutes with 32% customer retention metrics by December 30, 2020 to enable to launch the service in US by the end of 2021.

Operational Team Product

[control of the robot]

Robots should be able to autonomously deliver food from restaurants within two miles of the user.

f1., manual control of the robots through app (Q1 2020)

f2., remote control of the robots through app (Q2 2020)

f3., viewing the real-time status of the robot through app (Q2 2020)

Customer App

[Order handling]

Customer should be able to order food from any restaurant within two miles and track the food delivery robot

f1., order handling through app (Q1 2020)

f2., tracking the food delivery robot (Q2 2020)

f3., real-time feedback to DoorDash (Q1 2020)

Where do we go from here?

Widening the scope

Next Item is a Design Sprint:

- Make interviews with potential customers
- Creates sketches and digital prototypes
- Validate & Iterate on designs