

**Mida on kõige keerulisem
õpetada autonoomsele
sõidukile?**



**Mis dikteerib viimase
kilomeetri hinna trendi?**



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SVP of Operations
Starship Technologies



Starship Technologies.

Kokkuvõte

- Starship Technologies automatiseerib **viimase kilomeetri tarneid**
- Eesmärk on muuta viimase kilomeetri tarded **kõrge marginal ja madala CO2 emissiooniga** äriks, mis on kõigile kättesaadav
- **Kommerts operatsioonid** 100+ asukohas ja 6 riigis - ei ole piloot, test ega prototüüp
- **7 miljonit** tarnet tehtud, **2000+** robotit. Kõrge tarnekindlus...ja saame hakkama ka lumes...kui linn on tänavad puhtaks lükanud
- **14 miljonit sõidetud km, 90 tuhat teeületust päevas** - enim autonoomseid sõidukeid opereeriv ettevõtte maailmas
- Tarne **hind** on juba täna **soodsam võrreldes inimesega**

**Mida on kõige keerulisem
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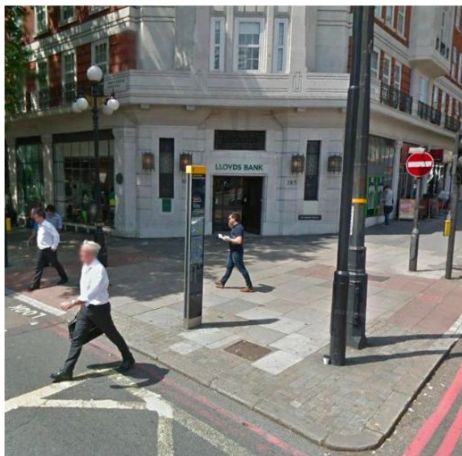
Where It Works

Dense urban

Largest food delivery market

Live: Helsinki, Tallinn

Next: Stockholm, Hamburg, London



Suburban + Small town

Largest grocery market

High courier cost → High margin for robots

Live: 25+ towns in UK + Finland



Campuses + Industrial

Open access, roads+sidewalks (not gated)

No competition → High margin

Live: 60+ sites



Robot Design Perfected Over 8 Years of Development

150+ patents granted or filed across the technology stack

Wireless enabled 70% fleet

Battery

- Runs for 18 hours on a single charge

Capacity

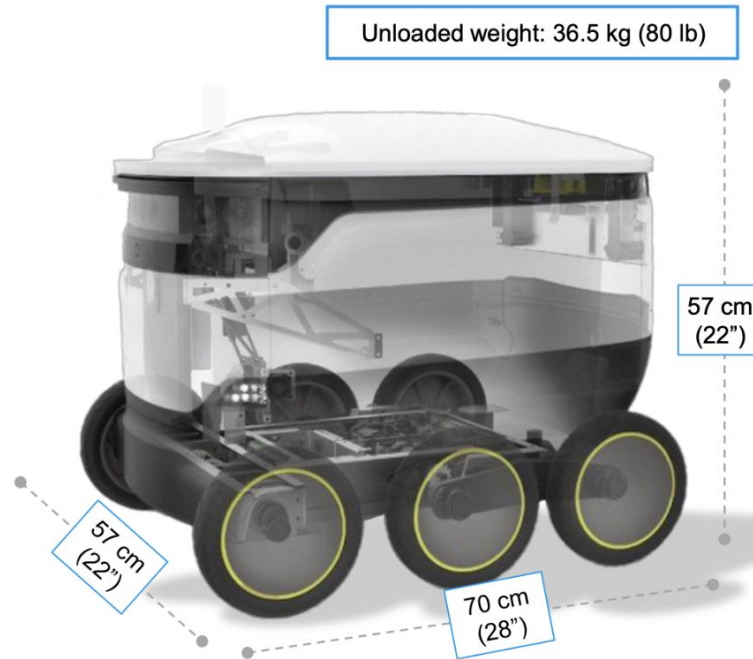
- Max speed of 10 km/h (6.2 miles/h)
- Capacity to carry a few shopping bags up to 10 kg (22 lb)

Inside measurements

- 40 x 34 x 31 cm (16" x 13" x 12")

Sensor suite

- Holistic sensory suite



3D mapping

- Computer vision
- Mapping and navigation

Object and obstacle detection

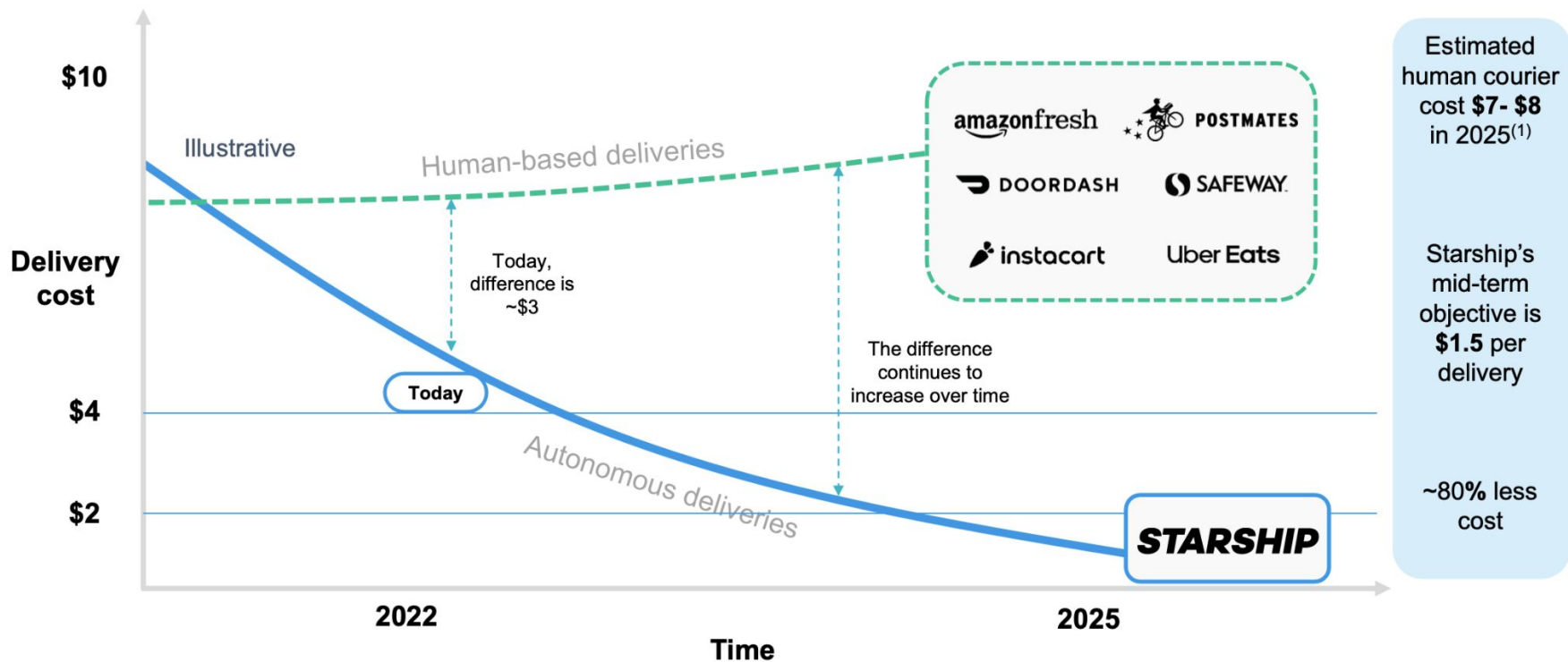
- Sensors
- Deep neural networks
- Intelligent traffic avoidance

Manufacturing

- 85% of assemblies done in-house
- Plan in place for contract manufacturing solution

**Mis dikteerib
kullerteenuse hinna
trendi?**





Sustainability

Most sustainable delivery mode



Environmentally sustainable

- Starship's robot fleets are 100% electric, with a single charge lasting 18 hours
- 50-70% of customers say their robot delivery replaced a car journey
- Cumulative CO₂ savings of over 500+ tons to date, or ~1m supermarket trips

Average CO₂ emission per km ⁽¹⁾



Car
250g



Moped
100g



Bicycle
60g



Starship
20g



Impact

"...Starship has calculated that 280,000 car journeys have been avoided, equating to over 500,000 miles. This in turn has seen 137 tons of CO₂ and 22kg of NO_x saved, with a reduction of 23kg of PM₁₀ and 12kg of PM_{2.5} in the volume of micro-particles in the air".

"...An average delivery for a Starship robot consumes as little energy as boiling the kettle to make just one cup of tea"

- Milton Keynes Press Release, 11/08/2021



Mina täna! Küsimusi?

