

42SG

Reducing CO₂e with order consolidation

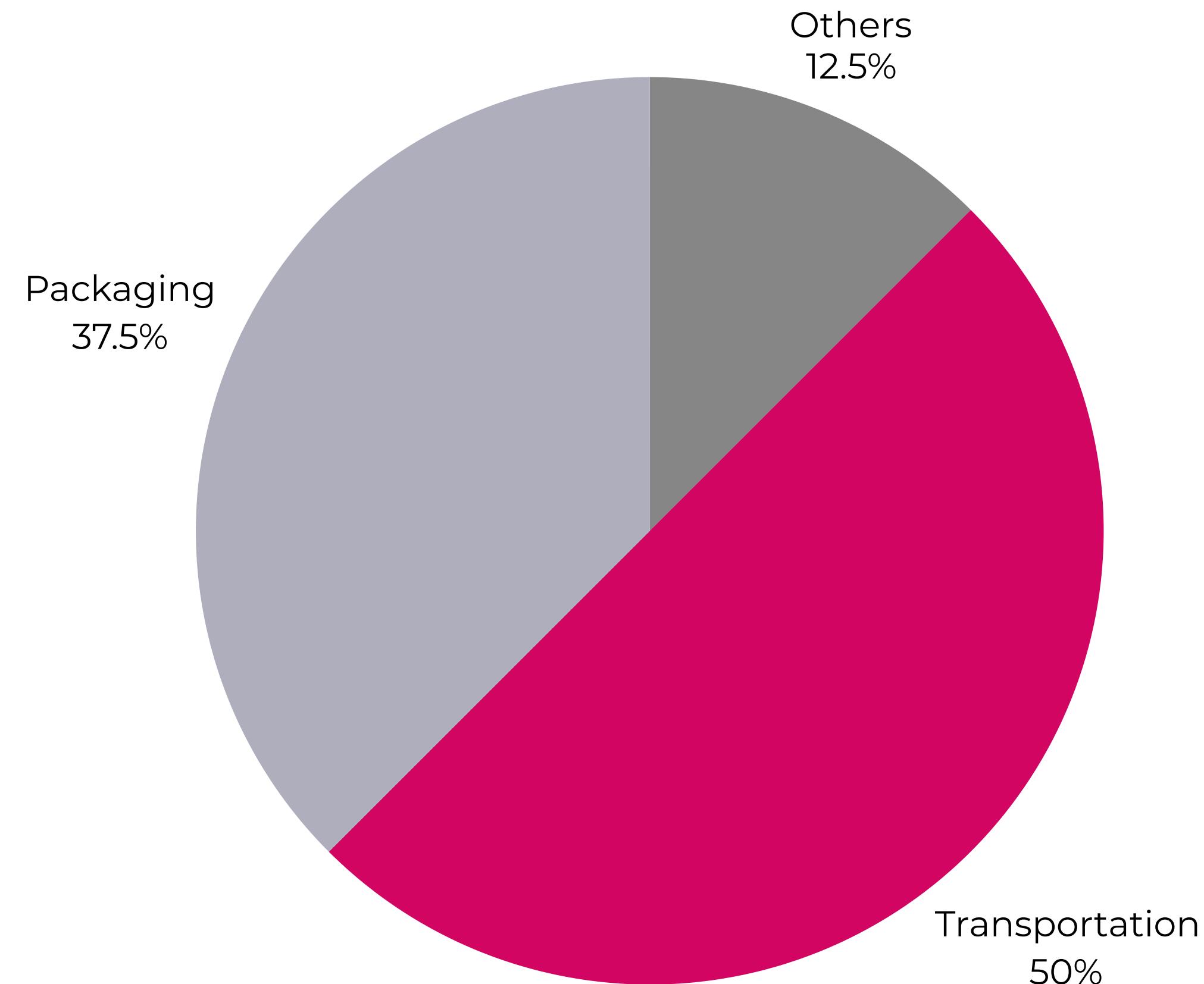


THE ECO CHALLENGE WE FACE...

”

**I feel I can
do more for
the planet...**





50%

CO₂E EMISSION* DUE TO

TRANSPORTATION

*emission measured for a point to point delivery
<https://www.mdpi.com/2071-1050/15/10/8084>

PROBLEM

Transportation

- an unavoidable component of food delivery
- inevitable CO₂e emissions that contribute to environmental impact

How can we reduce CO₂e without impacting business volume?

Can we reduce CO₂e while increasing business volume?



pandagather

Band Together,
Make the World Better.

OUR SOLUTION

pandagather

Intelligent Order/Route Consolidation

- Prompt users* to “piggyback” on ongoing orders

End-customer empowerment

- Empower users to participate in a essential “green” spending

Rewarding experience

- Quantifiable benefits for all stakeholders

*users identified with endpoint within 100m of destination of 1st order

WHAT WE SEEK TO ACHIEVE

- Reduce the number of trips, carbon footprint
- Maintain the number of deliveries
- Increase overall earning potential of delivery partners

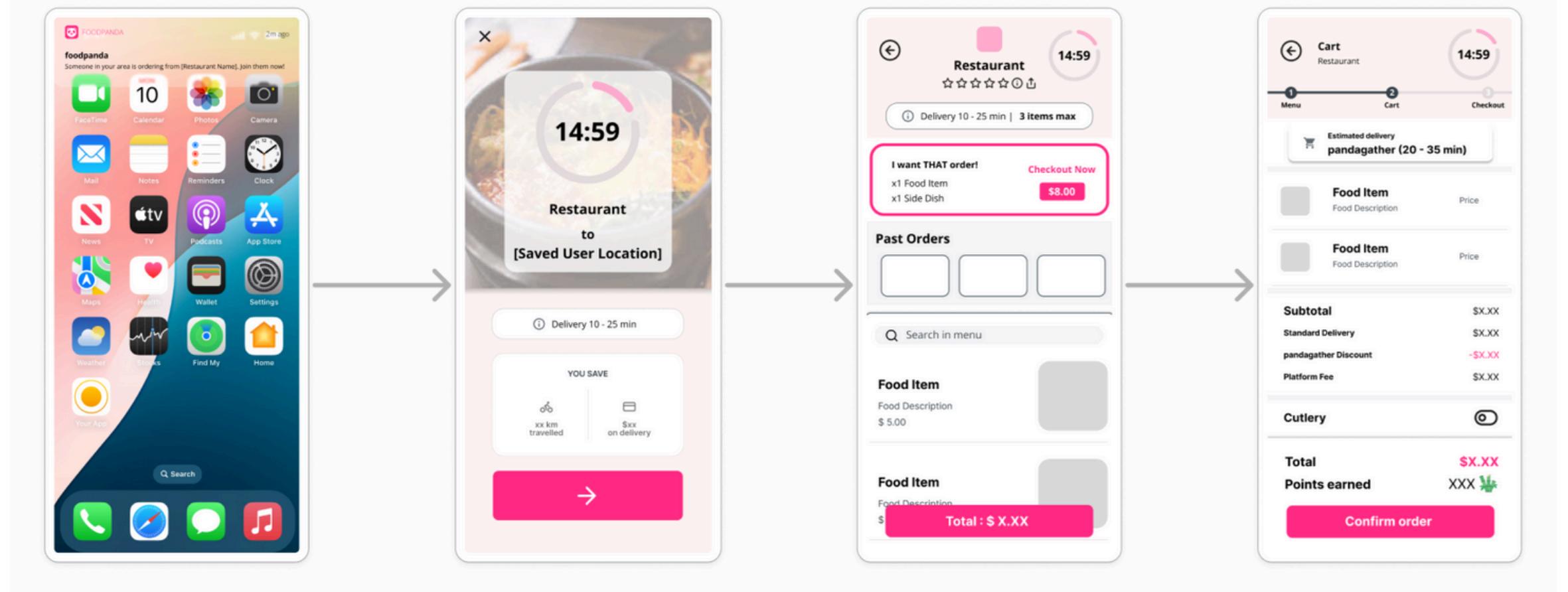
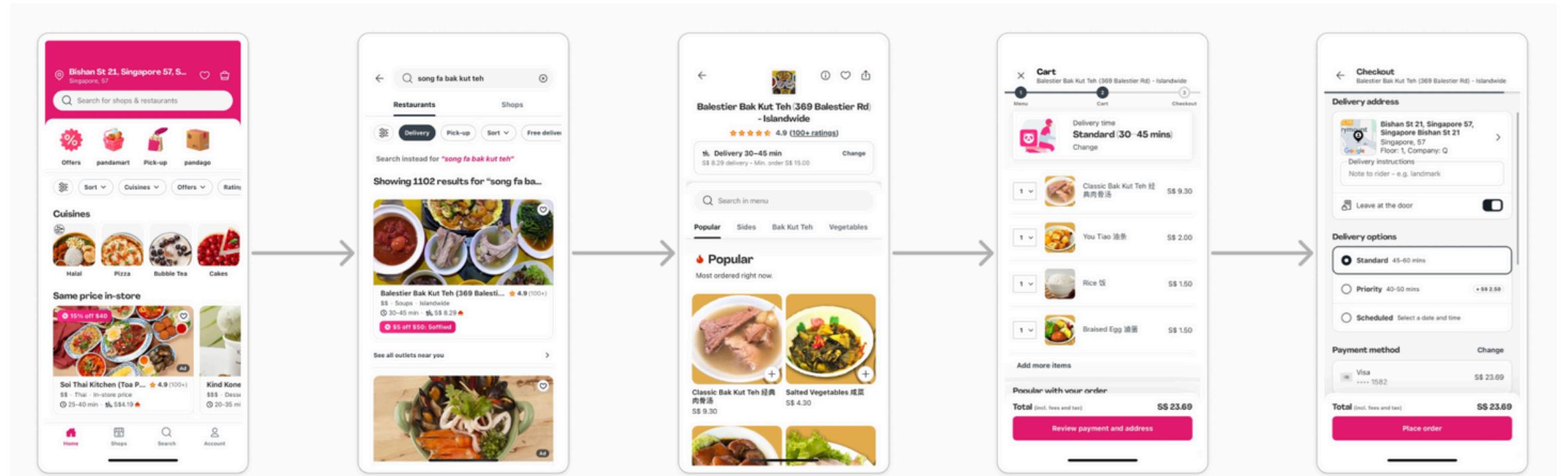
How it works

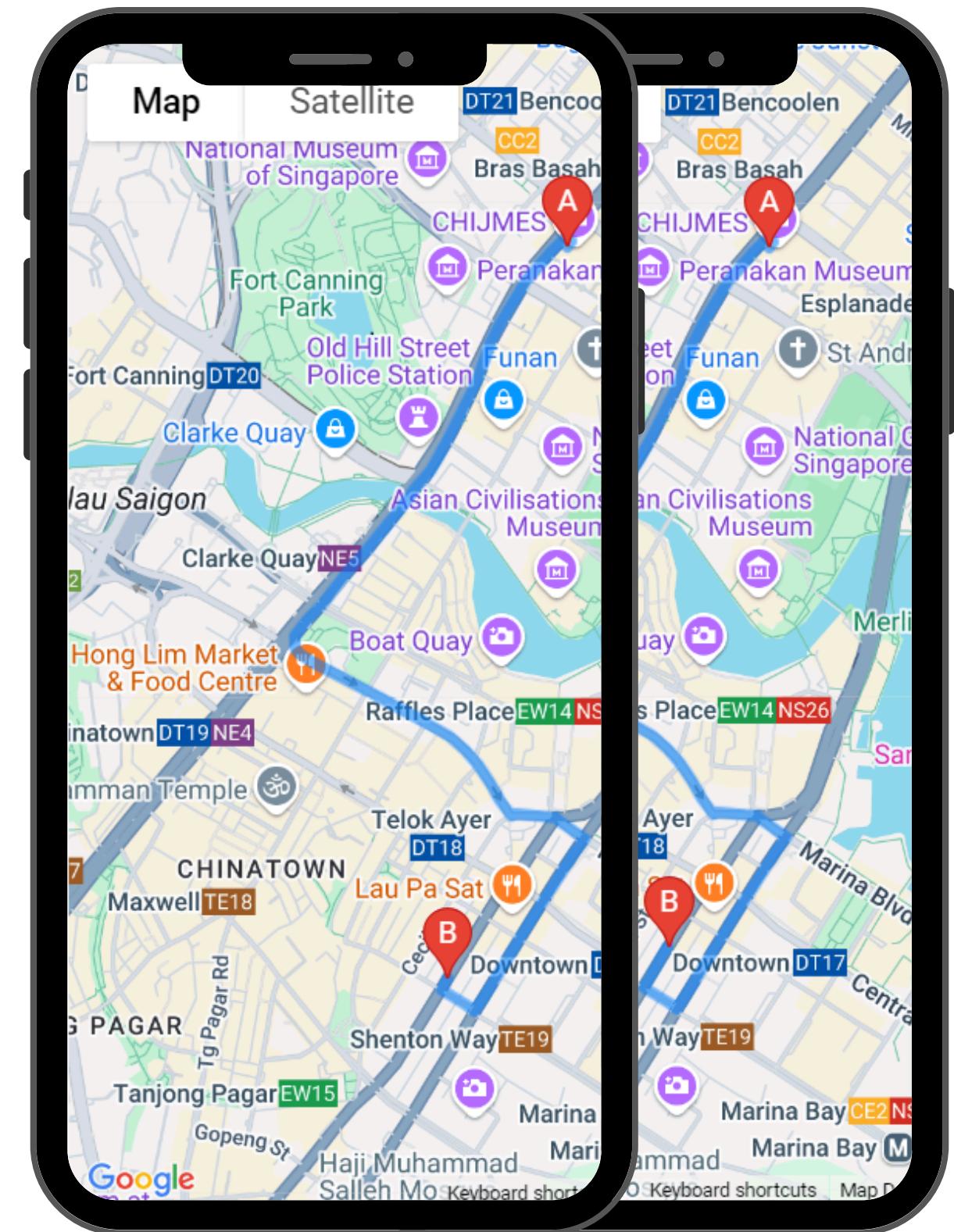


Principle Customer

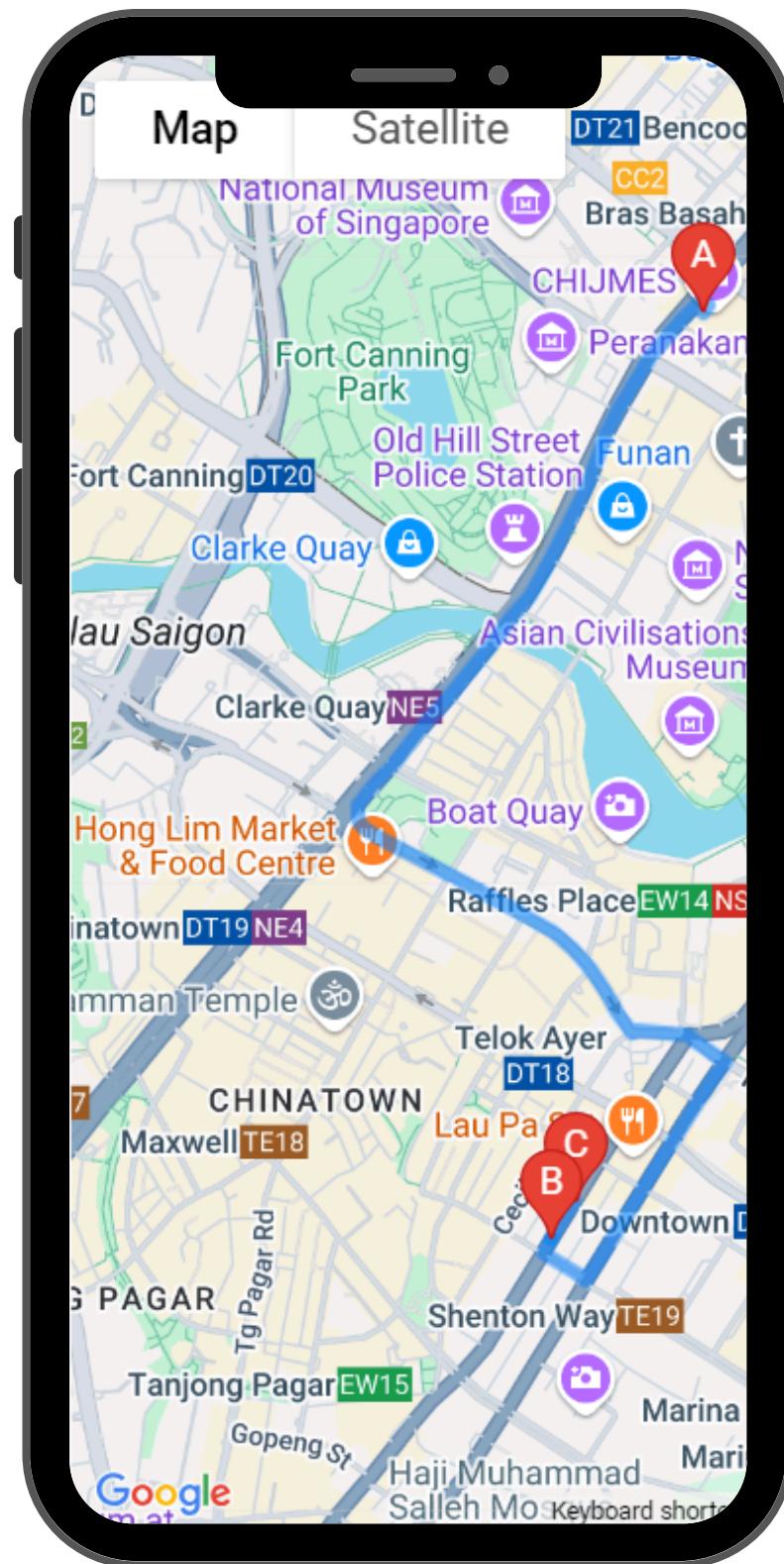
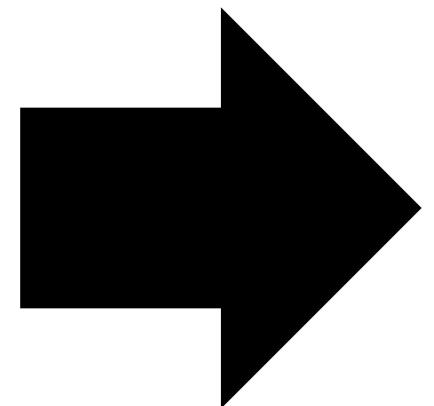


pandagather Customer





2 Orders - 2 Trips



2 Orders - 1 Trips

What we will achieve

All foodpanda
stakeholders

↓**8421.9**
tonnes*

less CO₂e emission



*per year not traveled due to order consolidation

#based on 3km avg distance reduced per 2 consolidated orders

What we will achieve

foodpanda

€37.7M



potential increase in revenue*

* 1.25% revenue increase based on FPFY2023 annual report#

11 countries: Bangladesh, Cambodia, Hong Kong, Laos, Malaysia, Myanmar, Pakistan, Philippines, Singapore, Taiwan, Thailand

What we will achieve

Rider

193%

Delivery efficiency*

+43.5%

increased earnings*



*Riders carrying 2 orders for traveling additional 100m over avg 3km route

What we will achieve

F&B Owners

+66%

exposure opportunity



*Additional exposure due to highlight during (1) popup notification and (2) nearby orders

What we will achieve

Customers

+50%

co-share green efforts



*assuming consolidation of 2 orders per journey

DEMO

FEASIBILITY & IMPLEMENTATION AT SCALE

Technical viability

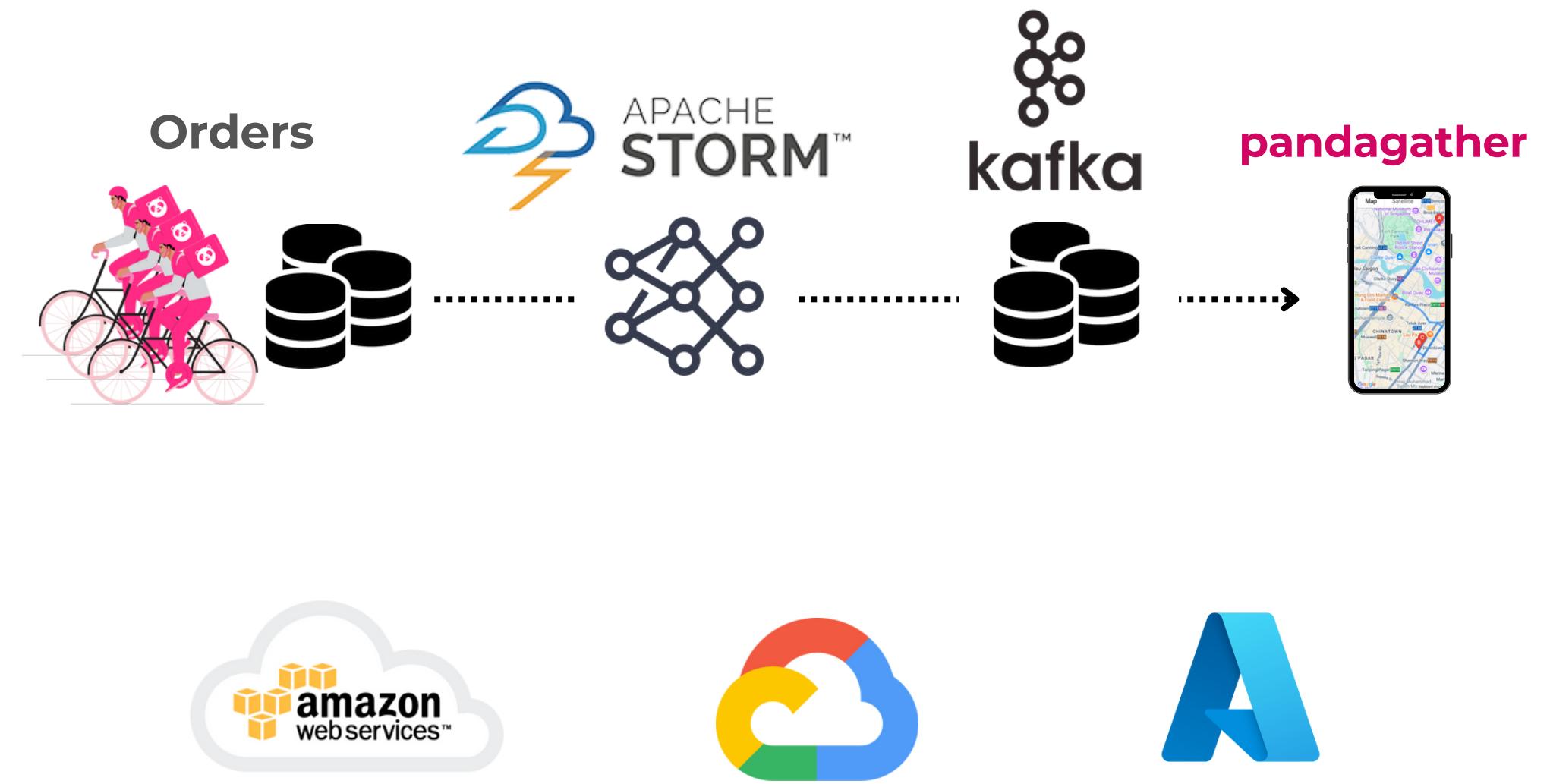
Storm is highly scalable and fault-tolerant distributed realtime computation system.

Over 30 companies use it:

- Twitter/X for personalisation, search
- Spotify for recsys
- Taobao for system telemetry
- Flipboard for generating custom feeds
- WebMD

Resource requirements

- Standard IaaS or FaaS cloud products



IDENTIFIED RISKS

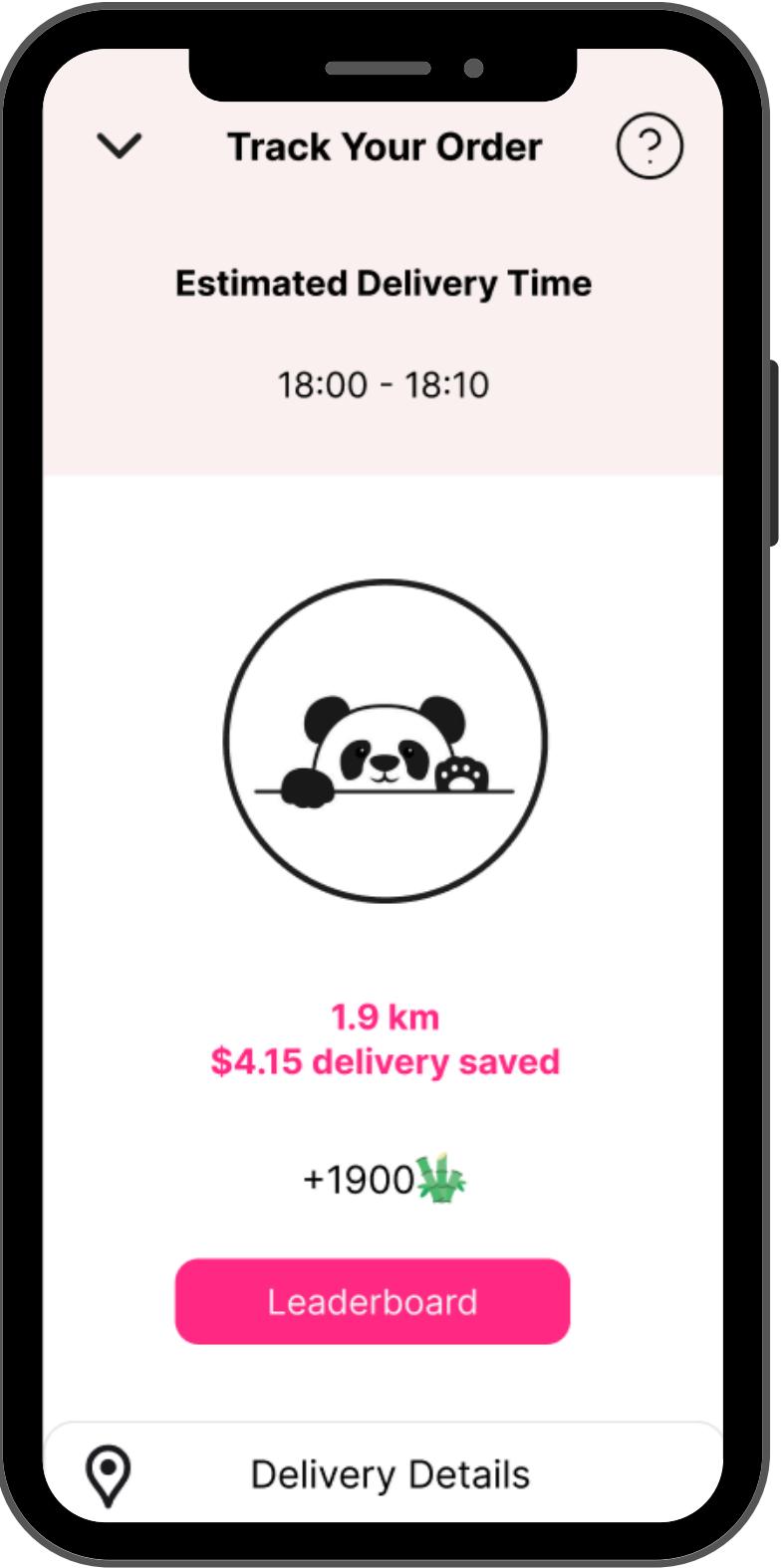
Risk	Mitigation
Food partners get overwhelmed	<p>Based on review of 23 randomly sampled restaurants from FP dataset, 22 gets more than 2 orders over a 10min period during peak time.</p> <p>Nonetheless, a opt-out switch has been implemented, and a limit of 1 additional meal for consolidation</p>

IDENTIFIED RISKS

Risk	Mitigation
Solution integration risk is high	<p>2 additional module to be built (pandagather page, user notification)</p> <p>1 existing module to be modified (routing and searching for additional customers)</p> <p>Otherwise, solution is scalable as there is technical limiting factor</p>



Order Gathering



Immediate Feedback



Social Sharing

THANK YOU

FOR COMING

Base Case Data*

1. Total Orders DH (2023) = 3,283.3M
2. Asia Orders DH (2023) = 1,716.6M
3. Total Revenue DH (2023) = 12,658.5 (€M)
4. Asia Revenue DH (2023) = 4,134.1(€M)
5. foodpanda Asia share = $6,250 / (6,250 + 761 \times 3) \times 100\% = 73\%$
6. foodpanda order share (2023) = $(1,716.6M / 3,283.3M) \times 0.73 \times 100\% = 38\%$
7. foodpanda Orders (2023) = $3283.3(M) \times 0.38 = 1,247.7(M)$
8. foodpanda revenue (2023) = (Asia Revenue x foodpanda Asia share) = 3,017.9 (€M)

Base Case Assumptions

1. Number of orders consolidated = 2 / pandagather
2. CO₂e / KM (per motorbike)** = 110g
3. Order Consolidation Rate = (Notification to Imp. Rate x Imp. to Con. Rate x Cust. Density) x 100% = 1.25%
4. Orders to Trips Rate = 50%
5. Notification to Imp. Rate = 2.5%
6. Imp. to Conv. Rate = 2.5%
7. Cust. Density (100m Radius) = 20pax
8. pandagather delivery discount = 50%
9. Average Trip Distance (pre-pandagather, 2 Orders) = 2 x 3km
10. Average Trip Distance (post-pandagather, 2 Orders) = 3.1km

*Barclay Equity Research European Internet, 30 August 2024

**<https://thrustcarbon.com/insights/how-to-calculate-motorbike-co2-emissions>

Calculations

1. Trips Reduction (Rate) : $(1 \text{ Order} / 2 \text{ Orders}) \times 100\%$
2. CO₂e = $(CO_2e \text{ g / KM}) \times (\text{Order Consolidation Rate} \times \text{Orders to Trips Rate}) \times (\text{foodpanda orders}) \times \text{Average Trip Distance (post-pandagather, 2 Orders)}$
3. Number of orders, pandagather(rate) = $(\text{Notification to Imp. Rate} \times \text{Imp. to Con. Rate} \times \text{Cust. Density})$
4. Potential Revenue Increase = $(\text{Number of Orders, pandagather(rate)} \times \text{foodpanda revenue})$
5. Rider Earnings Increase / Trip = $[\text{Average Trip Distance (pre-pandagather)} / \text{Avg Trip Distance (post pandagather)} \times 100\%] - 100\% - (\text{pandagather delivery discount})$
6. F&B Exposure Opportunity = $(\text{Cust. Density} \times \text{Notification to Imp. Rate} \times 100\%) - 100\%$
7. Co-share Green Efforts = Trip Reduction (Rate)
8. Average Trip Distance = $(\text{Average number of trips made in a 20min timeframe, from 1 vendor to the same area}) \times (\text{Average distance of such trips})$
9. Average Trip Distance = $(\text{Average distance of trips made in a 20min timeframe, from 1 vendor to the same area}) + \text{Average order consolidation radius}$