Green Logistics
Freight Consolidation for Omnichannel Home Delivery

Motivation / Background
CO₂ emissions are heavily driven by transportation and continue to rise

6 Million annual home deliveries
1300 Retail Stores in Mexico
1200 last mile delivery vehicles

Key Question / Hypothesis
How does freight consolidation impact CO₂ emissions and transportation cost?

What is the impact to working capital with consolidation?

Relevant Literature
When do customer want to receive their products after providing Environmental Statement at store?

The Problem
Effect of freight consolidation on CO₂ emissions and costs for omnichannel home delivery services?

What are the options and therefore recommended strategies for Coppel’s home delivery network design?

Methodology
Initial Results
“Huge opportunity for consolidation”

Expected Contribution
Identify the impact on cost and CO₂ emission

Recommend a strategy for Coppel

Deliver an analytical framework

Units per order

No of Order per truck Move

91%
34%
31%
35%

Small order size – only 1.04 units per order

~70% of truck moves are under utilized

January 2019 Poster Session

39%
32%
11%
18%

1-2 days
3-4 days
5-6
~7+ days

1% 10% 18% 23% 32%