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Optimizing the Last Mile
Urban Logistics in Brazil

January 2019 Poster Session

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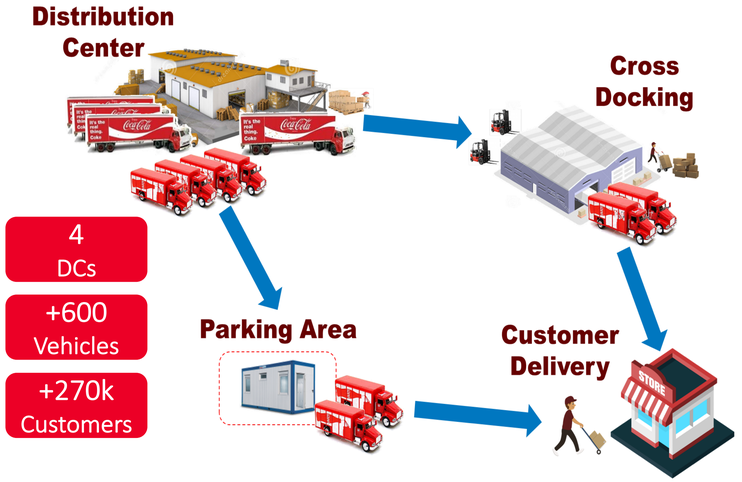
Background

Coca-Cola Femsa's network configuration for last-mile delivery in São Paulo, Brazil



Key Question / Hypothesis

What is the lowest-cost distribution network for last-mile delivery in São Paulo, Brazil?

Relevant Literature

- Snoeck, A. (2018). FEMSA Model in Colombia.
- Snoeck, A., & Winkenbach, M. (2018). The Value of Flexibility in Urban Distribution Networks under Demand Uncertainty.
- Winkenbach, M., Kleindorfer, P., & Spinler, S. (2016). Enabling Urban Logistics Services at La Poste through Multi-Echelon Location-routing.

The Problem

Emerging Market Challenges

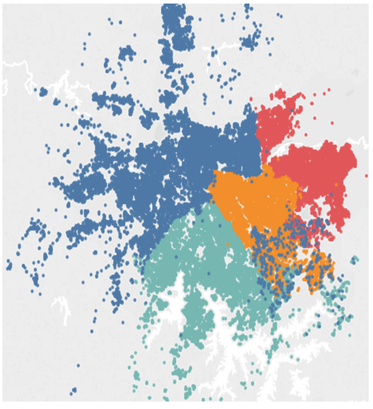
- Large number of customers
- High-density area
- Customer turnover
- Labor Relations
- Government Regulations

Methodology

Phase 1	Phase 2	Phase 3
Data collection	Add new constraints	Conduct scenario analysis
Update of time and cost parameters	Run base optimization model	Robust network of DCs, depots and vehicles

Initial Analysis

Current DC service areas overlap



Market challenges require additional decision variables

Expected Contribution

- **Extend** a multi-echelon location routing model to a more complex business case.
- **Assess** the impact in computation time by adding constraints and decision variables.
- **Achieve** significant cost reductions in a large-scale, multi-echelon, last-mile distribution network

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