# Decoupled Capacity with Powerloop

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January 2019 Poster Session

## Motivation / Background

**US Trucking Industry:**
- $730B market (TL)
- Driver shortage is creating illiquidity in the market and driving up rates

**Uber Freight's Powerloop:**
- Improves carrier utilization by reducing time carriers spend at shipper facilities
- Dropped trailer pool program

**How can shippers benefit from Powerloop?**
- Improved warehouse operations
- Decreased accessorial fees
- Improved delivery performance
- Lower transportation rates
- Improved carrier experience at shipper facility

## Key Question / Hypothesis

What benefit can shippers realize in accessorial fee savings and improved on-time delivery from using Powerloop?

## Relevant Literature

Tompkins, J. A., & Harmelink, D. A. (2004). The Supply Chain Handbook. Tompkins Press.

Tako, A. A., & Robinson, S. (2012). The application of discrete event simulation and system dynamics in the logistics and supply chain context. Decision Support Systems, 52(4), 802–815.

## Challenges

- Connecting the multiple loads of each Powerloop from a data perspective
- Accounting for driver service hours in the simulation model
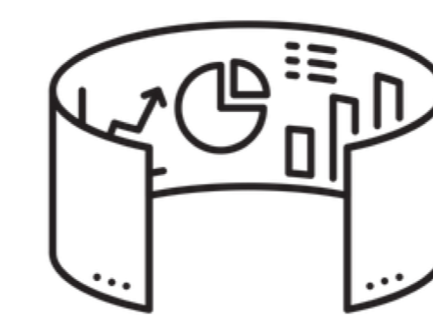
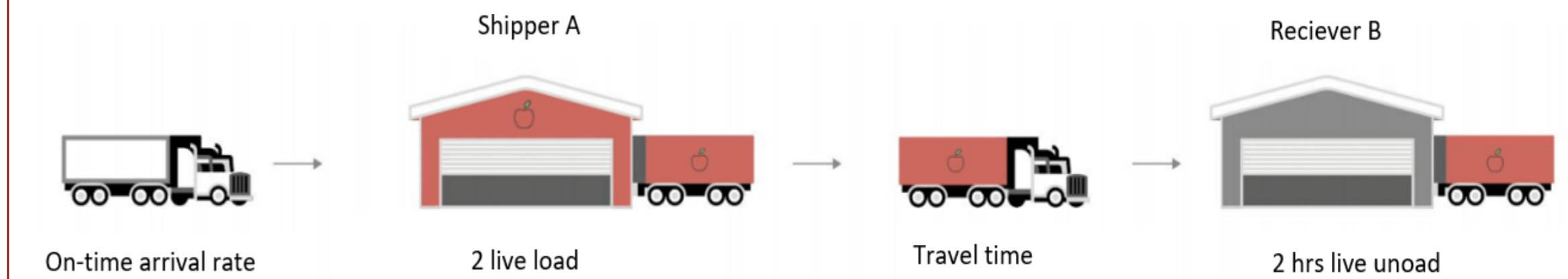## Methodology



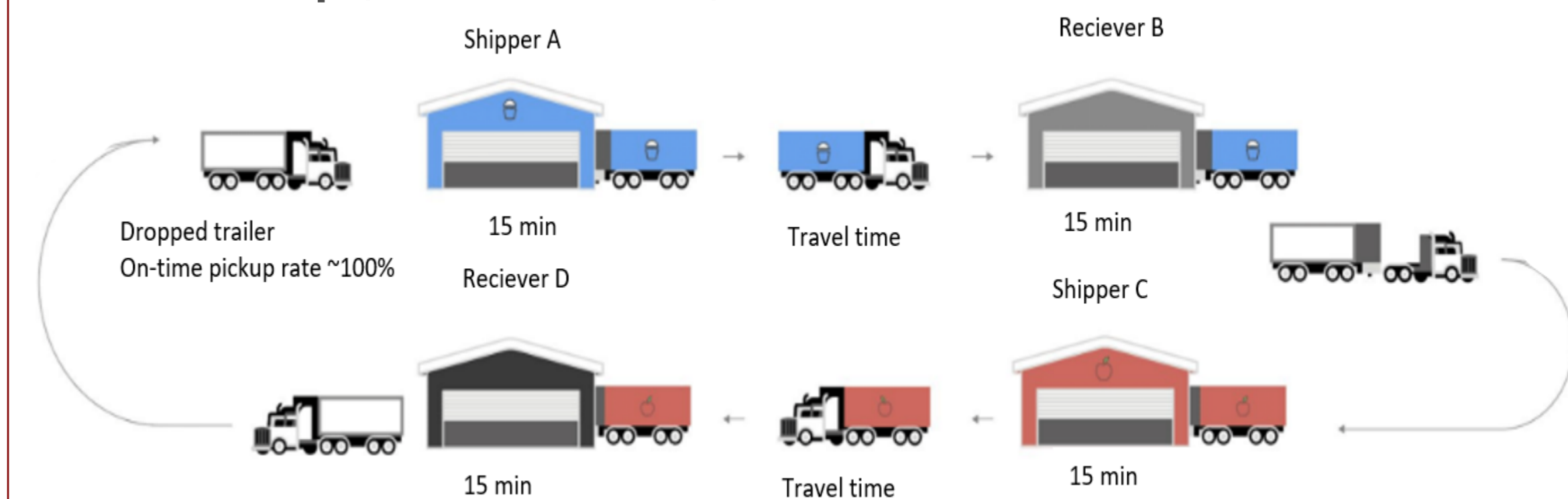Data Gathering  Data Cleaning  Expert Interview  Discrete-event Simulation

## Initial Results

### Current state



On-time arrival rate — Shipper A — 2 live load — Travel time — Reciever B — 2 hrs live unoad

### Powerloop (Drop-Drop Scenario)



Dropped trailer On-time pickup rate ~100% — Shipper A — 15 min — Travel time — Reciever B — 15 min
Reciever D — 15 min — Travel time — Shipper C — 15 min

Powerloop reduces the time a carriers spends at a shipper facility and increases carrier utilization

## Expected Contribution

- Provide insights about the impact Powerloop has on shipper's cost and performance
- Create a model to generate the future state expected accessorial savings and on-time arrival rates a shipper can expect from using Powerloop

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