Its About Time: Predicting Dwell Time to Improve Trucking ETA

Student: Sireethorn Benjatanont, SCM 2020
Student: Paco Tantuico, SCM 2020
Advisor: Dr. Christopher Mejia Argueta, Dr. David Correll
Sponsor: Global 3PL Provider

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BACK TO KIOSK MENU

Motivation

Resulting in…

Drivers spend

30%

of their week in facilities

- **UNRELIABLE** service for shippers
- **UNPREDICTABLE** ops for carriers
- **UNDERUTILIZED** fleets for 3PLs

Less Earnings



For 3PLs, carriers & shippers

Key Questions

UNDERSTAND

What factors are significant to dwell time?

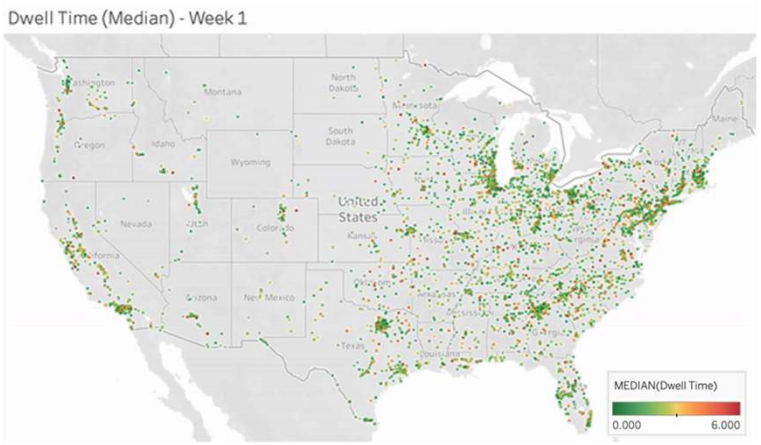
PREDICT

Can dwell time be accurately predicted at each stop?

Relevant Literature

Correll, D. (2019, October 21). Is There a Truck Driver Shortage or a Utilization Crisis? Retrieved November 14, 2019, from Medium website: https://medium.com/mitsupplychain/is-there-a-truck-driver-shortage-or-a-capacity-crisis-73a7d7a5bcb

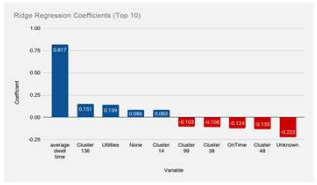
Moini, N., Boile, M., Theofanis, S., & Laventhal, W. (2012). Estimating the determinant factors of container dwell times at seaports. Maritime Economics & Logistics; London, 14(2), 162–177. http://dx.doi.org/10.1057/mel.2012.3



Methodology

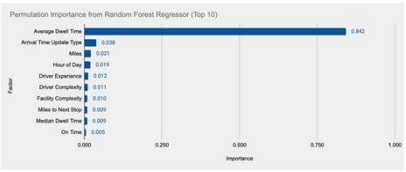
1. **EXPLORE** — **20 M** entries + **40+** variables
2. **IDENTIFY** — **Key drivers** that impact dwell time
3. **DEVELOP** — Model to predict dwell time for **each load at each stop**
4. **IMPROVE** — Increase **prediction accuracy** of model
5. **ACT** — Optimize **ETA predictions** and **reduce dwell time** at source

Preliminary Results



Linear Model: Ridge Regression

Ensemble Model: Random Forest



Expected Contribution

OPTIMIZE NETWORK

PROVIDE SAVINGS

IMPROVE EXPERIENCE

Sireethorn Benjatanont 

Paco Tantuico 