



Building Sustainable Supply Chains in the Era of E-Commerce

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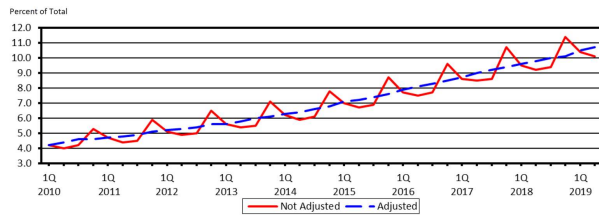


January 2020 Poster Session

Motivation / Background

- Online retail in the US has grown 16% over the last year; while Latin America is expected to grow 19.4% and reach \$78B by 2022
- How should companies design, procure, and manage their current infrastructure capacity to cope with the growth of e-commerce retailing and reduce its environmental effects?

E-commerce Growth Rate in U.S.



Retrieved from U.S. Department of Commerce. (U.S. Department of Commerce, 2019)

Key Question / Hypothesis

How can firms in developing countries:

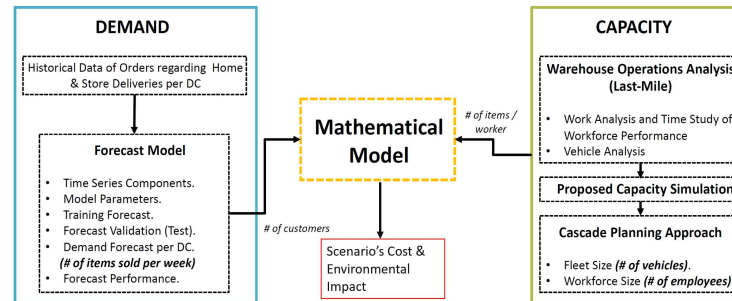
1. Define their current capacity and improve their resource utilization
2. Determine the capacity that will be needed for future years while understanding the environmental impact of supply chain decisions

Relevant Literature

1. Watson, M., Hoormann, S., Cacioppi, P., & Jayaraman, J. (2017). *Supply chain network design: Understanding the optimization behind supply chain design projects* (Dewey Library - Stacks HD38.5.S896138 2013). Upper Saddle River, New Jersey : FT Press, [2017].
2. Hopp, W. J., & Spearman, M. L. (2001). *Factory physics: Foundations of manufacturing management* (Dewey Library - Stacks TS155.H678 2001). Boston : Irwin/McGraw-Hill, c2001.



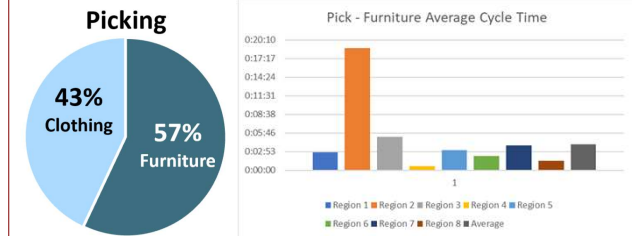
Methodology



Environmental Impact quantified using Network of Transport Measures (NTM) or Greenhouse Gases (GHG) (Environmental Protection Agency, 2007)

Initial Results

- Field study completed and analyzed to determine current state capacity
- Identified low-hanging fruit, such as DC efficiency differences



Expected Contribution

- Define Coppel's current capacity and provide recommendations on improving efficiency
- Provide Coppel with multiple network design options to accommodate future growth in the next 1-2 years
- Quantify the environmental and cost trade-offs of different Coppel supply chain decisions



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