

Channel Flow Optimization for Product Allocation in Grocery Retail

May 2021 Research Fest

Background

GROCERY RETAIL IS COMPLEX

Varying product characteristics

Evolving consumer preferences especially with COVID

Complex supply chain networks with multiple DCs

PRODUCT ALLOCATION IS CRITICAL

Product Allocation

- Shipping Location
Determining a shipping DC for every SKU
- Shipment Type
Breakpack, Full Case or Inner?

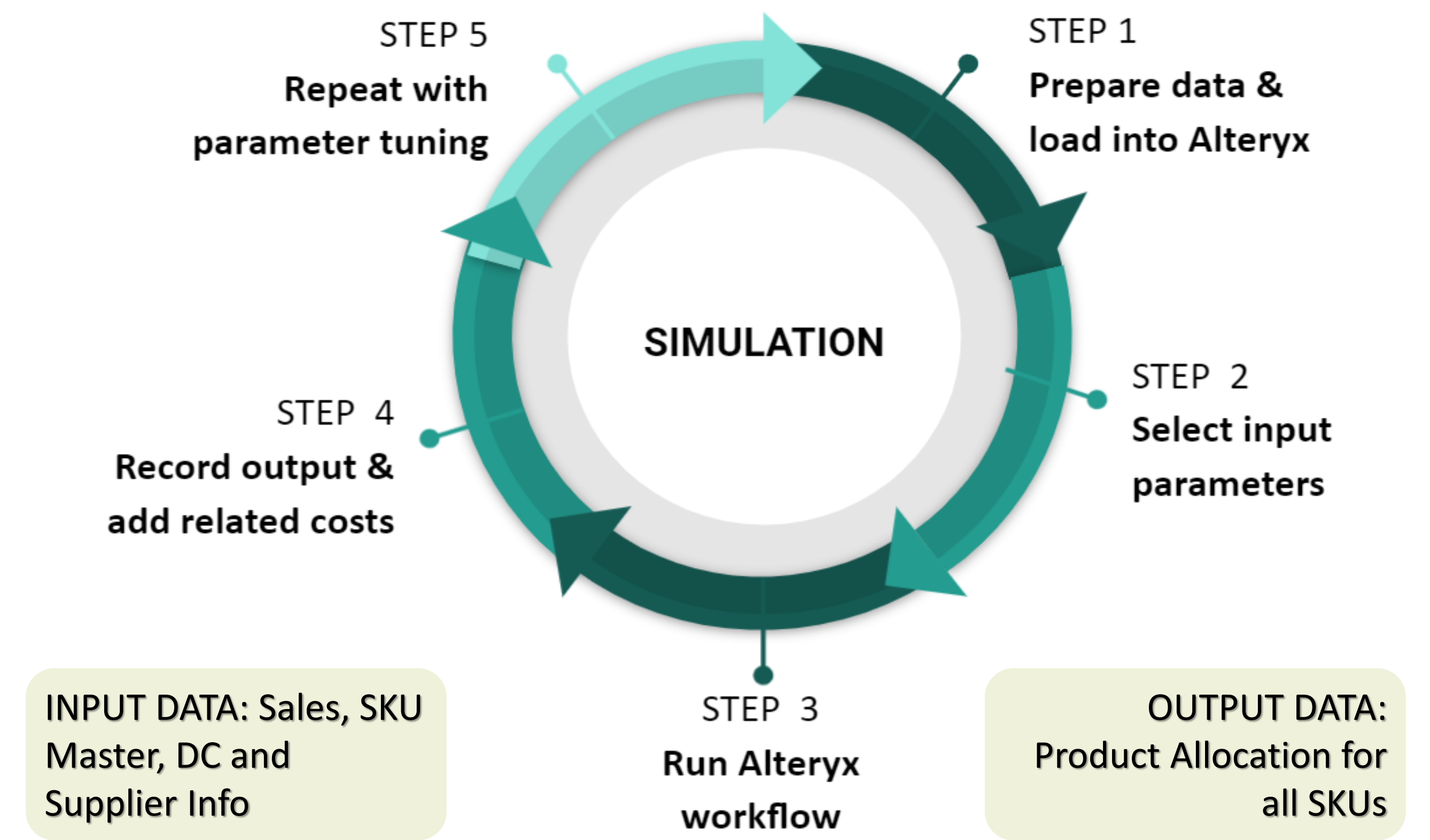
Project Objective and Research Questions

How do we improve product allocation to serve grocery retailers better?

- Are the input parameters used to determine Full Case ship vs. Breakpack ship correct?
- What other factors should be layered onto the tool to improve supply chain efficiencies?



Methodology



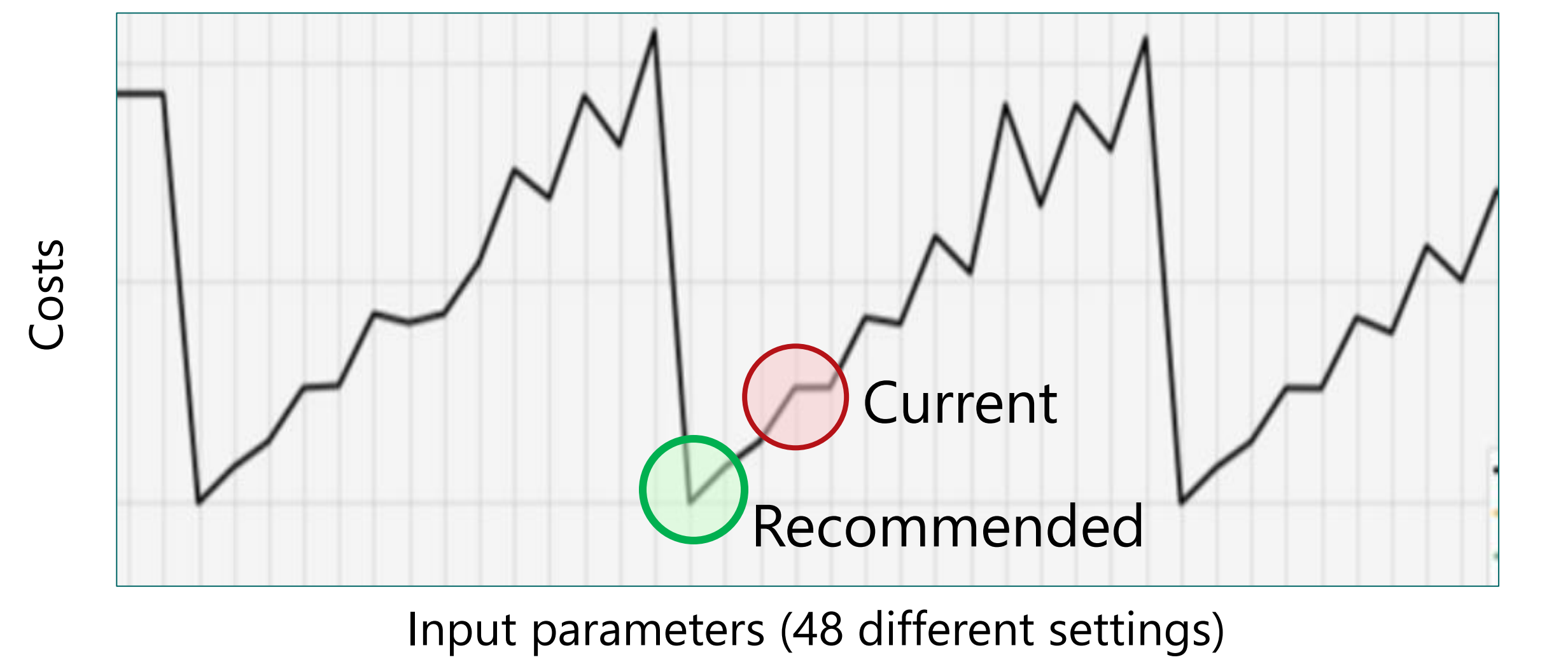
Relevant Literature

Holzapfel, A., Kuhn, H., & Sternbeck, M. (n.d.). *Product allocation to different types of distribution center in retail logistics networks.*

Wollenburg, J., Hubner, A., Kuhn, H., & Trautrim, A. (n.d.). *From bricks-and-mortar to bricks-and-clicks.*

Results

Logistics costs were analyzed and plotted for all input settings simulated



Parameters analyzed

- Sale Velocity Of SKU
- % Vendor Source Mix
- Days Of Supply

12% Savings in annual cost with recommended settings

Added cost as a new parameter to model

Key Insights

- Sale velocity of SKU has the biggest impact on product allocation
- Analysis of input parameters for product allocation presents cost saving opportunities in supply chain



Abhijeet Singh
SCM 2021



Bill Fang
SCM 2021

