

Network optimization for international commodity trading

Motivation / Background

- > Strategic raw materials for cement production (e.g. slag)
- > Global annual production: 300 million tons (2016)
- > International trade: **32 million tons**
- > Medium-term: **Demand > Supply**
- > Prices increase → secure long-term contracts
- > Challenge - Network optimization considering:
 - Margin optimization
 - Value creation for customers
 - Supply chain resilience

Key Question / Hypothesis

- > Are there opportunities to improve the current supply chain network delivering higher margins, cost efficiencies, while creating additional value to customers?
- > How can a supply chain optimization model help us to identify such opportunities?

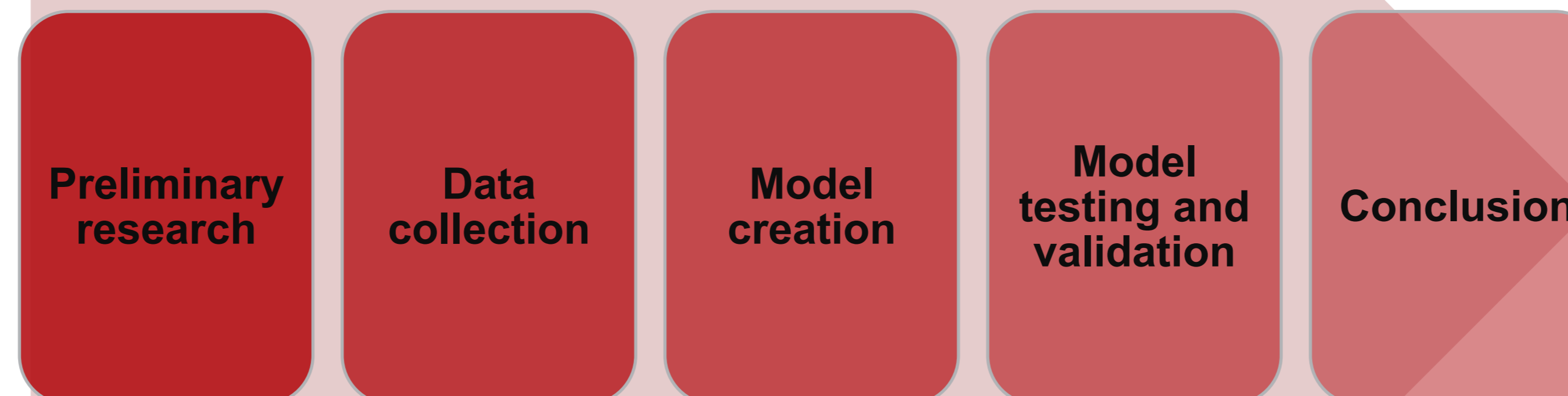
Relevant Literature

Chopra. S., & Meindl, P. (2007); Supply Chain Management: Strategy, Planning and Operations.

Noche, B., & Elhasia, T. (2013); Approach to innovative supply chain strategies in cement industry; Analysis and Model simulation.

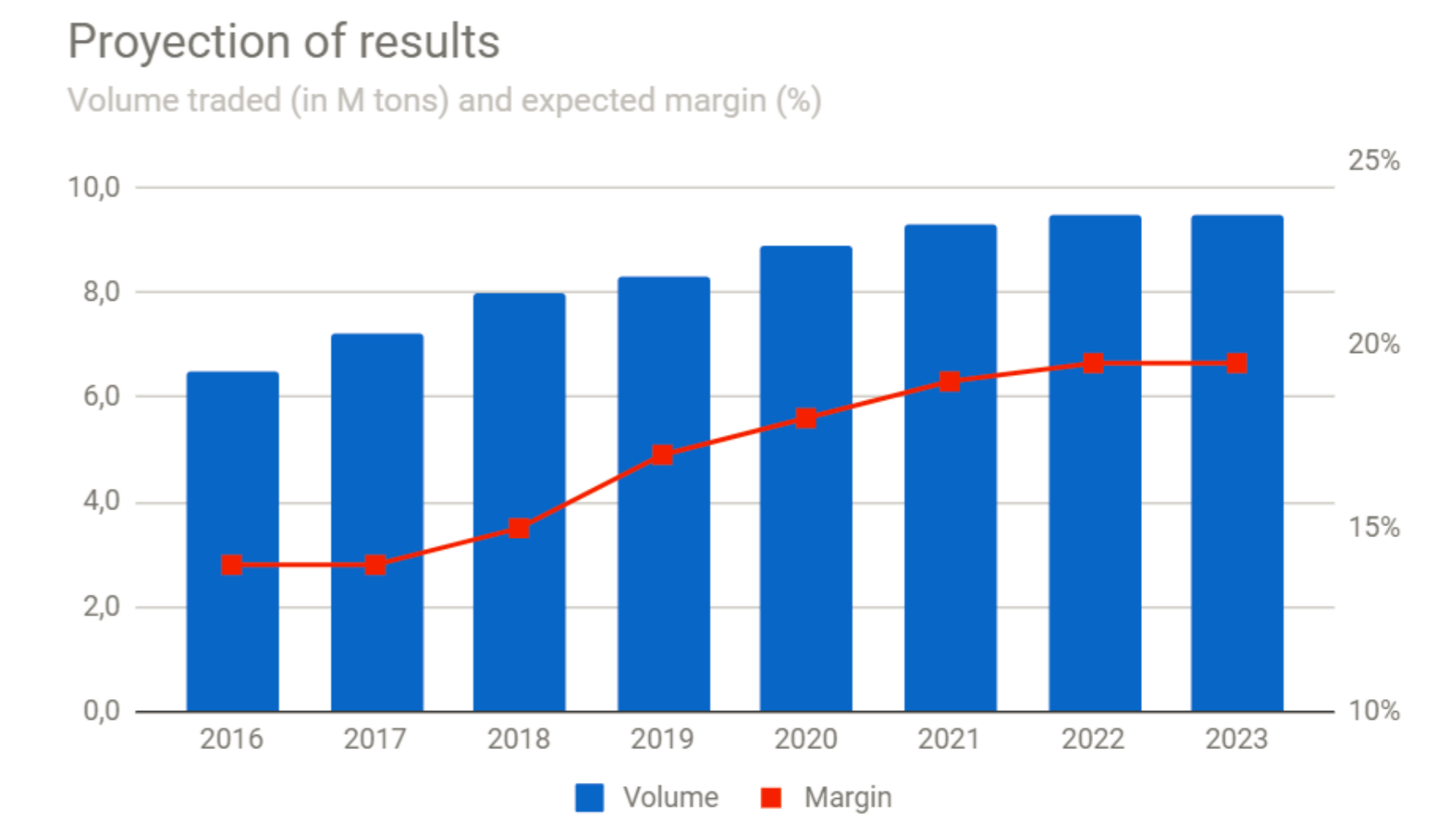


Methodology



Initial Results

- > Additional **~5%** of commercial margin
- > Optimized volume allocation based on **perceived value** for customer



Expected Contribution

- > We aim to deliver a **cloud-based tool** that supports management decision-making for a multinational trading company.



- > Using a supply chain optimization model, the company can identify opportunities to improve the current distribution network.
- > The model can also be extended to all seaborne bulk cargo traded by the company.

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