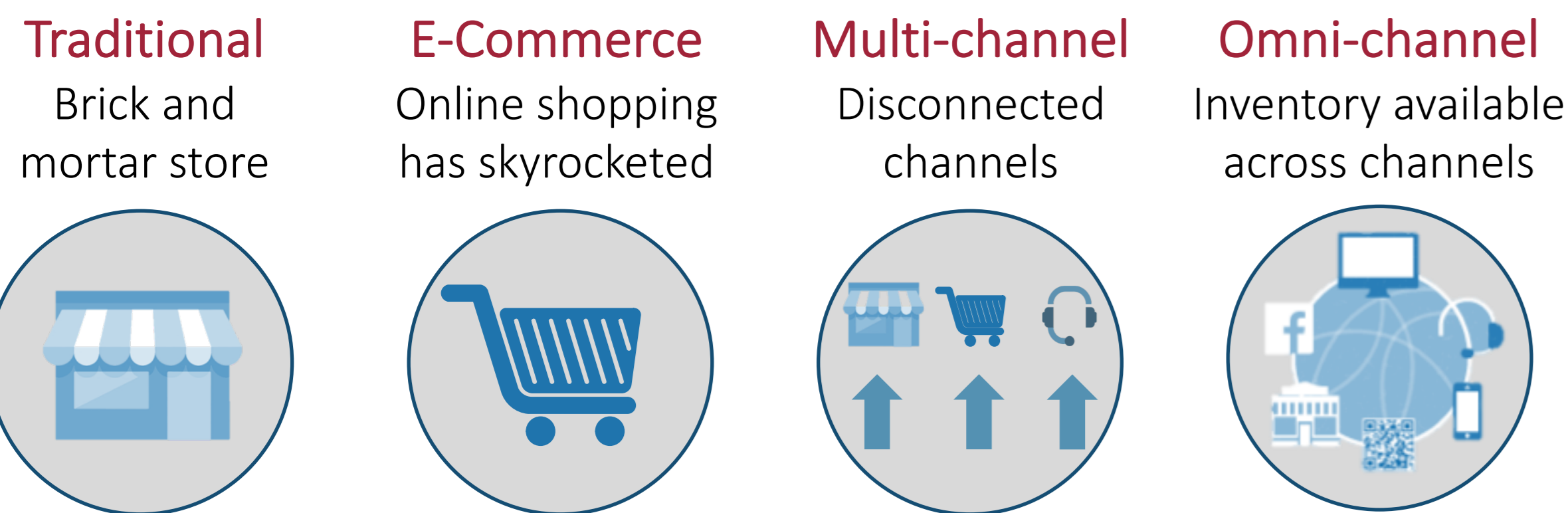# OMS Features for an Omni-channel Supply Chain

Neysan Kamranpour, SCM 2019
Marion Konnerth, SCM 2019
Advisor: Dr. Eva Ponce & Dr. Marina Mattos
Sponsor: MAERSK

MIT GLOBAL SCALE NETWORK

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Motivation / Background

E-commerce consumers have increasingly higher expectations for convenient and fast order deliveries.
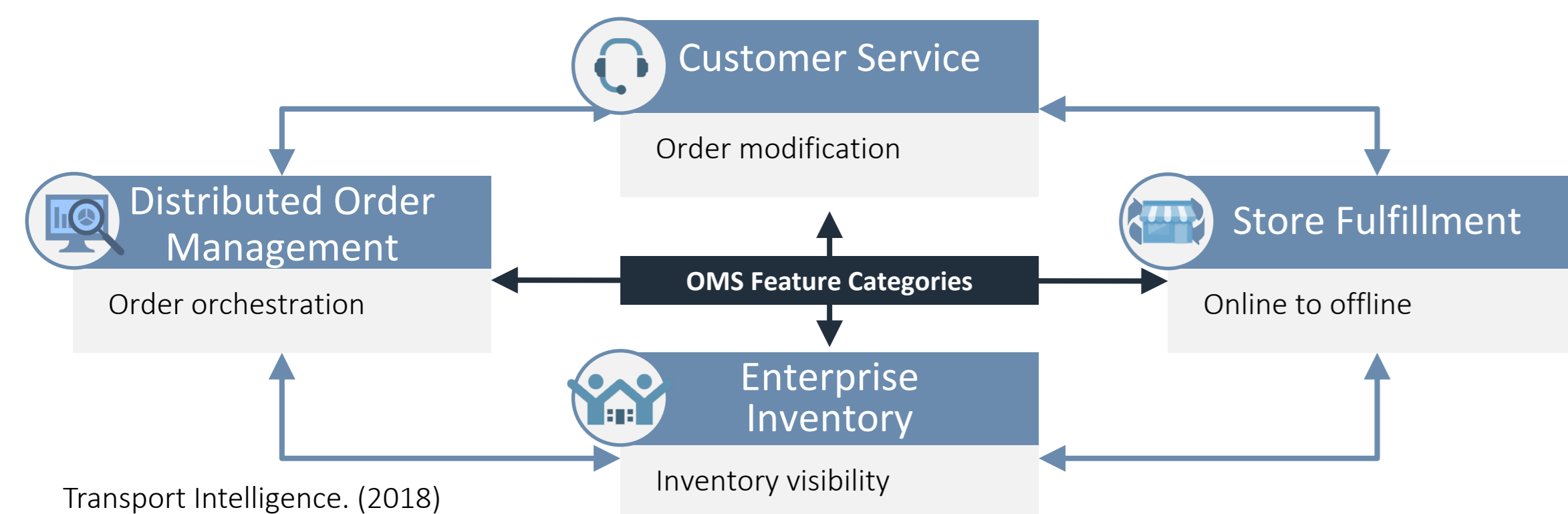
Current multi-channel distribution strategy is rigid and keeps B2C and B2B inventory separate and unavailable to other channels. Omni-channel supply chains overcome this problem.

Traditional
Brick and mortar store

E-Commerce
Online shopping has skyrocketed

Multi-channel
Disconnected channels

Omni-channel
Inventory available across channels

Key Question / Hypothesis

1. How will the supply chain transform to support store fulfilment for E-commerce consumers?
2. What OMS features will be necessary to transform a multi-channel supply chain into an omni-channel supply chain?

Relevant Literature

Customer Service
Order modification

Distributed Order Management
Order orchestration

Store Fulfillment
Online to offline

OMS Feature Categories

Enterprise Inventory
Inventory visibility

Transport Intelligence. (2018)
Witcher, B. & Silverman, (2016)
Witcher, B. (2018).

Methodology

1. **Rank OMS Features by Multi-Criteria Decision Analysis**

   Identify OMS features → Analyze current solution → Segment OMS features → Evaluate vendors
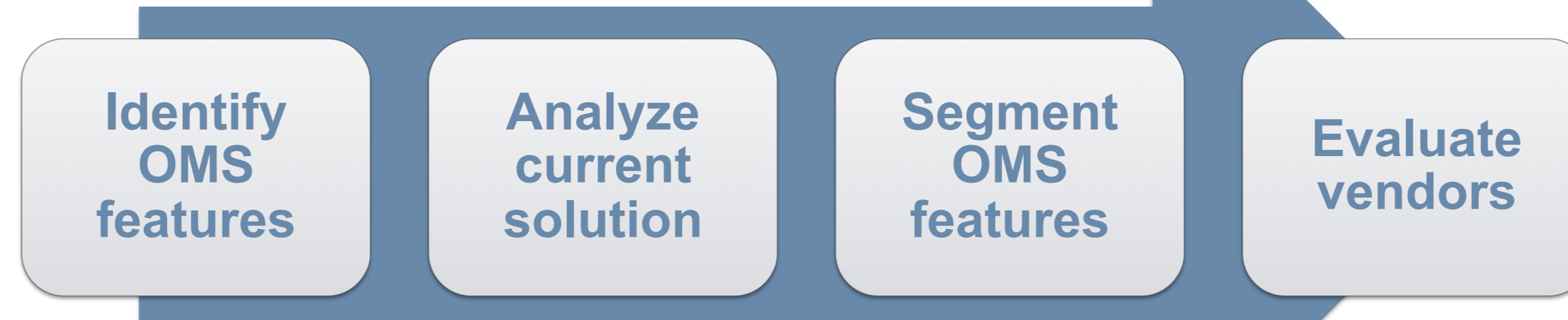
2. **Evaluate impact of OMS in an omnichannel scenario**

   > Build an omni-channel optimized network model
   > Use client data from merchandise distributed in China.
   > Test omni-channel scenario with brick-&-mortar stores as additional inventory locations within the network.

Initial Results

Multi-channel
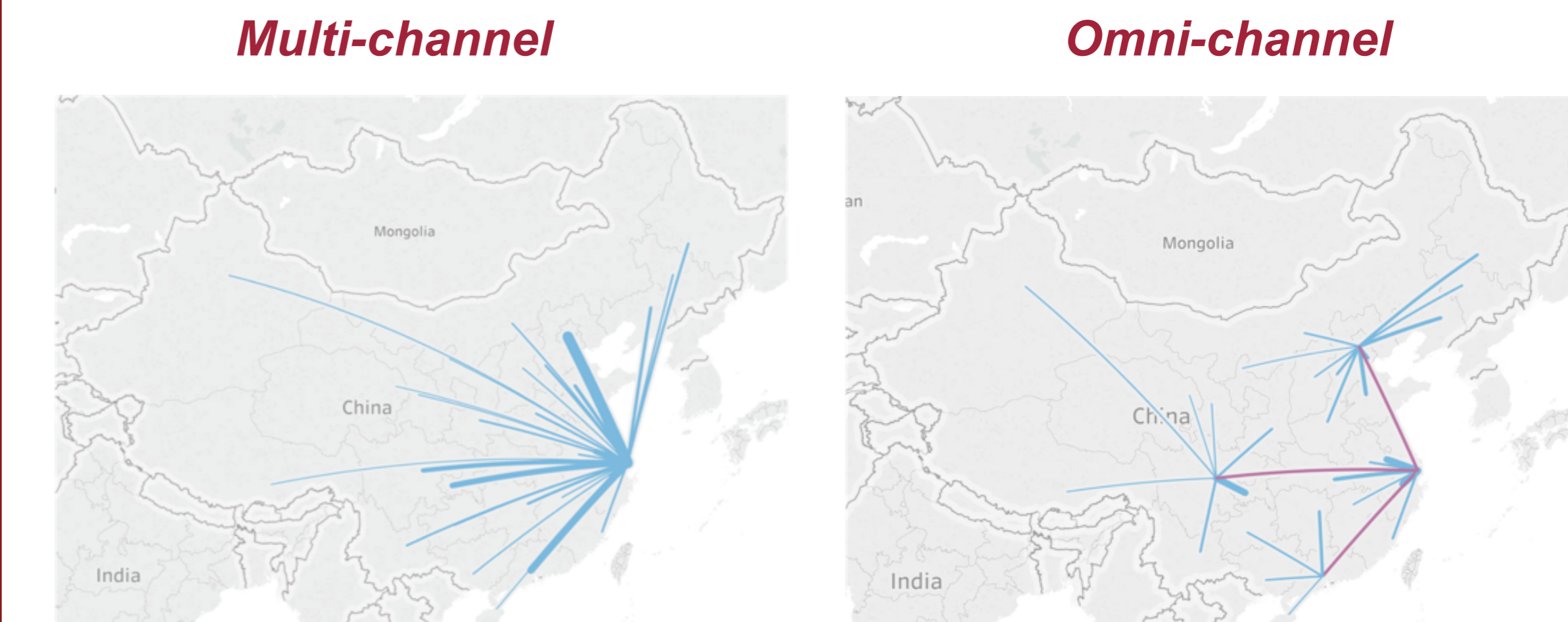
Omni-channel

> In the omni-channel scenario, orders are prepared and delivered from the nearest inventory location.
> Optimization yielded a reduction in average distance, between available inventory and consumers, from 1100km to 320 km.

Expected Contribution

For Sponsor:
> Recommend the most suitable omni-channel OMS available in the market.
> Become agile and lean as customer preferences change very quickly
> Attract new customers

General Insights:
> Provide a framework to select an omni-channel OMS
> The usage of the selected OMS will help to efficiently allocate inventory in omni-channel

Neysan Kamranpour (LEFT) Marion Konnerth (RIGHT)