**Retail Store Assortment**

RSA Use case – Business Context:

**Parameters for Store Classification to a retail site:**

1. Stores are classified into various classes (e.g., A, B, C, D) based on parameters like the Cost of Goods Sold (COGS) and location demographics.
2. Urban locations typically have higher-class stores due to dense populations, whereas rural regions have lower-class stores.
3. Most inventory is allocated to Class A stores post-launch.

This leads to:

* understocking at other stores and potential overstocking at Class A stores.
* It is also implied that while store class A might get more inventory, it might not have enough sales opportunity.
* Essentially there is an asymmetric allocation of quantities to Store class A.

**ABC Classification**:

1. Items, locations, and SKU (item-location combination) are classified based on the unit contribution to total store volume:
   * 1. A: >= 2000
     2. B: > 1000, < 2000
     3. C: > 500, < 1000
     4. D: <500
2. SKU classification drives allocation and replenishment decisions than item classification.

* Allocation processes are not properly logical, leading to suboptimal utilization of working capital.
* Safety stock and replenishment parameters lack precise alignment with demand forecasts.
* There should be a proper target value of stocks to replenish.
* There should be a proper safety stock threshold value in the inventory that matches the target value.
* The metrics like: Total Quantity Sold to Customers, Total Revenue per Customer, Average Order Value, Age Group, Price Sensitivity highlight demand patterns.
* At operational level manufacturing lead times, defect rates, and inspection results impact the availability of products in stores.
* Routes, transportation modes, and production volumes can help align inventory allocation with local demand patterns.

**Overall Problem Statement:**

Retailers face challenges in optimizing store assortment due to an over-reliance on an improper inventory allocation and replenishment. Asymmetric stock allocation to higher-class stores, inconsistent services, and improper inventory management result in inefficiencies, overstocking risks, and reduced customer satisfaction. A more dynamic, data-driven approach is essential to enhance assortment efficiency and minimize working capital exposure.