

## **Supply Chain – An Effective use case of Advance Analytics and Data Science**

Supply Chain encompasses the following functions in a Manufacturing Organisation -

- Procurement Activity.
- In-Bound Logistics for manufacturing goods.
- Manufacturing RM and Processed inputs Inventory
- Manufacturing Process and supply line.
- Finished Goods Inventory
- Customer order Fulfillment
- Out-Bound Logistics

Supply Chain costs around 9.8 % of sales , on an average across industry segments according to research by Logistics Bureau\* , with best in class averaging to 5.7%. Any savings here directly effects and improves the bottom line. Key areas of cost improvements are-

- Transactional Cost
- Mismatched Processes
- Uncertainty in Operation.

Data Analysis and usage of Data Science helps to give the right information at the right time for the Industries to act and monitor.

### **Strategic use of Data Science and Advance Analytics.**

#### **1)Demand Analytics and forecasting optimization –**

- Forecasting process Vis- a- vis demand .
- Detailed demand forecasting at the level of point of sale (store level, distribution channel)
- Deviation analysis of forecast versus actual at the Product /SKU level.
- Forecast integration with promotional events and external factors to fine tune the forecast.

#### **2)Finished Inventory Optimization –**

- Projecting stock velocity and forecasting dead inventory.
- Inventory budget optimization
- Safety stock level recommendations

#### **3)Replenishment Planning Analytics**

- What, when, and where should I ship.
- Integrated planning at the retailer, distributor, and channel level.
- Optimize demand fulfillment strategy to account for handling, storage or warehouse constraints.

#### **4) Network Planning and Optimization**

- Planning the right network of manufacturing and warehousing facilities.
- Number of physical plants for manufacture and warehouse.
- Optimized flow paths to fulfill different segments of customer demand at the lowest total cost

#### 5) Transportation Analytics

- Optimizing transportation routes and loads including contract compliance.
- Optimizing routes including backhaul.
- Optimizing shipment schedules.
- Maintaining compliance with transportation contracts.
- Accident reduction based on driver and route behavior

#### 6) Procurement Analytics

- Project lowest landed cost and secure long-term high quality supplier partners.
- Vendor Analysis based on scoring models for quality, cost, and stability.

#### 7) Geospatial Analytics in distribution network Planning and Optimization

- Geo-spatial analytics. Several advanced analytic platforms can allow the addition of detailed location information that can be evaluated for travel time between nodes and especially against local customer density and time-of-day traffic patterns.
- Can also be used for Channel management and profitability.

#### **Benefits that can be harvested -**

How fast will the supply chain recover from external shocks, and plan for the same?

Where are the biggest opportunities for additional profits from the supply chain?

How can you protect margins when demand falls?

How can you plan to protect profitability at the product level if a major supplier fails?

How we can you marketing/sales efforts based on consumption density and competition ?

We in Ebiw , with proven expertise in Supply Chain ,Data Science domain can help you in achieving the same. Do contact us in our website portal for further engagement.