DATE:	28.09.2022
TEAM ID:	PNT2022TMID07295
PROJECT NAME:	Inventory Managment System for Retailers

PROJECT DESIGN PHASE-I
PROBLEM SOLUTION FIT

1. Customer Segment: (CS)

Segmenting customers based on who they are -

The process of understanding who customers are typically focuses on demographics. This will include factors such as:

- Age
- Geography
- Urbanisation – are they city or rural?
- Income
- Relationship status
- Family
- Job type

Segmenting customers based on what they do -

You can also segment customers based on how much they spend (share of wallet), how often, and what products (this allows you to see how much you can increase spend). This is more behaviour focused.

- Basket size
- Share of wallet
- Tenure (how long they stay with you)
- Longterm loyalty (a function of share of wallet and tenure)

2. Jobs-to-be-done / Problems

- Monitors and maintains current inventory levels; processes purchasing orders as required; tracks orders and investigates problems.
- Records purchases, maintains database, performs physical count of inventory, and reconciles actual stock count to computer-generated reports.
- Receives, unpacks, and delivers goods; re-stocks items as necessary; labels shelves.
- Processes and/or approves invoices for payment.
- Processes and documents returns as required following established procedures.

3. Triggers

Comprehensiveness and deployment

A comprehensive view entails a variety of inventory aspects including current product levels, status of current product orders and the trends related to different product offerings.

User-friendly features

An easy user interface allows a larger number of employees to use the system with a greater degree of success.

Durability of the system

System maintenance also factors into an inventory system's durability.

The number of IT professionals required to properly maintain an inventory system increases a company's payroll and can affect profits if the system fails routinely

4. Emotions: Before / After

Before:

- Bureaucracy
- Impersonal touch
- loss to devaluation

After:

- It helps to maintain the right amount of stocks
- It leads to a more organized warehouse
- It saves time and money
- Improves efficiency and productivity

5. Available Solution:

- Expanding product range
- Growing a product line and newly set up warehouses demand effective management of inventory stocks.
- Warehouse space management
- Managing inventory spaces to accommodate new inventory stocks can be a daunting task.
- Manual billing and documents
- Manually keeping a track of all the inventory management reports, purchase orders, and invoices will be a difficult task.

6. Customer Constraints:

Lack of a centralized inventory hub

Imagine switching multiple tabs for customer order details and tracking real-time data. This leads to inventory managers getting frustrated and slow delivery of results.

Inconsistent Tracking:

Using manual inventory tracking procedures across different software and spreadsheets is time-consuming, redundant and vulnerable to errors.

Supply Chain Complexity:

Global supply chains shift daily, placing a burden on your inventory planning and management operations. The manufacturers and wholesale distributors that dictate when, where and how your inventory ships require flexibility and offer unpredictable lead times.

7. Behaviour:

Behavioral inventory-management research is not inherently at odds with more traditional prescriptive research methodologies. Rather, we believe that the two approaches are complementary and that the development of a stream of behavioral research is a natural component of the evolution of the field. The role that behavioral economics has played in the field of economics provides an insightful perspective (see Thaler and Ganser 2015). Initially it received significant resistance, but over time it improved the field's impact and validity.

8. Channels of Behaviour:

Establish and document protocols

Connecting and integrating different systems is a top challenge for 3PLs, and 34% of companies don't have the software integrations they need.

Head to the cloud

Going cloud-based also gives you richer insight into your business and your inventory. You can view real-time reports and data analyses to make more informed purchasing, pricing, and inventory-related decisions.

Sync online and offline

This also makes it easier to analyze online vs. offline sales. There may be particular products that perform better online vs. in-store, and vice versa

Automate what you can

Automation also saves you time by allowing your team to focus on more important business tasks, rather than tedious and repetitive tasks that could easily be handled by technology.

Conduct regular counts

A physical count is when you tally up the number of products you have in your possession in person. This means a person or multiple people physically go around and count how much merchandise you have.

9. Problems Root Cause:

Root cause analysis has been carried out to examine the probable causes in a more detailed manner. With the RCA analysis, the reasons for the Inventory have been considered in a more detailed fashion. Several reasons that were identified from the survey data collection were drilled down further to get to the roots of the problem. After getting to the reasons for the probable causes, certain corrective actions have been suggested, and recommendations were provided to improve the same.

10. Solution

The supplier provides products to the retailer and is subject to random disruptions. The retailer sells products to customersand adopts a continuous-review inventory policy. Partial backordering is allowed, which means that when a stockoutoccurs, customers can choose to backorder products or not. In addition, customers are segmented into two classes. Oneclass has high priority to receive backorders, and the other class has low priority. Unit backorder cost per unit time and unitlost-sale cost from high-priority customers are larger than those from low-priority customers.

The experimental results illustrate that supply disruption duration plays a more important role than supply disruptionfrequency in influencing the effect of customer segmentation on the inventory system.