AI POWERED INVENTORY MANAGEMENT SERVICE FOR SMALL/MEDIUM BUSSINESSESS

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Aim is to propose an AI-powered inventory management service designed to optimize supply chains and streamline inventory operations for small-scale and medium businesses. Leveraging machine learning algorithms, it offers accurate demand forecasting, efficient stock replenishment strategies, and real-time insights, enabling businesses to minimize stockouts, reduce excess inventory costs, and enhance overall supply chain efficiency. It deploys various ML algorithms to achieve this.

1. Business Model

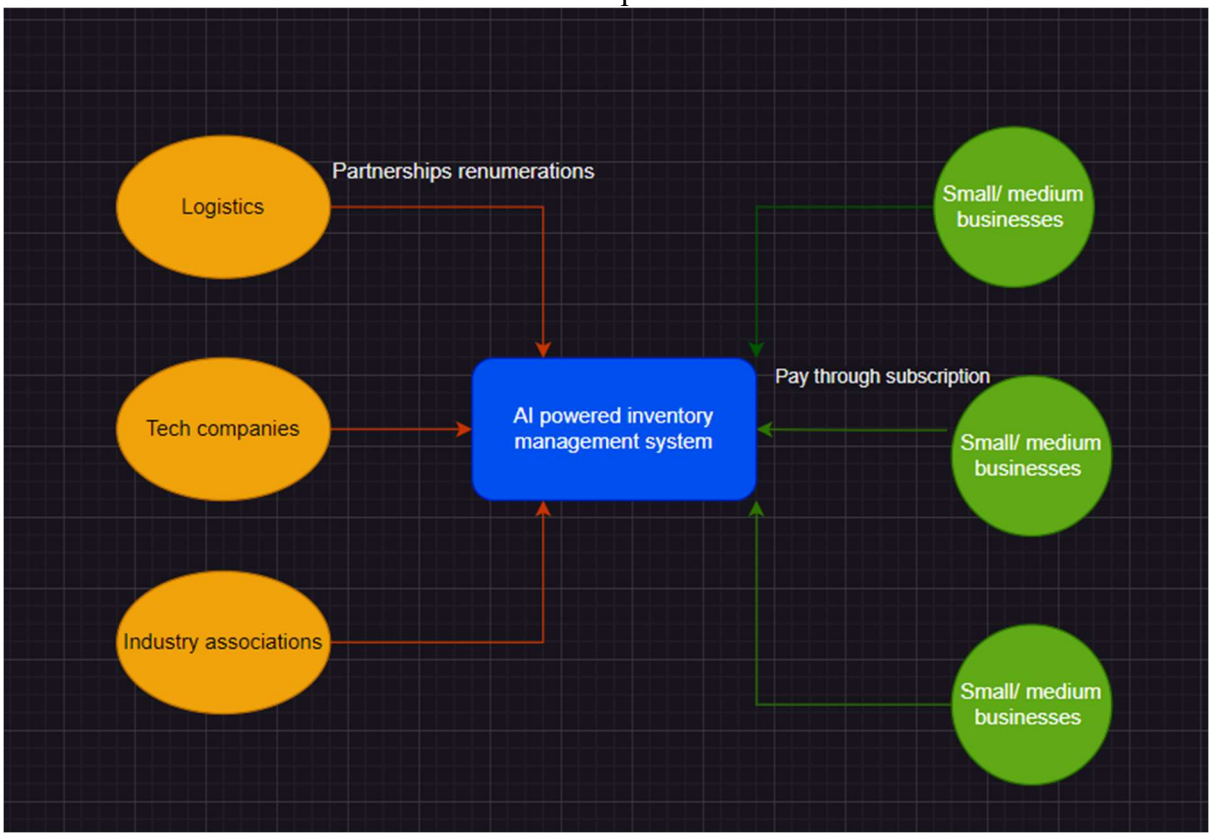
- Monetization method-

It can be a subscription-based model where businesses pay a recurring fee for accessing and utilizing the AI-Powered Inventory Management platform. Or we can consider a transaction-based model, where businesses pay per usage or based on the value derived from inventory optimization.

- Partnerships-

Revenue can be generated using some key partnerships with Logistic companies, Technology providers for cloud tehnology, warehouses, local transportation. Recommendation of software technologies or hardware can generate revenue in the form of commission as well.

Business model representation



2. Markets of inventory service management

- E commerce

The eCommerce industry is one of the sectors that help sustain the economy and should make the most of online inventory management. With the use of an online inventory system, businesses under the eCommerce industry can easily track the whereabouts of their products. They can also see in advance if they need to restock said products or not yet. They can also know the exact number of items left in their warehouses or physical locations. With this, they can provide their online clients with accurate information about the availability of their products.

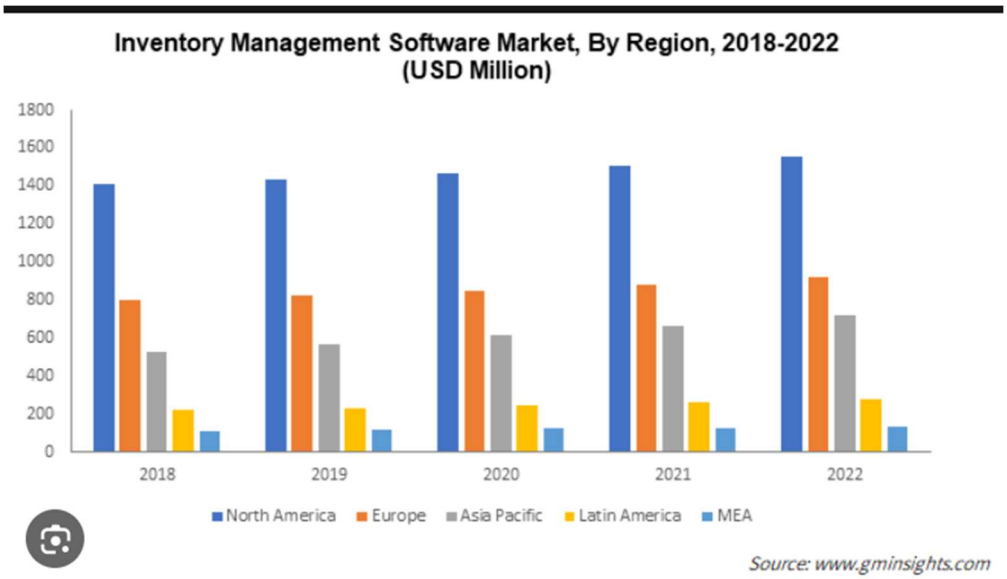
- Consumer Goods

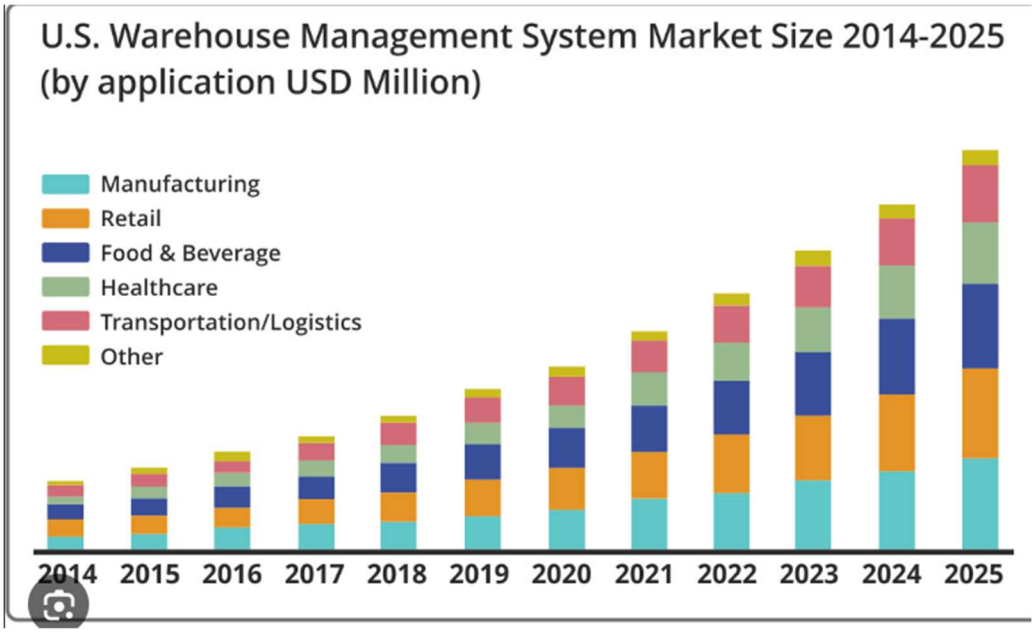
Retailers such as groceries and convenience stores deal with tricky inventory management partly due to seasonal changes. With the changing seasons comes the need for different types of products or goods by customers. As such, retailers need to perform forecasting as accurately as possible to ensure that they purchase and sell the right products or goods at the right time and at the right levels. As such, retailers can use an online inventory management system to help increase their forecasts' accuracy. In doing so, retailers can know when to sell particular goods.

- Food Service

Various sectors of our society rely on food, including households, schools, supermarkets, malls, restaurants, and many more. As such, the foodservice industry needs to purchase, store, process, market, and distribute massive amounts of food products every day to keep everyone fed. For this reason, the foodservice industry requires the proper control of the inventory of purchased food and supplies to ensure that resources are available when needed. You can never have too many food supplies stocked as it may mean wasted money. Storing food products for an extended period may lead to spoilage and cause serious health concerns.

Statistics

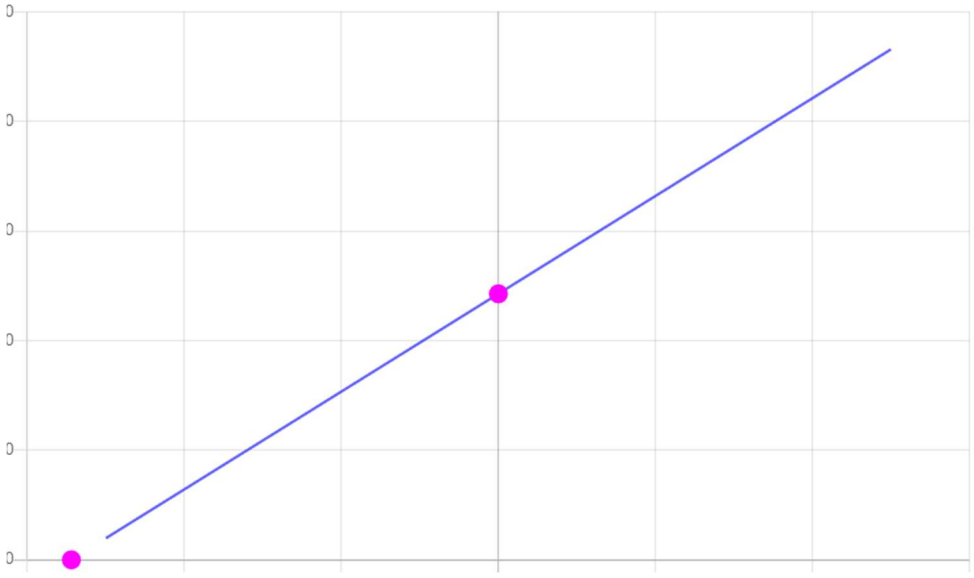

Inventory Management Software Market, By Region, 2018-2022
(USD Million)
1800
1600
1400
1200
1000
800
600
400
200
0
2018
2019
2020
2021
2022
North America
Europe
Asia Pacific
Latin America
MEA
Source: www.gminsights.com


U.S. Warehouse Management System Market Size 2014-2025
(by application USD Million)
Manufacturing
Retail
Food & Beverage
Healthcare
Transportation/Logistics
Other
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025

3. Sales growth in the market over a period of time

$x(t) = linear\ from\ the\ above\ analysis$

$$x(t) = 223t + 1213.57$$



$x(t)\ in\ terms\ of\ growth\ can\ be\ expressed\ as\ 1.8\ percent\ in\ a\ year$

On an average a subscription cost 175 dollars per month= 1.68 lakh INR per company in a year

4. Financial equation

4.1. Production cost

Symbol – C

In one year,

- Compensation of employees- say 10 lakh per person times minimum of 5
- (5 employees include – Data scientists, web developers, sales person.)
- Server/ App charges- 4.2 lakh INR per year
- Office cost – Studio size is ideal, so 20000*12 in rent = 2.4 lakhs

$$C = 10 + 4.2 + 2.4 = 16.6\ lakhs\ INR\ per\ year$$

4.2. Price of product

Symbol – M

In one year,

- Subscription cost per single company = 1.68 lakh INR
- Revenue through sales commission for other services and partnerships = 1 lakh per year for every product.

$$M = 1.68 + 1 = 2.68\ lakhs\ INR\ per\ company\ per\ year$$

4.3. Final equation

$$Y = M.N.x(t) - C$$

Where N is the number of companies subscribed with (that is number of our service/product sold) , Y is the profit obtained.

Assuming we get at least 10 companies for us, final equation will be

$$Y = 26{,}80{,}000 * x(t) - 16{,}60{,}000\ INR$$

Where x(t) is the market growth