

# **MARKET ANALYSIS AND PLANNING USING ERP VENDOR-RETAILER MODEL**

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## **ABSTRACT**

*The term portal is known as a links-page which presents information from diverse sources in a unified way. It may contain services that provide standard search engine feature, e-mail, news, information, databases and entertainment. Portals provide a way for enterprises to provide a consistent look and feel with access control and procedures for multiple applications and databases, which otherwise would have been different entities altogether. Online Vendor Retailer portal which I call it - (@WormHole) is one of the many efficient ways of focusing and combining vendor-retailer relationship, product-testing and discussion on one platform. Different opportunities are available so that both the vendor and the retailer can have maximum benefit. Also, newbies who are willing to explore in the domain of marketing can watch how the market works and further get their required references as well as contacts. This also provides a great opportunity for collaborations and building up of a solid Marketing Community.*

## **1.1 INTRODUCTION**

The project is based on the retail system between the admin and the vendors of the products in various branches. So the project plays a major role in the vendors' market. The software is very important for the admin to keep a track of all the products and the number of products being sold and their costs. The project consists of software that can be used in real life by the admin of the company to keep a track of all the activities by the vendors. Moreover, it can also be used by the customers in purchasing among a variety of range of products. The major benefit of the system is to the company and the customers. The admin can have a fair idea regarding the profit and loss and the customers can buy from a large amount of products.

## **1.2 PROBLEM STATEMENT**

Project ERP Vendor-Retailer software is really the enterprise resource planning for project management-related environments like engineer-to-order manufacturing, construction and engineering. So in this project the ERP retail system will be of the vendors of a company in different branches. The vendors in various branches of the company will have access to only view the data whereas the admin of all the branches of the company or the enterprise will have access to view as well as edit the data. The retailer can also only view the products and also add to their wish list for further purchasing.

The project is based on the software that will not only help the admin to supervise the activities going on in the branches of the company but will also help him to modify the data according to his convenience. The software will also help the retailers to view and buy the products. So the major objective is to help the admin and the customers to

access the products and the required information easily. The end users of the project will be the customer who will be able to view the products and the price of the product. The admin will have access to view the prices and also edit them. The vendor will have an exact idea about the products and the prices. Moreover, it also lets the vendor know about their daily schedule, their leaves and their salary. It provides customers with all the details of their product, their previous purchases and tracking of their order. The customer will have the facility to add the product for purchasing and also increasing or decreasing the quantity of the product. Another user will be the vendors in different branches who will be able to view what all have the customers brought and the price of the product. The main user of the software will be the admin of the company who will not only access the price and quantity but will also have access to modify the data depending on the profit/loss status of the company.

Anyone can discuss in the comment section of the products and this will bring in some new developments as well as ideas. The Companies will be monitoring the websites in search of new markets and also the existing market. The google-maps API would be used to get the location of the retailers and the vendors who can interact based on the demands. If the company wants someone in its locality for some temporary market, it can directly contact and hire the vendor.

## **2.1 NOVEL IDEA**

This software aims at strengthening the connections and contacts between the company, retailer and vendor. This system can add as an extension to the existing giants like Amazon, Flipkart, etc. The software will have a functionality to give the nearby vendors to the retailers which it will compare based on the prices of the product and the location of the vendor. Apart from that, existing system vendor-retailer related web portals only work on buying products from online but they do not provide daily updates on new trends and information in the market. The model will help in analyzing the profit of the business. Further with the help of the previous purchase details and the data available we can make a regression model which helps the admin to predict the profit. This helps the admin to get an idea about the business status. The admin can change the strategy accordingly to improve his business. Using this new model investors who are interested in this domain can share their views and contact with each other. And the best part is that people would make the website more interactive and it would have a great diversity of ideas.

## **2.2 CITATIONS**

### **2.2.1 IN-TEXT**

Under a constant demand rate, optimal solutions are obtained analytically for the customer's order quantity, the vendor's production quantity, hence the parties' individual and total costs in the three cases (James H. Bookbinder, Mehmet Gümüş & Elizabeth M. Jewkes 2010). The demand of the product is deterministic and the production process is imperfect and can produce a some of defective items. There can be a

mistake from the inspector's side to classify the product based on the quality. Optimal solution can be provided for the expected integrated total annual cost (Jauhari, W.A., Sofiana, A., Kurdhi, N.A. and Laksono, P.W., 2016). Transfer of inventory monitoring and other overhead costs to manufacturers and continuous replenishment of retailer inventory are commonly cited as potential benefits that VMI offers to retailers (Birendra K. Mishra, Srinivasan Raghunathan 2004). It is important for the vendor to optimally determine retailer selection and product's replenishment cycle time and the wholesale price, in order to maximize his profit (Yugang Yu, Zhaofu Hong, Linda L. Zhang, Liang Liang, Chengbin Chu 2013).

## 2.2.2 REFERENCES

1. James H. Bookbinder, Mehmet Gümüş & Elizabeth M. Jewkes (2010) Calculating the benefits of vendor managed inventory in a manufacturer-retailer system, International Journal of Production Research, <https://doi.org/10.1080/00207540903095434>
2. Jauhari, W.A., Sofiana, A., Kurdhi, N.A. and Laksono, P.W. (2016) 'An integrated inventory model for supplier-manufacturer-retailer system with imperfect quality and inspection errors', Int. J. Logistics Systems and Management, Vol. 24, No. 3, pp.383–407, <https://math-operationsresearch.com/wp-content/uploads/2019/06/22.pdf>
3. Birendra K. Mishra, Srinivasan Raghunathan (2004) Retailer vs. Vendor Managed Inventory and Brand Competition, Published Online, <https://doi.org/10.1287/mnsc.1030.0174>
4. Yugang Yu, Zhaofu Hong, Linda L. Zhang, Liang Liang, Chengbin Chu (2013) Optimal selection of retailers for a manufacturing vendor in a vendor managed inventory system, European Journal of Operational Research, <https://doi.org/10.1016/j.ejor.2012.09.044>

## 3.1 ANALYSIS MODEL

We are using Incremental Process Model for the Vendor-Retailer Software because we are going to implement functionalities or modules step by step before the final product is ready for deployment. This will help in error reduction and also requirements are not changing much during the development phase of the software.

### REQUIREMENT ANALYSIS

#### 1. Functional Requirements

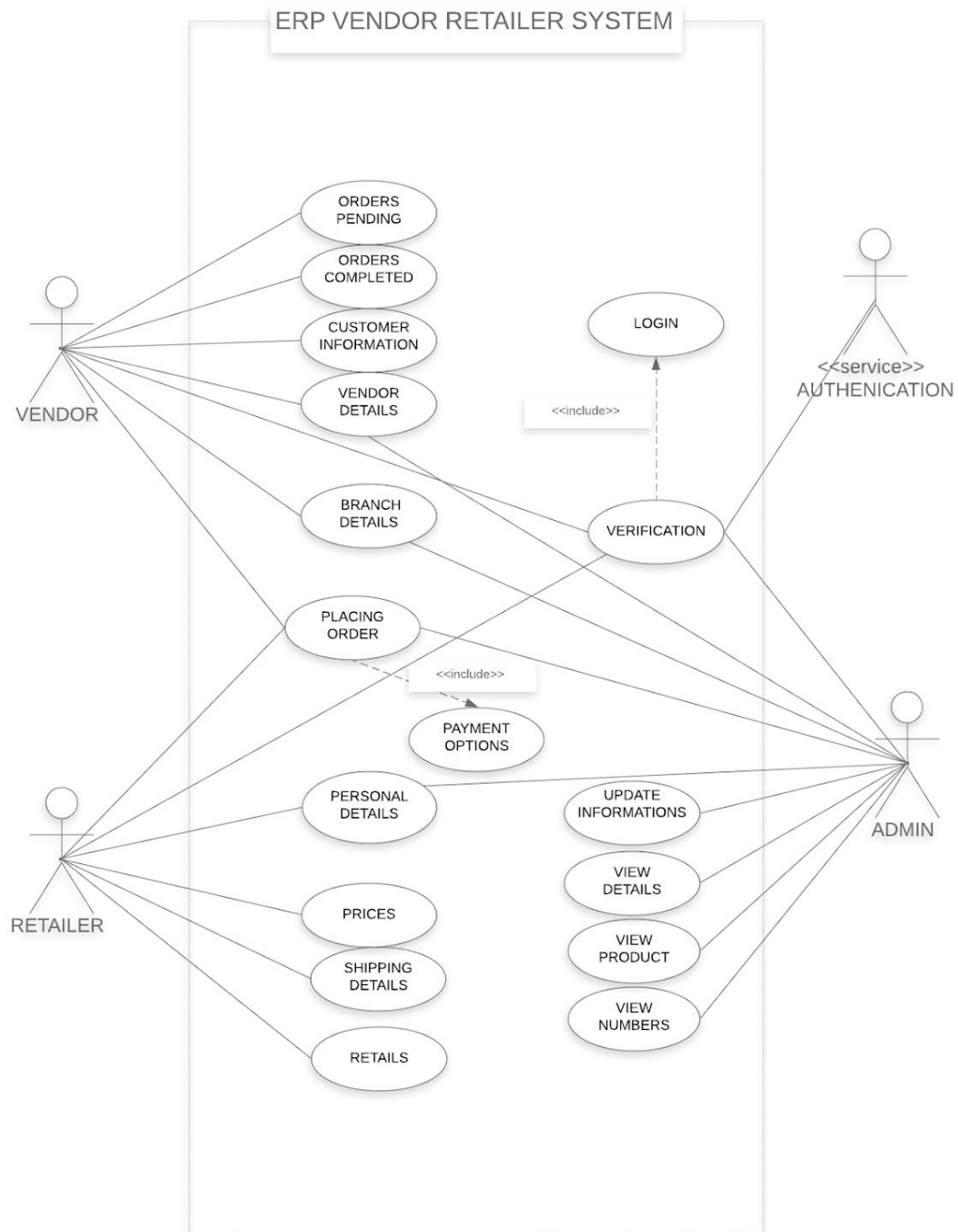
1. Collecting Vendor Details – The details of all the vendors will be collected and managed by the administrator (company) like personal details, marketing and total amount of sales.
2. Editing Vendor Details – The administrator can add, delete, update or change all vendor information such as name, address, and payment classification.

3. Login – To maintain the security and integrity of the system Vendor,retailer and the admin will have to login into the desktop interface to gain access to his or her information.
4. Password Management – In the case of misplacement of the password, user can get a new password through an interface which will be secured by sending an OTP on the user's mobile phone.
5. OTP Verification – OTP will be sent to the registered mobile phone number of the user which will provide a secure way for password and activity management of the user's profile.
6. Purchase Order Management – Vendors will enter purchase orders through the individual vendor desktops to the company.
7. Payment Method Selection – Employee can change the preferences of the payment as they wish.
8. Vendor Report – Report generation and management is possible. Vendor can create various reports.
9. Marketing Details Handling - Handles the collection of the current market data and plots regression graphs and statistics.
10. Commission Handling - Some of the salaried vendors also receive a commission based on their sales. They submit purchase orders that reflect the date and amount of the sale.

## 2. Non-functional Requirements

1. Performance – The performance of the system should be fast and optimised and the system should work fine if there is any load on the server.
2. Reliability – System should be reliable and should maintain backups and snapshots in the case of any breakdowns.
3. Error Handling – If any error occurs in the system, it should be able to fix it without affecting the performance of the system.
4. Ease of Use – The interface should be easy to use and should display all the required information in few clicks.
5. Security – Security of the employee information should be guaranteed and access preferences should be given.

### 3.2 USED-CASED MODEL



### **3.3 DESCRIPTION**

#### **RETAILER'S MODULE**

1. All the retailers will be given a specific login id and password.
2. The retailers will be the users of the application. They will have the option to view all the types of items that they want to use.
3. The retailers will have an option to add the items they want to buy to add to their cart and then have shipping options.
4. Whenever the retailer proceeds to checkout, he can select the payment options and will be directed to the specific bank's portal.

#### **VENDOR' S MODULE**

1. The vendors are the people in various branches who will be able to view the prices and also able to see the quantity of the products.
2. Each vendor in each branch will have an id and password, which will make an account of him or her on the portal.
3. The database will keep a record of how many times the vendor has logged in how much selling has been done by him per day.
4. Personal details will be displayed to the vendor through login like the leaves, the salary and various updates of the company and various messages by the admin of the company.
5. The vendors will get the information like delivery address and purchase details whenever a retailer makes an order so that he can work on the order and deliver it to the retailer.

#### **ADMIN'S MODULE**

1. The admin is the owner of the company and the in-charge of all the branches .
2. The admin has access to all the logins .The admin can see and set the quantity of the products as well as also make changes in the cost of the products.
3. The admin can connect to customers and vendors through the application.
4. All the activities can be viewed by the admin through the application.
5. The admin can also view the details about the customers who have logged in through the system.

#### **SERVICE AUTHENTICATION MODULE**

1. This will help in the authentication.
2. Whenever the admin, retailer or vendor is trying to login or make any changes in the database authentication will be made possible by this module.
3. If anyone enters the wrong password more than three times, they will block the access and notification will be sent to the authorized mobile number.

4. When someone changes the details OTP will be sent to the authorized mobile number and mail for verification.