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# B2B Order Management System

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***Abstract*— Most of the large scale business organizations have revolutionized their business standards. As a part of this a lot of automation has taken place. On a statistical approach we find that in the Global Market even a small retail store running any business plays a key role. One among the business models available in the market is B2B model. B2B model is nothing but Business to Business model. The general objective of the proposed web application is to support small retail stores enhance their business standards and help automate their business more effectively.Current System makes use of promotional pricing.The proposed web application targets businesses following the B2B marketing model. It helps both the wholesale market and organization who owns the application.**

***Keywords*- configured kits,order management,automation**

## I.INTRODUCTION

With the rapid growth of online retail world, when the number of orders placed, the number of shipments made etc, is growing rapidly, a good order management system/ sales management system can help a retailer save a lot of time and make their life much easier.[1] It includes the process of tracking a sales order from inception (when the order is placed with the seller) right through to completion (when the goods are received by the customer).

## II. ORDER MANAGEMENT SYSTEM

### *A. What is Order Management System?*

An order management system (OMS) automates and streamlines order processing for businesses. An OMS provides constantly updated inventory information, a database of vendors, a database of customers, a record of customer returns and refunds, information on billing and payments, order processing records, and general ledger information. [6]

Benefits of a well-implemented OMS include improved sales visibility, improved customer relations, and efficient order processing with a minimum of delays and back-orders.[2]

Order management is important primarily in the retail industry, but also in the telecommunications, health care, pharmaceutical, financial, and securities sectors

### *B. Existing System*

Current Order Management System processes both simple and complex orders.

It integrates closely with inventory systems, and allocate inventory at the time of order.

It also creates sales orders for kits and configured item. Current System makes use of promotional pricing

### *C. Proposed System*

Here we are looking to provide an order management system to manage the sales orders which comes through web and mobile app so that all retailers can use this product to integrate with their website or any other mobile app.

It will provide the admin with various reports on the number of sales made in a month, or on a particular brand or item etc. Provide efficient feedback mechanism.

### *D. Features in Order Management System*

The order management system we plan to implement will have an inventory of the items available. When we create an order, it will have all the details like details of the buyer, shipment details, payment details etc. Through OMS, the order details can be traced, shipment can be tracked till the order is delivered.[5]

The inventory will keep track of the number of each item left, its price etc. OMS will also provide the admin with various reports on the number of sales made in a month, or on a particular brand or item etc. Inventory details such as availability and demand would be showed using diagrams. In general Sales order management involves much more than taking and shipping orders. To ensure that customers are satisfied, and that they return for additional business.

- An inventory of the items available.
- When we create an order, it will have all the details like details of the buyer, shipment details, payment details etc.
- The order details can be traced, shipment can be tracked till the order is delivered using SMS and /or email notifications.
- The inventory will keep track of the number of each item left, its price etc.
- It will provide the admin with various reports on the number of sales made in a month, or on a particular brand or it etc.
- Efficient feedback mechanism.

## III. BUSINESS TO BUSINESS MODEL

Business-to-business (B2B) are commerce transactions between businesses, such as between a manufacturer and a wholesaler, or between a wholesaler and a retailer. Contrasting terms are business-to-consumer (B2C) and business-to-government (B2G). B2B branding is a term used in marketing.[5]

The overall volume of B2B (Business-to-Business) transactions is much higher than the volume of B2C transactions. The primary reason for this is that in a typical supply chain there will be many B2B transactions involving sub components or raw materials, and only one

B2C transaction, specifically sale of the finished product to the end customer. For example, an automobile manufacturer makes several B2B transactions such as buying tires, glass for windscreens, and rubber hoses for its vehicles. The final transaction, a finished vehicle sold to the consumer, is a single (B2C) transaction.

B2B is also used in the context of communication and collaboration. Many businesses are now using social media to connect with their consumers (B2C); however, they are now using similar tools within the business so employees can connect with one another. When communication is taking place amongst employees, this can be referred to as "B2B" communication.

### *A. Difference between B2B and B2C*

The main difference between B2B and B2C is who the buyer of a product or service is. The purchasing process is different in both cases and the following is a list of key differences between them

Some characteristics of organizational buying / selling behaviour in detail:

- For consumer brands the buyer is an individual. In B2B there are usually committees of people in an organization and each of the members may have different attitudes towards any brand. In addition, each party involved may have different reasons for buying or not buying a particular brand.
- Since there are more people involved in the decision making process and technical details may have to be discussed in length, the decision-making process for B2B products is usually much longer than in B2C.
- Companies seek long-term relationships as any experiment with a different brand will have impacts on the entire business. Brand loyalty is therefore much higher than in consumer goods markets.
- While consumer goods usually cost little in comparison to B2B goods, the selling process involves high costs. Not only is it required to meet the buyer numerous times, but the buyer may ask for prototypes, samples and mock ups. Such detailed assessment serves the purpose of eliminating the risk of buying the wrong product or service.

## IV. SYSTEM ANALYSIS

### *A. Functional Requirements*

#### *1) Customer Requirements*

The application should be able to automate most of the business tasks. Time and Cost being the major factors in business, the application should be fast enough to meet the business needs and also help in reduce unnecessary expenses. The application should include a user friendly interface that reduces the effort put in by the user. It should be able to validate all use cases in order to avoid faults in the functionality. Security measures to be maintained by implementing authorization for customers.

#### *2) Users*

The application should be developed considering the users who will be utilizing it for enhancing their business standards by automating their daily tasks as required by their business. The users should be able to access the application from their business site or any place of their choice. The users should be guaranteed of their business security and confidentiality as the application is going to be a multi-user system.

## V. SYSTEM DESIGN

### *A.System Architecture*

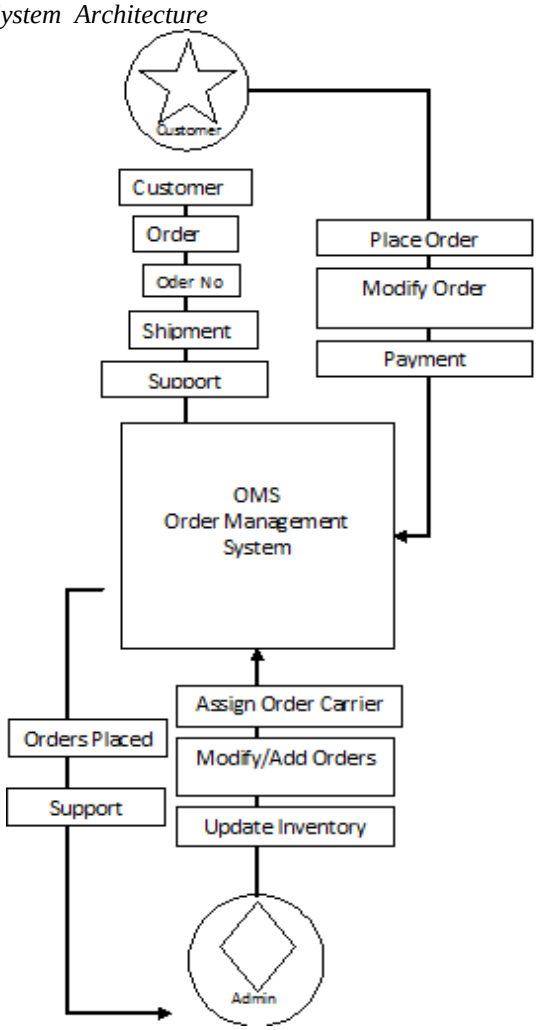


Figure1. Overall architecture

### *A. SIGNIN/SIGNUP*

This module will handle the customer registration and login functionality of the application.

### *B. ADMIN*

This module will handle all the activities performed at the back end of the application like managing orders and inventory.

### *C. ITEMS*

This module provides information about the products available in the OMS inventory.

### *D. DASHBOARD/HOME*

This module gives an overview of the customer/admin about the orders placed and new item in the inventory.

### *E. MY ACCOUNT*

This module will have all details regarding the customer. The customer can edit his details and all here. This module will have the customer's personal information.

*F.ORDER PLACEMENT*

The order processing functionality will be handled in this module. The orders can be placed and submitted from choosing the available items and their quantity.

*G.PAYMENT*

The payment for the order placed is handled in this module. Once the order is placed the retailer needs to pay for the goods he has ordered using credit card, cash, cheque or bank transfer.

*H. SHIPMENT*

The Shipment for the order placed is handled in this following module. This also includes the tracking mechanism for the order which is then notified to the retailers via SMS or Email notifications.

## *VI.* DATA FLOW DIAGRAM

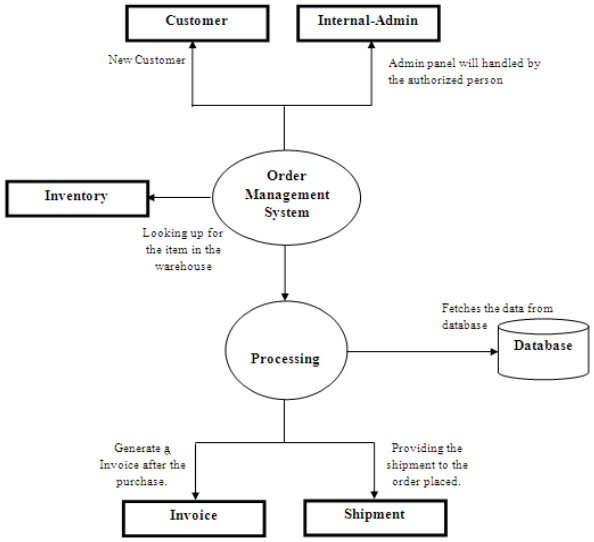


Figure 2. Context level

Description: A Context level data flow diagram for Order Management System consists of admin and an end user. Once the user is registered his / her information is stored in the database.

The Oder placed is checked if there is stock in the inventory. An invoice is generated after the purchase of the order and the shipping is provided.

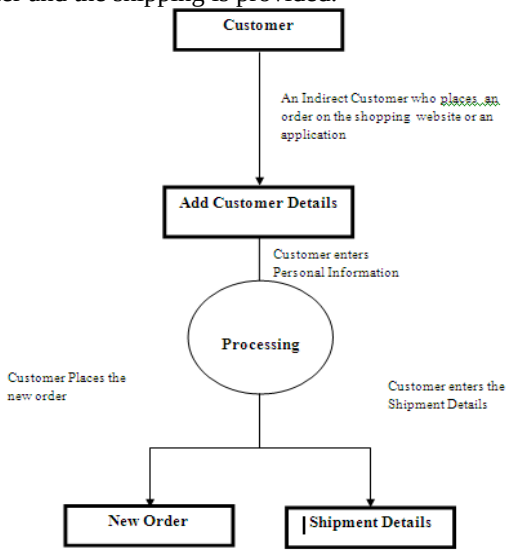


Figure 3: Customer Level 1

Description**:** A Customer level data flow diagram for Order Management System consists of Customer who is using our OMS Platform. The Signs up for OMS, Enters his personal information and starts placing an order by going to the new order module. And then he enters the shipping details.

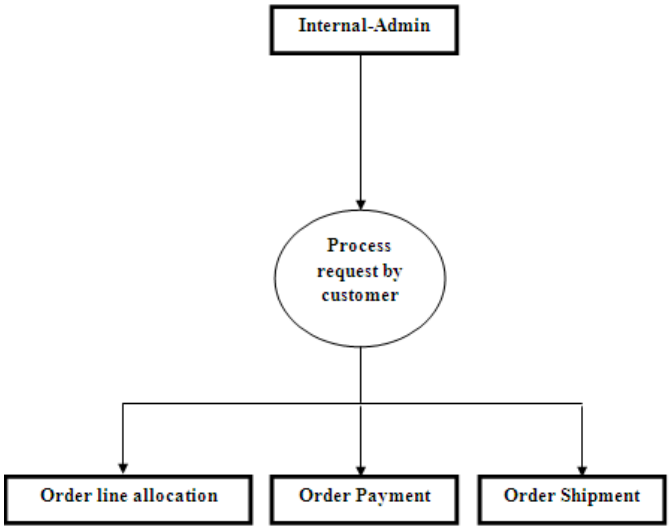


Figure 4 : Admin Level 2

Description: An Admin level data flow diagram for Order Management System consists of admin and his process which are differentiated from the end user. An Admin has the authorities for order line allocation, order payment and order shipment.

## *VII.* INTENDED USE

The application should provide a portal to describe about their line of business. The main feature to be developed is that the user should be able to view the products available in the market and place an order for the products he/she would like to sell at his/her outlet.

### *A.* EXPECTATIONS

The application should hold with it all the order details and invoice details, so that the customer can at any time refer or download it for any of their audit purpose. The application should be able to recommend customers on what could be purchased to improve their business. The application could have a feedback portal where in the customers can request addition of certain products and also provide their ideas of improving their experience with the application. The store owner should receive E-mail or SMS notifications about the purchase.

### *B.* CHALLENGES

The application should be designed in such a way that even a common man should be able to understand the process without any ambiguity. The reason being the targeted users are small scale retail store employees. The users have to be given training on how to use the application effectively. The application should be compatible even on a very low configured system. This should not cut short the performance in any manner. Achieving the e-mail and SMS notification facility is a major challenge.

## *VIII. SYSTEM REQUIREMENTS*

The software requirements identified for developing the application are Eclipse to handle JSP to handle data and APACHE TOMCAT as server.

### *A. SOFTWARE REQUIREMENTS*

1. *ECLIPSE*

Eclipse is a multi-language software development environment comprising a workspace and an extensible plug-in system. It is written mostly in Java. It can be used to develop applications in Java and, by means of various plug-in, other programming languages. This plug-in mechanism is a lightweight software component framework. In addition to allowing the Eclipse Platform to be extended using other programming languages such as C and Python, the plug-in framework allows the Eclipse Platform to work with typesetting languages like LaTeX, networking applications such as telnet and database management systems. The plug-in architecture supports writing any desired extension to the environment, such as for configuration management. Java and CVS support is provided in the Eclipse SDK, with support for other version control systems provided by third-party plug-ins. The Eclipse SDK includes the Eclipse Java development tools (JDT), offering an IDE with a built-in incremental Java compiler and a full model of the Java source files. This allows for advanced refactoring techniques and code analysis. The IDE also makes use of a workspace, in this case a set of metadata over a flat file space allowing external file modifications as long as the corresponding workspace "resource" is refreshed afterwards.

The stable version of Eclipse used is Eclipse Juno 4.2. This version eclipse offers features like code recommendations, JDT Enhancements, others.

**2.***WINDOWS OS*

Microsoft Windows is a series of graphical interface operating systems developed, marketed, and sold by Microsoft.The most recent client version of Windows is Windows 8. To develop the application Windows 7 or higher is required.

3.*APACHE TOMCAT*

Apache Tomcat is an open source software implementation of the Java Servlet and JavaServer Pages technologies. The Java Servlet and JavaServer Pages specifications are developed under the Java Community Process.Apache Tomcat is developed in an open and participatory environment and released under the Apache License version 2. Apache Tomcat is intended to be a collaboration of the best-of-breed developers from around the world. Latest version is 7.0.35. For developing the application apache tom cat 7.0 is used.

**a.** *HARDWARE REQUIREMENTS*

- Intel Pentium 4 processor or higher.
- Minimum RAM of 512mb.
- Free disk space of 40GB or more.
- 1024 x 768 resolution monitor.

### *B. TECHNOLOGY*

**1.** *JAVA SERVER PAGES*

The Sun Microsystems's java server pages technology allows you to rapidly develop and easily maintain rich, dynamic web pages. As a part of java family, JSP enables development of web based applications that are platform independent. The web applications build using JSP technology works with a wide variety of web servers, application servers, browsers and development tools.

The logic that generates the content is encapsulated in tags and JavaBeans components and tied together in script-let, all of which are executed on the server side. If the core logic is encapsulated in tags and Beans then other individuals, such as web masters and page designers, can edit and work with JSP pages without affecting the generation of the content. Thus the JSP technology separates the user interface from the content generation.

JSP page is simply an HTML web page, which contain additional bits of code that generates dynamic content of the page. JSP technology is a part of java family. It uses a java programming language based scripting language and JSP are compiled into java servelet the first time they are invoked. JSP pages may call JavaBeans, EJB components, RMI objects, DBC objects to perform processing on the server. Example JSP page may contain HTML that display static text and graphics, as well as a method call to JDBC object that access database, when the page is displayed in a user's browser.

Advantages:

- JSP technology follows the write once run anywhere rule which is the basic of the java language
- JSP uses pure java and takes the advantage of its object oriented nature.
- JSP uses a combination of tags and scripting to create dynamic web pages.
- The JSP page uses the components like EJB, JavaBeans which are reusable. This gives the JSP reusability capabilities.
- Applications made using JSP technology are easier to maintain.

### *C. DESIGN AND IMPLEMENTATION ISSUES*

One major issue in the design and implementation was that as the architecture which was in MVC pattern, it restricted the flourished usage of jQuery hence the validation part. We could not use plugins into real time websites. We also failed to implement the card payment due to the third party involvement. There were few development issues like non-functioning of jar files required to generate Excel report files.

## *IX.* ADVANTAGES AND DISADVANTAGES

The Retailers are able to keep track of the orders placed and also organize their bills and orders. They can also manage the products and stock in the inventory with the application.

The disadvantage being, the order module is not completed and hence the advantages for the same cannot be included in the section. The administration user is not able make an

action on more than one record on a single event. This becomes a tedious task.

## *X.* FUTURE ENHANCHEMENTS

Due to the issues with the chosen technology and the development process, the development team has decided to include hibernate for the better performance.

## *XI.* CONCLUSION

The objective of the project is to build a Product which will be a plugin for the retailers. It can help to manage for both sales and inventory management. The Order module has been built and is ready to use with some technical issues. Due to these issues in the order module, the sales module has difficulties

## ACKNOWLEDGEMENT

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