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Enterprise Resource Management

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ABSTRACT
The objective of this study was to design and develop information system for Noblesonics Pvt. Ltd to assist in improving their manufacturing process. The proposed system was designed to enable a small manufacturing company's transition from traditional method of record keeping and planning utilizing ERM (Enterprise Resource Management) software. This will potentially help the company to trace the employee, customer, order details and the inventory record. The reports generated from the new system would facilitate the company to manage their inventory and schedule their work process.
Keywords - Automated system, crystal report, ERM, Material Requirement Planning.

I. INTRODUCTION

Noblesonics Pvt. Ltd is a manufacturing company which has limited number of employees. It is the manufacturer of Ultrasonic Horns & Fixtures and Vibration welding Tool. The company's goal is to provide good quality of product and services adhering to a timely delivery process. Enterprise Resource Management (ERM) is software for such a firm for managing their information. The records of the employee, customer, products etc are maintained in Excel sheet. In excel sheet there is no provision for fast access of records. Keeping backups also becomes difficult; hence an automated system is required for managing records.

II. LITERATURE REVIEW

Almost all companies small or large have their own challenges with implementing and integrating technology as a means to secure the sustainable and competitive advantage over the competitors. Having computerized information is the basic need of the companies. The change in technology has narrowed the wide world and the competition has grown rapidly in every industry. Reduced lead time, improved quality of products and providing better services is the primary focus of the company. The success of MRP implementation in the business the desire moved to implementing an automated system in manufacturing companies.

A. MRP

In recent year significant attention has been paid to the integration of information technology with manufacturing process. Earlier it appears that the need was limited to cost and inventory management but with time it expanded to include production planning. As a result Material Requirement Planning (MRP) was developed [1].

MRP is a production planning and inventory control system used to manage manufacturing processes. Most MRP systems are software based, while it is possible to handle MRP by hand as well. The MRP systems are intended to ensure products are available for delivery to customers and plan delivery schedule.

The primary inputs of MRP are bill of materials, which details the composition of finished products; a master schedule, which details how much finished product is desired; and inventory records; which details how much inventory is in hand or on order. The planner process this information and output are obtained in the form of reports [2].

The implementation of MRP brings a significant change in the working process of the company. The MRP systems appear to make fact based production decisions by balancing the customer order in relation to the inventory based on the demand [3-4].

B. Existing system

Being a small scale company, Noblesonics uses a manual process of record keeping about their employees, customer, products, order status and inventory. The records are maintained in an excel sheet and it consumes a lot of time whenever there is a need to view the records. The manual record keeping becomes tedious [5]. The duration of order process is purely estimated and hence the company is in need of the system which provides them the reports for better decision making.

III.   PROPOSED SYSTEM

This study is primarily focused on developing a computerized information system for the company. The solution would overcome the problems encountered in executing daily work process such as customer details, order and delivery details etc. It will facilitate in simplifying process like tracing sales and purchase order and provide easy access to customer and employee information. The system also generates reports for better decision making regarding sales and inventory. For security purpose unique login will be provided to different employees. Reminder about the delivery of the products will be given prior to the delivery date.

IV. SYSTEM ARCHITECTURE

The system architecture shows two main modules the admin and the employee. The software will provide access to products, order status, inventory status etc. All the details are maintained in SQL server 2008 database. The services offered by the software are report generation, mailing facility and caching.
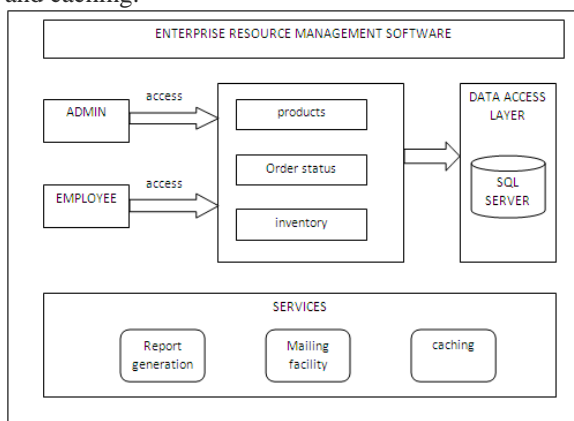

Fig. 1: system architecture

Different employees shall have new Login ID and password. Admin will be the authorized person and hence he can add, delete or modify employee and customer details. He can also view the product and order details. The employee takes order and generates bill. After the successful delivery of the products the database is updated. Employee and admin both can view the undelivered and delivered order details.

The inventory status will show how much products are still present in stock. The date of the product to be delivered will come as the reminder prior to the delivery date. After the successful delivery of the product mail will be send to customer along with the bill. According to database reports will be generated which will help in decision making. This is shown in figure 2.

A. Modules
The modules are as follows:

1) Admin:
He is responsible for managing the employees, products and decision making.

2) Employee
He is responsible for managing customer's database, product details, order details, inventory details and report generation.

3) Login and registration
Different Login IDs are provided to admin and employees. A new employee has to register first then can login.

4) Order
Here order for the products has to be done. Delivery for the products will be done only after checking the inventory status.

5) Report generation
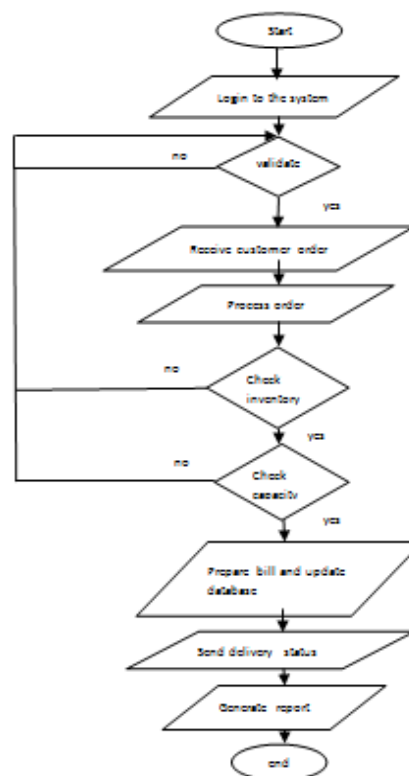The reports will be generated for decision making using crystal report.

Fig. 2: flow diagram for ERM

V. CONCLUSION

The study was focused on developing a computer based information system with the aim to

help in maintaining database and managing inventory process that is checking the inventory status and ordering and delivering the products. Here Microsoft Visual Studio 2010 for frontend; SQL SERVER 2008 R2 for backend; and crystal reports which are inbuilt in visual studio is for report generation is used. Efficiency and security can be increased using Oracle and other report generation methods. This is a stand - alone application and as our future work we will implement and deploy the software in the company's server.

ACKNOWLEDGEMENT

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