

SECURE E-CUSTOMER RELATION MANAGEMENT IN DECENTRALIZED SERVER

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ABSTRACT

Customer Relationship Management (CRM) software designed for businesses that is sell, service, and support Products. In Customer Relationship Management application Integrated marketing campaign management coordinates and increases capabilities to collect, analyze and act on marketing data, improving lead quality, cost per sale and overall return on marketing investments. Access to service data increases management's capabilities to analyze business, identify profitable opportunities, devise sales strategies, and drive top-line revenue growth. It is difficult to maintain all these B2B task manually. It will take lot of time to maintain these type of tasks and required heavy man power.

1. INTRODUCTION

Providing customized services have always helped companies to maintain better relations with their customers. According to the concept of relationship marketing, maintaining better customer relations involve building up a network with individual customers through the services being offered to them which will strengthen the network between the company and the customer and eventually provide value addition to the company(Park and Kim,2003).

E-commerce is the application of electronic means in making business transactions; the internet has surpassed the outreach of e-commerce by providing faster transmission media. To help the customers in search process, new business projects with innovative ideas have been possible to be served via ecommerce (Chappell et al., 2018). The Internet has emerged as a factor for growth of e-commerce in which trust and security are considered to be the major elements of concern for the customer for which e-vendors are required to be authentic, provide confidentiality, respect privacy, protect data and not repudiate transactions.

E-vendors aim should be to help customers by various practices like by giving smooth navigation experience, doing surveys and finding the preferences and urgencies of customers, giving the benefits of loyalty programs, giving credit on the money through reward points, giving choices for payments i.e., through credit cards, debit cards or net banking, providing interactive services by training customer's support to answer the queries of customers well (Lazakidou et al., 2008; Maniam et al., 2012). Functionality of product and psychological factors are the major determinants for online customer service experience. Factors like familiarity, layout, social presence, videos on product usage, interactivity, value for money are some others determinants while shopping online (Klaus, 2013).

E-Commerce has provided various opportunities to increase the customer base i.e. convenience, huge information about product catalog, 24*7 services, boosting brand awareness, accessing multi sites and many more. E-commerce has emerged as a convenient platform to shop over the years (Bai et al., 2014; Chiu et al., 2017). For managing customer relations, electronic customer relationship (e-CRM) has helped companies increasing their reach to the customers as well as for collecting potential data of customers.

The advancement in technology is helping companies in getting data through various touch points like at the time of point of purchase customers are asked to fill software oriented feedback forms (Chen and Popovich,2003;Becker et al.,2009). Using such data helps the companies to get feedback for their services as well as suggestions to serve better and eCRM initiative helps making customer experiences desirable whenever they shop online. It has been used helping to reduce expense and to make business more efficient and at competitive benefits. The various opportunities provided by e-CRM includes interactive and improvised customer relationships, managing customer's touch points as well as personalizing with customers (Adlin et al.,2019).

E-service quality, ease of use, and usability are positively significant towards e-CRM performance (Zandi and Tavana 2011; Momani, 2009). CRM is defined as a combination of business process and technology that seeks to understand company's customers from perspective of who they are, what they do and what they are like (Couldwell, 1998). Another group of authors (Peppers and Rogers, 1995) consider IT as one of the vital and important aspects of CRM and they define CRM as "the market place of the future is undergoing a technology-driven metamorphosis".

2. LITERATURE SURVEY

INRODUCTION

Literature survey is the most important step in software development process. Before developing the tool, it is necessary to determine the time factor, economy and company strength. Once these things are satisfied, ten next steps are to determine which operating system and language used for developing the tool. Once the programmers start building the tool, the programmers need lot of external support. This support

obtained from senior programmers, from book or from websites. Before building the system the above consideration is taken into for developing the proposed system.

RELATED WORK

Promotion, price, merchandise, supply chain and location have been prominent in providing superior customer value. Consumers interaction and experience management entitles a business strategy to provide valuable exchange to customers as whenever a customer engages with a business of product or service it lasts as an experience for future endeavors (Payne and Frow, 2005; Grewal and Kumar, 2009). Managing customer relations is very unpredictable and dynamic. Traditionally, in most of the cases it is seen that customers always look what are the service providers providing them as being their customers but with the changing time the perspective of customer has changed. The customers evaluate the service providers on the bases of the value they create for them.

A dualistic approach of interaction into the customer and service provider is what being practiced for creating value for each other, firms require new tools and technologies for understanding and evaluating customer relationships which could be explored by taking customer's perspective in view of how well they are integrating the value created by different service providers (Heinonen, 2014). On the bases of review of various articles published in eminent journals, CRM could be identified into four major branches: Strategic, Analytical, Collaborative and Operational. Systematic analysis and use of customer information as a platform for marketing management is termed as strategic CRM.

Analytical CRM involves analysis of the data for market efficiency in different ways. Collaborative CRM refers to collaboration of various communication channels like websites-mail, self-service which are being used as a communication strategy. ICT (Information and Communication Technologies) based support is provided for operational CRM for providing front office activities including sales, service and support, such support which is used by sales staff while contacting their customer. Further findings in addition to it were that Strategic and Analytical CRM dominates a lot of research work which includes salient topics related to new business practices, multichannel management and various analysis methods on customer's data and profiles (Fig. 1).

The research implications implied that a lot of research work needs to be done in collaborative and operational CRM which talks about the development of ICT (Information and Communication Technologies) to tap various customer touch point (Wahlberg et al., 2009; Wang and Feng, 2012). A major shift had occurred from brick to click due to the competitive environment of business. The companies are using the customer data collected and quickly adopting various multimedia channels which customers can easily access like via emails, television, and mobile internet, IVRs or company's websites (Fig. 2).

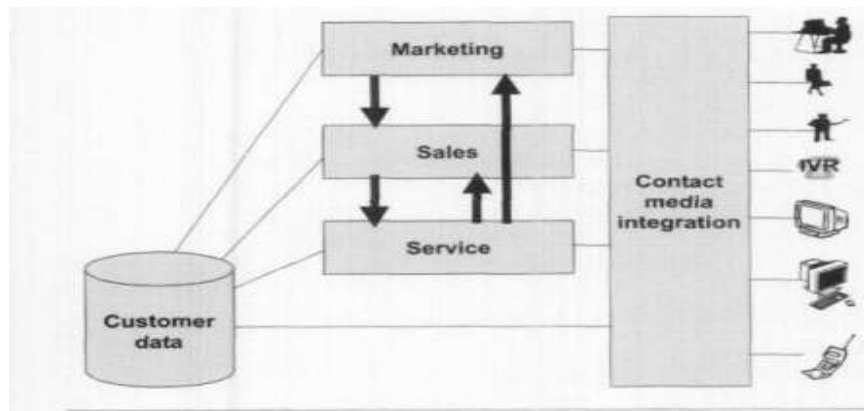


Fig. 1: CRM and Multiple Media

Organizations cannot survive supporting only one channel because customers look for multiple options while buying and also for after sale service according to their comfort. But the major concern of organizations is to decide on what occasions which customers want to use specific media and how the companies are going to direct customers towards the companies chosen medium. Every medium has its own set of facilities. Brining consistent personalizing essence during selling of the products and services via different channels as per customers' taste and preferences, leisure interests and purchasing patterns helps serve them better (Bradshaw and Brash, 2001). Data sharing and integration is required to give customer the best experience every time. The data should be well reviewed to know which part of the data is structured or unstructured that can be used further. Usage of web services with appropriate application tools helps making it effective (Shah and Murtza, 2005).

3. EXISTING SYSTEM

In this very busy world and when the technology is being used efficiently to conserve the time we cannot afford to spend so much of time for these types of B2B tasks. To overcome the disadvantage of the existing system that we will provide the automate information on a system which people can access from this system, which obviously provides proper information with minimum time consumption. Thus this new system provides the user a easier and a better way of accessing the information and providing them with the latest up to date data.

LIMITATION OF EXISTING SYSTEM

The main limitations of the existing system are as follows:

- 1) There will be no data accuracy
- 2) There is no Proper control of the higher authority
- 3) It increases a lot of manual data entry .
- 4) Less efficiency
- 5) Poor service
- 6) It is not User friendliness and interactive

- 7) More time required

4. PROPOSED SYSTEM

With the proposed E-CRM system Maintaining and processing all sort of information pertaining to the Order Type options control the life cycle of an order. The Order Type design tool allows you to define an unlimited number of order types, each with a unique sequence of processing events: Domestic Orders, No Charge Shipments, Exports, Customer Returns, Blanket Contracts, Service / Repair Orders, Customer Quotations, Consignment Orders, and Emergency Shipments. New types can be added easily allowing you to easily adapt the system as your needs change.

ADVANTAGES OF THE PROPOSED SYSTEM

The following are the advantages of the proposed system:

- 1) Ensure data accuracy
- 2) Proper control of the higher authority
- 3) Minimize manual data entry
- 4) Greater efficiency
- 5) Better service
- 6) User friendliness and interactive
- 7) Minimum time required
- 8) Minimum time needed for the various processing

5. SOFTWARE PROJECT MODULES

Implementation is a stage where the theoretical design is converted into programmatically manner. Here we need to divide the application into number of modules. In this application we mainly divide the total project into 2 modules:

1. Administration Module
2. Customer Module

Now let us discuss about each and every module in detail as follows:

5.1 Admin Module

The following are the modules performed by admin.They are as follows:

1. Admin Registration
2. Login Process
3. New Product details maintainance

4. Customer Details
5. Customer Order Details
6. Delevering the Products
7. Sending feed back to the customers

5.2 Customer Module

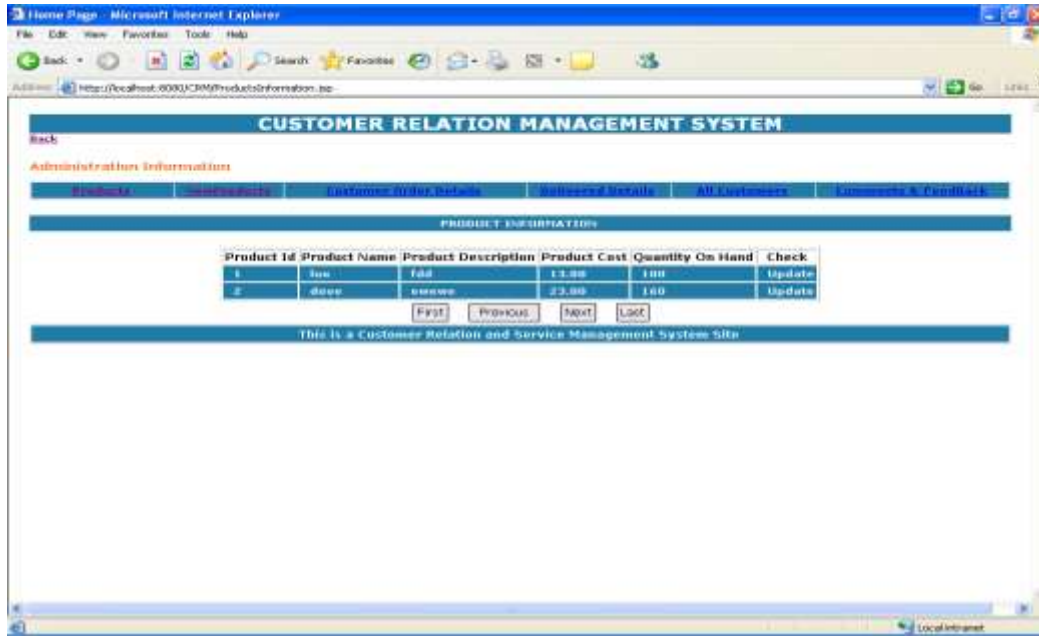
The customer module has following operations like:

1. New Customer Registration
2. Login Process
3. Ordering the products
4. Updating Customer Profile
5. Checking Order Details
6. sending comments to the administrator

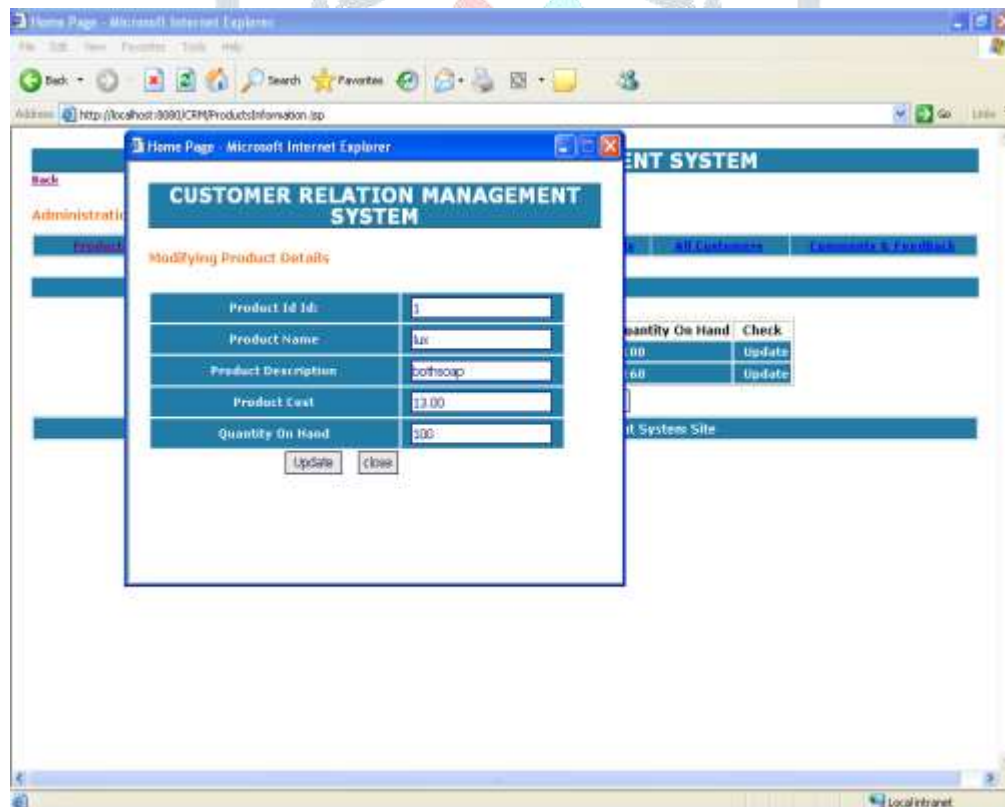
6. OUTPUT RESULTS

The screenshot shows a web browser window titled 'Home Page - Microsoft Internet Explorer'. The address bar contains 'http://localhost:8080/CRM/NewProduct.jsp'. The main content area displays the 'CUSTOMER RELATION MANAGEMENT SYSTEM' interface. At the top, there is a navigation menu with links: 'Home Page', 'Administration Information', 'BASE', 'Product Registration Form', 'Customer Order Details', 'Adminized Details', 'All Customers', and 'Comments & Feedback'. Below the navigation menu, the 'Product Registration Form' is visible, featuring input fields for 'Product Id', 'Product Name', 'Product Description', 'Product Cost', and 'Quantity'. There are 'Save' and 'Clear' buttons at the bottom of the form. A footer message states 'This is a Customer Relation and Service Management system site'.

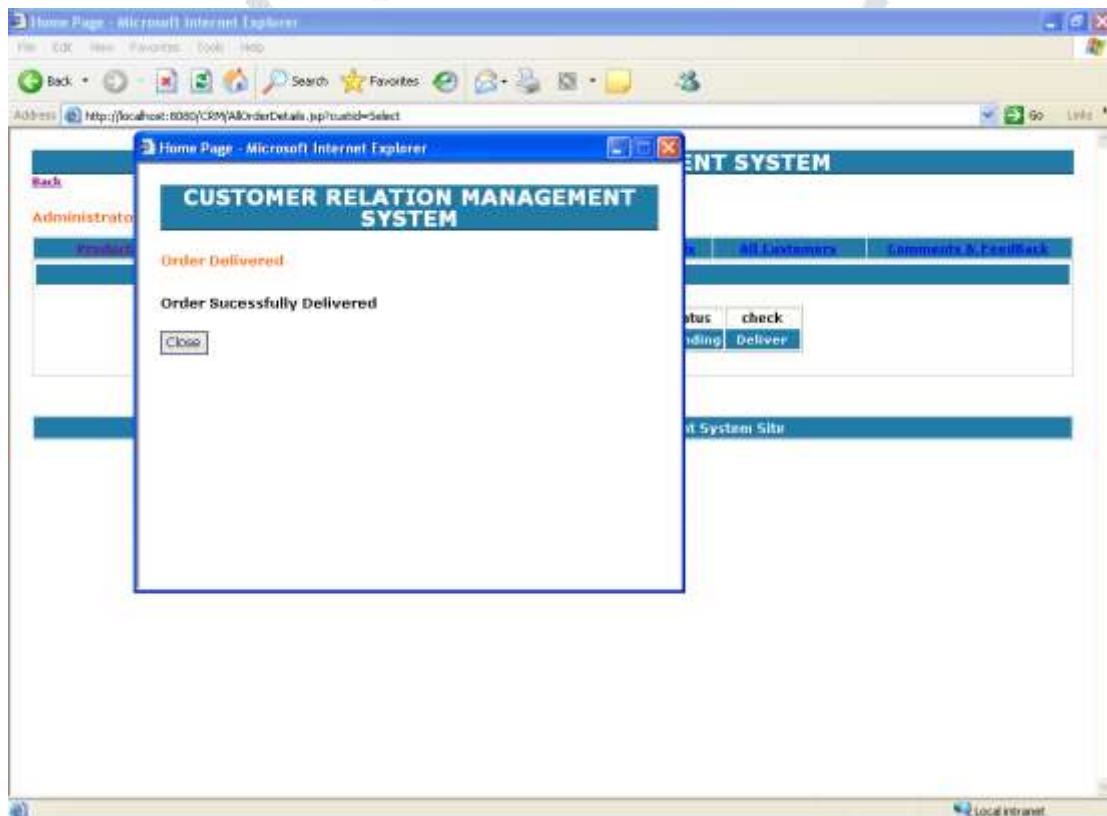
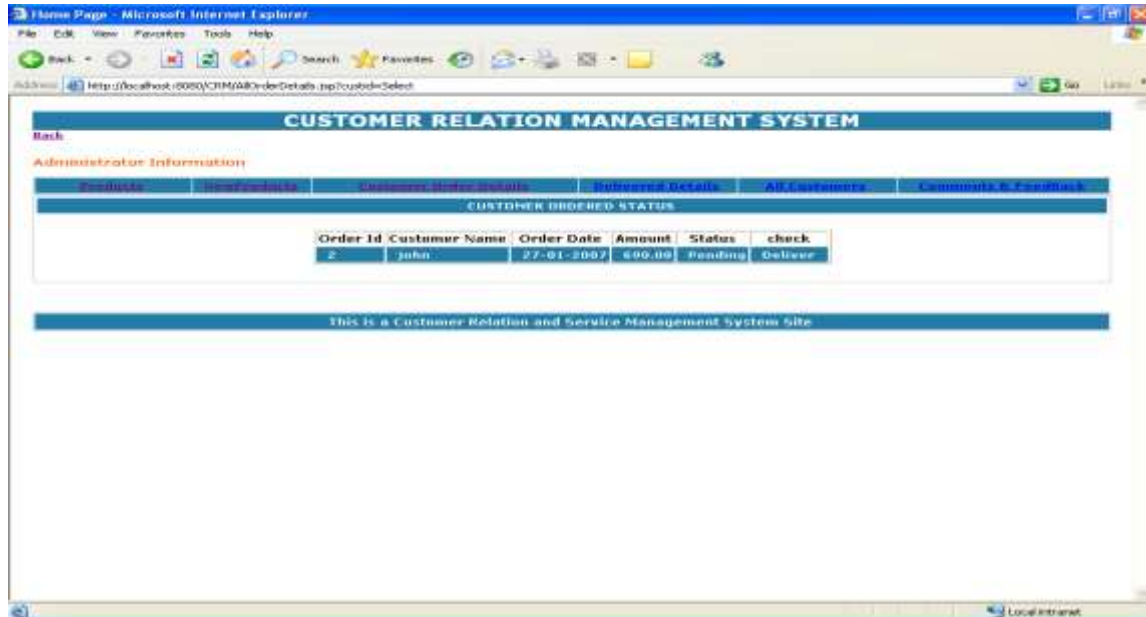
PRODUCTS INFORMATION



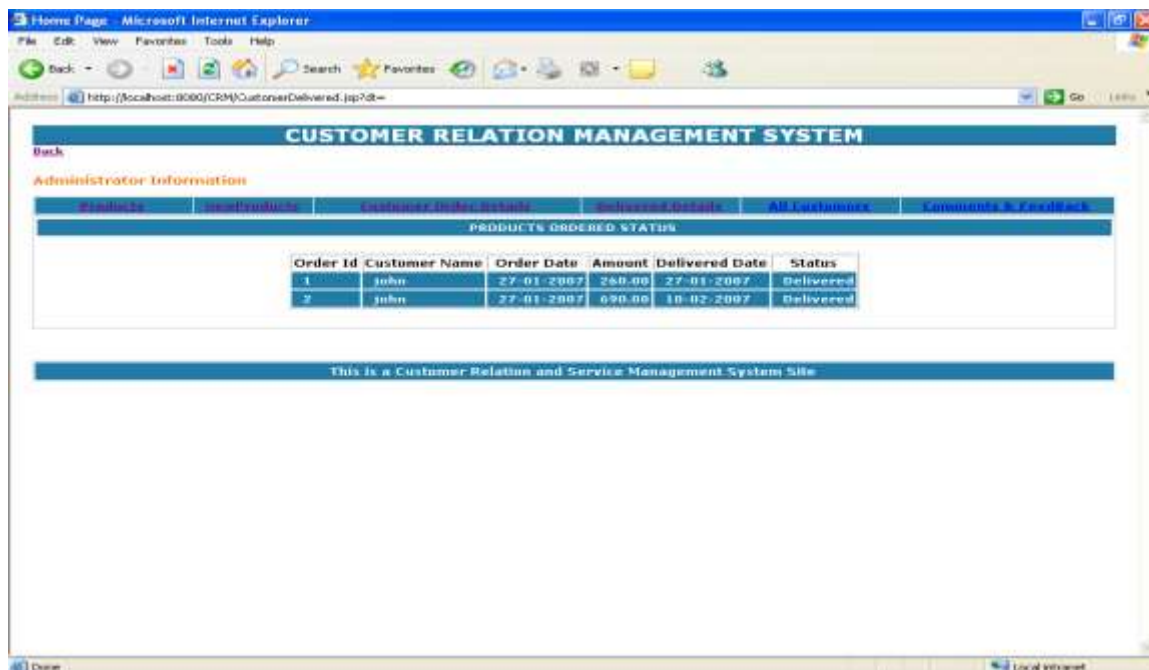
UPDATE PRODUCTS INFORMATION



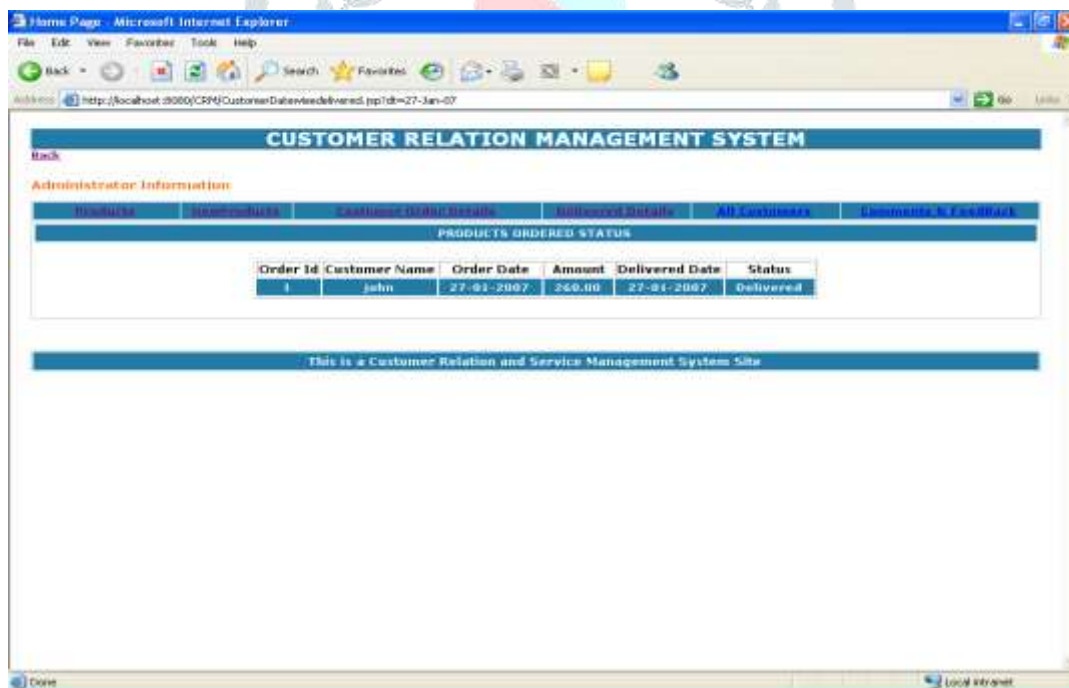
CUSTOMER ORDERED DETAILS



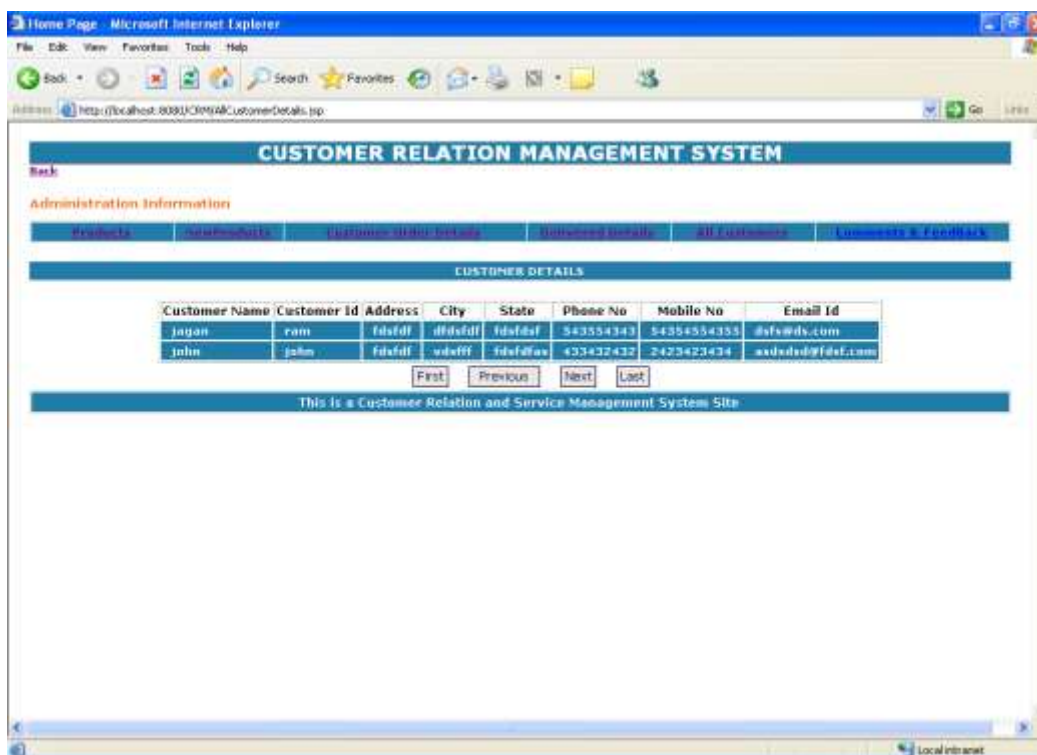
DELIVERED DETAILS (ALL ORDERS)



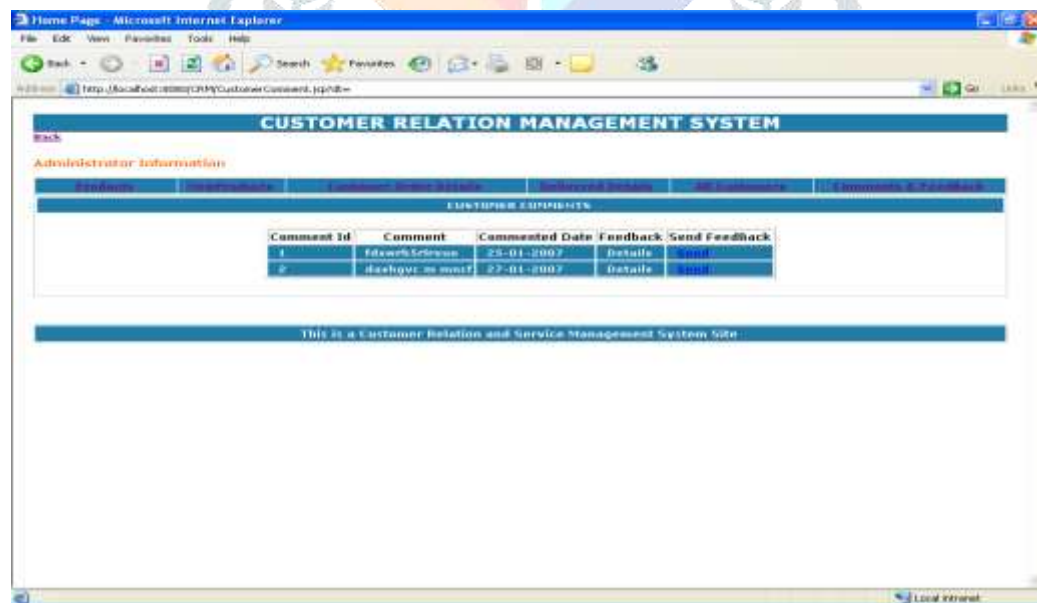
DELIVERED DETAILS (ON DATE)



CUSTOMERS DETAILS



CUSTOMER COMMENTS



7. CONCLUSION

This system is ever ready to attend the following needs of future:

1. Interaction with external software.
2. Cross platform functionality.
3. Facility to send any report by E-mail.
4. Web enabling of student's progress, so that parents can retrieve the information on web.
5. Any other feature that client needs.

8. REFERENCES

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