CRM Application For Analizing the Sales Using Data Mining Techniques and Business Intelligence

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Abstract:
There Abstract— CRM plays a very important role in today's marketing, using customer knowledge to sustain business growth. Based on the mental accounting theory, there are problems of uncertain supply and stock-dependent demand and analyze the effect of some parameters on the retailer's optimal decision. Presently, there are individual software's for inventory management, invoice generation and accounting respectively. The user thus has to handle individual software separately for their work. The proposed software presents all the three functions in single software. The technologies used for the software are Java i.e. Netbeans 8.2 and MySQL. Data Mining and Business Intelligence techniques are used for Data Analyzation which will give the user information through pie charts and graphs. This software will give the user a different experience all together.

Keywords: CRM, Inventory, Invoice, Accounting, DMBI, Netbeans, Java and MySQL.

I. INTRODUCTION

Customer Relationship Management (CRM) represents an approach of getting full knowledge about customer behavior and preferences that promote customers to augment their business relationship with the company. CRM mainly focus on collecting and understanding customer information. Treating different customers differently is the main purpose of using CRM. One of the traditional approaches is to have three separate software's for three different use. This puts the shopkeeper in a great confusion and also increases the amount of work for the shopkeeper. The use of CRM is becoming increasingly important to improve customer life time value for that shopkeeper. This will help the shopkeeper to differentiate between the customers and maintain the relationships with the frequent customers. According to the CRM theory, 75% of the corporate profits come from 20% of its customers. In today's market, the enterprise who has stable customer relationship will no doubt win the competition. Data Mining is a decision support process. The basic principle is that to find valuable information from a lot of raw data in the database to help decision-makers understand the potential connection between data, discover useful elements which are always ignored, thereby to grasp the regular pattern, forecast trends in order to facilitate scientific decision-making. Data Mining technology can be applied to any different stages and fields in the process of a customer-centric decision and management. In Customer Relationship Management, data mining can be applied in the classification of customers, cross-selling and customer retention and so on. The proposed software will help the shopkeeper to handle most of the things together in a single software. When the shopkeeper will enter a specific product in the bill, that particular product will automatically get deducted from the stock. There will also be a invoice system which will be used during the payment from the vendor. The database will be maintained using MySQL. As there will be a large amount of products in the stock so eventually the database needs to be big enough to handle the storage. Current research proposes a decision making technique that could help shopkeeper to make

new relations with the customers. The proposed algorithm uses data found from sales, processes it and generates result that can predict interest of customer or vendor in a product from that particular shopkeeper only. So further marketing department can approach customer as per their interest and give them some deals. It is not possible to manually collect the data and analyze it. Accounting is also not possible by the person as it takes time and is a very hectic process, so the proposed software will already have the accounting part which will calculate the account at that time itself and at the end of the month will give the information on sales in the form of pie charts and graphs.

II. SYSTEM ARCHITECTURE

The System Architecture shows the interconnection among the various system components. Here we are making a single software which will handle all the responsibilities like Accounting, Invoice generation, etc. There will be an interface on which the user will be working on. Through this interface only the user will enter the data and automatically the changes will be made in the database. The interface will be made of JAVA i.e. using NetBeans. The database will be made using MySQL. There will be many functions using which the admin will be managing everything easily. As this is the all-in-one software, there is no need to get multiple software's.
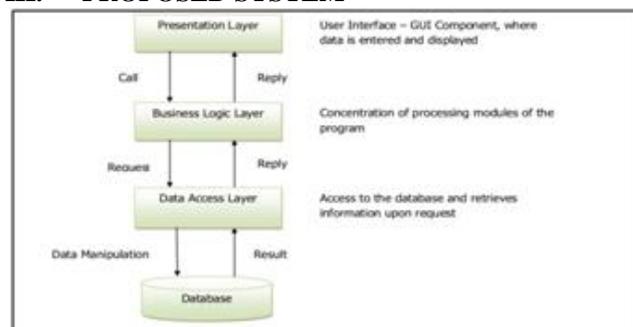
III. PROPOSED SYSTEM

Figure.1. Architecture Diagram

In this paper we will develop an advanced software for invoice generating system and stock management which will also manage the accounting simultaneously having options for analyzing the sales data in the form of graph and pie chart for CRM.

1. Stock Management
2. Invoice Generation
3. Order Management
4. Accounting
5. Data Analyzation using Data Mining Techniques

Every product in the shop comes in a fixed box in which the number of products most of the times remains the same, so we will have an interface with default settings that by just selecting the name and size, the number of products will be added to the stock using DBMS. The total cost price will be added in our DBMS and we can see it in the account section and the total amount paid of the pending amount to every company can be tracked there and there. Stock Management will be programmed in such a way that when a running product comes to a certain threshold count due to major sales it will automatically place an order for it. As per each bill generated by the system, all the number of products sold by the shop will be deducted from the total stock. Order Management will also be possible with the help of this software. Due to this we will have the records of all the delivered orders with date, place, time and will be able to access them whenever needed by the situation. Details of each shop with which we have business relation's will be stored in a database in which data can be added, modified and deleted. Sales invoice will be generated using inventory management system and once it gets generated the respective changes will be made in the remaining stock, pending orders and account section. Wholesale shops mostly work on credit basis, i.e. the trusted vendors are given the products first and the payment is done in installments. This domain will basically keep the track of payments which are done and also which are pending.

The following algorithms will be used to analyze the sales data:
1. K means
2. Apriori
3. Naive baiyes
4. C4.5

IV. CONCLUSION

CRM is developing at an unprecedented pace, and the user community is expanding. In fierce competition, the CRM model based on DM has become the fundamental element of modern enterprises and the key to winning. Now, customers are increasingly demanding that can carry out knowledge management. In essence, CRM system should provide organizational knowledge to customers whenever and wherever in the age of electronic commerce. Data mining technology, by integrating customer information and other relevant information, along with the expert system, neural network and genetic algorithm technology will help enterprises to rapidly work out high-quality solutions to business problems to reach business intelligence. Development of data mining technologies will allow customers to have better access to data, and make more people try techniques. In sum, the only way for enterprise development is to use data mining technology to analyze the characteristics of clients to explore the discipline of business and market operations and constantly improve the economic efficiency of enterprises.

V. REFERENCES

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