

# Forecasting for Profitable CRM using Knowledge and Time Management

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**Abstract** — Customer Relationship Management (CRM) and knowledge management, have some important issues, in particular, related to lack of success of CRM strategies implementation. Much CRM writing focuses on technology applications, but the critical role of knowledge management is now beginning to be recognized. CRM is definitely related to the discipline of knowledge management thus, the existence of sufficient and continually updated customer knowledge is critical for an effective CRM system. This paper contributes to the proposed integrated model of CRM taking into account complementary factors such as organizational factors, technology knowledge management, and customer orientation which provides to manage customer knowledge to better understand and serve on time.

**Keywords:** CRM, Knowledge management.

## I. INTRODUCTION

Customer Relationship management (CRM) focuses on the organization management to reach the goal in the competitive environment. CRM gives a friendlier approach for employee and customers on creating customer database. To succeed with CRM, companies need to match products and campaigns to reach the customers-in other words, to intelligently manage the customer life cycle.

The steps are designed for decision making accordingly to the requirements based on campaigns and interactions with the customers. The CRM uses information and communications technology (ICT) to gather data, which can then be analyzed to provide the information required to create a more personal interaction with the customer.

However, the sheer volume of customer information and increasingly complex interactions with customers has propelled data mining to the forefront of making your customer relationships profitable [2], [3]. Data mining is a process that uses a variety of data analysis and modeling techniques to discover patterns and relationships in data that may be used to make accurate predictions. It can help you select the right prospects on whom to focus, offer the right additional products to your existing customers, and identify goof customers who may be about to leave you. The result is improved revenue because of greatly improved ability to respond to each individual in the best way. CRM application that use data mining with time slot to increase the profitability.

## II. LITERATURE REVIEW

In the new environment, relations with the market are critical, and have completely changed the marketing strategies of firms to other more relational approach. In this context, emerged the concept of Customer Relationship Management (CRM) involves the establishment and development of value relationships with clients that aim to the retention and loyalty of the client. Moreover, research on the subject emphasizes that companies find it more profitable to retain existing customers, by developing long-term relationships that meet their needs, attracting new customers [3]. These long-term relationships are based largely on customer and knowledge management with time management. CRM systems improving not only the organization's ability to interact, attract, their knowledge about them.

Reviewing the literature, many studies that analyzed the crucial role played by knowledge management initiatives as determinants of the success of CRM were found. However, many studies that showed high rates of failure to implement that strategy were also found. Consequently, there is still no integrated conceptual framework to guide companies to their successful implementation [6]. In this paper, the relationship between knowledge, time management and CRM will be explore and whether or not it is enough to have the actual knowledge management initiatives of customer relationships to succeed in CRM will be analyzed. In the following, a review of the literature linking the two areas and the proposal for a model of CRM success are included.

## III. FRAMEDESIGN OF CRM FORECASTING

Among the Data mining techniques, the concept of prediction used in CRM for giving better performance measure in both the sides of organization and customer satisfaction. This prediction helps to design the CRM frame design for making decisions in company and time management act as a Key performance indicator (KPI) [9]. This is used to measure company performance, process improvements, and customer satisfaction.

The bottom line is to increase profitability and improve the relationship between company and customer. The success factors of CRM are Human, Process and Technology. They are classified as marketing, Time and Budget management, and Personalization process, customer Involvement, Communicate Strategy, Service and Sales [18].

In this paper, Time and Budget Management is taken as main factor for Forecasting. Time allotment will be done for each process level, so the quality of product will be maintained. At the same time, number of products will be produced according to the order placed by the customers on time. Here, time taken as a measure, which is one of the key performance indicator, leads to increase the profitability. The proposed Frame design in Fig. 1 shows the work flow of CRM for organization.

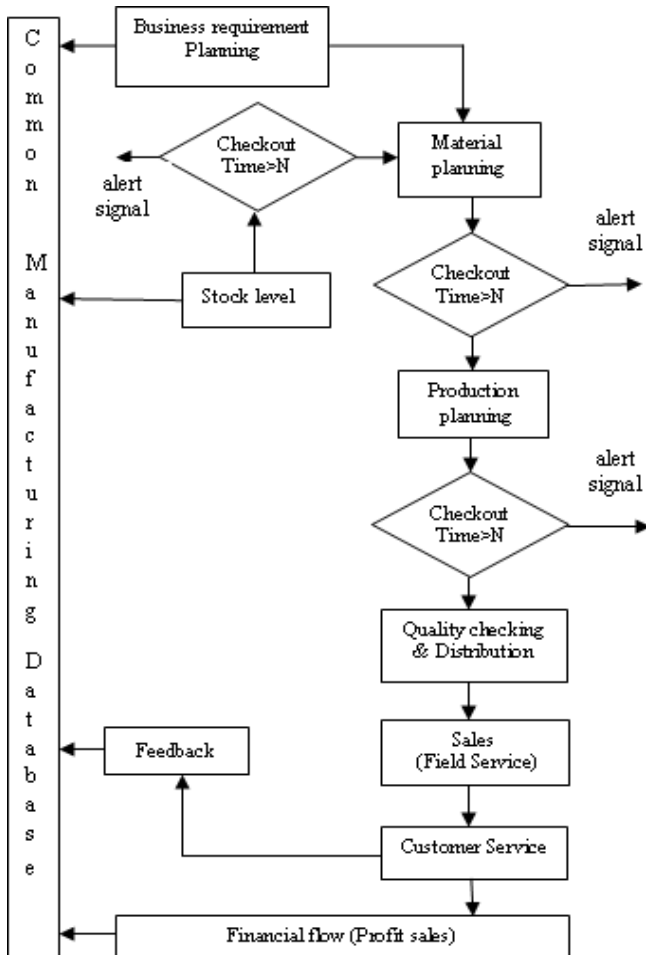


Fig.1. Frame design of CRM Forecasting Process.

Common manufacturing database integrates all the process of CRM unit. The business requirement planning perceives the requirements of customers from the common database. Material planning which gives source of material for production on the order placed, which comes from the stock with checkout time, intimates the time of material delivery to material planning. N denotes the time variant. Within the given time allotment the material should be delivered to the production planning. The alert signal will be given before N. The extra time taken by division will be noticed. The production planning has to process the steps for product development with the time slot and the alert signal will be given before N. After, the N value the product moved to the next process.

Before distribution, the quality will be checked as and when the product is finished. So that quality of products will be given to sales. Assurance of quality gives better results in

customer satisfaction, customer retention and improving customers. There will be no complaints from customers, only suggestions and requirements will be received in the feedback. The timeslot helps to produce the products on time based on the order placed.

Up gradation of stock and reorder level will be carried out for accuracy results depends on the feedback perceived from customers. The KPI measures the internal process and performance for organization improvements. The measure based on time and feedback of customers, which categorized as suggestions, and requirements will be analysed for decision making [11]. This helps to anticipate the customers need in future with enhancements and new patterns of product.

Financial flow gives the status of profit sales to the organization. So that, companies can retains existing customers, by developing long-term relationships with their needs, and attracting new customers [16].

IV. APPLY DATA MINING FOR PROFITABILITY

Profitability is the vital attention to the organization. In CRM, the creation and communication of customer-oriented culture within the organization is essential for best results [12]. Profitability is analysed on the basis of customer, product, market, channel campaign. In order to objectively quantify the complete solution and consistency of a data warehouse model two ratios has to be defined. CRM success ratio is defined as number of queries totally executed. CRM suitability ratio gives the suitability of data model, based on specific CRM needs. The results will be a measure of the completeness of data warehouse and helps to evaluate vendors and CRM strategies [9].

By using Data mining technique, creation of customer profiling and grouping can be done according to the requirements. The information collected can be used for different purposes like making new marketing initiatives, market segmentation, risk analysis and revising company policies according to the need of the customers [7],[18].

They generate accurate profiles based on team search and incremental learning techniques. Data mining techniques can significantly improve the number of customers by more focused marketing. According to the sales of products and customer service the forecasting (prediction) will be done by the Feedback analyses.

A. Forecasting process

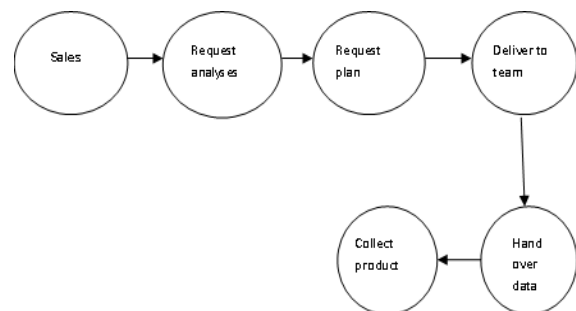


Fig. 2. Process of Forecasting.

The sales process gives the request (queries) received from the customer, will be analyzed based on the process flow. After that planning, process will be carried out to fulfill the needs. If the planning process is adaptable then moved on to appropriate team, who discuss about the plan and design are feasible as per rules and patterns [9], [11]. Next to verifying the details, the stock is checked for the availability to proceed. Data mining tools can solve these problems to a greater extent.

### B. Stock check/Maintain process

Stock holds availability of products information for the concern to take decisions depends upon the order

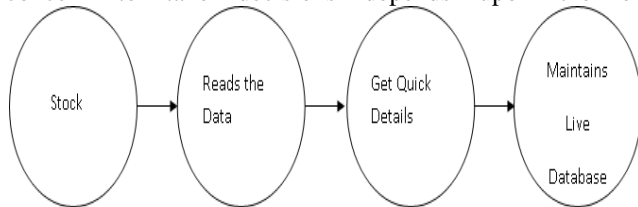


Fig.3. Process flow of stock check/maintenance

received/demand of products. When the verification goes to stock, the existing products will be noticed. Analysis will be done to carry out the process for production. As per the necessity the stock database will be updated, so that it is easy for production unit [9]. The checkout time intimates the period of time allocation for the materials to be delivered to the material planning.

## V. CONCLUSION

The Proactive Solution proposes the effective solution for maximizing the net profit for the industries or enterprises. Prediction improves the industry to forecast the budgets based on time, according to their attractive plans or schemes and various offers, gain better feedback on customer service, product sales and good relationship with customers. CRM will collect the information on suggestions and requirements of products through feedback and the queries will be forwarded to Knowledge management for future correspondence. Quality assurance evaluates the product quality so that, no complaints from customers. Time management helps the CRM to increase the profitability through production and sales.

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