

Research Article

Customer Satisfaction and Profit Enhancement through Social CRM

¹P. Menaka, ²K. Thangadurai, ³M. Uma and ⁴M. Punithavalli

¹Manaonmaniam Sundaranar University, Tamilnadu, India

²Department of Computer Science, P.G and Research, Govt. Arts College, Karur, Tamilnadu, India

³Dravidan University, Kuppam, Andra Pradesh, India

⁴Department of M.C.A, Sri Ramakrishna Engineering College, Coimbatore, Tamilnadu, India

Abstract: Customer Relationship Management (CRM) is a concept for increasing companies' profitability by enabling them to identify and concentrate on their profitable customers. CRM and knowledge management, have great influence in the success of an organization. A number of CRM approaches focuses on technology applications, but the critical role of knowledge management has now become an active research area. The customer's value has become apparent for the leading companies in today's competitive environment. Therefore they are constantly trying to improve their relationship with customers via their customer relationship management systems. Knowledge Management (KM) can also help to improve the quality of the information obtained by CRM. However, in order to be more effective, KM should be provided with a steady and ongoing process of gathering information from outer sources in cooperation with the CRM system. In this study, a Customer Knowledge Management (CKM) model has been integrated with CRM and KM in four stages. Then, in order to improve the performance of CKM, a Social CRM (SCRM) is proposed. SCRM would help in reaching the customer in a more efficient manner through online. SCRM can improve the overall profitability of the organization as direct feedback from customers are made available online which can motivate other customers to buy the products. This research study mainly focuses on the integrated SCRM model with CKM to compete with the online customers and to add values to the product based on the feedbacks of the customers.

Keywords: Feedback, knowledge management, manufacturing profit, online service, social CRM

INTRODUCTION

CRM is one of the main conceptual areas of the industries to integrate business and technology process to handle customer satisfaction. In order to achieve the customer satisfaction, knowledge and time management is considered in the manufacturing process. It is important for an organization to recognize the requirements of customers and to improve the consistence performance (Al-Mudimigh *et al.*, 2009a). Maximization of lifetime value is a key objective of CRM. Particularly, thorough perceptive analysis of the customers would result in increased customer lifetime value (Al-Mudimigh *et al.*, 2009b).

To improve the customer behavior, most of the companies concentrate on customer satisfaction as main performance indicator but, here time frame is proposed as Key Performance Indicator (KPI). Customer satisfaction is a bottom-line of business, which results in form of increased purchase of products, repetitive purchases. Activities of organization performs to identify qualify, acquire develop and retain improves the loyal and profitable customers by delivering the right product or service, to the right customer through

the right channel, at the right time and right cost (Al-Mudimigh *et al.*, 2009a, b).

Competition in today's market has been transferred from the hardware domain to that of software and recently to that of information and policies. Meaning, that only those organizations will progress and thrive that think up methods and processes to meet their needs comparatively better than their rivals. In this regard, Knowledge Management (KM) and Customer Relationship Management (CRM) have been the focus of attention in organizations and academic contexts, since both strive to obtain the constant benefits of competition through the optimization of the organizational resources in order to support commerce (Gebert *et al.*, 2003) leading to competitive advantage. CRM in competitive markets has inspired the organizations to look into ways to be in touch with a widespread scope of customers and also approaches to gain this knowledge. Easily said, that it would be impossible to keep in touch with a wide scope of customers without employing KM (Xu, 2011). To enhance the efficacy, effectiveness and the trustworthiness of desirable goods and services to customers and to meet their satisfaction, the

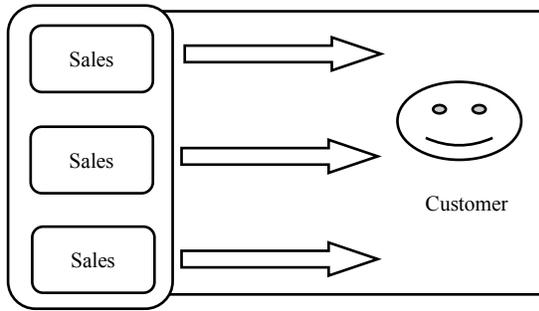


Fig. 1: Traditional CRM

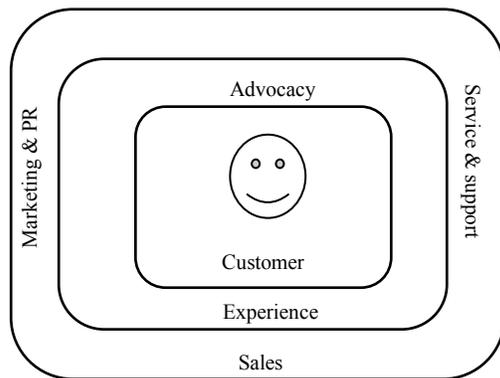


Fig. 2: Social CRM (SCRM)

organization ought to manage its knowledge about customers. Therefore, it seems that KM can be beneficial to better implementation of CRM. For this reason, the present article attempts to investigate upon the impact of KM on successful CRM. Also, this study presents the integrated model of both systems. Prior to the analysis of the presented consistent model, elaborated definitions will clarify the point better. Furthermore, an empirical analytical research is conducted to support the integration of these two systems in the real world. This study identifies the integration barriers of CRM and KM in organizations in order to make clear the possibility of achieving Customer Knowledge Management (CKM).

CRM based on Customer Knowledge and time management would result in improving the profitability of the organization. By measuring and understanding the status of employee and equipment productivity, as well as machine output with time frame, at all stages in the manufacturing process, manufacturers now have a cost-effective means of improving their business processes. This will enable them to increase profitability by increasing efficiencies and conducting better forecasting and budgeting more effectively for profitability.

Traditional CRM was very much based around data and information that brands could collect on their customers, all of which would go into a CRM system that then allowed the company to better target various

customers seen in Fig. 1. Traditional CRM focuses on the one way communication and it does not bother or care about the feedback from the customers. This is the main drawback of the traditional CRM (Bose and Sugumaran, 2003).

But, in order to improve the overall profitability and customer satisfaction, CRM has been integrated into online segment. Social CRM (SCRM) is an emerging concept which is becoming popular in recent years (Askool and Nakata, 2010a). Social CRM is just an extension of traditional CRM, not a replacement for traditional CRM. To be more specific, it is an extension of collaborative CRM described as one of the main pillars of traditional CRM (Wahlberg *et al.*, 2009) Social CRM is few steps ahead of traditional collaborative CRM (Askool and Nakata, 2010b) and can be identified as a separate entity that focuses on customer engagement generating sound and effective customer knowledge rather than customer transactional data. SCRM focuses on the two way communication and attains feedback from the customer at regular interval of time. This would improve the overall performance of the system.

This study mainly focuses on improving the customer satisfaction and profitability through SCRM is seen in Fig. 2. This research study takes into account main factors such as customer orientation, target time, customer feedback, etc. Based on the above considered factors, customer satisfaction can be attained through effective utilization of the SCRM with on time delivery and appropriate feedback from the customers.

LITERATURE REVIEW

CRM is therefore understood as a customer-oriented management approach where information systems provide information to support operational, analytical and collaborative CRM processes and thus contribute to customer profitability and retention. While potential benefits are attractive, CRM implementation must be managed carefully to deliver results (Cunningham and Song, 2007).

CRM analytics enable the effective management of customer relationships (Wu, 2008). Using CRM analytics, organizations are able to analyze customer behaviors, identify customer-buying patterns and discover casual relationships (Menaka *et al.*, 2012a). The final phase, Action, is where the strategic decisions are carried out. Business processes and organizational structures are refined based on the improved customer understanding gained through analysis (Wu, 2008). This stage closes the CRM loop and allows organizations to cash in on the valuable insights gained through analysis. Systemic approaches to CRM help organizations coordinate and effectively maintain the growth of different customer contact points or communication channels. The systemic approach places

CRM at the core of the organization, with customer-oriented business processes and the integration of CRM systems (Bull, 2003).

Traditional CRM is evolving from its roots of being a transactional-based system focused on optimizing customer facing processes to a system of truly interactive, real-time interactions that leverage technology meant for collaborative and social connections with customers. Firms are going to experience a shift in CRM applications, with the rise of social CRM. Therefore, there is sufficient evidence that we are on the verge of the first ever-social networking CRM.

Social CRM is based on the ability of a company to meet the personal agendas of their customers while at the same time meeting the objectives of their own business plan. It's aimed at customer engagement rather than customer management.

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 (Menaka *et al.*, 2012b). In this study, the relationship between knowledge, time management and CRM will be explored 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.

The main drawbacks of the existing CRM system are that they focused on only on the one way communication and concentrated on delivering the products on time to the customers. But, they did not focus the customer knowledge and on improving the marketing scenario.

This study focuses on improving the overall profitability through integrating customer knowledge and the SCRM.

METHODOLOGY

This study mainly focuses on improving the profitability and the customer satisfaction through integration of Customer Knowledge Management (CKM) and SCRM. In this approach, Time, Budget and customer knowledge has great impact in deciding the profitability of the organization. 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.

Conceptual framework of Customer Knowledge Management (CKM): Nowadays, providing and utilizing knowledge in organizations has become a procedure which can lead to competitive advantage. Availability of knowledge in organizations is such a

valuable fund that empowers them in various complicated situations (Attafar *et al.*, 2013). Knowledge management includes supporting innovations, brainstormed ideas and utilization of organizational thought power. It also embodies acquiring appropriate insight and experience to make the data accessible and useful for the time and place where they come in handy and also for those who need it (Gebert *et al.*, 2003), Knowledge management is an approach which creates data to meet the managers', customers' and operators' satisfaction. In other words, knowledge management is an inclusive process that considers identification, transmission and usage of accurate data and experience in organizations. The main principles of knowledge management include implementation and maintenance of the organizational and technical infrastructures as the indispensable groundwork to spread knowledge and to opt for specific technologies (Moutot and Bascoul, 2009). Through this process, all available sources of information such as personnel, information centers, documents and files are gathered and classified in appropriate categories. This data will be accessible in many ways throughout the organization for the knowledge workers. The appropriate data will be provided in order to make proactive decisions at the right time (Payne and Frow, 2004). Knowledge can be divided into two groups of implicit and explicit. Explicit knowledge is subjective, reasoned and logical. In other words, explicit knowledge is a collection of policies, approaches, applications, documents, instructions, reports and objectives in each organization. Explicit knowledge can be stated as words and numbers, or given in forms of data, scientific formulae, detailed descriptions and instruction manuals. This knowledge can be simply distributed among people both officially and systematically.

The final goal of CKM is to have a steady and long-term relationship with customers in order to turn them into trade partners. If the process takes place appropriately, organizations could definitely gain profits from their customers. What can increase the possibility of CKMs success is receiving effective information from customers and turning it into effective knowledge. CKM could then be divided into two parts; the first is a system that can build up a relationship between the organization and customers through different channels to exchange information from both sides; the second is a system that can make available information meaningful for further usage. CRM and KM are in charge of the first and the second task, respectively. Such a link is further explained. Figure 3 depicts the conceptual framework for CKM. CRM creates different channels between the organization and potential customers and provides personal data such as biographical information. Data gathered by CRM from out of the organization should be clarified by KM through separation, classification and encoding. In other words, data obtained through CRM from the customers is elucidated in this stage through CKM via KM. In

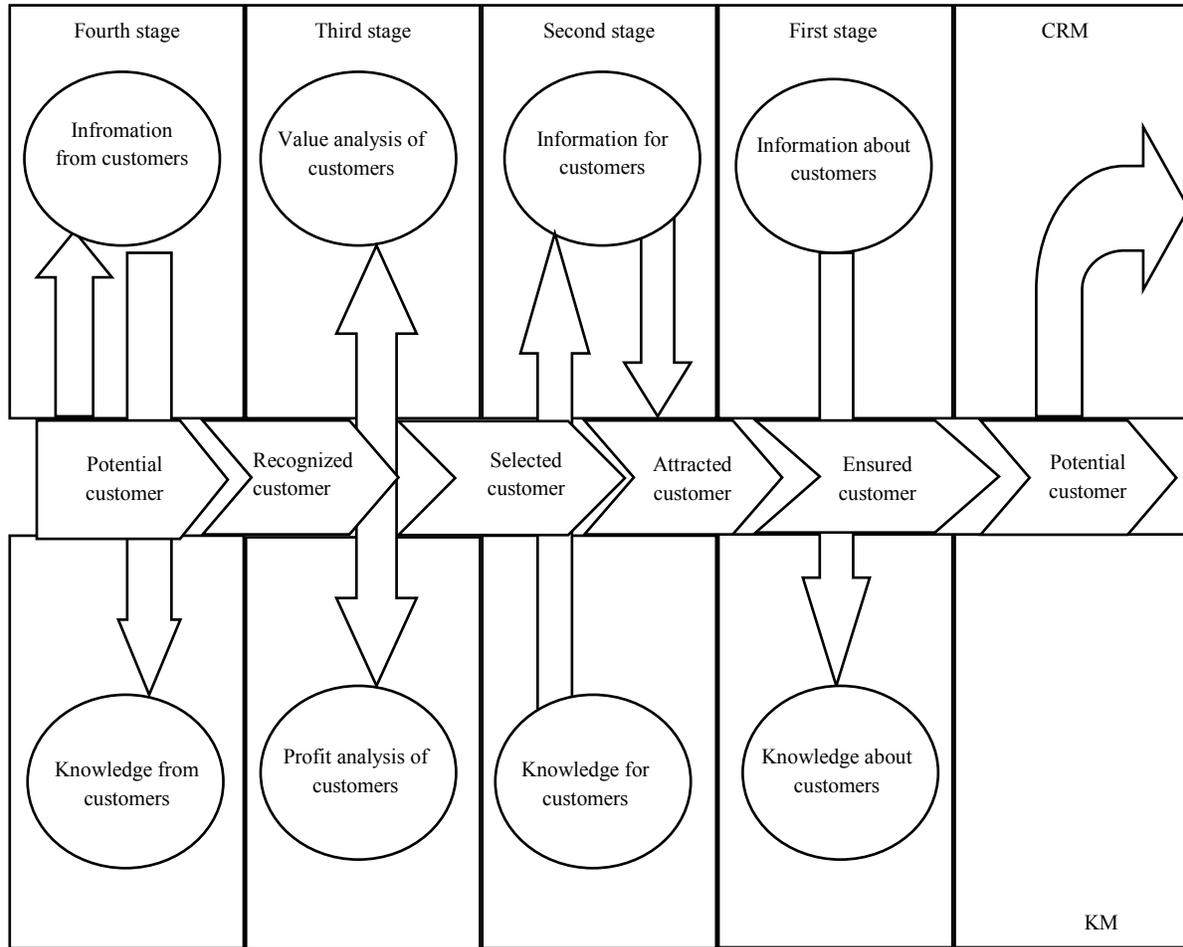


Fig. 3: The proposed conceptual framework for CKM

case clarification ends up in good knowledge, it could be claimed that the organization has achieved good knowledge about the customers, which in turn, changes potential customers into recognized ones within the organization.

In the second stage, some of the recognized customers can be valuable for the organization based on both the organization needs and the customers' qualities. These customers will be kept in touch since their qualities match those of the ideal customers. The selection cannot be based on a scientific and logical procedure since the gathered data about customers is limited to the information received from outside of the organization which is based on the market share and transactions. Therefore, anticipations are not always correct. The organization can be sure of the value and profit of the customers only if they have had commercial connections for quite some time. Moreover, KM produces decent data about the abilities and capabilities of the organization for the customers in order to motivate them for further cooperation. The previous identification of the customers creates useful and tangible data for them. This information is

transmitted through CRM and should be prepared in a way that attracts customers in competitive markets. If this stage is carried out appropriately, customers will be appealed. Therefore, if the data gathered in the organization is more valuable than that of the competitors, they should be able to attract customers, which in turn, mean customers will start business with the organization.

The third stage is a profit analysis done in KM and CRM processes, on attracted customers. This analysis is done according to the established knowledge of the transactions and benefits with each customer. Cooperation with each customer will be expanded only if the results obtained from the profit analysis are positive. Besides profit analysis, value analysis is sometimes done when the results are not positive. Some customers do not have any direct effects on the organization's profits.

However, they reduce the marketing expenses for the organization because of their position in the market. They disperse the products in great scales and advertise the capabilities of the organization when they support the trade mark. Their relationship is, therefore, helpful

even if they do not create direct profits. That is the reason that value analysis must be carried out after the third stage. Relationship with customers will be kept, in order to make them beneficial for the organization. Good customers are those whose relations with the organization are long-lasting and stable. They feel a sense of commitment to the trade mark of the organization they are dealing with. These customers can help the organization expand markets, products and services.

The fourth stage, presents information about the changes and modifications of the market, the competitors' plans and strategies, people's tastes and possible improvements which are received from valuable customers as the organization becomes active in the market. This information is looked over and analyzed inside the organization to be formed into useful knowledge for the commercial processes of the company. All the stages of being a potential customer to becoming a trade partner are displayed in the conceptual framework of the CKM in Fig. 3.

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 analyzed for decision making. 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 (Moutot and Bascoul, 2009).

By using Data mining technique, creation of customer profiling and grouping can be done according 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 (Rababah *et al.*, 2011).

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

Integrating CRM and customer knowledge management:

To build up a steady and profitable relationship with customers, organizations must identify their customer's respective needs and preferences and try to satisfy them. Such work under question unless utilizing "customers' knowledge". Constant relationship with customers' requires continuant input of their information into the organization through CRM. Later, this is the organization which makes the information meaningful through knowledge management. Therefore, the organization needs complete integration between KM and CRM to become successful in competitive markets. The unity of CRM and KM results in gaining profit. On one hand, KM focuses on the most valuable knowledge (i.e., customers' knowledge) and on the other hand, CRM utilizes a conceptual framework to increase the quality of relationship with purposeful expenses. Consequently, an integrated model of CRM and KM presented and will be described both conceptually and practically.

Social CRM: Social CRM is a philosophy and a business strategy, supported by a technology platform, business rules, processes and social characteristics, designed to engage the customer in a collaborative conversation in order to provide mutually beneficial value in a trusted and transparent business environment.

Social CRM has applications in marketing, customer service and sales, including.

Peer-to-peer management: Real Story Group and Gartner have published research identifying common use cases for Social CRM.

Social engagement with customers and prospects:

Social CRM tools let businesses better engage with their customers-can listen sentiments about the products or services, reviews, comments etc. It will also enable a two way communication between the business and the consumer.

Social Customer Relationship Management (CRM) is a phrase used to describe the addition of a social element in traditional CRM processes. Social CRM

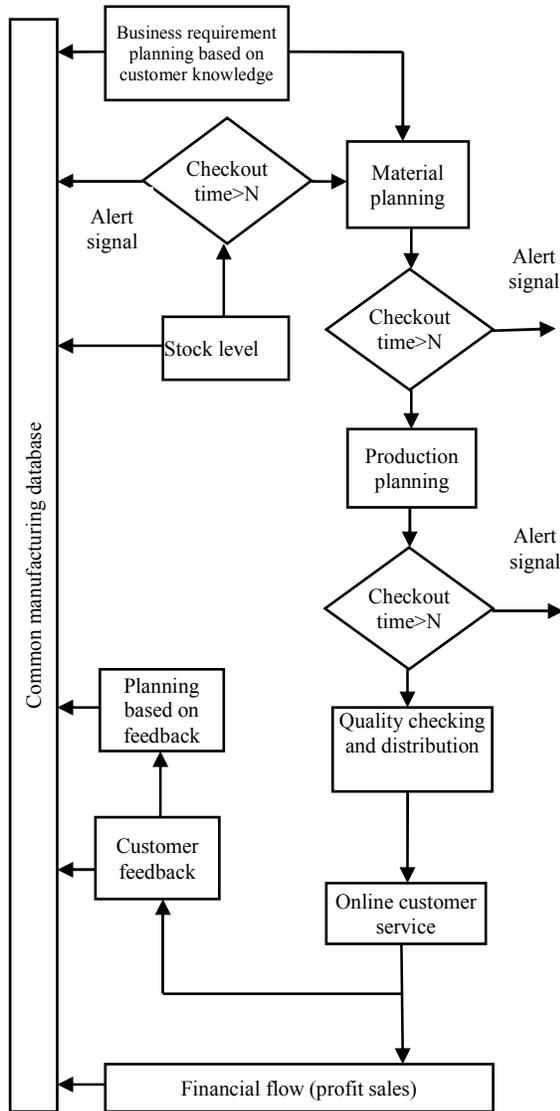


Fig. 4: Proposed SCRM with CKM

builds upon CRM by leveraging a social element that enables a business to connect customer conversations and relationships from social networking sites in to the CRM process. The Proposed SCRM with CKM is shown in Fig. 4.

In this approach, SCRM has the main advantage of taking the marketing form to lot of customers. CRM forecasting and time management are the two main aspects which get integrated with SCRM.

The frame design of CRM forecasting process exhibits the functional design with time frame used to reinforce the relationship with customer and organization. The process in the frame design is integrated in the common data warehouse and its functional flow is described. Data mining automates the process of finding predictive information in large database. The manufacturing unit is the main functional unit of organization and also for the prediction.

Before manufacturing process, the workflow is started from the business requirement planning. In this approach, based on the customer knowledge, business planning is made. This planning is nothing but information perceived from the feedback through customers. The feedback results the requirements of customers and suggestions from the existing product. No complaints will be received regarding the product, because of effective time management and quality control.

The people who are in the planning process will receive the data and designing the schedule according to the organization behavior and order placed by customers. As per the schedule and time frame the production of products will be initiated. The required raw materials of a product will be allocated in the stock prior to production process. The stock verification is made before the material planning. As per the work schedule the raw materials for the product will be checked out within the time frame so that delay of material supply will be avoided.

This time frame makes the employees to be aware of their work, prior planning and decision making. The material planning will produce the day today report of data received from the stock within the time frame. Here the timing segmentation avoids the delay of work and makes the employees to work with enthusiasm.

According to the work schedule, which is framed by the higher authorities, the work will be moved from each level within the time frame, helps the organization to govern the process easier and effective way. Time management is treated as a Key Performance Indicator (KPI) and also gives a security to organization.

Production planning is the next step of material planning. In this, according to the product requirements and product design the development modules will be prioritized. The levels of process will be continued.

The time frame is planned for each step of product manufacture. Based on this, processing time should not exceed or lesser than the given time zone, because the quality will be lost. This governs the quality of product automatically without any manpower.

The checkout time is a time period for each level of process which is defined with the value N. Here N denotes the time variant. For each product development, the process design will be varied. So that, for the different levels of process in the production, the value of N is customized (Menaka *et al.*, 2012a, b).

The alert signal indicates the minimum amount of time to end the process. Meanwhile, the employees have to report their status of work to higher authorities whether they need addition of time to complete than the given time frame. This will occur only in the rare occasions. If it happens the additional time will be extended to all the process levels from the given time frame. This helps the higher authorities to easily govern and identify the time difference from which level it occurs.

Data mining techniques used to improve quality control in manufacturing (Jayanthi, 2008). The quality



Fig. 5: Screen shot of SCRM for fluid pumps and systems

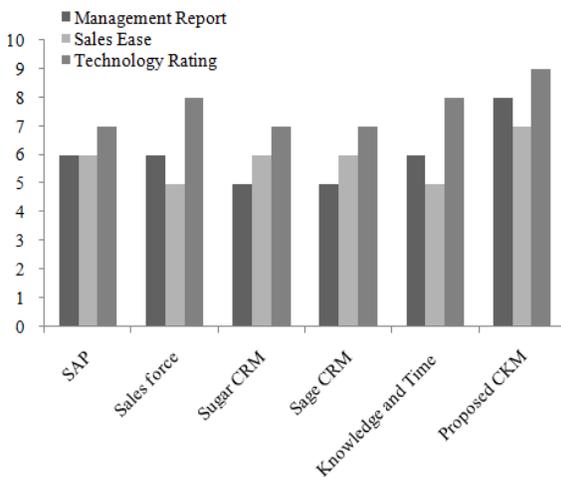


Fig. 6: Comparative analysis of various tools

checking process, verifies the number of products as per the schedule and quality of the products, then distributed to the sales department. Here, the KPI is the key factor for the product quality, so that quality is assured for the finished products. By this damages and complaints of products from customers are totally avoided. Only the suggestions and requirements are received from customers. This is one of the proactive solutions for maximizing the net profit.

Then, the manufactured products are kept for sales online through social websites. In this approach, the database and the server is maintained for updating the status and the entry of the customers. Based on the requirement of the customers, the products will be delivered and customer's feedback can be obtained. The feedback of the customers will be made available in the websites which make the popularity of the products and the organization.

IMPLEMENTATION

This SCRM has been implemented in various applications and industries in real time scenario. The following screen shots clearly illustrate the SCRM for

fluid pumps and systems. The customers who wish to purchase the pumps could directly contact the website and post their requirements and queries. Based on the requirements and queries, the company would satisfy the customer's demand by evaluating the customer knowledge. Then, the customers would make their feedback based on the service they received (Fig. 5).

EXPERIMENTAL RESULTS

The comparative analysis study is made with various tools, where the results are based on management report, sales ease and technology rating (Jayanthi, 2008). In Fig. 6, Knowledge and time management improves the technology rating index when compared to the other tools. Meanwhile, performance of management report and sales ease will be grown by their customer satisfaction.

The Knowledge and time management for manufacturing to enhance CRM is developed based on data mining concept and experimental data are obtained with the platform of VB.Net which is user-friendly in all views and for the users.

Predict the future by techniques: By applying Knowledge and data mining techniques the organization can predict the problems before them occur, forecast resource demands which gain the customer satisfaction.

Most profitable customers: Customer demographics help to seek and retain valuable customers and develop long term relationship by predicting and fulfilling their needs.

Maintaining quality of product development: Time management helps to plan the cycle time of product manufacturing which detects the fault and improves the quality of product.

Customer lifetime value, acquisition and retention: This knowledge and Time management increases the customer lifetime value and forecasting the necessary hidden patterns of customer helps to retain and acquisition of customers.

Identify customers and their products: By the sales analysis, the specific products and loyal customers and can be identified easily meanwhile customer satisfaction is also obtained.

CONCLUSION

This study mainly focuses on improving the overall profitability of the organization through integrating the customer knowledge and CRM. Understanding the customer knowledge and acting as per the customer requirement and satisfaction is the essential issue for

the profit of an organization. The main contribution of this study is the introduction of Social CRM in which the customer knowledge management is integrated. Moreover, marketing and sales are made through online and the feedback is also obtained from the customer. Forecasting the budgets using customer knowledge and time management for manufacturing process is the important issue in improving the profitability. SCRM helps to retain and increase the value of long-term customers, customer satisfaction, improving the profitability, service of product at right time and govern the employees in efficient way.

REFERENCES

- Al-Mudimigh, A., F. Saleem and Z. Ullah, 2009b. Efficient implementation of data mining: Improve customer's behaviour. Proceedings of IEEE/ACS International Conference on Computer Systems and Application, (AICCSA, 2009), pp: 7-10.
- Al-Mudimigh, A.S., F.Saleem, Z. Ullah and F.N. Al-About, 2009a. Implementation of data mining engine on CRM-improve customer satisfaction. Proceedings of International Conference on Information and Communication Technologies (ICICT' 09), pp: 193-197.
- Askool, S.S. and K. Nakata, 2010a. Scoping study to identify factors influencing the acceptance of social CRM. Proceeding of IEEE International Conference on Management of Innovation and Technology (ICMIT, 2010), pp: 1055-1060.
- Askool, S.S. and K. Nakata, 2010b. A conceptual model for acceptance of social CRM systems based on a scoping study. *Ai Soc.*, 26(3): 205-220.
- Attafar, A., M. Sadidi, H. Attafar and A. Shahin, 2013. The role of Customer Knowledge Management (CKM) in improving organization-customer relationship. *Middle-East J. Sci. Res.*, 13(6): 829-835.
- Bose, R. and V. Sugumaran, 2003. Application of knowledge management technology in customer relationship management. *Knowl. Process Manage.*, 10(1): 3-17.
- Bull, C., 2003. Strategic issues in a Customer Relationship Management (CRM) implementation. *Bus. Process Manage. J.*, 9(5): 592-602.
- Cuningham, C. and I.Y. Song, 2007. A taxonomy of customer relationship management analyses for data warehousing. Proceedings of International Conference on Conceptual modeling, pp: 97-103.
- Gebert, H., M. Geib, L. Kolbe and W. Brenner, 2003. Knowledge-enabled customer relationship management: Integrating customer relationship management and knowledge management concepts. *J. Knowl. Manage.*, 7(5): 107-123.
- Jayanthi, R., 2008. A review of data mining tools in customer relationship management. *J. Knowl. Manage. Practice*, 9(1): 1-16.
- Menaka, P., K. Thangadurai, M. Uma and M. Punithavalli, 2012a. Forecasting for profitable CRM using knowledge and time management. *Int. J. Comput. Sci. Inform. Technol.*, 3(2): 3711-3713.
- Menaka, P., K. Thangadurai, M. Uma and M. Punithavalli, 2012b. Knowledge and time management for manufacturing to enhance CRM. *Int. J. Comput. Appl.*, 51(4): 44-48.
- Moutot, J.M. and G. Bascoul, 2009. Effects of sales force automation use on sales force activities and customer relationship management processes. *J. Pers. Sell. Sales Manage.*, 28(2): 167-184.
- Payne, A. and P. Frow, 2004. The role of multichannel integration in customer relationship management. *Ind. Market. Manag.*, 33(6): 527-538.
- Rababah, K., H. Mohd and H. Ibrahim, 2011. Customer Relationship Management (CRM) processes from theory to practice: The pre-implementation plan of CRM system. *Int. J. e-Educ. e-Bus. e-Manage. e-Learn.*, 1(1): 22-27.
- Wahlberg, O., C. Strandberg, H. Sundberg and K.W. Sandberg, 2009. Trends, topics and under-researched areas in CRM research. *Int. J. Public Inform. Syst.*, 3: 191-208.
- Wu, J., 2008. Customer relationship management in practice: A case study of hi-tech company from China. Proceeding of International Conference on Service Systems and Service Management, pp: 1-6.
- Xu, L., 2011. Managing customer services: Customer knowledge management in service innovation. Proceeding of 8th International Conference on Service Systems and Service Management (ICSSSM, 2011), pp: 1-4.