

Web Based Store Management System with Customer Relationship Automation

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ABSTRACT: Web Technology now comes to stay in everywhere and have proved to be essential in the operations of the business. A lot of websites now been developed for online markets. Survival of business entities in conditions defined by the modern information society depends on successful e-commerce. The success of modern e-commerce is based on relationship marketing, i.e. CRM. Accordingly, there is the construction of the online portal to transition from the classic into e-commerce implies, among other, selection of an appropriate customer satisfaction and relationship management strategy, including reengineering of business processes. Therefore it is not strange in modern times that significant emphasis is put on customer relationship management within the e-commerce system (eCRM).

Keywords: Store management, CRM, framework, webapp, point of sale, ecommerce.

1 Introduction

Customer Relationship Management (CRM) is a management approach that seeks to create, develop and enhance relationships with carefully targeted customers in order to maximize customer value, corporate profitability and thus shareholders' value. Managing relationship with the customers has been of importance since the last many centuries, but with invent of information technology a new discipline in name of CRM has emerged. CRM is primarily concerned with utilizing information technology to implement relationship marketing strategies with potential customers and normal customers. The prominence of CRM is a consequence of a number of trends like the shift in business focus from transactional to relationship marketing, transition in structuring organizations on a strategic basis from functions to processes, and acceptance of the need for a trade-off between delivering and extracting customer value. The greater utilization of technology in managing and maximizing the value of information has also led to the modern shape of CRM.

The aim of CRM is to acquire and retain customers by providing them with optimal value in whatever way they need and response back to their queries and complaints. This includes the way of communication with them, how they buy, and the service they receive - in addition, of course, getting the best through the more traditional channels of product, price, promotion and place of distribution. Essentially, CRM is a customer-focused business strategy which brings together customer lifecycle and satisfaction management, business process and technology providence. The trend for companies to shift from a product-focused view of the world to a customer-focused view is one of the modern strategies of the business, as products become increasingly hard to differentiate in fiercely competitive markets. It stands to reason that the better one understands customers, the more successful the company will be in meeting their needs and keep them in comfort. But adopting a truly customer-focused approach can be a resource-intensive method of business. Many management has

questioned how far the investment is worth it. The answer to such questions lies in CRM which uses the trending technologies that can transform the technique of cultivating a loyal customer base.

1.1. Customer as Partner

In today's world, true relationship marketing practices require a fundamental shift in attitude towards viewing the customer as a partner and a business asset to be managed for long-term profitability. The sale should not be viewed either as a conquest or as the end of the marketing process; rather it should be constructed as the beginning of a relationship. The information technology, which includes the telecommunications, data storage and retrieval technologies, and the World Wide Web, has created a revolution that has shifted the business firm's orientation from production efficiency back to the customers' needs. IT could draw the customer closer to the company, build a better relationship, and reduce the probability of customer defection.

With technology touching the way we live our lives, expectations of individuals are fast changing. Just like television and the PC's have revolutionized our lives so is wireless communications, Internet and pervasive computing going to affect our daily pattern of lives. Some trends and strategies that have bearing on treating customers as partners can be seen as:

- More and more individuals will like to be treated as one single person rather than as one among the crowd.
- People wish products and services round the clock.
- With an abundance of product and service offerings, consumer's loyalty can only be commanded by providing a better portfolio of services.
- The speed of response and understanding each individual one of the major key issues.

IT is the enabler and choosing the right technology is managerial acumen. First one has to find out initiatives which need improvements through the recent technology, Identifying these initiative is one of the key tasks of a manager. The success of CRM is dependent upon choosing the activity that involves

data handling, complex modelling and requires lesser subjectivity/human intervention.

1.2. Technological Tools

The web application of internet technology is the most exciting, fastest growing, and changing the way customers get information about products and services. Technology includes all of the equipment, hardware, software and communication links that organizations use to enable or improve their processes, including everything from simple overhead transparency projectors to laptop computers, from fax machines to email, from audiocassette and videocassette players to cellular phones and voice mail(Stowell,1997)¹. The most widely used tools are :

Electronic Point of Sale (EPOS): The important benefit of EPOS and retail scanner systems is the amount of timely and accurate information they deliver. Advancement in recent technologies has significantly aided the scope for data analysis. In addition to the olden original scanner-related data on sales rate, stock levels, stock turn, price and margin, retailers now have information about the demographics, socio-economic and lifestyle characteristics of consumers. They can, in addition, assess the impact of a whole host of variables-price, promotion, advertising, position in the store, shelf position, number of facings, and so on. This informatic detail drives their choice of product mix, allocation of shelf space and promotional tactics. EPOS has certainly changed the relationship between consumer and seller.

Sales Force Automation: These techniques help in automating and optimizing sales processes to shorten the sales cycle and increase sales productivity. They enable the organisation or shop to track and manage all qualified leads, contacts, and opportunities throughout the sales cycle including customer support. These sales force can also improve the effectiveness of marketing communications programs for generating quality leads as well as greater accuracy in sales forecasting. The Internet can be used by the organisation or company in imparting proper training to its sales force. In-depth

product information, specialized databases solutions, sales force support queries, and a set of internal information on the Internet can improve the productivity of the sales force.

Customer Service Helpdesk: These applications help the company in automating the customer support processes, which enable it to deliver high-quality service to its customers. Such software helps in logging information about customers, enquiries, and suggestions, etc. It also helps in directing these queries to appropriate staffs or employees within the organisation. It maintains information regarding the status of customer enquiries and stores all support calls and related communications to final resolution, continually updating the database accordingly. With automated customer service, a company can reduce the costs of maintaining its customer service department while at the same time improving the level and quality of customer service. Customer service using the web provides more information and tools in the hands of customers, which enhances customer benefits by allowing them to learn more about the product and improving their skills in using the product.

Call Centres: Call centre helps in automating the operations of inbound and outbound calls generated between the company and its customers. These solutions integrate the voice switch of automated telephone responds systems with agent host software allowing for automatic call routing to agents, auto display of relevant customer data, predictive dialling, self-service Interactive Voice Response systems, etc. These systems are useful in high complicated segments like banking, telecom, e-shopping and hospitality. Today, more innovative methods of interacting with customers are emerging as a result of emerging technological development, such as global telephone-based call centres and the Internet. Companies are now focusing to offer solutions that leverage the Internet in building comprehensive CRM (Customer Relationship Management) systems allowing them to handle customer interactions in all forms.

1.3. CRM Process Framework

Technological advancements in recent times have enabled business organizations to automate their processes. This has resulted in greater profits through cost reduction in workforce, time and costs cycle flow. CRM technologies enable an organization to present a single point of contact with their customers. CRM (Customer Relationship Management) is a broad term encompassing many strategies, processes and technologies all working in tandem to get as close to the customer as possible. In order to have a healthy relationship with its Customers the company needs to monitor its customer's behaviours in each transaction and provide them with what they want.

The Meta Group uses the CRM architectural framework to analyse where the different solutions fit in from a holistic perspective. CRM process framework has three primary components which are,

- i. operational or process Management technologies,
- ii. analytical or performance management technologies required to achieve a balanced CRM approach and
- iii. collaborative.

Operational:

CRM solutions involve the integration of business processes involving customer touch points. These technologies reside in those parts of an organisation where moments of truth occur i.e. a consumer makes direct contact with the employees of the organisation. Typical CRM solutions that fit into this category are consumer sales and service, sales force automation, marketing automation and field services. The back office side of the operational CRM technique should be able to plug into ERP systems and chain management software.

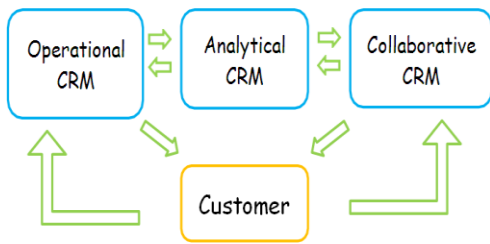


Fig. 1: Interactions with CRM Technologies

Analytical:

This method analyses the data created on the operational side of the CRM effort for the purpose of business performance management and improvement. Prediction of customer behaviour, identifying relevant customer segments, identifying potential customers etc are some of the activities that could be performed from the knowledge arising out of analytic CRM efforts.

Collaborative:

This method involves the facilitation of collaborative services (such as email) to facilitate interactions between customers and employees. All this effort produces high valued data that feeds the Analytical CRM technologies. It analyses the data using data mining and other strategies and in turn feeds the result (i.e. knowledge gained) back to the operational and collaborative CRM techniques.

Customer Relationship Management is a new technology initiative that aims to strengthen the front-end operations and build a mutually valuable long-term relationship with the customers. A firm might enjoy competitive advantage of its consumers for a long time by building mutually beneficial relationships that increase switching amounts and thus cannot be easily replicated. Studies have also shown that it costs as much as five times to acquire a new potential customer than to retain one. All customers do not contribute equally to a firm's profitability, some positively contribute and some others negatively contribute to the firm's bottom line. It is the endeavour of a firm to nurture these profitable customers. CRM integrates all front-end

operations of the firm so that a customer is presented with a single point of contact that remembers all like the past customer interactions.

A typical CRM cycle consists of front-end operations that interact with the customer (like call centres, target marketing initiatives etc.) and obtain data about the customer. This is typically

consolidated from various contact points with customers and fed into a data warehouse. The data warehouse consolidates not only transaction data but also data obtained from outside sources like census data and provides a fertile ground for analysis. Data analysis is done by data mining methods. The output is interpreted and new knowledge is transferred to a central customer repository where all staffs or employees of the firm might access it. This helps them to customize responses. Thus, data mining provides the intelligence behind the CRM initiative data management.

2 Review of Existing Systems

Any Company's ultimate aim is to improve its products quality plus growth in the market. To do this, the company should possess goodwill of their customers and also good communication with the staffs. Maintaining information about the purchasing activity of customers, staff details, and staff daily sales report is too hard and manual and prone to errors. Even when we develop software that will be available only in a standalone system so the management people can't view their day to day revenue if they were in an outstation. These are the main disadvantages we face in the existing System.

Microsoft Dynamics 365 Management System is a cloud web application from Microsoft Corporation that offers retailers a complete point of sale (POS) solution that can be adapted to meet unique requirements. It provides centralized control for multi-store retailers and integrates with dashboard view and Microsoft Office system programs. It also offers benefits like ease of use, automation, efficiency, flexible reporting and scalability. It can be deployed for any form of the enterprise like pharmaceuticals, grocery stores, etc. The system, however, is not

cloud-based and also targets businesses that run the Windows operating system – thus it is not cross-platform. But if we looking for cloud-based means its costs high. And also it is very tough and Includes Maintaining of the large level of records.

From the drawbacks in the existing systems, we intend to realize a store management solution that is cloud-based; platform independent;able to run on Web and mobile browsers and also easy to customize by any retail organization.

3 The Proposed System

Being software, we incorporate the store management system into our cloud design framework by modelling it at the SaaS layer - above the PaaS and IaaS layer. The model framework diagram is given below.

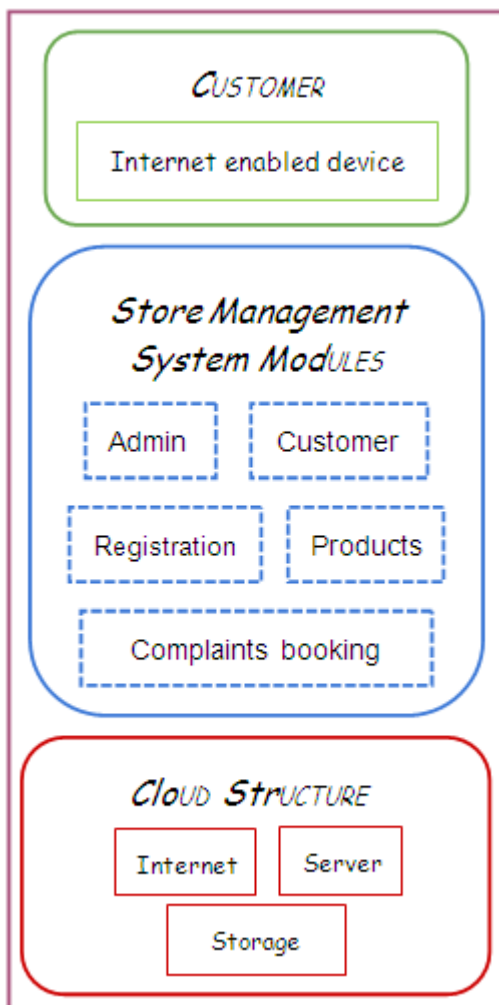


Fig. 2: Framework Model

The systems design framework of the proposed system has a lot of attracting features. This brings an easy way of communicating with customers and workers and also helps the customers to view the products online and purchase in a shop. The company would directly get the feedback right from the customers and can thus maintain an excellent status amidst customers. It also has an easy to watch workers sales report. Customers can visit the store’s website for knowing details about the product and their features, after which they can choose their product and can come to the shop for purchasing or can book their products in the store’s website or mobile app in case of urgency. This reduces the travelling conveyances and even save the valuable time of the customers. Through this proposed system small scale store management can gain profit and good relationship among customers which serves as the valuable assets of the companies. And also the proposed one should be very fast and accurate and no the store management doesn’t have the fear of data loss. And both the customer and store management doesn’t require any special hardware device.

CUSTOMER

This refers to channels that will be used to access and use the store management system. Such medium channels should be cloud-enabled which include laptops, tablet computers and smartphones.

STORE MANAGEMENT SYSTEM MODULES

The proposed web-based store management system (shown with dashed lines in Fig. 2) will have the following key features:

- i. complaints management that makes it easy to add and track items complaints;
- ii. registration management module is to sign up or log in to the web based store management system to use and access them
- iii. customer management that helps to keep the record of customers thus building a relationship with them;
- iv. products management to help manage the items and purchase of supplies;

v. admin management to provide a complete point of sale solution and overall management to help and deliver products efficiently, and report generation of whole unit.

CLOUD STRUCTURE

Cloud platform providers develop and avail their platforms with their own cloud infrastructure. So Microsoft and Google, as well as other platform providers, support their respective platforms through their own and individual cloud infrastructure, which includes:

- 1) Networks
- 2) Servers
- 3) Storage

4 Conclusion

The Internet has completely revolutionized the wholesale shopping industry. With online shopping, the customer now has many different ways to shop their needs without ever having to

leave the comfort of their own home. With the help of the Internet, catalogue sales were the only way that people could shop from their recliner while seated in front of the TV or while doing something else.

E-CRM is not restricted to only operates on the internet but it goes beyond the web to devices like PDAs, mobile phones, landline phones, pagers, WAP phones and set-top TV boxes. It increased the way of communication with the customers by integrating its services to several other mentioned devices or medium. The modern version of shopping of early shop-keeper shifts smoothly from store to web, to any device and enabling itself to serve possibly anywhere to the customers.

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