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Abstract

Technology has drastically changed how businesses operate. Internet and the subsequent "E-Commerce," have granted customers more bargaining power than ever. Thus, Continuous Customer Relationship and Customer Relationship Management (CRM) become the goal for customer retention. CRM, if performed correctly, allows creative marketing people to gain insights from information for new product ideas or new promotional campaigns and turn them into profits. CRM has extended beyond sales and marketing to include functions such as finance, R&D, channel partners, and even customers. This paper discusses the concept of customer-centric approach in CRM and its components. The current CRM market, key players, and trends are also reviewed.
Keywords: customer relationship management (CRM), Internet, customer centric

Customer Relationship Management (CRM) and E-Commerce
1. Introduction: Customer-Driven Approach

Pareto's Principle, or the 80/20 rule, states that 80 percent of the profit is derived from only 20 percent of the customers. Studies have shown that it costs 5 times more to acquire new customers than to retain existing ones [1]. Since there is no acquisition cost for loyal customers, and they tend to be high-volume purchasers and early adopters to the company's new products. Loyal customers also enhance for the company's reputation through words-of-mouth [9]. Thus, one of the key success factors for company to grow is to to establish "lifetime customers. Customre Relationship Management (CRM) has the potential to accomplish this goal [12].

This need of retaining customers has shifted the marketing concept from product-centered to customer-centered (or customer-driven) approach [8].

Insert Table 1 Here

Though the concept is a simple one, to truly understand the customer needs, a company must have huge amount of data on customer behaviors and know how to translate them into valuable knowledge.

2. CRM: the Definition

Depending on the focus of the party, CRM may be defined differently, but there are common characteristics. CRM is the art of science of acquiring, retaining, and growing profits from continuous customer relationships across the

enterprise rather than just within a particular product or business unit [14]. CRM uses one-to-one marketing to customize messages to the needs of customer segments or clusters. It involves a process of continually gathering data at all customer contact points, and then turning those data into knowledge for building more profitable customer relationships [12].

In traditional data warehousing, many reports are beautifully designed but contain no concrete information for decision making. Similarly, the key to successful CRM lies not in the amount of data a company has on its customers, but in how these data are used by the company. CRM, if performed correctly, will allow creative marketing people to recognize new product ideas or new promotion campaigns from these data and turn them into profits. This is where data mining becomes an important tool for identifying patterns from a chaotic ocean of data. As reiterated by Dale Kutnick (1999), the president of Meta Group, a research firm:

> "You can spend tons of money deploying customer relationship management systems or data mining tools, but at the end of the day, someone has to make a decision on what is the value of that information. The winners are going to be the companies that can make that link and exploit it early."

Key functional areas of CRM can be categorized into three groups as follows.

- Traditional CRM: mainly focuses on sales and marketing functions, including marketing automation, sales force automation, and customer service [15].
- New CRM: has extended the scope to include other important functional areas such as Finance, R&D, Management, Channel Partners, and even customers [4].
- E-Commerce: includes automating the Sales & Marketing functions above, where it directly interacts with the customers, and service with an Internet-based system.

Ideally, the information should flow easily among these functional areas, facilitating team selling, support, and all points of contacts with the customers. The customer data will be stored in a centralized database, enabling the organization to manage the entire life cycle of the customer relationships and be able to truly communicate with the customer with consistent message at any business points.

3.   E-Commerce and Relationship Marketing

The Internet has provided opportunities for businesses to learn more about their customers and therefore can customize the marketing efforts to suit them more effectively. It should be noted, however, that CRM emphasizes single-user relationship level. To develop the Internet front store to serve such a purpose, the following ideas can be utilized.

Customer-Focused Information System
It is the underlying wishes and interests of each customer that the business needs to understand and try to fulfill it in the fastest way possible. Salvatore Larosa (1998), a business consultant at Cap Gemini, Italy, provides an interesting illustration on this issue. Her company uses "Intelligent Agent" (IA) as a tool to interact at a single-user level without using human intervention.

She gives an example of a virtual bookstore, where the Intelligent Agents can create a virtual experience, allowing a user to pick up a character from a set, take the role scenarios such as islands, sea, desert, etc., and create her own virtual experience as she wishes. At the front end, the Web user is having fun playing the kind of life she likes, while the underlying IA records all the users' choices. IA can use those data to predict the customer's age or habits and store them in a marketing database. At the end of the play, the user can then be suggested the kind of book that she may like from the bookstore database. Furthermore, if the bookstore shares the back office database with a travel agency, the company can benefit from cross-selling by suggesting a travel vacation that she could buy to reach a place that she likes.

In addition, the analysis tools used with the Web today is becoming more sophisticated. They can be used to monitor activities on the Web sites closely, i.e., knowing where visitors have come from and where they are going once they leave, check out where people browse and how long they stay in each section. It can build personal profiles based on browsing and purchasing patterns and alert administrators to unusual activities or sudden spikes in demand [3].

Moreover, with the stored preferences in the database, the appearance and the content of the Web site could be customized to recognize each customer every time she reaches the site or to immediately offer her a set of product/service recommendations that she could like. An example to such features includes, for example, Amazon.com Web site, where it greets each customer by name each time she reaches the site and provides a set of recommendations immediately based on the past purchase history and browsing patterns.

Continuous Communications with Customers
It is important that the front-end service makes the customer feel that the company is recognizing and knowing her. The system must be designed in the way that the history of all messages and issues are tracked and stored, and be easily accessible by all customer contact points.   Simply having a customer in the database does not make a difference. Each person who and each system that interacts with the customer must have an access to the centralized database and be able to understand the customer's history in a few glances, so that the interactions can be made more effectively.

Strategic Customer Relationships Management
Many Web sites use the number on the counters as a way to measure success. However, in fact, it is not important in the long run to have high number of people visiting the Web sites, if each of them does it only once or twice and never come back. The company must act in such a way that potentially each Web customer is stimulated to come back again and potentially on a regular basis.

The real challenge, however, is to truly understand the customer and be able to develop the business process that can support marketing people in establishing a long-term relationship with customers.   This is where data mining and knowledge base play significant roles.   The knowledge database discovery will act as a data analysis tool in the back end predicting the pattern and the way that selected customers change their taste and behavior during a certain period. It may discover new meaningful relationship or pattern that is valuable to the business that may not be so obvious to the naked eyes. For example, channel data may contribute to a potentially new channel, or customer habit data may lead to a potentially new market segment.

A study by the Alexander Group, Inc., indicates that customer relationship has become the top priority for CEOs worldwide. Among them, these factors are: (1) relationship with customers, (2) cost competitiveness, (3) effective use of information technology, (4) managing change, (5) shareholder value, (6) revenue growth, (7) industry restructuring, (8) globalization, and (9) value-added supplier relationships.   Figure 1 shows what senior executives expect current customers to drive their future revenue growth [13].

Insert Figure 1 Here
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4. The Web: The Integration That Unifies the Enterprise

As discussed above, the "front office" of the business today has been playing significant role in interacting with the customers and is changing dramatically from the past.   Many existing standard processes, such as order entry or customer information update, have been moved onto the Internet. At the same time, many new processes, such as e-mail-based customer support or co-browsing and application sharing, has also been adopted into the computer systems.

With this trend, the real long-range value can be realized with the integration of the Internet front end with the existing back system into one centralized database accessible by all functional areas of the organization.   Zerega (1999) has stated this rising trend as follows.

> "By shifting front-office tasks onto the Web and then integrating them with existing client/server or mainframe back-office applications (some of which are simultaneously being made Web read), the long-sought wholly unified enterprise computing system may soon become reality."

Many businesses have had the Enterprise Resource Planning (ERP) system implemented to more efficiently and effectively manage their back-office processes.   However, with today's competition, it is essential for the business to focus on the customer approach and implement the CRM solution.   The trend from now onwards is to have both front office and back office systems integrated, sharing the data and knowledge extending to include sales, marketing, support, R&D, finance, management, suppliers, business partners, and customers, with the goal being customer-centered and increased effectiveness.

Vaas (1999) gives an insight that the CRM software package today can do more than just traditional Sale Force Automation (SFA).   "While SFA applications manage contacts, accounts, and sales opportunities, CRM does all that, plus it includes front-office applications that deal with customers; adds customer and product information; throws in marketing encyclopedias and product configuration engines; and has the ability to hook to back-end systems, including financials, inventory and Enterprise Resource Planning (ERP)."

CRM Benefits
Advantages of CRM to the business can be summarized as follows.

(1) More effective marketing effort: This can be achieved because the customer is better defined. The marketing efforts will be dealing directly with each customer's wishes and interests.

(2) More effective interactions with customer: Personnel at all business contact points have access to the database that will allow them to understand each customer better, in both their history with the company and their interests.

(3) Long-term profit from continuous relationship: The company gains loyal customer.   The customer gets clear view of products and services of interests and is able to track order status.   Each of them is communicated with consistent message at all contact points, whether it is customer service, sales people, or technical support.   Being able to target and serve the customers in such ways will keep customer coming back.   This, at the end, means long-term profitability of the organization.

(4) Shared knowledge: The customer data will be stored as the knowledge base in one unified database obtainable across the enterprise, and not restricted within just one business unit.

(5) Cost Savings: The link between the front and the back office applications enable the company to save costs across the board. Processes are automated and it eliminates the paper-driven system.   Besides, the entire service cycle is accelerated.

(6) More efficient and effective sales forces: Sales staff has the right tools to help them spend time more efficiently during the sales process, such as in the areas of pricing and configuration, and sales methodologies. They can now spend more time with customers and sell more products. Bruce Phillip (1999), CFO of Holphane, has made a remark that "Now that order information and commercial and technical support are in a place where anybody who needs them can access them at any time, the sales-call preparation time has proved to be cut in half."

CRM Challenges
Challenges to successful CRM can be summarized as follows.

(1) Costs: A company needs to assess the costs needed to purchase the software, hardware, support, training, as well as the future upgrade and associated costs. The real value may be hard to quantify right at the beginning, as it also depends on other variables such as the ability for the business to learn the knowledge from the data acquired and the ability to adapt the business process appropriately.

(2) Software vendors: The players in this field are increasing in numbers. The business has to carefully select the vendors that best suit the business environment in terms of costs, amount of supports, capability, and as such. Jeff Wright (1999), the president of Urban Ministries, Inc., a religious materials publisher, gave his failed implementation of GoldMine Software Corp. over his Macola ERP system due to the vendors. After eight weeks of his planning and transferring all the records to the new system, the result was configuration error and the system was unable to function. "Simply put, Write said, the company didn't get to the CRM promised land, because its underlying system was barely robust enough to support its current load, never mind trying to add GoldMine to the mix."

(3) Involvement of higher management: It is crucial for implementing CRM to, after finding the right partner, sell it to the upper management and include them in the process since planning. Integrated CRM is essentially powered by the synergy among all the departments. In addition, a study done by Exchange Application Inc, Boston, has found that the companies that have the most success in implementing CRM solutions always involve CEO. It is important for the company to have a customer-oriented culture mindset, which inherited hierarchically throughout the organization [2].

(4) Knowledge Database Discovery: This is one of the most challenging factors for successful CRM. After investing for the technology and collecting a huge amount of the data, the business must be able to learn the relationship and create knowledge from it.

As Peter Johnson, vice president of strategic technology at Mellon Bank Corp., stated (1998), "Data mining is the carrot that justifies the expense of data warehousing, yet the data mining tool I sonly 20 percent of the solution. The rest is your ability to apply the tool to solve the problem...You need the skills of a statistician, the skills of a computer scientist to understand the structure of the database and the skills of a business analyst to frame the problem in a way that makes sense."

5. Conclusion: The CRM Market, Players, and Trends

AMR Research Inc., Boston, predicts that the total aggregate CRM market will grow from $1.2 billion in 1997 to $11.5 billion by 2002 [11]. The current main player in the CRM market is Siebel Systems, whose revenue has risen astonishingly from $39 million in 1996 to $392 million in 1998. The company has changed its product focus from client/server sales-force automation applications to an integrated, Web-enabled, CRM suite containing sales, marketing, and customer service modules that come with prepackaged integration tools for linking to back-office systems. The company commands roughly 21 percent of the CRM market, according to recent estimates from IDC, an IT research firm [17]. Other major competitors in the market include Clarify and Vantive, who are offering a CRM solution to businesses linking its front office application to the back end system as well.

Traditional back-office vendors such as SAP, PeopleSoft, and Oracle are now also coming forward to offer their own front-office software. To date, only Oracle offers such a system, while SAP and PeopleSoft are expected to deliver similar products by the end of 1999. Oracle's senior vice president of CRM products stated that its strategy is "to go deep into CRM, deep into ERP, and deep in to e-commerce, and then to integrate all of it at zero cost." In addition, Oracle has recently, in June 1999, taken another step in filling the gap in its data warehousing strategy by acquired the data mining business of Thinking Machines Corp. in Burlington, MA, who sells a

server based data mining product called Darwin. The company believes that data mining is a critical feature for many applications especially e-business and CRM.

At this point, Web-enabled products have just set a new characteristic to the CRM. CRM vendors such as Siebel, Clarify, and Vantive approach front-office tasks from the outside looking in, while ERP vendors like Oracle and SAP, which have traditionally emphasized automation and execution of transactions, can be described as starting from the inside and looking out.

In summary, the key idea to long-term success of the business in such a competitive environment today is to utilize the customer-centered approach and e-service. However, the missing link in e-business is e-service, and vendors and enterprises are racing to provide it. To be successful, e-service must be part of a complete e-CRM environment, including sales, marketing, and e-commerce functionality and content. Internet-based customer service evolves to become a core component of the support infrastructure? The Internet technology is the key to this unified information.
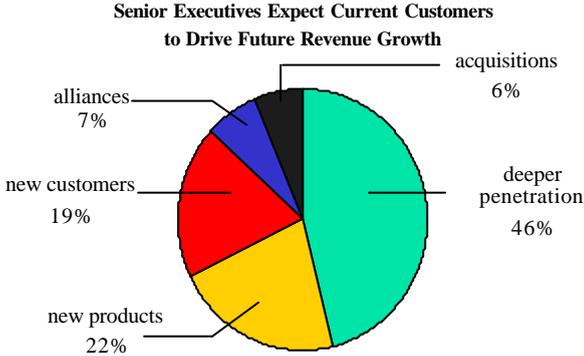
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Table 1: Changing Marketing Mix from market-driven to customer-driven

The Four Ps	The Four Cs
Product	Customer needs and wants
Price	Cost to the customer
Price	Convenience
Promotion	Communication

Figure 1: Senior Executives' Expectation from Current Customers to Drive

Senior Executives Expect Current Customers to Drive Future Revenue Growth

acquisitions
6%

alliances
7%

new customers
19%

deeper
penetration
46%

new products
22%

Source: Alexander Group, Inc. (1996)