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CUSTOMER RELATIONSHIP MANAGEMENT

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I. INTRODUCTION

Over a century ago, in small-town America, before the advent of the supermarket, the mall, and the automobile, people went to their neighborhood general store to purchase goods. The proprietor and the small staff recognized the customer by name and knew the customer's preferences and wants. The customer, in turn, remained loyal to the store and made repeated purchases. This idyllic customer relationship disappeared as the nation grew, the population moved from the farm communities to large urban areas, the consumer became mobile, and supermarkets and department stores were established to achieve economies of scale through mass marketing.

Although prices were lower and goods more uniform in quality, the relationship between the customer and the merchant became nameless and faceless. The personal relationship between merchant and customer became a thing of the past. As a result, customers became fickle, moving to the supplier who provided the desired object at lowest cost or with the most features.

The last several years saw the rise of Customer Relationship Management (abbreviated CRM) as an important business approach. Its objective is to return to the world of personal marketing. The concept itself is relatively simple. Rather than market to a mass of people or firms, market to each customer individually. In this one-to-one approach, information about a customer (e.g., previous purchases, needs, and wants) is used to frame offers that are more likely to be accepted. This approach is made possible by advances in information technology.

Remember that CRM is an abbreviation for Customer Relationship *Management, not* Customer Relationship *Marketing.* Management is a broader concept than marketing because it covers marketing management, manufacturing management, human resource management, service management, sales management, and research and development management. Thus, CRM requires organizational and business level approaches – which are customer centric – to doing business rather than a simple marketing strategy.

CRM involves all of the corporate functions (marketing, manufacturing, customer services, field sales, and field service) required to contact customers directly or indirectly. The term “touch points” is used in CRM to refer to the many ways in which customers and firms interact.

II. HISTORY OF CRM MARKET

Before 1993, CRM included two major markets [Financial Times, 2000, p.25]:

1. Sales Force Automation (SFA) and
2. Customer Services (CS).

Sales Force Automation was initially designed to support salespersons in managing their touch points and to provide them with event calendars about their customers. SFA's meaning expanded to include opportunity management that is supporting sales methodologies and interconnection with other functions of the company such as production. The box below indicates the range to sales force automation capabilities currently available.

Sales Force Automation Capabilities

- *Contact Management*: Maintain customer information and contact histories for existing customers. May include point in the sales cycle and in the customer's replenishment cycle.
- *Activity Management*: Provide calendar and scheduling for individual sales people
- *Communication Management*: Communicate via E-mail and fax
- *Forecasting*: Assist with future sales goals, targets, and projections
- *Opportunity Management*: Manage leads and potential leads for new customers
- *Order Management*: Obtain online quotes and transform inquiries into orders
- *Document Management*: Develop and retrieve standard and customizable management reports and presentation documents
- *Sales Analysis*: Analyze sales data
- *Product Configuration*: Assemble alternate product specifications and pricing

  Marketing Encyclopedia: Provide updated information about products, prices, promotions, as well as soft information about individuals (e.g., influence on buying decisions) and information about competitors

Source: http://www.benchmarkingreports.com/salesandmarketing/sm115_sfa_profiles.asp

Compared to SFA, Customer Service (CS) is an after sales activity to satisfy customers. The goal of Customer Service is to resolve internal and external customer problems quickly and effectively. By providing fast and accurate answers to customers, a company can save cost and increase customer loyalty and revenue. As shown in the box below, customer services include call center management, field service management, and help desk management.

Customer Services Capabilities

- Call Center Management
  - Provide automated, end-to-end call routing and tracking
  - Capture customer feedback information for performance measurement, quality control, and product development
- Field Service Management
  - Allocate, schedule, and dispatch the right people, with the right parts, at the right time
  - Log materials, expenses, and time associated with service orders
  - View customer history
  - Search for proven solutions
- Help Desk Management
  - Solve the problem by searching the existing knowledge base
  - Initiate, modify, and track problem reports
  - Provide updates, patches, and new versions

Source: http://www.clarify.com/products/suite/service/
http://www.peoplesoft.com/en/us/products/applications/crm/product_content.html

Today, CRM includes all customer-facing applications, including:

- Sales Force Automation (SFA),
- Customer Service (CS),
- Sales and Marketing Management (SMM), and
- Contact & Activity Management [Emerging Market Technologies, 2000].

MAJOR VENDORS

The major vendors changed over time. In 1993, the leaders of SFA were Brock Control, Sales Technologies, and Aurum. Since then, Brock Control changed its name to Firstwave Technologies, Inc. In 1998, Sales Technologies merged with Walsh International and now is consolidated into SYNAVANT Inc. to provide pharmaceutical and healthcare industry relationship management service. Aurum was merged into Baan, which in turn was acquired by Invensys plc in July 2000 [Invensys, 2000].

In the CS area, Scopus, Vantive and Clarify were the major vendors. However, things also changed rather rapidly:

- Siebel merged with Scopus in 1995 and dominated the consolidated CRM market with 68% market share.
- Vantive was bought by Peoplesoft in 1999.
- Clarify was bought by Nortel in 1999.

In 1998, the CRM market was divided by Siebel, Vantive (now PeopleSoft), Trilogy, and Clarify (now Nortel), and Oracle (in that order) plus fewer than 20 other companies with small market shares. [Financial Times, 2000, p. 1]

At the beginning of 2000, Siebel Systems Inc. was the market leader with a 35% share. Vantive (PeopleSoft) and Clarify Inc. (Nortel) followed. SAP and Oracle Corporation were introducing new application to the market based on their software development capabilities. Recent entrants offering Web applications and services include Silknet Software, E.piphany, and netDialog. [Hamm, 2000]

CURRENT OFFERINGS

The current Siebel application provides a customer information system, a product information system, a competitive information system, and a decision support system with a large database. [Financial Times 2000, p.25]

Today, the rapid development of network and communication technologies leads each CRM company to move towards new technologies such as data warehousing, knowledge management, and portals on the web. [Howlett, 1999] In addition, a reverse movement took place as many companies in such fields as data warehousing and Enterprise Resource Planning (ERP) began offering CRM software.

III.DEFINITIONS OF CRM

Traditional marketing strategies focused on the four Ps (price, product, promotion, and place) to increase market share. The main concern was to increase the volume of transactions between seller and buyer. [Wyner, 1999] Volume of transactions is considered a good measure of the performance of marketing strategies and tactics.

CRM is a business strategy that goes beyond increasing transaction volume. Its objectives are to increase profitability, revenue, and customer satisfaction. To achieve CRM, a company wide set of tools, technologies, and procedures promote the relationship with the customer to increase sales. [Sweeney Group, 2000] Thus, CRM is primarily a strategic business and process issue rather than a technical issue.

CRM consists of three components:

- customer,
- relationship, and
- management (Figure 1).

CRM tries to achieve a ‘single integrated view of customers’ and a ‘customer-centric approach’ [Roberts-Witt, 2000].

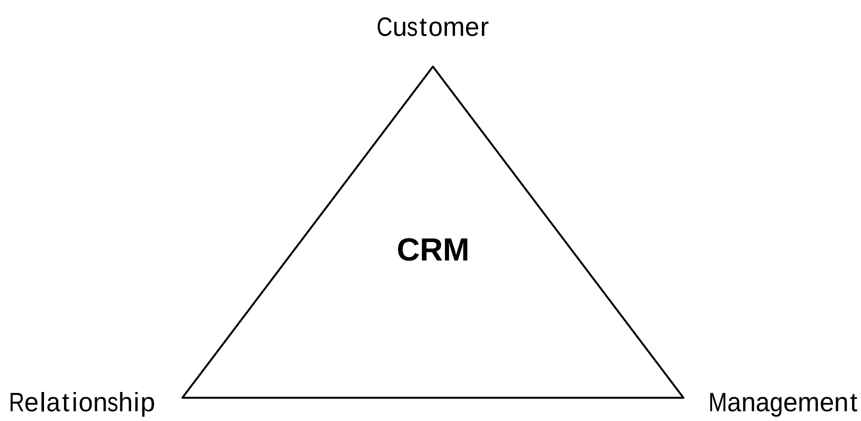


Figure 1. Components of CRM

Customer: The customer is the only source of the company’s present profit and future growth. However, a good customer, who provides more profit with less resource, is always scarce because customers are knowledgeable and the competition is fierce. Sometimes it is difficult to distinguish who is the real customer because the buying decision is frequently a collaborative activity among participants of the decision-making process [Wyner, 1999]. Information technologies can provide the abilities to distinguish and manage customers. CRM can be thought of as a marketing approach that is based on customer information [Wyner, 1999].

Relationship: The relationship between a company and its customers involves continuous bi-directional communication and interaction. The relationship can be short-term or long-term, continuous or discrete, and repeating or one-time. Relationship can be attitudinal or behavioral. Even though customers have a positive attitude towards the company and its products, their buying behavior is highly situational [Wyner, 1999]. For example, the buying pattern for airline tickets depends on whether a person buys the ticket for their family vacation or a business trip. CRM involves managing this relationship so it is profitable and mutually beneficial. Customer lifetime value (CLV), discussed in Appendix C, is a tool for measuring this relationship.

Management. CRM is not an activity only within a marketing department. Rather it involves continuous corporate change in culture and processes. The customer information collected is transformed into corporate knowledge that leads to activities that take advantage of the information and of market opportunities. CRM required a comprehensive change in the organization and its people.

Specific software to support the management process involves:

- Field service,
- E-commerce ordering,
- Self service applications,
- Catalog management,
- Bill presentation,
- Marketing programs, and
- Analysis applications.

All of these techniques, processes and procedures are designed to promote and facilitate the sales and marketing functions.

IV. DRIVERS FOR CRM APPLICATION

REASONS FOR ADOPTING CRM: THE BUSINESS DRIVERS

Competition for customers is intense. From a purely economic point of view, firms learned that it is less costly to retain a customer than to find a new one. The oft-quoted statistics[1] go something like this:

- By Pareto's Principle, it is assumed that 20% of a company's customers generate 80% of its profits.
- In industrial sales, it takes an average of 8 to 10 physical calls in person to sell a new customer, 2 to 3 calls to sell an existing customer.
- It is 5 to 10 times more expensive to acquire a new customer than obtain repeat business from an existing customer. For example, according to the Boston Consulting Group [Hildebrand, 2000], the costs to market to existing Web customers is $6.80 compared to $34 to acquire a new Web customers.
- A typical dissatisfied customer tells 8 to 10 people about his or her experience.

[1] Although often repeated, sources for many of these numbers could not be found.

- A 5% increase in retaining existing customers translates into 25% or more increase in profitability.

In the past, the prime approach to attracting new customers was through media and mail advertising about what the firm has to offer. This advertising approach is scattershot, reaching many people including current customers and people who would never become customers. For example, the typical response rate from a general mailing is about 2%. Thus, mailing a million copies of an advertisement, on average yields only 20,000 responses.

Another driver is the change introduced by electronic commerce. Rather than the customer dealing with a salesperson either in a brick and mortar location or on the phone, in electronic commerce the customer remains in front of their computer at home or in the office. Thus, firms do not have the luxury of someone with sales skills to convince the customer. Whereas normally it takes effort for the customer to move to a competitor's physical location or dial another 1-800 number, in electronic commerce firms face an environment in which competitors are only a few clicks away.

COST GOALS

Major cost goals of CRM include:

- Increase revenue growth through customer satisfaction.
- Reduce costs of sales and distribution

- Minimize customer support costs

The following examples illustrate tactics to achieve these goals;

1. To increase revenue growth
   - Increase share of wallet by cross-selling
2. To increase customer satisfaction
   - Make the customer's experience so pleasant that the customer returns to you for the next purchase.
3. To reduce cost of sales and distribution
   - Target advertising to customers to increase the probability that an offer is accepted.
   - Use web applications to decrease the number of direct sales people and distribution channels needed
   - Manage customer relationships rather than manage products (a change in marketing)
4. To minimize customer support costs
   - Make information available to customer service representatives so they can answer any query
   - Automate the call center so that representatives have direct access to customer history and preferences and therefore can cross-sell (see goal 1)

V. THE CRM INDUSTRY

SIZE OF THE CRM INDUSTRY

Estimates of the size of the CRM industry are shown in Table1 and plotted in Figure 2. These illustrations show forecasts made in the 1997 to 2000 period by a number of industry research groups. It is important to realize that the forecasters generally did not specify what they included in their estimates. Therefore, it is not possible to tell which expenditures (e.g., hardware, software, mailing, personnel, call centers, …) and which revenues are included in the numbers shown.

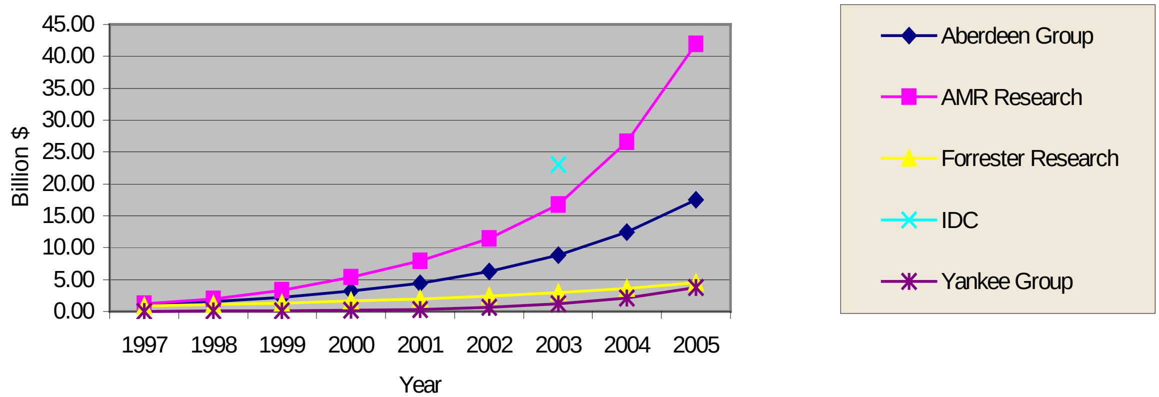
Not all values shown in Table 1 are forecasts; some of the values shown were obtained by taking the forecaster's growth rate and then interpolating. Interpolated values are shaded.

Table 1. Estimated CRM Market Size

	1997	1998	1999	2000	2001	2002	2003	2004	2005	Growth Rate
Aberdeen Group	1.12	1.59	2.24	3.15	4.45	6.27	8.85	12.47	17.59	41%
AMR Research	1.20	1.98	3.27	5.40	7.90	11.50	16.80	26.54	41.94	58%
Forrester Research	0.87	1.07	1.31	1.61	1.98	2.44	3.00	3.69	4.54	23%
IDC 1							23.00			
IDC 2				4			11			
Yankee Group	0.04	0.07	0.12	0.21	0.38	0.68	1.20	2.14	3.80	78%

Shaded values: Interpolated values based on forecasts

Figure 2. CRM Market Size Estimates



Clearly the forecasts shown vary significantly as they reach the out years because they are based on different assumptions of the size of the current market at the time of the forecast and the growth rate inferred from the numbers presented. The important point, is that the market is growing and is multibillion.

VENDORS

A few years ago, technology vendors had their own specialties. For example, Siebel was in sales force automation, Remedy was in helpdesk systems, Davox was in call center systems, eGain was in e-mail management, and BroadVision was in the front-end application area. Today, however, there is no specific boundary of vendors. All vendors are trying to expand their products over the entire CRM area. For example, Siebel says it can do everything, Davox moved into customer contact management, and BroadVision is trying to integrate backward with ERP. [Mckenna, 2000]

Most of CRM vendors came from two different origins:

- Back-End Application

  Traditional ERP vendors (SAP AG, Oracle Corporation, Baan (now Invensys plc), and PeopleSoft) acquire, build, and partner their CRM application for ERP functionality.
- Front-End Application

  Some companies started with front-end solutions such as personal information management system (PIMS). Siebel, BroadVision, and Remedy are in this category.

Starting in late 1998, with the fast development of e-business, many of the larger players acquired or merged with mid-sized companies to allow them to offer full service across the entire CRM “sandbox”. Table 2 lists some of the major categories and players.

Table 2. The Major CRM Vendors

Category	Vendor Company
Enterprise-wide back-end office	SAP AG Oracle Corporation Baan Company (now Invensys plc) PeopleSoft, Inc.
Front-end office	Siebel Systems Saratoga Systems Vantive Corporation (a division of PeopleSoft, Inc.) Clarify (a division of Nortel Networks) Onyx Software Corporation
Web-based front-end solution	Firstwave UpShot.com Rubric
Adhere to Microsoft Standards	Remedy Corporation Onyx Software Corporation
Midsize Player	Interact Commerce Corporation (previously SalesLogix) Sales Automation Group
Contact Management	Symantec Corporation Multiactive Software Inc. (Canadian)

TECHNOLOGY AND SERVICE

Table 3 shows the various vendors and the services they provide. Customer service and support, marketing automation, and web and field sales areas are most important parts of their packages.

Table 3. Functions of the CRM Packages [Girishankar, 2000]

Vendor	Product	Functions								
		Product Manage-ment	Web & Field Sales	Field Services	Partner Collabora-tion	Marketing Automation	Customer Service & Support	ERP	Analysis	Brand Manage-ment
Applix	Applix iEnterprise	✓	✓	✓	✓	✓	✓	✓		
Aspect Communcations	Aspect Customer Relationship Portal				✓	✓	✓	✓		
Baan	Baan Front Office Direct	✓	✓	✓		✓	✓	✓		
Business Resource Software	Insight for Sales Strategy		✓			✓				
Broadbase Software	Broadbase E-Business Application Suite					✓	Customer Support			
Cable & Wireless	WebReady	✓	Web Sales		✓	✓	Customer Service			
Cisco Systems	Cisco eMail Manager		Web Sales				✓			
Clarify	Clarify eFront Office		✓	✓		✓	✓			
CustomerCast	SatCast AccountCast SupportCast		Field Sales				✓			
eHNC	Select Response						✓			
Epiphany	Epiphany E4 System					✓	Customer Service			
Epicor Software	Epicor eFront Office Powered by Clientele		✓			✓	✓			

Vendor	Product	Functions								
		Product Manage-ment	Web & Field Sales	Field Services	Partner Collabora-tion	Marketing Automation	Customer Service & Support	ERP	Analysis	Brand Manage-ment
Firstwave Technologies	Firstwave eRM	✓	✓		✓	✓	✓			
Great Plains Software	Great Plains Siebel Front Office		✓	✓	✓	✓	✓	✓		
HNC Software	Capstone CRM Decision Platform		Web Sales			✓	Customer Service			
IBM	IBM CRM Solutions		✓	✓		✓	✓			
Hyperion Solutions	Hyperion CRM analysis Suit	✓	✓	✓		✓	✓		✓	
	Hyperion Essbase OLAP Server	✓	✓	✓	✓	✓	✓	✓		✓
I2Technologies	Rhythm Customer Manager		✓	✓	✓	✓	✓			✓
Kana Communication	Kana 5		Web Sales			✓	✓			
Lawson Software	Relationship Management Solutions	✓	✓	✓	✓	✓	✓	✓		✓
Lucent Technologies	CRM Central 2000						✓			
Multiactive Software	Entice		✓	✓	✓	✓	✓			
Octane Software	Octane 2000		✓		✓	✓	✓			
Onyx Software	Onyx Front Office 2000	✓	✓	✓	✓	✓	✓			

Vendor	Product	Functions								
		Product Manage-ment	Web & Field Sales	Field Services	Partner Collabora-tion	Marketing Automation	Customer Service & Support	ERP	Analysis	Brand Manage-ment
Oracle	Oracle E-Business Suite/CRM		✓	✓	✓	✓	✓	✓		✓
PeopleSoft	Vantive Enterprise		✓	✓	✓	✓	✓			✓
Pivotal	Pivotal eRelationship 2000	✓	✓	✓	✓	✓	✓			✓
Quintus	eContact						Customer Service			
Remedy	Remedy Sales Continuum	✓	✓	✓		✓	✓			
	Remedy Quality Management	✓	✓	✓			✓			
	Remedy Leads Management	✓	✓	✓	✓		✓			
	Remedy Customer Support	✓	✓	✓			Customer Service			
SalesLogix	Interact	✓	✓	✓	✓	✓	✓			✓
	SalesLogix 2000		✓	✓	✓	✓	✓			
	Act 2000		✓	✓						
SAP	CRM with mySAP.com	✓	✓	✓	✓	Marketing Mgmt	✓	✓		
Saratoga Systems	Avenue		✓	✓	✓	✓	✓			
Siebel Systems	Siebel ebusiness solutions	✓	✓	✓	✓	✓	✓	✓		
Silknet Software	Silknet eBusiness Experience					✓	✓			
Tenuteq International	eRelationship	✓	✓	✓	✓	✓	✓	✓		✓

Vendor	Product	Functions								
		Product Manage-ment	Web & Field Sales	Field Services	Partner Collabora-tion	Marketing Automation	Customer Service & Support	ERP	Analysis	Brand Manage-ment
Trilogy Software	MultiChannel Commerce 2.1	✓	✓	✓	✓	✓	✓			
Upshot.com	Upshot.com		✓		✓	✓	✓			
YouCentric	YouCentric 3.0	✓	Field Sales		✓	✓	✓	✓		

VI. INFORMATION TECHNOLOGIES FOR CRM

KEY CRM TASKS

> "I know who you are, I remember you. I get you to talk to me. And then, because I know something about you, my competitors don't know, I can do something for you my competitors can't do - not for any price" [Newell, 2000]

CRM differs from the previous method of database marketing in that the database marketing technique tried to sell more products to the customer for less cost. [Seiler and Gray 1999]. The database marketing approach is highly company centric. However, customers were not kept loyal by the discount programs and the one-time promotions that were used in the database-marketing programs. Customer loyalty is, indeed, very difficult to obtain or buy. The CRM approach is customer-centric. This approach focuses on the long-term relationship with the customers by providing the customer benefits and values from the customer's point of view rather than based on what the company wants to sell.

The basic questions that CRM tries to answer are:

1. What is the benefit of the customer?
2. How can we add the customer's value?

Four basic tasks are required to achieve the basic goals of CRM. [Peppers, et al., 1999]

1. Customer Identification

   To serve or provide value to the customer, the company must know or identify the customer through marketing channels, transactions, and interactions over time.

2. Customer Differentiation

   Each customer has their own lifetime value from the company's point of view (Appendix B) and each customer imposes unique demands and requirements for the company.

3. Customer Interaction

   Customer demands change over time. From a CRM perspective, the customer’s long-term profitability and relationship to the company is important. Therefore, the company needs to learn about the customer continually. Keeping track of customer behavior and needs is an important task of a CRM program.

4. Customization / Personalization

   “Treat each customer uniquely” is the motto of the entire CRM process. Through the personalization process, the company can increase customer loyalty. Jeff Bezos, the CEO of Amazon.com, said, “our vision is that if we have 20 million customers, then we should have 20 million stores.” [Wheatley, 2000] The automation of personalization is being made feasible by information technologies.

IT FACTORS OF CRM

Traditional (mass) marketing doesn’t need to use information technologies extensively because there is no need to distinguish, differentiate, interact with, and customize for individual customer needs. Although some argue that IT has a small role in CRM, [Computing, 2000] each of the four key CRM tasks depends heavily on information technologies and systems. Table 4 shows this relationship for the marketing processes, for the goals, for traditional mass marketing, for CRM, and for the information technologies used in CRM.

TABLE 4. IT Factors in CRM

Process	Identification	Differentiation	Interaction	Customization
Goal	• Identify individual customer	• Evaluate customer value and needs	• Build a continuing relationship	• Fulfill customer needs • Generate profit
Traditional Mass Marketing	• Not done	• Clustering	• Call Center	• Sales • Services
CRM	• Customer profiling	• Individual level analysis	• Call center management • Auto response system	• Sales automation • Marketing process automation
Information technologies	• Cookies • Web site personalization	• Data mining • Organizational learning	• Web application • Wireless communication	• ERP • E-Commerce

VII. CONSULTANTS

Like any other major software development/deployment project, consulting plays an important role in the CRM project. A Cap Gemini and IDC survey in 1999 found, on the average, 23% of the total CRM investment was spent on consulting. [Sterne, 2000] Three different types of consulting companies work in the CRM industry.

- General Consulting Company

  Traditional business-consulting companies such as Anderson Consulting, McKinsey & Company, KPMG Consulting, Inc., and PricewaterhouseCoopers provide consulting services for CRM integration. This work focuses more on organizational and marketing management integration than technical implementation of CRM software.

- CRM-Specific Software Vendor

  The consulting arms of Siebel Systems, Onyx Software Corporation, Saratoga Systems, and Remedy Corporation are dedicated to CRM. These companies focus more on technical integration than conceptual or managerial consulting services.

- Back-End Software Vendor

  SAP AG, Oracle Corporation, PeopleSoft Inc., IBM Global Services Consulting, SAS Institute Inc., and Microsoft Corporation also have CRM consulting service. However, these companies primarily sell their own back-end application such as ERP systems, database management systems, and statistical analysis systems.

VIII. RETURN ON INVESTMENT OF IMPLEMENTATION

COST AND TIME

The 1999 Cap Gemini and IDC survey also found that, the average total investment in CRM of 300 U.S. and Europe companies was $3.1 million. More than 69% of the companies surveyed spent less than $5 million, and more than 13% of the companies spent over $10 million. [Sterne, 2000]

The cost of implementing a CRM system is easily double the Enterprise Resource Planning (ERP) implementation cost. [Morrison, 1999] Average implementation time for an ERP system is 23 months and the cost of ownership over the first 2 years is from 0.4% to 1.1% of company revenue. [Higgins, 1999]

As shown in Tables 5 and 6, based on GartnerGroup data, the implementation cost of CRM depends on the industry, project size, and application requirements. According to GartnerGroup, the average implementation cost of CRM can be between $15,000 and $35,000 per user in a three-year project. [Golterman, 2000]

Table 5. Annual CRM Expenses (in $million)

Health Care Products	3.4
Manufacturer	5 ~ 8
Publisher	6 ~ 8
Consumer Goods Manufacturer	6.3
Office Supplies Manufacturer	8 ~ 10

Source: Golterman (2000)

Table 6. Cost Allocations

Services	38%
Software	28%
Hardware	23%
Telecommunication	11%

Source: Golterman (2000)

BENEFITS

The principal benefits of CRM are to

- Improve the organization's ability to retain and acquire customers
- Maximize the lifetime value of each customer (share of wallet)
- Improve service without increasing cost of service. [CMG, 2000]

Some of these benefits can be measured and others cannot.

CRM is composed of four continuous processes, which were described in Section IV of this paper. Each process provides distinctive benefits to the organization. To obtain all of these benefits, sales, marketing, and service functions need to work together. The benefits are shown in Table 7.

Table 7. Benefits of CRM project

	Identification	Differentiation	Interaction	Customization
Source of benefits	Clean data about customer Single Customer View	Understand customer	Customer satisfaction and loyalty	Customer satisfaction and loyalty
Benefits	Help sales force Cross selling	Cost effective marketing campaign Reduce direct mailing cost	Cost effective customer service	Lower cost of acquisition and retention of customer Maximize share of wallet

Anderson Consulting, based on a survey of more than 500 executives in six industries (communications, chemicals, pharmaceuticals, electronics/high-tech, forest products and retail), believes that a 10% improvement of overall CRM capabilities can add up to $35 million benefits to a $1 billion business unit. [Renner, 2000]

More than 57% of CEOs in another survey with 191 respondents believe that the major objective of CRM is customer satisfaction and retention. Another 17% said it is designed to increase cross selling and up selling. [Seminerio, 2000]

ROI OF CRM PROJECT

We still have to wait-and-see to determine the Return On Investment (ROI) of CRM [Trepper, 2000] since CRM does not bring any direct monetary benefits after implementation. Rather, CRM requires a large amount of initial investment in hardware and software without any immediate cost saving or revenue improvement. The benefits of CRM need to be measured on a long-term basis. CRM is designed to build long-term relationships with customers and to generate long-term benefits through increased customer satisfaction and retention. [Cyber Marketing Services, 2000]

A survey of 300 companies conducted at a CRM conference concluded that CRM is not a cheap, easy, or fast solution. More than two-thirds of CRM projects end in failure. However, the successful third can obtain up to a 75 % return on investment. [Mooney, 2000]

IX. PRINCIPLES OF CRM

The overall processes and applications of CRM are based on the following basic principles.

- Treat Customer Individually

  Remember customers and treat them individually. CRM is based on philosophy of personalization. Personalization means the 'content and services to customer should be designed based on customer preferences and behavior.' [Hagen, 1999] Personalization creates convenience to the customer and increases the cost of changing vendors.

- Acquire and Retain Customer Loyalty through Personal Relationship

  Once personalization takes place, a company needs to sustain relationships with the customer. Continuous contacts with the customer – especially when designed to meet customer preferences – can create customer loyalty.

- Select “Good” Customer instead of “Bad” Customer based on Lifetime Value

  Find and keep the right customers who generate the most profits. Through differentiation, a company can allocate its limited resources to obtain better returns. The best customers deserve the most customer care; the worst customers should be dropped.

In summary, personalization, loyalty, and lifetime value are the main principles of CRM implementation.

X. CRM ISSUES

CUSTOMER PRIVACY

Customer privacy is an important issue in CRM. CRM deals with large amounts of customer data through various touch points and communication channels. The personalization process in CRM requires identification of each individual customer and collections of demographic and behavioral data. Yet, it is the very information that most customers consider personal and private.

The individual firm is thus caught in an ethical dilemma. It wants to collect as much information as possible about each customer to further its sales, yet in doing so it treads at and beyond the bounds of personal privacy.

Privacy issues are not simple. There are overwhelming customer concerns, legal regulations, and public policies around the world. [Steinbock, 2000] Still it is unclear and undetermined what extent of customer privacy should be protected and shouldn't be used, but four basic rules might be considered. [Sterne, 2000]

- The customer should be notified their personal information is collected and will be used for specific purposes.
- The customer should be able to decline to be tracked.
- The customer should be allowed to access their information and correct it.
- Customer data should be protected from unauthorized usage.

Some companies provide 'customer consent form' to ask the customer to agree to information collection and usage. Providing personalized service to customer is a way to satisfy customers who provided their personal information. All of these efforts are designed to build trust between the company and its customers.

TECHNICAL IMMATURITY

The concept, technologies, and understanding of CRM are still in its early adapter stage. Most of the CRM technologies are immature and the typical implementation costs and time are long enough to frustrate potential users.

Many software and hardware vendors sell themselves as complete CRM solution providers but there is little standardized technologies and protocols for CRM implementation in the market. Even the scope and extent of ‘what CRM includes’ differ from vendor to vendor; each has different implementation requirements to achieve the customer’s expectations.

CRM is one of the busiest industry which occurs frequent merger and acquisition. Many small companies merge together to compete with large vendor. Large companies such as PeopleSoft acquired small vendor to enter this ‘hot’ CRM market. Due to these frequent merger and acquisiton, the stable technical support from the market becomes rare. Vendors publish new version – maybe more integrated software – of CRM software as frequently as they can and customers should pay for that.

Often these technical immaturities or unstable conditions are combined with the customer requirements which are frequently unclear and lead the project failure. These technical immaturities may be overcome over time, but the process may be long and painful.

XI. CASE STUDIES

AMAZON.COM

When you try to buy something from Amazon.com, you can see the following statement; “Customers who bought this item also bought these items.” If you have any previous purchasing experience with Amazon.com, the company will support a ‘Welcome to Recommendations’ Web page.

The personalized Web pages, vast selection of products, and low price lead customer loyalty and long-term relationship of Amazon.com. More than 20 million people have purchased at Amazon.com. The percentage of returning customers is about 15 to 25 percent , compared with 3 to 5 percent for other e-business retailers.

Amazon.com assembles large amounts of information on individual customer buying habits and personal information. Based on a customer’s previous purchases and Web surfing information, Amazon.com recommends books, CDs, and other products. Sometimes a customer buys additional products because of this information.

Through its ‘1-Click’ system, which stores personal information such as credit card number and shipping address, Amazon.com simplifies the customer buying process.

Like the corner merchant of old, Jeff Bezos, the founder of Amazon.com, believes the Internet store of the future should be able to guess what the customer wants to buy before the customer knows. He wants to make Amazon.com Web site that smart and that personal. [Newell, 2000]

DELL

Since 1983, Dell Computers has operated on two simple business ideas: sell computers direct to individual customers and manufacture computers based on the customer’s order. The individual customer can make his/her system unique and obtain it directly from the company.

If the system has a problem, the user can contact the Dell Web site directly and get personalized services by using the customer system service tag number, which is on the side of the computer. These personalized services also provide related information and make software downloads available. In addition, a call center provides technical assistance at multiple levels. If the first level technician cannot resolve the problem, the customer is routed to a more skilled contact.

Dell is organized by customer segment, such as education, government, small business, large business, and home, instead of by product lines.

Dell developed ‘Premier Dell.com’ that covers entire processes of computer ownership: purchasing, asset management, and product support. Premier pages support online purchasing, standard management, price quotes, and order management.

VOLKSWAGEN

Volkswagen AG is the largest automobile maker in Europe. More than 36 million vehicles carry on their logo. Like other automobile manufacturers, the company is well informed about its customers and heavily depends on this information. However, they lose contact with the car owner after the first change of ownership (after an average 3.7 years). As a result, the company does not have current information about many of its customers. [Chojnacki, 2000]

In 1988, the company started its ‘Customer Come First’ marketing strategy. Under this strategy, all of the decision-making processes are based on the ‘Voice of Customer.’ The company carefully monitored their response to advertisements, customer expectations, and customer satisfaction. Customer forums and focus group are used to hear the customer voice.

Volkswagen developed services such as service guarantee, the emergency plan, the mobility guarantee, the customer club, and toll-free service phone. All advertising media are designed toward two-way communication. This allows the company to obtain useful information such as lifestyle, demographic, and behavioral data.

The company maintains a central database to provide club card, bonus point programs, club shops, and Volkswagen magazine. Every contact points with a customer gives the company more information about the customer, so the company can constantly improve the quality and value of the customer database.

WELLS FARGO

Banking differs from other industries because the average relationship between customer and bank lasts much longer on the. For example, in the auto industry, the relationship between the customer and the company is becoming weaker over time. You don’t need to contact the car dealer or manufacturer once a week or a month. You can change your oil or maintain your car with different service station. However, once you open your account in a specific bank, your relationship or dependence to the bank increases. You may write checks more frequently, have direct deposit, transfer money, pay bills, and withdraw money. The bank contacts you regularly by sending you your monthly statement. You can obtain credit card or investment opportunities from the bank.

Wells Fargo is one of the leading banks which transforms these relationships into opportunities. It was the first bank which started 24-hour phone banking service and opened branches in the local supermarket and Starbucks coffee house. Wells Fargo always tried to provide more touch points to its customers and a one-stop shopping environment.

Since 1993, Wells Fargo tried to integrate all of its back-end customer information into its Customer Relationship System. Previously, customer information was managed by several different backend system. Software was organized by account number, with each backend system using its own numbering system. Customer service agents found it difficult to integrate customer information when they received a request to transfer from one account to another. They had to log on to several different system to obtain the information and do the transactions requested. In the new system, the service agent can access all required information by using the customer's social security number instead of the account numbers. These changes increase convenience for both customers and service agents.

Wells Fargo provides Internet banking. It built a Web site as a new contact point in 1995 and provided advanced technologies to its customer. By using online banking, customers can manage their account anytime and anywhere. Online banking also saves operating cost of the bank branches.

In the future, Wells Fargo will try to build online customer communities (similar to America Online or the World Wide Web) in its banking service by responding to customers' needs with new technologies.[Seybold, 2000] By providing more power to manage their account and money, Wells Fargo expects to increase ustomer loyalty and obtain long term mutual benefits with its customers.

XII. CONCLUSIONS

The present is an era of company loyalty to the customer in order to obtain customer loyalty to the company. Consumers are more knowledgeable than ever before and, because the customer is more knowledgeable, companies must be faster, more agile, and more creative than a few years ago.

The Internet allows information to be obtained almost instantaneously. The Internet permits firms to establish a personalized customer experience through online help, purchase referrals, quicker turn-around on customer problems, and quicker feedback about customer suggestions, concerns, and questions.

CRM is very hard to implement throughout a company. The IT department needs extensive infrastructure and resources to implement CRM databases successfully. Executives must be willing to support the CRM implementation process forever because CRM never ends.

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APPENDIX A

BASIC ASSUMPTIONS OF CRM

This appendix lists the basic assumptions of the CRM approach. For each assumption, counterarguments and/or limitations are also presented.

1. *Habitual action*

   A basic idea of CRM is that the future behavior of customer is determined by or similar to their previous behavior. In other words, the people will behave as they did yesterday and a month ago. This assumption is partially right and partially wrong. As time goes by, behavior patterns change. Therefore, the important thing is the prediction model of future behavior. By predicting future behavior, a company can better serve its customers' changing demands and preferences.

2. *Current customer information is always correct*.

   It is important to maintain the quality of customer demographic and behavioral information. The right decision requires correct data and information. Can we believe or trust the customer data in the database or in the data warehouse? The customer database comes from a variety of sources and is obtained by different input methods. Considerable attention (and expense) is required for cleansing the data periodically to make it useful for CRM. The firm must update as customer information changes. For example, people move; income levels change; marriages, births, and deaths occur. Admittedly, the correct decision is sometimes made accidentally from incorrect data; however, that is a rare event.

3. *Consumers Want Individual, Differentiated Treatment, Services, And Products*

   The basic assumption of CRM is that the customer always wants individualized products and services. However, this assumption cannot always be satisfied because a company cannot always deliver all of the required products and services. Furthermore, instead of individualization, customer-buying decisions for products and services often follow fashion or trends. Technology developments are also important in the decision process. Therefore, some argue the importance of providing the right products and services at the right time or moment rather than just providing individualized products and services.

APPENDIX B

COMMON MYTHS OF CRM

This appendix is based on Adolf et al. (1997) who describe the myths of CRM.

Myth 1: Excellent CRM system guarantee marketing success.

CRM is not a strategy but a tool to help and modify the marketing strategies of a company. Before it achieves a viable CRM system, a company needs the right value propositions and strategies to implement the customer centric philosophy of the CRM. CRM requires more commitment and loyalty by the company to the customer rather than by the customer to the company. Without competitive products and services, a company cannot obtain the benefits of CRM.

Myth 2: To use CRM, a company must be organized by customer segments rather than products.

Organizational restructuring is expensive, time-consuming, and painful process for a company and the people in the company. Without appropriate coordination with other functions in a company, restructuring is not as effective as expected. For example, channel strategies should be combined with CRM capabilities so a customer does not receive different offers from a company through different channels.

Myth 3: Successful CRM requires a large centralized database with complete customer data.

Many successful financial companies maintain databases at the product level. By having a smaller database, a company can simplify the system design and maintenance and the customer ownership. Common standards of hardware and software are more important than large databases.

Myth 4: CRM requires the most advanced and sophisticated analytical techniques.

Clean data is more important and effective than sophisticated analytical tools. Frequently incomplete, inaccurate, and outdated customer information is used. If there is garbage in, the output is also garbage. Future-oriented and hypothesis-based analysis and anticipation are more effective than complex analysis.

Myth 5: CRM is a turnkey project.

Database, infrastructure, and supporting business processes are required to start CRM programs. However, it is not necessary to set up everything together. Rather CRM is a 'test, run, test' process. An iterative and incremental approach is cheaper and more effective than turnkey based approach. Lessons from mistakes are important to educate employees about how to use CRM.

The above discussion of common myths of CRM means CRM is not a perfect single solution to the business problems. CRM is a part of complex set of business strategies and processes to serve the customer.

Figure B-1 shows the relations between CRM and the customer.

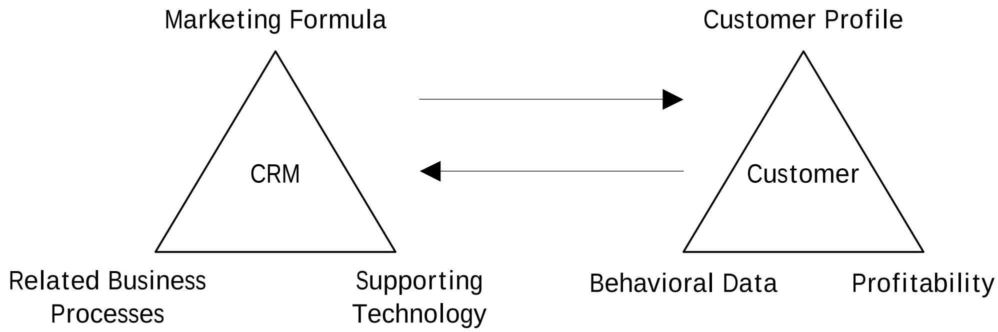

Figure B-1. Relation Between CRM and the Customer

APPENDIX C

LIFETIME VALUE OF A CUSTOMER

A fundamental concept of Customer Relationship Management is the lifetime value of a new customer[2]. The basic idea is that customers should be judged on their profitability to the firm over the total time (dubbed "lifetime") they make purchases. Profitability is usually based on net value, that is, the markups over cost less the cost of acquiring and keeping the customer. Fixed costs are not considered because it is assumed that these costs will be incurred with or without the particular customer.

This appendix presents two methods of doing the calculations. The first is quite crude. It is based on the average customer and does not consider time value of money or the effects of marketing actions such as loyalty programs and referral programs. The second includes these factors. In both cases, the method is illustrated with an example that provides a template for performing the calculation.

The revenues and the costs are expected value calculations. They are based on a number of assumptions about the future such as total number of customers, the percentage of customers retained from year to year, and the average annual purchase per customer

C.1 SIMPLE APPROACH

The simplest approach to lifetime value is to compute the average net revenue by multiplying four quantities together:

Avg. sale * No. of Purchases/year*Stay of customer * Average Profit %

Example**:** Consider a computer store working with a small, growing business:

Average sale	$2000
No. of purchases/year	2
Expected length of customer stay (years)	3
Average profit margin	.24
Lifetime net revenue:	$2880

Having the net revenue, the lifetime value can be determined by subtracting acquisition and retention costs:

Lifetime value = Lifetime revenue – cost to acquire
-cost to retain*no. of purchases

If, for example, allocated cost to an acquired customer from an advertisement is $500 and the cost to retain for each purchase after the first is $20 then:

Net Lifetime value of customer = $2880 –$500- 5*$20 = $2280

Three strategies can be followed to increase the value of the customer:

1. Increase size of average sales (tie ins, package multiple items)
2. Increase the number of sales (find other customer needs you can provide and satisfy them)

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[2] The same methods apply to an existing customer, when considering their future value from now on. However, for existing customers, there is no acquisition cost.

3. Increase profit margin (reduce overhead costs, reduce cost of goods, and raise price if market will stand it)

C.2 MORE SOPHISTICATED CALCULATION

A more sophisticated calculation would include retention rate (percent of customers who buy again) and discount rate to take temporal effects into account.

Consider the following example: Assume that 100,000 customers are obtained in Year 1 and that an increasing percentage of those who continue from one year to the next stay loyal. Furthermore, assume that these loyal customers will spend more each year. The assumed cost of retaining a customer is $6/year and that the initial cost is 5 times that, $30. The discount rate is taken to be 20%.

The result might look as follows. Assumed values are shown shaded.

Revenues

	Year 1	**Year 2**	**Year 3**	**Year 4**
Customers	100,000	50,000	30,000	21,000
Retention Rate	50%	60%	70%	70%
Purchases/customer	$160	$200	$240	$240
Total Revenue	$16,000,000	$10,000,000	$7,200,000	$5,040,000

Next, consider the fraction of the revenue that is expense, and the cost to retain both on an individual bases (Acquire/Retain Cost) and the Total Acquisition Cost for all customers. Note that the Total Acquisition Cost is obtained by multiplying the Acquire/Retain Cost by the number of customers in that year.

Variable Costs

Direct cost per purchase	60%	50%	45%	45%
Variable Direct Cost	$9,600,000	$5,000,000	3,240,000	2,268,000
Acquire/Retain Cost	$30	$6	$6	$6
Total Acquisition Cost	$3,000,000	$300,000	$180,000	$126,000
Total Variable Cost	$12,600,000	$5,300,000	$3,420,000	$2,394,000

The gross profit is obtained by taking the difference between revenues and variable cost. The net present value of profit is found by discounting the gross profit (20% per year in the example)

The average customer lifetime value is obtained by dividing the cumulative NPV by the number of original customers (i.e., 100,000).

Profits

Gross Profit	$3,400,000	$4,700,000	$3,780,000	2,646,000
Discount rate	1.00	1.20	1.44	1.728
NPV Profit	$3,400,000	$3,750,000	$2,625,000	1,385,417
Cumulative NPV	$3,400,000	$7,150,000	$9,775,000	$11,160,417
Customer Lifetime Value	$34.00	$71.50	$97.75	$111.60

The table can serve as a template. That is, by substituting values that apply to a particular firm, it can be used to estimate lifetime value for a particular situation.

C.3 EFFFECT OF LOYALTY PROGRAMS

Loyalty programs are designed to increase the lifetime value of customers. Such programs offer incentives (sometimes discounts) to encourage:

1. Higher retention rates
2. Larger purchases
3. Referrals

Consider our previous example. Suppose a loyalty program offers special privileges with the following assumptions

Retention rates increase to 75%, 80%, 85%, 85%
Percentages of customers who refer others are 8%, 10%, 12%, 12%

That is, the total number of customers, retention rates, and percent referrals are:

	Year 1	**Year 2**	**Year 3**	**Year 4**
Total Customers	100,000	83,000	74,700	72,459
Retention rate	75%	80%	85%	85%
Pct. Referrals	8%	10%	12%	12%

If purchases increase to $210, $250, $280, $280, then Total Revenue becomes

Purchase/customer	$210	$250	$280	$280

Total Purchases	$21,000,000	$20,750,000	$20,916,00	$20,288,520

These gains, of course, do not come for free.

If we assume that the cost to acquire a loyalty program customer is $40 rather than $30 and the advertising cost to retain is still $6/year and if we assume the following costs of running the loyalty program:

Record keeping costs/customer per year	$ 5
Service costs/loyal customer	20
Referral Incentives/customer referred	20

The cost picture becomes:

Direct Percent	60%	50%	45%	45%
Variable Direct Cost	$12,600,000	$10,375,000	$9,412,200	$9,129,834
Per customer costs	$75	$31	$31	$31
Total customer cost	$7,500,000	$2,573,000	$2,315,300	$2,246,129
Referral Incentives	0	$160,000	$166,000	$179,280
Total Cost	$20,100,000	$13,108,000	$11,893,500	$11,555,24

The profits and customer lifetime values become:

Gross Profit	$900,000	$7,642,000	$9,022,500	$8,733,277
Discount rate		1.20	1.44	1.728
NPV Profit	$900,000	$6,368,333	$6,265,625	$5,053,980
Cumulative NPV	$900,000	$7,268,333	$13,533,958	$18,587,938
Customer lifetime value	$9.00	$72.68	$135.33	$185.88

Comparing the customer lifetime value before the loyalty program and after the loyalty program leads to the following table of cumulative lifetime values and the difference between them.

Customer Lifetime Value	**Year 1**	**Year 2**	**Year 3**	**Year 4**
Before Program	$34.00	$71.50	$97.75	$111.16
With Program	$9.00	$72.68	$135.33	$185.88
Difference	$(25.00)	$1.18	$37.58	$74.76

Note that the value is reduced in the first year, but increases considerably for the 3rd and 4th year in our example.

C.4 ADDITIONAL FACTORS TO CONSIDER

Appendices C2 and C3 include assumptions about:

- Expected number of customers
- Retention rate
- Average annual purchase per customer (including increasing number of sales and increasing amount per sale to retained customers)
- Markup of goods
- Cost to obtain a new customers
- Cost to maintain a customer/year
- Cost to obtain customers through referrals
- Discount rate

For a more complete model, the following considerations can be added:

- Risk factor (that the customer will not pay).
- Delay between order and payment (i.e., the account receivable days)
- Repurchase cycles other than annual (e.g., several years between buying cars)

All of these factors are discussed in mathematical terms in Appendix C.5

C.5 THE ARITHMETIC OF LIFETIME VALUE

Quantities assigned assumed values:

Number of customers in year 1	N(1)
Retention rate in year i,	RR(i)
Number of purchase/year	NS(i)
Size of purchases (i.e., sales) in year i	S(i)

Direct Percent in year i = (1-markup percent)	D(i)
Cost to acquire a new customer	RC(1)
Cost to retain a customer in year i > 1	RC(i)
Discount rate in year 2	DR(2)
Risk Factor in year i	RF(i)

Computed quantities:

No. of customers in year i:	N(i) = N(i-1) * RR for i>1
Total revenue in year i	TR(i) = N(i) * NS(i)*S(i)
Cost of goods sold in year i	COGS(i) = TR(i) * D(i)
Total cost in year i	TC(i) = COGS + N(i)*RC(i)
Gross Profit in year i	GP(i) = TR(i) - TC(i)
NPV of Profit in year i	NP(i) = GP(i) /DR(i)
Cumulative NPV of Profit in year i	CumNP(i) = CumNP(i) + CumNP(i-1) i>1
Customer Lifetime Value after i years	CumNP(i)/N(1)

For simplicity, the foregoing relations assume no risk, instant payment, and one purchase per year. Standard accounting/finance relations can be used to take these additional factors into account.

Definition of Symbols in Alphabetic Order

COGS	Cost of goods sold
CumNP	Cumulative Net Present Value of Profit
D	Direct percent (=1 - markup)
DR	Discount rate
GP	Gross Profit
LV	Lifetime value of a customer
N	No. of customers
NP	Number of Purchase in year
NP	Net Present Value of Profit
RC	Retention cost; = Acquisition cost in year 1
RF	Risk factor
RR	Retention rate (%)
S	Size of purchases (i.e., sales)
TC	Total cost
TR	Total revenue

C.6 EXAMPLE: APPLYING LIFETIME VALUE CONCEPTS IN BANKING[3]

The banking industry is an example of a sector of the economy starting to apply lifetime value concepts to running its business. The process involves the following steps:

1. Development of a scoring system indicating the profitability of various services as a function of the size of the account, debts, and types of services used.

2. Scoring the profitability of individual customers based on the general results.

3. Encouraging profitable customers through additional services (i.e., rewards), trying to cross-sell additional products to less profitable and unprofitable customers, and by discouraging unprofitable customers by higher fees.

For example, Wells Fargo Bank divides its customers into four categories based on profitability:

Rank	**Avg. Annual Profitability**	**Percentage**
Outstanding	>$1000	4%
Excellent	$200 to $1000	20%
Moderate	$0 to $200	38%
Potential	Unprofitable	38%

Profitability is determined from revenues and costs. Note that Wells Fargo includes allocated overhead in its costs.

[3] This section is based on an article by E. Sanders in the Los Angeles Times, July 21, 2000

BANK REVENUES AND COSTS

Revenues:	Costs:
• Monthly checking fees • Late fees and bounced checks • Interest paid on mortgages. Credit • Brokerage commissions • Earning's on customer deposits	• Interest on savings and CDs • Customer direct services (eg teller visits) • Allocated fixed costs

The bank's intent is to use the profitability scores in each contact with the customer. The client's profitability category is to appear on employee's screens as a way to determine the level of service to give.

The system shifts relationships. People, who previously received superior treatment because they had high balances, may lose because they consume expensive services such as weekly visits to the bank. Conversely, people who bank online or who have high outstanding debts (such as first time home buyers whose mortgages generate large revenue) or maintain low balances while paying high monthly checking fees and bounced check fees may gain services because they are more profitable.

Whether banks can enforce these differential service levels without a backlash remains to be seen.

C.7 SUMMARY AND CONCLUSIONS ON LIFETIME VALUE

Lifetime customer value refers to the profit a customer is expected to generate while he/she maintains a relationship with the company. The net margins on transactions, taken over all channels, of company determine customer value.

This analysis is possible because a company can distinguish among customers and collect information about individual purchase histories. A good way to think about lifetime value is to consider the return on investment on the customer asset. The investment includes the cost to acquire and retain the customer. Once obtained, a repeat purchaser whose cost to maintain is relatively small becomes an asset that adds to the firm's profitability.

The methods of analyzing both the lifetime costs and the benefits are approximations that contain many assumptions. Many numbers in calculating returns (such as retention rates, average purchase amount, referral rates, and average relationship periods) are assumptions about future behavior. Similarly, the cost to develop and maintain the individual customer relationship involves assumptions about the direct and indirect marketing and management costs. Each customer is unique, has a different lifetime value, and has personal preferences that need to be taken into account. Despite of these limitations, computing and understanding lifetime customer value is central to a CRM program.