Business Process Management Journal

Developing re-engineering towards integrated process management

Electronic customer relationship management

Guest Editors: Jerry Fjermestad and Nicholas Romano

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Electronic customer relationship management

Guest Editors
Jerry Fjermestad and Nicholas Romano

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Customer relationship management: strategic lessons and future directions

Rado Kotorov

Keywords Customer relations,
Customer service management,
Competitive advantage

Investigates customer relationship management (CRM) as a new concept. Follows the introduction of CRM in various settings, from departments to corporations, and the changes, commitment and support that are required to make the implementation of it a success. Points out that CRM is a strategy not a solution and can provide enormous competitive advantage if implemented in a co-operative environment. Points out that the committed involvement of senior management is essential in promoting and supporting the concept of customer relationship management within the organization. Looks at what might be emerging in the future and how customer relationship management may be used in different areas of business, such as human resources.

Electronic customer relationship management: revisiting the general principles of usability and resistance – an integrative implementation framework

Jerry Fjermestad and Nicholas C. Romano Jr

Keywords Customer relations,
Customer service management,

Electronic customer relationship management (eCRM) has become the latest paradigm in the world of customer relationship management. Recent business surveys suggest that up to 50 per cent of such implementations do not yield measurable returns on investment. A secondary analysis of 13 case studies suggests that many of these limited success implementations can be attributed to usability and resistance factors. The objective of this paper is to review the general usability and resistance principles in order to build an integrative framework for analyzing eCRM

case studies. The conclusions suggest that if organizations want to get the most from their eCRM implementations they need to revisit the general principles of usability and resistance and apply them thoroughly and consistently.

Strategic issues in customer relationship management (CRM) implementation

Christopher Bull

Keywords Customer relations,
Customer information, United Kingdom,
Integration

The number of customer relationship management (CRM) implementations has grown dramatically in recent years. However, few academic studies of the issues associated with the implementation of the concept are available. This paper offers a modest contribution through the analysis of a case study of a CRM implementation at a UK-based manufacturing company. The case study illustrates that CRM is a complex and holistic concept, organised around business processes and the integration of information technologies. The study also highlights that implementing CRM requires effective leadership, sourcing, targeting and evaluation strategies.

CRM packaged software: a study of organisational experiences

Ben Light

Keywords Customer information,
Customer service management,
Computer software

Customer relationship management (CRM) packaged software has become a key contributor to attempts at aligning business and IT strategies in recent years. Throughout the 1990s there was, in many organisations' strategies, a shift from the need to manage transactions and toward relationship

management. Where enterprise resource planning packages dominated the management of transactions era, CRM packages lead in regard to relationships. At present, balanced views of CRM packages are scantly presented, instead relying on vendor rhetoric. This paper uses case study research to analyse some of the issues associated with CRM packages. These issues include the limitations of CRM packages, the need for a relationship orientation and the problems of a dominant management perspective of CRM. It is suggested that these issues could be more readily accommodated by organisational detachment from beliefs in IT as utopia, consideration of prior IS theory and practice and a more informed approach to CRM package selection.

development stages is proposed. The findings of the survey show that about half of the organizations of the sample do not adopt any CRM philosophy. The remaining organizations employ instruments to conduct customer satisfaction and other customer-related research. However, according to the proposed model, they are positioned in the first, the preliminary CRM development stage. The findings also suggest that managers hold positive attitudes towards CRM and that there is no significant relationship between the type of the transactional information system used and the extent to which customer satisfaction research is performed by the organizations. The paper concludes by discussing the survey findings and proposing future research.

CRM and customer-centric knowledge management: an empirical research

Constantinos J. Stefanou,
Christos Sarmaniotis and Amalia Stafyla

Keywords Customer relations,
Knowledge management,
Customer satisfaction, Greece

Current competitive challenges induced by globalization and advances in information technology have forced companies to focus on managing customer relationships, and in particular customer satisfaction, in order to efficiently maximize revenues. This paper reports exploratory research based on a mail survey addressed to the largest 1,000 Greek organizations. The objectives of the research were: to investigate the extent of the usage of customer- and market-related knowledge management (KM) instruments and customer relationship management (CRM) systems by Greek organizations and their relationship with demographic and organizational variables; to investigate whether enterprises systematically carry out customer satisfaction and complaining behavior research; and to examine the impact of the type of the information system used and managers' attitudes towards customer KM practices. In addition, a conceptual model of CRM

The impact of product category on customer dissatisfaction in cyberspace

Yooncheong Cho, Il Im, Jerry Fjermestad and Starr Roxanne Hiltz

Keywords Product attributes,
Customer satisfaction, Monetary policy,
Complaints, Purchasing

How do online customers judge a product's attributes in cyberspace? Previous studies of online product category suggest that all goods are not equal on the Web, because products have different attributes. Furthermore, the literature assumes that the customer's ability to evaluate product quality on the Web differs according to product attributes. Based on these considerations, the purpose of this study is to determine whether a customer's dissatisfaction and propensity to complain on the Web differ depending on product category. This study examines how selected variables (i.e. monetary, and non-monetary effort, and the degree of involvement) influenced the impact of product category on customer dissatisfaction. The analysis was performed using survey data, collected both online and offline. The findings suggest the most appropriate strategies online companies should employ for each product category in question.

A framework of dynamic CRM: linking marketing with information strategy

Chung-Hoon Park and Young-Gul Kim

Keywords Customer information, Customer relations, Customer loyalty

Committed customers are profitable to an organization for the long term. Customer commitment forms when a customer's expectation is satisfied and the customer realizes fair value from his/her relationship with the organization. From an organization's perspective, this value reflects customer equity, but from a customer's perspective, it represents the customer's perceived value of the relationship. In order to manage such a relationship successfully, it is necessary to support diverse customer information – such as of-the-customer, for-the-customer, and by-the-customer information. A customer information system (CIS) plays the role of boundary spanning that manages and distributes customer information. But the gap between marketing and IT strategy is a barrier in implementing a successful CIS. The CIS, which includes the database, communication channel, and decision model for relationship management, should be designed to facilitate the two-way customer relationship exchanges. This paper develops a framework of dynamic customer relationship management, suggests the information technology strategy to support the framework, and illustrates the applicability of such framework and strategy through a real business case.

Understanding customer relationship management (CRM): people, process and technology

Injazz J. Chen and Karen Popovich

Keywords Customer relations, Business process re-engineering, Relationship marketing, Integration

Customer relationship management (CRM) is a combination of people, processes and technology that seeks to understand a company's customers. It is an integrated approach to managing relationships by focusing on customer retention and relationship development. CRM has evolved from advances in information technology and organizational changes in customer-centric processes. Companies that successfully implement CRM will reap the rewards in customer loyalty and long run profitability. However, successful implementation is elusive to many companies, mostly because they do not understand that CRM requires company-wide, cross-functional, customer-focused business process re-engineering. Although a large portion of CRM is technology, viewing CRM as a technology-only solution is likely to fail. Managing a successful CRM implementation requires an integrated and balanced approach to technology, process, and people.

Guest editorial

About the Guest Editors Jerry Fjermestad is an Associate Professor in the School of Management at the New Jersey Institute of Technology. He received his BA in chemistry from Pacific Lutheran University, an MS in operations research from Polytechnic University, an MBA in operations management from Iona College and an MBA and PhD from Rutgers University in management information systems. Jerry has taught courses on management information systems, decision support systems, systems analysis and design, electronic commerce, data warehousing, and graduate seminars in information systems. His current research interests are in collaborative technology, decision support systems, data warehousing, electronic commerce, global information systems, customer relationship management, and enterprise information systems. Jerry has published in the Journal of Management Information Systems, Decision Support Systems, Group Decision and Negotiation, *the* Journal of Organizational Computing and Electronic Commerce, Information and Management, Logistics Information Management, International Journal of Electronic Commerce, *the* Journal of Computer-Mediated Communication, Technology Analysis & Strategic Management *and the* Proceedings of Hawaii International Conference on System Sciences. *Jerry has also been a special issue editor of the* International Journal of Electronic Commerce, Group Decision and Negotiation, *and* Logistics Information Management, *and is currently doing a monograph with Dr Nicholas Romano on "Customer relationship management: advances and issues" in* Advances in Management Information Systems.

Nicholas C. Romano Jr is Assistant Professor of Management Science and Information Systems at the Oklahoma State University. Dr Romano is founder and co-chair of minitracks on electronic commerce customer relations management (ECCRM) for the America's Conference on Information Systems (AMCIS.) and the Hawaii International Conference on Systems Sciences (HICSS.) Previously Dr Romano was a Research Scientist at the University of Arizona's Center for the Management of Information, where he helped to design, develop and evaluate collaborative technologies to improve group productivity. He has been a Visiting Scholar at the University of Arizona in the summer of 2000, 2001, and 2002. His research interests include collaborative computing, Web-based application design and development, technology supported learning, GSS interface design, knowledge creation and management, and electronic commerce customer relationship management. Dr Romano received a PhD in Management Information Systems from the University of Arizona, has been a technical consultant for GroupSystems.COM and worked for the International Business Machines Corporation as a systems programmer. Dr Romano has published papers in a number of scholarly journals, conference proceedings and practitioner journals including the Journal of Management Information Systems, *the* International Journal of Electronic Commerce, *the* Journal of the American Society for Information Science, Information Technology and Management, Proceedings of the Hawaii International Conference on Systems Sciences, *and* Proceedings of the Conference of the Association of Management, Proceedings of the Americas Conference on Information Systems, *and the* IBM AS/400 Systems Management Journal. *Nicholas has also been a special issue editor or the* International Journal of Electronic Commerce, *and* Logistics Information Management, *and is currently doing a monograph with Dr Jerry Fjermestad on "Customer relationship management: advances and issues" in* Advances in Management Information Systems. *He is also working on a special issue of* Information Systems Frontiers, *with Ramesh Sharda, Joyce Lucca, and Lisa Neal, on "Computer-supported collaborative learning requiring immersive presence.*

Electronic customer relationship management (eCRM) involves attracting and keeping economically viable customers and repelling or eliminating economically invaluable ones. The scope of this special issue on eCRM in the

Business Process Management Journal is to provide an insight to research that is being undertaken in the new area. We have selected seven papers and one expert opinion, which have undergone a vigorous review process. The resulting articles are focused on the challenges and opportunities associated with eCRM.

Rado Kotorov, in his position paper on "Customer relationship management: strategic lessons and future directions" suggests the CRM should be treated more as a strategy than a solution. This notion is further supported in our second paper by Jerry Fjermestad and Nicholas C. Romano Jr on "Electronic customer relationship management: revisiting the general principles of usability and resistance – an integrative implementation framework". This paper assesses the differences between successful eCRM implementations and ones with limited success.

The paper by Christopher Bull further emphasizes a strategic approach to developing and implementing CRM. Bull suggests that CRM is a complex and holistic concept with should be organized around sound business processes and effective leadership.

Ben Light's case study suggests that organizations need to understand the theoretical and practical implications of the CRM project before it is undertaken. Furthermore, strategy again is a key component of any implementation.

Articles five and six are empirical investigations. Constantinos Stefanou, Christos Sarmaniotis and Amalia Stafyla, in their paper "CRM and customer-centric knowledge management: an empirical research", suggest that based on a survey sent to large Greek organizations only half of the organizations employ instruments to systematically carry out customer satisfaction research and customer-related analysis. The other half have not adopted a CRM philosophy at this time.

Cho, Im, Fjermestad, and Hiltz, in their paper "The impact of product category on customer dissatisfaction in cyberspace", conducted a series of surveys on customer dissatisfaction. The results suggest that online customers are more dissatisfied with sensory products than non-sensory products.

The final two papers relate to CRM. The paper "A framework of dynamic CRM: linking marketing with information strategy" by Chung-Hoon Park and Young-Gul Kim develops a framework of dynamic customer relationship management, suggests the information technology strategy to support the framework, and illustrates the applicability of such framework and strategy through a real business case. Meanwhile, "Understanding customer relationship management (CRM): people, process, and technology" by Injazz J. Chen and Karen Popovich explains that managing a successful CRM implementation requires an integrated and balanced approach to technology, process, and people.

Jerry Fjermestad and Nicholas C. Romano Jr
Guest Editors

Customer relationship management: strategic lessons and future directions

Rado Kotorov

ClubMom Inc., New York, USA

Abstract *Investigates customer relationship management (CRM) as a new concept. Follows the introduction of CRM in various settings, from departments to corporations, and the changes, commitment and support that are required to make the implementation of it a success. Points out that CRM is a strategy not a solution and can provide enormous competitive advantage if implemented in a co-operative environment. Points out that the committed involvement of senior management is essential in promoting and supporting the concept of customer relationship management within the organization. Looks at what might be emerging in the future and how customer relationship management may be used in different areas of business, such as human resources.*

Numerous management concepts emerge and become popular quickly by promising to change fundamentally the operations and the organization of the corporation. As fast as they emerge, many fade into obscurity as mere buzzwords for failing to fulfill their promises. In the last decade the boom and the bust of Internet companies with innovative business concepts and fundamentally new business models created a fear of business buzzwords. And in the past two years, many executives, practitioners and scholars speculated whether customer relationship management (CRM) was just another buzzword or indeed a new customer-driven business model.

CRM appeared as a new concept at the peak of the Internet boom. In 1998 JPMorgan's analysts forecasted that the demand for CRM technology would grow with double-digit annual rate because the Internet was causing a quiet revolution in the way customers demanded to interact with corporations. Interestingly enough, another forecast envisioned that corporations would change dramatically the way of managing their networks as a result of the emergence of an efficient market for bandwidth trading, which was expected to grow to $450 billion dollars by 2003. The latter forecast made Enron, the pioneer in bandwidth trading that filed for bankruptcy in 2002, one of the largest companies in the USA. Many management specialists embraced the still vague notion of customer relationship management across multiple channels and interaction points as "the next big thing", and rushed its implementation despite the lack of a clear definition, vision, and set of best practices, as well as without understanding of the enormity and complexity of organizational restructuring required for a successful CRM implementation.

In Internet time, even the disappointing news comes quickly. Skepticism about CRM, aroused as companies saw the marginal cost rather than profit increasing dramatically at each stage of the implementation of the CRM project. A sobering realization was forming that there was no low hanging fruit in CRM, and that it required enormous resources and commitment to a broad range of organizational changes. The CRM project failure rate was estimated to be between 55 percent and 75 percent in 2001 (Meta Group Inc.). The disappointing results coincided with the technology melt down. Hence, many practitioners questioned whether CRM was not just another buzzword, and many CRM projects were put on hold or cancelled altogether.

Today "bandwidth trading" is considered a buzzword, for the market failed to emerge and transform how corporations build and manage their information infrastructure. On the other hand, a handful of successful CRM projects provide both a proof-of-concept and a managerial blueprint for a successful CRM implementation. Furthermore, the successful projects have created enormmore competitive advantage, thus making the implementation of CRM by rival companies a sheer survival necessity. Measured by the scale and scope of the inter- and intra-organizational changes, CRM can be named the third most significant revolution in the organization of business after the invention of the factory built by Thomas Lombe in 1718 in England (The Derby Industrial Museum) and the introduction of the assembly line into the factory production process by Henry Ford in 1913 (Henry Ford Museum and Greenfield Village). As then, we wanted to know what made the factory and mass production successful, so now we want to find out which factors contributed to the successful implementation of CRM?

Even though many factors played a role in the transition to a CRM-driven business model, the most important step forward was the conceptualization of CRM as a strategy rather than as a solution. This realization allowed first CRM projects to be elevated from departmental level projects to corporate level projects and, second, to secure the involvement and commitment of the members of the senior executive team, without whose support, CRM projects fail. At the early stages in the evolution of the CRM-driven business model, CRM was deployed as a technology solution: a software package that was bought and installed to facilitate or automate some particular marketing function. The terms "sales-force automation", "campaign automation", "customer support automation" were often equivocated with CRM, even though they stand only for different components of the integrated enterprise-wide CRM strategy. Shortly after the deployment of such packages it became evident that they were not used. As one executive put it: "So we bought a nice toy, and now no one's using it" (Albert Stroucken, Chairman and CEO of H.B.Fuller Company, 115-year-old chemical manufacturer, CRM, August 2002).

The failures of the small interdepartmental projects were due not to the technology itself, but to the unrealized scale, scope, and complexity of the CRM

project. CRM projects that were started within and as departmental level initiatives ran into dead-ends as the CRM needs to cross the departmental boundaries, and to change processes, functions, and systems in other departments. The flow of CRM into other departments was natural, even though unforeseen initially, for the project traced customer data, which was dispersed in many departments, analogously to how an accounting systems tracks costs across multiple departments and business units. As each departmental project proceeded, it revealed more and more traits of customer data that needed to be acquired to complete the 360 degrees view of the customer. The large infrastructural changes required to complete the 360 degrees view of the customer could not be achieved without leadership from the highest echelon in the corporation.

Securing the involvement of senior management in CRM projects was neither a quick nor an easy task. The newness of the concept and the technology, the lack of ROI data, and the tremendous reorganization requirements and intradepartmental cooperation posed serious risks to be considered by any executive accepting the responsibility to sponsor such a project. Hence, many departmental level projects ran out of resources and were abandoned as they failed to secure in time the needed executive support.

Corporations that adopted the strategic approach to CRM were successful in implementing it for several reasons. First and foremost, they were able to define a CRM strategy fit for their business needs. Out-of-the-box solutions come with a lot of functionality, but functionality by itself does not determine use. It is the other way around; business needs determine what functionality should be developed and deployed. In this sense, airline carriers have different CRM strategies, even though their online ticket selling systems may appear to be functionally the same. Second, the formulation of the CRM strategy also dictates the determination of the scope of the project, i.e. the decision: which of the CRM components will be included in the project. Planning for the scope of the CRM project requires detailed examination of applications for sales-force automation, marketing campaign automation, call center routing, Web self-service, kiosks, point of sale systems, wireless application, employee relationship management, and their integration into an operationally frictionless system. Third, the scope of the project determines the necessary cross-departmental infrastructural changes that ought to be implemented. In turn, this facilitates the formation of a broad cross-functional team to carry out these organizational changes within each department or business unit. These three factors – strategy formulation, planning for project scope, and formation of a CRM cross-functional team – pave the way for the tactical implementation of large scale CRM projects.

From a tactical perspective, there are two main challenges:

(1) business process integration; and

(2) systems/applications integration.

Both process and system integration are necessary conditions for achieving better person-to-person service and Web-based self-service. Yet, the larger the scope of the project the more daunting the integration task. Companies that did not adopt the strategic approach often settled for partial integration. Partial integration results not only in incomplete customer view, but often in distorted customer view leading to confusing customer service and poor customer targeting. Departmental project leaders who proceeded with partial integration had false expectations to produce quick proof-of-concept results. Instead, partial integration proved to be the fastest way to discredit the entire CRM project. Failed targeting and failed service undermine the validity of the CRM concept, instead of indicating an implementation failure. Successful companies took process and system integration seriously, and did not rush to produce customer level result without having obtained a nearly 360 degree view of the customer first. Prior to this, they used reductions in systems, maintenance costs, and other information systems efficiencies gains to show that resources devoted to the project are producing returns from the onset.

Since full integration cannot be achieved across all business units simultaneously unless the operations of the enterprise are suspended for the duration of the project, companies adopted a step-wise approach. There are two tactical strategies to distinguish the successful from the unsuccessful companies in this aspect. First, best practices and technology were used to build data-marts in time boxes of 90 days, a short enough period not to disrupt operations, as well as not to discredit the project as endless. Second, the implementation sequence proceeded from the most profitable business units to the operationally troubled ones. By starting in the strongest units, the CRM project sponsors were able to prove efficiency gains through reduction in systems and system maintenance costs. In that sense, the project made the unit even stronger, and, thus, secured further support and adoption of the CRM processes. Other companies started the integration process in the troubled business units as a measure to improve their operations, and they failed, for integration can make a working process better, but cannot improve bad processes. This tactical mistake often produces a culture of resistance and undermines the adoption of CRM in other business units.

Leaving aside the purely technical challenges of process and systems integration, management faced the most fundamental challenge ever since the organization of production began. That is the challenge of coordination. Adam Smith was the first to emphasize the importance of coordination in securing productivity gains. In the case of CRM, lack of coordination leads directly to failure for it creates incomplete or distorted customer view. The difficulty arises from the very nature of customer information. Customer information can change dynamically in each department or business unit independently of other departments or units. Marketers and accountants can create different rules regarding the ways to categorize customers, and to choose different types

of information about them. Thus, customer data is collected and stored in multiple unsynchronized data marts known as "stove-pipe" enterprise architecture, which is analogous to the enterprise process silos. Companies started to create *ad hoc* hand-coded tools to synchronize and integrate this data into a single view of the customer. The hand-coded approach seemed an easy solution especially with the development of stored procedures in PL SQL. But the process created further confusion for multiple data formats, intractable changes in the "stove-pipes", and human error produced plenty of dirty data. End users who rely on data for precision targeting are less tolerant to dirty data than to partial data. As the saying goes, no data is better than incorrect data.

Companies that have adopted the strategic approach recognized the problem early and began to cooperate with CRM vendors to overcome it both architecturally and technologically. Today the typical CRM architecture includes a central metadata repository and ETL (Extraction/ Transformation/Load) tools that synchronize the *ad hoc* changes made in the departmental data-marts. That is to say that not only data is updated, but rules about the data are updated simultaneously across the entire organization. In the evolving "hub-and-spoke" architecture, the ETL tool is the hub, while the data sources are the spokes. The ETL tool accesses data from any source, transforms it according to user specifications, and writes the changes to the targeted data marts. The system, even though still difficult to implement, gives maximum flexibility for local creation and manipulation of data, without impeding the integrity and quality of the enterprise wide 360 degrees view. Stated differently, it allows to enrich the 360 degrees view, without causing confusion or distortion due to incompatible rules and types of customer information. Variants of the "hub-and-spoke" architecture are emerging quickly to address company specific needs.

The automation of the synchronization process had a profound effect on the provision of near-real-time customer data for customer support across all touch points. "Operational data store" is the process that consolidates data from multiple operational source systems and provides a near-real-time integrated view of volatile current data. Thus, a customer can update his or her profile in one division of the corporation, and the changes will be reflected immediately as he or she clicks through to access the services of another department. This results in an undisturbed customer service along the organizational silos, prior to the transfer of data from the operational databases to the departmental data-marts or data warehouses.

With much of the strategic, tactical and technological issues solved, one may wonder what is forthcoming in the CRM arena? There are two main areas of future developments:

(1) further increase of the scope of CRM projects; and

(2) an expansion of the CRM applications to PDAs.

With regard to scope, the further development is driven by the realization that while the demand for CRM is customer driven, the implementation of CRM is people driven. Hence, there is a tremendous push from vendors to integrate the human resource (HR) systems within CRM and to make all HR functions visible within the CRM system. This is to say that if a corporation has an incentive management program, the employee should not send spreadsheets to HR and accounting, but instead should have a real-time data available through an integrated system. Thus, incentive management becomes part of the information automation in the CRM system. The latter development has changed dramatically the competitive landscape in the CRM market. While Seibel secured market leadership through being a technology pioneer in CRM applications, late comers like SAP and PeopleSoft are benefiting more from already having HR packages which can easily be integrated into their CRM applications. As to the expansion of CRM application to PDAs, while there is a consensus that there is a demand for such applications, it is yet to be seen what the best model is or which applications and functions are most suitable for these devices.

Electronic customer relationship management

Revisiting the general principles of usability and resistance – an integrative implementation framework

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Abstract *Electronic customer relationship management (eCRM) has become the latest paradigm in the world of customer relationship management. Recent business surveys suggest that up to 50 per cent of such implementations do not yield measurable returns on investment. A secondary analysis of 13 case studies suggests that many of these limited success implementations can be attributed to usability and resistance factors. The objective of this paper is to review the general usability and resistance principles in order to build an integrative framework for analyzing eCRM case studies. The conclusions suggest that if organizations want to get the most from their eCRM implementations they need to revisit the general principles of usability and resistance and apply them thoroughly and consistently.*

Introduction

The goal of electronic customer relationship management (eCRM) systems is to improve customer service, retain valuable customers, and to aid in providing analytical capabilities. Furthermore, it is the infrastructure that enables the delineation of and increases in customer value, and the correct means by which to motivate valuable customers to remain loyal (Dyche, 2001).

The rush to implement eCRM systems is on! Organizations want to achieve the enormous benefits of high return on investments (ROI,) increases in customer loyalty, etc. (see Table I) from successful implementations (Scullin *et al.*, 2002.)

The Meta Group predicts that the eCRM craze will only intensify, with the market growing from \$20.4 billion this year to \$46 billion by 2003 (Patton,

Benefits	Examples
Increased customer loyalty	Information captured by an eCRM system helps a company to identify the actual costs of winning and retaining individual customers Having this data allows the firm to focus its time and resources on its most profitable customers Classifying one's "best" customers in this way allows an organization to manage them more efficiently as a premium group, with the understanding that it is neither necessary nor advisable to treat every customer in the exact same way
More effective marketing	Having detailed customer information from an eCRM system allows a company to predict the kind of products that a customer is likely to buy as well as the timing of purchases CRM allows for more targeted campaigns and tracking of campaign effectiveness Customer data can be analyzed from multiple perspectives to discover which elements of a marketing campaign had the greatest impact on sales and profitability
Improved customer service and support	More accurately receive, update and close orders remotely Log materials, expenses and time associated with service orders View customer service agreements Search for proven solutions and best practices Subscribe to product-related information and software patches Access knowledge tools useful in completing service orders
Greater efficiency and cost reduction	Integrating customer data into a single database allows marketing teams, sales forces, and other departments within a company to share information and work toward common corporate objectives using the same underlying statistics

Source: Adapted from Scullin *et al.* (2002)

2001) or perhaps to $125 billion by 2004 (Iconocast, 2000.) On the down side, a Gartner Group report (Patton, 2001) indicates that more than one-half of all eCRM projects are not expected to produce a measurable ROI. Furthermore, a Bain & Co. study (Patton, 2001) revealed that 19 percent of CRM users decided to stop funding their eCRM projects. Why are organizations having such a difficult time achieving their eCRM goals?

It is the objective of this paper to analyze the secondary data available in published sources (business trade magazines and academic journals) in the context of the basic usability and resistance principles. The paper first presents an introduction to eCRM. Next, it revisits the general usability and resistance principles and builds an integrative framework for case study analysis. Finally, it presents an analysis of 13 case studies followed by conclusions and recommendations for successful eCRM implementations.

eCRM defined

Romano and Fjermestad (2001-2002) suggest that successful eCRM requires attracting and keeping economically valuable customers while repelling and eliminating economically invaluable ones. Winer (2001) asserts that CRM is the new "mantra" of marketing. The traditional focus of marketing was the acquisition of new customers; however this has shifted to customer retention (Grönroos, 1994). Relationship building and management have become core principals of modern marketing approaches in both research and practice (Jackson, 1985; Dwyer and Shurr, 1987) as the paradigm in marketing strategy has shifted from "marketing mix" to "relationship marketing" (Grönroos, 1994). Relationship marketing emphasizes building relationships that lead to customer retention and long-term customer loyalty, in juxtaposition to traditional transactional marketing, in which making a one-time, immediate sale to the customer is the primary goal (Jackson, 1985; Dwyer and Shurr, 1987; McKenna, 1991; Grönroos, 1994; Buttle, 1996). Reichheld (1996) has shown that a small increase in retention (5 percent) can yield a 95 percent increase on the net present value delivered by customers.

What, then, is eCRM? It is a combination of hardware, software, processes, applications, and management commitment. Dyche (2001) suggests that there are two main types of eCRM: operational eCRM and analytical eCRM. Operational eCRM is concerned with the customer touch points. These can be inbound contacts through a telephone call or a letter to a company's customer service center or outbound contacts such as a sales person selling to a customer or an e-mail promotion. Thus, customer touch points can be everything from in-person, Web-based, e-mail, telephone, direct sales, fax, etc. Analytical eCRM requires technology to process large amounts of customer data. The intent is to understand, via analysis customer demographics, purchasing patterns, and other factors so as to build new business opportunities.

The key point is that eCRM takes on many forms depending on the organization's objectives. eCRM is not only about technology or software (Rigby *et al.*, 2002) it is about aligning business processes with customer strategies supported with software and technology. In short it is about business change. Rosen (2001) suggests that eCRM is about people, processes, and technology. The people and the process issues are paramount to success. How do we design systems that focus on people and processes? There are two sets of principles, which can aid in this regard, usability and resistance. The next section reviews the general usability and resistance principles in the context of eCRM.

Usability and resistance principles

Gould and Lewis (1985) suggest that any system designed for people to use should be easy to learn, easy to remember, and useful, that is, it should contain the necessary functionality to improve work and productivity, and be easy and

pleasant to use. This is further supported by Goodwin (1987) who argues that usability and functionality go hand in hand. Usability and functionality are an integral part of systems design. Usability contributes to the overall system functionality by making it accessible to the users and, in turn, facilitating effective use of the system features and capabilities.

Gould and Lewis (1985) recommended three basic principles of usability design:

(1) early focus on users and tasks;

(2) empirical measurement; and

(3) iterative design.

Early focus on users and tasks refers to the premise that the system designers need to know who the users of the indented system will be. In eCRM implementations, the users will be very diverse ranging from senior managers to marketing managers, from field sales engineers to temporary customer service workers and customers. Such a diverse group will have different behavioral and attitudinal characteristics than the more homogeneous set of users associated with traditional systems that cross fewer organizational boundaries and provide a smaller set of specific functionalities. Empirical measurement focuses on the development process. Gould and Lewis (1985) suggest that the users should actually be involved with the development process. This can be accomplished through simulations and prototypes. The user performance (functionality) and reactions to the system (usability) should be observed, recorded, and analyzed. In this fashion, when users find problems, they must be fixed through an iterative design process.

Nielsen's (1992) usability engineering life cycle is a modification and extension of Gould and Lewis's (1985) model. The model consists of three stages (see Table II):

(1) pre-design;

(2) design; and

(3) post design.

The basic elements include empirical measurement, prototyping, and an iterative design.

Pre-design stage
The first stage of the usability life cycle is the pre-design stage. This stage involves the gathering of information in order to gain a better understanding of the user community. Nielsen (1992) stresses the importance of this stage by suggesting that user differences and task variability are the two factors with the largest usability impact. Knowing the users and the tasks they perform is essential when designing any system, but it is imperative if the system is to be usable and useful. Spending time learning about the user's environment is a

Pre-design Understand the target population users and tasks	Design Objective: to arrive at a usable implementation that can be released	Post-design Objective: to collect data for the next version and for new future products

1. *Know the user*
  Visit customer sites
  Interview individual users
  Observe users and
    processes
  Analyze the tasks
  Business process
    reengineering
2. *Competitive analysis*
  Investigate competitive
    products and vendors
3. *Set usability goals*
  Learnability
  Efficiency
  Ease of use
  User satisfaction
  Frequency of use
	1. *Participatory design*
	  Prototyping
	  Pilot projects
	2. *Coordinated designs*
	  Consistency
	  Standards
	  Product identity
	3. *Guidelines and heuristic
	    analysis*
	  Use simple natural dialogue
	  Speak the user's language
	  Be consistent
	  Provide feedback and
	    shortcuts
	  Provide good error messages
	  Prevent errors
	4. *Prototyping*
	5. *Empirical testing*
	  The users use the system
	  The users test the system
	6. *Iterative incremental design*
		1. *Feedback from the users*
		2. *Collect field data*
		3. *Economic data*
		  ROI
		  Development time
		  Customer satisfaction

Source: Adapted from Nielsen (1992)

Table II.
Usability engineering
life cycle

key to understanding what they want from their system. It is therefore imperative to investigate the needs of the users if the desired outcome is a highly successful, useful, and usable product. There are a number of ways in which designers can become familiar with their users; the most obvious way is to visit their work environment and observe them in their natural work setting. Designers can also gain valuable information through questionnaires or interviews. They can identify areas in which current systems fail to meet the users needs or where users are unable to reach goals, because they do not understand the product. Once a design team comes to an understanding about the user group they are targeting and the user's current task, they need to identify the functionality that should be included in the product.

Once user knowledge has been assessed, the application designers need to engage in some sort of competitive analysis. A common technique used in this area is prototyping. The designers need to perform user tests and gather empirical data, which will be used to formulate a strategy to achieve usability goals. Rather than spend an enormous amount of time building a prototype, Nielsen (1992) suggests using a competing product for user testing. This will allow the designers to evaluate the strengths and weaknesses of a system

already in production and brainstorm ways to incorporate new and enhanced features into their own product.

The last step in the pre-design stage is to set the usability goals (see Table II). The purpose of establishing these usability goals is two-fold: first, specific usability goals help focus user interface design efforts during the design process by giving designers something concrete to aim for and something concrete to assess their design ideas against. The second purpose of usability goals is to serve as acceptance criteria during evaluation, especially towards the end of the design process. Specific goals allow empirical data to be collected and enable the team to gauge the success of the project. Overly general goals will not help to focus the team on the definition of success as it relates to the product. It is important that the designers be involved in setting the goals. Participation in goal setting will allow the users to have a clear understanding of what they can expect from the product and will allow them to assume the role of "stakeholder". The three phases of the pre-design stage, knowing your users, competitive analysis, and goal setting, may need to be repeated. It is an iterative process and insights gained in one area, may warrant the repetition of another area. Moving too quickly through the pre-design stage can have serious repercussions in the post-design stage of the product life cycle.

Design stage
According to Nielsen (1992) the objective of the design phase is to arrive at a usable implementation that can be released. The design stage consists of a number of specific design tasks involving different levels of design and different levels of user involvement and testing. Similar to the pre-design stage, design stage subtasks may need to be repeated if later tasks reveal that corrections need to be made. A participatory design process may be used to further address issues that were overlooked in the pre-design phase. Users test the product and advise the designers whether or not it helps them to accomplish their job tasks efficiently and effectively. Nielsen (1992) suggests that this stage is important because users often raise questions that the development team has not even dreamed of asking. The designers will need to translate the feedback of the users into usable product characteristics.

The consistency of the interface should transcend all media that are associated with the application including: documentation, online help, and any training material (Benbasat and Lim, 1990; Bennett, 1983; Davis and Jordan, 1997; Nielsen and Molich, 1990; Romano and Nunamaker, 1997; Satzinger, 1991; Shneiderman, 1987.) It is important that designers share the goal of a common interface and know how it should appear to users. Tools used to assure consistency in projects include interface standards, code sharing and product identity.

The next step involves developing guidelines and performing heuristic analyses, which provide a list of principles that the developers should follow in

designing the user interface. The purpose of the guidelines is to build a consistent interface, documentation, and a help and error message system that work for the users.

If a prototype has not already been created at this point, it is essential that one be built. The ultimate goal of building a prototype is to reduce risk at the lowest cost. One should be designed early in the process so users have an interface with which to test and provide feedback. The prototype gives the users hands-on experience with the eventual product. Basically, the later in the process changes are made, the more costly it becomes to the organization and the company (Boehm, 1981; Cockburn, 2000; Fagan, 1986; Jones, 1996; Jorgensen, 1988; Kelly and Sherif, 1992.) A prototype therefore becomes essential to the bottom line success of the project.

In order to assure a high quality finished product, empirical testing is conducted. When errors are encountered they must be corrected, thus, this process becomes an iterative, incremental one. It is important in this phase to ensure that users simulate the tasks they will perform on the job. Common empirical testing methods include: thinking aloud or GOMS analysis (Fountain and Norman, 1985,) attitude and usability questionnaires (Davis, 1989,) testing user knowledge before and after system use, user observations (Prasse, 1990; Sullivan, 1991,) and group elicitation (Boy, 1997; Sullivan, 1991).

At this point, the developers will need to engage in iterative design. The developers will need to revisit earlier stages in an attempt to refine the product. Developers will address scenarios in which they solve and correct certain design flaws only to uncover additional or create new problems. It is important to conduct additional testing and retest the product after usability issues are resolved. Designers must be careful not to over expose testers to the point where they become experts and are no longer good test subjects. After a number of "loops through the life cycle" the development team, along with sign-offs from their management and users will make the decision to release the product and therefore move into the post-design stage.

Post-design stage

The main objective of the post-design stage is to begin gathering information for the next release. The designed product will now act as the prototype for the later versions. Designers will need to conduct follow-up studies and gather complaint information that will form the basis for new product designs. Designers are encouraged to visit real-user sites and observe how they interact with and use the product. They can also gather economic data on increased user productivity, opinions of the product through surveys and supervisor and user interviews. In essence, the process begins all over again, as the designers "reacquaint" themselves with their users and work towards developing a new and enhanced version of the existing product. At some point, management and the development team will need to make a decision on when a new version

should be released. When enough product enhancements have been requested by users, sufficient errors have been uncovered, it is cost effective for the organization and/or the development team has added additional functionality are all scenarios in which a new product version will be introduced.

Resistance

Markus (1983) suggests that resistance can be defined in terms of usability because it guides user behavior and influences the actions taken by managers and systems designers concerned with implementing computer-based applications like eCRM. Some basic rules of thumb in regards to reducing resistance and improving usability are:

- get top management support;
- have users involved in the design process;
- systems which respond flawlessly are more likely to be used than those that do not;
- people resist change – get them to buy in; and
- bring systems in within budget and time.

Markus (1983) integrated and enhanced Kling's (1980) earlier work to develop three basic theories of IS resistance. The first theory is the people-determined theory, which asserts people or groups of people organized into organization subunits (i.e. remote sales force or customer service representatives for eCRM) may resist a new information system simply because people resist all change. Keen (1981) suggests that resistance could be due to failure of an earlier system that left the systems designers lacking credibility with the users. The systems design team would need to develop counter implementation tactics (Keen, 1981) in order to overcome these issues. Such a tactic might be to create a small local success prior to an organization-wide rollout.

The second resistance theory is the system-determined theory, which states that the person or group may have resisted the new IS because of factors inherent in the application or system being implemented (Markus, 1983.) In other words, a person or a group may resist an information system implementation because of system design features that are specific to the system. eCRM examples of this are:

- a slow unresponsive system where the sale representatives were unable to help the customers;
- an overly complex system;
- slow access to the system; or
- data being unavailable to the sales representatives.

Interaction theory (Markus, 1983) is the third theory, where resistance results from the interaction between people (social context, organizational scope, etc.)

and the technical design features (interface/usability, performance/functionality, etc.) eCRM examples are: required the sales people to use the system and learned from a past implementation.

The framework for analysis

Gorry and Scott Morton (1971) suggested that frameworks for viewing management information systems are essential if an organization is to plan effectively and make sensible allocations of resources to information systems tasks. Zwass (1996) also recommends that the recognized method to examine and develop complex systems or concepts (such as eCRM systems) is to organize them into a meaningful structure or framework. In building their framework for management information systems Gorry and Scott Morton (1971) integrated Anthony's (1965) taxonomy for managerial activity and Simon's (1960) decision-making strategies. The resulting seminal framework has aided managers in examining the purposes and problems of information systems' activity.

For eCRM, two important types of frameworks that should be considered are usability frameworks (Gould and Lewis, 1985; Nielsen, 1992) and Markus's (1983) resistance model. Taken together, usability and resistance (Table III) can provide an integrated framework for designing and implementing eCRM systems that will aid in minimizing resistance while maintaining high usability standards. The table columns depict the usability portion of the framework, while the rows recommend example activities aimed at reducing and eliminating resistance. For example, under "Usability design" the "People determined" factors are:

- add users and modules slowly;
- pilot projects; and
- work closely with teams.

Analysis of eCRM implementations

The framework is tested by categorizing 13 secondary case studies (see Table IV for a list of the case and details of the problem) published in three business press magazines (*CIO Magazine*) and one academic journal (*Decision Support Systems*).

These cases were chosen simply because they were readily available and presented enough information to proceed with an analysis. Two separate analyses were conducted. The first analysis (Table V) was conducted on the cases that achieved limited success. Table V highlights the reasons why the organization achieved limited success from its eCRM implementation. The second analysis (Table VI) highlights reasons for successful eCRM implementations.

	Pre-design	Design	Post-design
Resistance/usability principle People determined	Know the user Competitive analysis Setting usability goals Change people Job rotation Educate users Train users Coerce users User participation to gain commitment System champion Restructure incentives for users	Participatory design Coordinated design Guidelines and heuristic analysis Prototyping and empirical testing Iterative design Add users and modules slowly Pilot projects Work closely with teams	Collect feedback from users Create credibility Develop long term plans
System determined	Understand the technology	Improve systems efficiency Improve data entry Improve human factors Understand and simplify organizational procedures and processes	Iterative, incremental implementations
Interaction theory	Integrate with existing technology	Use cross functional teams Use positive users in pilots	Build systems for valid business reasons Fix organizational problems Restructure relationships Assign a system champion

Reasons for limited success
Table V lists the cases with limited success and the reasons for such a limited success. In terms of the people-determined issues in the pre-design phase Monstor.com (Patton, 2001) hired inexperienced consultants to lead the implementation. eCRM is complex enough with its many potential customer/user touch points (Dyche, 2001) that having inexperienced consultants leading the implementation is an early sign of potential failure. Rigby *et al.* (2002) suggest that one of the basic perils of eCRM is implementing the system before creating a customer strategy. They suggest that an effective

Paper	Company	Details of problem
Patton (2001) The truth about CRM	Monster.com The initial failure resulted in millions of dollars in added expenses and months of effort to re-implement the system	Rolled out a high-end software package to provide its telephone sales representatives with instant information on prospective customers
	Telecommunications company	Launched a CRM to 1,000 sales reps at a cost of $10,000 per user. One year later only 10 percent were using the system
	Mshow	Implemented a $300,000 CRM to aid in acquiring new customers and improve the bottom line. The 50 member sales force refused to use the system. The second time the implementation was more successful
	CopperCom	The company abandoned a $500,000 CRM after an ASP failed to provide adequate support for the complex system
	Barclay Global Investors	A successful implementation
	Fingerhut	Spent five years looking for the best ways to use its data warehouse
	RadionShack	Using a measured approach to CRM development based on past struggles and failure reports
Deck (2001) CRM made simple	Tipper Tie	Alternative packaging methods began making inroads with Tipper Tie's customer base. The company sought to change the way the staff interacted with the customers
	Hewlett-Packard	HP was not using the Web effectively. There was no central program or strategy for e-mail marketing
	Student Connections	Developed a CRM project to better understand how its products were being used and to maximize ROI
Patton (2002) Get the CRM you need at the price you want	Group Health	Successful CRM implementation. The next steps are to enhance the current system and automate other processes
Overby (2002) The little banks that could	Union National Bank	Faced with growing competition from bigger banks a CRM solution was implemented to keep its customers

(continued)

Table IV.
eCRM Implementations

Paper	Company	Details of problem
Massey *et al.* (2001) Re-engineering the customer relationship: leveraging knowledge assets at IBM	IBM	IBM was faced with a declining market share and customer defection. The CRM task force was guided by five key strategic issues: exploit IBM technology; deliver on the promise technology; achieve leadership in network-centric computing; be the best at delivering value to the customer; leverage IBM's size and scale

Table IV.

eCRM is based on segmentation analysis, which is what Gould and Lewis (1985) ascribe to as an early focus on the users and what they need. Consultants are typically hired to lead such an effort.

Another observation from Monster.com, is that the field representatives were "locked out" of the system. This again suggests that the organization did not have a clear focus on its objectives and strategy. Similar observations at Mshow (Patton, 2001) revealed that the sales force refused to use the system, perhaps because the company did not articulate its needs well enough and also had inexperienced consultants. Thus, based on these observations an organization needs to focus on the users and their needs and on the overall strategy it has for implementing an eCRM system if it is to be successful.

There were several observations of limited success from system-determined issues in the design phase. Both Monster.com and Mshow had slow system response rates, which prevented the customer/sales representatives from helping their customers in a timely manner (Patton, 2001.) Additionally, data was unavailable for the Mshow sales representatives. Comments from users at CopperCom suggested that the implemented system was too complex and that the application service provider did not provide adequate support. Based on the integrated usability framework, it is evident that educating designers on how to build a technically-sound system and focusing on the general usability goals could overcome these anomalies.

The managers at Mshow and CopperCom learned from their earlier "failures". Mshow hired consultants first, to investigate the organizations' needs before purchasing the technology for their second eCRM implementation. They developed an implementation plan that included a smaller scale eCRM and required the salespeople to use the system from the very beginning. Similarly, CopperCom focused on their users throughout the development process by following an iterative prototype strategy. Furthermore, CopperCom implemented an incentive plan to encourage staff to use the system. Clearly these strategies helped to avoid problems of usability and resistance.

Company	Resistance/usability	Pre-design	Design	Post-design
Monster.com	People-determined	Field reps locked out of the system		
	System-determined	Inexperienced consultants	Slow systems, reps were unable to help customers	Complex systems
Telecommunications Company	Interaction theory			
	People-determined			
	System-determined			
	Interaction theory		10 percent of the intended users were using the system No clear support from top management	*Second implementation* Hired consultants first
Mshow	People-determined	The company did not articulate its needs Sales force refused to use the system Inexperienced/poor consultants		
	System-determined		Slow access to system by remote sales people Data unavailable for the sales reps	Implemented small scale CRM
	Interaction theory			Required sales people to use the system
CopperCom	People-determined			*Second implementation* Focus on users throughout the process Incentive plan to encourage use
	System-determined		Complex system ASP failed to provide support	
	Interaction theory			Iterative and prototype development

Table V.
Reasons for limited success

Company	Resistance/usability	Pre-design	Design	Post-design
Barclays	People-determined System-determined Interaction theory	Survey the technology two years ahead of time Found a solution that works with existing software	Iterative, incremental	
Fingerhut	People-determined System-determined		Pilot tested the system on 10 percent of its customers for one year Looked for pieces instead of trying to fit into one solution	
RadioShack	Interaction theory People-determined System-determined Interaction theory	Developing multiple small CRM projects	Plans to add sales force gradually Pilot projects 20 people in first roll out	A guarded approach based on past struggles failure reports Past success were completed in "bite-size pieces"
Tipper Tie	People-determined System-determined	Soft sell to management Interviewed sales reps Interviewed call center staff Interview consultants to find the best fit	Worked closely with consultants Team members work the system then made presentations to other users	

Table VI.
Reasons for success

Table VI.

Company	Resistance/usability	Pre-design	Design	Post-design
	Interaction theory		Piloted the systems with "positive upbeat" people Semi-weekly progress updates Cross functional pilot teams – the key to success	
HP	People-determined	Used small tests to uncover issues Learned what the customers wanted		
	System-determined		Controlled project comparing e-mail campaign with direct-mail offer	
	Interaction theory	Analyzed and segmented its e-mail databases		
Student Connections	People-determined System-determined		Pilot program to analyze new programs Dicing database into small segments for f analysis	
	Interaction theory	Used pilot programs		Learned from one implementation and applied to the next
Group Health	People-determined System-determined Interaction theory			Implementing the next technology based on a successful implementation

(continued)

Company	Resistance/usability	Pre-design	Design	Post-design
Union National Bank	People-determined	Early focus on the user	Create power users	
	System-determined	Analyze the available technology		
	Interaction theory	Align CRM solutions with strategy		
IBM	People-determined	Interviewed customers Focus groups Surveys	Prototype and test new processes – change the processes that do not work	
	System-determined	External benchmarking	Pilot implementations	
	Interaction theory			

Table VI.

Reasons for success

Table VI lists the cases with successful eCRM implementations. Four organizations focused on people-determined issues during the pre-design phase: soft sell to management, interviewed customer or users, used focus groups to understand the issues, and/or interviewed consultants to find the ones with the best fit. Four organizations focused on technology-determined issues in the pre-design phase. IBM, for example, focused on external benchmarking (Massey *et al.*, 2001) Student Connections (Deck, 2001) used pilot programs to uncover its requirements. Union National Bank (Overby, 2002) analyzed the available technology to uncover the best solutions for its company. Barclays (Patton, 2001) spent two years surveying the technology before selecting one to purchase. Furthermore, Barclay's solution worked with the company's existing software and Union National Bank aligned the eCRM solution around the company strategy (interaction theory.)

Six organizations focused on system-determined issues during the design phase. They included pilot projects (Fingerhut, Tipper Tie, Student Connections, and IBM) or incremental and iterative rollouts (Barclays and RadioShack). Tipper Tie (Deck, 2001) piloted the systems with super users who were considered positive and upbeat people. The lead manager also required semi-weekly meetings to assess progress and considered cross-functional pilot teams the key to success. These issues are closely linked to the interaction theory.

Three organizations (Student Connections, Group Health (Patton, 2002) and RadioShack) learned from one implementation and applied that knowledge to the next. These are examples of the interaction theory working in the post-design phase.

Conclusions

The integrated eCRM framework provides a guideline for systems designers and the corresponding management team to improve usability and reduce resistance. In many cases, focusing on usability can reduce resistance (training and educating users) and focusing on resistance can improve usability (use of pilot programs and prototyping.) These two strategies go hand-in-hand.

The organizations that had limited success in implementing eCRM did not initially realize how much of an effect people could have on system success. For example, both Monster.com and Mshow did not design the systems around their primary customer contacts (field representatives and sales force.) In addition, both implemented systems with inexperienced consultants. Mshow learned its lesson. The second time around, people were given the primary focus; thus minimizing or eliminating resistance and involving people with the design.

The key reasons for successful eCRM implementations, from the analysis, were that the organizations' focus was on people and iterative, incremental

approaches. By applying the basic usability and resistance principles proposed in this framework, organizations should achieve higher levels of success.

CRM is a very complex combination of technology, software, people, and business processes. In order to get the most out of an implementation it is recommended that the systems designers and implementation managers design for usability and know how to manage, reduce, and overcome resistance.

This study of 13 cases emphasizes the need for organizations designing and implementing eCRM systems to review and apply the principles of usability and resistance. It also underscores the need for additional research into why such a large percentage of eCRM systems, and information systems in general, fail. Further research is needed to develop appropriate frameworks for analyzing system failures and developing guidelines that will lead to successful implementations. Larger analyses with additional cases and more detailed study of the reasons for failure my lead to additional insights that can aid designers and managers that build eCRM systems. Achieving the goal of designing a system that users are both "able" and "willing" to use will be the true measure of success for eCRM systems.

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Strategic issues in customer relationship management (CRM) implementation

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Abstract *The number of customer relationship management (CRM) implementations has grown dramatically in recent years. However, few academic studies of the issues associated with the implementation of the concept are available. This paper offers a modest contribution through the analysis of a case study of a CRM implementation at a UK-based manufacturing company. The case study illustrates that CRM is a complex and holistic concept, organised around business processes and the integration of information technologies. The study also highlights that implementing CRM requires effective leadership, sourcing, targeting and evaluation strategies.*

Introduction

In recent years many organisations have identified the need to become more customer facing with increased global competition. As a consequence, customer relationship management (CRM) has risen to the agenda of many organisational strategies. Definitions of CRM and CRM systems are wide ranging and shall be explored in greater detail in the next section. Fundamentally however, CRM systems can be viewed as information systems aimed at enabling organisations to realise a customer focus. In 1998 global corporate expenditure on CRM was estimated to be in the region of US$1.9 billion (IDC and AMR Research, 2001) and it is predicted that by 2004, it will reach approximately US$23.5 billion (Datamonitor, 2001)[1]. Clearly, an increasing number of diverse organisations are adopting CRM yet surveys are beginning to highlight the potential risks. Even though CRM systems are proving an incredibly popular choice for implementation, success is proving illusive. One study of 202 CRM projects found that only 30.7 per cent of the organisations said that they had achieved improvements in the way they sell to and service customers (Dickie, 2000). Moreover, a recent and broader survey estimates that 70 per cent of companies will ultimately fail (Giga, 2001). The Giga survey revealed that: companies generally underestimate the complexities of CRM, lack clear business objectives and tend to invest inadequately in the provision of CRM software. While the findings by Giga highlight a fairly gloomy scenario, it is clear that not all organisations are facing failure. First Manhattan are just one of the many examples of diverse companies highlighted by Newell (2000) that have applied CRM methods and experienced success. It is

clear that there is still a need for further empirical studies of CRM however, only a few are available. The availability ranges from the study of Abselon (Van Bennekom and Blaisdell, 2000) to that of IBM (Ciborra and Failla, 2000). It is against this background that the author offers a case study analysis of the selection and implementation of a CRM system at a manufacturing company.

In the next section the paper considers the concept of CRM and how CRM systems are reported on in the literature. Following this, the research approach of a single descriptive case study is reported, and the data presented. The empirical data is used as a basis for an analysis of the reported thinking in the literature in an attempt to identify similarities and disparities between the two. This leads into the conclusions of the study and recommendations for further research.

An overview of CRM
CRM is a highly fragmented environment and has come to mean different things to different people (McKie, 2000). One view of CRM is the utilisation of customer related information or knowledge to deliver relevant products or services to customers (Levine, 2000). While such definitions are widespread, they tend to offer a narrow insight into the goals or basic characteristics of CRM. As CRM evolves, richer definitions are emerging, with an emphasis on the goals, logistics and complex character of CRM. According to Light (2001), CRM evolved from business processes such as relationship marketing and the increased emphasis on improved customer retention through the effective management of customer relationships. Relationship marketing emphasises that customer retention affects company profitability in that it is more efficient to maintain an existing relationship with a customer than create a new one (Payne *et al.*, 1999; Reichheld, 1996). The idea of relationship marketing within CRM is fairly strong and has led others such as Newell (2000) to explore strategic methods for maintaining or improving customer retention. Another view of CRM is that it is technologically orientated. Sandoe *et al.* (2001) argue that advances in database technologies such as data warehousing and data mining, are crucial to the functionality and effectiveness of CRM systems. For example, Fingerhut has four million names of repeat customers, each with up to 1,000 attributes, stored in a data warehouse that can hold 4.5 trillion bytes (Davenport *et al.*, 2001). Furthermore, Peppard (2000) suggests that technological advances in global networks, convergence and improved interactivity, are key to explaining the growth of e-business and CRM. The increasing use of digital technologies by customers, particularly the Internet, is changing what is possible and what is expected in terms of customer management (Tamminga and O'Halloran, 2000). The appropriate use, for instance, of automation technologies, such as interactive voice response systems and Web-based frequently asked question pages, could be popular with customers and highly cost effective (Petrissans, 2000). Despite the

appearance of two extremes, the ELMS case study will demonstrate that in reality CRM is a complex combination of business and technological factors, and thus strategies should be formulated accordingly.

CRM implementation issues

CRM normally involves business process change and the introduction of new information technology, consequently effective leadership is important (Galbreath and Rogers, 1999). Because leaders monitor the external environments of an organisation they are often the best placed to set the vision or strategic direction for CRM projects. In addition, leaders are influential in the authorisation and control of expenditure, the setting and monitoring of performance and the empowerment and motivation of key personnel (Pinto and Slevin, 1987).

As CRM reaches into many parts of the business it has been suggested that organisations should adopt a holistic approach (Girishankar, 2000). The holistic approach places CRM at the heart of the organisation with customer orientated business processes and the integration of CRM systems. Ciborra and Failla (2000) conceptualise CRM beyond a front office contact management system. For others, CRM goes further, to constitute operational, analytical and collaborative elements (Trepper, 2000). Holistic approaches to CRM help organisations co-ordinate and effectively maintain the growth of disparate customer contact points or channels of communication. However, problems of channel conflict have been identified whereby customer experiences differ depending on the sales channel (Peppard, 2000).

Another implementation issue is that of sourcing. Many organisations have few alternatives but to outsource a significant proportion of their CRM solution as they lack the resources to develop CRM software. According to MacSweeney (2000) 60 per cent of in-house CRM systems fail. Timing is also important, as developing CRM software in-house can be a lengthy process and there are rewards to those that can respond rapidly and appropriately (Howle, 2000). CRM is also reputed to be facilitating the outsourcing of more business operations directly to the customer, highlighted by the UPS customer self-tracking system with annual savings of US\$164 million (Hamm and Hof, 2000) and by the enormous savings in Internet banking (Downes and Mui, 1998).

According to Newell (2000) CRM is a useful tool in terms of identifying the right customer groups and for helping to decide which customers to jettison. Clemons (2000) estimates there may be a tenfold difference between the most profitable customers and the average. The idea that you cannot have a profitable relationship with all customers and the practice of targeting customers with a differentiated product or service is already widespread in many financial services, e.g. banking, insurance, credit cards etc. It is less established in many other business sectors such as manufacturing. One method

for identifying customer groups is the notion of distinguishing between transaction and relationship customers. Transaction customers are highly volatile and have little loyalty, other than that related to obtaining the best price. Relationship customers have far more potential for loyalty as they are often prepared to pay a premium price for a range of reliable goods or services (Newell, 2000). Once relationship customers are recruited they are less likely to defect, provided they continue to receive quality service. Relationship customers are also more cost effective than new customers because they are already familiar with, and require far less persuasion to buy the company's products or services. Peck *et al.* (1999) are among those who argue that for many organisations it would be beneficial to distinguish between the two types of customer and focus on relationship customers. According to Newell (2000) there are often three distinct types of relationship customers: the top, middle and lower groups. The top group (top 10 per cent) consists of customers with excellent loyalty and of high profitability for the organisation. CRM is needed to retain and offer them the best possible services in order to avoid them defecting to hungry competitors. Middle group customers (next 40-50 per cent) are ones delivering good profits and who show good potential for future growth and loyalty. These are the customers who are probably giving some of their business to competitors. The idea is to use CRM to target middle group customers effectively as they are the greatest source of potential growth. Lower group relational (bottom 40-50 per cent) customers are those who are only marginally profitable. Some may have potential for growth but the expense and effort involved in targeting such numbers, hinders the effectiveness of servicing existing relational customers in the top and middle groups. CRM should be used to identify this group and seriously consider the response required. Transactional customers contribute either nothing or have an adverse effect on profitability. The consensus therefore is that CRM needs to identify transactional customers to help organisations respond appropriately.

Another dimension is the ability to deliver the strategy successfully. CRM strategies are only effective if they deliver positive outcomes. It is no longer good enough just to say that you are customer focused, but it matters what you do. Newell (2000) discusses a range of CRM case studies that used customer knowledge to deliver relevant products and services. Blockbuster recognised that their customer's top priority was the ability to rent their first-choice movie, when they visited a store. The industry norm for achieving this customer service was around 80 per cent. The company implemented an information system called "Centre stage" to improve stock availability of first-choice titles. The centre stage system stores customer data to help predict the likely demand for specific movies. The company then stocks the relevant number of products and now delivers significantly improved availability, while other competitors don't. Blockbuster strongly believes that CRM has enabled them to remain a market leader. The consensus appears to be that the fundamental goal of CRM

is to improve organisational profitability through efficient and effective customer relations. If the CRM strategy is struggling to influence profitability, after a reasonable period of time, then the organisation is clearly failing. Organisations in this position should immediately consider changing direction and adopt alternative strategies. The position for those organisations that have failed may result in a series of circumstances that are hard to recover from. Such companies may find they have a disproportionate number of unprofitable customers that others have jettisoned. The path back to growth may require far more radical approaches. If a CRM strategy can be shown to improve profitability, then the organisation is obviously on the right path and succeeding. Companies in this healthy position should avoid complacency. They would be wise to devote sufficient resources and time to CRM and remember that effective CRM strategies are iterative and continually evolving.

Research method

The central research question for this study was: What are the strategic implications of the implementation and use of CRM systems? In the light of this, a case study approach was adopted as it enables the researcher to pose questions relating to what happened, how things happened and why (Yin, 1994). The case study therefore illustrates a UK-based manufacturing company's experiences with its CRM implementation. The data for the study was collected over the period of a year beginning at the selection stage and reaching closure at go-live. Throughout the study, data was collected via a number of channels including many interviews with members of the project team and others within the company. Interviews were conducted with the directors of sales and finance, the managers of sales, marketing, IT, HRM and logistics, several field sales engineers and sales administrators. In addition numerous project meetings and briefings were attended in line with Silverman (1998) who states that researchers should focus on what people do, in addition to what they say they do. Documentary evidence, such as requirements specifications was also considered. Review meetings were also held with key contacts at the organisation, to review the case data as it was transcribed from note form. This combined approach helped to generate data that was rich in detail and high in rigour (Miles and Huberman, 1994).

CRM case study

The case study was conducted throughout 2000 and raises specific issues of one company's experience of CRM. However, some of the issues raised are of interest to others that seek to adopt CRM, will contribute to further discussion and be of use in terms of further case study research.

ELMS Limited is a small- to medium-sized UK manufacturing company. ELMS are traditional in respect that they have a hierarchical command structure and work is conducted in departments rather than around

customer-orientated business processes. Communications within management levels and departments are perceived as excellent and the company claims to have strong organisational co-operation with low levels of staff turnover. ELMS are facing increasing global competition resulting in the loss of some key customers. A strategic decision was made that the company had to be more proactive and proficient in their operating market and decided that its front office operations were in need of re-engineering. It decided that the best solution would be to explore the case for adopting CRM.

The first major issue for ELMS was the lack of knowledge pertaining to the concept of CRM. Strategic managers had a basic understanding of CRM. The IT department had little time to research CRM or to develop software solutions as it was often overstretched and struggling to maintain existing systems. The sales and marketing devoted little time to the concept of CRM as they were increasingly burdened with trying to meet customer requirements with fairly ineffective *ad hoc* support and communication systems. Thus, it was decided to use external consultants to acquire knowledge of CRM. The first stage of consultancy was to evaluate the position at ELMS and explore the case for adopting CRM. ELMS were dissatisfied with the outcome of the initial consultancy for they believed the findings failed to tell them anything they didn't already know, provided little in the way of knowledge about CRM and proved to be a fairly expensive exercise. ELMS decided to end the contract and to seek an alternative approach. The company decided that a more cost effective and productive strategy would be to acquire more CRM expertise within the company, despite the existing work pressures. A small project team was created including a strategic manager and personnel from sales and marketing and IT. They were asked to acquire knowledge of CRM and were given additional training at a range of residential courses.

The project team's first decision was to source a CRM packaged software solution and they entered into negotiations with two software vendors. After negotiations and demonstrations at the company, a vendor was selected and a package chosen. In addition, the vendor would be used to provide a range of additional services including installation and minor configurations.

Unfortunately, the ELMS CRM sourcing strategy was limited in many areas. Too many members of the project team failed to become sufficiently active in the selection process. Despite initial training, the sales and marketing project team members still lacked knowledge of the full implications of CRM in relation to their business requirements. They failed to appreciate the need to evaluate the software from a business perspective, perceiving the exercise as a technical issue. It is also the case that the project team put enormous faith in vendor assurances and verbal promises, perhaps because the vendor contacts were fellow sales representatives? The IT manager lacked expertise to sufficiently perform the necessary evaluation of the business requirements and was primarily concerned and focussed on the technical issues pertaining to the

software. After selecting the vendor and software package, the CRM project team was expanded to include more personnel and was responsible for business process change, migration activity, testing, implementation and the initial maintenance of the software system.

The first major problem for the project implementation team was the selection of the project team itself. The project team was selected at random and this caused some discontent. Uncharacteristically for ELMS, some of the excluded staff felt undervalued by senior managers, others felt they lacked influence and queried the method for valuing their intellectual capital. Some of those with high levels of pertinent knowledge, such as sales engineers, did not feel engaged or empowered. This resulted in a fear of CRM, that it was about efficiency or cost-cutting exercises. This resulted in a perception that CRM would replace or de-skill their knowledge and contributions to the organisation and result in staff redundancies. In reality the selection process and lack of initial communication was more due to the inexperience of project management within the company. The project team failed to respond to such concerns immediately and although the fears were ultimately misplaced and later resolved, this was an unfortunate start to the project. For ELMS the CRM systems migration was a complex operation. The migration exercise relied heavily on the commitment of the key employees to resolve issues such as the effective cleansing and the codification of customer data. Because of the delay in enlisting the support of key staffs, the migration exercise drifted, taking four times longer than projected.

After implementing the CRM system, problems began to occur at the operational and analytical level. The company failed to appreciate the significance of using CRM to effectively target customers and of the need for systems integration. Targeting customers via CRM was only identified as a requirement after purchase, unfortunately the package fails to perform this task effectively. Furthermore, the software package is unable to integrate with many other enterprise applications. This results in duplication of tasks and the maintenance of multiple systems with the prospect of data inconsistencies. In terms of targeting and integration, the company are faced with the prospects of paying additional costs for software configuration or to abandon the system, write off the expenditure and source a new CRM package.

Regarding operating CRM, the next issue involved changing business processes to align with the CRM system. For ELMS there were difficulties in moving to a process orientation. The need to re-engineer was problematic due to organisational legacies. Despite the appearance of excellent co-operation between departments, front-office employees were regularly criticised for failing to appreciate the resource capabilities of the company and making promises to customers that could not be met. Back-office employees were also criticised for complacency and because they were often shielded from customer and competitor demands, there was little incentive to test the capabilities of the

logistic operations. For ELMS, the reality of deploying CRM was to move towards a customer-facing culture. By the end of the study this had not been realised. The transition will take much longer and require more effort than expected.

The research findings highlight that the ELMS CRM strategy, hampered by an ineffective software tool is largely failing to meet the company expectations. The latest redesign of the corporate Web site is fairly revealing, it lacks functions that competitor sites offer such as: online quotation and order capabilities, technical help sections and customer comment facilities. Thus, the company is struggling to compete effectively in its environment and is prone to the loss of its relational customers to their savvy competitors. At the end of the study, it was apparent that the level of competition for customers had increased. Some competitors were using CRM successfully to collect detailed data about customers. Competitors were becoming more knowledgeable about who and where the relational customers were and in respect of the nature of their requirements and expectations. Consequently, they were targeting such customers with a range of more attractive goods and services. One particular competitor had used CRM to tailor a range of offers to customers that were innovative and highly seductive. Traditionally, customers in this sector experienced high installation and maintenance costs with products. The competitor now offers customers products free of all costs, in return for exclusive rights to use the products to generate advertising revenue. At the end of the project, the failure of the ELMS CRM system to deliver such a response was a serious cause for concern, resulting in a major threat and evident erosion of a significant market position.

In general, although the ELMS CRM system is fairly beneficial in terms of some responses to external forces, its achievements are fairly limited. The software facilitates unprecedented storage of customer data, although it is restricted in terms of operational, analytical and collaborative capabilities. The strategy has involved a shift towards a holistic work ethic. Nevertheless, there is a significant amount of business process change that needs to occur to make the CRM strategy more effective. It would appear by the end of the study, that ELMS are far from delivering a truly customer-centric culture and are losing ground to some of their competitors who have.

Discussion

The case study highlights the similarities and differences between the theory and practice of implementing effective CRM strategies. For ELMS, leadership became an important and problematic activity. There are lessons to be learnt from Galbreath and Rogers (1999) in terms of the adverse consequences of not creating a vision or strategic direction for the project. The project management success factors framework of Pinto and Slevin (1987) may also have been useful in helping to overcome the inexperience in terms of project management, the

failure to address project ownership issues and the need to recognise the problems in organisational communication. Furthermore the need to acquire expertise in sourcing and to learn from previous experiences is also highlighted. To their credit ELMS did recognise that they lacked certain competencies in certain areas and they were open to the idea of seeking external expertise, training and consultancy wherever necessary. However, by the time they entered into their second sourcing contract with software vendors, they had failed to learn sufficiently from the costly experience of their first. This was evident in a number of ways. First ELMS failed to negotiate with more software vendors to get the most appropriate and competitive solution. They did not insist on observing the software working in another organisational setting, thus missing an opportunity to learn from adopters. They failed to trial the system or negotiate a performance-related contract. Finally, they failed to have a contingency strategy in place to resolve problems or to implement alternative solutions. Such pitfalls did result in compromises in the functionality of the system. However, it should be said that ELMS still believed that the decision to outsource was a major success with levels of functionality acquired within a timeframe that were far in excess of what would have been achieved in-house. The research also shows that vendor claims that CRM can be rapidly and effectively implemented are highly misleading. It is no surprise that organisations such as ELMS are failing to prepare for CRM appropriately. The case supports the theory by Girishankar (2000) that CRM is a holistic and complex strategy and also supports Light's (2001) view that CRM involves business process change and IT integration, for ELMS this will take a considerable time to achieve. Finally the empirical study highlights the importance of targeting and delivery as argued by Newell (2000). Although the ELMS CRM system is weak in delivering such analytical capabilities, evidence was emerging that competitors were more effective here and that they were using such capabilities to poach profitable customers.

Conclusion
The results of the study are cause for concern, for they support the findings of other surveys that show a high failure rate for CRM. This research was conducted because of the relative lack of CRM empirical studies, particularly within this business sector. This modest contribution has identified and analysed some of the approaches and theories relating to CRM and CRM project implementation. The study confirms that CRM is a complex and holistic concept requiring appropriate business processes and integrated systems. In addition, the study demonstrates the relevance of the need for effective leadership, sourcing, targeting and evaluation within CRM strategies. The ELMS case is an archetypal study of a CRM implementation that has failed to deliver in these core areas and where many lessons can be learnt by other adopters. It is an interesting example of the affect of CRM and how it is forcing

companies to change. Despite a decade of developments in respect of business process change, systems integration and information sourcing, it is only now with the threat of CRM centric competition, targeting customers effectively, that ELMS are exposed by their indifference to change in such areas. The impact of CRM is real and so are the problems for certain organisations in terms of successful implementation. This is a disturbing scenario because of the accumulation of diverse and complex factors that now need addressing, the lack of expertise to resolve them and the lack of time in which to respond appropriately. Thus, there is a great need for additional empirical research within CRM to identify the extent of such issues, the state of organisational effectiveness and for additional insights. This particular research is ongoing and will aim to develop and expand on the issues raised by conducting more empirical studies.

Note

1. The author recognises the deluge of figures and predictions regarding the uptake of software and that these can be contradictory, as highlighted in other studies such as Markus and Tanis (2000). The figures presented here are used solely as an outline for the growth of CRM.

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CRM packaged software: a study of organisational experiences

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Abstract *Customer relationship management (CRM) packaged software has become a key contributor to attempts at aligning business and IT strategies in recent years. Throughout the 1990s there was, in many organisations' strategies, a shift from the need to manage transactions and toward relationship management. Where enterprise resource planning packages dominated the management of transactions era, CRM packages lead in regard to relationships. At present, balanced views of CRM packages are scantly presented, instead relying on vendor rhetoric. This paper uses case study research to analyse some of the issues associated with CRM packages. These issues include the limitations of CRM packages, the need for a relationship orientation and the problems of a dominant management perspective of CRM. It is suggested that these issues could be more readily accommodated by organisational detachment from beliefs in IT as utopia, consideration of prior IS theory and practice and a more informed approach to CRM package selection.*

Introduction

Information technology (IT) is constantly implemented by organisations to help improve competitiveness although it seems that as new IT-based systems and concepts become available, they are devoured by organisations with little thought for existing and past experiences. Many managers still subscribe to the technological utopianism that Kling (1996) refers to as the use of technologies to shape a vision where life is "enchanting and liberating". Markus and Benjamin (1997) discuss the problem of this belief using the magic bullet theory of IT and organisational change – when IT is used, desirable organisational change will result. Projects such as the widely cited French Railways Socrate system highlight this idea (Mitev, 1998). The Socrate system was supposed to bring about a new philosophy of selling but was initially rejected by staff and customers as too much emphasis was placed on success in relation to the technology. The 1990s, and early in the 2000s, include several instances where organisations have leaped before they looked. Clear inclusions here are business process reengineering (BPR) (Hammer, 1990), enterprise resource planning (ERP) systems (Holland and Light, 1999; Davenport, 1998) and the dot com arena (Howcroft, 2001). It seems as though organisations need reminding that magic bullets do not exist. Lyytinen and Robey (1999) discuss this problem from a systems development perspective. They state that organisations fail to learn from their own experiences and that of others. Customer relationship

management (CRM) packages are one of the latest cases. Balanced views of CRM packages are scantly presented and rely mostly on vendor rhetoric and managerially-focussed practitioner reports. Few un-sanitised reports emerge that allow for the learning that Lyytinen and Robey (1999) indicate is required. Works on CRM in the financial services industry (Peppard, 2000) and at IBM (Ciborra and Failla, 2000) are notable exceptions. Consequently, this paper provides insights into the context, rationale and consequences of CRM package implementation. It is important to acknowledge at this point that CRM packages have the potential to offer immense value to organisations. Indeed, package software may be the only economically viable alternative for small and large organisations. The aim of the paper is to develop a better understanding of the potential problems associated with CRM packages in order that people in organisations can enter into projects more informed and therefore hopefully improve the process of selection, implementation and usage.

The next section defines CRM and offers a short discussion of the context and rationale for CRM package implementation. The research method is described next and extracts from the data collected follow. This data is used to highlight a range of issues associated with CRM packages. Finally, some thoughts on the implications of the findings and recommendations for future research are provided.

The concept and confusion of CRM

CRM has become one of "the" buzzwords for many organisations. Ody (2000) offers three views of the concept of CRM. The first is concerned with precision marketing – the exact matching of a product or service with a customer's requirement in order to secure sales. The second relates to the notion of creating a single, coherent view of customers as commonly associated with call centres. The third is focused on consumer databases with CRM driving investment into data warehouses. Ovum (1999) states that CRM is a business theory built around the simple premise that it pays to know about and look after customers. Generally, definitions hint that CRM is fundamentally concerned with, the idea that:

> A tiny proportion of a company's customers will generate the bulk of its profits. Identifying, collecting and keeping these clients is the very essence of customer relationship management (Clemons, 2000, p. 25).

It is impossible to ignore the striking similarities between CRM and relationship marketing. Relationship marketing is based on the idea that the happier a customer is with a relationship, then the greater the likelihood they will stay with an organisation. There is also strong evidence that customer retention and profitability are correlated (Payne *et al.*, 1999). Berry (1983) states that relationship marketing is about attracting, maintaining and enhancing customer relationships. Gronroos (1994) also offers insights in the same vein.

CRM packages should therefore be seen as being useful for the assisting in the operationalisation of relationship marketing concepts. To elaborate, the organisational experiences reported in this paper, combined with the various definitions of CRM, highlight CRM as much more than a packaged software and implementation activity.

The rise of CRM packages can be linked to two decades of globalisation and the requirement for an appropriate strategic response. During this time, many organisations identified that IT and organisational infrastructures were incompatible with a globalisation strategy. The chronology of the situation was often that IT infrastructures developed on a functional silo basis, nationally and internationally. Therefore, management attention focused on maximising operational efficiency and effectiveness and was a key reason for the domination by ERP systems (Markus and Tanis, 2000). The focus on improving transactional effectiveness and efficiency ignored a critically important issue. Organisations were aware that as globalisation occurred, levels of international competition, and subsequently the threat of new entrants, and new opportunities, increased (Tersine and Harvey, 1998). What seemed to be neglected was that trying to compete for new customers was more resource intensive than keeping existing ones. Even the organisations that recognised this believed that improvements in operational efficiency and effectiveness would keep customers happy, despite the concept of relationship marketing gaining widespread acceptance. It was not until throughout the 1990s that the need to manage relationships was embraced. Perhaps this may be linked with the growth of CRM packages, rather than the concept of relationship marketing or CRM *per se*. It is possible to argue that managers saw CRM packages as another silver bullet. Certainly the stampede toward the implementation of CRM packages, and hitherto the recognition of the need to manage customer relationships is acutely reflected in the increase in the size of the market during this time. For example, during 1998-1999 Siebel Systems, the market leader, saw revenue rise by 93 per cent to $790.9m (Goodley and Bennett, 2000).

Research method

The aim of the study was to investigate organisational experiences of CRM packaged software. A qualitative case study research strategy was employed, as the subject of the study poses content, context and process questions which deal with operational links over time (Pettigrew, 1985; Miles and Huberman, 1994). The research was descriptive in that the data collected was used to describe events in a given context for the purpose of increasing understanding of the area under investigation (Gummesson, 1991). The approach was to compile case vignettes of organisations that were, or had been, involved in CRM package evaluation, selection, implementation and use. An explicit specification of a priori constructs was not used, as the author did not have

previous knowledge of the area of CRM. However, it is acknowledged that the author used an informal, internalised framework for investigation that was revised throughout the data collection process (which lasted one year). The internalised framework was devised and revised on the basis of previous research activity and the literature review. This took the form of a set of research questions that were used to guide the data collection process. The main research questions were:

(1) What are CRM systems? (Concerned with developing an understanding of the interviewees' view of CRM)

(2) How are they introduced into organisations? (Aimed at exploring how CRM systems are created/selected and implemented)

(3) What are the implications of CRM system adoption? (Examines the multiple effects and perspectives of the implementation of CRM systems)

(4) What are the differing perspectives of CRM systems? (Aims to develop understanding of the consequences of a unitary perspective of CRM system projects)

The data was collected using a number of techniques including formal and informal interviews with users and managers of CRM projects. At GoodsCo, the general manager for CRM (two) and IT director (one) were interviewed. At EngCo, the CRM project manager (five), finance director (one), sales director (one), tendering manager (one) IT consultant (one) and managing director (one) were interviewed. At ProfCo, managing director (five), marketing manager (two), sales manager (two) and IT manager (five) were interviewed. Interviews usually lasted two to three hours and the number of interviews held varied by organisational member and is indicated in parentheses after each organisational member listed above. At least two visits were made to the case organisations with a maximum of five months between each. Review of the CRM packages while operating in organisations, and documentary evidence such as strategy and requirements documents was also considered. It is worth noting that there is scope for further development of the range of issues highlighted by the study. Clearly, some of the issues presented in the next section will have greater resonance with a broader variety of organisational contexts. The author acknowledges and welcomes this, since it reinforces the point of the paper. That is, a range of issues exist and there will be others dependent very much on content, context and process issues. In the next section extracts from selected cases are presented. Full cases are not presented however, they contain adequate content to highlight issues for discussion and small cases have been used in the past for the same purpose (Lyytinen and Robey, 1999). Pseudonyms are used to protect the autonomy of the organisations.

Case data

GoodsCo

GoodsCo is a global consumer goods company. Historically, each region and country operated their own systems based on a variety of simple user-developed applications. As each country operated autonomously, there was not a conscious effort to capture fundamental information such as product registrations. If a pan-regional view of the customer base was required then circa 11 phone calls had to be made. In 1998, it implemented a CRM package in its American call centres' customer-facing activities including sales, marketing and service. The package was considered one of the market leaders at the time for large organisations. In 1999, a different package was implemented to support the European call centres. Since this supported pre- and post-sales activities, and the "American" package only supported post-sales, the decision was taken to move the whole organisation to the package chosen to support European operations. Up to this point, the American operations had been using what they described as a "home grown" system to support pre-sales activities. The packages were used by a variety of groups in both regions. These included 60 call centre operatives, six call centre supervisors, three managers (of marketing origin) and four product development specialists.

The package was viewed as very helpful on the whole, it had a problem resolution database that was widely used and which they felt added value to the consumer relationship. However, the company sold their products via retailers, who were in effect their direct customers, and it was very difficult for GoodsCo to obtain data about whom was purchasing their products (their consumers). The CRM package was really only used to support marketing and service activity as much of the selling process was conducted by the retailers. Essentially, GoodsCo would market and advertise their products and provide a free phone number on the advertisement. The consumer might then contact the call centre to locate the nearest stockist of the product. Alternatively, a consumer might see an advertisement for a product and find a stockist without calling the free phone number. Even if the consumer used the free phone number, they would only know that an enquiry had been made by a particular consumer about a particular product and that they had been directed to a retailer based on their post code. The only other potential for the development of a relationship was if the consumer bought a GoodsCo product and decided to register it with the company or if they called the number with a problem with the product they had purchased or a service enquiry. It was not possible to obtain information about customers via the retailers, as the information system which supported business-to-business relationships did not allow for this. GoodsCo had implemented an ERP package to automate transaction-related business processes and it was configured to deal with bulk orders between GoodsCo and the retailers. Consequently, GoodsCo knew for example, that 300 units of a particular product had been shipped to a store at Leeds in Northern

England and they might also know that they had been sold. However, they did not know where those products went from there even though they might have information in the CRM package that told them they had directed several consumers to that store. This compounded the difficulty for the company in profiling their most profitable consumers and maintaining a relationship with them.

EngCo

EngCo is an internationally dispersed small engineering company. The managing director introduced the idea of implementing a CRM package in 1998. The package chosen was a mid-market solution that had evolved from a sales force automation package. The software supported a variety of sales methodologies, but was mainly geared to pre-sales and marketing activities such as enquiry capture and response, mail shots, quotation conversion rate analysis and pipeline management. The managing director believed he was the most informed about what was available on the market as he viewed himself as one of the most comfortable with IS in the organisation. His rationale for the implementation of the package was that they had lost a large contract, which contributed to 25 per cent of the organisations turnover. His impression was that EngCo had lost the contract as competitors were more creative in the way that the interacted with prospective and existing customers. When pressed on this matter, it became clear that the managing director meant the competitors were better at highlighting and focussing on their most profitable customers. He went on to say that the company needed to get more involved with their customers as they did not fully understand them.

The company had previously implemented an ERP package and this was the dominant system used throughout the company. However, many paper-based systems still existed due to lacking functionality in the ERP package. The company had many customer "touch points" throughout the internal departments, any of which could become involved with the customer and it was therefore looking to implement a CRM package with the management of this in mind. In particular, the sales force required significant help as they had been using paper-based systems for several years with little information sharing with the rest of the organisation. A few members of staff developed small standalone applications on their computers but these were not available to the other sales staffs. Sales staffs were becoming distracted from their key role of selling and maintaining good relationships by the amount of administration required such as the logging of phone calls, appointments and manual sales analysis. A further management goal was recognition of a strategic problem – that of retaining and managing the sales force and its operations. Many of the sales team had a great deal of invaluable industry-related intellectual capital. This gave the sales staff a high level of influence and control as the knowledge and skills they held were of great value

to the company, its customers and very importantly, competitors. The sales director, although he felt that he knew nothing of CRM, was critical of the existing ways of work, as they did not provide any feedback to him regarding the performance of the internal and external sales force. He could not find out for example, how many calls had been made to customers, where visits were being made – when and by whom, the nature of the company's customer base. He stated that he felt he was always "operating on a hunch". The company's management wanted the CRM investment to solve this problem. In contrast, the tendering group who would take the requests for quotations and convert them into quotes were not included in the roll out of the package. They felt that the system should have been widened so they could analyse the profiles of prospective customers – that is, whom they historically won business from and whom they didn't. They felt that this knowledge would assist EngCo in being more efficient and effective at quoting for contracts if they could target failures and successes and understand why things were they way they were. However, they were not seen as part of the customer interaction process and merely as engineers. The IT manager at the company had a good understanding of the concept of CRM and commented on the pitfall of viewing the package as just a sales force automation tool, and not including the tendering group, but this was largely ignored by the management team.

ProfCo

ProfCo is a national professional services company with sites at ten locations in the UK. The package chosen was the same mid-market solution as EngCo that had evolved from a sales force automation package. Obviously, as with EngCo, the package therefore supported a variety of sales methodologies, but was mainly geared to pre-sales and marketing activities such as enquiry capture and response, mail shots, quotation conversion rate analysis and pipeline management. Several solutions were considered prior to acquisition and a rigorous requirements gathering process was undertaken prior to the various sales presentations of the vendors. However, in 1999 a senior member of the executive group made the decision to purchase the chosen solution based on a slick presentation (rather than the requirements of ProfCo). The user base for the package was 80. This included geographically dispersed members of the executive group, sales, marketing and service support staff in addition to external ProfCo agents who facilitated service provision.

The company had devised a CRM strategy that they wished to implement and recognised early in their project the limitations of the package they had selected. This centred on improving customer contact and service provision to increase profitability. To some extent, the sales and marketing departments found the software useful for analysing who their customers were, and to some extent, the services they were buying. However, the software did not allow the service support staff to track the progress of service provision that customers

were buying in order to improve this and to allow data from this to be fed into sales presentations to prospective customers. That is, they knew who was buying from them but they could not properly capitalise on this, as they did not fully know why they kept coming back. The company had been in business for some time and had a "feel" for why this was the case, but they did expect the CRM package to provide further support in this respect. For example, ProfCo wanted the package to provide the data to enable them to report key performance indicators such as "every time you use our service, we have a 70 per cent success rate within three months and a 98 per cent success rate within six months". This problem was further complicated by the company's business model. Agents were used to deliver the service and therefore it was difficult to obtain information about service levels and the progress of the delivery of the service as the agents did not want to be monitored. The executive group denied this was the purpose of the exercise, but secretly were eager to monitor external agent performance, as their costs were significant. Despite revisiting the other vendor solutions in 1999 and again in 2001 following postponement of the development of a custom-based system, it was eventually decided that a piece of packaged software, although the most economical route, was not going to be able to satisfy the business-specific demands of ProfCo. Consequently, additional custom systems are now in development that will be integrated with original package that has also been customised.

Case discussion and comparison with the literature
A number of issues emerge from the case data and a discussion of these issues follows, with further support for their existence provided from the literature.

Limitations of CRM packages
The reasons for implementation of CRM packages are very similar to other forms of packaged software which include drivers such as increased development speed, reduced development staff requirement and the maintenance of system integrity through pre-coding and subsequent upgrades (PriceWaterhouse, 1996). However, it has been suggested that packaged software may have limitations such as problems of flexibility, functionality, cost, control and impacts on competitiveness (Holland and Light, 2001; Butler, 1999; Lucas *et al.*, 1988). A limitation of CRM packaged software is that it tends to embody standardised views of relationship management processes. However, not all companies have direct contact with their customers for example. GoodsCo and ProfCo used agents to sell products and services to customers and each experienced difficulty in aligning the software with their business processes. GoodsCo experienced problems in finding out about the characteristics of their customers. ProfCo could not monitor the level of service provided to customers and therefore report on the success of the service to existing and potential customers. EngCo and ProfCo identify a further problem

where both organisations chose to implement the same package and experienced similar difficulties. The software could not be configured to hold data about the volume of sales transactions per customer, which is interesting, given that it was presented under the banner of CRM by the vendor. These findings are not surprising as other studies have highlighted the misfit of packaged software with organisational requirements (Soh *et al.*, 2000; Nah *et al.*, 2001). Further work has also examined the implications of this and has attempted to offer insights into organisational experiences in dealing and living with the compromise necessary of adopting a strategy that is, for many, more economically viable than custom development (Light, 2001).

The need for a relationship orientation

CRM packages appear to be built on the ideas of relationship marketing but the capabilities of the software are often not congruent with the concept – relationship marketing must involve the whole organisation (Payne *et al.*, 1999). The concept of process orientation gained widespread acceptance throughout the 1990s as a way of improving an organisation's customer focus (Hammer, 1990). A package aimed at improving customer relationships, but which is used to, or implicitly reinforce functional silos is therefore potentially problematic. In this study, CRM packages were implemented in functional silos such as sales, marketing and call centres. GoodsCo used a CRM package in their call centre, but clearly required further IT-based support for their relationship management activities throughout the rest of the organisation, particularly in relation to gaining feedback from retailers. They used an ERP package to manage their transactions with retailers but it processed bulk orders and this made it impossible to link products with end consumers. EngCo used the CRM package to improve operational effectiveness, efficiency and codify intellectual capital in the sales department. A broader view of relationship management was not taken, as evidenced by the exclusion of the tendering group. ProfCo implemented the CRM package in the sales and marketing functions but quickly recognised that they needed further support to gain information about service provision post sale, in order to feedback to existing and potential customers. Industry analysts such as Ovum and Forrester have also highlighted the problems of CRM packages in relation to the need for a broader view of the customer. They argue that CRM packages need to offer back office integration capabilities and also incorporate the availability of links with a variety of channels such as phone, Web and mail (Phillips, 2000). Peppard (2000) reinforces this point stating that, in a financial services context, many institutions have taken a narrow view of CRM, as illustrated above. He further concurs with the author's findings and argues that enterprise-CRM, which embraces much more of the organisation is scarce.

Perhaps then, what is required is clearer thinking and terminology in relation to the ideas of relationship management and IT support for its

execution. This study highlights how organisations vary in the nature of the relationships they create and maintain. However, current thinking implies a standard approach to relationship management yet CRM, as it is generally defined, fundamentally implies return visits or repeat purchases. The nature of a product, service or customer base may be at odds with this. Consider a business-to-business monthly stationery order in contrast to a business-to-consumer contract for a funeral. Even where return visits or repeat purchases occur, people in organisations need to consider the profile of the relationship maker/breaker. It is too simplistic to think of them as the customer. For instance, who is the "customer" at GoodsCo? Who do they want to maintain the relationship with: the retailer, the consumer or both of them? The term CRM does not make this complexity evident, yet it is invaluable to recognise it in CRM package evaluation, selection, and implementation activity. This is also important when different CRM package vendor treatments of the concept may be implicitly embodied in the product they are selling[1]. If the case organisations in this study had thought in terms of a "relationship orientation" (that is, thinking of their organisations as a framework of dynamic relationships – as demonstrated by the case data), then maybe their requirements may have been different.

The problems of a dominant management perspective of CRM projects
CRM is often seen from a management perspective that assumes a unitary view of organisations. As stated earlier, to date, little academic work has focussed on CRM packages with much of the published work in business papers, magazines and on Web sites. This is a valuable source of data although it can be sanitised, usually presenting the perspective of management in organisations. This can be problematic and is highly likely to miss or ignore other important views and subsequent issues, strategic or otherwise. It also assumes that those in management positions in organisations subscribe to the unitary view when, in fact, they are individuals with a range of interests in the same way that other non-managerial organisational members are. For example, Van Bennekom and Blaisdell (2000) present the key lessons from a CRM implementation as:

- define your (management) needs;
- compose a project team of users (so that they think it's their idea);
- be prepared for mutual adaptation and leverage this opportunity (use the system to drive change);
- decide the role of the new CRM system (will it informate or automate).

At GoodsCo, EngCo and ProfCo the agenda for implementation was very managerially focussed and was consistent with the industry rhetoric. The aim was to improve efficiency, effectiveness, competitiveness, and also to codify intellectual capital. In the case of EngCo the original spark for the implementation was that the managing directors had seen a CRM package in

operation in another company and decided that they "wanted" one. Each company implemented the same package that they had seen in operation – the rationale being that if product "X" worked for that company, then it would work for theirs. At ProfCo, a savvy sales pitch similarly swayed the managing director.

The use of a CRM package to codify intellectual capital was also a strong driver for implementation, in order to reduce the power base of particular staff groups, particularly sales staff or agents. The problem, to varying degrees, for each of the cases was that those who interacted directly with customers had built up a substantial amount of knowledge, valuable to their existing employer and its competitors. Even though there were intellectual property terms written into contracts, it was impossible to make someone leave behind what they knew and not pass this on to their next employer if they ever left the organisation. The codification of data about customer relationships and its input into a CRM package was viewed as making provision for if an employee left or being able to review contracts based on performance. In relation to the cases, initially, management's agenda prevailed with the underpinning assumption of a unitary view of organisations. However, several of the case organisations, having failed to implement the CRM package with this underlying philosophy, are now attempting to recognise and accommodate competing interests in order to operationalise the system more successfully. This point is reinforced by the case described by Van Bennekom and Blaisdell (2000) where management forced a CRM "tool" onto the sales force and where the sales force realised the new system increased management ability to watch and control – few used the tool. Ciborra and Failla (2000) add further weight to the need to consider this issue in their analysis of IBM's CRM project. They suggest that the installed base (for example the sales force as above) may influence the implementation of CRM.

Conclusions

The organisations in the study pin organisational success on IT-based systems to varying degrees. The paper offers insights into the rationale for this (and in some cases lack of it). Arguments can be made that organisations are sold the idea of success by vendors, although the cases show how organisations may also sell themselves the idea via self-induced peer pressure. That is, by wanting what competitors or other organisations have. Confusion about the definition of CRM is also a likely contributor to the problems encountered by organisations. Organisations need to understand the theoretical and practical implications of the organisational perspective of CRM before embarking on a CRM package implementation. CRM package implementation and usage must be viewed as, potentially but not necessarily, a key component of the operationalisation of a CRM strategy rather than the only component. These issues contribute to inadequate at best, and ill-informed at worst, selection processes – a critical

vehicle for understanding the resultant problems associated with implementation and usage. The purpose of this study was not to generalise about the issues related to packaged software in a CRM context, yet some may levy the criticism that the case organisations' experiences reported are not representative of the general trend in the macro-environment. In response, it is necessary to point out that the purpose here was to cut through the hyperbole of CRM and present a more comprehensive analysis of organisational experiences that may offer useful learning and a deeper understanding of the issues involved rather than a cookbook approach to CRM. That said, what is interesting to note is that the three organisations involved (one large and two small- to medium-sized) all implemented their respective market leaders and all experienced some form of difficulty with the package. It is important to note however, that these difficulties were not always solely related to the packaged software itself and rather to the context within which it was residing. Nevertheless, IT considerations should not be ignored. For example, systems integration capabilities and requirements are an important issue – particularly if a relationship orientation is to be adopted.

The findings, in relation to the limitations of CRM packages, acutely reflect the lack of learning about the idea of IT Utopia. Even though problematic ERP projects have emerged, knowledge transfer is largely absent. The misfit between business processes and package is a key example. Finally, the dominant management perspectives of the CRM projects at the case organisations suggest relatively low levels of maturity with regard to IT. Operational efficiency is mistaken for competitiveness and the competing interests of different groups are not recognised or are neglected. Further work would therefore be useful, which examines such areas as success and failure in CRM package implementation, case studies of organisations that have implemented an IT-supported relationship orientation and the impact of CRM packages on organisational cultural microcosms. The work also raises interesting research questions for the field of information systems in general. Do differences in organisational maturity and perspective of IT impact on selection, implementation and use? What are the consequences of trends toward packaged software? What happens to the role of the IS function where packages form the software infrastructure and how might this affect organisational IT selection, implementation and usage capabilities?

Note

1. Many thanks to Professor M. Lynne Markus for her insight into vendor interpretation of the CRM concept.

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CRM and customer-centric knowledge management: an empirical research

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Abstract *Current competitive challenges induced by globalization and advances in information technology have forced companies to focus on managing customer relationships, and in particular customer satisfaction, in order to efficiently maximize revenues. This paper reports exploratory research based on a mail survey addressed to the largest 1,000 Greek organizations. The objectives of the research were: to investigate the extent of the usage of customer- and market-related knowledge management (KM) instruments and customer relationship management (CRM) systems by Greek organizations and their relationship with demographic and organizational variables; to investigate whether enterprises systematically carry out customer satisfaction and complaining behavior research; and to examine the impact of the type of the information system used and managers' attitudes towards customer KM practices. In addition, a conceptual model of CRM development stages is proposed. The findings of the survey show that about half of the organizations of the sample do not adopt any CRM philosophy. The remaining organizations employ instruments to conduct customer satisfaction and other customer-related research. However, according to the proposed model, they are positioned in the first, the preliminary CRM development stage. The findings also suggest that managers hold positive attitudes towards CRM and that there is no significant relationship between the type of the transactional information system used and the extent to which customer satisfaction research is performed by the organizations. The paper concludes by discussing the survey findings and proposing future research.*

Introduction

Leading firms, after gradually adopting the production, sales and marketing philosophies, are now faced with the challenges of a new orientation that might be termed a customer-centric one (Bose, 2002). At the core of this orientation there exists the necessity for developing and establishing long-term relationships with customers aimed at improving customer service and satisfaction. The interest for the vendors-customers relationships, termed "relationship marketing", has evolved from the concept that there is a continuum of customer relationships, ranging from transactional to relational orientations. Through this relational orientation a company seeks to create overall or cumulative customer satisfaction as opposed to transaction-specific customer satisfaction (Garbarino and Johnson, 1999). Customer satisfaction

and the level of customer service are particularly regarded significant in building trustworthy relationships with customers and retaining the competitive advantage. Sophisticated organizations worldwide rely on specialized CRM software systems to accumulate and analyze customer-focused information.

Company relationships with customers can be greatly improved by employing information technology (IT) (Karimi *et al.*, 2001). IT can facilitate and enhance customer relationships in various ways, but mainly enables companies to attain customization, the essence of the customer-centric orientation, through the deployment of sophisticated customer relationship management (CRM) systems (Dewhurst *et al.*, 1999). According to Oracle, CRM "is about knowing your customers better and effectively using that knowledge to own their total experience with your business, and to drive revenue growth and profitability". CRM can also be defined as the management approach that involves identifying, attracting, developing and maintaining successful customer relationships over time in order to increase retention of profitable customers (Bradshaw and Brash, 2001; Massey *et al.*, 2001).

Companies have come to realize that in order to develop successful, long-term, relationships with customers they should focus on the "economically valuable" customers, while keeping away and eliminating the "economically invaluable" ones (Romano, 2000; Verhoef and Donkers, 2001). Thus, instead of treating all customers equally, companies are now realizing that it is more effective to develop customer-specific strategies. CRM enables firms to deploy such strategies by managing individual customer relationships with the support of customer databases and interactive, as well as, mass customization technologies (Verhoef and Donkers, 2001). CRM, as explained in the relevant section below, is definitely related to the discipline of knowledge management (Romano, 2000; Massey *et al.*, 2001). Thus, the existence of sufficient and continually updated customer knowledge is critical for an effective CRM system.

The objectives of the research reported in this paper were: to propose a conceptual model of CRM development stages; to investigate the extent of the usage of KM customer-related instruments and CRM information systems by Greek organizations and their relationship with organizational and demographic variables; to investigate whether companies systematically conduct customer satisfaction and complaining behavior research; and to examine the impact of the type of the information system used on CRM related practices. The paper is structured as follows: First, there is a discussion about relationship marketing, customer satisfaction and complaining, where the customer satisfaction concept is stressed. Next, CRM and its relation with KM and information systems is examined. Then, the proposed CRM model is presented and analyzed. The methodology section with survey results and analysis follow. Finally, conclusions and implications are presented.

Relationship marketing, customer satisfaction and complaining
Relationship marketing aims at building long-term, mutually satisfying
relations with customers, suppliers and distributors with the objective to earn
and retain their long-term preference and businesses (Kotler, 2000, p. 13).
According to relationship marketing theories, social and structural bonds
between businesses and customers can be developed and leveraged with the
objective of mutually beneficial economic exchanges (Frenzen and Davis, 1990;
Massey *et al.*, 2001). A basic theoretical approach guiding relationship
marketing research stems from social psychology. More specifically, the social
exchange theory and the theories of power and dependence emphasize
processes that lead to satisfaction for the exchange parties as well as
techniques for managing dependence and uncertainty (Cannon and Perreault,
1999). Empirical findings suggest that customer satisfaction, which is the
underlying notion of relationship marketing, is a critical point in achieving and
retaining competitive advantage. Organizations have discovered and research
studies have shown that retaining current customers is much less expensive
than attempting to attract new ones (Desatnick, 1988; Stone *et al.*, 1996; Bitran
and Mondschein, 1997; Chattopadhyay, 2001; Massey *et al.*, 2001). The best
means to accomplish customer retention is to keep customers satisfied. In fact,
a number of studies have shown that customer satisfaction can lead to brand
loyalty, repurchase intention and repeat sales (Day, 1984; Swan and Oliver,
1989; Oliver, 1999; Parasuraman and Grewal, 2000), in short to customer
retention. Customer retention, in its turn, seems to be related to profitability
(Oliver, 1999).

Customer satisfaction has been related to perceived performance and
expectations. If performance matches expectations or exceeds them, the
customer is satisfied or highly satisfied respectively. If performance falls short
of expectations, the customer is dissatisfied (Olshavsky and Miller, 1972;
Anderson, 1973; Hunt, 1977). Moreover, customer satisfaction is at the core of
the marketing concept, which has been the guiding force for most of the leading
companies (McCarthy and Perreault, 1987; Webster, 1988; Kotler, 1991, 2000).

Traditionally, emphasis has been given in obtaining additional customers
and encouraging brand switching from competitors, that is, in offensive
strategies (Fornell and Wernerfelt, 1987). Customer satisfaction and retaining
has been labeled as defensive strategy. The goal of defensive strategy is the
minimization of customer turnover (maximization of customer retention)
through the protection of products and markets from competitive brands and
generally from competitive inroads (Fornell, 1992). Practically, most firms
adopt a combination of offensive and defensive strategies. But in the face of
increasing competition and maturing and shrinking markets, defensive
marketing is becoming more attractive and popular. Obviously, this trend is
magnified by the rapid development of CRM systems and the adoption of the
customer-centric orientation.

This paper also addresses the issue of customer complaining, which has been ignored in the CRM literature. Customer complaining is strongly related to the notion of customer dissatisfaction. It refers to behavioral and non-behavioral consequences following customer dissatisfaction with a product or service. Traditionally, the behavioral consequences have been the focus of complaint behavior studies and involve some kind of expression of the dissatisfaction experience. That is, brand switching, negative word-of-mouth, redress seeking, complaining to the firm or to a third party, among others. Understanding complaining behavior is an important area of inquiry. It has been recognized that the study of complaining behavior has implications for such critical phenomena as brand loyalty and repurchase intentions (LaBarbera and Mazursky, 1983; Day, 1984; Blodgett *et al.*, 1993; Davidow and Leigh, 1998) and market feedback mechanisms (Fornell and Wernerfelt, 1987). From all the dissatisfaction consequences, the most desirable one for the company should be customer complaining to it. It has been shown, that maximizing the number of complaints from dissatisfied customers (subject to certain cost constraints) is in the best interest of the firm (Fornell and Wernerfelt, 1987). In such a way, where applicable, a market feedback mechanism is activated enabling the company to pin-point the problems related to product quality, pricing, communication with customers and other aspects of the marketing mix (Bearden and Teel, 1980; East, 1996). Therefore, the system should encourage customers to complain, aiming at providing a better feedback to the company. Complaint management is thus, an important marketing variable and a key element in relationship marketing and CRM by extension. Consequently, in applying a CRM system within the firm, the customer data profile needs to be expanded in order to include non-transactional data, such as general enquiries, suggestions and complaints (Bose, 2002).

CRM and customer knowledge management

According to the definition of CRM presented in the introduction, obtaining customer-related knowledge is specified as the means to attain CRM objectives. Knowledge has been recognized as one of the main assets of organizations (Drucker, 1993). KM, in particular, has been defined as the process of capturing the collective expertise and intelligence in an organization and using them to foster innovation through continued organizational learning (Nonaka, 1991; Quinn *et al.*, 1996). Since a major part of that expertise and intelligence refers to customers, it is concluded that CRM is strongly related to KM and especially to customer KM (Romano, 2000; Massey *et al.*, 2001). According to Romano (2000) companies should explore and refine CRM knowledge management methods in order to get value-added knowledge for themselves and their customers and understanding not only customer purchasing patterns and trends but attitudes and preferences as well. Customer-related knowledge, level of customer service

and customer satisfaction are especially regarded significant in retaining the competitive advantage of the firm (Porter, 1985; Kim and Kim, 2001).

The significance of customer knowledge is emphasized by a number of studies on KM. For example, Skyrme and Amidon, in a 1997 survey of KM practices of European and North American companies, found that 96 percent of them evaluated customer knowledge as the most important asset in maintaining competitiveness (quoted in Bennet and Gabriel, 1999). Similarly, in another survey conducted by the *Journal of Knowledge Management*, with the assistance of the Best Practice Club and the Benchmarking Exchange, in a sample of companies engaged in KM philosophy and practices, was found that customer-focused knowledge was the most preferred type of KM activity (Chase, 1997).

In order to acquire and monitor customer knowledge, a number of practices, instruments and measures have been suggested in the KM literature. Beijerse (1999) proposes the following:

- assess customers;
- carry out customer satisfaction research;
- obtain knowledge from customers; and
- interview customers.

Customer satisfaction, in particular, as an instrument to enhance customer knowledge, is also suggested by other authors in the literature (Ahmed *et al.*, 1999; Meso and Smith, 2000; King and Ko, 2001). Apart from the adopted methods, practices and instruments, the perceived importance of the customer factor is also indicated by the company's culture as expressed by its attitudes towards customers and the relationships shaped between the company and them. These attitudes, structuring, under certain conditions, behavior and actions (Ajzen and Fishbein, 1980; Antonides and Raaij, 1998, p. 202) are also examined in the present study.

At this point, it is interesting to note, that, as has been argued, knowledge, unlike data or information, is embedded in people and not in IT (Sveiby, 1997, 2000; Davenport and Prusak, 1998). The way people capture, share and interpret knowledge accumulated in organizational repositories is very important in operational and strategic business activities and actions aiming at retaining competitive advantage. It has also been suggested that a biased view of the value of knowledge-based systems (KBS) exists in the literature putting an excessive emphasis on IT (Hendricks and Vriens, 1999). However, IT enables decisively the implementation of modern KBS by providing data mining and decision support tools and integrating communications technologies (McCampbell *et al.*, 1999). Additional technological advances supporting both KM and CRM systems include groupware systems, dataware houses, information retrieval engines, workflow systems and Web-based technologies.

CRM in information systems
Advances in IT and information systems have been a catalyst for the development of CRM systems. According to Bose (2002):

> ... in IT terms, CRM is an enterprise-wide integration of technologies working together, such as data warehouse, Web site, intranet/extranet, phone support system, accounting, sales, marketing and production.

CRM has certainly been transformed and become more sophisticated with the development of e-commerce. The two areas seem to follow a common route into the future.

From the definitions about CRM, cited in the introduction of this paper, one could conclude that no management process technology is necessary. However, practically, there are two basic ways a CRM system can be employed and interact with a customer: first, an IT-assisted CRM, emphasizing traditional channels, such as telephone support centers, communication by fax and/or mail as well as field personnel (Wells *et al.*, 1999; Bradshaw and Brash, 2001); second, an IT-automated CRM, emphasizing customer interaction through technologies such as the Web, wireless devices and automated phone systems (Wells *et al.*, 1999; Bradshaw and Brash, 2001; Bose, 2002). The system enables customers to interact directly with CRM (Bose, 2002).

CRM might be a major part of a firm's e-commerce strategy (Karimi *et al.*, 2001). The Web presence, in particular, should engage each individual customer ensuring his/her returning again and again. The company should integrate the Internet with the front-office company functions, i.e. marketing, sales and service, so that it will be able to have and provide a good customer experience. Integration with back-office applications is also essential and it is not surprising that CRM applications are rapidly becoming more multifunctional and integrated with other existing software such as enterprise resource planning (ERP) systems (Karimi *et al.*, 2001). Although traditional ERP is generally regarded as a transactional back-office system offering limited decision making support (Stefanou, 2001), recently developed ERP functionalities and bolt-on applications, such as supply chain management (SCM) and CRM aspire to give extended ERP knowledge management capabilities for capturing, analyzing and sharing market and customer data and creating value for the customers. This integration may lead to a Web-based decision support system (DSS) providing online analytical capabilities and serving effectively both customers and organizations.

However, despite the enthusiasm for CRM as front-office integration, the adoption of second generation CRM systems in large North American and European companies is just emerging according to an industry study by the IDC and Cap Gemini consulting and research firms in 1999 (cited in Massey *et al.*, 2001). This survey found that only 12 percent of the companies have operational CRM systems, most of them focusing mainly on call centers. The situation is expected to be worse in a country like Greece, where, according to a

research survey, only 67 percent of the large enterprises have Web presence
and e-commerce plays a minor role in their business activities (Doukidis *et al.*,
2000).

A conceptual model of CRM development stages

CRM, as an emerging discipline, is in great need of theoretical assistance
(Gummesson, 2002). Guiding theories and models are in short supply in the
field, probably due to the fact that it is a new area for research and because of
its relatively recent interchange with IT and information systems, which have
been rapidly developing.

It is obvious from the discussion in the preceding sections and the
definitions presented in the introduction, that CRM can be defined without any
reference to IT or the particular information system implemented in the
organization. However, effective customer personalization management
requires that CRM software systems should not only be operational but also
highly integrated into the IT architecture of the organization. Figure 1 depicts a
conceptual model of the CRM development stages. The stages are determined
by the level of IT employed and the sophistication/integration of the
information system used in the organization. The higher the level of IT the
higher the integration of CRM into the organization's IT/IS architecture and
more effective/efficient is the management of customer relationships leading to
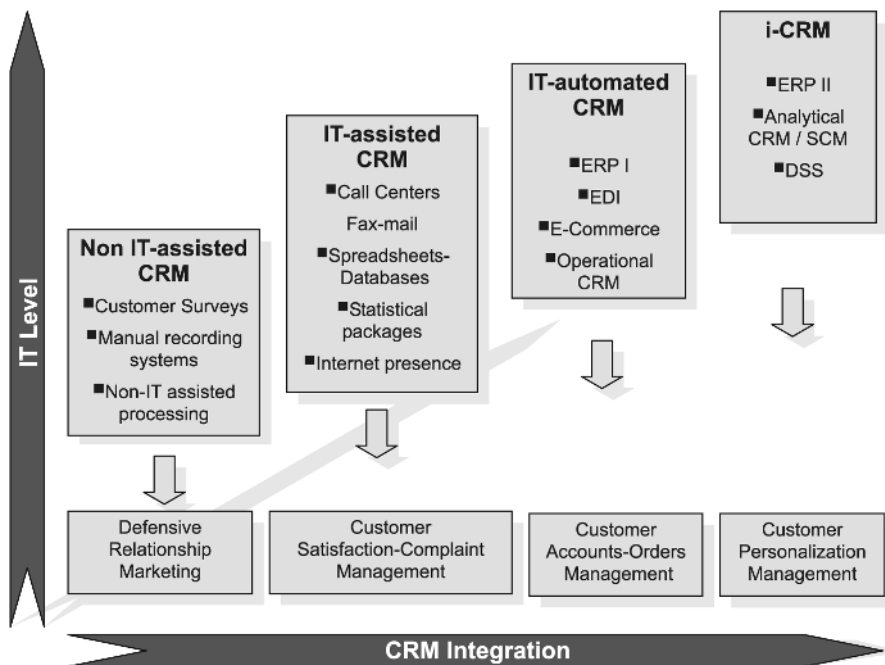customers' expanded profiles and personalization.

Figure 1.
Stages of CRM
development

The first CRM development stage is the preliminary, non IT-assisted stage. Organizations belonging to this stage have a very limited or not at all use of IT as far as the management of customer relationships is concerned. However, these organizations use customer related knowledge management instruments and have some type of a mostly manual customer satisfaction and/ or complaining data recording/processing system, indicating, thus, their positive attitude and orientation towards defensive relationship marketing.

The second CRM development stage is the IT-assisted CRM, predominately a manual process that uses IT to enhance the company-customer relationship (Wells *et al.*, 1999) and analyze customer-related data. This came to prominence around 1998 and emphasized on traditional channels mentioned above. Customer data are mainly collected manually but recorded and analyzed by using spreadsheets, database systems and statistical packages. Organizations belonging to this stage are expected today to have some Internet presence and manage effectively and efficiently customer satisfaction and complaint behavior.

The third CRM development stage is the IT-automated CRM, which emphasizes customer interaction by using a number of technologies, such as the Internet and telephone/computer integration. Acquisition of customer profiles, tracking of customer purchase patterns and trends and interactive service provision have been made possible by the advances in IT (Chattopadhyay, 2001). Companies belonging to this stage have active Web presence, use EDI systems, engage in e-commerce and have implemented ERP and operational CRM systems aimed at business processes optimization and sales force automation. Processing of customer requests and orders and management of customer accounts are expected to be timely and accurate and generally at a high level of efficiency.

The fourth CRM development stage is the integrated CRM (i-CRM), leading to customer personalization and high level of service and customer satisfaction. At this stage, companies employ sophisticated CRM information systems providing highly integrated back-office, front-office and Internet functions. These integrated CRM software systems should be flexible enough to adapt to changing customer needs over the product's life cycle (Chattopadhyay, 2001) and analytical in order to dynamically monitor consumer preferences. Personalization software includes a number of analysis technologies such as data mining, collaborative filtering and rules engines (Bradshaw and Brash, 2001). Supply chain optimization and analytic functions are also expected at this stage through the use of Web-enabled decision support software systems. This will probably require not only enterprise-wide sharing of information so that customer-centric knowledge could be available to every decision maker inside the organization but also sharing of relevant business information with customers and business partners aiming at overall customer satisfaction, processes efficiency and cost minimization (Stefanou, 2001).

Research methodology

This study is based on a mail survey of the largest Greek organizations. The questionnaire was addressed to marketing and sales managers because it included a large number of marketing variables and it was thought that these managers should also be familiar with the information system of their organizations. Due to the exploratory nature of this research, the questionnaire included items concerning costumer-oriented knowledge gathering instruments, customer satisfaction/complaining data recording/processing systems, managers' attitudes towards CRM and the type of information system employed. The survey was constructed by following standard guidelines for the design of research surveys proposed by Dillman (1978).

The questionnaires, accompanied with a pre-paid self-addressed envelope and a cover letter explaining the purpose of the research, the voluntary nature of the participation and assuring participants of confidentiality, were mailed to the marketing/sales managers of the 1,000 largest, based on revenue, organizations in Greece. The questionnaires were mailed from and returned to a campus address. The list of organizations was compiled by using the ICAP (Index of Companies and Products) directory, a widely accepted database containing information about Greek companies. A second letter, including a questionnaire form, was sent three weeks later, thanking those who answered the questionnaire and reminding those who did not, to return it by a specified date.

The letters were addressed to each individual personally and not just to the "marketing or sales manager". This was achieved by using the information contained in the ICAP database. A total of 1,000 questionnaires were mailed and 92 were initially returned. After the follow-up another 77 were received making a total of 169. The rate of response was 16.9 percent. Seven of the questionnaires were unusable, therefore a total of 162 usable questionnaires were used in the analysis of data.

Measures

The questionnaire incorporated a list of customer-related instruments based on a previous study (Beijerse, 1999) presented below. All of the items were measured by a Likert-type scale (1 = never, 5 = always). A number of questions regarding the customer satisfaction/complaint recording system used in the company, the customer data collection method employed and the technology used to analyze customer data were also part of the questionnaire. A section with questions concerning managers' attitudes towards CRM was included. The questions of this section were compiled by the authors after an extensive search of the literature and discussion with colleagues and are presented below. These items were also measured by Likert-type scales (1 = not important, 5 = very important). In addition, the questionnaire included questions regarding the particular information system used (ERP

package, non-ERP package, custom made/in-house development) and whether additional specialized CRM and SCM systems were used. Demographic variables, such as age and education of the respondents and organizational variables such as the type of industry and the size of the marketing department were also included.

Data analysis and discussion

A variety of industries is represented in the sample (Table I). The age of the majority of the respondents was between 35-44 years, 24.8 percent of them were female. As far as their education level is concerned, 46.9 percent of them had a University degree, 39.5 percent a postgraduate degree and 6.8 percent a college degree

Table II depicts the frequencies concerning the use of customer-oriented KM instruments in Greek organizations.

Overall, the findings show that more than half of the Greek organizations always, or frequently use, instruments to evaluate external environment and to assess and obtain knowledge from customers. However, only about one-quarter of them systematically carry out market research. This suggests that there is enough room to increase performance in case there was an improvement in this particular aspect. It is also worth mentioning that 44 percent of the respondents carry out customer satisfaction research. An additional similar question, asking whether there was a customer satisfaction recording system in the organization was included in the questionnaire. The percentage of those who answered "yes" was about the same, 41.5 percent. By performing the chi-square

Main activity of organization	Percent
Finance/banking/insurance	2.5
Retail	6.2
Wholesale/distribution	27.6
Food processing	6.8
Chemical processing	4.9
Textiles	3.7
Other	9.1

Table I.
Sample characteristics

Instruments used to:	Never/sometimes (%)	Frequently/always (%)
Assess customers	16.6	54.7
Carry out customer satisfaction research	37.8	44.0
Carry out market research	47.1	26.7
Obtain knowledge from customers	17.5	51.3
Evaluation of external environment and markets	15.6	51.3

Table II.
Customer oriented instruments

test and the ANOVA procedure among this variable and the Table II customer satisfaction and market research instruments, there was an indication of convergent validity of those variables.

Table III depicts the percentages of the organizations that use any type of a customer satisfaction and complaint recording system; 41.5 percent of them use questionnaires, e-mails, call centers and periodic market research and customer surveys in order to collect customer satisfaction data; 61.7 percent of them collect customer complaint data. It is concluded, therefore, that about half the organizations do not usually employ any customer KM methods and have not adopted any CRM philosophy.

Table IV depicts the type of the system used to collect the data and Table V the technology employed to analyze these data and transform them into meaningful information.

Table VI depicts the type of the main information system implemented by the organizations which responded to the survey.

	Percent		
	Yes	No	
Customer satisfaction recording system	41.5	58.5	
Customer complaining recording system	61.7	38.3	

Table III.
Customer satisfaction/complaining recording system

	Percent		
	Internet	Non-Web-based market research	
Customer satisfaction data collecting system	1.7	98.3	
Customer complaining data collecting system	13.3	76.7	

Table IV.
Customer data collection method

	Percent		
	MS Excell-Access	Statistical package	Outsourced to third party
Customer satisfaction	72.0	24.0	4.0
Customer complaints	93.3	6.7	0.0

Table V.
Technology used to analyze customer data

	Percent
ERP	53.4
Packaged applications (non-ERP)	21.9
Custom made/in-house development	24.7

Table VI.
Type of information system implemented

As shown in Table VI, 53.4 percent of the respondents have implemented ERP systems. The ERP average age, after implementation, is 23.95 months. The ERP percentage in Table II includes ERP software developed by both the big multinationals ERP vendors, mainly SAP, (17.8 percent) and local Greek software firms (35.6 percent). However, it should be noted that nearly half of the respondents failed to answer the above question, as probably they did not know the type of their information system. Without taking this fact into account, the actual percentage of those who answered that they use an ERP system is 24.1. Also, it is interesting to note that 10.3 percent of the respondents use additional specialized CRM software (such as Siebel's) and 6.4 percent use specialized supply chain management (SCM) software (such as Manugistics). In more than half the cases, the CRM and SCM software is integrated with the ERP system. However, only 1.85 percent uses integrated ERP/SCM/CRM systems. The average operation period of the CRM and SCM systems is 14.5 months, which shows that CRM/SCM systems have only very recently entered the market. In any case, the penetration of specialized CRM and SCM packages is rather small considering the fact that the survey was addressed to the largest Greek companies. These findings suggest that there is a potential large market for vendors of CRM software systems to enter.

By using the above information and taking into account the conceptual framework of CRM development stages presented previously, it is concluded that nearly half of the largest Greek enterprises exhibit technological indicators characteristic of the first two stages of CRM maturity adopting a philosophy of defensive relationship marketing or practicing customer satisfaction/complaint management. Only a very small percentage of them (1.85 percent), that is, those that use integrated CRM and SCM software systems, can be assumed to belong to the more mature stage of CRM development. It is reminded however, that, relatively, the situation is not much better with the large North American and European companies, according to the IDC/Cap Gemini study mentioned earlier.

Next, managers' attitudes towards CRM are presented. As noted in the theoretical part of the paper, the perceived importance of the customer factor can also be indicated by the managers' attitudes towards customers and company-customer relationships. Table VII depicts the frequencies of 12 questions measuring the importance attributed to customer-oriented and marketing-related issues by the respondents.

As was expected, customer-related issues are regarded in general very important by the respondents. In particular, shaping trustworthy relationships with customers, forming long-term relationships with customers, retaining competitive advantage, and increasing customers' satisfaction are regarded important or very important by the 98.8, 96.2, 94.3, and 93.1 percent of the respondents, respectively. On the other hand, only 45.2 percent of the respondents believe that having compatible information systems with customers is an important issue, despite the fact that compatibility of

	Not/little important (%)	Important/very important (%)
1. Shaping trustworthy relationships with customers	0.0	98.8
2. Assuring accurate transition of information to customers	0.0	91.3
3. Organization's assessment by customers	3.1	81.9
4. Using compatible information systems with customers	11.6	45.2
5. Forming long-term relationships with customers	0.6	96.2
6. Retaining competitive advantage	1.3	94.3
7. Increase of market share	1.3	91.6
8. Improving performance together with customers	11.5	73.7
9. Improving communication among organizational functions for customer service	13.8	86.1
10. Improving communication between company and customers	1.9	91.8
11. Increasing customers' satisfaction	0.6	93.1
12. Improving product/services quality	0.7	93.0

information systems between organizations and customers can enhance customer service level. Furthermore, as far as costing is concerned, compatibility of information systems is a necessary condition to optimize costs across supply chains (Drucker, 1995). The second lowest percentage has been given to "improving performance working together with customers" (73.7 per cent)

In order to determine whether any of the variables regarding managers' attitudes are related to each other in a common category, factor analysis was performed on the set of questions presented in Table VII. The KMO measure for sampling adequacy was satisfactory at 0.825 and Bartlett's test of sphericity was 638.4 at 0.000 significance level. The factor loadings are presented in Table VIII. Factor analysis resulted in two factors; the first one included the improvement of communications inside the company and between

Factor 1: Customer satisfaction
Increasing customers' satisfaction	0.855
Improving communication between company and customers	0.815
Improving product/services quality	0.793
Improving communication among organizational functions for customer service	0.684
Improving performance together with customers	0.560

Factor 2: Customer relationships
Shaping trustworthy relationships with customers	0.791
Organization's assessment by customers	0.722
Forming long-term relationships with customers	0.720
Retaining competitive advantage	0.664
Assuring accurate transition of information to customers	0.578

the company and customers as well as increasing customer satisfaction and product quality. This factor was named "customer satisfaction" with a reliability of $a = 0.80$. The second one included the variables of forming relationships with customers and retaining the competitive advantage. This factor was named "customer relationships" and exhibited a reliability of $a = 0.76$. The two factors explained 58.29 percent of the total variance and can be used in future research as implementation variables. Questions 4 and 7 in Table VII did not load high enough in any of the two factors and, thus, they were excluded from further analysis.

Finally, the study examined the relationship between the type of information system used and the extent to which a customer satisfaction and/or complaint data recording system is used by organizations. By performing the ANOVA procedure between the types of information systems used and the customer satisfaction/complaints variables it was found that no statistically significant correlation existed between these variables.

Conclusions

It is believed that this exploratory study has made a significant contribution by proposing a CRM development stage model, identifying the extent to which Greek organizations employ customer-oriented KM instruments and use customer feedback data, i.e. customer satisfaction and complaint, and investigating the level of CRM employed and managers' attitudes towards CRM issues.

The proposed CRM model specifies the basic parameters of the various CRM development stages. It can assist researchers to concentrate their efforts on a specific research area having, at the same time, a global view of the development process. On the other hand it can assist companies to detect problematic areas in the existing customer-based information system and motivate them to improve it.

According to the findings of the survey, only about half of the organizations employ instruments to systematically carry out customer satisfaction research and other customer-related analysis, while the other half is not involved in relationships marketing and has not adopted any CRM philosophy. This suggests that Greek companies need primarily, to develop an organizational culture positively oriented to construction, employment and exploiting of customer-oriented KM instruments. Greek enterprises are also in the first stages of the CRM maturity according to the technological indicators incorporated in the model of CRM development presented previously in the paper. Only a very small number of those are using integrated specialized CRM and SCM software and, thus, can be characterized as belonging to the mature CRM stage. However, about 90 percent of the respondents evaluate most CRM issues as important or very important. This suggests that companies should address the issues of practically installing and managing customer information

systems at all levels of the organization as it seems that managers are convinced about the merits of CRM and they are willing to exploit the advantages offered by CRM information systems.

Despite the excitement surrounding ERP systems concerning their knowledge accumulation, analysis and sharing capabilities (Radding, 2000), it was found that no relation exists between the type of the transactional information system used and the extent to which customer satisfaction research is performed by the organizations. An implication of this finding is that the adoption of modern processing technology, although essential for building customer-oriented knowledge-based and CRM systems, does not necessarily lead to advanced customer-centric initiatives. This finding may also indicate that standard transactional and first generation ERP systems overlook the importance of the customer satisfaction/dissatisfaction issues and are characterized by a lack of analytical capabilities. The sample of the respondents that use CRM systems was too small to perform any meaningful statistical analysis on that issue and further research, probably qualitative, is needed. It is reminded that the survey took place in Greece and the findings needs to be further verified by using a different and larger sample.

Customer-centric knowledge management requires a positive attitude and a desire to extract value for the organization by managing customer relationships over time. The organization, in order to really manage customer relationships, has to primarily develop a culture, motivating employees at all levels towards learning and facilitating them in capturing, selecting, using, and sharing knowledge by providing the means and the technology required to do so. In light of the above, future research could be directed at examining how enterprises should implement and integrate CRM technologies into their IT architecture and how these technologies could be used efficiently and effectively by their internal users and decision makers.

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The impact of product category on customer dissatisfaction in cyberspace

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Abstract *How do online customers judge a product's attributes in cyberspace? Previous studies of online product category suggest that all goods are not equal on the Web, because products have different attributes. Furthermore, the literature assumes that the customer's ability to evaluate product quality on the Web differs according to product attributes. Based on these considerations, the purpose of this study is to determine whether a customer's dissatisfaction and propensity to complain on the Web differ depending on product category. This study examines how selected variables (i.e. monetary, and non-monetary effort, and the degree of involvement) influenced the impact of product category on customer dissatisfaction. The analysis was performed using survey data, collected both online and offline. The findings suggest the most appropriate strategies online companies should employ for each product category in question.*

1. Introduction

Purchasing behavior in traditional physical markets and in online markets differs depending on what type of products/services customers have in mind. Although e-businesses expend a major effort in maximizing customer satisfaction and minimizing customer dissatisfaction, they face critical limitations. Online customers cannot see/touch/smell/hear the actual products via online transactions. For example, for products such as clothes, shoes, and cosmetics, the general tendency of customers is to try and see the products, since online information regarding their actual ingredients, such as type of fabric, for instance, does not provide enough information to make a purchase decision. Another common reason that customers wish to try and see such products physically is that even clothes of the same size may differ in actual sizes across companies. For example, size "medium" from the A company maybe almost like size "large" from the B company.

There are some exceptions in terms of purchasing such products as clothes, shoes, and cosmetics on the Web. For example, customers who have prior experiences with specific brands and/or products might not hesitate to purchase them online because their familiarity has accorded them full information about the products. However, without those prior familiarities, it is not easy to determine the quality of products such as clothes, shoes, and cosmetics on the Web.

The current literature regarding customer dissatisfaction on the Web has rarely focused on the impact of product categories on dissatisfaction. The previous study by Cho *et al.* (2002) indicates that customers' satisfaction/dissatisfaction on the Web is affected by the types of products they purchased. The purpose of this study is to explore the impact of product category on various issues in online shopping, including customers' dissatisfaction. This study uses product categories by Degeratu (2000) and investigates how product category impacts customers' dissatisfaction. In examining the relationship between product category and dissatisfaction, this study adopts three moderating variables, monetary effort, non-monetary effort, and ego involvement, which were frequently applied in the studies of product classification (e.g. Murphy and Enis, 1986). The perceived price by customers was used to measure monetary effort, while search effort and time were identified as non-monetary effort. Different effects of moderating variables on dissatisfaction based on product category are discussed in the conclusion of this study.

2. Conceptual background

Products were classified in a number of ways in the traditional market place. Based on the product classification by Murphy and Enis (1986), four categories of products – convenience, preference, shopping, and specialty – are defined in terms of the buyer's evaluation of the price. Two dimensions were used to explain this classification of products, risk and effort. Risk (Murphy and Enis, 1986) in this study is the buyer's subjective feeling about the monetary and non-monetary price of the product, while effort is defined as the objective amount of money and time it takes to purchase a product. According to these dimensions, convenience products (e.g., fresh produce, grocery staples, etc.) are defined as lowest in terms of both effort and risk (Murphy and Enis, 1986); preference products (e.g. beer, soft drinks, etc.) are slightly higher in the effort dimension and much higher in risk; shopping products (e.g. automobiles, clothing, furniture, etc.) include increased levels of risk and also are perceived by consumers as high involvement products; and specialty products (e.g. vintage wines, expensive cars, etc.) are defined to be highest in both risk and effort.

Recent approaches to product category on the Web have studied the degree of requirements of consumer's physical presence. Kiely (1996) mentions that the

impact of interactive home shopping depends on the requirements of the consumer's physical presence. Shoppers at Home Depot, for example, typically inspect the size, specifications, or colors of the tools, gadgets, and other building materials they are planning to purchase, and often seek advice from the retailer's sales associates (Kiely, 1996). Thus, if retailers are to succeed in interactive home shopping, they will need to develop a much more sophisticated understanding of how to create and deliver detailed product information to their customers.

A study by Degeratu *et al.* (2000) classified products on the Web as sensory vs non-sensory. This category was suggested because online transactions differ from traditional exchanges in terms of a product's sensory attributes such as touch, smell or sound. Sensory products were defined as those that have attributes that can be conveyed through our senses, particularly touch, smell, or sound, while non-sensory products were defined as products with attributes that can be conveyed reasonably well in words (Degeratu *et al.*, 2000). The study by Cho *et al.* (2002) found that online customers' complaints are greater with sensory products than with non-sensory products, particularly when customers are dissatisfied with the presentation of the information provided for the sensory product compared to information for the non-sensory product.

Studies by Kiely (1996) and Cho *et al.* (2002) both suggested that products with a higher physical presence (i.e. customers must see, touch, or smell the product) should provide as much sophisticated information as possible. In other words, on the Web, due to the inherent limitation in delivering sensory information, it is hard to make sound decisions for sensory products regardless of the time and effort spent on the information search. However, in the in-store environment, there is a good chance that decision quality increases if customers spend more time and effort in the information search for sensory products. It suggests that on the Web, tools for more detailed and sophisticated information will be needed for products that have such attributes. Therefore, it is interesting to see the impact of the quality of information on the customers' dissatisfaction based on the product continuum.

Another approach to product category was by de Figueiredo (2000) in the context of e-commerce. de Figueiredo (2000) examined whether quality is easy or difficult to judge in products on the Web. Products on the Web are unequal due to the inability to deliver actual services or adequately detail the specific nature of many products. Therefore, a product's attributes are not evaluated equally by customers on the Web (de Figueiredo, 2000). Four product categories on the Web by de Figueiredo (2000) include commodity products (e.g. oil, paper clips), quasi-commodity products (e.g. books, CDs, videos, or toys), look-and-feel goods (e.g. suits, furniture, model homes, etc.), and look-and-feel goods with variable quality (e.g. arts, produce, etc). According to product continuum on the Web by de Figueiredo (2000), product category

moves from commodity product to look-and-feel goods with variable quality, as a product's attributes are not easily evaluated by customers.

Sensory products do not convey all the attributes of the products on the Web. According to de Figueiredo (2000), customers need to see and touch products such as produce and art despite recognizing the brand and knowing the product. Therefore, customers are not likely to purchase sensory products with variable quality online, because their satisfaction after the purchase might not reach prior expectations. Thus, in an effort to fulfill customer expectations for those products, e-businesses sell sensory products only by providing customized technologies, such as pictures of the products, enlargements of the products, and size charts, etc. Frontier Web sites such as www.landsend.com, use advanced Web features such as a three-dimensional mirror images to reduce the uncertainty of the clothes they sell on the Web. Based on the previous work, this study used the product classification by Degeratu *et al.* (2000) and Kiely (1996), sensory vs non-sensory products. The study assumes that customers might be reluctant to purchase products with sensory products on the Web because they cannot measure the attributes of those products. It is expected that customers' dissatisfaction with sensory products on the Web might be higher than dissatisfaction with such products in the physical market place.

Customer dissatisfaction and complaints

Most of the definitions of satisfaction/dissatisfaction that have been proposed contain some mention of "expectation" or a synonym (Gilly, 1979). Even in common usage, as found in the *Random House Dictionary*, dissatisfaction is defined as resulting from "contemplating what falls short of one's wishes or expectations" (Gilly, 1979). Most conceptual discussion of dissatisfaction concludes that a discrepancy between perceived product performance and the consumer's expectation of performance leads to dissatisfaction (Landon, 1977). For example, Olson and Dover (1979) found that perceptions of product attributes are affected by expectations, and suggested dissonance theory as an explanation. Studies by Oliver (1980) also proposed that when perceived quality (which can be influenced itself, by expectations) was negatively disconfirmed after the consumption of the product or service, customers' dissatisfaction increases (Vavra, 1997).

The intensity of complaint behavior or propensity to complain was often hypothesized to be directly proportional to the degree of dissatisfaction (Bearden and Teel, 1983). Propensity to complain is defined as representing a summary measure of an individual's demonstrated inclination and intentions to complain in the face of any unsatisfactory purchase experience (Bearden *et al.*, 1979). Previous studies found that the "propensity to complain" has been operationally linked to past complaint actions, as a proxy for the inclination of consumers to complain (Bearden *et al.*, 1979; Gronhaug, 1977; Zaltman *et al.*, 1978).

The customers' dissatisfied experience based on product categories on the Web has rarely been the focus of study in the existing literature. This study hypothesizes that as the product quality is difficult to judge on the Web, the possibility of customers' being dissatisfied with that product increases. Thus, the first hypothesis is established to determine the impact of the degree of judgment of the product quality on the Web in the product continuum for customers' dissatisfaction.

Perceived price, information search effort and ego involvement

Figure 1 presents what this study is measuring. The Figure explains the process of the impact of the product category on the customers' dissatisfaction, intention to complain, and complaint behavior on the Web. The study also used the impact of the perceived price, information search effort, and ego involvement on online customers' dissatisfaction based on the different levels of the product on the continuum. Perceived price, information search effort, and ego-involvement were considered because they are main factors of the importance of the purchase, which significantly affect customers' satisfaction or dissatisfaction (Bearden *et al.*, 1979; Richins, 1984).

Perceived price, as a monetary effort, is often used as a dimension to classify the products in the literature. For example, perceived price was introduced as the importance of risk in the classification typology (Holbrook and Howard, 1977). Price is also emphasized as an important factor of customer satisfaction, because whenever consumers evaluate the value of an acquired service, they usually think of the price (Anderson *et al.*, 1994; Bei and Chiao, 2001). The role of price in this study is to measure how the impact of the perceived price affects the degree of the dissatisfaction on each product category. The perceived price is used, based on the definition of price from the consumers' viewpoint (Bei and Chiao, 2001). In the consideration of the product continuum on the Web (de Figueiredo, 2000), inexpensive products give consumers the incentive to purchase, even when those products are look-and-feel products with variable quality. Customers might purchase look-and-feel goods on the Web if the price
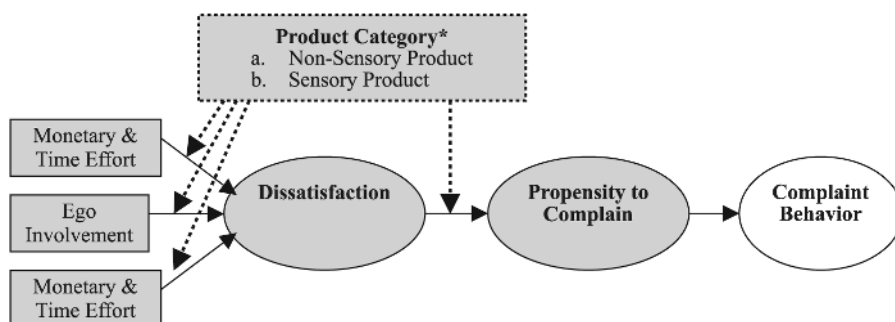
* The degree of judgment of product quality is higher from a to b on the Web

Figure 1.
Conceptual framework for the impact of the product category on customer dissatisfaction and propensity to complain on the Web

is low, because the perceived monetary risk has been reduced. A previous study by Cardozo (1965) speculated that customer dissonance would be increased, as customers made considerable effort to buy a product or paid a substantial price. Thus, customer dissatisfaction might be increased if dissonance between expectation and actual outcome is increased. This study measures whether the level of dissatisfaction, if product category is controlled, is higher when the price is higher, because people expect more when they spend more.

    H1. Customers' dissatisfaction increases as the customers' perceived price increases in a same product category.

    H1a. The impact of the perceived price on customers' dissatisfaction will be higher with sensory products than non-sensory products.

Information search effort, as a non-monetary dimension, is another moderating variable in this study. Information search effort was focused as the search and evaluation of alternative stages in the decision-making process (Engel *et al.*, 1986; Murphy, 1986). Previous studies found that considerable time and effort in gathering information tend to increase the perceived importance of the purchase and consumers' feelings about positive and negative experiences after the purchase (Bearden *et al.*, 1979; Day, 1977; Day and Landon, 1977). Alternatively, Westbrook (1977) has suggested that the information search is positively related to dissatisfaction because of its role as a proxy variable for some basic psychological construct (e.g. risk aversion) which mediates the experience of dissatisfaction in buying situations.

    This study expects that customers who put the greatest effort into researching information on the Web are attracted to e-businesses that provide key attributes, such as user-friendly presentation, proper information, and advanced technologies. The information search effort and spending time on the Web might depend on several factors, such as personal ability, computer experience, and how e-businesses present their sites. This study assumes that within each product category, if customers' perceived non-monetary effort increases, their dissatisfaction will also increase.

    H2. Customers' dissatisfaction increases as the customers' information search effort increases, in the same product category.

    H2a. The impact of the information search effort on customers' dissatisfaction will be higher with sensory products than non-sensory products.

Ego involvement was considered as another component of the importance of the purchase in the studies of customer dissatisfaction and complaining behavior (Landon, 1977). According to Landon (1977), customers who are highly ego-involved with a product are more likely to believe that discrepancies between performance and expectation are important. Kraft (1977) has

hypothesized that consumers who believe that a firm intentionally deceived them or acted to dissatisfy them will be more likely to complain than those without this perception.

The degree of customers' search effort is also related to the degree of ego involvement in prior purchase decisions. If customers have low involvement with the products that can satisfy the perceived need, they exert little effort in the information search; in a state of high involvement, the consumer may be more willing to seek out detailed information through product trial experiences (McGaughey and Mason, 1998). More involved online customers might be satisfied more since hyperlinks to detailed product specifications, pictures, testimonials, and e-mail addresses can be provided through the company Web page (McGaughey and Mason, 1998).

Cardozo (1965) speculated that dissonance would prevail in purchases of high involvement and substantially expended effort. Customers' disparity will increase as they do not have satisfactory outcome. Moreover, the impact of disparity will increase if they involve more with the purchase. This study proposed that within product category, as customers' involvement increase, customers' dissatisfaction will also increase.

> *H3.* Customers' dissatisfaction increases as the customers' ego involvement increases, in the same product category.

> *H3a.* The impact of the ego involvement on customers' dissatisfaction will be higher with sensory products than non-sensory products.

Figure 1 shows that the degree of dissatisfaction affects customers' propensity to complain.

Propensity to complain is used in this study, because it has been operationally linked to past complaint actions as a proxy for the inclination of consumers to complain (Bearden *et al.*, 1979; Gronhaug, 1977; Zaltman *et al.*, 1978). Previous studies described propensity to complain as an effort to summarize the personality, attitudinal, and lifestyle variables that influence whether a person will seek to obtain redress or complain when dissatisfied and also have an effect on the nature of the action to be taken (Bearden *et al.*, 1979; Day and Landon, 1977). Previous studies (Bearden *et al.*, 1979; Cho *et al.*, 2001) also found that the degree of dissatisfaction has a positive effect on customers' intention to complain. This study measures how the degree of dissatisfaction affects the propensity to complain by the product category on the Web. This study proposed that the impact of dissatisfaction on customers' propensity to complain is higher as the product has sensory attributes than non-sensory attributes.

> *H4.* The impact of dissatisfaction on the propensity to complain will be higher with sensory products than non-sensory products.

3. Methodology

Survey data were collected both online and offline. For the offline data collection, mostly graduate students were selected from two major universities on the east coast. The study also collected data via online sites, which was designed for this study. A total of 390 respondents (329 from offline data collection; 61 from online data collection) responded to questionnaire. In order to select appropriate data, this study used first and second screenings. For the first screening, subjects who had a dissatisfied experience recently online were selected. For the second screening, subjects whose main sources of information regarding the product with which they were dissatisfied are mainly online were selected. The remaining subjects after these screenings, were asked to continue to fill out a questionnaire describing their negative experiences and complaining behavior resulting from dissatisfaction over a purchase made on the Web.

Because the study asked subjects about their worst dissatisfied online shopping experiences for any type of product, subjects' answers were from a variety of products, such as books, airline tickets, camcorders, etc. If subjects reported their dissatisfaction with suits, for example, that were bought on the Web, the data for these subjects were coded as "sensory products", while their dissatisfaction with books, for example, the data were coded as "non-sensory products". Subjects were selected from the graduate students in two major universities on the east coast. The categories of the products were coded qualitatively, and inter-coder reliability between coders was 0.87.

4. Analysis of data

After the first and the second screening process, 72.5 percent of subjects (270 – 219 from offline data and 51 from online data) remained in this analysis. This study used chi-square to test for differences between the data collected from offline and online sources. The study tested whether there are significant differences for each demographic. The chi-square result for "gender" differences found that there is no significant difference between the data from two different sources, online and offline (Chi-square $= 0.810$; $p = 0.366$), The study also found that there is no significant difference between the "age groups" (Chi-square $= 0.924$; $p = 0.921$). The chi-square analysis of "educational level" also concluded that there is no significant difference (Chi-square $= 3.128$; $p <= 0.536$). Chi-square analysis results for the "income" (Chi-square $= 7.854$; $p = 0.171$) and "cultural background" (Chi-square $= 5.076$; $p = 0.406$) also showed that there are no significant differences between the two data sets. Based on the considerations above, this study combined the two sets of data, collected offline and online, and analyzed them as one data set.

Of the 270 respondents from the data collected offline and online, 56.1 percent were male and 43.9 percent were female. About 38.8 percent were between the ages 18-24; 39.1 percent were between the ages 25-30; 19.1 percent

were in the 31-40 age group; 1.8 percent were in the age group 41-50; and 1.2 percent were age 51 or older. Approximately 17.8 percent reported that their highest educational level was high school graduate, while 7.3 percent had an associate degree, 35.5 percent were college graduates, and 19.2 percent had done graduate work. More than 60 percent had an annual average income between $20,000 and $59,999. Of the respondents, 50.3 percent were Asian/Asian-American, 23.5 percent were White-American, and 7.5 percent were Black/African-American (see Appendix, Table AI).

The item scales and optional variables were tested in a pilot study, 128 responses were analyzed for the pilot study and the results were applied to develop operational variables and the validity of the study. The item scales were based on previous studies (Bearden *et al.*, 1979; Blodgett *et al.*, 1997; Richins and Dover, 1983) and modified in the context of this study. All items are operationalized as a seven-point semantic scale. For example, propensity to complain is operationalized as a composite of a scale, whose items reflect individual intentions to complain and the perceptions of each respondent's complaining history similar to those described by Bearden *et al.* (1979 and Fishbein and Icek (1975).

This study employed principal components analysis as an extraction method, while varimax with Kaiser normalization was used as a rotation method. Varimax rotation method was applied because the correlations between factors are low with oblique rotation method. Factor analysis was conducted to select the best set of questionnaire items for variables. Tables I-III shows the results of factor analysis. The obtained factor score was used for regression analysis.

Items	Component 1	2	3
Perceived price 2	0.817		
Perceived price 1	0.782		
Information search effort 1		0.824	
Information search effort 2		0.791	
Ego involvement 1			0.845
Eigenvalue	4.120	2.621	1.832

Table I.
Component matrix for independent variables

Items	Component 1
The degree of dissatisfaction 1	0.842
The degree of dissatisfaction 3	0.811
The degree of dissatisfaction 2	0.780
Eigenvalue	4.141

Table II.
Component matrix for dependent variable I

Table IV summarizes the constructs remaining after factor analysis was performed, and their overall means, standard deviations, and alphas for responses describing experiences on the Web. Cronbach's alpha typically indicates the reliability of construct measurement (Neter *et al.*, 1997). Cronbach alpha showed a range from 0.712 to 0.985, indicating high internal-consistency reliability for each construct. Overall, the mean value of the constructs is the lower with the non-sensory data, while it is higher with the sensory product data.

According to the analysis of correlation, this study found that inter-correlations among the items are high. Thus, it is concluded that observations and measures are consistent and stable (Richins, 1984). All the correlations between items for the same construct were significantly high,

Items	Component 1
Propensity to complain 4	0.875
Propensity to complain 1	0.818
Propensity to complain 2	0.759
Eigenvalue	3.075

Table III.
Component matrix for dependent variable II

Constructs and items	Non-sensory products	Sensory products
The degree of dissatisfaction		
How were you dissatisfied with the product quality?	Mean = 3.524	Mean = 6.012
Were you dissatisfied with the product information?	SD = 1.528	SD = 1.147
Overall, how dissatisfied were you with the purchase?	Alpha = 0.715	Alpha = 0.897
Information search effort		
I spent quite a lot of time searching for the product with which I was later dissatisfied	Mean = 4.201	Mean = 5.894
I compared the product with another product/ brand before I made the purchase quite a lot	SD = 1.211	SD = 1.124
	Alpha = 0.810	Alpha = 0.801
Ego involvement	Mean = 3.200	Mean = 5.221
I was quite focused on searching for the product	SD = 1.312	SD = 0.985
Perceived price		
I spent quite a lot of money on the product with which I wasn't satisfied	Mean = 3.890	Mean = 5.301
If a defective product is inexpensive, I usually keep it rather than ask for a refund or exchange	SD = 1.681	SD = 1.120
	Alpha = 0.712	Alpha = 0.814
Propensity to complain		
I am probably more likely to return an unsatisfactory product than most other people I know		
I would attempt to notify store management if I thought the service in a store was particularly bad	Mean = 4.752	Mean = 4.988
	SD = 1.398	SD = 1.191
If I am dissatisfied with a product, I will complain	Alpha = 0.887	Alpha = 0.781

Table IV.
Means, standard deviations, Cronbach Alphas and list of items by product category

while correlations among items for different constructs were low. This indicates a high level of discriminant validity (see Table V).

Regression analysis was conducted to analyze the relationship between the degree of dissatisfaction, dimensions – perceived price, information search effort, ego involvement and propensity to complain. Regression analysis was performed for each product category and standard coefficients from the analyses were used for comparison analyses. ANCOVA (Analysis of Covariance) was also applied in this study in order to examine the effect of product category on dissatisfaction. Those results of the ANCOVA, regression analysis and ANOVA were used to test hypotheses.

The study also used a dummy variable to test the differential effects of the product categories for the effect of perceived price on the degree of the dissatisfaction. Non-sensory products were used as the basis for the effects of dummy variable. Table VI presents the summary effects of the perceived price, information search effort, and ego involvement on the degree of dissatisfaction and also the effect of the degree of dissatisfaction on the propensity to complain based on the product categories.

The result of regression analysis indicates that the degree of the dissatisfaction was higher if the perceived price was higher. This impact scored higher with sensory product than non-sensory products. Thus, *H1* and *H1a* are accepted. Further, the results of ANCOVA showed that the impact of

	Price 2	Price 1	Information search effort 1	Information search effort 2	Ego involvement 1
Price 2	1.000				
Price 1	0.708	1.000			
Information search effort 1	0.069	0.110	1.000		
Information search effort 2	0.101	0.071	0.671	1.000	
Ego Involvement 1	0.120	0.131	0.201	0.124	1.000

Table V.
Correlation matrix among indicators

Effects	Standard coefficient	*t*-value (Sig)
The effect of the perceived price on the degree of dissatisfaction based on product category	0.782	13.594[*]
The effect of the information search effort on the degree of dissatisfaction based on product category	0.765	12.362[*]
The effect of the ego involvement on the degree of dissatisfaction based on product category	0.609	11.204[*]
The effect of the degree of dissatisfaction on the propensity to complain based on product category	0.794	13.901[*]
Note: [*]Significant at 0.01 level (two-tailed)		

Table VI.
Summary of the effects based on product category

the perceived price on the degree of dissatisfaction was significant according to product category ($F = 3.108$, Eta-squared $= 0.134$, significant at 0.01 level).

The effect of the information search effort on the degree of the dissatisfaction depends on the product category (Table VI). The study found that online customers' degree of dissatisfaction increases as they put more effort into searching for information. Standard coefficients from regression analysis results proved that the impact of the information search effort on the degree of dissatisfaction was different according to product category. ANCOVA also tested and found that the impact of the information search effort on the degree of dissatisfaction was significantly different based on two different groups, which were classified by product types ($F = 3.812$, Eta-squared $= 0.171$; significant at 0.01 level). Based on the findings, *H2* and *H2a* are accepted.

The degree of ego involvement affects the degree of dissatisfaction (Table VI). The study found that online customers' dissatisfaction increases as their ego involvement in shopping increases. The Table presents the results of regression analysis for the impact of the ego involvement on the degree of dissatisfaction based on product category. The result of ANCOVA indicates that the impact of the ego involvement on the degree of dissatisfaction was significantly affected by product category ($F = 2.592$, Eta-squared $= 0.161$, significant at 0.01). Thus, *H3* and *H3a* are accepted in this study.

The effect of the degree of dissatisfaction on the propensity to complain also increased as the degree of the ability to judge the product category increased (see Table VI). That is, online customers' degree of dissatisfaction and their propensity to complain gets higher if the product has attributes that customers cannot easily evaluate on the Web. The results of ANCOVA also found that the effect of the degree of the dissatisfaction on propensity to complain was significantly different according to product category ($F = 3.694$, Eta-squared $= 0.157$, significant at 0.01). *H4* is accepted.

Table VII summarizes the effects of the perceived price, information search effort, and ego involvement on dissatisfaction, and the effect of customers' dissatisfaction on the propensity to complain. The study accepted hypotheses for the main effects and also additional effects.

Effects based on product category	Significant	Size of effect from non-sensory to sensory products
Perceived price on the degree of the dissatisfaction	Significant	Increased
Information search effort on the degree of the dissatisfaction	Significant	Increased
Ego involvement on the degree of the dissatisfaction	Significant	Increased
The degree of dissatisfaction on the propensity to complain	Significant	Increased

Table VII.
Summary of the effects based on product category

5. Discussion

E-businesses have a limitation that customers cannot try, see, touch the product before it is delivered unless customers are already familiar with the products. Therefore, customers' buying behavior in the online shopping environment has been significantly affected by the product categories. This study used product categories, sensory vs non-sensory products, to find out the different impacts of online customers' ability to judge the product quality. This study attempts to analyse how customers' dissatisfaction and propensity to complain differ by different product categories on the Web. The study particularly used three variables, perceived price, information search effort, and ego involvement, which were frequently used as an "importance of the purchase" and also often studied with variables, customer dissatisfaction and propensity to complain. The study revealed that the impact of perceived price, information search effort, and ego involvement on the degree of dissatisfaction are significantly affected by product category. The results of this study also found that the effect of the degree of dissatisfaction on propensity to complain was significantly different based on product category on the Web. The findings imply that online customers are more dissatisfied with sensory products than non-sensory products as they spent more effort on searching the information on sensory products than non-sensory products; they involve more on purchasing sensory products than non-sensory products; and they cost more on sensory products than non-sensory products.

This study provides a question: How e-businesses with sensory products could improve their sales' profits and also enhance customer satisfaction by reducing customer complaints and dissatisfaction. The results of this study strongly suggest that e-businesses should employ product category-dependent strategies. Particularly, this study suggests that IS practitioners should develop a better system and managing tools to enhance customer satisfaction and/or user satisfaction on the Web. For example, those e-businesses dealing with sensory products (e.g. clothing, shoes, or cosmetics) need to develop better means of delivering product information to customers who obviously cannot touch, taste, or smell the object they are thinking of buying (Cho *et al.*, 2002). Online customers, who are interested in purchasing sensory products might spend more time searching the information, because customers hardly judge such products in the cyberspace. Therefore, e-businesses dealing with sensory products should put more effort into issues such as Web interface, design, and highly advanced technologies, etc. As Gangopadhyay (2001) suggested, e-businesses dealing with sensory products should focus more on an image-based system, which is an important characteristic for many products such as apparel, designer costumes, interior designs of homes, etc. An excellent example of using advanced Web features to achieve this goal can be found at landsend.com. The company helps customers build a three-dimensional mirror image known as "My Virtual Model™." Some companies also offer highly interactive communication tools to reach customer satisfaction and to achieve

customer relationship management (CRM). By providing a real-time chatting system, e-businesses dealing with sensory products particularly, could resolve the uncertainty about the products, so that online customers' satisfaction will be increased. At the same time, such effort might reduce customers' information search effort, so the impact of the information search effort on customer dissatisfaction with sensory products might be also reduced.

Moreover, this study suggests that online companies which sell sensory products should provide a high quality of customer services to fit customers' fastidious preferences. E-businesses with sensory products should enhance service quality in order to deliver clearer information on the product and also to handle customer complaints effectively after the purchase has been made. E-businesses with sensory products could employ new strategies, such as reimbursement of shipping costs if product quality does not meet customers' satisfaction. Those efforts might reduce the effect of the perceived price on customers' dissatisfaction, particularly with sensory products, as the effect was higher with sensory products than non-sensory products.

Further, e-businesses dealing with sensory products should also build brand reputation. Well-known brands or strong brand image trigger customers to purchase products with attributes that are not easy to judge on the Web. If customers become loyal to a certain store or brand on the Web, their information search effort to compare the products is expected to be reduced. Thus, by making such an effort, online companies dealing with sensory products can decrease customer dissatisfaction and complaints, while increasing customer satisfaction and loyalty.

There are some limitations of this study. Although this study found significant results according to product category, more detailed research on product category on the Web is required. This study classified products based on a previous study by Degeratu (2000) and coded them qualitatively. However, for future analysis, this study suggests that product classification on the Web should be studied with more rigorous theoretical framework. Moreover, a more sophisticated method will be applied to measure the degree of dissatisfaction by controlling the disparity between customer expectation which occurred in the prior purchase stage and the actual performance during the post-purchase evaluation stage. Further, more detailed variables, such as the level of information search effort based on customers' past experiences, will be considered in future analysis.

6. Conclusion
Despite the Web imparting substantial information in a convenient way, online customers are not always satisfied with their purchase. Customers take risks in their purchase decisions because they are not able to see the products. While customers differ in terms of their personal characteristics, skills, and purchase experience on the Web, making a purchase decision is not easy for all

customers, particularly if the product has attributes that are not easily evaluated on the Web. By applying the framework of the product category on the Web by de Figueiredo (2000), the findings indicate that the degree of customers' dissatisfaction and complaints differ according to the product categories. The study suggests that online businesses require strategies tailored to specific product categories in order to reduce customers' dissatisfaction and complaints, and enhance customer relationship management.

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Appendix

	Percent from offline data collection results (n = 219) (%)	Percent from online data collection results (n = 51) (%)	Average percent
Gender			
Male	59.3	52.9	56.1
Female	40.8	47.1	43.9
Age			
18-24	39.8	37.8	38.8
25-30	36.4	41.9	39.1
31-40	20.4	17.7	19.1
41-50	2.3	1.3	1.8
51 or over	1.1	1.3	1.2
Education			
High School Graduate	13.6	22.1	17.8
Associate Degree	6.8	7.8	7.3
Undergraduate Degree	65.3	41.6	54.5
Graduate Degree	13.2	25.3	19.2
Other	1.1	3.2	2.2
Income			
Less than $20,000/year	12.1	2.8	7.5
$20,000/year-$39,999/year	30.3	28.9	29.6
$40,000/year-$59,999/year	24.2	34.1	29.2
$60,000/year-$79,999/year	10.6	12.8	11.7
$80,000/year-$99,999/year	6.1	6.0	6.0
More than $100,000/year	1.7	1.4	1.5
Cultural background (optional)			
Asian/Asian-American	56.8	43.7	50.3
White-American	17.6	29.4	23.5
White-European	5.4	6.7	6.0
Black/African-American	6.8	8.2	7.5
Hispanic	5.4	5.2	5.3
Other	8.1	6.7	7.4

Note: n = 270

Table AI.
Respondents'
demographics

A framework of dynamic CRM: linking marketing with information strategy

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Abstract *Committed customers are profitable to an organization for the long term. Customer commitment forms when a customer's expectation is satisfied and the customer realizes fair value from his/her relationship with the organization. From an organization's perspective, this value reflects customer equity, but from a customer's perspective, it represents the customer's perceived value of the relationship. In order to manage such a relationship successfully, it is necessary to support diverse customer information – such as of-the-customer, for-the-customer, and by-the-customer information. A customer information system (CIS) plays the role of boundary spanning that manages and distributes customer information. But the gap between marketing and IT strategy is a barrier in implementing a successful CIS. The CIS, which includes the database, communication channel, and decision model for relationship management, should be designed to facilitate the two-way customer relationship exchanges. This paper develops a framework of dynamic customer relationship management, suggests the information technology strategy to support the framework, and illustrates the applicability of such framework and strategy through a real business case.*

Introduction

Effective customer relationship management (CRM) has become a strategic imperative for companies in virtually every business sector. Companies are moving closer to their customers, expending more effort in finding new ways to create value for their customers, and transforming the customer relationship into one of solution finding and partnering rather than one of selling and order taking (El Sawy and Bowles, 1997). Organizations will be more successful if they concentrate on obtaining and maintaining a share of each customer rather than a share of the entire market (Peppers and Rogers, 1995). It has been illustrated in practice that retaining an existing customer is more profitable than acquiring a new one (Reichheld and Sasser, 1990).

As for the key factors in a long-term relationship, marketing researchers have studied the effects of mutual information sharing exchange (Duncan and Moriarty, 1998), and communication effectiveness on building trust and commitment among relationship participants (Sharma and Patterson, 1999). Each relationship exchange incurs transactional and/or non-transactional data. Transactional data typically include sales amount, transaction time, place, and buyers while non-tansactional data may include inquiries or feedback in the form of complaints or suggestions. Both transactional and non-transactional

data must be organized into an integrated customer data profile because such information is what makes customer interaction powerful (Wells *et al.*, 1999). Such integration is a foundation of simplifying customer support activities and reducing transaction costs so that the organization may not only differentiate its products but also offer lower prices (Goodhue *et al.*, 1992; Rangaswamy, 1993; El Sawy and Bowles, 1997).

However, CRM strategy means different things to different people (Winer, 2001). In the marketing area, much discussion has been devoted to relationship marketing strategy but a critical problem is that although a number of authors have contrasted relationship marketing with direct, database, loyalty, retention and transaction marketing, such discussions fail to clarify substantive issues (O'Malley and Tynan, 2000). For example, relationship marketing strategy has clarified customer lock-in (Barnes, 1994; Turnbull and Wilson, 1989; Palmer, 1995), customer retention (Berry, 1983), database marketing (Copulsky and Wolf, 1990; Treacy and Wiersema, 1993), and close relationships (Barnes, 1994, 1995). However, the first three approaches are criticized in that, all are lacking recognition of "mutuality and special status" (Rowe and Barnes, 1998, p. 284) and, therefore, are unlikely to result in close, personal, long-term relationships.

For the information technology domain, as key enabler of CRM, there has been active discussions on the implementation of relationship management package (Jutla *et al.*, 2001), customer information system (Mentzas, 1997; Wells *et al.*, 1999), customer database (El Sawy and Bowles, 1997), decision support application (Kohli *et al.*, 2001). Still, many companies have difficulty in implementing an effective CRM program because they allow software vendors to drive their approach to customer management, or retrofit a customer strategy to match the CRM technology they have purchased (Rigby *et al.*, 2002). Namely, most of them mistake CRM technology for a marketing strategy, forming a barrier in implementing a successful CRM project (Woodcock and Starkey, 2001).

In this paper, to help reduce such misconception, we develop a framework of dynamic CRM from a marketing perspective and suggest appropriate IT strategies to support the framework. We then illustrate the applicability of such a framework and strategy through a real business case.

Types of customers
Enabled by advanced information technologies, companies can now collect unprecedented amount and depth of data on their customers and turn them into information for their strategic business purposes. Here, the important issues are: to identify what kind of information they need; about whom they will collect this information; and how they will manage such information for future use. From an information management perspective, customer identification is a critical beginning point for CRM. When customers do not reveal their identity to the firm (like the cash-paying customers in retail stores or airline passengers

who are not enrolled in the mileage program), they are invisible to the firm, thus unmanageable. We define an identified customer as "a customer whose identification and contact information exists within the firm". Once able to identify its customers, a firm can make its customer-base more loyal by collecting, processing, and applying customer profile and transaction data to create in-depth understanding of customer needs and provide fair value to all customers.

As the firms nurture their relationships with their identified customers, some of them will evolve to become, what we call, core customers. Core customers are typically a small group of customers who are truly loyal to the firm and create enormous value for the firm. Despite their significant contribution to the firm, identifying these core customers is not always as easy as it sounds. In fact, defining core customers is regarded as one of the most critical strategic processes (Blattberg and Deighton, 1996). We define the core customer of a firm as "an identified customer who accrues substantial value to the firm through high profit contribution, long term active relationship, or strong opinion leadership".

It is not necessary to satisfy all three conditions to qualify as a core customer. Since the conditions are not mutually exclusive, some may satisfy two or all three conditions while others may satisfy only one of them. To identify core customers, firms need to collect not only transaction data (purchasing) but also various non-transaction data such as membership activity, new customer referral, or feedback idea for the firm.

Types of customer information
According to the content and interaction types, customer information can be classified into three types:

(1) information of the customer;

(2) information for the customer; and

(3) information by the customer.

First, "of-the-customer" information includes personal and transaction data about a customer. It is the type of information most widely collected for CRM implementations. Firms obtain the personal data and are able to understand the customer's sales volumes, profitability, purchasing patterns, frequency, preference, etc. For example, banks and credit card firms keep enormous amount of "of-the-customer" information in their database systems for opening, maintaining, and customer accounts billing and also to identify the most or least profitable customers. Database marketing, also called target marketing, is based on the strategic use of "of-the-customer" information.

Second, product, service and organizational information that are perceived useful by customers is referred to as "for-the-customer" information. This type of information is presented through diverse communication media so that

customers acquire and process it to make more informed decisions. Firms can provide such information by direct mail, automatic response system (ARS), or Internet home pages.

The third type is "by-the-customer" information. This is the non-transactional customer feedback information that includes customer complaints, propositions, claims, A/S information, etc. Information of this type must be included in the expanded customer data profile because such information is what makes customer interactions powerful (Wells *et al.*, 1999). Since it contains customers' direct complaints, needs and suggestions, this type of information can be applied to develop new products and services or improve critical business processes.

An integrated framework for dynamic CRM

Figure 1 shows the integrated customer relationship management framework based on customer information types along with relationship evolution stages. At the relationship initiation stage, firms identify customers by collecting and recording "of-the-customer" information. Registering customers into the firm's membership or bonus point programs is a typical method for customer identification.

For the identified customers, firms can provide various "for-the-customer" type information – for example, newsletters, special promotion notice, bonus point status, order status, etc. – as well as customized service. Some of the identified customers, after a certain period of satisfactory relationship experience, eventually evolve into core customers who satisfy one or more of the criteria for core customer. As identified customers evolve into core customers, the firm enters the "expansion phase" in its CRM. In this phase, core customers actively participate in the two-way interactions with the firm and expand the firm's customer base by word-of-mouth marketing. Feedback or suggestion from these core customers ("by-the-customer" information) may prove to be crucial for the firm to introduce new products, improve business processes, and satisfy customer needs. The boundary between the firm and its customers becomes transparent in this phase

Relationship value analysis
For effective customer relationship management, each customer relationship needs to be analyzed from both the customer's and organization's perspectives. We introduce two dimensions to define each participant's value to the relationship. One dimension is the customer value from the customer's perspective and the other dimension is the customer equity from the company's perspective.

Customer value is the bundle of benefits customers perceive from a given relationship in both economic and psychological terms (Ravald and Gronroos, 1996; Gwinner *et al.*, 1998). For example, a frequent buyer program offers
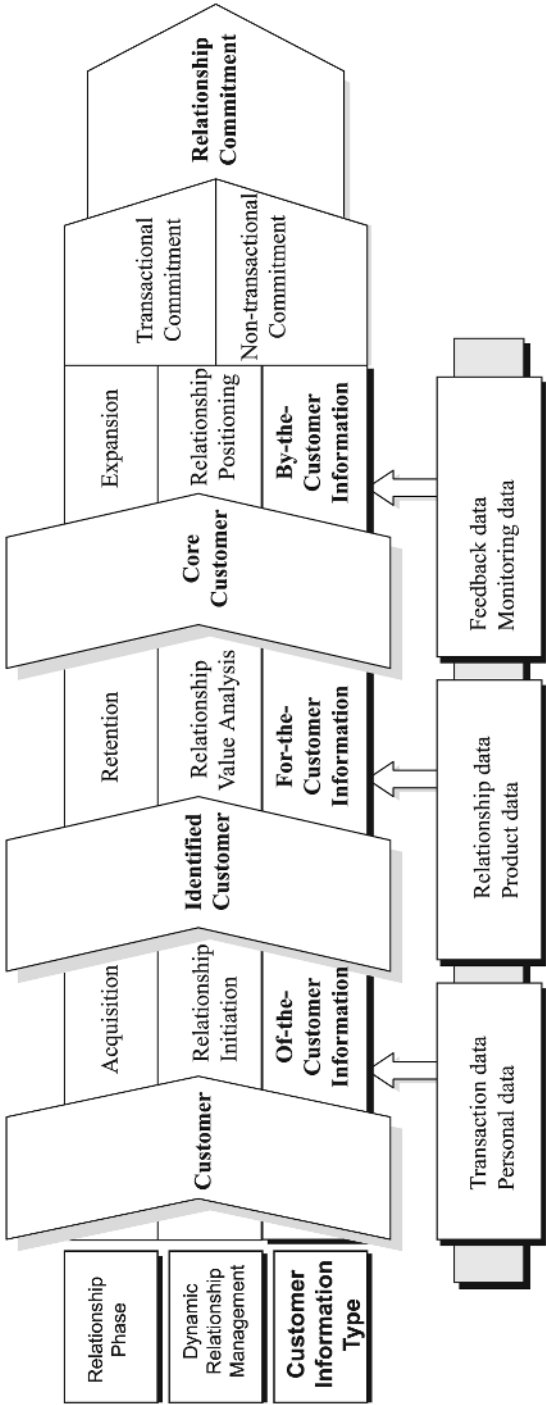
Figure 1.
A framework of dynamic
customer relationship
management

economic value such as membership discount or bonus points for repeat
purchasing, while consistent communication between customers and firms
creates an emotional tie between the customer and the firm by reducing
perceived risks and increasing stability of the customer's future exchange with
the firm. Customer equity is calculated as the sum of the customer's lifetime
value (Rust *et al.*, 2000; Blattberg *et al.*, 2001). Usually, the customer's lifetime
value is the profit that would have been yielded by the customer if he/she had
continued purchasing for the expected number of years.

As the customer becomes more committed, he/she may create more profits
by also becoming a referrer. The firms, of course, should make every effort on
behalf of these customers. The equity of these customers should be much
higher than others. So this type of equity – opinion leadership of core
customers – is considered an important component of the customer equity.

Table I shows components and methods of evaluating the relationship
values. The commitment index as part of the firm's evaluation components
indicates the level of customer loyalty. It is calculated, based on factors such as
relationship period, relationship intensity, and the number of referrals that a
customer makes. There are many ways to increase a customer's lifetime value
but they should be viewed from a long-term perspective to share the benefits
with customers. To do that, companies should understand their current
relationship status through analyzing mutual relationship values – customer
value and customer equity. Figure 2 shows the analysis of the relationship
value along the two dimensions.

The area I in Figure 2 shows that, while the company provides significant
value to its customers, the equity of the customers is relatively low for the
company. So, in this case, the company may be given two alternatives. First, it
can expel low-equity customers by reducing the level of benefits provided. Or it
can increase the customer equity by intensifying customer relationship
interactions and increasing customer loyalty. The customers in area II in
Figure 2 have high customer equity but their perceived customer value from
the relationship is relatively low. In this case, because the current value of the
relationship to the customers is low, if a competitor offers a better value
proposition, they may be tempted to defect.

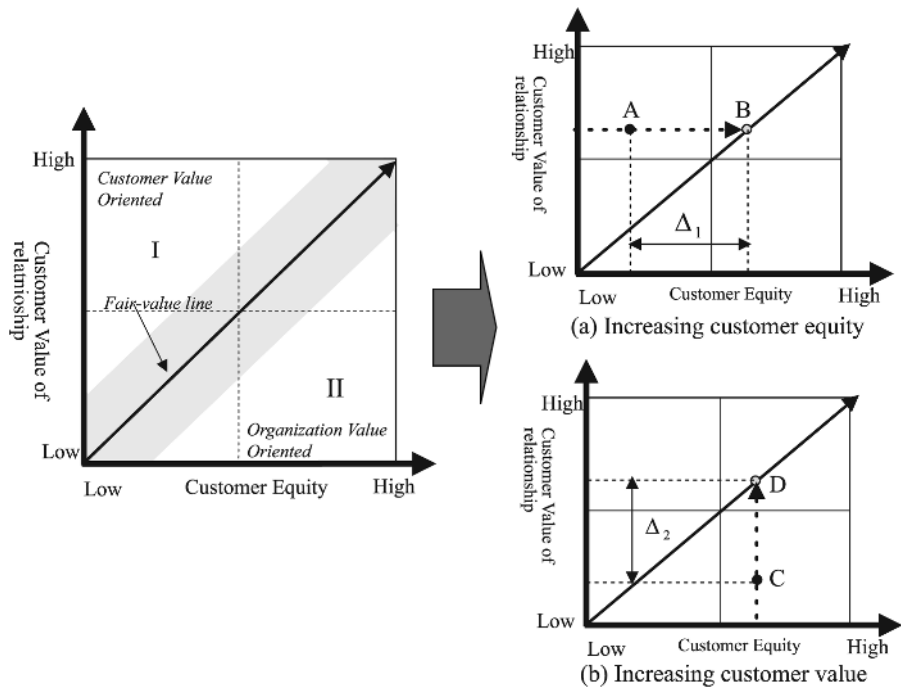|	Customer's view	Organization's view
Value of relationship	Customer value	Customer equity
Evaluation components	Cost of relationship (C)	Life time value (LTV)
	Extra value of relationship	Commitment level (CL)
	Economic value (EV)	
	Socio-psychological value (SpV)	
Evaluation method	(EV + SpV) − C	$\{\sum \text{LTV}\} \times \text{CL}$

Table I.
Relationship evaluation

Figure 2.
Relationship value
analysis and positioning
in two dimensions

Thus when your customers (especially core customers) are located either in
area I or area II of Figure 2, it suggests a state of disparity and necessitates
corrective actions.

Relationship positioning

According to equity theory, when a person perceives disparity in relationship,
he/she will try to change the balance in an actual or psychological manner;
otherwise, he/she would attempt to end the relationship (Hatfield *et al.*, 1979).
So equitable relationship building is important in the long-term relationship
management. Through proper relationship positioning, it is possible to manage
the customer life cycle so that firms may implement an equitable relationship
strategy; by maximizing customer equity as well as enhancing the customer
value.

The fair-value line is a guidance to such an equitable relationship
positioning. As shown in Figure 2, if the current relationship state of an
organization and its customer is located at point A, the organization does not
extract fair asset value from the customer. The organization should make the
relationship equitable by increasing the customer equity. According to the
fair-value line, the point of equitable relationship is B, so that the effective
amount that should be increased is Δ_1. Similarly, if the point C indicates the
current relationship status, the organization does not provide the customer fair

value relative to its equity, so the organization should increase its customer value by amount Δ_2.

The shaded area on both sides of the fair value line represents the value that is mutually equitable. If the relationship is not equitable to both parties, it is difficult to maintain the relationship over the long-term. The company should periodically evaluate relationships with its customers from these perspectives, as well as from the customary cost and benefit perspective. On the fair-value line, relationship value is fair for the company and its customers but it does not guarantee that the relationship is mutually satisfactory. The ideal relationship should lead to high customer value and high customer equity compared with competitors.

Two perspectives for relationship commitment
Through proper relationship value analysis and relationship positioning, a relationship can be evolved to the level of relationship commitment that has been accepted as the ultimate level of relationship evolution (Dwyer *et al.*, 1987). The commitment concept has been identified in both cognitive and affective perspectives (Morgan and Hunt, 1994; Pritchard *et al.*, 1999). First, it is brought about by a cognitive evaluation of the value of a continued relationship with a firm. In this perspective, to induce customer commitment, firms provide customers with extra benefits and values according to their loyalty level, as judged by their repurchasing behavior. For example, to solidify their relationships with consumers, chain retailers, airlines, credit card firms have implemented frequent buyer programs that provide bonus points for large sales volumes or repeated purchasing.

We define the cognitive aspect of commitment as transactional commitment. Firms can increase their customers' transactional commitment by providing them with economic and psychological value. Economic value is added when a discount for frequent purchases or large sales volumes is offered. Psychological values can be enhanced by strengthening the convenience aspect such as offering home delivery service or individually tailored services.

The affective aspect of commitment is defined as non-transactional commitment. It grows based on trust and emotional bonding between the firm and its customers. Firms earn non-transactional customer commitment through consistent relational communication and customer participation. For example, when software products are launched, they are tested by end-users. Service providers employ customers as panels to evaluate service quality and to interview new sales persons in a recruiting process. These activities help improve organizational effectiveness and enhance customers' commitment to the firms. Today, most companies operate a Web-based homepage that makes it easy to communicate with their customers. Using this virtual space, customers make suggestions for service improvement, request after-service, or form a virtual community with common interest on the firm's products or

services. Through these activities, customers play a role as advocates or monitors for certain products and services.

In summary, for maintaining a successful long-term relationship with their customers, firms should provide differentiated relationship value and communicate continuously with their customers. Customer information lays the foundation of such sustainable relationships. With the help of information technology, organizations can manage their customer information to enhance their customers' transactional and non-transactional commitment, thereby boosting their competitiveness.

Customer information system for CRM

A customer information system (CIS) for CRM is an integrated approach for an information technology strategy to implement a relationship-oriented marketing strategy. A CIS plays a boundary-spanning role from two perspectives. First, it internally records, distributes customer information, and supports decision making for customer relationships. Customer information recorded in a database supports decision making and performance measurement by enabling the creation of customer profiles. They are used to assess customer equity so that organizations may identify their core customers (see Figure 3).

Customer equity is measured in both qualitative and quantitative ways. Quantitatively, the lifetime value of the customer can be calculated statistically by analyzing historical transaction data and predicting customers' purchasing behavior in the future. It is difficult to measure the degree of commitment by statistical techniques since the concept of commitment is not quantitative. So, it is necessary to build a rule-based model that includes objective-scale criteria on the psychological dimension of customer commitment at both the transactional and non-transactional levels. This requires data on the cognitive dimensions of customer behavior like opinion leadership, participation level, trust, etc. Since customer value of the relationship is measured from the customer's viewpoint, it is measured by analyzing the customer's feedback data.

To test whether the relationship is equitable, customer equity is compared with the customer value of the relationship relative to competitors. Normalization of each value with relative scales is required in mapping the relationship value analysis. The application program for CIS consists of rule and knowledge bases and models that support measuring the relationship value for effective customer relationship management. According to the results of the relationship value analysis, the organization can adopt a proper relationship positioning strategy aimed at creating a higher relationship value for both parties.

Second, externally, the CIS system supports the firm's interaction with its customers. Three types of customer information are organized with each other so that they are efficiently tailored to meet the customers' specific information
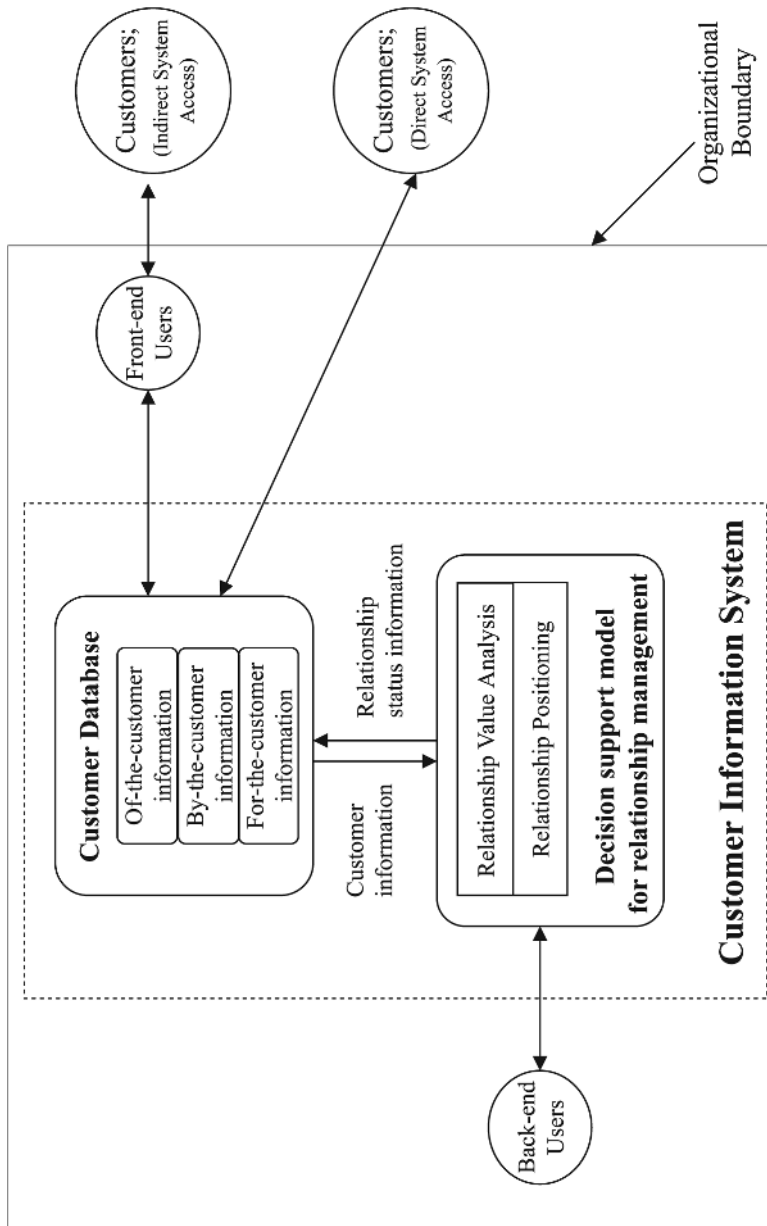
Figure 3.
Configuration of a
customer information
system for CRM

requirements. Since customer interaction may or may not be fully automated, interaction occurs in both direct and indirect system accessing. Indirect access with human interaction provides the social element of the experience so that there is an emotional element in the human dyadic. Recently, many firms give information through Web-based homepages. These homepages can provide "for-the-customer" information including company, product, and service information tailored for each customer. It also supports fully automated interactions like interactive feedback and online business services (Liu *et al.*, 1997).

The most important part of the communication strategy is to ensure that communication is sufficiently frequent. More customers are lost through a lack of follow-up, and what appears to the customer to be indifference, than through any other cause of defection. A study of competitor communications may indicate real opportunities to get closer to customers; however, since the market environment is variable, the communication frequency should be based on customer-defined expectations.

Traditional media includes both mass media (television, radio, newspaper, magazines, and direct mail) and personal communications (word-of-mouth). New forms of media encompass interactive media like videotex, CD-ROM, online services, and hypermedia computer-mediated environments. Relative to the traditional media, the new forms of media tend to afford greater consumer control and nonlinear access to more differentiated contents.

Case study: Maeil Dairy Corporation
Study approach
The central activity in doing research is to develop and test a theory. However, the framework of dynamic CRM is a new concept, and more observations are needed before a theory can be developed. Allport (1961) argues that the case study method permits the detailed observations that can reveal various nuances and subtleties of behavior that other empirical methods might miss. Similarly, Eisenhardt (1989) argues that case study research leads researchers to find new theoretical relationship and question old ones. The purpose of our case study is to explore situations and problems when the framework of dynamic CRM is applied.

In this case study, data was collected by the following steps, First, to understand the entire corporate information system environment, we referred to the enterprise information system planning reports that include overall specifications of hardware, software, human resources, and business processes, and gathered information on how the case firm started and managed their customer relationship management activities. Then we conducted several in-depth interviews with senior managers of the marketing, customer service, and information system divisions. Each interview lasted about an hour. During the first meeting, we explained our framework for CRM to each manager and

asked the interviewee to describe the related activities and programs within their division. The results of the internal customer surveys that measure customer value and perception of the products and services have been used to analyze the customer relationship management efforts from the customer's perspective (see Table II).

Case background
Maeil Dairy Corporation, a major dairy producer in Korea, was founded in 1969. Its 2001 sales was in excess of US$500 million. While Maeil Corp. produce more than 200 products, they can be classified into two categories:

(1) *the powdered milk product group* – which includes infant foods; and

(2) *the liquid milk product group* – which includes milk, yogurt, juice, and mineral water.

The total sales volume of the powdered milk group represents about 30 percent of the total revenue, and the liquid milk group, 60 percent.

Maeil Corp.'s products are produced in four plants and sold through about 1,000 distributors, including agents and franchisees around the country. It has been described as a conservative and hierarchical organization, since the decision-making authority is centered at the top management.

Maeil Corp.'s customer relationship management
Maeil has managed various relationships with the consumers, including promotions and customer service. They can be classified into two types according to their product categories.

Data sources	Inputs in case study	Outputs in case study
Enterprise information system planning reports	Corporate information system architecture (H/W, S/W, human resources, business processes) Long-term business strategy	Understanding the corporate information system environment
Summary report of survey	Scope: headquarters, factory, local branch, consumers, sales persons, local agents Information system usage Product and service status	Information system supports for sales and marketing Customer perception of product and services
Interviews	Marketing manager Manager of direct mailing MIS system operators	Customer information management status CRM program and activity Customer database system configuration
Other sources	Internal reports System documents	

Table II.
Data sources, input, and output used in the case study

First, for infant food product consumers, Mothers' Membership Program has been operating since the 1970s as a sales promotion and public relations tool for consumers who have infants under the age of 12 months. This program is divided into three stages:

(1) pregnancy;

(2) birth to four months; and

(3) four-12 months.

Through direct mailing (DM), the members are given educational and other promotional materials on pregnancy, birth, and infant care. Customer information is acquired from diverse channels. The major channel is the hospital where the new mother has given birth to the child. In this case, nurses in the hospital write membership initiation cards for the mothers and the DM division of the firm collects them in batches. The second channel is through women's magazines with membership application post card inserts. Hospital subscriptions account for 71.1 percent of the members, and 15.8 percent come from the magazine inserts. Maeil's customer database contains a huge amount of "of-the-customer" information – 460,000 records out of the 600,000 women who deliver babies in Korea each year, but it is mostly profile type data. Since there is no customer transaction data recorded in the database, Maeil Corp. cannot identify their real customers, even with the 460,000 pieces of personal data. The data is not available to the market research department. Recently, Maeil Corp. attempted to sell infant food to members at discount prices through direct mailing. But the response rate was only 0.96 percent, which is low relative to the usual return rate of direct marketing in Korea (about 1.5 percent).

For-the-customer information, like product and service information, membership information, and other knowledge about infant care, is periodically provided through mail or sales promotions. But customized information for specific requests from individual customers is not provided. Although four or five infant-care consultants are working at the local branches, individual customer consultation information is not stored in the organizational memory.

Although Maeil Corp. has data on 76 percent of the total infant food consumers, it is not made available for the market research and decision-making. Because of the customer privacy concern, the system and data are restricted to DM operators only. Since there is no behavioral and psychographical data, it is impossible to apply the information to market research and decision-making at this point.

In addition, data accuracy is a basic problem in data collection and manipulation. Most of the membership data is acquired in the hospital. However, membership subscription is not initiated by the mothers but by a nurse. Consequently, mothers often do not know of their to membership to Maeil, and do not care about the accuracy of the data. This is the reason why

the DM response rate was low relative to the average response rate of the local direct marketing.

Except for infant food products, Maeil Corp. does not manage their end consumers directly. Access to customer information is blocked by the distributors such as franchisees and sales agents across the country. No information is collected about the distributors' customers like retailers, end consumers, and convenience stores. For instance, since the information on home-delivery consumers is kept within the delivery person's memory, when he or she retires, the information disappears.

Approximately, 25 percent of the total consumers prefer home-delivery of milk; the others purchase it at the retailers. Data from an internal survey indicates that the reason for home-delivery service is convenience (55.7 percent) and freshness of the milk (37.3 percent). A total of 89 percent of customers are willing to continue to have the service delivery. Recently, however, the number of home-delivery consumers has decreased, as many of them opt to purchase milk at the retail stores. The reason for this change is that consumers are putting more value on price than on convenience. Consequently, the transaction points of consumers in the distribution channel are moving from distributors to small or large-scale retailers.

Relationship value analysis and positioning

We can analyze the relationship value of the two different customer relationships only qualitatively since Maeil Corp. lacks transactional data about customers and there are no formal channels for monitoring their customer value (see Table III).

In the Mothers' Membership Program, customers perceive a low economic value and high psychological value. They strongly want to learn how to care for themselves during their pregnancy and about infant care. Through

Relationship	Value	Mothers' membership	Home-delivery consumers
Customer value	Economic value	Low economic value; partially, direct sales with discounted price	No economic value
	Psychological value	Valuable knowledge about pregnancy and infant care	Convenience in purchasing Freshness of products
Customer equity	Customer LTV	Low life time value Short relationship periods	High lifetime value Long relationship periods
	Degree of commitment	Low commitment Non-transactional commitment in some members who monitor products and services	High degree of commitment Transactional commitment

Table III.
Qualitative evaluation of customer relationship

campaigns with expert lecturers in related areas and direct mailing of informational materials, Maeil satisfies the customers' needs and demands. Some of them communicate with the central research institute individually. They monitor products and services through personal communication channels, so they are committed non-transactionally by participating in various firm-sponsored activities. However, since there is no data about individual customer behavior, Maeil Corp. cannot manage its customer relationships systematically; it is not easy to estimate the relationship value, identify core customers, or, by relationship positioning strategy, create more core customers from standard customers.

The customer equity in Maeil Corp. Mothers' Membership is low because the relationship time is short – less than 12 months. However, home-delivery consumers have long-term relationships relative to non-home-delivery consumers and most of them are willing to retain this relationship in the future. They are highly committed transactionally to Maeil Corp.

While the members of Maeil Corp. Mothers' Membership give high value to this relationship, there is no difference between members and non-members in customer equity since the degree of transactional commitment is low and the relationship period is short. Home-delivery consumers show high equity since they are committed transactionally and for a long time. However, there is no economic benefit and they perceive no values other than convenience and freshness, so they are beginning to purchase through other distribution channels like supermarkets and convenience stores. Eventually, the number of home-delivery consumers will decrease and their equity will be reduced.

From the relationship positioning perspective, Maeil Corp. needs to raise the equity level of its Mothers' Membership Program by tracking the members' sales transaction data. On the other hand, it should provide higher value to its home-delivery milk customers by tracking their personal information.

Customer information system configuration
Maeil Corp. is in the process of building a customer information system that provides the three types of customer information. Until now, their marketing strategy has been product-oriented, not customer-oriented. There are product managers but no customer managers. Currently, the marketing function is divided into two categories – liquid milk products and powdered milk products – so the company cannot adequately manage cross-selling among its products because of the lack of information sharing.

Maeil Corp. should build a long-term customer relationship strategy that makes the product-dependent customers into life-time customers. The two customer relationships should be integrated into one and managed by customer managers, not by product managers. It is possible to keep customers "from the cradle to the grave" through careful and integrated customer life cycle management. Since Maeil Corp.'s products are purchased for the purpose of

health-care and end consumers are diverse in age, it would be feasible to develop product packages with tailored information and health-care instructions that are provided to individual customers or families according to their age.

For relationship initiation through mutual information sharing, various contact points with customers should be established. The personal and transaction data should be collected through direct and indirect contact points. As direct contact points, available contact points are PC-based VAN services, Internet homepages, and direct mailings associated with customer databases. It is also possible to use the POS data from its affiliated convenience store chain (LOVE M) and agents. Maeil Corp. needs to design a strategic rewards system that stimulates customers to initiate the relationship by giving their private information voluntarily. Coupon redemption is a typical tool for acquiring consumer information. Consumers who want to initiate a relationship with Maeil Corp. give their information with collected coupons that show their transaction history.

The relationship value analysis needs to be conducted periodically by measuring customer value and equity. A relationship positioning strategy and follow-up procedures also need to be established. For the internal use of customer information, the Central Research Lab and the Marketing Division can share customer information for their own purposes and still protect the privacy of customers.

Through the integrated CIS as shown in Figure 4, Maeil Corp. can plan to give life-time health care and dairy food services to their customers. Packaged food products, for health care information and value-added services can be provided for individual customers at each customer life cycle stage.

Conclusion and limitation

We have defined the concept of "identified" and "core" customers from the information processing perspective. In our definition, it is impossible to manage relationships with unidentified customers even though they are committed to your organization. Based on these definitions, we proposed a framework of dynamic customer relationship management, consisting of three stages: first, a customer acquisition stage, where the organization recognizes unidentified consumers as customers who are identifiable by collecting the information about them through diverse communication channels; second, a customer retention stage, where the organization builds equitable relationships through relationship value analysis so that ordinary customers turn into core customers who are committed to the relationship with high equity; finally, a customer expansion stage, in that core customers play the role of expanding the company's customer base through word of mouth marketing and active interactions with the company. Throughout the entire customer lifecycle, an
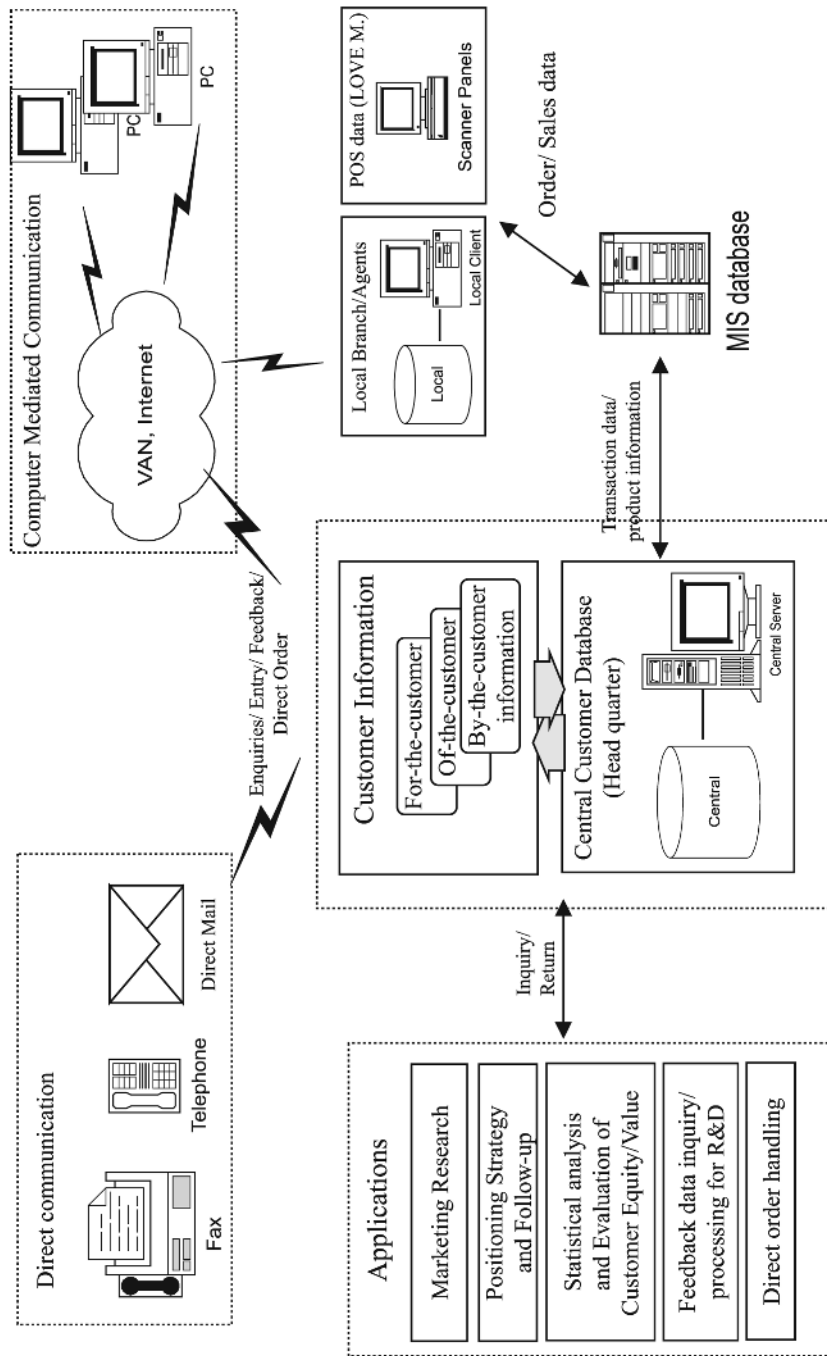
Figure 4.
Configuration of
customer information
system for Maeil Corp.

organization is expected to measure relationship value from both perspectives and build a proper relationship positioning strategy.

Once a proper strategy is chosen, in order to collect and analyze the required customer information, it is necessary to build a CIS customer for relationship management. A CIS for relationship management consists of a customer database, a communication channel, and an application for relationship management. Such CIS should support all three types of customer information: of-the-customer, for-the-customer, and by-the-customer information. Through the framework of dynamic customer relationship management and CIS, organizations should be able to manage the entire customer life cycle and make one-time buyers into lifetime core customers.

However, we have studied the customer relationship management in a qualitative manner so the theoretical framework proposed may need further validation quantitatively based on real world CRM implementation data. The concept of customer value and equity as well as CIS architecture should be refined with detailed criteria to be applicable to other industries. In the relationship value analysis, measuring customer equity is not easy. In practice, the customer equity has been calculated by subtracting the customer management costs from the customer lifetime value, which is the present value of the future potential profitability. Using statistical techniques and prediction models, it can be estimated from the firm's transaction database but, with this method, only the behavioral aspect is considered. Socio-psychological factors like degree of commitment, as we indicated in this paper, should also be included in estimating more relevant customer equity and developing effective CRM strategies.

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Understanding customer relationship management (CRM)

People, process and technology

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Abstract *Customer relationship management (CRM) is a combination of people, processes and technology that seeks to understand a company's customers. It is an integrated approach to managing relationships by focusing on customer retention and relationship development. CRM has evolved from advances in information technology and organizational changes in customer-centric processes. Companies that successfully implement CRM will reap the rewards in customer loyalty and long run profitability. However, successful implementation is elusive to many companies, mostly because they do not understand that CRM requires company-wide, cross-functional, customer-focused business process re-engineering. Although a large portion of CRM is technology, viewing CRM as a technology-only solution is likely to fail. Managing a successful CRM implementation requires an integrated and balanced approach to technology, process, and people.*

1. Introduction

In the mid-twentieth century, mass production techniques and mass marketing changed the competitive landscape by increasing product availability for consumers. However, the purchasing process that allowed the shopkeeper and customer to spend quality time getting to know each other was also fundamentally changed. Customers lost their uniqueness, as they became an "account number" and shopkeepers lost track of their customers' individual needs as the market became full of product and service options. Many companies today are racing to re-establish their connections to new as well as existing customers to boost long-term customer loyalty. Some companies are competing effectively and winning this race through the implementation of relationship marketing principles using strategic and technology-based customer relationship management (CRM) applications.

CRM technology applications link front office (e.g. sales, marketing and customer service) and back office (e.g. financial, operations, logistics and human resources) functions with the company's customer "touch points" (Fickel, 1999). A company's touch points can include the Internet, e-mail, sales, direct mail, telemarketing operations, call centers, advertising, fax, pagers,

stores, and kiosks. Often, these touch points are controlled by separate information systems. CRM integrates touch points around a common view of the customer (Eckerson and Watson, 2000). Figure 1 demonstrates the relationship between customer touch points with front and back office operations.

In some organizations, CRM is simply a technology solution that extends separate databases and sales force automation tools to bridge sales and marketing functions in order to improve targeting efforts. Other organizations consider CRM as a tool specifically designed for one-to-one (Peppers and Rogers, 1999) customer communications, a sole responsibility of sales/service, call centers, or marketing departments. We believe that CRM is not merely technology applications for marketing, sales and service, but rather, when fully and successfully implemented, a cross-functional, customer-driven, technology-integrated business process management strategy that maximizes relationships and encompasses the entire organization (Goldenberg, 2000). A CRM business strategy leverages marketing, operations, sales, customer service, human resources, R&D and finance, as well as information technology and the Internet to maximize profitability of customer interactions. For customers, CRM offers customization, simplicity, and convenience for completing transactions, regardless of the channel used for interaction (Gulati and Garino, 2000).

CRM initiatives have resulted in increased competitiveness for many companies as witnessed by higher revenues and lower operational costs. Managing customer relationships effectively and efficiently boosts customer satisfaction and retention rates (Reichheld, 1996a, b; Jackson, 1994; Levine, 1993). CRM applications help organizations assess customer loyalty and profitability on measures such as repeat purchases, dollars spent, and longevity. CRM applications help answer questions such as "What products or services are important to our customers? How should we communicate with our customers? What are my customer's favorite colors or what is my customer's size?" In particular, customers benefit from the belief that they are saving time and money as well as receiving better information and special treatment (Kassanoff, 2000). Furthermore, regardless of the channel or method used to contact the company, whether it is the Internet, call centers, sales representatives, or resellers, customers receive the same consistent and efficient service (Creighton, 2000). Table I provides a brief overview of some of the benefits that CRM offers by sharing customer data throughout the organization and implementing innovative technology.

With much success, software vendors such as Oracle, SAP, PeopleSoft, Clarify, SAS, and Siebel are racing to bring off-the-shelf CRM applications to organizations. Many of these are the vendors responsible for developing enterprise resource planning (ERP) systems. AMR Research estimates that the CRM market will top $16.8 billion by 2003 (Tiazkun, 1999).
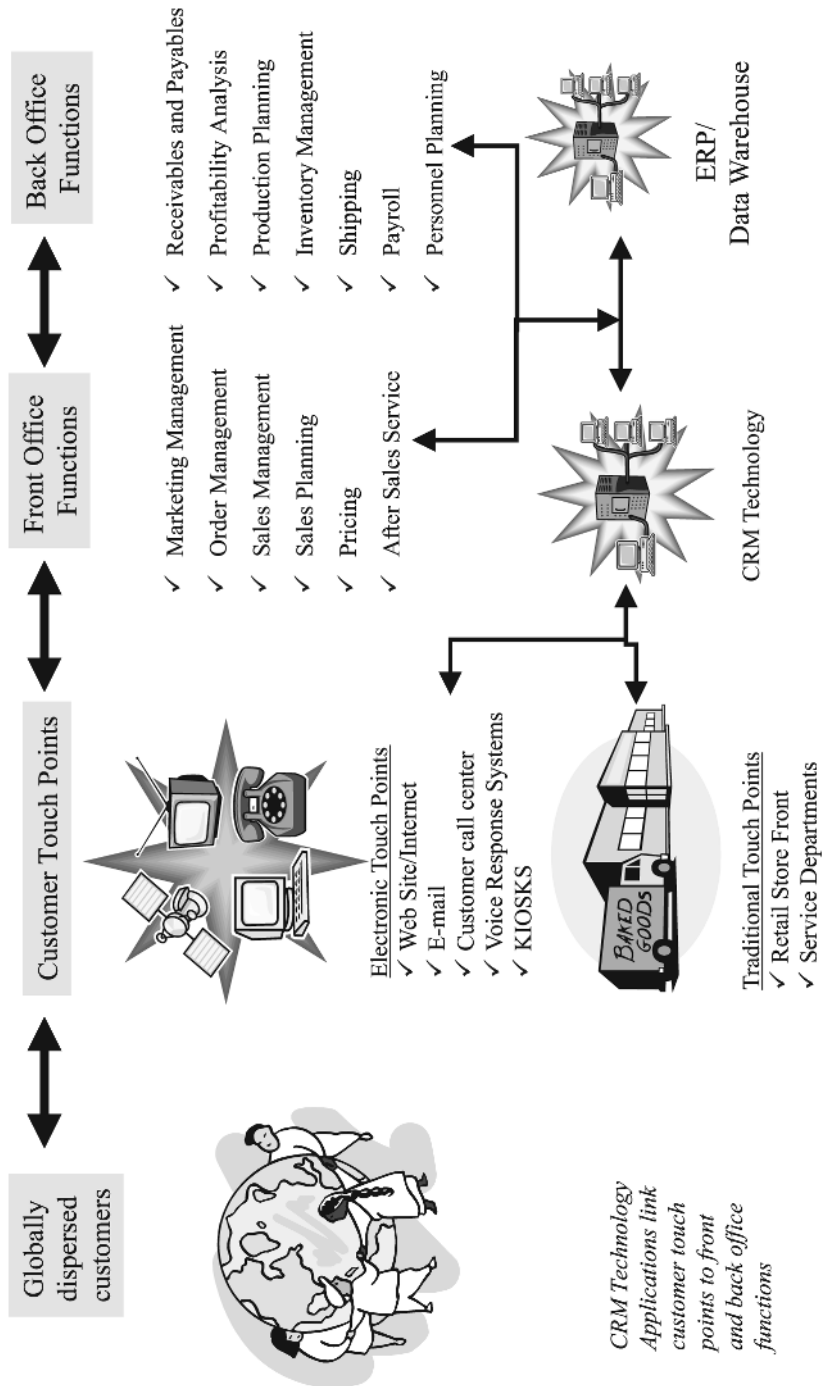
Figure 1.
CRM applications,
supported by ERP/data
warehouse, link front
and back office functions

Back Office Functions

✓ Receivables and Payables
✓ Profitability Analysis
✓ Production Planning
✓ Inventory Management
✓ Shipping
✓ Payroll
✓ Personnel Planning

ERP/
Data Warehouse

Front Office Functions

✓ Marketing Management
✓ Order Management
✓ Sales Management
✓ Sales Planning
✓ Pricing
✓ After Sales Service

CRM Technology

Customer Touch Points

Electronic Touch Points
✓ Web Site/Internet
✓ E-mail
✓ Customer call center
✓ Voice Response Systems
✓ KIOSKS

BAKED GOODS

Traditional Touch Points
✓ Retail Store Front
✓ Service Departments

Globally dispersed customers

CRM Technology Applications link customer touch points to front and back office functions

Customer data sharing throughout the organization resulting in:	CRM innovative technology:
Superior levels of customer service	Extends capability to the customer for self-service and Internet applications
Opportunities for cross-selling and up-selling	
Vast information about customers' habits and preferences	Attracts existing and new customers through personalized communications and improved targeting
Integrated and complete view of the customer	
Improved targeting to segments and individual customers	Integrates customer and supplier relationships
Efficient call centers/service centers	Constructs metrics to analyze common and unique customer patterns

While there are many compelling reasons to consider a CRM strategy, caution and careful analysis is prudent. Hackney (2000) warns that although CRM software vendors may entice organizations with promises of all-powerful applications, to date there is no 100 percent solution. Possible risks such as project failure, inadequate return on investment, unplanned project budget revisions, unhappy customers, loss of employee confidence, and diversion of key management time and resources must be well thought out (Schweigert, 2000). In one example, a large telecommunications company rolled out a major CRM application to more than 1,000 sales reps in late 1999, at a cost of $10,000 per user, only to find a year later that fewer than 100 were using the system (Patton, 2001). Recent surveys further reveal that the average investment in CRM applications is $2.2 million dollars (CIO Research Reports, 2002), and that CRM implementation failure rate is as high as 65 percent (Apicella *et al.*, 1999).

It is becoming increasingly clear that stalled or failed CRM projects are often the result of companies lacking a thorough understanding of what CRM initiatives entail. Thus, this paper first presents the evolution of CRM to facilitate the comprehension of the implementation issues. It then sets out to explore the underlying critical components that can enable (or hinder) the successful implementation of CRM initiatives. A CRM implementation model that integrates the three key dimensions of people, process, and technology within the context of an enterprise-wide customer-driven, technology-integrated, cross-functional organization is proposed in Figure 2. The essential roles of these three dimensions are further elaborated in the subsequent sections following the evolution of CRM.

2. CRM evolution

Customer relationship management itself is not a new concept but is now practical due to recent advances in enterprise software technology. An outgrowth of sales force automation (SFA) tools, CRM is often referred to in the literature as one-to-one marketing (Peppers and Rogers, 1999). SFA software automates routine tasks such as tracking customer contacts and forecasting. The goal of SFA is to allow the sales force to concentrate more on selling and
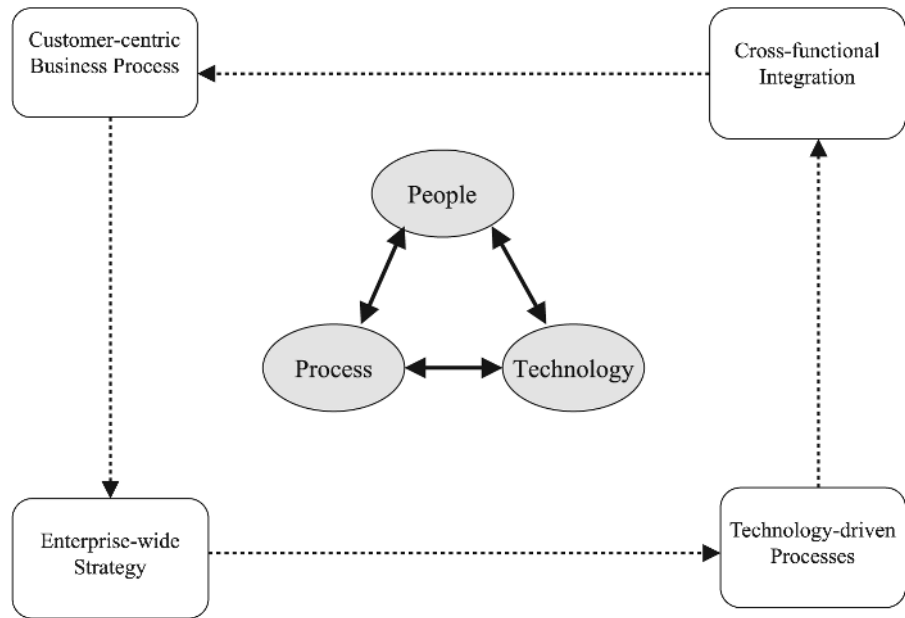
less on administrative tasks. It should be noted, however, that CRM also has its roots in relationship marketing which is aimed at improving long run profitability by shifting from transaction-based marketing, with its emphasis on winning new customers, to customer retention through effective management of customer relationships (Christopher *et al.*, 1991). Thus, CRM is a more complex and sophisticated application that mines customer data that has been pulled from all customer touch points, creating a single and comprehensive view of a customer while uncovering profiles of key customers and predicting their purchasing patterns. Technology that tracks and analyzes customer behavior allows companies to easily identify the best customers and focus marketing efforts and reward those who are likely to buy often. Acquiring a better understanding of existing customers allows companies to interact, respond, and communicate more effectively to significantly improve retention rates.

Innovations in technology, competitive environments, and the Internet are just several factors that make one-to-one initiatives a reality. Companies can develop these relationships to customize the shopping experience, better predict online buying patterns, entice customers with special offers or services, evaluate the economic advantage of each customer, and build long-term mutually beneficial relationships. The following examples highlight some of the benefits of CRM applications.

Ritz-Carlton, an upscale chain of hotels, records guest preferences gleaned from conversation with customers during their stay and uses them to tailor the

services that customers receive on their next visit at any other Ritz-Carlton in the world. Requests for items such as hypoallergenic pillows and additional towels are recorded for future use so that personalized goods and services can be added for repeat customers. Mining customer data allowed Bank One to significantly reduce turnover among its most profitable small business customers by assigning dedicated account managers (Conlon, 1999). The service industry, however, is not the only industry to harness people, process, and technology to manage resilient customer relationships. Dell Computer Corporation exemplifies CRM success by combining IT with front and back office operations. Every PC that Dell manufactures is already sold. From the Internet, Dell customers are able to configure their own system, from thousands of hardware and software combinations, with an easy-to-use ordering system that provides delivery dates as well as progress updates.

3. The technology factor
Information technology (IT) has long been recognized as an enabler to radically redesign business processes in order to achieve dramatic improvements in organizational performance (Davenport and Short, 1990; Porter, 1987). IT assists with the re-design of a business process by facilitating changes to work practices and establishing innovative methods to link a company with customers, suppliers and internal stakeholders (Hammer and Champy, 1993). CRM applications take full advantage of technology innovations with their ability to collect and analyze data on customer patterns, interpret customer behavior, develop predictive models, respond with timely and effective customized communications, and deliver product and service value to individual customers. Using technology to "optimize interactions" with customers, companies can create a 360 degree view of customers to learn from past interactions to optimize future ones (Eckerson and Watson, 2000).

Innovations in network infrastructure, client/server computing, and business intelligence applications are leading factors in CRM development. CRM solutions deliver repositories of customer data at a fraction of the cost of older network technologies. CRM systems accumulate, store, maintain, and distribute customer knowledge throughout the organization. The effective management of information has a crucial role to play in CRM. Information is critical for product tailoring, service innovation, consolidated views of customers, and calculating customer lifetime value (Peppard, 2000). Among others, data warehouses, enterprise resource planning (ERP) systems, and the Internet are central infrastructures to CRM applications.

3.1 Data warehouse technology
A data warehouse is an information technology management tool that gives business decision makers instant access to information by collecting "islands of customer data" throughout the organization by combining all database and

operational systems such as human resources, sales and transaction processing systems, financials, inventory, purchasing, and marketing systems. Specifically, data warehouses extract, clean, transform, and manage large volumes of data from multiple, heterogeneous systems, creating a historical record of all customer interactions (Eckerson and Watson, 2000). The abilities to view and manipulate set data warehouses apart from other computer systems. Constantly extracting knowledge about customers reduces the need for traditional marketing research tools such as customer surveys and focus groups. Thus, it is possible to identify and report by product or service, geographic region, distribution channel, customer group, and individual customer (Story, 1998). Information is then available to all customer contact points in the organization.

Data warehousing technology makes CRM possible because it consolidates, correlates and transforms customer data into customer intelligence that can used to form a better understanding of customer behavior. Customer data includes all sales, promotions, and customer service activities (Shepard *et al.*, 1998). In addition to transaction details, many other types of data generated from internal operations can make significant contributions. Information related to billing and account status, customer service interactions, back orders, product shipment, product returns, claims history, and internal operating costs all can improve understanding of customers and their purchasing patterns. The ability of a data warehouse to store hundreds and thousands of gigabytes of data make drill-down analysis feasible as well as immediate. A corporate awareness survey conducted jointly by Cap Gemini and International Data Corporation (1999) found that 70 percent of US firms and 64 percent of European firms plan on building a data warehouse to support their CRM projects. SAS Corporation, a significant player in the data warehouse industry, has recently teamed with Peppers and Rogers Group to provide "CRM Resource", a weekly guide on industry-focused CRM. A brief outline of organizational benefits with a data warehouse are:

- accurate and faster access to information to facilitate responses to customer questions;
- data quality and filtering to eliminate bad and duplicate data;
- extract, manipulate and drill-down data quickly for profitability analysis, customer profiling, and retention modeling;
- advanced data consolidation and data analysis tools for higher level summary as well as detailed reports; and
- calculate total present value and estimate future value of each and every customer.

3.2 Enterprise resource planning (ERP) systems

Enterprise resource planning (ERP), when successfully implemented, links all areas of a company including order management, manufacturing, human

resources, financial systems and distribution with external suppliers and customers into a tightly integrated system with shared data and visibility (Chen, 2001). An overview of ERP systems is provided in Figure 3. Major enterprise systems vendors, who have been successful in the ERP market, are gearing up for the growing needs of CRM by aggressively forming alliances with, or taking over other software companies that have been operating in the CRM market. For example, J.D. Edwards entered into a deal with Seibel, a leading CRM company, in May 1999 and subsequently shut down its in-house sales force automation team. Peoplesoft acquired Vantive's CRM software in October 1999 to integrate with its own ERP systems. Through mySAP initiatives, users of SAP R/3 system can add Web-based CRM and SCM functions while leaving the core R/3 system intact (Xenakis, 2000). Oracle has taken the most drastic steps in forming a new bond between ERP and CRM. The new flagship ERP/CRM software package, called 11i, is heavily Internet oriented and allows users to seamlessly implement modules of CRM with a smaller ERP suite (Sweat, 2000).

Significant differences exist between ERP technology and CRM applications. ERP serves as a strong foundation with tightly integrated back office functions while CRM strives to link front and back office applications to maintain relationships and build customer loyalty. ERP systems promise to integrate all functional areas of the business with suppliers and customers. CRM promises to improve front office applications and customer touch points to optimize customer satisfaction and profitability. While ERP systems address fragmented information systems, CRM addresses fragmented customer data. CRM applications are Web-enabled and designed to extend the data mining capabilities of ERP throughout the supply chain to customers, distributors, and manufacturers (Scannell, 1999). Organizations can use CRM analytical capabilities to predict and answer key business questions on customer intelligence and share the results across channels. Although ERP is not required for CRM, providing customers, suppliers, and employees with Web-based access to systems through CRM will only be beneficial if the underlying infrastructure, such as data warehouses and/or ERP, exists (Solomon, 2000). Companies with an ERP system, however, need to understand where they are in the implementation process, as well as assess where other technologies, such as data warehouses, fit in before plunging into CRM applications (Saunders, 1999).

3.3 Impact of the Internet

The explosive growth of the Internet has also brought new meaning to building customer relationships. Greater customer access to the organization, such as online ordering and around the clock operations, has set the stage for a shifting paradigm in customer service. A recent report describes how successful Web sites are in building lasting relationships with "e-customers" by offering
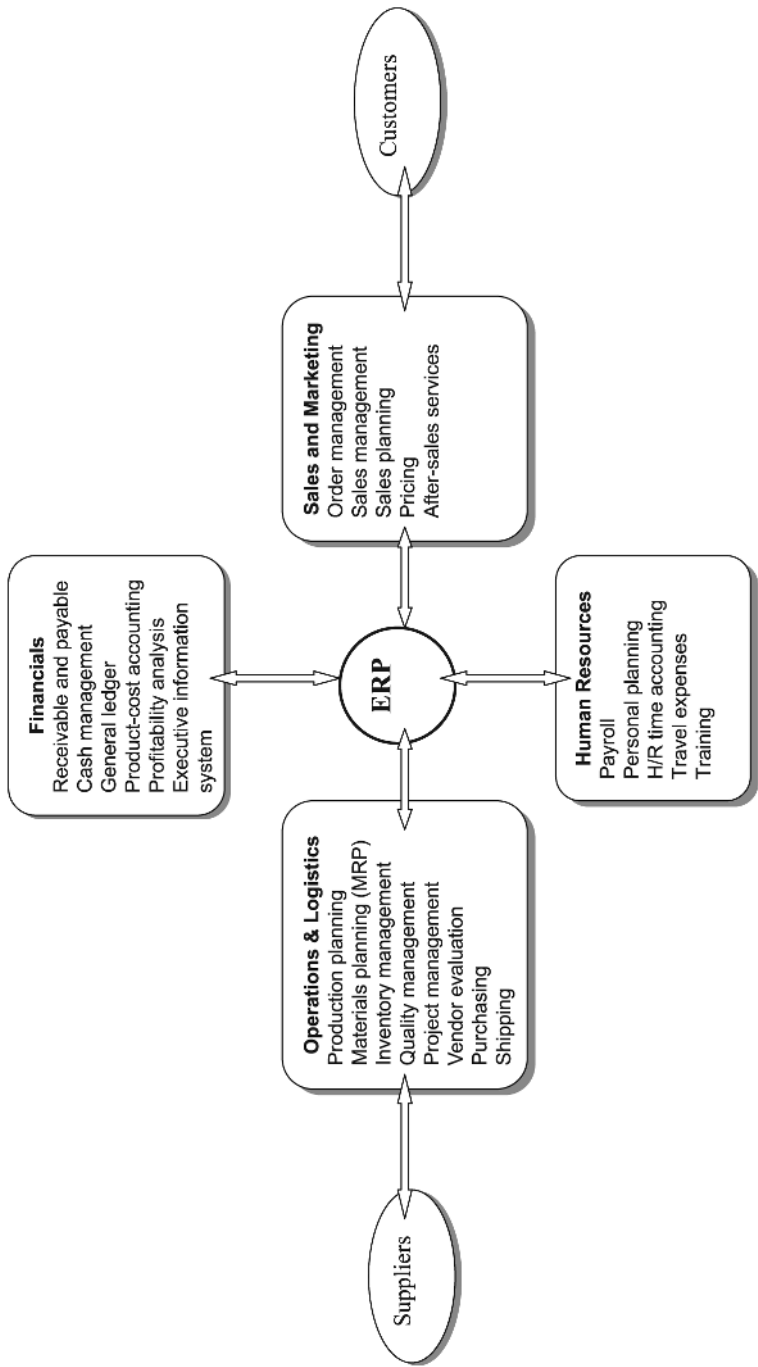
Figure 3.
An overview of
ERP systems

Source: Adapted from Chen, 2001

services in traditionally impossible ways (Peppers and Rogers, 2000). Using a series of richly detailed case studies, they also contended that in the broad arena of business-to-business commerce, organizations would rise or fall on the basis of their capabilities to cultivate one-to-one relationships with their customers (Peppers and Rogers, 2001). Customers expect organizations to anticipate their needs and provide consistent service at levels above their expectations. In return, customers are loyal to the organization for longer periods of time. For instance, the American Airlines Web site builds customized customer views in real time allowing two million frequent fliers to have a unique experience each time they log on (Peppers and Rogers, 1999). Prior to the Internet, there was not a cost-effective way to tell millions of customers fitting a certain profile about an immediately available special fare. With the interactive capability of the Internet, American Airlines can do exactly that without having to tell everyone about every special fare. As a part of CRM, American Airlines offers loyal customers promotional fares and special discounts to partner businesses based on individual customer preferences.

4. Business process changes

Not long ago, companies with efficient facilities and greater resources were able to satisfy customer needs with standardized products, reaping advantages through productivity gains and lower costs. Mass marketing and mass production were successful as long as customers were satisfied with standardized products. As more firms entered the market, mass marketing techniques, where the goal was to sell what manufacturing produced, started to lose effectiveness. Target marketing, or segmentation, shifted a company's focus to adjusting products and marketing efforts to fit customer requirements. Changing customer needs and preferences require firms to define smaller and smaller segments.

It has become well known that retaining customers is more profitable than building new relationships. Consequently, relationship marketing was developed on the basis that customers vary in their needs, preferences, buying behavior, and price sensitivity. Therefore, by understanding customer drivers and customer profitability, companies can better tailor their offerings to maximize the overall value of their customer portfolio. In his seminal study, Reichheld (1996a, b) has documented that a 5 percent increase in customer retention resulted in an increase in average customer lifetime value of between 35 percent and 95 percent, leading to significant improvements in company profitability.

Customer relationship marketing techniques focus on single customers and require the firm to be organized around the customer, rather than the product. Customer-centric organizations seamlessly integrate marketing and other business processes to serve customers and respond to market pressures. Firms

that evolve to this stage will benefit from a marketing-manufacturing interface, resulting in the flexibility to meet changing customer needs efficiently and effectively (Prabhaker, 2001). Figure 4 demonstrates the change from weak to strong customer relationships based on changing marketing strategies of mass marketing, target marketing and customer relationship marketing.

Despite the technological perspectives discussed in the previous section, the philosophical bases of CRM are relationship marketing, customer profitability, lifetime value, retention and satisfaction created through business process management. In fact, Anton (1996) characterizes CRM as an integrated approach to managing customer relationships with re-engineering of customer value through better service recovery and competitive positioning of the offer. Couldwell (1998) further depicts CRM as a combination of business process and technology that seeks to understand a company's customer from the perspective of who they are, what they do, and what they are like. In fact, companies have been repeatedly warned that failure is eminent if they believe that CRM is only a technology solution (Goldenberg, 2000).

The statement "retaining customers is more profitable than building new relationships" is especially true in the changing Internet market. The Boston Consulting Group estimates that it costs $6.80 to market to existing customers via the Web, versus $34 to acquire a new Web customer (Hildebrand, 1999). A recent Deloitte Consulting survey of more than 900 executives across different industries also revealed that manufacturers that set goals for improving customer loyalty are 60 percent more profitable than those without such a strategy (Saunders, 1999). A CRM strategy can help create new customers, and more importantly, develop and maintain existing customers.

Customer relationship management is an enterprise-wide customer-centric business model that must be built around the customer. It is a continuous effort that requires redesigning core business processes starting from the customer perspective and involving customer feedback. The Seybold Group starts this process by asking customers what barriers they encounter from the company (Seybold, 1998; Seybold *et al.*, 2001). In a product-focused approach, the goal is to find customers for the products using mass marketing efforts. In a customer-centric approach, the goal becomes developing products and services to fit customer needs. In Seybold's work, five steps in designing a customer-centric organization were suggested:

(1) make it easy for customers to do business;

(2) focus on the end customer;

(3) redesign front office and examine information flows between the front and back office;

(4) foster customer loyalty by becoming proactive with customers; and

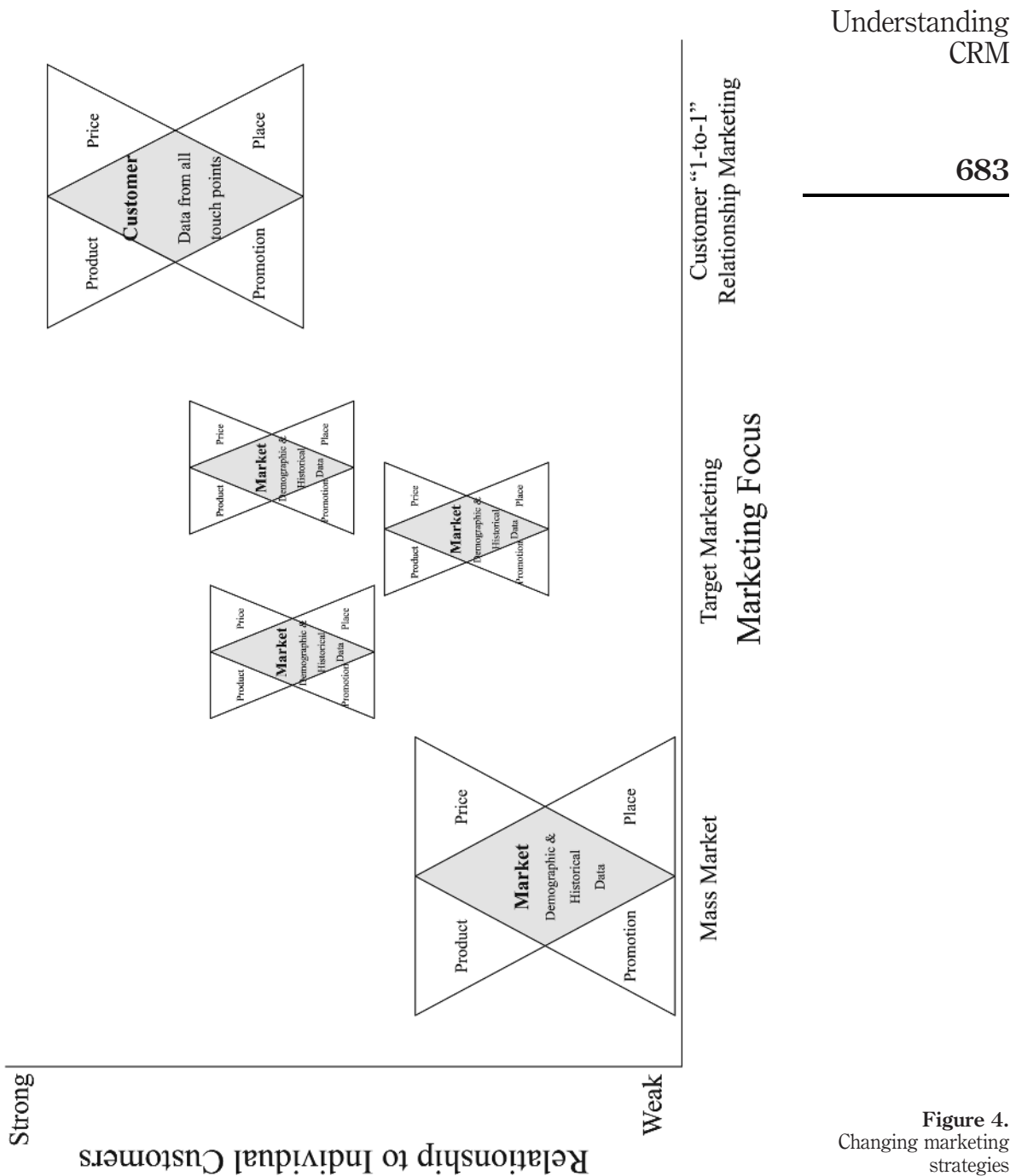(5) build in measurable checks and balances to continuously improve.

Figure 4.
Changing marketing
strategies

The goals of a customer-centric model are to increase revenue, promote customer loyalty, reduce the cost of sales and service, and improve operations. Optimizing customer relationships requires a complete understanding of all customers; profitable as well as non-profitable, and then to organize business processes to treat customers individually based on their needs and their values (Renner, 2000). Within the paradigm of business process re-engineering, Al-Mashari and Zairi (1999) offer a holistic view of success and fail factors. Specifically, change management, management support, organizational structure, project management, and information technology were highlighted. Companies considering CRM implementation can also benefit from addressing these five BPR issues.

5. People changes

Implementation of enterprise technology, such as CRM and ERP, requires changes to organizational culture (Al-Mashari and Zairi, 2000). While both technology and business processes are both critical to successful CRM initiatives, it is the individual employees who are the building blocks of customer relationships. There are several underlying dimensions surrounding management and employees that successful CRM implementations require.

Top management commitment is an essential element for bringing an innovation online and ensuring delivery of promised benefits. Top management commitment, however, is much more than a CEO giving his or her blessing to the CRM project. Customer-centric management requires top management support and commitment to CRM throughout the entire CRM implementation. Without it, momentum quickly dies out. Furthermore, top management should set the stage in CRM initiatives for leadership, strategic direction and alignment of vision and business goals (Herington and Peterson, 2000). This view was reinforced in a recent META Group Report (1998) that singled out top management support and involvement as a key success factor for CRM implementations.

As in most major change efforts, objections and disagreement among various functional departments that arise in the process of business reengineering and CRM implementation can only be solved through personal intervention by top management, usually resulting in changes to corporate culture. The META Group Report (1998) concluded that investing in CRM technology without a customer oriented cultural mindset is like throwing money into a black hole. Dickie (1999) also warns against starting a CRM project if senior management does not fundamentally believe in re-engineering a customer-centric business model.

CRM projects require full-time attention of the implementation project team with representatives from sales, marketing, manufacturing, customer services, information technology, etc. Cap Gemini and IDC found that top management and marketing and sales management are generally the initiators of a corporate

CRM project (1999). In addition, project teams require not only sponsorship by top management but also a project champion that can persuade top management for continuous change efforts (Al-Mashari and Zairi, 1999). In general, project teams assist companies to integrate their core business processes, combine related activities, and eliminate the ones that don't add value to customers.

A functional organization often takes "ownership" of customer data. Many departments and individuals see customer handling as a sales or marketing function, and regard the release of their data to another function as a loss of power. A customer-centric model requires sharing the data enterprise-wide; this usually requires a fundamental paradigm shift in the culture to sharing information and knowledge. Especially in organizations where tradition has established separate goals and objectives, top management must not take a passive role in change efforts. Silo-based organizational myopia must be replaced with a customer-focus so departments will collaborate rather than compete with each other. Many of these changes efforts can be aided by effective communication throughout the entire project and reaching all levels of employees.

CRM initiatives require vision and each and every employee must understand the purpose and changes that CRM will bring. Re-engineering a customer-centric business model requires cultural change and the participation of all employees within the organization. Some employees may opt to leave; others will have positions eliminated in the new business model. Successful implementation of CRM means that some jobs will be significantly changed. Management must show its commitment to an ongoing company-wide education and training program. In addition to enhancing employee skills and knowledge, education boosts motivation and commitment of employee and reduces employee resistance. Additionally, management must ensure that job evaluations, compensation programs, and reward systems are modified on a basis that facilitate and reward customer orientation. After all, how people are measured will determine their behavior.

6. Conclusion

Somewhere along the turn of the twentieth century, buyers and sellers lost their intimate relationships. Prior to the Industrial Revolution, sellers knew their customers, many times by name, and generally understood their needs. Mass production built a wall between buyers and sellers where the main concept was to find customers for standardized products. Customers are more empowered today than ever before and the Internet is accelerating the trend toward greater customer empowerment. CRM applications attempt to focus on the customer first, specifically one customer at a time, to build a long-lasting mutually beneficial relationship.

Customer relationship management is a comprehensive approach that promises to maximize relationships with all customers, including Internet or

"e-customers", distribution channel members, and suppliers. Getting to "know" each customer through data mining techniques and a customer-centric business strategy helps the organization to proactively and consistently offer (and sell) more products and services for improved customer retention and loyalty over longer periods of time. Peppers and Rogers (1999) refer to this as maximizing "lifetime customer share", resulting in customer retention and customer profitability. On the other hand, advanced customer data analysis also allows a company to identify the customers it does not want to serve. Beside the technological advances, CRM initiatives represent a fundamental shift in emphasis from managing product portfolios to managing portfolios of customers, necessitating changes to business process and people. As companies start to re-engineer themselves around customers, individual employees must also come to terms with changing business process, organizational culture and, thus, the ways they view their customers and how they treat them.

Organizations today must focus on delivering the highest value to customers through better communication, faster delivery, and personalized products and services. Since a large percentage of customer interactions will occur on the Internet rather than with employees (Bultema, 2000), technology must adapt to the changing and unpredictable market. Organizations that implement CRM and e-business applications will have the greatest gains (Lange, 1999). The future of CRM is e-relationship management or eRM that will synchronize cross-channel relationships (Saunders, 1999). It is also envisioned as an "e-partnering ecosystem" with a complex network of partners that operate as an interconnected whole, spanning entire markets and industries (Creighton, 2000; Siebel, 2001).

CRM implementations and the changing effect of the Internet offer abundant research opportunities. The identification of some implementation issues in this study raises several important research questions. In particular, what are the roles of suppliers and supply chain partners in CRM? How does e-CRM strategies affect brick and mortar companies? What business processes, integration challenges, and organization structures are common throughout successful CRM implementations? Research in these areas will contribute to building thriving customer relationships and long-term corporate survival. Years of academically researched topics of relationship marketing and customer retention are now practical and cost-effective to implement due to emerging technology. It is time to put academic theories to practice.

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Literati Club

Awards for Excellence

Sergio Beretta
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is the recipient of the journal's Outstanding Paper Award for Excellence for his paper

"Unleashing the integration potential of ERP systems. The role of process-based performance measurement systems"

which appeared in ***Business Process Management Journal***, Vol. 8 No. 3, 2002

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