



# Creating customer knowledge competence: managing customer relationship management programs strategically

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## Abstract

While increasingly demanding customers have prompted many firms to implement customer relationship management (CRM) programs, little is known about the internal processes that assist organization-wide learning about individual customer relationships. This research proposes a conceptual framework about the internal processes involved in creating customer knowledge competence, which allow firms to strategically manage their CRM programs. The framework is discussed based on five case studies of Canadian financial services firms that have implemented customer relationship programs.

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## 1. Introduction

The term “network” can be used as an attribute of any organization to describe the pattern of ties that exists, defined by hierarchical reporting relationships, task interdependencies, information sharing, and so on (Kanter & Eccles, 1992). Strategic choice theorists emphasize the ability of managers to redesign internal organizational networks to fit changing tasks and environments. For managers, networks are both something that sets the context for the actions they wish to take—thereby providing resources and constraints—as well as something that can be manipulated in order to provide more resources and fewer constraints.

One major catalyst for change in a firm’s internal network is the challenge of how to evaluate and manage important customer relationships efficiently. In their quest to increase access to valuable customers, companies have turned to CRM information technology to provide much-needed bases for evaluating the current status and profitability of a customer. While customer relationship management (CRM) has been defined in numerous ways (Gronroos, 1995; Morgan & Hunt, 1994; Rigby, Reicheld, & Scheffer, 2002), elements common to all definitions include leveraging technology to engage individual customers in a meaningful dialogue so that firms can customize their products

and services to attract, develop, and retain customers. Modern CRM software packages include front office applications that access customer and product data as well as back-end systems including financials, inventory, and enterprise resource planning (ERP).

Various researchers have extolled the potential of CRM as an opportunity for firms to achieve a competitive advantage by offering more value to customers. CRM can enable more effective marketing (Grant & Schlesinger, 1995) by creating intelligent opportunities for cross-selling (Hill, 1998) and faster new product introductions (Ruediger, Grant-Thompson, Harrington, & Singer, 1997). But implementing a software tool alone to manage customer relationships does not guarantee such results. A recent research done by the Gartner Research Group in North America found that 55% of all CRM projects fail to produce results (Rigby et al., 2002). Another study by Ernst & Young (2001) of managers who had implemented CRM found that the two biggest challenges in implementing CRM strategies were internal organizational issues (53% of respondents), followed by the ability to access all relevant information (40% of respondents). The evidence suggests that for CRM to be successful, changes are required in the way firms manage customer information internally. Many firms now know quite a lot about the behavior of their customers but little about how the firm should make good use of this knowledge.

The importance to firms of harnessing knowledge-based competence, which yields a competitive advantage, is well

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established in both the marketing (Day, 1994; Glazer, 1991) and strategy (Pralahad & Hamel, 1990) literature. Firm competences are generally thought of as “complex bundles of skills and collective learning, exercised through organizational processes” (Day, 1994, p.38). Market knowledge competence and customer knowledge competence are two related, yet separate, concepts. Market knowledge competence refers to the processes that generate and integrate market information *in aggregate*, which includes both customer and competitive information (Li & Calantone, 1998), whereas customer knowledge competence refers to the processes that generate and integrate information about *specific* customers.

While data about customers are readily available through existing CRM database software packages, data alone do not lead to customer knowledge. To be useful, managers need to transform data into customer information and to integrate the information throughout the firm to develop customer knowledge. It is the customer knowledge competence based on internal firm processes that generate and integrate specific customer information, which enables firms to develop customer-specific strategies. The importance to a firm’s competitive advantage of the organizational processes that generate and integrate market knowledge has been acknowledged conceptually (Day & Wensley, 1988; Glazer, 1991; Hunt & Morgan, 1995) in the academic literature. However, with the notable exception of Li and Calantone (1998), there has been little empirical work on market knowledge competence and no explicit attention to customer knowledge competence.

The purpose of this research is to understand the internal firm processes necessary to create customer knowledge competence. This exploratory research represents a first step in understanding the ways firms are attempting to redesign their internal organizational networks to meet the challenges of generating and integrating specific customer knowledge. From a managerial perspective, this research is intended to help managers take a more strategic approach to managing CRM programs in their organizations by providing a framework to guide managerial decision making.

## 2. Conceptual framework

### 2.1. Customer knowledge competence

Li and Calantone (1998) distinguish between market knowledge and market knowledge competence in the following way. Market knowledge is defined as “organized and structured information about the market as the result of systematic processing,” whereas market knowledge competence is defined as “the processes that generate and integrate market knowledge” (p. 14). In this research, a similar distinction is adopted between customer knowledge, which is systematic customer information, and customer knowledge competence, which is based on generating and

integrating customer information throughout the organization. Unlike customer knowledge, a customer knowledge competence is inimitable, because the processes of generating and integrating customer knowledge are embedded in organizational cognitive activities and are not observed readily from outside (Day, 1994; Pralahad & Hamel, 1990), and immobile, because these processes are created within the firm and cannot be purchased in the market (Day, 1994).

Since the ability to create a customer knowledge competence has only recently been enabled through technology, there has been no explicit attention in the academic literature on the specific organizational processes inherent in customer knowledge competence. Previous work on the impact of market knowledge competence on new product advantage (Li & Calantone, 1998) is adapted and extended to conceptualize customer knowledge competence. Li and Calantone (1998) suggest that market knowledge competence in new product development is composed of three organizational processes: (1) a customer knowledge process; (2) a competitor knowledge process; and (3) the marketing research and R&D interface. Drawing on work in organizational learning (Huber, 1991; Sinkula, 1994), marketing strategy (Day, 1994; Day & Wensley, 1988), and new product development (Cooper, 1992, 1998), this research conceptualizes customer knowledge competence as being composed of four organizational processes, which, together, generate and integrate customer knowledge within the organization: (1) a customer information process; (2) marketing–IT (information technology) interface; (3) senior management involvement; and (4) employee evaluation and reward systems (Fig. 1).

The first component, customer information process, is an organizational process that generates customer knowledge, whereas the other three components are organizational processes that integrate customer knowledge throughout the organization. A customer information process refers to the set of behavioural activities that generate customer knowledge pertaining to customers’ current and potential needs for products and services (Li & Calantone, 1998). Marketing–IT interface refers to the process by which marketing and information technology functions communicate and cooperate with each other. Senior management involvement refers to the processes by which top management signals its support for the generation and integration of customer knowledge within the firm. The employee evaluation and reward system refers to the process by which employee behaviour is aligned to the firm’s goals of generating and integrating customer knowledge into the firm’s marketing strategies.

This conceptualization is complementary to the Li and Calantone (1998) study on market knowledge competence in several respects. Both a customer information process and an interdepartmental interface process (in this case marketing–IT interface) are adopted from their study. The conceptualization of customer knowledge competence extends

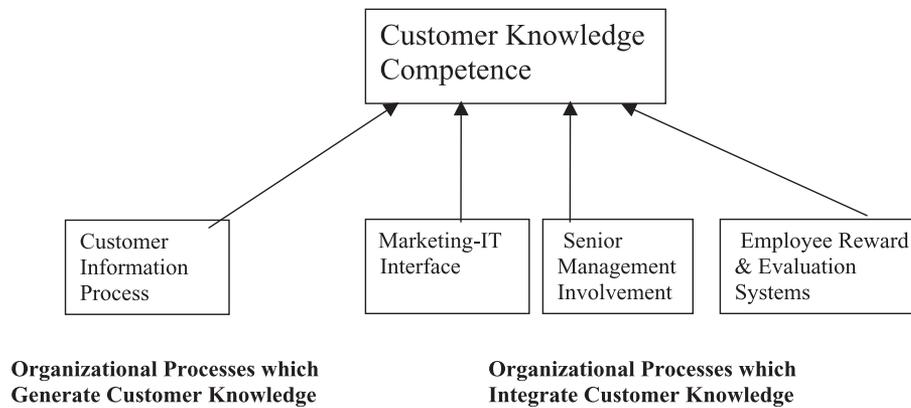


Fig. 1. A conceptualization of customer knowledge competence.

previous research to include senior management involvement and employee evaluation and reward systems because of their role in shaping the manner in which employees interact with each other to share customer information. Senior management involvement engenders goal clarity among organizational employees, which in turn fosters sustained effort towards the desired goal (Spreitzer, 1996). Reward systems induce behaviours within organizations through the provision of incentives (Lawler, 1990).

The importance of these four components in developing customer knowledge competence is discussed next using five case studies of large Canadian firms in the financial services sector that have implemented CRM programs within the last 3–5 years. Since the research focus is on how firms are changing their internal processes, each component of customer knowledge competence and how it is being managed in the context of CRM programs is discussed separately.

### 3. Method

The selection of case studies was guided by the goal of finding firms with sufficient experience in CRM in that they would already have experimented with making structural changes in the way their employees interacted to ensure the success of the CRM implementation. The intent in using multiple case studies was to replicate the findings to provide greater confidence in the overall results. It was believed that firms in financial services would be farther along the learning curve in how to implement CRM programs and, thus, would be in a better position to have made internal changes in the way employees interacted and shared customer information.

The Canadian financial services industry is experiencing an unprecedented restructuring and a strategy transition in response to challenges such as substitute financial service providers, new global competition, and more powerful buyers and suppliers. As a result, virtually every major financial institution in Canada has made investments in

CRM. As expected, firm interviews confirmed that CRM is perceived in the Canadian financial services industry as a necessity to help firms differentiate their services in an increasingly crowded marketplace. As the marketing manager at one bank commented, “The number one competitive advantage within the industry is a good CRM strategy that will increase existing customer relationships and reduce overall customer retention and acquisition costs”. Another said, “Obviously, relationship marketing efforts are very important. . . and for marketing to large numbers of customers, it’s even more important. You really have to cherish that customer base so relationship marketing is a very important competitive tool.”

Five large financial services providers in the Canadian marketplace were selected for study: three banks, one credit card firm, and one investment brokerage firm. All five firms had made large investments in CRM software over the past 3–5 years and had stated in their public literature that their firm strategy was based on leveraging CRM technology to better service their customers. Each firm interview typically lasted between 1 and 2 h and involved interviews with senior and middle managers in the marketing and IT departments. In three cases, senior managers were asked to comment on the interviews conducted with middle managers. In total, 14 interviews were conducted.

The interviews followed a guideline that was presented to the informants beforehand. After a brief description of the research project, the informants were encouraged to speak freely about the interview topics. Additional questions were used to probe deeper to elicit examples, illustrations, and other insights.

For all five firms, the goals of CRM were similar: to acquire new customers and to deepen the relationships with existing customers. However, when asked about the strategic value of CRM to their firm, most managers admitted that such programs had, to date, resulted in very little co-value creation with customers. The primary benefit of CRM was an enhanced ability to identify and target valuable customers—customer relationships were still mostly one-way in which firms tried to create value for, rather than with,

their customers. Firms tended to view their core competence as being in informational database management. Only one firm felt that the increased customer information resulting from their CRM program had helped the firm develop superior customer knowledge capable of generating new customer insights. And even this firm felt that it was only at the beginning of developing “a competence in knowledge-based individual customer solutions to add value to its customers’ financial affairs.”

It was apparent from the interviews that creating a customer knowledge competence requires a new way of doing business. As a senior manager at one bank put it, “CRM is not just a ‘project’ that can be compartmentalized. It’s an evolutionary process—new CRM processes and initiatives happen every year—it’s the way a company organizes itself.” The efforts these five firms had made to change the way customer information was shared and acted upon within the firm are related to the four proposed components of customer knowledge competence in the Results section.

## 4. Results

### 4.1. Customer information process

Consistent with organizational learning theory (Huber, 1991; Sinkula, 1994) a customer information process consists of two sequential aspects: customer data acquisition and data interpretation, which transforms the data into customer information. Not surprisingly, the importance of both aspects of the customer information process was confirmed in the interviews. However, when managers were asked how the customer information process was managed in terms of data acquisition and the interpretation of customer information across the organization, it became apparent that there was a tendency among managers to overemphasize the process of customer data acquisition and underemphasize information interpretation.

Well-established procedures had been implemented by all firms to acquire customer data. Typically, both quantitative and qualitative customer data were acquired through parent and sister company relationships, direct customer contact, networking, and secondary data. The five firms used a variety of proprietary and off-the-shelf software packages to organize customer data according to both “data-driven” (actual revenue, profitability, customer business/product segment, longevity of the account, strategic importance, etc.) and qualitative (potential customer revenue, quality/intensity of the relationship, etc.) parameters.

Customer data were typically analyzed using software packages that cross-referenced customer data with other data such as business type, vendor activity, and market size. Customer feedback loops were utilized in the data mining process to enrich existing information and for use in strategy formulation. However, in all five firms, there did not seem

to be much common understanding between different functional areas about how to interpret this analyzed information. As one manager put it, “How can this (CRM) be improving communication when there are different models for each separate function such as Marketing, Customer Service, and so on?” The major problem in managing the customer information process was getting employees to share a common interpretation of the customer information. This communication problem, in turn, created problems in integrating customer information throughout the organization. A manager working at a bank where CRM initiatives had yielded disappointing results commented that “while our firm has been good at stockpiling ‘private content’ information about customers in data warehouses and using it for basic demographic and research purposes, we have largely failed to link this information in any meaningful way to their delivery channels where customer interaction and sales occur.”

Typically, the intranet was the primary organizational process used in these firms to facilitate both the interpretation and the integration of customer information throughout the organization. Several managers commented that “the intranet is an important first step towards creating better internal relations to help the overall external relationships with customers.” Not surprisingly, having an intranet did not automatically produce better interpretation and integration of customer information throughout the firm. Firms tended to expect that because the technology was in place to allow access to this information by different departments, the information was being communicated and understood.

It appears from the experiences of these five firms that integrating customer information into an organization’s marketing and selling efforts requires more than just the more efficient use of technology. A new set of organizational skills is needed to effectively communicate the analyzed information to other functional areas in the firm and to integrate the information with a variety of delivery mechanisms that enable cross-selling opportunities. The processes used to create a stronger marketing–IT interface are discussed next.

### 4.2. Marketing–IT interface

Interface theory (Griffin & Hauser, 1991; Gupta, Raj, & Wilemon, 1986; Song & Dyer, 1995; Song & Parry, 1997) proposes that a higher level of synergy between marketing and other functional areas enhances a firm’s overall performance, whereas a higher level of disintegration between marketing and other functions increases the degree of mismatch between what is needed by customers and what is offered by the firm. The necessity for marketing and other functional areas to work together to achieve success has been validated in empirical work on successful new product development (Griffin & Hauser, 1991).

In practice, a strong marketing–IT interface may be difficult to achieve due to the different perspectives of these

departments. Each functional area often operates under the assumptions of its own “thought world” (Dougherty, 1992). While marketing requires the development of external capabilities to link a firm with its customers, technology development is an internal capability that sustains a firm’s market position (Day, 1994). For CRM initiatives to be successful, domain similarity is needed between marketing and IT departments. Domain similarity refers to the degree to which two different departments share the same goals or tasks (Kothandaraman & Wilson, 2000).

Domain similarity between marketing and IT may be achieved through different organizational mechanisms ranging from informal communication linkages to joint committees and project teams or cross-functional integration. Cross-functional integration exists when an organization assigns specific business process responsibilities to formalized teams involving personnel from multiple functional areas (Hammer & Champy, 1993). Cross-functional integration increases the potential for creativity (Sethi, Smith, & Park, 2001) by encouraging employees with different perspectives to interact with each other.

Both the strength of the marketing–IT interface and whether or not this interface had changed as a result of implementing CRM were investigated. Four of the five firms were satisfied with the strength of the marketing–IT interface. A senior manager at a bank said that the marketing–IT interface was aligned with the bank’s strong belief in building strong relationships with all stakeholders. He described the marketing–IT interface as a strong working relationship in which “the IT group works on keeping its customers happy.”

The manager at the remaining firm described the marketing–IT interface as being “not strong... The results of marketing campaigns do not become inputs to the data system quickly enough to utilize the new findings without any delay. The same issue occurs with information from other departments within the company.” The lack of a strong marketing–IT interface tended to create three major problems: (1) complex technology that did not integrate customer data and allow access to information by all departments; (2) poor data exchange when employees switched responsibilities from one customer account to another; and (3) the lack of comprehensive customer-related business processes to drive relationship building. As another manager at this bank put it, “it might be nice to think data warehouse is helping us communicate about customers and this is probably true to some extent. However, too often the files become unwieldy and there is too much time spent moving large files between Access/Excel, etc.”

All five firms confirmed that changes, which influenced the nature and strength of communication linkages between these job functions, had been made within the organization. At all firms, there were extensive informal communication linkages between marketing and IT. However, informal communication channels were clearly not enough. In three firms, informal communication channels had been supple-

mented by joint committees and project teams that were created and dissolved on an ad hoc basis to manage new initiatives. There were also weekly “coordination meetings” in which marketing and IT employees talked about CRM implementation issues.

Only two firms had made significant structural changes to the way their marketing and IT departments interacted as a result of implementing CRM. At both of these firms, marketing and IT functions had been integrated around specific customer groups. At one firm, each customer segment subteam included both marketing personnel and dedicated software professionals in the team. The goal was that customer offers from marketing were developed in a manner conducive to IT integration into CRM. By incorporating some IT “thinking” into the development of marketing proposals, the proposals were more readily accepted by IT and launched sooner with fewer revisions. The other firm had a Customer Knowledge Management business unit composed of five teams—Technology Group, Database Analysis Group, Marketing Database Group, Marketing Group, and Marketing Modeling Group. This ensured that both marketing and IT personnel were motivated by the same objectives and that workflow was coordinated among the five groups.

One theme that emerged from the interviews was the importance of teams, teamwork, and team building across all functional areas of the firm. While the strength of the marketing–IT interface was acknowledged to be of paramount importance, many managers pointed out that task interdependencies extended beyond these two functional areas and that work should be structured in a way that encouraged strong interfunctional linkages throughout the firm.

Given the significant capital expense involved in purchasing and implementing CRM programs, it is likely that there is senior management support in any firm that has implemented CRM. However, how that support is communicated throughout the organization affects employees’ perception of the perceived importance of customer knowledge and whether or not information about specific customers is actually generated and integrated within the firm. This is discussed next.

#### *4.3. Senior management involvement*

All the managers interviewed stressed the importance of support from senior management as being critical to their firm’s ability to develop a customer knowledge competence. Senior management in all five firms had articulated a vision around their adoption of CRM that was widely disseminated and appeared to be well understood within the firm. In all but one firm, the stated objective of CRM was to understand the firm’s customers better in order to serve them better. While one bank stated that the strategic vision that supported CRM was based on cost reduction, for the rest of the firms, the vision behind CRM was on value creation. This

vision was described in different ways such as “giving our customers more than they expect” or “moving from a product-centric organization to a customer-centric organization by building and maintaining a base of committed customers profitable for our firm.”

Since senior management plays a key role in shaping an organization’s behavioural activities (Deshpande, Farley, & Webster, 1993; Kohli & Jaworski, 1990) and in providing an environment that is either conducive or inhibitory to the behavioural processes of customer knowledge generation (Gupta et al., 1986), it was expected that senior management would have implemented changes in reporting relationships and other internal processes that signalled their involvement. Surprisingly, this was not the case.

Senior management did not appear to be actively involved in ensuring that their strategic vision was realized within their organization. There had been no structural changes in reporting relationships to senior management, nor had there been any formal changes to communication flows between middle and upper management. Senior management appeared to assume that since a CRM vision had been articulated, the responsibility for implementing this vision fell into the hands of middle managers. At one bank, the manager responsible for initiating the CRM investment was no longer at the bank and no other champion had taken his place. This had implications for obtaining employee buy-in and changing the way employees interacted with each other. Another manager at this firm confirmed that “one important problem is to obtain full buy-in and support for the program. At this point, we do have the support of the President and all the VPs. All are committed to providing the necessary funds and resources to support the project. The next challenge is to obtain full manager and employee support.”

What did emerge from the interviews was that organizational values played a significant role in creating customer knowledge competence. While senior management involvement tended to be viewed as “support from the top,” organizational values were viewed as depending on the active participation of all employees stemming from employee motivation and task interdependencies. One organizational mechanism that reinforces organizational values is the employee evaluation and reward systems. Reward systems that are not supportive of the customer relationship paradigm will promote employee feelings of independence and individuality, rather than promote feelings of membership and interdependence. Processes adopted to change employee evaluation and reward structures are discussed next.

#### *4.4. Employee evaluation and reward structure*

In a CRM environment, it is increasingly being acknowledged that the challenge of realigning employee behaviour closely parallels the challenge of realigning customer behavior (Grant & Schlesinger, 1995). Behaviour-specific reward

systems have been shown to motivate the specific behaviours (Jaworski & Kohli, 1993). In the context of CRM, there is some evidence to suggest that systems that reward individual achievement can impede the effective implementation of the relationship paradigm within an organization (Kothandaraman & Wilson, 2000). It was therefore expected that firms would redesign their employee evaluation and reward structures to promote internal team-based incentives based on concrete behaviours.

All managers interviewed acknowledged the difficulties in providing incentives for employees to improve their customer-focused performance. The variety of problems caused by lack of proper employee evaluation and reward systems ranged from inadequate and outdated customer database information to changing employee mindsets about their role in customer satisfaction, to employees bypassing the new technology altogether.

Although most managers complained that their employees were reluctant to learn new procedures, especially when it initially seems more complicated and tedious, few firms had instituted any kind of comprehensive training to encourage employees to change their existing ways of doing business. As one manager commented, “while our core technology systems are some of the best in the industry, the training for our operational staff is far from sufficient.” Firms were particularly weak in instituting cross-training between departments to enhance employees’ understanding and appreciation of other functional areas. Managers did recognize, however, that training had to be reinforced with an adequate evaluation and reward system. As one manager commented, “It’s obvious from our experience that training alone is not sufficient to promote systemic organizational change.”

A big issue was the need to make product and sales managers recognize that customers may well have much broader relationships with the firm, and to remind employees of the need to deal with customers in that context. The vice president of the Sales and Marketing Department at one firm admitted that “we are strong in building customer relationships, but weaker in starting them. We are starting to move toward teaching our salespeople how to develop long-term relationships with customers by understanding not only their wants and needs, but their motivations and business.”

It was evident from the interviews that there was a learning curve associated with developing an appropriate employee evaluation and reward structure. While firms were experimenting with different types of employee evaluation and reward structures, these systems tended to be externally rather than internally focused. Firms started with performance bonuses that were restricted only to sales personnel and were revenue-driven rather than behaviour-driven. The typical pattern was to start with a performance-based incentive scheme for salespeople since managers felt that the success of CRM was more dependent on sales than on the other functional areas.

Over time, however, firms moved towards more customer-focused, behaviour-based rewards. At one firm, incentive pay based on CRM objectives was implemented 2 years ago for all sales staff. In the first year, the reward structure was focused on customer retention and, last year, the emphasis was switched to measuring the growth of each portfolio managed. The goal for the upcoming year is to base incentive pay on how well the sales staff meets objectives for specific customers identified by the CRM system. At another firm, salespeople were rewarded for their actions through a bonus structure based on goals set by both the company and the employee. The bonus could be up to 21% of salary—6% based on achieving corporate objectives and 15% based on achieving personal objectives. It was recognized that this bonus structure was more beneficial to some employees than to others, depending on which business unit they were in. “If you were serving customers in an industry which is not growing, your objectives would be less ambitious than if you are serving customers in an industry where there is more opportunity to grow the business.”

Another firm had recently switched to a combination of revenue and behaviour-based evaluation and rewards. Employee performance was measured by sales team productivity (customer retention rates, response rates, increased customer spending); quality of performance (customer satisfaction ratings, ability to complete customer requests at first point of contact; effective and efficient communications with customers, and ability to maintain customer retention); sales (volume of sales and profit, not just number of calls); and leadership (employee initiative in approaching new customers). Only one bank had instituted a reward structure based solely on employee customer-focused behaviours (although this was individual-based rather than team-based). The “relationship managers” at this bank were evaluated monthly on specific goals pertaining to the level of contact with each client and updated database.

None of the five firms participating in this study had any incentive or reward systems in place for other functional groups to participate in sharing information with sales account groups. Two firms had a stated firm-wide employee incentive plan aimed at creating a “strong culture” of customer performance accountability. These banks had set financial benchmarks, initiated more disclosure than ever before (based on the belief that employees will feel more accountable when their performance is published externally), and tied employee compensation tightly to customer-focused performance. In practice, however, the focus was still on sales people. As the process improvement manager at one of these firms said, “We essentially need a behavioural change in the people who are going to use the new process. In my mind, sales people are one of the most difficult types of people to change in a company. It is going to be a challenge. The success of the program depends on it. . . We reward salespeople for their support and use of the CRM program. Measurement is based on which customers

you are seeing and how you are maintaining the database.” While the other firm recognized that both internal and external behaviours needed to be considered in their employee evaluation system, they have been unable to develop a performance-based evaluation system that effectively measures both types of behaviours.

Engaging in a dialogue with a diverse and evolving customer base in multiple channels places a high premium on employee flexibility. One difficulty in developing adequate evaluation and reward systems appeared to stem from striking a balance between employee empowerment and teamwork. The tension between encouraging proactive employee behaviour while at the same time remaining a team player was apparent at several firms.

## 5. Discussion

While several studies have pointed to the increased demand by customers for firms to implement processes that improve their ability to provide customer-specific solutions (Gupta et al., 1986; Wheelwright & Clark, 1992), to date, there has been little conceptual development to guide firms as they move away from searching for advantage through aggregated market information towards a focus on individual customer relationships as a means to enhance their strategic advantages. This research represents a first step in providing both academics and managers with a conceptual framework outlining specific processes that contribute to creating customer knowledge competence.

While the four components of customer knowledge competence proposed in this research were acknowledged by the managers interviewed as being important, it was evident that there was more attention spent on the processes of generating customer knowledge than on the processes of integrating this knowledge throughout the firm. Specifically, in the customer information process, the focus tended to be on technology-based processes to aid in information acquisition and interpretation rather than on organizational processes to change the way information was shared or used within the organization. In the organizational processes that integrate customer knowledge, more effort was spent on the marketing–IT interface and employee reward and evaluation systems than on instituting processes to signal senior management involvement.

Firms were experimenting with both formal and informal processes to change the marketing–IT interface. While only exploratory, the experiences of the five firms in this study suggest that informal and ad hoc linkages between marketing–IT are not sufficient to create a strong marketing–IT interface. The case studies suggest that the marketing–IT interface is more effective when functional areas are integrated, rather than implemented, by joint committees or project teams. While most firms had instituted team-based employee reward systems linked to specific customer metrics, many of the metrics were revenue-based rather than

behaviour-based. The reward and evaluation systems were externally rather than internally focused, and often were only applied to sales and marketing personnel rather than to all. Clearly, this approach limits the effect of such systems on changing internal patterns of communication and interaction.

There was no evidence at any of these five firms that organizational processes had been implemented to increase senior management involvement in creating a customer knowledge competence within the firm. This was somewhat surprising since the extent to which senior management is actively involved in the implementation of CRM technologies emits a strong signal to employees about the perceived importance of customer knowledge to the firm.

### *5.1. Academic implications and research limitations*

One of the major challenges faced by contemporary organizations is the development of internal processes to assist organization-wide learning about individual customer relationships. These internal processes influence the patterns of roles and relationships that shape a firm's internal network. Managers often talk about creating a "network organization" (Baker, 1992) when they are trying to change the present organization's functioning. Although not the primary focus of this study, overall, the findings from this research suggest that changing the nature of a firm's internal network cannot occur piece meal by focusing on one or two organizational processes. Interaction patterns and communication linkages need to be reinforced by multiple processes.

Clearly, much more work remains to be done to understand customer knowledge competence. There are a number of research limitations in this study that give rise to future research opportunities. This research investigated four organizational processes that generate and integrate customer knowledge based on their relevance in previous work in organizational learning (Huber, 1991; Sinkula, 1994), marketing strategy (Day, 1994; Day & Wensley, 1988), and new product development (Cooper, 1992, 1998). However, the construct of customer knowledge competence may well encompass additional processes. Other organizational processes that require further investigation are ways in which firms encourage employee empowerment and support relationship-based organizational values.

In addition, although it is clear that the four components of customer knowledge competence are connected to one another, this research examined each component separately. Future research could address the differential impact of each process on customer knowledge competence and examine how these four processes interact within the firm to create customer knowledge competence. It would also be useful to examine the viewpoints of customers about which organizational processes create customer knowledge competence. In that context, future research could examine the effects of differences in the number and types of customers as well as

the effects of industry and firm characteristics on firm success with CRM initiatives.

Finally, future research could address the cross-relational impact or external network effects of customer knowledge competence. How can firms extend customer knowledge competence to include other relational factors that influence customer needs in particular relationships? Can firms leverage customer knowledge competence to gain entry into new networks of customers?

### *5.2. Managerial implications*

The market for CRM software is experiencing explosive growth. In the US market, the CRM software market is expected to more than double from US\$20 billion in 2001 to US\$46 billion by 2003 (Rigby et al., 2002). Firm investment in CRM continues to command an ever-increasing proportion of firm's budgets, with a 12% forecast for 2001 and a 9% increase projected for 2002 (Ernst & Young, 2001). But investment in CRM software packages cannot be justified unless it results in new customer value propositions that increase share, revenue, and profitability.

The results from this research suggest that a number of factors cited as being key success factors in the managerial literature are likely to be necessary but not sufficient conditions for CRM to result in customer knowledge that can be leveraged strategically. To reap the rewards of CRM, managers need to complement new CRM technologies with organizational processes that integrate customer information throughout the firm; improve the strength of ties between marketing and IT departments; signal senior management involvement; and encourage employees to adopt new customer-focused behaviours both within the firm and with external customers.

There is no doubt that the role of marketing is changing within organizations (Webster, 1992). The results from this research suggest that for the successful implementation of CRM, strong marketing-IT linkages are essential rather than discretionary. Gaps between customer requirements and the firm's product offerings can be closed only when the information, ideas, and goals of the marketing and IT departments are shared and aligned with each other.

It is interesting that although all managers in the sample recognized that it is a myth that on-line enhancement and channel integration automatically build customer loyalty, in practice, they relied on CRM technology to replace sound business practices. This study demonstrates that leveraging customer knowledge is dependent not only on employee access to customer information provided by CRM products. Managers need a holistic view of their organization to effect real change. For example, there was some evidence in the case studies that the organizational processes used to facilitate information interpretation (part of the customer information process) affected the effectiveness of the organizational processes that integrated customer knowledge throughout the organization.

One reason why firms in this study had not effected dramatic changes to their internal networks may have been that firms were still struggling to uncover the type of organization they wanted to create. Many firms appeared to be experimenting through trial and error with individual organizational processes rather than working towards a strategic vision of the type of organization they wanted to create. Although the challenges inherent in implementing a new technology are considerable, the real challenges lie in developing business processes and systems to integrate information and to motivate employees.

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