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Role of Dynamic Capability and Information Technology in Customer Relationship Management: A Study of Indian Companies

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Executive Summary

There is a growing body of academic and practitioner literature on Customer Relationship Management (CRM), most of the research in this field being conducted in the Western context. In the emerging countries of Asia, the difference is not only about the level of technology adoption and infrastructure, but also about the way decisions are made and technology is used to form relations, and the deeply-rooted values of employees and customers who drive the competitive performance of CRM. These contextual peculiarities of CRM have got important implications for the sources of competitive performance in the process of CRM.

It has been well accepted that CRM is a strategic initiative. But, surprisingly, the CRM literature is largely silent on the issue of competitive reaction in dynamic markets of emerging Asian economies. In such markets, the domain of CRM is characterized by lots of changes. Managers cannot rely on only static firm's resources that they have assembled to take CRM decisions and drive competitive advantage. Drawing from the theoretical argument in strategic management, i.e., dynamic capability approach, this study identifies sources of competitive performance for the process of CRM in dynamic capability. It is an organization's ability to continuously improve, innovate, and reconfigure resources to match the evolving environmental needs. Information technology (IT) competence has been considered as an important moderator of the relationship between dynamic capability and competitive performance. The study articulates the drivers of dynamic capability for CRM. Further, the study investigates the main effects, as well as the interaction effects of IT and dynamic capability on competitive performance of the CRM process. A questionnaire survey has been conducted, and data collected from a sample of 334 cross-functional executives of 29 organizations from Indian banking, telecom, and retail industry.

Some of the important findings of the study are as follows:

- In the emerging markets of Asia, dynamic capability played a crucial role in gaining competitive CRM performance across all three industries.
- In the highly dynamic and competitive Indian telecom industry, the dynamic capability played the most important role.
- Important drivers of dynamic capability also include social networking capability with the other capabilities related to integration and market orientation.
- Contrary to the findings of the few studies in the Western context, CRM technology had positive effects on competitive CRM performance; it also enhanced the dynamic capability-competitive CRM performance relationships.
- In the absence of appropriate dynamic capabilities in the CRM process, the use of CRM technology might do more harm than good. ❖

KEY WORDS

Customer Relationship Management

Emerging Countries

Dynamic Capability

Resource Reconfigurability

IT Competence

Over the last decade, there has been an explosion of interest in customer relationship management (CRM). The role of information technology (IT) in enhancing customer relationships has been considered very crucial (Thwaites and Lee, 1994; Pine, Peppers and Rogers, 1995; Grant and Schlesinger, 1995; Day, 2000). All over the world, many organizations have turned to IT-enabled CRM initiatives, and the enthusiasm about these investments are continuously growing. To be competitive globally as well as in Indian markets, lots of companies in India have also invested in technological initiatives for managing customer relationships. Some of them succeeded in reaping the fruits of better managed relations and competitive success, while many others failed.

Given the evolution of the CRM field, it is surprising that the CRM literature is largely silent on the issue of competitive success (Boulding, *et. al.*, 2005). There is no empirical study that explains why one succeeds and the other fails. There is a severe lack of research, which takes a broader and strategic focus across firms (Reinartz, Krafft, and Hoyer, 2004). In the context of CRM, to explore how one firm outperforms the other and gains competitive success, one must go back to strategic management literature. A few studies have applied a resource-based view (RBV) in the context of CRM (Day and Bulte, 2002; Coltman, *et. al.*, 2001) in their arguments that valuable, rare, inimitable, and non-substitutable (VRIN) resources and capabilities drive CRM success. These studies that focus on static resources are not enough to address complexities of CRM in competitive and dynamic markets. Building on an extended resource-based view, i.e., dynamic capability approach (DCA), this study aims to investigate the complex sources of competitive CRM performance.

DCA suggests that when competitive landscapes are shifting, the dynamic capabilities by which firm managers integrate, build, and reconfigure internal and external competencies to address rapidly changing environments (Teece, Pisano, and Shuen, 1997) become the source of competitive performance. Drawing on DCA, the study aims to explore the sources of competitive CRM performance in dynamic capability linked to CRM process. It also identifies three important drivers of dynamic capability for CRM. As IT competence has been considered as an important moderator of the relationship between dynamic capability and competitive performance (Reinartz, Krafft and Hoyer, 2004; Sher and

Lee, 2004), the study further investigates the role of IT in affecting competitive CRM performance. A questionnaire survey has been conducted and data collected from a sample of 334 cross-functional executives of selected 29 organizations from Indian banking, telecom, and retail industry.

Along with significantly contributing to CRM literature, the study is also important for the literature on dynamic capability approach for two reasons. First, majority of studies on resource-based view and dynamic capability approach take firm performance as dependent variable; this study takes performance of CRM process as a dependent variable. It follows the view (Ray, Barney and Muhana, 2004) that there can be a lot of reasons why competitive performance of a business process does not get reflected in firm performance, and that there is an important alternate class of dependent variable, i.e., performance of a business process. Second, while majority of discussions on dynamic capability focus on organizational resources and knowledge internalization (Lung and Shou, 2005), this study introduces external and inter-organizational relationships and social networking capability as important drivers of dynamic capability.

CRM IN EMERGING COUNTRIES OF ASIA

The emerging Asian markets have been one of the most volatile and dynamic markets of the world with a growing disposable income, shift in consumption patterns, global competition, software revolutions, and growing rates of technology adoptions. These fast growing economies and changing business environment provide the most suitable context to study the effects of dynamic capability on CRM.

Generally, CRM has been defined from at least three perspectives: narrowly and tactically, as a particular technology solution that is considered as functional level; wide-ranging technology solutions level and customer-centric that is considered as organizational level (Payne and Frow, 2005). After a long debate, practitioners and researchers agree on a point that CRM should be considered at the organizational level and the key elements of CRM relates to strategy, the management of the dual creation of value, the intelligent use of data and technology, the acquisition of customer knowledge and the diffusion of this knowledge to the appropriate stakeholders, the development of appropriate relationships with specific customers and the integration of processes

across many areas of the firm and across the network of firms that collaborate to generate customer value (Boulding, *et al*, 2005). These key elements have been more precisely identified as five generic processes related to CRM: the strategy development process, the value creation process, the multi-channel integration process, the information management process, and the performance assessment process (Payne and Frow, 2005).

CRM in the emerging countries of Asia has moved from a narrow perspective of “an information technology product” to “a series of information technology initiatives” and “a strategic initiative.” In the organizations, customer-centricity has started occupying boardroom time. The perspective of better customer experience has come into sharper focus. It is a step towards building robust processes and appropriate leverage of technology advances. Increased competition, margin pressures, and demanding customers are forcing companies to look at CRM in a big way. In the emerging countries of Asia, the implementation cycles for CRM are getting shorter and automation of CRM-related processes have a direct impact on a company’s profitability. Therefore, more and more of these organizations are expected to invest in CRM.

The Asian CRM literature has not been able to reflect these changes in the business practices of CRM appropriately. Though in Asia, the relationships have provided foundation of business activities for thousands of years, there are inherent values embedded in the CRM literature that do not reconcile with the public face of Asian values (Peppers and Rogers, 2002). Except for a few exploratory surveys and case studies by practitioners, very few empirical studies related to CRM have been conducted in the Asian context (Jain, Jain and Dhar, 2003; Kabiraj, Agarwal and Singh, 2004; Chen and Ching, 2004). None of these studies focused on the issues relevant to the dynamic markets in the emerging countries of Asia.

There are only a few studies (Day, 2002; Reinartz, 2004; Jayachandran, Sharma, Kaufman, and Raman, 2005) that explore the role of IT in CRM in the Western context. In the context of emerging countries of Asia, the difference is not only about the level of technology adoption and infrastructure, but also about the decision-making styles, organizational processes and structure, the way technology is used to form relations in specific context, and the deeply-rooted values of employees and customers who are at the heart of CRM (Peppers and Rogers,

2002). Some peculiar characteristics of the Asian markets significantly affect the five generic processes related to CRM. In Asian business community, strategy development process is more intuitive and holistic (Haley, 1997). Information management process relies more on subjective information (Haley and Tan, 1996). Higher importance of group dynamism and family (Tsapi, 1999) make dual value creation process more complex because of higher numbers of actors involved in making decision. Stronger information silos across functions and less willingness to share information makes cross-functional integration more complex (Martinsons, 1991). Chances of performance of CRM getting reflected in shareholder results are too less and the right flexible matrix that incorporates both subjective and objective performance for measuring CRM is too crucial (Martinsons and Davisons, 1996). These peculiarities of CRM are reflected in the conceptual development and methodology of the study.

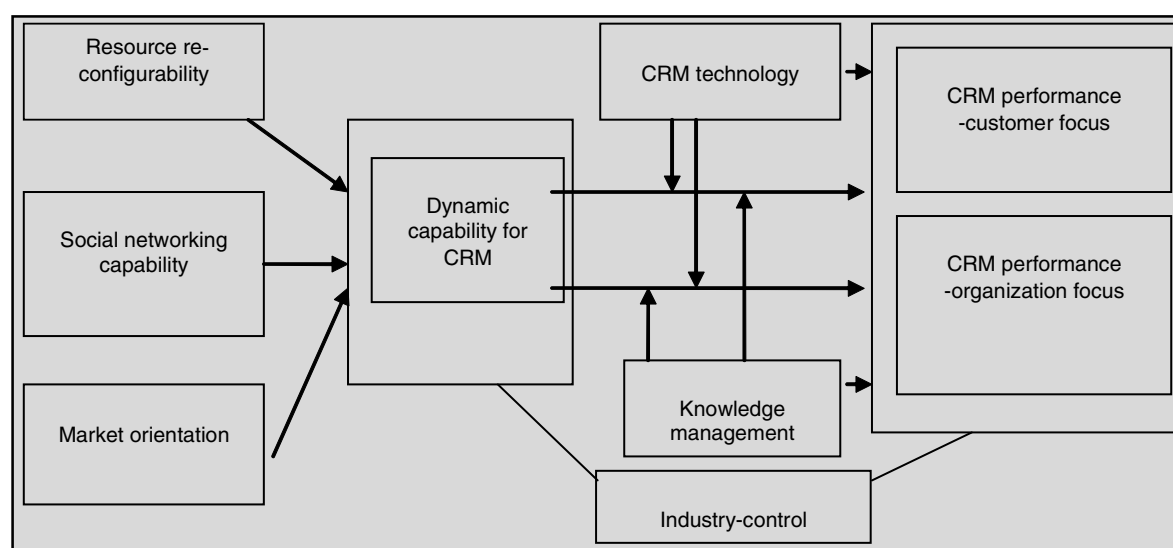
CONCEPTUAL FRAMEWORK

In the conceptual framework, it is important to consider competitive CRM performance from both internal as well as external perspectives. As shown in Figure 1, competitive CRM performance-customer focus represents external perspectives and competitive CRM performance-organization focus represents internal perspectives. Since rapidly changing environments erode the value of existing competencies, the key source for competitive CRM performance is a dynamic capability for CRM. Resources re-configurability, social networking capability, and market orientation have been the drivers of dynamic capability for CRM. IT competence-related variables—CRM technology and knowledge management—are moderators of the relationship between dynamic capability for CRM and competitive CRM performance. Along with the moderating impact, it is also important to explore the direct impact of IT competence variables on competitive CRM performance. Industry is considered as a control variable.

Competitive CRM Performance

Competitive CRM performance refers to managerial perceptions about the competitive performance achieved through the process of CRM. The competitive performance is achieved through continuous “dual value creation” for both customer and the firm (Boulding, *et al*, 2005). It is important to measure competitive CRM

Figure 1: Conceptual Framework



performance from both the perspectives. Therefore, the study considers two dependent variables related to CRM performance: CRM performance-customer focus and CRM performance-organization focus.

CRM Performance-Customer Focus

CRM performance-customer focus refers to managerial perceptions on competitive value creation for customers through CRM. It deals with an understanding of customer needs, expectations, feedback, communications, and customer-focused matrices (Day 2000; Gartner, 2003). Competitive value creation for the customer gets reflected in higher levels of customer satisfaction, customer loyalty, and other customer focused matrices.

CRM Performance-Organization Focus

CRM performance-organization focus refers to managerial perceptions about competitive value creation for the organization through CRM. It is linked to the changes in an organization's business strategy, structure, business processes, matrices, compensation, skills, and technology. The competitive value creation for the organization gets reflected in both market share gains and financial performance outcomes in the CRM process. Though this concept is related to organization's performance outcomes, it is different with its specific focus on CRM process. It refers to competitive value creation in terms of market share gains or financial performance improvement only achieved through CRM process. If such competitive position is not achieved through CRM, then in that case, it is not considered CRM performance-

organization focus and will fall in the category of organization performance.

To validate the results, the study considered objective performance measure as a dependent variable. While most research in marketing strategy have assessed the impact of focal construct on perceived performance (e.g., Kohli and Jaworski, 1990; Bharadwaj, Varadarajan, and Fahy, 1993), the current study assessed the association with a measure of objective performance (Varadarajan and Jayachandran, 1999), considering Return on Assets (ROA) as the most suited objective performance measure (Han, Kim and Srivastava, 1998; Reinartz, Krafft and Hoyer, 2004).

Dynamic Capability for CRM

Dynamic capability for CRM refers to dynamic capability that is intimately tied in CRM process and creates value for firms and customers by manipulating resources into new competitive value-creating strategies. Just like VRIN (valuable, rare, inimitable, and non-substitutable) resources, VRIN dynamic capability for CRM is not a direct source of competitive CRM performance (Esienhardt and Martin, 2000). Effective dynamic capabilities violate the RBV assumption of persistent heterogeneity across firms and have commonalties across firms in terms of key features. Therefore, they cannot be a direct source of competitive CRM performance. The potential for competitive CRM performance lies in using dynamic capability for CRM sooner, more astutely, or more fortuitously than the competition to create the resource

positions that lead to competitive CRM performance.

The CRM literature indicates relevance of dynamic capability in driving competitive CRM performance. The three dragons threatening the CRM processes are: dynamic complexity, fragmentation, and uncertainty (Kellen and Stefanczyk, 2002). In this situation, applied to CRM processes, dynamic capabilities enable the organization to leverage their existing resources to capture new strategic opportunities, and compete in changing markets with renewed functional competencies that better align with environmental contingencies (Teece, Pisano and Shuen, 1997). Dynamic processes and capabilities are too crucial in driving CRM strategy, gaining competitive advantage, and achieving strategic benefits of CRM (E-Piphany Report, 2003; Coltman, 2003). Dynamic capability for CRM facilitates continuous reconfigurations and renewal of resources to shape better interactions with customers and thus leads to competitive CRM performance. Thus,

H1a: Dynamic capability for CRM positively influences CRM performance-customer focus.

H1b: Dynamic capability for CRM positively influences CRM performance-organization focus.

Drivers of Dynamic Capability for CRM

Dynamic capability for CRM is neither vague nor a tautologically defined abstraction (Eisenhardt and Martin, 2000). Though the dynamic capability for CRM is idiosyncratic in its details and path-dependent in its emergence, there are some common capabilities across all effective firms, and it is very important to identify these common capabilities that drive dynamic capability for CRM and in turn competitive CRM performance. To identify these drivers of dynamic capability for CRM, first and the most important thing is to go back to the literature on dynamic capability. We studied the foundation literature on dynamic capability approach (Collis, 1994; Teece, Pisano and Shuen, 1997; Eisenhardt and Martin, 2000) and outlined the key abilities that drive dynamic capability. These key abilities have been related to: (i) sensing, adapting, and addressing the rapidly-changing environments; (ii) integrating resources, transforming, and extending the existing resources through learning; and (iii) revamping, re-deploying, recombining, and renewing resources. To capture the content domain of these three capabilities in the context of CRM, we undertook an extensive literature review that aimed at identifying the specific and measurable factors. This

process yielded three distinct capabilities: (i) resource re-configurability (ii) social networking capability, and (iii) market orientation.

Resource Re-configurability

Resource re-configurability refers to the ability of the organization to re-configure and integrate the existing resources in new ways. It is reflected in a combination of lower order factors that jointly contribute to effective resource reconfiguration (Pavlou and El Sawy, 2005). Integration of the right people, process, and technology resources are at the heart of CRM. Resources, whose integrations and reconfigurations are relevant for CRM, include all kinds of resources-information, knowledge, human, finance, and technology. For these dispersed resources to become useful in the CRM process, they must first be properly coordinated and integrated (Mintzberg, 1979). Resource reconfigurations and integrations are important because the benefits of resource relatedness emerge only when firms integrate and reconfigure their resources extensively (Zollo and Singh, 2000). Resource re-configurability is related to the ability to recognize the intrinsic value of the existing resources and integrate them to creatively shape new competencies that lead to competitive CRM performance (Amit and Schoemaker, 1993; Pisano, 1994; Prahalad and Hamel, 1990). Therefore, resource re-configurability is an important driver of dynamic capability for CRM. Thus,

H2a: Resource re-configurability positively influences dynamic capability for CRM.

Social Networking Capability

Social networking capability refers to the ability of the organization to develop and manage relationships with the key suppliers, customers, and other organizations and to deal effectively with the interaction among these relations to secure benefits and to renew the resources for the process of CRM (Ritter, Wilkinson and Johnston, 2002; Portes, 1998). Zollo and Winter (2002) argue that the external relationships of organizations do not require special consideration from the dynamic capabilities perspective. They argue that dynamic capability involves tacit knowledge, and that they are unlikely to be developed by the observations of the competitors, suppliers, customers, or other external constituencies. This standpoint is a narrow view and takes off the learning potential of the inter-organizational relationships. Rapidly accumulating evidence on the relevance of inter-organizational learning and network relationships suggests that the view emphasizing 'observation' seems

untenable (Kogut and Zander, 1992; Möllar and Svahn, 2003; Powell and Dent-Micallef, 1997). Social networking capability not only enables to transfer complex knowledge, but also co-creates new resources through intentional business nets (Moller and Svahn, 2003). Social capital, obtained through networks, is essential for the acquisition, integration, and release of resources, that is at the core of dynamic capability for CRM (Maureen and Russel, 2003). Thus,

H2b: Social networking capability positively influences dynamic capability for CRM.

Market Orientation

Market orientation refers to the ability to sense the market, understand customer needs, competitive dynamics, and being responsive to market intelligence in terms of effective resource reconfiguration and renewal at the right time (Day, 1994, Kohli and Jaworski, 1990). It is mainly related to sensing and adapting the environment at the right time and taking decisions related to resource alterations rapidly. Market orientation facilitates dynamic capability for CRM by (i) identifying new market opportunities (Day, 1994), (ii) recognizing resource gaps and rigid competencies (Sinkula, 1994), and (iii) promoting innovation (D'Aveni, 1994). An effective choice of resource configuration and renewal must be guided by an understanding of customer needs and market trends. The ability to sense the environment, dissemination of market intelligence, and initiation of change are at the heart of the dynamic capabilities view (Teece, Pisano and Shuen, 1997). Identifying resource gaps and rigid competencies that do not match the market needs is a key aspect of dynamic capability for CRM (Grant, 1995). Thus,

H2c: Market orientation positively influences dynamic capability for CRM.

IT Competence

IT competence refers to two aspects: (a) comprehensiveness of IT construction within firm for CRM, i.e., CRM technology, and (b) IT competence related to knowledge management, i.e., knowledge maintenance and facilitation of knowledge creation in the CRM process (Sher and Lee, 2004).

CRM Technology

CRM technology essentially entails IT designed for managing customer relationships. CRM technology components include front-office applications that sup-

port sales, marketing, and service, a data depository, and back-office applications that help integrate and analyse the data (Greenberg, 2001). Sales support will permit management of sales leads and provide competitor and customer information to the sales force and manage sales through multiple channels by tracking product availability and delivery (Jaychandran, *et al.*, 2005). Marketing support includes market planning, execution of campaigns, and measurement of campaign performance (Greenberg, 2001). Service support helps customers serve themselves by providing ready access to a knowledge-base of solutions (Meuter, *et al.*, 2000). These front-office or customer interaction solutions will be supported by a customer data repository and software that will help integrate and analyse the data (Jaychandran, *et al.*, 2005).

There is a debate on role of CRM technology in affecting competitive CRM performance. On the one hand, there are studies that support non-significant effects of CRM technology on competitive CRM performance (Day and Bulte, 2002; Reinartz, Krafft and Hoyer, 2004). On the other hand, there are studies that assert positive effects of CRM technology in affecting competitive CRM performance (Chen and Ching, 2004; Jaychandran, *et al.*, 2005). There are more evidences on the positive side. Therefore, we hypothesize positive direct effect of IT on competitive CRM performance. Thus,

H3a: CRM technology positively influences CRM performance-customer focus.

H3b: CRM technology positively influences CRM performance-organization focus.

The reason for the existence of the above-stated debate is rooted in the fact that the role of CRM technology in affecting competitive performance is not always very straight-forward. For CRM technology to be effective, it must continuously support the right business processes that manage customer experiences (Greenberg, 2001). Therefore, CRM technology is not a substitute for dynamic capability, but an enabler of their effectiveness. CRM technology can moderate the effects of dynamic capability and affect performance outcomes (Sher and Lee, 2004). In conjunction with dynamic capability, the use of CRM technology allows more efficient firm-customer interactions and provide better insights into a customer-desired value change (Flint, Woodruff, and Gardial, 2002), thereby improving competitive CRM performance. Thus,

H3'a: Greater the CRM technology, stronger the

positive link between dynamic capability and CRM performance-customer focus.

H3'b: Greater the CRM technology, stronger the positive link between dynamic capability and CRM performance-organization focus.

Knowledge Management

Knowledge management refers to creation, searching, storage, sharing, and diffusion of knowledge that are improved by CRM technology usage. These improved knowledge management capabilities affect CRM technology utilization. Since high technology utilization leads to a reduction of CRM technology costs, it tends to be a source of competitive CRM performance (Bhardwaj, 2000). Thus,

H3c: Knowledge management positively influences CRM performance-customer focus.

H3d: Knowledge management positively influences CRM performance-organization focus.

The role of knowledge management in CRM is also somewhat complex. There is an emerging insight (Sambamurthy and Zmud, 2002; Sambamurthy, Bharadwaj and Grover, 2003; Venkatraman and Henderson 1999) and managerial intuition (D'Aveni, 1994; Goldman, Nagel and Preiss, 1995) that knowledge management linked to IT can be a powerful enabler. This enhanced knowledge management capability serves as the enabling platform on which agility – an instance of a dynamic capability is built (Sambamurthy, Bharadwaj and Grover, 2003). Knowledge management also moderates the effects of dynamic capability and affects competitive performance outcomes (Sher and Lee, 2004). The knowledge sharing and information processing capabilities of CRM technology enable rapid information flows and resource reconfiguration and facilitate organizations to successfully keep up with the rapidly changing environments. Thus,

H3c: Greater the level of knowledge management, stronger the positive link between dynamic capability and CRM performance-customer focus.

H3d: Greater the level of knowledge management, stronger the positive link between dynamic capability and CRM performance-organization focus.

METHODOLOGY

Measures

All the measurement items were adapted from the existing scales. Based on a review of the literature on each construct and the existing scales, we prepared a list of total 40 items for measuring different constructs. For adapting and refining the measures in the study context, these measures were pre-tested over two stages with samples of academicians and managers. Five academicians checked the scale indicators for face validity and provided comments that were used to revise the scales. Interviews with ten managers engaged in customer relationship management activities gave useful insights to revise the questionnaire. It was possible to adapt the scales for CRM technology from Jaychandran, *et al.*, (2005). The scales of CRM performance-customer focus, CRM performance-organization focus, dynamic capability, market orientation, social networking capability, and knowledge management needed minor deviations mainly in terms of dropping a few items, which were not found important in the study context and sometimes required changing the wordings of some of the items.

Seven items of the resource re-configurability scale required significant deviation to reflect its scope and importance in the context of CRM process. And, it was important to assure that the measure covered the range of their concepts' meaning following the procedures observed in the marketing literature (see Churchill, 1979). For refining the measure in the study context, with the suggestions of managers and academicians. we added five more items resulting in 13-item scale. Out of these 13 items, three were related to integration of information resources to generate useful customer knowledge, three were linked to reconfiguration of resources among different customers as per customer tier membership, three were related to right integration of people process and technology resources, and the last four items were related to flexible technology implementation, performance monitoring, and existence of feedback loops. Regarding importance of these 13-items in the study context, there were contradictory views among managers, and it was important to refine it further.

The purpose of the pilot study was to (i) refine the measure of resource re-configurability, and (ii) get an idea on the validity of the conceptual framework in the study context. For the pilot study, data were collected

from 82 cross-functional executives from 11 organizations in Indian retail, telecom, and banking industry. All variables were measured by multi-item scales, which were summed to create a scale score. The scales were scored such that a high score reflected a favourable perception of that variable. Perceptions of the executive were measured using 5-point Likert type scale. For the purpose of refining the measure of resource re-configurability, exploratory factor analyses was conducted on the 13 items. These items as well as the result of factor analysis have been given in Exhibit 1. The result of factor analyses led to a 5-item scale of resource re-per cent configurability. These five items together explained 80 per cent of the total variance. Cronbach α for all the scales were above 0.65.

For getting an idea about the validity of the conceptual framework, we conducted regression analysis. First, the regression analysis was conducted where dynamic capability for CRM was a dependent variable and the three drivers were independent variables. *F* statistic was significant for the model at 0.01 level of significance, and R^2 value was 0.29. All independent variables were positively associated with the dependent variable. Second, the regression analysis was conducted having CRM performance-customer focus and organization focus as dependent variables, and dynamic capability for CRM, IT competence variables, and their interaction effects as independent variables. *F* statistic was significant for the models at 0.01 level of significance, and R^2 value was 0.30 and 0.27 respectively.

All the measurement items have been described in Exhibit 2. The scale for CRM performance-customer focus had two items that measured customer satisfaction and customer retention. The scale for CRM performance-organization had two items related to market share and financial performance. Both these scales were adapted from Jaychandran *et. al.*, (2005). The dynamic capability scale for CRM, adapted from Jaychandran, Hewett and Kaufman (2004) had three items related to customer response speed, customer response expertise, and flexibility. Resource re-configurability scale, adapted from Pavlou and El Sawy (2005), had five items. Social networking capability scale was adapted from Ritter, Wilkinson and Johnston (2002) and Portes (1998), and it had five items. Market orientation scale, adapted from Day (1994), and Kohli and Jawaroski (1990), had four items. The scale for knowledge management was adapted from Sher and Lee (2004), and it had three items. For

measuring CRM technology, we used a formative measure developed by Jaychandran *et. al.*, (2005). It had six aspects: sales support, marketing support, customer service support, data analysis support, data integration and access support, and customer database.

For measuring CRM technology, we used a separate questionnaire module filled by only IT executives. During the pilot study, it was observed that the specific questions related to CRM functionalities and CRM status were not answered properly by other functional executives. They suggested that they should be answered by an IT person or other responsible person for CRM; otherwise they should be left blank. Therefore, we decided to use a separate questionnaire module, in which the respondents were asked to mark items from a list of CRM technology applications that their organization was using. The marked items from the list have been aggregated to measure CRM technology use, similar to the measure of innovation in Han, Kim and Srivastava, (1998).

Sample

The sample of 334 executives was selected from 29 firms in the following industries: retail (n=60), telecom (n=81), and banking (n=183) in India. A multi-industry sample was not used as industry effects present complications and may lead to inconclusive results. Having a limited industry sample controlled for industry effects, but at the same time, allowed us to make some cross-industry contrasts. The study adopted judgment sampling method for choosing the right sample. This method was more appropriate for this study because of (i) small population, (ii) prior knowledge about population, and (iii) difficulty in using random sampling methods (McKee, 1986).

The study used self reports of the best informed managers and therefore had some chances of common method bias. This was minimized with the use of multiple methods of data collection and triangulations of information by having multiple respondents in the same firm, and reordering of questions in the questionnaire. But, it was not appropriate to escalate the unit of analysis to the firm level. If the variance found within the firms is not significantly less than the variance found between the firms, it is not appropriate to escalate the unit of analysis to the level of firm (Podsakoff and Organ, 1986). Different employees of one firm disagreed strongly with each other, and it made no sense to talk about

average perceptions of all executives of a single organization (Mezias and Starbuck, 2003). As shown in Table 1, in order to cross-validate the analysis and to counter a possible common-method bias, representation of all functional executives was ensured in the sample.

Questionnaire Survey Administration

For conducting a questionnaire survey, 500 executives from 40 firms were targeted. Out of them, 337 executives from 29 firms participated in the study. That way, the response rate was 67.5 per cent. The field study was conducted during January to July, 2005. The management of the participating companies was promised a copy of the overall survey report for their internal evaluation and use. The study used multiple methods like e-mail, phone, and personal interviews, to administer the questionnaire. It was thus possible to collect some of the measures in different places (work vs. home) or by different media (phone survey vs. mail survey), or by using a combination of these techniques. This mitigated the problem of transient mood state and common stimulus cues, and perhaps reduced the effect of respondent strain over consistency and countered a possible common method bias (Podsakoff and Organ, 1986). As far as possible, more interactive ways of administering questionnaire were preferred. There were two main reasons for this. First, the questionnaire dealt with complex issues such as dynamic capability, CRM performance, and IT competence for CRM process. It was more effective to define and explain the concepts directly to the questionnaire respondent. Also, it would be possible to clarify any confusion regarding the concepts being investigated quite easily. Second, it would give an opportunity to ask questions beyond those contained in the questionnaire, thus providing valuable insights into the dynamics of the organization that cannot be captured on paper. Three questionnaires were not usable because of missing information. Data from 334 questionnaires were processed for output analysis.

Table 1: Representation of Job Function in the Sample

Job Function	Number of Executives	Percentage (Approximate)
Sales, marketing, customer care	101	30
Operations and general management	99	30
Information technology	53	16
Human relationship management	47	14
Finance	20	6
Others	14	4

ANALYSIS AND RESULTS

The number of items, Cronbach α , means, and standard deviations for all the variables are shown in Table 2. Zero-order correlations between the dependent and independent variables have been described in Table 3—11 of the 12 correlations were significant at 0.05 levels. The correlations between the dependent and the independent variables were in the expected directions.

To test the hypotheses described in the conceptual framework, we estimated the following equations using least square regression. The results from the estimation are provided in Exhibit 3.

$$\text{Model 1: } DC = \beta_0 + \beta_1 RR + \beta_2 SN + \beta_3 MO + \beta_8 I1 + \beta_9 I2 + \beta_{10} I3$$

$$\text{Model 2: Perform (CF)} = \beta_{01} + \beta_{11} DC + \beta_{21} I1 + \beta_{31} I2 + \beta_{41} I3 + \beta_{51} KM + \beta_{61} IT + \beta_{71} DCKM + \beta_{81} DCIT + \beta_{91} DCKMIT$$

$$\text{Model 3: Perform (OF)} = \beta'_{01} + \beta'_{11} DC + \beta'_{21} I1 + \beta'_{31} I2 + \beta'_{41} I3 + \beta'_{51} KM + \beta'_{61} IT + \beta'_{71} DCKM + \beta'_{81} DCIT + \beta'_{91} DCKMIT$$

where,

DC=Dynamic capability for CRM,

RR=Resource re-configurability,

SN=Social networking capability

MO=Market orientation

I1=Banking industry

I2=Telecom industry

I3=Retail industry

Perform (CF)=CRM performance-customer focus

Perform (OF)=CRM performance-organization focus

IT=IT applications

KM= Knowledge management.

H1a and H1b, which hypothesized positive association of dynamic capability for CRM with CRM performance-customer focus and CRM performance-organization focus respectively, were supported (0.14, t -value=2.50, 0.11, t -value=2.00). H2a and H2b, which hypothesized positive association of resource re-configurability and social networking capability were supported (0.39, t -value=7.8, 0.20, t -value=2.9). Though the results supported positive association between market orientation and dynamic capability for CRM, it was not found to be significant at 0.05 level of significance (0.06, t -value=0.93). Thus, the results did not support H2c.

H3a, which hypothesized positive association of CRM technology and CRM performance-customer focus found support (0.24, t -value=3.68) in the study whereas,

Table 2: Mean, Standard Deviation, and Cronbach α of the Variables

Variable	Mean	Standard deviation	No. of items	Cronbach α
CRM performance-customer focus	8.50	1.27	2	0.72
CRM performance-organization focus	8.60	1.26	2	0.73
Dynamic capability for CRM	11.51	1.28	3	0.70
Resource re-configurability	19.72	1.91	5	0.73
Social networking capability	19.55	2.50	5	0.76
Market orientation	15.53	1.31	4	0.66
Knowledge management	12.52	1.51	3	0.68
CRM technology score	21.69	5.21	5	NA

Table 3: Correlations among Independent and Dependent Variables

	CRM Performance-Customer Focus	CRM Performance-Organization Focus
Dynamic capability for CRM	0.115*	0.345**
Resource re-configurability	0.18**	0.415**
Social networking capability	0.134*	0.177*
Market orientation	0.202**	0.364**
Knowledge management	0.206**	0.132*
CRM technology	0.261**	Not significant

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

H3b did not get support—the association between CRM technology and CRM performance-organization focus was not found to be significant at 0.05 level of significance. H3c and H3d, which hypothesized positive association of knowledge management with CRM performance-customer focus and CRM performance-organization focus respectively, were not supported. H3'a and H3'b, which hypothesized positive moderating effects of CRM technology on CRM performance-customer focus and CRM performance-organization focus, were supported (0.23, t -value=4.26, 0.23, t -value=4.13). Though, H3'c and H3'd, which hypothesized positive moderating effect of knowledge management on CRM performance-customer focus and CRM performance-organization focus, were not supported, knowledge management's interaction effects with CRM technology and dynamic capability for CRM were found to be positively associated with CRM performance-organization focus. For further validation of the results, we estimated a model taking objective performance measure, ROA, as the dependent variable, and dynamic capability for CRM, IT competence variables, and their interaction effects as the independent variables. The results are also provided in Exhibit 3.

As the study found significant controlling effects of the industry, it was important to explore the inter-industry differences in the results. In the case of retail industry, the number of responses were 60; therefore, for inter-industry comparison, the study also took a random sample of 60 respondents from banking and telecom industries. After that, multiple regression analyses were conducted in all the three samples, to test the relevance of the estimated models in the specific industry contexts. The results in terms of inter-industry comparisons of standardized coefficients are provided in Exhibit 4.

In the case of retail and banking industries, the two variables, resource re-configurability and social networking capability, were significant drivers of dynamic capability, for CRM. In the case of telecom industry, only resource re-configurability was found to be significant. Discussions with executives and a review of literature suggested the Indian telecom market to be a real high velocity market. Therefore, the results supported the view (Eisenhardt and Martin, 2000) that in high velocity markets, the nature of dynamic capability differs from moderate velocity markets. In terms of CRM performance-customer focus, the highest beta value of dynamic capability for CRM was in the case of telecom industry; it confirmed the view that dynamic capability is more valuable in high velocity markets. The highest beta value of CRM technology was in retail industry, where CRM technology adoption was in its earliest phase. In terms of CRM performance-organization focus, the highest beta value of dynamic capability for CRM in the telecom industry again confirms the view that dynamic capability is more valuable in high velocity markets. The highest beta value of CRM technology was found again in retail industry, where CRM technology adoption was in the earliest phase.

The results found that CRM technology moderated the link between dynamic capability for CRM and CRM performance either positively or negatively and also had a direct impact on CRM performance variables. Interestingly, both the CRM performance variables at low values of dynamic capability were inferior when CRM technology was higher than when it was lower. This finding got reflected in negative interaction effects of dynamic capability for CRM and some IT competence-related variables. This finding suggests that when appropriate dynamic capabilities are not there in the CRM process, the use of IT competence might do more harm

than good. A simple slope analysis (Aiken and West, 1991; Jaychandran *et. al.*, 2005) was conducted to clarify the nature of this interaction. A linear regression analysis was conducted with high and low values of CRM technology and the impact of dynamic capability on CRM performance-customer focus was examined through the slope of the regression line. As shown in Figure 2, as the CRM technology goes from low to high, CRM performance-customer focus improves more rapidly with dynamic capability. The slope of the association between dynamic capability for CRM and CRM performance-customer focus is 2.4 (t -value = 6.674) when CRM technology is low. The slope for the same association is 5.72 (t -value = 6.746) when CRM technology is high. When CRM performance-organization focus was taken as a dependent variable, the similar kind of results were achieved.

DISCUSSION

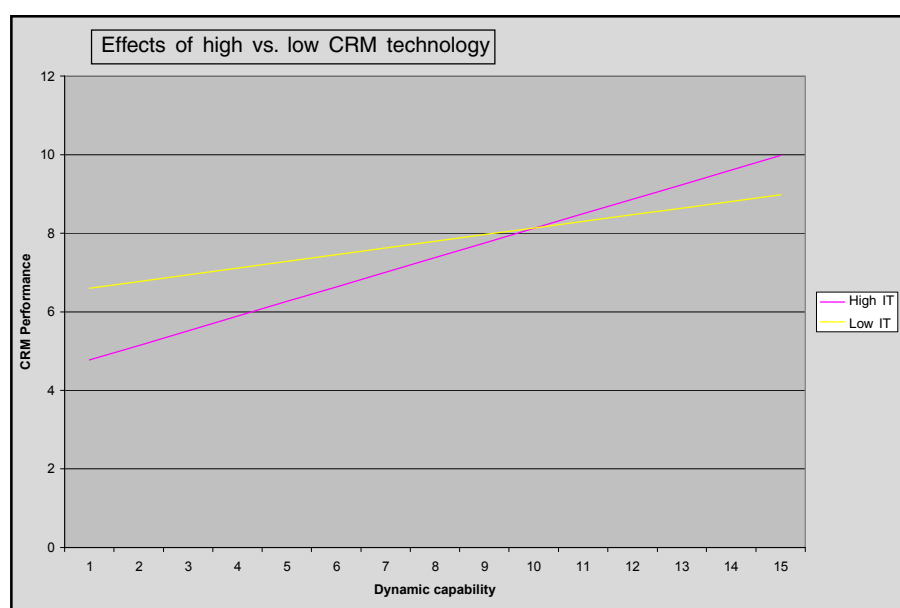
The results of regression analyses provided substantial support to the hypotheses. In line with the other studies in strategic management (Teece, Pisano and Shuen, 1997; Pavlou and El Sawy, 2005; Mollar and Svahn, 2003; Roy and Roy, 2004), the results supported the positive impact of each driver capability—resource re-configurability, social networking capability, and market orientation—on dynamic capability in the context of CRM process. Among the drivers of dynamic capability for CRM, positive impact of market orientation was found insignificant compared to other two drivers. Resource re-

configurability and social networking capability more apparently affected cost-reduction, profitability, and the executives' perceptions about CRM performance, while market orientation may affect customer satisfaction in comparatively long run.

The results confirmed the importance of dynamic capability in driving CRM performance across the three industries, and supported the view of Pavlou and Sawy (2005) that dynamic capability is important even in moderately dynamic markets, breaking the implied assumption in the literature about the importance of dynamic capability only in the hyper-competitive environment. The telecom industry in India has become one of the most fiercely competitive telecom industries across the world. The findings show that the telecom sector got the highest beta value for dynamic capability for CRM in affecting both the CRM performance variables thus supporting the view that organizations in hyper-competitive environments face an increasing gap between their learning opportunities and needs, and actual learning performance. In order to survive, they must improve their dynamic capacity (Lyytinen, Rose and Yoo 2002).

The direct impacts of IT differed among both the dependent variables. Both the IT competence variables had positive impact on CRM performance-customer focus. The impact of CRM technology was highly significant. This result is quite encouraging and is in line with the few recent studies on CRM (Jaychandran *et. al.*,

Figure 2: Dynamic Capability-CRM Performance-Customer Focus Relationship — High and Low Values of CRM Technology



2005). When CRM performance-organization focus was the dependent variable, both the IT competence variables had insignificant and negative beta values. This finding is again in line with the studies on CRM which focus on organizational viewpoints (Day, 2002, Reinartz, Krafft and Hoyer, 2004). Day (2000) echoes this view by suggesting that while the cost aspects of CRM investment are evident, the revenue enhancing aspects are much less obvious. These findings give an important insight to the on-going debate on the impact of IT on CRM. Though, in the short run, organizations may not make the benefits of CRM too evident, but it affects customer satisfaction, retention, and brand image which provides higher returns in future.

The moderating effects of IT differed among both the independent IT competence variables. For both the dependent variables, the interaction effects of CRM technology and dynamic capability had significant and positive beta value. This finding is in line with the study conducted by Sher and Lee (2004). They also considered IT applications as important facilitators of dynamic capability. For both the dependent variables, the interaction effects of knowledge management and dynamic capability were insignificant and also had negative beta value. Knowledge management reflected how well people use CRM technology to create and sustain knowledge. Most businesses using CRM technology in our sample are still learning to use it, and have not reached the minimum competency level. This competence may prove to be more important once the organization reaches the minimum competency level.

For further confirmation of the results, regression analysis was conducted taking ROA as dependent variable. The results confirmed significant controlling effects of industry, and the direct as well as moderating impact of IT competence variables, but could not confirm the significant impact of dynamic capability of CRM. ROA reflects organizational performance and dynamic capability measure specific to CRM process. These results support the view (Ray, Barney and Muhanna, 2004) that there can be many reasons for strategic process performance not getting reflected in organization performance, and it is important to take strategic process performance as an alternate dependent variable.

MANAGERIAL IMPLICATIONS

The study provides managers with systematic guidelines of activities and processes that lead to dynamic capability for CRM and competitive CRM performance. It draws attention of managers to the very basic fact about CRM that technology use in itself is not a panacea to CRM problems; only in the presence of the right set of dynamic capability, CRM technology can lead to competitive performance. While taking the key decision related to whether to implement CRM technology or not, one can ask a more basic question that through that specific technology implementation, whether the organization is adding to their dynamic capability or core rigidity. If the organization's ability and structure suggest a situation conducive to dynamic capability, and such processes are effectively implemented, CRM technology is likely to play a supportive role in enhancing competitive performance.

The study provides important suggestions to managers about CRM implementation process. An organization's readiness for specific CRM initiative should be assessed in terms of its level of dynamic capability. Only when it is ready should one design the right strategy to implement the CRM technology. Instead of the strict top-down approach of implementation, it is important to balance the top-down and bottom-up approaches in taking decisions about process prioritization in CRM. One should incorporate feedback from employees and customers so as to have enough agility and competitiveness for designing the right matrix for monitoring CRM performance and dynamic capability. It is very crucial to periodically monitor the CRM process and reconfigure resources as per the organization's specific needs at the right time. Therefore, instead of a large scale implementation, it is important to adopt a more adaptive and iterative approach.

RESEARCH IMPLICATIONS

The study explored the sources of competitive advantage for CRM process, and addressed the most crucial question—why one succeeds and other fails—that stayed largely unanswered in CRM literature. Majority of studies that take a resource-based approach or a dynamic capability view, generally consider a highly aggregated

dependent variable, i.e., the overall firm performance. As per the suggestion of Ray, Barney and Muhanna (2004), the study contributes to research by testing the dynamic capability theory with an alternate class of a dependent variable, i.e., performance of a business process. In addition to this, the study makes an important contribution to the very rare empirical studies on CRM in the Asian context.

The study answered the call for empirical research on 'dynamic' strategy (Sambamurthy, Bharadwaj and Grover, 2003; Teece, Pisano and Shuen, 1997). By exploring the drivers of dynamic capability for CRM, it unpacked the black box of dynamic capability and articulated its inner working. The study contributes to the dynamic capability literature, by highlighting significant importance of external relationships and social networking capability in driving dynamic capability for CRM.

The study explains the illusive role of IT in CRM. Day and Bulte (2002) found that IT, irrespective of industry type, never seemed to matter much in affecting competitive CRM performance. Based on the resource-based logic, they stated that, "Since information technology and expertise is available in the market, it cannot form the basis of a sustained competitive advantage. Only imperfectly mobile and imperfectly replicable resources, such as organizational culture and the alignment of structure, strategy, and systems, can do so." They considered IT competence as a static resource, and ignored the role of IT competence in enhancing dynamic capability. The study suggests that in presence of the right set of dynamic capabilities, IT competence enhance competitive CRM performance by having direct and moderating impact on the link between dynamic capability and competitive CRM performance. At the same time, the study breaks the implied assumption in literature that IT always enables dynamic capability, and

suggests that in the absence of the right set of dynamic capability, IT can also turn up to be a core rigidity.

LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

Typical of much empirical strategy research, the results of this study are based on self-reported data of the best-informed managers. The insignificant impact of market orientation on dynamic capability of CRM and competitive CRM performance may be the result of restricting the study to managers who highlight organizational viewpoints. Future research can combine the viewpoints of both customers as well as organizations in measuring CRM performance as well as dynamic capability for CRM. The cross-sectional design of this study would not allow the examination of long-term impact of dynamic capability on competitive CRM performance by shaping organizational resources that no longer match the environment. Even if longitudinal analysis cannot be downgraded, solid cross-sectional models must first be established before future research examines them over time.

The chain of causality implies an indirect link between dynamic capability and performance outcomes (Zott, 2003). Dynamic capabilities create and shape a firm's resource position and functional competence (Eisenhardt and Martin, 2000). In turn, these mediating variables lead to competitive performance. Future research is required to explore sub-activities and functional competencies of CRM, which can be the mediating link. These include processes like analysing customers, developing and delivering tailored offerings, providing customer service, orchestrating linkages, assigning accountability, and evaluating performance (cf. Gilbert 2002). Because of the dynamic nature of important variables, the replication of the study in different cultural contexts and with different units of analysis in future would provide interesting insights. ♥

Exhibit 1: Constructs Measures and their Sources

Variable	Source (adapted from)	Items
CRM performance-customer focus	Jaychandran <i>et al.</i> , 2005	In the most recent years, relative to your competitors, how has your CRM process performed with respect to: - achieving customer satisfaction - keeping current customers
CRM performance-organization focus	Jaychandran <i>et al.</i> , 2005	In the most recent years, relative to your competitors, how has your CRM process performed with respect to: - securing desired market share - securing desired financial performance
Dynamic capability for CRM	Jaychandran <i>et al.</i> , 2004	- When we identify a new customer need, we are quick to respond to it. - When we find that customers are unhappy with our product or service, we take corrective action immediately. - When we find that customers would like us to modify a product or service, the departments involved make concerted efforts to do so.
Resource re-configurability	Paulav, 2004	- We integrate customer information from various functions and sources that interact with customers. - We identify the best customers and know the importance of different customer segments. - We reconfigure the resources among customers by customizing our offer. - Our employees help us in identifying the right processes that are the pain points of organizational nerves. - We have customer-focused matrices to monitor process performance.
Social networking capability	Ritter, 1999	- We are experienced in dealing with technical partners and consultants. - We maintain good relations with our supply chain partners.-We have benefited from relationships with our partners. - Our relations helped us releasing resources locked in loss-making technology and customer segments. - Our customers share useful information on an on-going bases.
Market orientation	Day, 1994, Kohli and Jaworski, 1990	- We have implemented customer-related strategies quickly as per the needs of the market. - We are quick to discuss changes in our customers' product preferences. - We are quick to respond to the significant changes in the competitors' customer service. - We are quick to respond to significant changes in our competitors' pricing structures.
Knowledge management	Sher and Lee, 2004	- IT is comprehensively utilized in all functional areas of the organization. - Members in our organization apply IT to create new knowledge about customers - IT facilitates processing of customer information to take important decisions

Note: For measuring CRM technology, we used the same instrument developed and used by Jaychandran, *et al.*, 2005.

Exhibit 2: Results of Exploratory Factor Analysis

Rotated Component Matrix	1	2	3	4	5
rr2	0.897				
rr1	0.854				
rr3	0.786				
rr7	0.682				
rr5		0.817			
rr4		0.760			
rr13		0.733			
rr11			0.779		
rr12			0.690		
rr6			0.671		
rr8				0.895	
rr10				0.762	
rr9					0.886

Exhibit 2: Contd.

Extraction method: Principle Component Analysis

Rotation method: Varimax with Kaiser Normalization.

Rotation converged in nine iterations.

where,

rr1 We integrate customer information from various functions and sources that interact with customers.

rr2 We identify the best customers and know the importance of different customer segments.

rr3 We integrate internal customer information with customer information from external sources.

rr4 We reconfigure resources among customers through loyalty programmes.

rr5 We reconfigure resources among customers through customizing our offer.

rr6 We reconfigure resources among customers through better deals for cross-selling.

rr7 The processes we automated in the first place gave important insights for the next step.

rr8 Our employees help us in identifying the right processes that are the pain points of organizational nerves.

rr9 We have customer-focused matrices to monitor process performance.

rr10 For technology implementation, we have adopted iterative and adaptive approaches.

rr9 We can well integrate the new and the existing information systems.

rr13 Our employees are encouraged to focus on customer relationships and technology adoption.

Exhibit 3: Results of Least Square Regression Analyses

Predictor Variable	Equation 1 DV: Dynamic Capability for CRM		Equation 2 DV: CRM Performance-Customer Focus		Equation 3 DV: CRM Performance-Organization Focus		Results ConfirmationsDV: ROA	
	Standardized Coefficient	T-value	Standardized Coefficient	T-value	Standardized Coefficient	T-value	Standardized Coefficient	T-value
Telecom industry	0.25**	4.3	0.089	1.48	0.14*	2.33	0.63**	15.78
Retail industry	0.16*	2.0	0.14*	2.38	0.19**	3.18	0.60**	15.45
Resource re-configurability	0.39**	7.8	-	-	-	-	-	-
Social networking capability	0.20**	2.9	-	-	-	-	-	-
Market orientation	0.06	0.93	-	-	-	-	-	-
Dynamic capability for CRM	-	-	0.14*	2.50	0.11*	2.00	-0.02	-0.54
Knowledge management	-	-	0.12	1.86	-0.01	-0.17	0.16	3.7
CRM technology	-	-	0.24**	3.68	-0.01	-0.15	0.05**	1.16
Dynamic capability for CRM*CRM technology	-	-	0.23**	4.26	0.23**	4.14	0.006	0.17
Dynamic capability for CRM* knowledge management	-	-	-0.015	-0.268	-0.12*	-2.04	-0.10*	-2.51
Dynamic capability for CRM*knowledge management	-	-	-	-	-	-	-	-
* CRM technology	-	-	-0.078	-1.17	0.12*	1.74	0.023	0.51
F-Value	27.7**	9.29**	5.74**	71.8**				
R ²	0.297	0.186	0.124	0.639				

* $p < 0.05$ ** $p < 0.01$

Exhibit 4: Standardized Coefficients—Inter-Industry Differences

Dependent Variables	Independent Variables	Banking Industry	Telecom industry	Retail Industry
Dynamic capability for CRM	Resource re-configurability	0.44**	0.45**	0.55**
	Social networking capability	0.16*	-0.13	0.40**
	Market orientation	0.007	-0.25	-0.40
	F-Value (d.f)	10.46	7.21	47.11**
	R ² -Value	0.359	0.279	0.72
CRM performance-customer focus	Dynamic capability for CRM	0.32**	0.34**	0.207
	CRM technology	0.58**	0.44**	0.70**
	Knowledge management	-0.58**	-0.43**	-0.07
	F-Value (d.f)	12.37**	14.14**	39.45**
	R ² -Value	0.40	0.43	0.679
CRM performance-organization focus	Dynamic capability for CRM	0.38**	0.48*	0.13
	CRM technology	0.10**	-0.51**	0.28
	Knowledge management	-0.66**	-0.20	0.55
	F-Value (d.f)	12.47	19.33	56.8
	R ² -Value	0.401	0.509	0.753

* $p < 0.05$ ** $p < 0.01$

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Insight, I believe, refers to the depth of understanding that comes by setting experiences, yours and mine, familiar and exotic, new and old, side by side, learning by letting them speak to one another.

— Mary Catherine Bateson

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