2012

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Management Decision

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The current issue and full text archive of this journal is available at
www.emeraldinsight.com/0025-1747.htm

Customer relationship management capabilities

Measurement, antecedents and consequences

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Abstract

Purpose – This study seeks to extend the resource-based view to the context of customer relationship management. It is intended to develop a measurement model of customer relationship management (CRM) capabilities, and to explore the key antecedents and performance consequences of CRM capabilities.

Design/methodology/approach – Questionnaire survey was used to collect data. In order to develop a reliable and valid measurement model of CRM capabilities, several rounds of questionnaire survey were conducted, and hypotheses were tested by utilizing the technique of structural equation modeling.

Findings – A three-factor (customer interaction management capability, customer relationship upgrading capability and customer win-back capability) measurement model of CRM capabilities is developed and tested. Furthermore, results support the hypothesized influences of customer orientation, customer-centric organizational system and CRM technology on CRM capabilities, as well as the influence of CRM capabilities on organizational performance.

Practical implications – This study provides a useful measurement mode of CRM capabilities that managers can use to evaluate the status in quo of CRM capabilities of their firms. Managers may also improve their CRM programs more effectively and efficiently by deploying such strategic resources of firms as customer orientation, customer-centric organizational system and CRM technology to build and strengthen their CRM capabilities.

Originality/value – The paper addresses significant gaps in the current literature by taking a capability view of CRM, developing a valid measurement model of CRM capabilities, and examining how possession of important CRM resources influences the effective deployment of CRM capabilities.

Keywords CRM capabilities, Customer orientation, CRM technology, Organizational system, Customer relationship management

Paper type Case study

The authors sincerely thank the anonymous reviewers and Dr John Peters, previous Editor of *Management Decision*, for their insightful comments and suggestions. They also acknowledge the financial support by National Natural Science Foundation of China (71072019), the Program for New Century Excellent Talents in University of China (NCET-09-0302), the Fok Ying-Tong Education Foundation of China (121080), and the Leading Academic Discipline Program of 211 Project and Program for Innovative Research Team of University of International Business and Economics.

Management Decision
Vol. 50 No. 1, 2012
pp. 115-129

0025-1747
DOI 10.1108/00251741211194903

Introduction

The extant literature of the resource-based view (RBV) has concluded that possession of heterogeneous resources such as market-based assets (e.g. such relational assets as customer relationships, and such intellectual assets as customer preference information) provides a firm with sources of competitive advantage (e.g. Barney, 1991; Srivastava *et al.*, 1998). However, little research has focused on how those resources are deployed to match market conditions and contribute to firm performance (e.g. Morgan *et al.*, 2009; Slotegraff *et al.*, 2003). Drawing on the resource-based view and dynamic capabilities (DC) perspective, we address this gap and argue that possession of resources influences the effectiveness of a firm's capabilities to deploy these resources, which in turn might influence firm performance. Specifically, we will examine how firm resources such as customer orientation, customer-centric organizational system and customer relationship management (CRM) technology can be deployed to foster superior customer relationship management (CRM) capabilities and achieve competitive advantages.

Furthermore, extant studies of customer relationship management have uncovered that many firms failed to effectively deploy and manage their customer relationship management programs (e.g. Reinartz *et al.*, 2004). For example, firms around the globe are spending billions of dollars on CRM, but approximately seventy per cent of CRM projects fail to achieve expected bottom-line improvement in business performance (Reinartz *et al.*, 2004). Some studies concluded that these firms faltered because they failed to deploy the CRM resources they possessed to build superior capabilities in managing customer relationships and achieve competitive advantages (Day and Van den Bulte, 2002; Morgan *et al.*, 2004; Plakoyiannaki and Tzokas, 2002). Therefore, it is urgently needed for these firms to learn how to develop and strengthen their CRM capabilities. However, little is known about what exactly CRM capabilities are, and how to measure and strength CRM capabilities to improve business performance.

This study is intended to address these important gaps and contribute to extant literature in three ways. First, it contributes to the CRM literature by taking a capability view of CRM, developing a valid measurement model of CRM capabilities and identifying key resources that are essential to build superior CRM capabilities; second, it enriches extant studies of resource-based view by examining empirically how possession of important CRM resources (e.g. customer orientation, customer-centric organizational system and CRM technology) influences the effective deployment of CRM capabilities; third, we replicate and extend extant literature by testing the influence CRM capabilities on firm performance in an emerging economy. This provides new empirical evidence for dynamic capability perspective by demonstrating the importance of customer-relating capabilities in deploying firm resources to enhance competitive advantages of a firm (Eisenhardt and Martin, 2000).

The remainder of this paper is organized as follows. The next section provides the theoretical framework of this study. The concept of CRM capabilities and its key components are then presented based on extensive literature review. Next, hypotheses pertaining to the antecedents and performance consequences of the CRM capabilities is discussed, which is followed scale development and validation process, and hypotheses testing. Finally, we draw some conclusions and implications.

Theoretical framework and hypotheses

The resource-based view (RBV) contends that sustained competitive advantages stem from valuable, rare, inimitable and non-substitutable (VRIN) resources (Barney, 1991; Wernerfelt, 1984). However, RBV has been criticized for not addressing how resources are deployed in ways that match dynamic market place environment (e.g. Priem and Butler, 2001). In comparision, the dynamic capabilities (DC) perspective has proposed that the possession of the VRIN resources does not necessarily lead to superior performance overtime, rather it is the capability to acquire and deploy firms' resources in ways that match the dynamic environment that leads to sustained competitive advantage (Eisenhardt and Martin, 2000; Makadok, 2001; Morgan *et al.*, 2009; Teece *et al.*, 1997).

Firm capabilities are skills and accumulated knowledge that firms use to acquire, deploy and leverage resources to achieve superior performance (Day, 1994; Morgan *et al.*, 2009). They are usually embedded in organizational processes and enable firms to coordinate their activities more effectively (Day, 1994). Capabilities are different from resources as resources are largely static while capabilities are the skills embedded in the well-defined process to create, maintain and leverage VRIN resources, thus they are dynamic (Vorhies and Morgan, 2005). Capabilities are also different from other organizational processes since they are related with those processes and routines (i.e. develop customer relationships) that a firm can perform well relative to their competitors (e.g. Bingam *et al.*, 2007; Day, 1994; Ethiraj *et al.*, 2005; Morgan *et al.*, 2009). As those capabilities are valuable, embedded and hard to imitate, they can build sustainable competitive advantages for firms (Day, 1994). Prior research has shown that firms with superior marketing capabilities usually have superior business performance (e.g. Day, 1994; Srivastava *et al.*, 1998; Krasnikov and Jayachandran, 2008; Vorhies and Morgan, 2005). Strong customer-relating capabilities are one of the most important marketing capabilities that are posited to enable firms to make use of their related customer relational resources to build sustainable competitive advantages (Day, 2000). Therefore, this paper focuses on CRM capabilities and proposes that firms' CRM capabilities can improve firm performance by combining such valuable resources as customer oriented culture, customer-centric organizational system and CRM technology. The theoretical framework of this study is summarized in Figure 1.

CRM capabilities

CRM is a cross-functional organizational process that focuses on establishing, maintaining, and enhancing long-term relationships with attractive customers (Payne and Frow, 2005; Parvatiyar and Sheth, 2001). CRM capabilities are embedded in CRM activities in organizational processes, and they reflect a firm's skills and accumulated knowledge to "identify attractive customers and prospects, initiate and maintain relationships with attractive customers, and leverage these relationships into customer level profits" (Morgan *et al.*, 2009). Thus, CRM capabilities are reflected in major CRM activities (Srivastava *et al.*, 1999; Reinartz *et al.*, 2004), such as customer interaction management (e.g. customer identification, customer acquisition and customer retention), customer relationship upgrading (e.g. cross-selling and up-selling), and customer relationship win-back (re-establishing relationships with lost but profitable customers) (Reinartz *et al.*, 2004; Parvatiyar and Sheth, 2001). Therefore, we can treat CRM capabilities as a multi-dimensional construct consisting of three components:

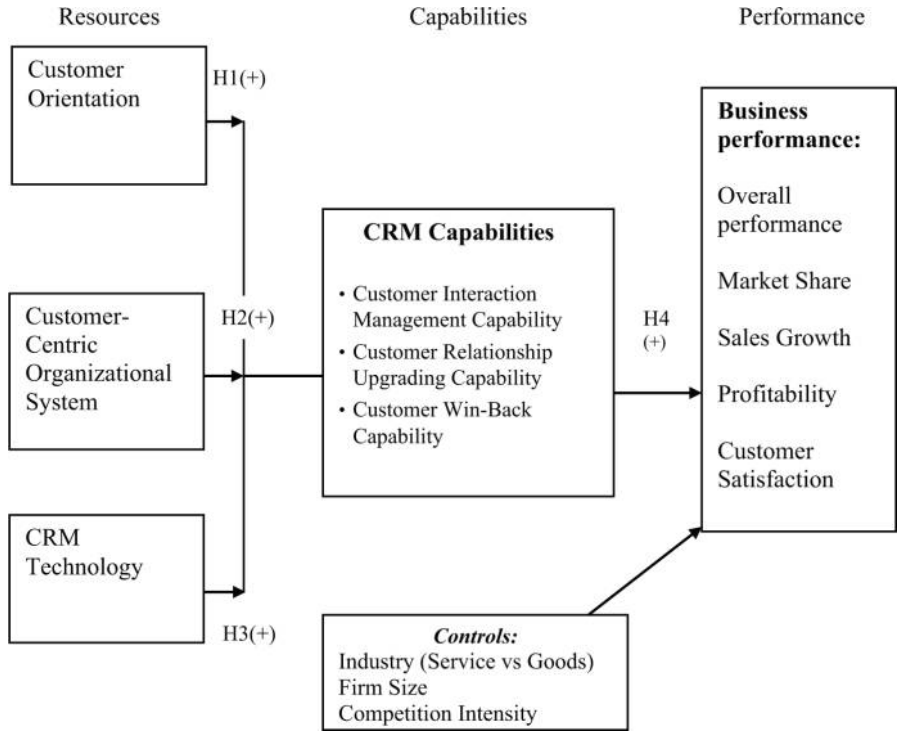

Figure 1.
Antecedents and consequences of CRM capabilities

(1) customer interaction management capability;
(2) customer relationship upgrading capability; and
(3) customer win-back capability.

Customer interaction management capability refers to the skills that firms use to identify, acquire and retain profitable customers. Customer relationship upgrading capability refers to the skills that firms use for up-selling (sell more expensive items, upgrades) and cross-selling (sell additional products or service) to existing customers based on scientific customer data analysis. And customer win-back capability is the skills firms use to re-establish the relationship with lost or inactive but profitable customers since loss of those customers will have a huge negative impact on firm performance in the long run (Reichheld and Sasser, 1999).

Antecedents of CRM capabilities

Superior customer-relating capabilities result from the organizational culture that considers customers' need a priority, the organization system that promotes customer relationship building and the information technology (IT) that enables customer information acquisitions and analysis (Day, 2000, 2003; Day and Van den Bulte, 2002).Therefore, we propose that customer orientation, customer-centric organizational system and CRM technology are three key antecedents that may strengthen CRM capabilities of a firm.

Customer orientation

Successful implementation of CRM projects requires firms to be customer oriented (Jayachandran *et al.*, 2005). Customer orientation is a culture-based concept and it reflects the values, behavioral norms, the shared mental modes that enables a firm to put customers' interest first (Deshpandé *et al.*, 1993; Day and Van den Bulte, 2002). Customer orientation as a corporate culture is a special kind of VRIN resources available for a firm. However, culture itself cannot have a direct influence on firm performance. However, customer orientation will guide the organization's attitude toward implementation of CRM activities (Day, 2000), leading to more emphasis on the initiation and maintenance of long-term customer relationships. Therefore, customer orientation may strengthen CRM capabilities of a firm, and thus improve firm performance. In other words, a truly customer-oriented firm is more likely to have higher CRM capabilities and build sustainable comparative advantages. Thus we have the following hypothesis.

H1. Customer orientation has a positive association with CRM capabilities.

Customer-centric organizational system

Since CRM capabilities are embedded in organizational processes (Srivastava *et al.*, 1999), the effectiveness of CRM activities depends on how CRM is integrated with the firm's existing processes and structures (Boulding *et al.*, 2005). Therefore, firms need to integrate CRM activities into the fabric of the overall firm operations. This is more likely to be achieved when the organization is structured around customer groups; the management system is consistent with a customer orientation (Day, 2003); and when the employees are awarded for high performance in CRM-related activities. A customer-centric organizational system enables a firm to initiate customer information sharing, overcome functional barriers, devote to such customer-centered actions as customer relationship retention and upgrading. So we have the following hypothesis.

H2. Customer-centric organizational system has a positive association with CRM capabilities.

CRM technology

CRM technology is the information technology that is deployed for better management of customer relationships (Reinartz *et al.*, 2004). It includes front office applications that may support sales, marketing, and service; a data storage and back office applications that may integrate and analyze data about customers. Thus CRM technology may improve an organization's ability to sustain profitable customer relationships by gathering and analyzing information about profitable customers, facilitating more efficient and effective firm-customer interactions, and streamlining product or service customization. So CRM technology may strength customer-related capabilities (Day, 2003). Thus we can have the following hypothesis.

H3. CRM technology has a positive association with CRM capabilities.

Consequences of CRM capabilities

The role of capability in enhancing business performance and building firm's competitive advantages has been well documented in the literature on the RBV (Barney, 1991, 2001; Peteraf, 1993) and the dynamic capability perspective (Teece *et al.*,

1997; Hunt and Morgan, 1995). Literature of marketing capabilities has also demonstrated that firms possessing superior marketing capabilities such as brand management capabilities (Morgan *et al.*, 2004) and customer-relating capabilities (Day and Van den Bulte, 2002; Day, 2003) usually have superior financial performance (Krasnikov and Jayachandran, 2008). Outstanding CRM capabilities enable firms to create and deliver superior customer value, maintain a large base of loyal customers, and thus create sustainable competitive advantages (Day, 2000, 2003). In addition, strong CRM capabilities will enable a firm to capture accurate and timely insights pertaining to customer needs. Thus, firms with such capabilities might achieve first-mover advantage by responding quickly to real time customer needs with new product development or up-selling. Empirical studies have shown that successful CRM implementation can help firms achieve a 270 per cent increase in business unit profits (Ryals, 2005) as well as increases in stock price (Fornell *et al.*, 2006), customer loyalty and customer satisfaction (Anderson *et al.*, 2004). Thus we can have the following hypothesis.

H4. Stronger CRM capabilities lead to improved business performance.

Methodology

Data collection and sample

This study consisted of thee stages. After extensive literature review, a pilot test (100 business executives who were attending a part-time MBA program of a top university in China) was conducted to explore the factor structure of CRM capabilities. Then, a large-scale survey of top marketing managers and senior managers in service industries in the five most developed cities of China was conducted to confirm the factor structure of CRM capabilities. We used the local *Yellow Pages* of each city to get firms' name randomly and then sent mails to each firm's top marketing executive or senior client manager to invite them to participate in the survey because they are usually the most informative person about their customer management. We also attached a recommendation letter from each city's local government officer who is influential among local firms to stimulate responses. Furthermore, We also examined the quality of informants in terms of their self-reported knowledge about issues under study (Conant *et al.*, 1990). Each informant indicated on a five-point scale his (her) degree of knowledge on customer management issues in his/her firm. In total, 1,015 questionnaires were sent, among which 180 questionnaires were returned. After deleting surveys from respondents who rated their knowledge about issues under study less than three on a five-point scale, we retained 162 valid responses, resulting in a 15.96 per cent (162/1015) response rate. Then a test for non-response bias (Armstrong and Overton, 1977) by was conducted by comparing the respondents and non-respondents on the industry in which they operated and firm size (both employee number and registered capital). Independent sample *t*-test revealed no significant difference between the two groups ($P < 0.05$). In addition, we also divided all the respondents into two groups, i.e. early group and late group, then compared them on the key variables included in this study, and no significant difference was found between the two groups ($P < 0.05$). So non-response bias did not appear to be a serious problem in the study.

In the third stage, we sent the questionnaires to another 500 company executives in various industries from a contact list of a CRM forum held in Shanghai to assess the

generalizability of the final scale and test the whole framework. The valid response rate was 14.40 per cent (72/500). Again, a similar test for non-response bias was conducted by comparing the respondents and non-respondents on gender and education of each potential respondent. Independent sample *t*-test revealed no significant difference between the two groups either ($P < 0.05$). We also divided all the respondents into two groups, i.e. early group and late group, then compared them on the key variables included in this study, and no significant difference was found between the two groups ($P < 0.05$) too.

Finally, we also compared the 162 respondents in stage 2 and the 72 respondents in stage 3, and *t*-tests on the major constructs involved in this study showed that there was no significant difference between responses from samples in stage 2 and stage 3 before we combined them together to get a total sample of 234 firms from various industries. And the mean respondent knowledgeability score of 4.58 (the highest score is 5) for these firms indicates the validity of the key informant approach adopted in this study. Furthermore, we also took efforts to alleviate common method variance (Podsakoff *et al.*, 2003). For example, we used different response formats in the survey: the items for CRM capabilities and performance were anchored with five-point scales with "much worse than competitors" and "much better than competitors", the items for the three antecedents were anchored with "strongly disagree" and "strongly agree" on a five-point scale. Besides, Harman's one factor test was conducted in this study and seven factors emerged with the variance explained by each factor no more than 20 per cent. Thus common method variance may not be a serious problem in this study.

Survey development and measurement

With the exception of CRM capabilities, we adopted scales from existing literature. Items for customer orientation and customer-centric organizational system were adopted from Jayachandran *et al.* (2005); items for CRM technology were adopted from Reinartz *et al.* (2004). We utilized five items to assess business performance: the overall performance, market share, sales growth, profitability and customer satisfaction. All constructs are measured on five-point Likert scales.

The development of the new scale for CRM capabilities followed Churchill's (1979) framework. First, we generated an item pool consisting 55 items based on literature review (we utilized the translation and back translation method to translate those items into Chinese) and in-depth interviews with managers and academics. Then we presented the items to a panel of five academic experts and five professionals in CRM to examine face validity. Items that received 75 per cent agreement in classification remained and this led to a questionnaire containing 30 items. The 30-item questionnaire was subject to a pilot test with 100 business executives who were attending a part-time MBA program of a top university in China as the respondents. Then item-to-total score correlation, and the effects of deleting items on Cronbach's alpha were used together to determine candidate items for further studies. As suggested by Nunnally (1978) and Li and Calantone (1998), items with lower correlations that do not represent an additional domain of interest were deleted. This resulted in retaining of 13 items, which converged to three factors in the exploratory factor analysis (EFA) with Varimax rotation using SPSS 15.0 and they explained 60.62 per cent of total variance. The three factors are: customer interaction management capability, customer relationship upgrading capability and customer win-back capability.

Validity and reliability of measures

We evaluated measurement properties by conducting confirmatory factor analysis (CFA) and reliability analysis of CRM capabilities with the 162 service firm samples in stage 2. The models provided good levels of fit: $\chi^2(62) = 79$; $p = 0.07$, GFI = 0.93, RMSEA = 0.04, CFI = 0.98, TLI = 0.97, AGFI = 0.90, $\chi^2/\text{df} = 1.28$). As shown in Table I, the Cronbach's alphas of the three dimensions ranged from 0.78 to 0.82, and the factor loadings were all above 0.5, which met the minimum level suggested by Nunnally (1978) and Fornell and Larcker (1981). Furthermore, as shown in Table II, the average variance extracted (AVE) for each factor exceeded 0.50, which indicated good convergent validity (Fornell and Larcker, 1981). In addition, as shown in Table II, the square root of AVE of any factor was higher than the correlations between it and all other factors, indicating that all factors in this construct are both conceptually and empirically distinct from each other (Fornell and Larcker, 1981).Therefore, the three-factor (13 items) correlated measurement model of CRM capabilities had acceptable reliability and validity.

In order to test the generalizability of the CRM capabilities scale in other industries, CFA was conducted with the 234 samples from all industries in stage 3. The data in this study showed a satisfactory level of fit ($\chi^2(62) = 118.13$, $p < 0.001$, GFI = 0.93; AGFI = 0.90; CFI = 0.95; TLI = 0.93; RMSEA = 0.06; $\chi^2/\text{df} = 1.91$). And the reliability and validity all met the criteria. In conclusion, the 13-item CRM capabilities scale was found to have a high degree of reliability and validity across various industries.

We also examined the reliability and validity of other measures involved in this study by using the technique of Structural Equation Modeling (SEM). As shown in Table I, the Cronbach's alphas of the other five constructs range from 0.77 to 0.88, all above the threshold value of 0.7 that Nunnally (1978) recommended. In addition, as shown in Table III, the average variance extracted (AVE) for each factor exceeded 0.50, which indicated good convergent validity (Fornell and Larcker, 1981). Besides, the results in Table III also showed that almost all the square root of AVE of factors is higher than the correlations between it and all other factors, indicating that all factors in this construct are both conceptually and empirically distinct from each other (Fornell and Larcker, 1981). Overall, all measures in this study showed good construct validity and desirable psychometric property.

Model estimation and results

The structural equation model exhibited a good fit with the data ($\chi2(424) = 747.69$, $p < 0.001$, GFI = 0.83; AGFI = 0.80; CFI = 0.90; TLI = 0.89, RMSEA = 0.06; $\chi2/\text{df} = 1.76$). The results showed that CRM capabilities were positively associated with business performance ($r = 0.57$, $p < 0.001$). So *H4* was strongly supported. Furthermore, as shown in Table IV, it was found that customer orientation ($r = 0.40$, $p < 0.001$), customer-centric organizational system ($r = 0.38$, $p < 0.001$) and CRM technology ($r = 0.41$, $p < 0.001$) had positive associations with CRM capabilities. Therefore, *H1*, *H2* and *H3* were strongly supported too.

Discussions and implications

This study explored the conceptualization and dimensionality of CRM capabilities and developed a valid measurement model of CRM capabilities. It was found that CRM capabilities reflected a firm's skills and knowledge to routinely establish, maintain,

Constructs/items	Standardized loading	*t*-value	Cronbach's alpha
Customer interaction management capability			0.82
New scale			
We regularly meet customers to learn their current and potential needs for new products	0.60	Scale	
We are good at creating relationships with key customers	0.64	6.38	
We maintain an interactive two-way communication with our customers	0.74	7.09	
We have a continual dialogue with each customer and use well-developed methods to improve our relationships	0.75	7.11	
We are good at maintaining relationship with key customers	0.71	6.81	
Customer relationship upgrading capability			0.78
New scale			
We measure customer satisfaction systematically and frequently	0.62	6.01	
We have formalized procedures for up-selling to valuable customers	0.73	6.92	
We have formalized procedures for cross-selling to valuable customers	0.78	7.51	
We try to systematically extend our "share of customers" with high-value customers	0.63	Scale	
Customer win-back capability			0.79
New scale			
We apologize or compensate in time for the inconvenience or lost that we bring to customers	0.66	6.61	
We have a systematic process/approach to reestablish relationships with valued lost customers and inactive customers	0.71	7.39	
When we find that customers are unhappy with the appropriateness of our product or service, we take corrective action immediately	0.71	7.26	
We maintain positive relationships with migrating or unattractive customer on a regular basis	0.69	Scale	
Customer orientation			0.77
Jayachandran *et al.* (2005)			
In our organization, retaining customers is considered to be a top priority	0.56	6.72	
Our employees are encouraged to focus on customer relationships	0.75	9.19	
In our organization, customer emphasizes the importance of customer relationships	0.77	10.37	
Our senior management emphasizes the importance of customer relationships	0.70	Scale	
Customer-centric organizational system			0.82
Jayachandran *et al.* (2005)			
In our organization, employees receive incentives based on customer satisfaction measures	0.64	8.76	
In our organization, business processes are designed to enhance the quality of customer interactions	0.75	11.12	

(*continued*)

Table I.
Constructs measurement items and results of confirmatory factor analysis

Constructs/items	Standardized loading	*t*-value	Cronbach's alpha
We focus on customer needs while designing business processes	0.77	Scale	
We organize our company around customer-based groups rather than product or function-based groups	0.63	9.06	
In our organization, various functional areas coordinate their activities to enhance the quality of customers' interactions	0.66	9.57	
CRM technology			0.81
Reinartz *et al.* (2004)			
We invest in technology to acquire and manage "real time' customer information and feedback	0.77	8.42	
We have a dedicated CRM technology in place	0.79	8.66	
We have technologies that allow for one-to-one communications with potential customers	0.66	8.01	
Relative to out competitors the quality of our information technology resources is larger	0.65	Scale	
CRM capabilities			0.86
Customer interaction management capability	0.73	5.97	
Customer relationship upgrading capability	0.79	Scale	
Customer win-back capability	0.78	6.69	
Business performance			0.88
Relative to your competitors, how does your company perform in terms of:			
achieving overall performance	0.87	13.39	
attaining market share	0.75	Scale	
attaining growth	0.81	12.21	
current profitability	0.73	10.89	
customer satisfaction	0.70	10.45	

Table I.

	Mean	S.D	1	2	3
1. Customer interaction management capability	4.26	0.56	0.79		
2. Customer relationship upgrading capability	3.64	0.75	0.57*	0.71	
3. Customer win-back capability	3.93	0.64	0.64*	0.52*	0.76

Note: * $p < 0.001$ (two-tailed); $n = 162$; The off-diagonal indicate correlations. The diagonal elements indicate square root of average variance extracted (AVE)

Table II.
Means, standard deviations and correlations of components of CRM capabilities

upgrade and re-establish beneficial relationships with attractive customers, and they were composed of customer interaction management capability, customer relationship upgrading capability and customer win-back capability. Consistent with RBV and DC perspective that inter-firm performance variations could be explained by heterogeneity in organizational capabilities, our results also revealed a significant and direct relationship between firms' CRM capabilities and business performance. In addition, our results showed that VRIN resources were essential for building strong CRM capabilities as well. Therefore, firms should not only possess valuable CRM resources

such as customer orientation, customer-centric organizational system and CRM technology, but also learn how to deploy those resources to build strong CRM capabilities, which will then contribute to superior business performance. Specifically, our findings offered three substantive contributions as follows.

First, while the importance of deploying customer-relating resources for superior business performance has been widely recognized in the DC perspective (e.g. Day, 1994, 2003), only a few empirical studies (if any) have been done to test the role of CRM resource deployment in enhancing business performance (Newbert, 2007; Slotegraff *et al.*, 2003). Our research filled this gap by showing the importance of CRM capabilities in improving firm performance, thus providing empirical evidence for the DC perspective.

Second, our results also enriched extant literature of the resource-based view by revealing that possession of valuable CRM resources such as customer orientation, customer-centric organizational system and CRM technology influenced the effectiveness deployment of CRM resources. We demonstrated that CRM capabilities were not only influenced by CRM technology, but also influenced by cultural and organizational factors, such as customer orientation and customer-centric organizational system. In order to build strong CRM capabilities, managers had to acquire such VRIN resources as customer orientation, customer-centric organizational system and CRM technology, and deploy them well in organizational process. Besides, our framework also enabled us to compare the relative importance of each antecedent to CRM capabilities. Although the influence of CRM technology ranked the first, their relative importance was quite similar, which implied that managers should pay equal attention to the other two VRIN resources, i.e. customer orientation and customer-centric organizational system.

	Mean	S.D	1	2	3	4	5
1. Customer-centric organizational system	3.50	0.69	0.73				
2. CRM technology	3.47	0.79	0.73*	0.73			
3. Customer orientation	4.30	0.55	0.05*	0.42*	0.80		
4. CRM capabilities	3.87	0.53	0.88*	0.85*	0.76*	0.92	
5. Performance	3.83	0.61	0.50*	0.49*	0.43*	0.57*	0.85

Note: * $p < 0.001$ (two-tailed); $n = 234$; The off-diagonal indicate correlations. The diagonal elements indicate square root of average variance extracted (AVE)

Table III.
Means, standard deviations and correlations of all constructs in the model

Hypothesized path	Hypothesis	Proposed direction	Standardized path coefficient	Overall finding
Customer orientation → CRM capabilities	*H1*	+	0.40*	*H1* supported
Customer-centric organizational system → CRM capabilities	*H2*	+	0.38*	*H2* supported
CRM technology → CRM capabilities	*H3*	+	0.41*	*H3* supported
CRM capabilities → Performance	*H4*	+	0.57*	*H4* supported

Notes: * $p < 0.001$ (two-tailed); $n = 234$

Table IV.
Results of hypothesis testing

Third, we also contributed to the CRM literature by taking the capability perspective of CRM. As an integration of marketing ideas with technology (Boulding *et al.*, 2005), CRM has received much attention from both academics and practitioners in recent years. However, though many studies have been done of an array of CRM outcomes, there were few established measures to evaluate the CRM capabilities (Payne and Frow, 2005). This study explored and identified the specific CRM capabilities that were imbedded in organizational processes that firm have to develop to achieve superior performance in CRM. In particular, the three elements of CRM capabilities were identified, and a precise and actionable measurement model of CRM capabilities was developed and tested, which can help firms monitor their CRM processes, diagnose their problems, and identify areas where firms should give priorities to optimize their customer relationship activities. This study also showed that CRM capability was a critical success factor for business performance. Firms had to monitor their CRM processes continuously, enhance their customer orientation, improve their customer-centric organizational system, and implement CRM technology to build and strengthen their CRM capabilities.

Limitations and future research direction

In support of the DC perspective, our results clearly indicated that CRM capabilities were significantly and positively associated with business performance, and our study also enriched the resource-based view by revealing that the possession of CRM resources such as customer orientation, customer-centric organizational system and CRM technology contributed to strong CRM capabilities. However, as with all research, there were some limitations that should be noted.

First, previous studies have suggested that differences in the market environment of different countries might influence the types of strategies adopted by firms and the impacts of these strategies on business performance (Douglas and Craig, 1983). Given that we developed the CRM capability scale and tested our framework in China, future research could validate the measure model and test the framework in different national culture contexts to establish global generalizability. Second, data were collected by taking the key informant approach given the exploratory nature of this study. Extant literature also posited that senior managers might provide data as reliable and valid as multiple informants and objective data did (Tan and Litschert, 1994; Zahra and Covin, 1993). Furthermore, different response formats in the survey were adopted to alleviate common method variance bias, and Harman's one factor test showed that common method variance may not be a serious problem in this study. However, it was believed that multiple key informant approach may be more favorable in future. Third, given that the management of customer relationship in practice was rather complicated, future studies could also examine the moderating effect of environmental factors such as competition intensity and market growth rate on the relationship between CRM capabilities and business performance. In addition, a disaggregated approach might be taken and examine the various effects of each component of CRM capability on business performance.

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