

Contents lists available at [SciVerse ScienceDirect](#)

Journal of Business Research



Social media technology usage and customer relationship performance: A capabilities-based examination of social CRM

Kevin J. Trainor^a, James (Mick) Andzulis^b, Adam Rapp^{b,*}, Raj Agnihotri^c

^a The W.A. Franke College of Business, Northern Arizona University, P.O. Box 15066, Flagstaff, AZ 86011-5066, United States

^b Department of Management and Marketing, University of Alabama, 105 Alston Hall, Tuscaloosa, AL 35487, United States

^c The Schey Sales Center, Ohio University, Athens, OH 45701, United States

ARTICLE INFO

Article history:

Received 25 July 2012

Received in revised form 2 May 2013

Accepted 2 May 2013

Available online xxx

Keywords:

Customer relationship management
CRM

Customer relationship performance

Information technology

Marketing capabilities

Social media technology

ABSTRACT

This study examines how social media technology usage and customer-centric management systems contribute to a firm-level capability of social customer relationship management (CRM). Drawing from the literature in marketing, information systems, and strategic management, the first contribution of this study is the conceptualization and measurement of social CRM capability. The second key contribution is the examination of how social CRM capability is influenced by both customer-centric management systems and social media technologies. These two resources are found to have an interactive effect on the formation of a firm-level capability that is shown to positively relate to customer relationship performance. The study analyzes data from 308 organizations using a structural equation modeling approach.

© 2013 Elsevier Inc. All rights reserved.

1. Introduction

Much like marketing managers in the late 1990s through early 2000s, who participated in the widespread deployment of customer relationship management (CRM) technologies, today's managers are charged with integrating nascent technologies – namely, social media applications – with existing systems and processes to develop new capabilities that foster stronger relationships with customers. This merger of existing CRM systems with social media technology has given way to a new concept of CRM that incorporates a more collaborative and network-focused approach to managing customer relationships. The term *social CRM* has recently emerged to describe this new way of developing and maintaining customer relationships (Greenberg, 2010). Marketing scholars have defined social CRM as the integration of customer-facing activities, including processes, systems, and technologies, with emergent social media applications to engage customers in collaborative conversations and enhance customer relationships (Greenberg, 2010; Trainor, 2012). Organizations are recognizing the potential of social CRM and have made considerable investments in social CRM technology over the past two years. According to [Samer et al. \(2011\)](#), spending in social CRM technology increased by more than 40% in 2010 and is expected to exceed \$1 billion by 2013.

Despite the current hype surrounding social media applications, the efficacy of social CRM technology remains largely unknown and underexplored. Several questions remain unanswered, such as: 1) Can social CRM increase customer retention and loyalty? 2) How do social CRM technologies contribute to firm outcomes? 3) What role is played by CRM processes and technologies? As a result, companies are largely left to experiment with their social application implementations ([Samer et al., 2011](#)), and they do so without a clear picture of how these new technologies can be used to develop new, performance-enhancing capabilities.

Researchers have demonstrated that CRM technologies alone rarely provide direct value to firms, and, instead, these technologies are most effective when combined with other firm resources and processes (e.g., [Chang, Park, & Chaiy, 2010](#); [Jayachandran, Sharma, Kaufman, & Raman, 2005](#); [Srinivasan & Moorman, 2005](#)). While extant literature provides a firm footing upon which to base social CRM research, little research has yet examined how social media technologies interact with CRM systems and processes to enhance customer relationships.

The contributions of this research are the following: first, this research conceptualizes and measures social CRM capabilities. While the interest in social CRM continues to grow among technology vendors and the popular press, the CRM literature has only recently begun exploring the concept and how to measure it. Second, this research demonstrates how social CRM capability is influenced by customer-centric management systems and social media technologies. Third, this research examines the interactive effects of organizational resources and social media technology resources. These types of interactive effects

* Corresponding author. Tel.: +1 205 348 7420.

E-mail addresses: kevin.trainor@nau.edu (K.J. Trainor), jmandzulis@crimson.ua.edu (J.(M.) Andzulis), arapp@cba.ua.edu (A. Rapp), rsagni@gmail.com (R. Agnihotri).

have received little attention in the IT literature in general (Nevo & Wade, 2010; Wade & Hulland, 2004) and within the marketing technology context specifically (Trainor, Rapp, Beitelspacher, & Schillewaert, 2011). Finally, this research establishes a link between social CRM capabilities and customer relationship performance and examines organizational influences on this relationship.

2. Theoretical background and conceptual model

The resource-based view (RBV) and the capabilities-based perspective serve as the theoretical foundation of this research. Both perspectives suggest that performance is determined by a firm's resource endowment and the firm's effectiveness at converting these resources into capabilities (Barney, 1991; Day, 1994). Resources represent a firm's assets, knowledge, and business processes used to implement a strategy. Capabilities, on the other hand, are defined as an organization's ability to assemble, integrate, and deploy resources in combination to achieve a competitive advantage (Day, 1994; Eisenhardt & Martin, 2000; Rapp, Trainor, & Agnihotri, 2010; Teece, Pisano, & Shuen, 1997).

Scholars in marketing (e.g., Day & Wensley, 1988; Hooley, Greenley, Cadogan, & Fahy, 2005; Roberts & Grover, 2012; Vorhies & Morgan, 2005) and in IT (Bharadwaj, 2000; Borges, Hoppen, & Luce, 2009; Chang et al., 2010; Melville, Kraemer, & Gurbaxani, 2004) find that resources alone are not always sufficient to provide significant performance gains and, instead, must be transformed into distinctive capabilities. Such findings suggest that investments in hardware and software to support CRM initiatives will not necessarily yield performance improvements. Instead, improved performance occurs when distinctive capabilities are created by deploying technological resources in combination with other complementary organizational resources. Building from this logic, therefore, social media technologies need to be integrated with CRM processes to form a firm-level capability that influences performance. Further, the extent to which these technologies are integrated throughout the organization will facilitate capability development and will moderate the capability–performance relationship (e.g. Nevo & Wade, 2010).

Based on prior research and drawing theoretical support from Melville et al.'s (2004) integrative IT business value model, this study's conceptual model is depicted in Fig. 1. Two central tenets of the integrative model put forward by Melville et al. (2004) are specifically incorporated here. First, Melville and colleagues argued that "IT business value is generated by the deployment of IT and complementary organizational resources" (p. 293). This notion is represented in Fig. 1 by the inclusion of both IT (i.e., *Social Media Technology Use*) and complementary organizational resources (i.e., *customer-centric management systems*). Second, the integrative model suggests that IT and complementary resources "ultimately may impact organizational performance" by enabling new or improving existing business processes or capabilities (Melville et al., 2004; p. 293). Hence, the intermediate capability of *Social CRM capability* is examined here to explain the social media technology–performance chain.

As shown in Fig. 1, social media technology use and customer-centric management systems will have both direct and interactive relationships with social CRM capabilities. Further, the development and outcome of this distinctive capability will be influenced by facilitating conditions that indicate how well social media technology usage is integrated and supported throughout the organization.

2.1. Social CRM capabilities

Customers have begun adopting social media applications (e.g., Facebook, LinkedIn, Twitter, etc.) to connect with peers and now expect, if not demand, the same level of interactivity with their business counterparts (Berthon, Pitt, Plangger, & Shapiro, 2012; Hanna, Rohm, & Crittenden, 2011; Rainie, Purcell, & Smith, 2011). This shift in expectations is challenging businesses to facilitate more customer–firm interaction by deploying new technologies and capabilities (Andzulis, Panagopoulos, & Rapp, 2012; Trainor, 2012). The emergence of a "social customer" is also challenging practitioners and researchers to rethink what it means to manage customer relationships (Greenberg, 2010). Thus, the concept of CRM is giving way to an extended perspective that recognizes new capabilities enabled by the technological and social shifts brought about by social media applications (Trainor, 2012).

Recognizing the important role played by CRM systems and emergent social media applications, this research uses the following definition of social CRM capability: "the integration of traditional customer-facing activities, including processes, systems, and technologies with emergent social media applications to engage customers in collaborative conversations and enhance customer relationships" (Trainor, 2012, p. 321).

Although few researchers have specifically examined how social media technologies relate to firm performance, past RBV research provides evidence as to how investments in marketing resources and information technology are integrated to form performance-enhancing capabilities (Mithas, Ramasubbu, & Sambamurthy, 2011; Nath, Nachiappan, & Ramanathan, 2010; Rapp et al., 2010; Wade & Hulland, 2004). Rapp et al. (2010) demonstrate that the capability to develop durable customer relationships, or *customer-linking capability*, is established via the combination of CRM technology investments and strategic organizational resources. Similarly, "e-marketing capability" (Trainor et al., 2011) and "CRM capability" (Coltman, 2007; Srinivasan & Moorman, 2005) – recognized as the combination and integration of information technology and human and business resources – are shown to positively affect customer relationships and organizational performance.

Based on these findings, this study views social CRM capability as a unique combination of emerging technological resources and customer-centric management systems that can lead to customer satisfaction, loyalty, and retention. Similar to the concept of relational information processes found in CRM literature (Jayachandran et al., 2005), social CRM capability refers to a firm's competency in generating, integrating, and responding to information obtained from customer interactions that are facilitated by social media technologies.

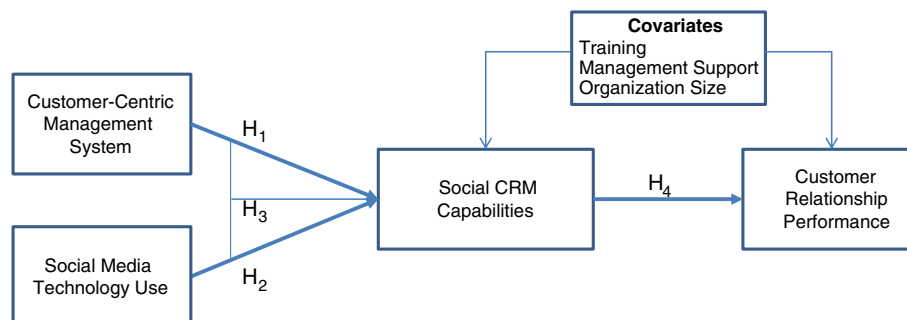


Fig. 1. Hypothesized framework.

2.2. Customer-centric management system

The degree to which firms tailor their business processes and systems toward serving customers is referred to as *customer-centric management systems* (Jayachandran et al., 2005). Extant CRM literature suggests that such systems are important factors in supporting a firm's customer-oriented culture and consist of structural and technological elements that ensure organizational actions are driven by customer needs (Hillebrand, Nijholt, & Nijssen, 2011; Kim, Park, Dubinsky, & Chaiy, 2012; Reimann, Schilke, & Thomas, 2010). Customer-centric management systems augment an organization's ability to focus on customer interactions, influence the development of information processes, and are likely to influence the success of CRM initiatives (Jayachandran et al., 2005).

Implementing management systems and configuring an organization around customer-centric processes can enable social CRM capabilities in several ways. First, these systems and processes have been shown to reflect a firm's customer orientation – the organization-wide gathering, sharing, and use of intelligence about customers – and coordinated actions based on that intelligence (Deshpandé, Farley, & Webster, 1993) – which is shown to lead to capability development (Rapp et al., 2010). Second, customer-centric systems and processes support the coordination of activities with customers, enabling a firm to better understand its customers, collaborate with them, and develop timely responses to their needs (Day, 1994). Finally, these systems facilitate the implementation of information technologies and provide incentives for employees to break down functional barriers and encourage enterprise-wide information sharing (Chen & Popovich, 2003; Cooper, Gwin, & Wakefield, 2008; Day, 2003). Thus, customer-centric management systems will influence the development of social CRM capabilities that are built from customer-related information obtained through social media applications.

H1. Customer-centric management systems have a positive association with social CRM capabilities.

2.3. Social media technology use

Information technology has long been recognized as an important component of CRM (e.g. Chang et al., 2010; Jayachandran et al., 2005; Rapp et al., 2010). Most of the technology described in extant CRM literature, however, tends to relate to the automation of information processing among employees internally and between salespeople and their customers externally (e.g., IT such as e-mail, interactive voice response systems, sales force automation, and systems for customer analytics and database marketing). In other words, CRM technology is typically viewed as a sales or marketing-centric tool that increases employee efficiency and effectiveness (Ahearn, Hughes, & Schillewaert, 2007; Crittenden, Peterson, & Albaum, 2010), and CRM technology has been broadly defined as “the degree to which firms use supporting information technology to manage customer relationships” (Chang et al., 2010, p. 850). While this definition remains relevant, past studies relying on it have not examined the role played by new technologies that facilitate social interactions because these technologies have, until fairly recently, largely only been deployed tactically or experimentally in organizational settings (Sarner et al., 2011; Trainor, 2012).

Social media applications have introduced new customer-centric tools that enable customers to interact with others in their social networks and with businesses that become network members (Kietzmann, Hermkens, McCarthy, & Silvestre, 2011). Examples include blogs, discussion forums, user-created communities, and user-generated content sites. More specifically, applications like LinkedIn, Facebook and Twitter have transformed from completely customer-specific (i.e., originally developed as a peer-to-peer communication tool) to customer-centric tools that allow organizations to take part in the interactions between network members (Trainor, 2012). These technologies have the potential

to provide greater access to customer information either directly through firm–customer interactions or indirectly through customer–customer interactions (Agnihotri, Kothandaraman, Kashyap, & Singh, 2012). This research focuses on four functional blocks enabled by social media technology that are particularly relevant in a CRM context: sharing, conversations, relationships, and groups (Kietzmann et al., 2011).

Sharing refers to technologies that support how users exchange, distribute, and receive digital content (e.g., coupons, texts, videos, images, “pins” on Pinterest, etc.). This is similar to the concept of information reciprocity – the activities and processes that encourage customers to interact and share information – which has been shown to positively influence a firm's ability to manage relationships (Jayachandran et al., 2005).

Conversations represents technologies that facilitate a firm's interactive dialog with and between customers (e.g., blogs, status updates on Facebook and Twitter, discussion forums, etc.) and capture the information from these dialogs.

Relationships represents the set of technologies that enables customers (and businesses) to build networks of associations with other users (e.g. Facebook, LinkedIn, Ning, Yammer, etc.) and allows organizations to utilize this network information.

Finally, *groups* represents the set of technologies that support the development of online user communities centered on specific topics, brands, or products. Examples include Salesforce.com's *Ideaforce* and Igloo's *Customer Community* application software.

Firms that use the technologies described above will have access to valuable information related to customer requirements, complaints, and experiences, which are discussed among customers on social networking applications, blogs, online communities, and/or discussion forums (Trainor, 2012). Further, online support communities can enable organizations to interact with networks of customers to solve problems during service and support encounters and create and disseminate knowledge from these interactions throughout the organization (Bagozzi & Dholakia, 2006; Trainor, 2012). Social media technologies can also increase the effectiveness of a firm's sales force by 1) providing a better understanding of the underlying social networks between customers and prospects (Üstüner & Godes, 2006) and 2) enabling internal and external collaborations that lead to better customer solutions (Trainor, 2012). To summarize, social media technology use will influence an organization's social CRM capability of engaging customers in collaborative conversations and enhancing customer relationships.

H2. Social media technology use has a positive association with social CRM capabilities.

2.4. Interactive effects of customer-centric management systems and social media technology use

RBV researchers have argued that examining the interactive effects of business resources is important yet largely underexplored (e.g., Nevo & Wade, 2010; Rapp et al., 2010; Song, Droge, Hanvanich, & Calantone, 2005; Wade & Hulland, 2004). Resource complementarity – defined as the ability of one resource or capability to reinforce the impact of another capability – has been argued to have enhancing effects on the relationships between resources and outcomes (Amit & Schoemaker, 1993; Teece et al., 1997). In the marketing literature, Song et al. (2005) provide empirical evidence of such interactive effects between technology and marketing resources. Similarly, Rapp et al. (2010) find that CRM technology resources have a positive, interactive effect when coupled with a complementary organizational culture. These findings suggest that CRM technologies are more deeply embedded and have a greater impact when deployed by firms with customer-oriented organizational cultures.

Along these same lines of logic, customer-centric management systems should enable employees across the organization to have greater access to information from customer interactions generated

from social media applications. Similarly, the deployment of customer-centric management systems is shown to influence the implementation of CRM and “break down functional barriers to customer-centered actions” (Jayachandran et al., 2005, p. 180). Firms with more effective CRM implementations are likely to facilitate more effective customer-firm interactions and make greater use of the information generated from social media technologies. In other words, the technology-enabled IT resources of social media applications will exhibit resource complementarity when coupled with customer-centric management systems resulting in greater social CRM capabilities.

H3. Customer-centric management systems and social media technology use will interact to positively affect social CRM capabilities.

2.5. Performance outcome of social CRM capabilities

Social CRM capabilities, which place emphasis on a firm's ability to engage customers in collaborative conversations and enhance customer relationships, suggest that the relational outcomes of customer satisfaction, loyalty, and retention should be included in this study's research model. This conclusion is supported by Hooley et al. (2005) and Rapp et al. (2010) who find that marketing capabilities lead to the development of strong customer relationships that positively influence customer satisfaction and loyalty. From a technology-based perspective, the literature suggests that technologies have enabled organizations to interact more effectively and efficiently with customers (Ahearne, Jelinek, & Rapp, 2005; Ahearne et al., 2007; Coviello, Milley, & Marcolin, 2001) and coordinate the capture and use of customer information leading to more effective customer responses (Jayachandran et al., 2005). Marketing technologies have also been shown to positively influence customer satisfaction and relationship development via improved internal communications and information sharing (Wu, Mahajan, & Balasubramanian, 2003).

H4. Social CRM capabilities have a positive association with customer relationship performance.

3. Methods

3.1. Sample

The data for this research were acquired by surveying members of top-management teams in a random sample of 1200 firms across a broad spectrum of industries located in the United States. Survey respondents were offered an aggregated summary of the research results and an executive summary of the study findings in return for providing their responses. The respondents were representative of a wide range of sizes and types of businesses serving both the business and consumer markets. The survey assured respondents that individual responses would remain confidential and that only aggregate results

would be reported. Responses were received over a six-week time frame. Of the firms contacted, 330 – or 27.5% – provided complete data.

For greater accuracy in reporting organizational policies and programs, any respondents who did not identify themselves as being a member of their company's top-management team (e.g., business unit or operational vice president who worked as a chief decision-maker, CEO, etc.) were eliminated from the survey, which left a sample of 308 respondents. The reason for this decision is based on past research in the area of strategic management (Hambrick & Mason, 1984), which suggests that members of top-management teams are typically familiar with the ideas and values within an organization and therefore are the most appropriate sample to survey to collect information on strategic initiatives and outcomes.

Tests were conducted to rule out any potential nonresponse bias by comparing early to late responders on all study variables and demographics. Organizational respondents represented a wide array of industries and size, which included industrial, technological, financial, and media organizations, among others. The majority of the companies were business-to-business (60.7%), the average firm size was between 100 and 500 employees (38.2%), and the average of the respondents' ages was between 35 and 54 years (64.9%).

3.2. Measures

All multi-item scales used within this research were developed and adapted from scales used in past survey research studies. The means, standard deviations, and correlations for the latent constructs are detailed in Table 1, and individual scale items and loadings are provided in the Appendix A.

Following Jayachandran et al. (2005), an index for the social media technology use measure was developed. Respondents were presented with a list of 15 social media technologies and were asked to indicate if their organizations used these technologies by marking a check box next to each item. The marked items were aggregated to determine a single score that captures how many different social media technologies are used by each organization. The resulting score was treated as an observed measure in the research analyses. This approach of using a single score to capture technology use is similar to that of past research (e.g., Ahearne, Jones, Rapp, & Mathieu, 2008; Jayachandran et al., 2005).

Social CRM capabilities were operationalized using an adapted scale from Srinivasan and Moorman (2005), which represents an organization-wide system for acquiring, disseminating, and responding to customer information. The three latent factors mentioned above were assessed using multi-item scales. Three items were used to assess information generation ($\alpha = .94$), four items were used to assess information dissemination ($\alpha = .92$), and six items were used to assess responsiveness ($\alpha = .93$). The scale items were modified to specifically refer to customer information generated from social media applications. These three subdimensions were then aggregated into single-scale

Table 1
Means, standard deviations, and latent construct correlations.

		Mean	SD	1	2	3	4	5	6	7
1	Customer-centric mgmt system	5.27	1.25	1						
2	Social media technology use	5.21	3.66	0.297**	1					
3	Social CRM capabilities	4.92	1.44	0.245**	0.415**	1				
4	Customer relationship perf	5.57	1.07	0.536**	0.274**	0.317**	1			
5	Training	4.68	1.54	0.369**	0.242**	0.189**	0.272**	1		
6	Management support	5.03	1.57	0.450**	0.306**	0.305**	0.380**	0.670**	1	
7	Organization size	3.85	1.02	0.111*	.045	.047	.105	-.034	.013	1

* Significant at $p < .05$.

** Significant at $p < .01$.

scores and were used as individual indicators for the capabilities construct, which demonstrated adequate reliability ($\alpha = .93$).

Customer-centric management system was measured using six items from the Jayachandran et al. (2005) measurement instrument. This scale captures the extent to which customers are a focal point of evaluation and was found to be reliable ($\alpha = .92$).

Customer relationship performance was measured using scale items developed by Rapp et al. (2010). The scale consists of five items that assess the extent to which firms are successful at satisfying and retaining loyal customers. The scale was found to be reliable ($\alpha = .89$).

To account for effects of extraneous variables, the study included measures of organization size and facilitating conditions. To assess potential facilitating conditions, two variables (training and organizational support) were operationalized using the user training and support scales adapted from Ahearne et al. (2005).

3.3. Analytical strategy

In order to take advantage of the benefits offered from the use of structural equation modeling (SEM), a covariance-based SEM program was used to test the measurement properties of the research model and the linear effects hypothesized. SEM modeling generally follows a two-stage process. In the first stage, a measurement model is specified and fit. In the second stage, the structural model is fit to the data (see Anderson & Gerbing, 1988). To test the proposed relationships, the study fit a linear effects model that amounts to the hypothesized model depicted in Fig. 1, minus the interaction (i.e., H3). Below is a report of the fit indices and properties for both models and a discussion of the parameter estimates.

3.4. Evaluation of structural model

The analysis fits a CFA model to the research data, and this process yielded an acceptable fit [$\chi^2 = 191.3$ (85), $p < .01$; CFI = .97; RMSEA = .06]. Fornell and Larcker (1981) tests for discriminant validity were all found to be acceptable, all factor loadings were significant ($p < .01$), and composite reliabilities exceeded the .60 benchmark (Bagozzi & Yi, 1988).

3.5. Results of hypotheses tests

3.5.1. Direct effects

To begin the structural equation analysis, the linear effects present in the research model were examined. This direct-effect model exhibited acceptable fit indices [$\chi^2 = 368.4$ (135), $p < .01$; CFI = .94; RMSEA = .07]. The positive relationships between a firm's customer-centric management system (H1: $\beta = .122$, $p < .05$) and social media technology use (H2: $\beta = .348$, $p < .01$) on its social CRM capabilities were both supported. Moreover, social CRM capabilities (H4: $\beta = .352$, $p < .01$) were found to have a positive influence on a firm's customer relationship performance, and the management support covariate was shown to significantly influence social CRM capabilities ($\beta = .204$, $p < .01$). Table 2a presents a summary of the model parameter estimates.

3.5.2. Interactive effects

The final stage in the analysis was to examine the interactive effects hypothesized in the research model. As there are challenges associated with testing interaction effects within a SEM framework (Marsh, Kit-Tai, & Wen, 2004; Ping, 1995), the analysis used hierarchical regression analysis in SPSS, which is among the most frequently used methods for interaction effects (Gounaris, Koritos, & Vassilikopoulou, 2010). To test the interaction effects, social media technology use and customer-centric management systems were both mean-centered. Next, the multiplicative interactive term between the variables was calculated and placed into the hierarchical regression analysis to determine the effects of the interaction.

Table 2a
Structural equation modeling results.

Independent variable	Dependent variable	Dependent variable	
		Social CRM capabilities	Customer relationship performance
H1 Customer-centric management system	.122*		
H2 Social media technology use	.348**		
C1 Training	-.059		
C2 Management support	.204**		
C3 Organization size	.013		
H4 Social CRM capabilities		.352**	
C3 Organization size		.085	

* Significant at $p < .05$.

** Significant at $p < .01$.

The regression equation used social CRM capabilities as the dependent variable and both customer-centric management systems and social media technology use as independent variables. All covariates outlined previously were included in the model.

The data supported the interactive effect within the research model. Social media technology use and customer-centric management systems were found to interact and have a significant effect on social CRM capabilities (H3: $\beta = .320$, $p < .01$). Using standard practices from moderated regression analyses (Aiken & West, 1991), the interaction was plotted to interpret its form. Specifically, using the information from the hypothesized model analyses, the analysis plotted the relationship between the customer-centric management system and social CRM capabilities that correspond to the low (one SD below the mean) and high (one SD above the mean) values of the social media technology use moderator. As shown in Fig. 2, as social media technology use is present within an organization, the greatest impact on social CRM capabilities comes when a customer-centric management system is more prevalent.

The proportions of variance of the endogenous variables accounted for by the hypothesized influences are as follows: R^2 social CRM capabilities = .26; R^2 customer relationship performance = .15.

3.5.3. Post hoc analyses

In addition to analyzing the hypotheses in the study, other non-hypothesized relationships that could be present in the research model were also explored, such as whether any differential effects exist across business-to-business (B2B) or business-to-consumer (B2C) firms. Dividing the research sample into two subsamples (121 B2C firms and 187

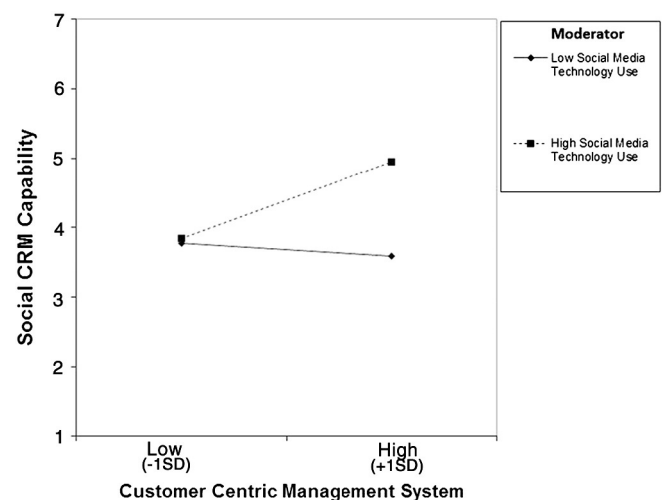


Fig. 2. Social media usage by customer-centric management system interaction.

B2B firms); a similar hierarchical analysis to that outlined above was conducted wherein one significantly different path across the relationships of interest was uncovered. As seen in Table 2b, all hypothesized effects are the same except for the relationship between customer-centric management system and social CRM capabilities. Specifically, in B2B organizations ($\beta = .152, p < .05$) the relationship is significant; however, in B2C firms, the relationship is not significant ($\beta = -.053$). Although these linear effects need to be interpreted cautiously with the higher-order interaction present, the direct effects suggest that in B2B firms customer-centric management systems are an important driver of capabilities in and of themselves, but this is not the same with respect to B2C firms. This finding would suggest that as B2C firms are typically more transactional in nature, customer centricity is not as important as social media tools.

Last, the study fit a third model that included other potential effects not hypothesized in the conceptual framework. By including the exogenous linear effects and interactive effect to customer relationship performance, the respecified model was a significant improvement over the hypothesized model, and one additional significant effect was uncovered. Specifically, a customer-centric management system had a significant effect on customer relationship performance ($\beta = .585, p < .01$). There was no evidence, however, of a direct relationship between social media technology use and customer relationship performance.

4. Discussion and implications

This study offers several contributions to the CRM literature and provides managerial insight related to the efficacy of social media technology use. This research is the first empirical study of social CRM as a firm-level capability. The theoretically grounded conceptualization and measurement of social CRM capability provides support for the argument that social media technology use, when viewed as a resource, positively influences customer relationship performance via firm-level capabilities. This finding is consistent with extant IT literature, which suggests that technology alone may not be sufficient to gain a competitive advantage. Instead, social media technologies merely facilitate capabilities that allow firms to better meet the needs of customers.

Another important contribution of this study is the examination of the interactive effects of customer-centric management systems and social media technology use on social CRM capabilities. The findings in this study lend support for the notion that complementarity exists between CRM systems and emerging technologies like social media applications. As shown in Fig. 2, firms that have high social media technology use in conjunction with customer-centric management systems have developed greater social CRM capabilities than their

counterparts with low social media technology use. Given the positive effect of the interaction, it is possible that firms adopting social media technology without coupling such technology with customer-centric management systems are missing an opportunity to further enhance performance.

An interesting, and somewhat unexpected, finding is represented by the negative interaction slope for firms with low social media use. It is somewhat counterintuitive that firms with low customer-centric management systems exhibit higher social CRM capabilities than firms with high levels of customer-centric systems. Drawing from the IT-alignment literature it can be argued that the interaction slopes are indicators that firm resources (i.e., technology deployment) have a greater effect when coupled with strategic capabilities. Based on this logic, it appears that social CRM capabilities are not considered strategic for low social media use firms in general. For firms that are low social media use/high customer-centric management systems in particular, it is plausible that customer-centric business processes and supporting activities are deeply entrenched within these organizations and, as a result, developing new capabilities that alter these processes may be particularly challenging. Such firms would, therefore, likely exhibit lower social CRM capability than their low customer-centric management systems counterparts.

The differences between B2B and B2C firms revealed in the post-hoc analysis represent another contribution of this study. The findings suggest that the direct influence of customer-centric management systems on social CRM capabilities is significant only for B2B firms. This finding is arguably a result of the transactional nature of B2C relationships and reflects a diminished importance placed by such firms on customer-centric management systems and the capabilities they enable. It is likely that other such contingent factors that fall outside the scope of this study will influence both IT resource deployments and the corresponding development of social CRM capabilities.

4.1. Implications for practice

This study provides evidence that investment in social media technology can provide firms with substantial relationship management benefits. On the surface, this finding seems to support claims made by technology vendors that social media technology is a panacea for effectively managing customer relationships. To the contrary, the results in this study suggest that social media technology use alone does not have a direct effect on these relationship performance outcomes. Instead, the results show that firms use these technologies to develop capabilities that allow them to better serve their customers. Not only do social media technology investments enhance a firm's social CRM capabilities, but firms with customer-centric management systems are

Table 2b
Hierarchical regression results.

	Independent variable	Dependent variable		Dependent variable	
		Social CRM capabilities		Customer relationship performance	
		Business-to-consumer	Business-to-business	Business-to-consumer	Business-to-business
H1	Customer-centric management system	-.053	.152*		
H2	Social media technology use	.256**	.393**		
H3	Cust-centric mgt system × SM tech use	.267**	.205**		
C1	Training	.053	-.161		
C2	Management support	.345**	.145		
C3	Organization size	-.065	.071		
H4	Social CRM capabilities			.394**	.290**
C3	Organization size			.266**	-.015

Business-to-consumer (n = 121).

Business-to-business (n = 187).

* Significant at p < .05.

** Significant at p < .01.

also well-positioned to take advantage of the rich information afforded through social media technologies. In this instance, when firms couple customer-centric management systems with nascent technologies, the impact on social CRM capabilities is magnified, which subsequently enhances customer relationship performance.

This study suggests that managers considering social media technology investments should focus on how these technologies integrate with existing systems to support their firm's capabilities. While many firms might be able to implement a CRM system or create a social media presence, turning such resource investments into productive capabilities will likely necessitate that the technological investment supports and complements company strategies. According to the post hoc analyses of this study, management support plays a role in enhancing social CRM capabilities for B2C firms. For such firms, which may be more transactional in nature, managers may need to provide more support and guidance related to social media usage than in B2B firms, where the interaction is typically more relational in nature and the employee may be more cognizant of the value of social media applications.

4.2. Limitations and future research

The study does have limitations, many of which highlight exciting opportunities for future research. The study sample, for example, was very broad and diverse. It is possible that although the research results are generally true across industries, the relationships may be less applicable to specific industries that may not see as much potential or customer demand for social media use. Speaking to this issue, differences were found between B2B and B2C firms, particularly in the direct relationship between customer-centric management systems and social CRM capabilities. While an explanation for this result is outside the purview of this study and we can only offer speculation on what might be driving this result, this is certainly an interesting avenue for future work.

Future research exploring the applicability of these findings to different industries, contexts, and settings is certainly warranted and encouraged. For example, the study did not consider other contingent factors such as the competitive environment or the position of the firm in its industry. It is conceivable that this study is capturing an effect that is only applicable to firms that have aggressively undertaken initiatives in support of their customer orientation strategy. The findings might, therefore, be less applicable to firms that are just beginning to adopt social media or has a top management team that is less knowledgeable on social media initiatives.

An additional possible limitation of this study involves the survey sample of top-management team executives who, although knowledgeable about, and representatives of, the beliefs, values, and ideas espoused by the firm, may have inflated their characterization of their firms' levels of customer-centric management systems, social media technology use, social CRM capabilities or even customer relationship performance. It is possible that relationships may be less pronounced than they might otherwise be had data been collected from individuals who were not part of the top-management team and who are more directly involved with day-to-day operations. Future research might collect responses from middle management and link that information to archival performance data for the firm.

Finally, the index used to measure social media technology usage captures only the number of social media applications deployed by a firm. While this type of index has been used in past research, this measurement approach is not without its limitations. Some of the items captured by the index may be more applicable for B2B firms than they are for B2C companies. Developing a technology usage measure that is more specific and appropriate for either B2B or B2C contexts could be a worthwhile endeavor for future research. Also, as noted by Ahearne et al. (2008), self-reported technology can be different than actual technology use (i.e., when measured using

archived IT usage records). For example, with the current measurement approach, respondents may report that they use a particular social media technology but the actual use of the technology may be minimal. Future studies could plausibly capture the actual usage activity within social media applications for a more accurate and complete picture of technology use across the firm. Another measurement approach for consideration is to employ a perceptual measure that not only captures the technologies used by the firm but also the usage intensity, or the extent to which the technologies are used within an organization (e.g., Wu et al., 2003). A more robust measure of technology use could provide a clearer picture of how social media technologies relate to different firm capabilities and performance outcomes.

Appendix A. Scale items and loadings

Social media technology use	
Which of the following functions are the social media technologies used by your organization capable of doing? Please check all that apply	
<i>Sharing support</i>	
<input type="checkbox"/> Photo sharing/storage (e.g. Flickr, Twitpic)	
<input type="checkbox"/> Video hosting/sharing/storage (i.e. Twitvid, UStream, YouTube)	
<input type="checkbox"/> Presentation sharing/storage (e.g. SlideShare)	
<input type="checkbox"/> News/live feeds (e.g. RSS)	
<i>Conversation Support</i>	
<input type="checkbox"/> Blogging (e.g. Blogger, Wordpress, TypePad)	
<input type="checkbox"/> Instant messaging (e.g. Google Instant Messenger, ooVoo, MSN, Yahoo)	
<input type="checkbox"/> Micro-blogging (e.g. Twitter, Tumblr)	
<input type="checkbox"/> Online conferencing/webinar (e.g. Adobe Connect, Go-to-Meeting, ooVoo, Yugma)	
<input type="checkbox"/> Live interactive Broadcasting (e.g. UStream.tv)	
<i>Relationship support</i>	
<input type="checkbox"/> Social and professional network presence (e.g. FaceBook, LinkedIn, MySpace, Ning)	
<input type="checkbox"/> Social analytics (Omniiture, sproutsocial, SAS, IBM Analytics)	
<input type="checkbox"/> Social collaboration (e.g. Chatter, hootsuite, Groupsite)	
<i>Groups/community support</i>	
<input type="checkbox"/> Moderated web community (e.g. IdeaForce, Igloo, Jive)	
<input type="checkbox"/> Unmoderated web community (e.g. Ning, Jive, LeverageSoftware, Zoho)	
<i>Customer-centric management system</i>	
We focus on customer needs while designing business processes.	0.757
In our organization, employees receive incentives based on customer satisfaction measures.	0.793
A key criterion used to evaluate our customer contact employees is the quality of their customer relationships.	0.845
In our organization, business processes are designed to enhance the quality of customer interactions.	0.847
We organize our company around customer-based groups rather than product or function-based groups.	0.798
In our organization, various functional areas coordinate their activities to enhance the quality of customer experience.	0.828
<i>Social CRM capability</i>	
<i>Information generation</i>	
In this business, we use SOCIAL MEDIA to conduct market research.	0.899
We use SOCIAL MEDIA to detect changes in our customers' product preferences.	0.930
We use SOCIAL MEDIA to detect fundamental shifts in our industry (e.g., competition).	0.883
<i>Information dissemination</i>	
We have frequent interdepartmental meetings to discuss market trends identified via SOCIAL MEDIA.	0.867
Marketing personnel spend time discussing customers' future needs identified on SOCIAL MEDIA applications with other departments.	0.881
Data collected using SOCIAL MEDIA on customer satisfaction are disseminated at all levels on a regular basis.	0.863
When one department finds out something important about competitors using SOCIAL MEDIA, it is quick to alert other departments.	0.818

Appendix A (continued)

Social media technology use	
Responsiveness	0.915
We use SOCIAL MEDIA to respond to our competitor's price changes.	0.841
We pay attention to changes in our customers' products or service needs using SOCIAL MEDIA.	0.876
If a major competitor launched an intensive campaign targeting our customers, we would respond immediately using SOCIAL MEDIA.	0.873
The SOCIAL MEDIA activities of the different departments are well coordinated.	0.819
Customer complaints can be filed and tracked using SOCIAL MEDIA in our firm.	0.768
When our customers want us to modify a product or service, we announce that change using SOCIAL MEDIA.	0.799
Customer relationship performance	
Relative to your competitors ...	
...our customers work with our firm for a long time.	0.797
...once we get new customers, they tend to stay with our company.	0.866
...our customers are very loyal to our firm.	0.836
...our customers are satisfied with our company.	0.749
...customer retention is very important to our firm.	0.760

References

- Agnihotri, R., Kothandaraman, P., Kashyap, R., & Singh, R. (2012). Bringing "social" into sales: The impact of salespeople's social media use on service behaviors and value creation. *Journal of Personal Selling and Sales Management*, 32(3), 333–348.
- Ahearne, M., Hughes, D. E., & Schillewaert, N. (2007). Why sales reps should welcome information technology: Measuring the impact of CRM-based IT on sales effectiveness. *International Journal of Research in Marketing*, 24(4), 336–349.
- Ahearne, M., Jelinek, R., & Rapp, A. (2005). Moving beyond the direct effect of SFA adoption on salesperson performance: Training and support as key moderating factors. *Industrial Marketing Management*, 34(4), 379–388.
- Ahearne, M., Jones, E., Rapp, A., & Mathieu, J. (2008). High touch through high tech: The impact of salesperson technology usage on sales performance via mediating mechanisms. *Management Science*, 54(4), 671–685.
- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage Publications, Inc.
- Amit, R., & Schoemaker, P. J. H. (1993). Strategic assets and organizational rent. *Strategic Management Journal*, 14(1), 33–46.
- Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychology Bulletin*, 103(3), 411–423.
- Andzulis, J. M., Panagopoulos, N. G., & Rapp, A. (2012). A review of social media and implications for the sales process. *Journal of Personal Selling and Sales Management*, 32(3), 305–316.
- Bagozzi, R. P., & Dholakia, U. M. (2006). Open source software user communities: A study of participation in linux user groups. *Management Science*, 52(7), 1099–1115.
- Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, 16(1), 74–94.
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120.
- Berthon, P. R., Pitt, L. F., Plangger, K., & Shapiro, D. (2012). Marketing meets Web 2.0, social media, and creative consumers: Implications for international marketing strategy. *Business Horizons*, 55(3), 261–271.
- Bharadwaj, A. S. (2000). A resource-based perspective on information technology capability and firm performance: An empirical investigation. *MIS Quarterly*, 24(1), 169–196.
- Borges, M., Hoppen, N., & Luce, F. B. (2009). Information technology impact on market orientation in e-business. *Journal of Business Research*, 62(9), 883–890.
- Chang, W., Park, J. E., & Chaui, S. (2010). How does CRM technology transform into organizational performance? A mediating role of marketing capability. *Journal of Business Research*, 63(8), 849–855.
- Chen, I. J., & Popovich, K. (2003). Understanding customer relationship management (CRM): People, process, and technology. *Business Process Management Journal*, 9(5), 672–688.
- Coltman, T. R. (2007). Why build a customer relationship management capability? *The Journal of Strategic Information Systems*, 16(3), 301–320.
- Cooper, M. J., Gwin, C. F., & Wakefield, K. L. (2008). Cross-functional interface and disruption in CRM projects: Is marketing from Venus and information systems from Mars? *Journal of Business Research*, 61(4), 292–299.
- Coviello, N., Milley, R., & Marcolin, B. (2001). Understanding IT-enabled interactivity in contemporary marketing. *Journal of Interactive Marketing*, 15(4), 18–33.
- Crittenden, V. L., Peterson, R. A., & Albaun, G. (2010). Technology and business-to-consumer selling: Contemplating research and practice. *Journal of Personal Selling and Sales Management*, 30(2), 103–110.
- Day, G. S. (1994). The capabilities of market-driven organizations. *Journal of Marketing*, 58(4), 37–52.
- Day, G. S. (2003). Creating a superior customer-relating capability. *MIT Sloan Management Review*, 44(3), 77–82.
- Day, G. S., & Wensley, R. (1988). Assessing advantage: A framework for diagnosing competitive superiority. *Journal of Marketing*, 52(2), 1–20.
- Deshpandé, R., Farley, J. U., & Webster, F. E. (1993). Corporate culture, customer orientation, and innovativeness in Japanese firms: A quadrad analysis. *Journal of Marketing*, 57(1), 23–37.
- Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities: What are they? *Strategic Management Journal*, 21(10–11), 1105–1121.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50.
- Gounaris, S., Korits, C., & Vassilikopoulou, K. (2010). Person-place congruency in the internet banking context. *Journal of Business Research*, 63(9–10), 943–949.
- Greenberg, P. (2010). The impact of CRM 2.0 on customer insight. *The Journal of Business and Industrial Marketing*, 25(6), 410–419.
- Hambrick, D. C., & Mason, P. A. (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of Management Review*, 9(2), 193–206.
- Hanna, R., Rohm, A., & Crittenden, V. L. (2011). We're all connected: The power of the social media ecosystem. *Business Horizons*, 54(3), 265–273.
- Hillebrand, B., Nijholt, J. J., & Nijssen, E. J. (2011). Exploring CRM effectiveness: An institutional theory perspective. *Journal of the Academy of Marketing Science*, 39(4), 592–608.
- Hooley, G. J., Greenley, G. E., Cadogan, J. W., & Fahy, J. (2005). The performance impact of marketing resources. *Journal of Business Research*, 58(1), 18–27.
- Jayachandran, S., Sharma, S., Kaufman, P., & Raman, P. (2005). The role of relational information processes and technology use in customer relationship management. *Journal of Marketing*, 69(4), 177–192.
- Kietzmann, J. H., Hermkens, K., McCarthy, I. P., & Silvestre, B. S. (2011). Social media? Get serious! Understanding the functional building blocks of social media. *Business Horizons*, 54(3), 241–251.
- Kim, M., Park, J. E., Dubinsky, A. J., & Chaui, S. (2012). Frequency of CRM implementation activities: A customer-centric view. *Journal of Service Marketing*, 26(2), 83–93.
- Marsh, H. W., Kit-Tai, H., & Wen, Z. (2004). In search of golden rules: Comment on hypothesis-testing approaches to setting cutoff values for fit indexes and dangers in overgeneralizing Hu and Bentler's (1999) findings. *Structural Equation Modeling*, 11(3), 320–341.
- Melville, N., Kraemer, K., & Gurbaxani, V. (2004). Review: Information technology and organizational performance: An integrative model of IT business value. *MIS Quarterly*, 28(2), 283–322.
- Mithas, S., Ramasubbu, N., & Sambamurthy, V. (2011). How information management capability influences firm performance. *MIS Quarterly*, 35(1), 237–256.
- Nath, P., Nachiappan, S., & Ramanathan, R. (2010). The impact of marketing capability, operations capability and diversification strategy on performance: A resource-based view. *Industrial Marketing Management*, 39(2), 317–329.
- Nevo, S., & Wade, M. R. (2010). The formation and value of IT-enabled resources: Antecedents and consequences of synergistic relationships. *MIS Quarterly*, 34(1), 163–183.
- Ping, R. A., Jr. (1995). A parsimonious estimating technique for interaction and quadratic latent variables. *Journal of Marketing Research*, 32(3), 336–347.
- Rainie, L., Purcell, K., & Smith, A. (2011). *The social side of the internet*. Washington, DC: Pew Internet & American Life Project (Retrieved from <http://pewinternet.org/Reports/2011/The-Social-Side-of-the-Internet.aspx>).
- Rapp, A., Trainor, K. J., & Agnihotri, R. (2010). Performance implications of customer-linking capabilities: Examining the complementary role of customer orientation and CRM technology. *Journal of Business Research*, 63(11), 1229–1236.
- Reimann, M., Schilke, O., & Thomas, J. S. (2010). Customer relationship management and firm performance: The mediating role of business strategy. *Journal of the Academy of Marketing Science*, 38(3), 326–346.
- Roberts, N., & Grover, V. (2012). Investigating firm's customer agility and firm performance: The importance of aligning sense-and-respond capabilities. *Journal of Business Research*, 65(5), 579–585.
- Sarner, A., Thompson, E., Davies, J., Drakos, N., Fletcher, C., Mann, J., et al. (July 25). *Magic Quadrant for Social CRM*. Gartner (Retrieved from www.gartner.com).
- Song, M., Droge, C., Hanvanich, S., & Calantone, R. (2005). Marketing and technology resource complementarity: An analysis of their interaction effect in two environmental contexts. *Strategic Management Journal*, 26(3), 259–276.
- Srinivasan, R., & Moorman, C. (2005). Strategic firm commitments and rewards for customer relationship management in online retailing. *Journal of Marketing*, 69(4), 193–200.
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509–533.
- Trainor, K. J. (2012). Relating social media technologies to performance: A capabilities-based perspective. *Journal of Personal Selling and Sales Management*, 32(3), 317–331.
- Trainor, K. J., Rapp, A., Beitelspacher, L. S., & Schillewaert, N. (2011). Integrating information technology and marketing: An examination of the drivers and outcomes of e-Marketing capability. *Industrial Marketing Management*, 40(1), 162–174.
- Üstüner, T., & Godes, D. (2006). Better sales networks. *Harvard Business Review*, 84(7/8), 102–112.
- Vorhies, D. W., & Morgan, N. A. (2005). Benchmarking marketing capabilities for sustainable competitive advantage. *Journal of Marketing*, 69(1), 80–94.
- Wade, M., & Hulland, J. (2004). The resource-based view and information systems research: Review, extension, and suggestions for future research. *MIS Quarterly*, 28(1), 107–142.
- Wu, F., Mahajan, V., & Balasubramanian, S. (2003). An analysis of e-business adoption and its impact on business performance. *Journal of the Academy of Marketing Science*, 31(4), 425–447.