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Social Media Technology Use and Salesperson Performance: A Two Study Examination of the Role of Salesperson Behaviors, Characteristics, and Training

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Abstract

Extending the literature on sales technology, we use two studies to develop and test a model involving salesperson-customer shared technology tools, referred to as Social Media Technology (SMT). Specifically, we demonstrate the impacts of SMT in B2B sales contexts on customer relationship performance and objective sales performance through key mediating behaviors and characteristics. Empirical findings from two studies, cross-company and within-company data, demonstrate the effects of SMT on salesperson product information communication, diligence, product knowledge, and adaptability. Moderating effects suggest that the integration of SMT in the absence of training on the technology may not yield the best results. Findings suggest that firms must allocate the resources necessary to properly implement SMT strategies. The framework tested provides a foundation for integration of SMT into buyer-seller interactions.

1. Introduction

In recent years, scholars have paid increased attention to technology tools that are shared between salespeople and customers, generally referred to as social media technology (hereafter, SMT) ([Andzulis, Panagopoulos, & Rapp, 2012](#); [Trainor, 2012](#)). Discussing the role of technology at the salesperson-customer interface, interactive technologies involve both salesperson and customer engagement ([Ahearne & Rapp, 2010](#)). It has been argued that – due to this interactive nature – SMT is driving “a revolutionary change in the way contemporary selling is conducted” ([Marshall, Moncrief, Rudd, & Lee, 2012](#), p. 357). In fact, three out of four B2B buyers use social media to engage in the buying process and make final purchase decisions ([Minsky & Quesenberry, 2016](#)). This presents a challenge to the 78% of sales and marketing executives that don't feel well prepared for this digital disruption ([Kovac, 2016](#)). Yet these tools offer platforms to keep customers engaged in a hypercompetitive sales environment where connecting with a prospect can now take 18 or more phone calls ([Minsky & Quesenberry, 2016](#)). With callback rates below 1%, increasing numbers of B2B salespeople are using social media tools to outperform their peers and many are closing deals “as a direct result of social media” ([Minsky & Quesenberry, 2016](#)). When leveraged for customer interaction, SMT represents an additional tool in the repertoire available to salespeople, beyond traditional sales technology implementations.

Due to the nature of their boundary spanning position, salespeople represent the company-customer interface in the buying cycle. In this unique role, salespeople have the ability to leverage SMT on an individual basis – within discrete customer interactions – to communicate with, influence, and manage buyers. Given a state of “always on technology” ([Agnihotri, Dingus, Hu, & Krush, 2016](#)), SMT provides a new, and unique, outlet for developing and maintaining customer relationships. Social media technologies can help sales organizations engage customers through superior information exchange, reciprocity, and problem solving ([Hennig-Thurau et al., 2010](#)). In an increasingly competitive sales environment, tools that allow salespeople superior utility in customer-focused actions (e.g., engagement in service behaviors) are poised to provide a great deal of benefit to customer relationship management activities – when managed properly. Therefore, it is important to understand the mechanism that links SMT use to expected customer relationship outcomes.

While it is important to explore SMT as a tool in the customer relationship process, the implications of organizational support for effective deployment of SMT by salespeople are also critical considerations. Salespeople are increasingly connecting with their customers via SMT ([Andzulis et al., 2012](#)). However, without organizational support and direction, they are left to navigate an increasing complex and competitive selling environment on their own ([Gupta, Armstrong, & Clayton, 2010](#)). Sales technology literature recognizes salesperson training as the degree to which the salesperson has been trained to utilize sales technology tools ([Ahearne, Jelinek, & Rapp, 2005](#)), and underscores its importance in overcoming frequent problems related to technology intricacies ([Speier & Venkatesh, 2002](#)). When left without training resources, salespeople may not be leveraging SMT to its full potential or, worse, they may be misusing SMT through trial and error.

Keeping the above-mentioned issues in mind, this research aims to contribute to the sales research in two ways. First, we extend the sales technology literature by examining the impact of a specific type of technology, namely SMT, on salespeople's ability to create and cultivate superior customer relationships. We gain support from the viewpoint that "different uses of technology have differential effects on various aspects of performance ... thus, how a sales representative uses technology and on which behavioral tasks (work processes) matters" ([Hunter & Perreault Jr, 2007](#), p. 30). Further, we align this research with the sales technology literature that posits that salespeople will get the optimal results from technology use if the link is mediated through relationship oriented behaviors and characteristics ([Ahearne, Jones, Rapp, & Mathieu, 2008](#)). Specifically, we propose and test the notion that SMT use enhances salesperson product information communication, diligence, product knowledge, and adaptability, which ultimately influences customer relationship performance.

Second, we address the question of how firms can properly facilitate the effective use of SMT by their salespeople. Specifically, we consider the moderating impact of salesperson training resources on the relationship between SMT use and salesperson behaviors. User training, defined here as the degree to which salespeople have been trained to use the sales technology tools, has been touted as a critical facilitating condition to support technology use ([Ahearne et al., 2005](#)). This vein of inquiry addresses calls for research to incorporate facilitating conditions of sales technology in general (e.g., [Sundaram, Schwarz, Jones, & Chin, 2007](#)), and SMT in particular (e.g., [Rodriguez, Peterson, & Krishnan, 2012](#)) as moderators in the technology to performance chain.

Below, we present our salesperson SMT use framework in greater detail ([Fig. 1](#)) and provide the theoretical underpinnings for our proposed relationships.

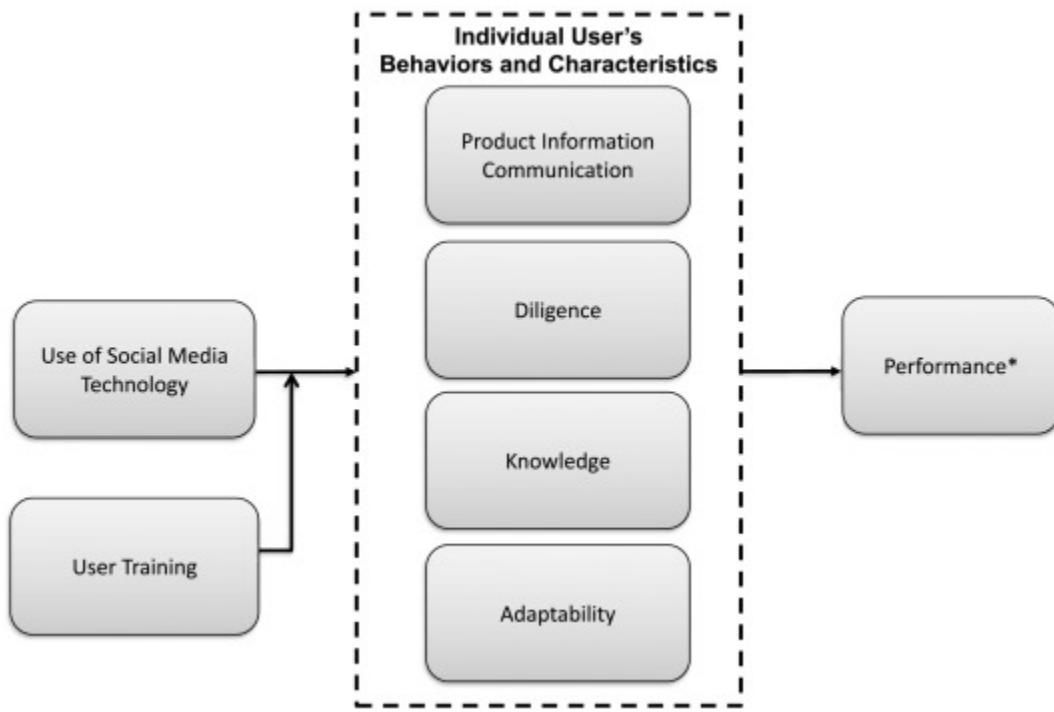


Fig. 1. Hypothesized model.

*Customer relationship performance (Study 1); Sales performance (Study 2).

1.1. Sales technology-behaviors-performance link

Sales scholars have consistently studied the role of technology in sales and have enriched our understanding regarding its adaption and use, as well as the associated performance outcomes ([Ahearne, Srinivasan, &](#)

[Weinstein, 2004](#); [Jelinek, Ahearne, Mathieu, & Schillewaert, 2006](#); [Speier & Venkatesh, 2002](#)). A key theme that emerges from the literature is that the use of technology within the sales force is a necessary but not sufficient criterion and that the manner in which salespeople use technology determines performance outcomes. Many empirical studies have supported this belief over time (e.g., [Bush, Bush, Orr, & Rocco, 2007](#); [Homburg, Wieseke, & Kuehnl, 2010](#); [Onyemah, Swain, & Hanna, 2010](#)) and outlined the key sales behaviors and characteristics that mediate the relationship between sales technology and performance ([Hunter & Perreault Jr, 2007](#)).

Moreover, research examining the multidimensional nature of sales technology has explored differential mediating paths from the various dimensions of technology. For example, [Hunter and Perreault Jr \(2007\)](#) outline SFA and CRM as dimensions of sales technology and define SFA technology as “tools that are intended to make repetitive (administrative) tasks more efficient” (2007, p. 17). CRM technology represents a more strategic orientation and has been defined as “the degree to which firms use supporting information technology to manage customer relationships” ([Chang, Park, & Chaiy, 2010](#), p. 850). It has been touted as a tool that enables salespeople to develop sales strategies ([Rigby & Ledingham, 2004](#)). Building upon this logic, [Rapp, Agnihotri, and Forbes \(2008\)](#) reported that SFA usage has a direct impact on effort behaviors, and CRM usage has a direct positive impact on salesperson adaptive selling.

Further extending the multidimensional aspect of sales technology, [Ahearne and Rapp \(2010\)](#) highlighted the need for research in the area of salesperson-customer sharing technology. Responding to this call, sales scholars argue that salespeople should be aware of the “emerging technology” tools that can enable the buyer-seller exchange process to become more efficient and effective ([Marshall et al., 2012](#); [Rodriguez et al., 2012](#)). In terms of technology pertinent to the sales field, researchers highlight the adaption and utilization of SMT as a way to create opportunities for direct customer involvement ([Trainor, 2012](#)). SMT offers new customer-centric tools (blogs, discussion forums, user communities, etc.) that enable customers to interact with others in their social networks and with organizations that become network members ([Kietzmann, Hermkens, McCarthy, & Silvestre, 2011](#)). Social network tools and platforms (e.g., LinkedIn, Facebook, etc.) have evolved from purely customer-specific (peer-to-peer communication) tools toward customer-centric applications that are enabling organizations to participate in the interactions happening within their customers' networks ([Trainor, Andzulis, Rapp, & Agnihotri, 2014](#)).

Accordingly, we view SMT as another dimension of sales technology based on its level of specificity for influencing relationship building tasks. Social media technology has been described as “any social interaction-enhancing technology that can be deployed by sales professionals to generate content (e.g., blogs, microblogs, wikis) and develop networks (e.g., social networks, online communities)” ([Agnihotri, Kothandaraman, Kashyap, & Singh, 2012](#), p. 334). Aligning this description with the sales technology literature, SMT use can be defined as a salesperson's utilization and integration of SMT to perform his or her job ([Ahearne et al., 2005](#)). Building on this, we suggest that SMT can be used by salespeople to build networks and better customer relationships in a broad sense.

Building on prior theory, we develop and test a model (see [Fig. 1](#)) that examines how salespeople's SMT use impacts salesperson service behaviors (e.g., product information communication, diligence, product knowledge, and adaptability) and ultimately customer relationship performance. By adopting a perspective from within salesperson-customer relationships (i.e., implementation of social media tools to enhance customer encounters), our research provides insight into the potential for value creation through long-term, profitable, customer relationships. Our study responds to the call made by scholars to look beyond technology use to the salesperson characteristics and behaviors that capture the indirect influence of technology on salesperson performance (e.g., [Avlonitis & Panagopoulos, 2010](#); [Ingram, LaForge, & Leigh, 2002](#)). This approach considers how SMT provides increased customer contact opportunities ([Hennig-Thurau et al., 2010](#)) and facilitates the

behavioral processes in which these tools are aligned with the “relationship-forging tasks” necessary for technology effectiveness ([Hunter & Perreault Jr, 2007](#)).

2. Development of hypotheses

2.1. SMT and product information communication

Information communication, in the marketing literature, is referred to as the sharing of relevant and timely information between organizations through both formal and informal approaches ([Anderson & Narus, 1990](#)). Such communication's effectiveness is based upon the volume, frequency, and quality of information that is being shared between buyers and sellers ([Palmatier, Dant, Grewal, & Evans, 2006](#), p. 138). Effective communication educates customers and keeps them informed “in a language that they can understand” ([Sharma & Patterson, 1999](#), p. 158). This easy and effective communication flow is a key characteristic of strong customer relationships ([Morgan & Hunt, 1994](#)). [Jones, Chonko, Rangarajan, and Roberts \(2007\)](#) underscore the heightened expectations of potential and current customers and the challenges that salespeople may experience when trying to convey vital information to these buyers in an easier way. Social media platforms provide increased communication opportunities and an array of platforms for buyer-seller interactions.

Social media technology enables salespeople to more easily adapt modes of interactions with buyers, an important capability when sharing product information through communication processes ([Mohr & Nevin, 1990](#)). For example, if customers are seeking additional product or service information, salespeople can more easily arrange and execute live chat sessions or publish informational webinars that efficiently cater to the unique needs of the customer. This example demonstrates the opportunities that SMT provides for a more customizable information exchange process between a buyer and a seller. These platforms provide unique outlets for user-friendly transfer of information, allowing salespeople to process and manage larger amounts of information in functional ways ([Malthouse, Haenlein, Skiera, Wege, & Zhang, 2013](#)). With increased opportunities and capacity for information exchange, use of SMT will facilitate and enhance product information communication behaviors of salespeople.

H1

Salesperson use of SMT will have a positive effect on product information communication behaviors.

2.2. SMT and diligence

Diligence relates to the idea that today's hypercompetitive sales environment requires salespeople to provide accurate and dependable service in a timely manner ([Ahearne, Jelinek, & Jones, 2007](#)). Customer service is considered as a contextual concept where industry, product, and customer expectations play a critical role. Salesperson diligence, based upon the context, could involve service before sale, product support after the sale, responsiveness to customers before, during, and after purchase, reliability and speed of delivery, etc. ([Vickery, Jayaram, Droke, & Calantone, 2003](#)). In a sales context, customer service is often conceptualized as diligent behaviors rooted in the level of reliability and responsiveness of the salesperson-customer interface ([Ahearne et al., 2007](#)). As the primary contact person for customers, it is essential for salespeople to respond promptly to customer needs and requests.

With the array of contact points made available by social media, salespeople can maintain more consistent contact with buyers. For example, SMT allows salespeople to engage with and serve customers that may be previously underserved due to physical or geographic constraints. These tools provide salespeople with the ability to educate, compare offerings, discuss product functionality, and help customers gain optimal service utility. SMT can be used to monitor changes in customer wants and needs, track customer complaints, and coordinate with other departments within the organization to operate more cohesively ([Rodriguez et al., 2012](#)).

In these ways, SMT enhances salesperson-customer relationships and builds trust between salespeople and customers ([Chanda & Zaorski, 2013](#)). Through SMT, salespeople can better understand and predict customer needs, fulfill demands more efficiently, and consequently be more diligent throughout the customer experience.

H2

Salesperson use of SMT will have a positive effect on salesperson diligence.

2.3. SMT and product knowledge

We focus on salesperson expertise related to product development, specification, and performance. In the past, scholars have studied other forms of knowledge such as market knowledge as a mediator between sales technology and performance outcomes ([Hunter & Perreault Jr, 2007](#)). As per recent scholarly advances, in the area of sales technology-mediated environments, product knowledge is considered critical to satisfying customers where persuasion knowledge is becoming less relevant ([Sharma & Sheth, 2010](#)). SMT use by salespeople enables salespeople to connect with professionals inside and outside of the organizational realm, thereby giving them access to a wider base of information sources and available knowledge (Ahearne et al., 2007).

As customers pay greater attention to product specifications and technical standards, they demand greater salesperson interaction and instantaneous service provision. To combat these increasing knowledge demands, SMT can be used to gain market and industry insight that augments salesperson overall product knowledge. This is especially important as information gathered from other resources (e.g., statistical or company reports) are often dated and presents a rather complex picture which is difficult to decipher.

Further, salespeople are uniquely positioned to gather marketplace intelligence ([Rapp, Agnihotri, & Baker, 2011](#)) to be leveraged in future interactions. Salesperson knowledge gathering and dissemination is enhanced through access to customer and market research as well as available competitive information ([Sujan, Weitz, & Kumar, 1994](#)). SMT provides access to extensive networks of information. By drawing on the available information salespeople can maintain and demonstrate higher levels of knowledge ([Ahearne et al., 2008](#)). Formally stated:

H3

Salesperson use of SMT will have a positive effect on product knowledge.

2.4. SMT and adaptability

The basic premise of adaptive selling is to alter sales behaviors and activities in keeping with situational considerations ([Sujan et al., 1994](#)). Through adaptive selling, salespeople can alter their sales approach across customers and tailor sales presentations to the individual customer ([Spiro & Weitz, 1990](#)). At the same time, the necessary factors to perform adaptive selling include attainment, scrutiny, and utilization of customer information ([Weitz, Sujan, & Sujan, 1986](#)). Past literature on sales technology supports the idea that salesperson adaptability could be improved by using different technology tools ([Ahearne et al., 2008; Rapp et al., 2008](#)).

With the help of SMT, salespeople are better able to assess and conform to the situational needs of their buyers (e.g. working style, time restrictions, or other organizational priorities), and such awareness enhances adaptive behavior in customer interactions ([Sujan et al., 1994](#)). To adapt effectively to individual customers salespeople must draw on a clear understanding of their customer's needs. SMT use can help salespeople track individual customers' purchase patterns and research customers systematically to best align exchange encounters with buyer wants and needs. Availability of SMT also enables a salesperson to adapt both the medium and method of interaction. Technology infusion can provide salespeople with access to vast amounts of information, in addition to specific information search capabilities ([Ahearne et al., 2008](#)). SMT provides such access, creating a

searchable network of customer information for salesperson use. A variety of social media platforms allow salespeople to leverage customer information to create unique sales presentations – enhancing their adaptive selling behaviors. Therefore,

H4

Salesperson use of SMT will have a positive effect on adaptability.

2.5. Moderating role of salesperson training

User training, one of the critical organizational facilitating conditions, not only helps avoid negative consequences but also positively impacts overall technology use ([Goodhue & Thompson, 1995](#)). Sales technology literature reports the moderating impact of technology training on the link between the use of sales technology and desired outcomes (e.g., [Ahearne et al., 2005](#); [Sundaram et al., 2007](#)). Such findings forward the notion that without proper training salespeople might not be able to use technology to its fullest potential ([Sundaram et al., 2007](#)). Therefore, the usefulness of implementing SMT within the sales force is contingent upon organizational support and requires a shift in resources to meet the new demands being placed on salespeople ([Agnihotri et al., 2012](#)). When a firm fails to allocate resources for strategic technology adoption and sales force support, technology infusion is more likely to diminish sales force productivity ([Avlonitis & Panagopoulos, 2010](#)).

With training, salespeople will be confident and able when implementing technical tools and mitigating any technological challenges and will therefore be better able to utilize SMT to improve behaviors and characteristics. Salesperson training will thus affect the efficiency of SMT use. This reasoning aligns with past technology literature in which researchers argue that information technology use positively influences individual effectiveness when moderated by proper training and support ([Ahearne et al., 2005](#); [Erffmeyer & Johnson, 2001](#)). Notably, social media research within customer-facing activities points to potential organizational related contextual variables as moderators in social media frameworks (e.g., [Rodriguez et al., 2012](#)). Parallel with these arguments, we reason that organizational provision of user training will play a key role in leveraging SMT for enhanced salesperson service behaviors.

H5

User training will strengthen the relationship between salesperson SMT use and (a) product information communication, (b) diligence, (c) product knowledge, and (d) adaptability.

2.6. Customer relationship performance

At the organizational level, customer relationship performance reflects how well a firm is performing relative to set goals of customer acquisition, satisfaction, and loyalty (e.g., [Jayachandran, Sharma, Kaufman, & Raman, 2005](#); [Rapp, Trainor, & Agnihotri, 2010](#); [Rust, Moorman, & Dickson, 2002](#)). At the salesperson level, customer relationship performance can be operationalized as the salesperson's "success in achieving customer satisfaction and keeping current customers," (p. 218) with this performance arguably driven by interpersonal traits of the salesperson ([Agnihotri et al., 2012](#)). Recent scholarly efforts are aimed toward the salesperson perceptions of customer relationship quality and underscore its impact on forming and influencing account profitability ([Mullins, Ahearne, Lam, Hall, & Boichuk, 2014](#)).

Salespeople's behaviors and characteristics could help or hinder their efforts to build and maintain loyal customer bases ([Plouffe, Hulland, & Wachner, 2009](#)). Relationship oriented behaviors establish and extend relationship commitment, as perceived by customers, and eventually yield performance benefits for both the customer and salesperson ([Pillai & Sharma, 2003](#)). In general, good communication (i.e., helpful, positive, timely, easy, and pleasant) between a salesperson and a customer will impact all facets of the relationship, with a

specific influence on trust, satisfaction, and loyalty ([Ball, Simões Coelho, & Machás, 2004](#)). By helping their customers obtain applicable and accurate product information and specifications, salespeople can enrich customer experiences. Through superior product information communication, salespeople provide a sense of assurance that is imperative in effectively satisfying customers ([Ahearne, Jelinek, & Jones, 2007](#)). Salesperson product information communication practices would represent a platform upon which high quality service could be provided, thereby, determining customer relationship satisfaction and commitment ([Sharma & Patterson, 1999](#)).

H6

Salesperson product information communication behaviors will positively influence customer relationship performance.

Marketing scholars agree that consistent, timely, and quality customer interaction not only influences the dominant marketing outcomes ([Ray, Muhanna, & Barney, 2005](#)) but also contributes toward gaining competitive advantage ([Szymanski & Henard, 2001](#); [Zeithaml, 2000](#)). The ability of salespeople to be diligent in their interactions with customers in order to provide superior customer service is considered a strategic imperative in today's competitive environment ([Ray et al., 2005](#)). Diligence is central to relationship performance because "during the service encounter employee behavioral performance is the service, as customers perceive it" and therefore a vital component in achieving customer satisfaction ([Ahearne et al., 2008](#), p. 675). Research clearly highlights the positive impact of service behaviors such as diligence and responsiveness on key consumer satisfaction outcomes and future intentions ([Darian, Tucci, & Wiman, 2001](#)). Salespeople must be able to effectively manage customer needs and provide the desired level of customer service within each relationship. Diligence impacts a customer's perception of the salesperson, the service encounter, and the organization ([Evans, Arnold, & Grant, 1999](#)). Ultimately, this informs customer satisfaction, retention, and relationship performance.

H7

Salesperson diligence will positively influence customer relationship performance.

In general, for sales organizations, employees' knowledge represents a competitive resource ([Rapp, Agnihotri, Baker, & Andzulis, 2015](#)). Specifically, salesperson expertise and knowledge is necessary to transform customer oriented attitudes into the behaviors essential to gaining customer satisfaction ([Stock & Hoyer, 2005](#)). Product knowledge aids salespeople in providing detailed explanations of product and service offerings while conveying industry expertise. Consequently, a breadth of product knowledge on behalf of the salesperson creates an opportunity to diagnose customer needs and positions the salesperson to better introduce the customer to an array of services available from the organization ([Evans et al., 1999](#)) adding value to the customer relationship. It can be argued that salesperson product knowledge would help them in crafting pragmatic solutions to customer problems ([Gwinner, Bitner, Brown, & Kumar, 2005](#)); and, because providing customers with comprehensive solutions is critical for the relationship development process, the link between product knowledge and customer relationship performance is quite visible.

H8

Salesperson product knowledge will positively influence customer relationship performance.

Marketing scholars highlight the fact that customer facing employee's adaptability is a much stronger antecedent to job performance than factors such as self-efficacy or job satisfaction (e.g., [Chebat & Kollias, 2000](#)). Within the sales context, adaptive selling behaviors are becoming increasingly important in satisfying and retaining customers ([Robinson Jr, Neeley, & Williamson, 2011](#)). Customers are more likely to evaluate

interactions favorably when salespeople are capable of adapting to address specific customer needs and unique requests ([Bitner, Booms, & Tetreault, 1990](#)). Adaptable salespeople are more likely to engage customers during the exchange process, meeting individual customer needs and enhancing relationship satisfaction ([Ahearne et al., 2008](#)). Therefore, salesperson adaptability should augment customer relationship performance. Theoretical reasoning aligns with the argument that salespeople that can “adapt their behaviors during customer interactions are more likely to fulfill the needs and requests of their customers and thereby increase customer satisfaction” ([Ahearne et al., 2008](#), p. 676). Building upon theoretical rationale and empirical findings, we argue:

H9

Salesperson adaptability will positively influence customer relationship performance.

3. Method

3.1. Study 1

3.1.1. Data collection and sample

Data for this research were collected through surveying of salespeople from a random sample of 1200 business-to-business firms located in the United States. The sample represents a broad spectrum of industries and firm size. In exchange for their participation, firms were offered an aggregated summary of research results as well as an executive summary of study findings. The survey description assured respondents anonymity of their individual responses. Directions were provided to respondents advising them to consider each of the survey questions with respect to their use of social media tools to communicate to/with customers.

Surveys were made available to potential respondents over a six-week time frame. Completed responses were received from 389 of the firms contacted (32.4% response rate). Due to excessive missing values 14 responses were removed. This resulted in a final sample of 375 respondents. To rule out the potential of any nonresponse bias, tests were conducted comparing early to late responders on all variables and demographics within the dataset ([Armstrong & Overton, 1977](#)).

3.1.2. Measures

All multi-item scale measures used in this study were developed and adapted from previously published survey research. All scale items used 7-point Likert-type scales anchored by 1 = *strongly disagree* and 7 = *strongly agree*. Individual scale items and loadings can be found in [Appendix A](#).

3.1.2.1. *Technology utilization and organization environment*

The measure of *SMT use* was developed following the approach of [Ahearne et al. \(2008\)](#) in which technology usage was calculated as a latent construct with indicators that represented frequency and intensity of use (pp. 678–679). Similarly, our measure accounted for both frequency and intensity of SMT use by salespeople. Because social media outlets are numerous ([Mangold & Faulds, 2009](#)) and can take various forms ([Kietzmann et al., 2011](#)), to capture intensity of SMT use, respondents received a list of 15 common SMT tools and were asked to indicate which of the social media tools they used for job related responsibilities by marking a box next to each of the items. Respondents were also given the opportunity to include any other forms of SMT utilized that were not included within the list provided. The researchers then generated an aggregated total from the marked items to determine a single score that captured the intensity of SMT usage ([Trainor et al., 2014](#)). Additionally, a 3-item measure of frequency of use was adapted from [Jelinek et al. \(2006\)](#) to assess respondents' frequency of SMT use. As expected, intensity of use (number of social media tools used) and frequency of use were significantly, and highly correlated ($r = 0.693$, $p < 0.01$). Thus, the measure of *SMT use* encompasses both the extent to which SMT is used and the frequency of SMT use.

To account for the impacts of facilitating conditions within the organization, we examined the extent to which salespeople were provided instruction, training, and guided practice in using SMT tools. To capture these conditions a 3-item measure of user training was adapted from [Goodhue and Thompson \(1995\)](#).

3.1.2.2. Individual user's behaviors and characteristics

Product Information communication was measured by adapting 3 items from the [Ahearne, Jelinek, and Jones \(2007\)](#) information communication measure, which captured the ability of a salesperson to effectively communicate information – specifically about the company products – to customers. In adapting this scale, we dropped one of the initial items proposed by Ahearne et al. (2007) because the question involves employee use of company brochures. This type of company-generated promotional material did not exist across all companies in our sample and was therefore not included in the study. Diligence was measured using 5 items adapted from the Ahearne and colleagues (2007) measure of salesperson diligence in response to service requests. This measure captures the extent of salesperson responsiveness and reliability when fielding service requests. Salesperson product knowledge was measured using 4 items adapted from [Behrman and Perreault \(1982\)](#), capturing the extent of an employee's knowledge concerning company production and product development as well as diverse product applications, specifications, and functions. Finally, employee adaptability was assessed using 7-items adapted from the [Spiro and Weitz \(1990\)](#) scale measuring adaptive selling behaviors.

3.1.3. Performance outcomes

Relative to the focus of employing SMT to enhance and retain customer relationships, our measure of customer relationship performance consists of 5 scale items adapted from [Rust et al. \(2002\)](#) and [Jayachandran et al. \(2005\)](#) that assess the extent to which salespeople successfully satisfy and retain loyal customers.

3.1.4. Measurement model

We use AMOS Structural Equation Modeling software to explore the relationships proposed in our model. [Table 1](#) provides descriptive information and intercorrelations for the latent constructs in study 1. To assess the validity and reliability of the multi-item scales used in this study, a confirmatory factor analysis was conducted ([Gerbing & Anderson, 1988](#)). Average variance extracted and composite reliabilities all exceed the thresholds recommended in past literature ([Bagozzi & Yi, 1988](#)). In support of discriminant validity, the average variance extracted for each construct exceeds the squared correlations between all pairs of constructs (see [Table 1](#)) ([Fornell & Larcker, 1981](#)).

Table 1. Means, standard deviations, correlations, and AVEs (Study 1).

Variable		Mean	Std dev	1	2	3	4	5	6	7
1.	Social media technology use	4.02	2.71	0.70						
2.	User training	4.29	1.84	0.62	0.84					
3.	Product information communication	5.10	1.45	0.40	0.31	0.68				
4.	Diligence	5.28	1.37	0.16	0.18	0.37	0.64			
5.	Product knowledge	5.27	1.38	0.22	0.17	0.40	0.39	0.66		
6.	Adaptability	5.34	1.17	0.27	0.26	0.50	0.30	0.38	0.63	
7.	Customer relationship performance	5.43	1.12	0.30	0.35	0.39	0.43	0.39	0.36	0.59

Note. N = 375. All correlations are significant at $p < 0.01$. Values on the diagonal represent average variance extracted (AVE).

The measurement model yielded acceptable fit ($\chi^2 = 813.413(356)$, $p < 0.01$; CFI = 0.948; RMSEA = 0.06).

However, in order to account for possible effects of common method bias or same source bias, we followed the procedure suggested by [Podsakoff, MacKenzie, Lee, and Podsakoff \(2003\)](#) and introduced an additional first-order source factor to the CFA. This CFA model demonstrated excellent fit ($\chi^2 = 700.187(329)$, $p < 0.01$; CFI = 0.958; RMSEA = 0.05). χ^2 difference between the two models was significant, $\Delta\chi^2 = 113.226(27)$, $p < 0.01$.

We thus employ the second CFA model (including the common method factor) as the foundation for ensuing model tests.

3.1.5. Hypothesized model

We first fit a linear effects model that tests the hypothesized model (shown in [Fig. 1](#)), minus the interaction effects. This model allows us to test the linear relationship between salesperson use of SMT and product information communication ([H1](#)), diligence ([H2](#)), product knowledge ([H3](#)), and adaptability ([H4](#)). Additionally, although not hypothesized, this model also includes linear effects of user training, so as to serve as a baseline model for testing of interaction effects. We next fit the hypothesized model, including the interaction term.

To test for interaction effects, SMT use and user training were both mean-centered and a multiplicative interaction term between the two variables was calculated. The reliability of the interaction term was estimated using the formula presented by [Bohrnstedt and Marwell \(1978\)](#) which takes into account the reliabilities of both of the individual constructs that form the product term as well as the correlation between the linear terms. The resulting reliability for the interaction between SMT use and user training ($\alpha = 0.81$) was used to fix the error term associated with the interaction term at $(1-\alpha)$ times the variance. We then fit a second model that included this product term as an antecedent to product information communication, diligence, product knowledge, and adaptability ([H5](#)). Because the linear effects model is nested within the hypothesized model it is necessary to analyze and compare the results of the direct effects model to the final model which includes the interaction term. If a significant $\Delta\chi^2$ exists between the two models then the interaction is significant. This procedure for testing interactions in structural equation models is supported in extant empirical research ([Mathieu, Tannenbaum, & Salas, 1992](#)) and recommended in method comparison research ([Cortina, Chen, & Dunlap, 2001](#)).

3.1.6. Hypotheses testing

The linear effects model yielded acceptable fit ($\chi^2 = 855.401(364)$, $p < 0.01$; CFI = 0.945; RMSEA = 0.06). To determine the linear effects of SMT use on product information communication, diligence, product knowledge, and adaptability we first examine the significance of paths in the linear model (not including the interaction term). The relationship between SMT use and product information communication was significant, supporting Hypothesis 1 ([H1](#); $\beta = 0.513$, $p < 0.01$). However, the hypothesized relationships between salesperson SMT use and diligence ([H2](#); $\beta = -0.056$, ns) and product knowledge ([H3](#); $\beta = 0.158$, ns) were not significant. Finally, the relationship between SMT use and salesperson adaptability was found to be significant, supporting Hypothesis 4 ([H4](#); $\beta = 0.278$, $p < 0.01$).

The hypothesized model exhibited an excellent fit ($\chi^2 = 834.720(360)$, $p < 0.01$; CFI = 0.947; RMSEA = 0.06) and demonstrated a significant improvement over the linear effects model ($\Delta\chi^2 (4) = 20.681$, $p < 0.01$). Hypothesis 5 posits that the facilitating condition of user training will positively impact the relationships between salesperson SMT use and product information communication, diligence, product knowledge, and adaptability. The data supported the interactive effect within the research model and demonstrated a significant effect on all four salesperson behaviors and characteristics, fully supporting our hypothesis. User training significantly interacts with SMT use as related to product information communication ($\beta = 0.309$, $p < 0.01$), diligence ($\beta = 0.337$, $p < 0.01$), product knowledge ($\beta = 0.414$, $p < 0.01$), and adaptability ($\beta = 0.277$, $p < 0.01$). All interaction effects were positive as hypothesized.

Finally, the linear relationship between product information communication and customer relationship performance was significant and in the hypothesized direction ([H6](#); $\beta = 0.130$, $p < 0.05$). Diligence was also significantly related to customer relationship performance and positive as hypothesized ([H7](#); $\beta = 0.206$, $p < 0.01$). The relationship between product knowledge and customer relationship performance ([H8](#); $\beta = 0.186$, $p < 0.01$),

as well as the relationship between adaptability and customer relationship performance ([H9](#); $\beta = 0.363, p < 0.01$) were both significant and in the hypothesized direction.

In sum, six of our eight linear hypothesized relationships were supported. Notably, the hypothesized interaction was fully supported with significant interaction between SMT use and user training found across all four salesperson behaviors and characteristics.

3.2. Study 2

In order to better validate our findings, we replicated study 1 with a sales-focused performance measure.

Additionally, to diminish same source bias inherent in survey research, we utilize an objective measure of sales performance (percentage of sales quota) in place of Customer Relationship Performance (see Study 1 and [Fig. 1](#)) in our replication.

Data for this study were collected from an energy solutions company operating in the United States. Surveys were sent to 800 business-to-business salespeople and potential respondents were given 4 weeks to complete the survey. The survey description assured respondents anonymity of their individual responses. Directions were provided to respondents advising them to consider each of the survey questions with respect to their use of social media tools to communicate to/with customers. Completed surveys were received from 192 salespeople (24% response rate). Due to incompleteness 11 of these surveys were removed from the final sample. This resulted in a final samples size of 181 respondents.

All of the multi-item scale measures used in this study were consistent with those used in study 1 with the exception of the performance outcome measure. To assess sales performance, we collected a measure of percentage of sales quota achieved by the salesperson. This measure controls for extraneous factors, such as territory size, because it is adjusted based on market potential.

3.2.1. Measurement model

We use AMOS Structural Equation Modeling software to test the relationships proposed in our model. [Table 2](#) provides descriptive information and intercorrelations for the latent constructs. A confirmatory factor analysis was conducted to assess validity and reliability for the multi-item scales used in this study ([Gerbing & Anderson, 1988](#)). Average variance extracted (AVE) for each scale exceeded the thresholds recommended by extant literature ([Bagozzi & Yi, 1988](#)) and these values are reported in [Table 2](#) as well. AVE for each construct exceeds the squared correlations between all pairs of constructs in support of discriminant validity ([Table 2](#)). The measurement model (CFA) yielded an acceptable fit ($\chi^2 = 323.105(235), p < 0.01$; CFI = 0.98; RMSEA = 0.046) ([Table 2](#)).

Table 2. Means, standard deviations, correlations, and AVEs (Study 2).

Variable		Mean	Std dev	1	2	3	4	5	6	7
1.	User training	4.67	1.75	0.83						
2.	Product information communication	5.31	1.40	0.48	0.79					
3.	Diligence	5.53	1.27	0.47	0.44	0.89				
4.	Product Knowledge	5.45	1.29	0.58	0.43	0.46	0.83			
5.	Adaptability	5.38	1.29	0.34	0.52	0.31	0.32	0.76		
6.	Sales performance	1.04	0.26	0.38	0.26	0.34	0.35	0.31	–	

Note. N = 181. All correlations are significant at $p < 0.01$. Values on the diagonal represent average variance extracted (AVE).

3.3. Hypothesized model

Results from the structural models tested in both studies are reported in [Table 3](#) below. Following extant literature ([Mathieu et al., 1992](#)), we first fit a linear effects model that tested the hypothesized model minus the

interaction effects. This first model allows for the testing of the linear relationships between salesperson use of SMT and product information communication ([H1](#)), diligence ([H2](#)), knowledge ([H3](#)), and adaptability ([H4](#)). This model also includes direct linear effects of user training, allowing it to serve as a baseline model for testing interaction effects. While not formally hypothesized, the direct effects of social media user training are included in [Table 3](#).

Table 3. Standardized parameter estimates and goodness-of-fit statistics.

Relationships		Study 1		Study 2	
	Linear effects model	Interaction effects	Linear effects model ^c	Interaction effects	
H1	SMT use → product information communication	0.51**	— ^a	0.36**	0.39**
H2	SMT use → Diligence	-0.06	—	0.07	0.10
H3	SMT use → product knowledge	0.16	—	0.06	0.11
H4	SMT use → adaptability	0.28**	—	0.20**	0.23**
H5	SMT use × user training → product information communication		0.31**		0.22**
	SMT use × user training → Diligence		0.34**		0.17**
	SMT use × user training → product knowledge		0.41**		0.14*
	SMT use × user training → adaptability		0.28**		0.14*
H6	Product information communication → Performance ^b	0.13*	0.13*	0.04	0.04
H7	Diligence → Performance	0.23**	0.21**	0.19**	0.19**
H8	Product knowledge → Performance	0.20**	0.19**	0.18**	0.18**
H9	Adaptability → Performance	0.36**	0.36**	0.25**	0.24**
Chi-square (df)		855.40 (364)	834.72 (360)	470.18 (285)	456.89 (281)
<i>p</i> value					
CFI		0.945	0.947	0.961	0.963
SRMR		0.044	0.039	0.060	0.059

Note. Sample 1: N = 375. Sample 2: N = 181. SMT = social media technology.

Training → Info. Communication = 0.38**.

Training → Diligence = 0.42**.

Training → Knowledge = 0.54**.

Training → Adaptability = 0.36**.

*Significant at *p* < 0.05

**Significant at *p* < 0.01.

aLinear effects are not interpreted in the presence of a higher order interaction.

bCustomer relationship performance (Study 1); Sales performance (Study 2).

cNon-hypothesized relationships in linear model.

Next, we fit the hypothesized model including the interaction term. To test for the hypothesized interaction effects, we mean-centered SMT use and user training and calculated a multiplicative interaction term. To determine the reliability of the interaction term we used a formula presented by [Bohrnstedt and Marwell \(1978\)](#) which accounts for the reliabilities of both of the individual constructs as well as the correlation between the linear terms. The resulting reliability ($\alpha = 0.83$) was used to fix the error term associated with the interaction

at $(1 - \alpha)$ times the variance. This allowed us to fit a second model that included this interaction term as an antecedent to product information communication, diligence, knowledge, and adaptability ([H5](#)). This second model is then compared to the direct effects model to assess whether a significant $\Delta\chi^2$ exists. If the $\Delta\chi^2$ is significant then the interaction is deemed to be significant and the results can be assessed.

3.4. Hypotheses testing

The linear effects model yielded an acceptable fit ($\chi^2 = 470.183(285)$, $p < 0.01$; CFI = 0.96; RMSEA = 0.06). To assess the linear hypotheses ([H1](#), [H2](#), [H3](#), [H4](#)) we assessed the significance of the paths from SMT use to product information communication, diligence, knowledge, and adaptability. For the linear relationships, we find similar hypothesis support as was found in study 1. Hypothesis 1, relationship between SMT use and product information communication is supported ($\beta = 0.361$, $p < 0.01$), while [H2](#) (diligence) and [H3](#) (knowledge) were not supported ($\beta = 0.072$, ns and $\beta = 0.059$, ns respectively). Finally, [H4](#) (adaptability) was significant ($\beta = 0.196$ $p < 0.05$). We next examine the hypothesized model including the interaction term to assess the remaining hypothesized relationships.

The hypothesized model demonstrated a strong fit ($\chi^2 = 456.890(281)$, $p < 0.01$; CFI = 0.96; RMSEA = 0.06) and a significant improvement over the linear effects model ($\Delta\chi^2 (4) = 13.293$, $p < 0.01$), allowing us to examine the hypothesized interaction effects ([H5](#)). The results demonstrated a significant interaction effect of user training on all four employee behaviors and characteristics (see results in [Table 3](#)), fully supporting H5. User training significantly moderated the effects of SMT use on product information communication ($\beta = 0.224$, $p < 0.01$), diligence ($\beta = 0.166$, $p < 0.01$), knowledge ($\beta = 0.142$, $p < 0.05$), and adaptability ($\beta = 0.141$, $p < 0.05$). In line with previous findings in study 1, all interaction effects were significant and positive as hypothesized.

Finally, for a more comprehensive understanding of the performance implications of social media technology use, we examined an alternative performance measure in Study 2 – sales performance. Therefore, in this study [H6](#), [H7](#), [H8](#), [H9](#) test the relationships between employee behaviors and characteristics and an objective measure of sales performance (percentage of quota). Interestingly, we find that product information communication is not significantly related to sales performance ($\beta = 0.035$, ns), meaning, contrary to Study 1, [H6](#) is not supported in Study 2. The relationship between diligence and sales performance is significant ($\beta = 0.192$, $p < 0.01$), supporting [H7](#). The relationship between knowledge and sales performance is also significant ($\beta = 0.176$, $p < 0.01$) supporting [H8](#). Finally the significant relationship between adaptability and sales performance ($\beta = 0.243$, $p < 0.01$) provides support for [H9](#).

4. Discussion

Today's business environment demands that sales organizations use technology to interact and provide services to their customers and business partners almost instantaneously, effectively leaving behind those organizations that cannot meet these increasing consumer expectations. Keeping these emerging sales practices in mind, we develop a model of salesperson SMT use and its effect on performance via behaviors and characteristics. Our results, based on two empirical studies (i.e., Study 1: across firms' data with customer relationship performance as the ultimate outcome variable; Study 2: single firm data with salesperson's objective performance as the ultimate outcome variable), significantly contribute to theory and practice alike. In the next sections we discuss our findings in detail and outline theoretical and managerial implications.

4.1. The impact of SMT use

Findings of this research emphasize the opportunities presented by the use of SMT in customer interactions. Indeed, SMT use was shown to enhance salesperson behaviors – specifically communication and adaptability behaviors in both studies. These findings are in line with the contemporary sales literature ([Agnihotri et al., 2016](#); [Itani, Agnihotri, & Dingus, 2017](#)) and significantly enhance our understandings of social media use by

salespeople and its effects. To our best knowledge, this is the first study that examines the influence of SMT use (intensity of use and frequency of use) on key salesperson characteristics and behaviors as underscored by the literature (c.f. [Ahearne et al., 2008](#)).

Notably, SMT alone did not enhance salesperson responsiveness to customers, nor did it bolster their knowledge of organizational developments, product offerings, or applications. With the information available through social media channels and the plethora of response platforms, these findings reiterate the idea that integration of technology into the workforce does not inherently add value. This technology must be the right fit for the task at hand, and the extent of organizational strategy and support necessary for optimal infusion must be considered. For example, it is possible that salespeople may be overwhelmed by the communication platforms and available information, leaving them unable to process and leverage information. This information may also point to a changing sales environment in which salespeople are less likely to store organizational knowledge, opting instead to rely on informational networks to retrieve information when needed. Moreover, customers are looking to social media tools as a way to make optimal purchase decisions and maintain relationships with organizations ([Stephen & Toubia, 2010](#)), therefore, when salespeople engage with customers over social media platforms the customers' expectations of salesperson product knowledge and diligence may increase given the use of technology. These could be why we do not see a direct impact of SMT use on diligence and knowledge.

4.2. Significance of salesperson training

Probably the most significant contribution that the current study offers is underscoring the critical role of salesperson training within the context of SMT use. We find that the use of SMT alone is not sufficient in optimizing all salesperson characteristics and behaviors necessary to cultivating customer relationship performance. Our findings from both studies demonstrate that organizations must also provide the facilitating conditions conducive to the proper understanding and implementation of SMT in managing customer relationships. Infusion of technologies into organizations requires properly trained salespeople to better enable the provision of satisfying customer experiences ([Bitner, Brown, & Meuter, 2000](#)). Thus, while the use of SMT undeniably enables some aspects of salesperson behaviors, the organizational provision of user training is equally, if not more important in influencing salesperson behaviors that are crucial to the customer relationship.

4.3. Performance outcomes

For a more comprehensive understanding of the performance implications of SMT use, we examined different performance measures in two distinct studies. In study 1 we utilized customer relationship performance whereas in study 2 an objective measure of sales performance (percentage of sales quota) was used. While the majority of our findings are consistent across both studies, (e.g., results linking diligence, product knowledge, and adaptability to both types of performance were significant), we do find some discrepancies due to the nature of the performance measures in question. For example, product information communication was found to be significantly related to customer relationship performance but its effect on objective sales performance was not significant.

4.4. Managerial implications

Deemed 'a pressing challenge for sales organizations,' determining best practices for social media use is of critical importance to managers ([Lassk, Ingram, Kraus, & Mascio, 2012](#)). With industrial buyers increasingly seeking value-added solutions from their sales representatives, ongoing service behaviors are key elements in developing and sustaining exchange relationships ([Rvals & Humphries, 2007](#)). Our results demonstrate the performance implications of integrating SMT into the buyer-seller interaction – underscoring the key role played by salespeople in the customer value creation process. Importantly, our framework highlights the enhanced capabilities of the sales force made possible through SMT use.

Considering the value of customer relationships, this research also provides key insights into the behaviors and characteristics of salespeople that are most influential in customer relationship management. With technology advancements, customers are becoming more informed in their product selection and decision process. Our results demonstrate that salesperson product information communication does not impact customer relationship management as strongly as diligence, product knowledge expertise, and adaptability. Likely, many customers are now capable of gathering much of the needed information before the interaction with the salesperson and rely more so on a salesperson's ability to adapt to their needs, offer expertise on product offerings, and provide diligent customer service. This has great implications for firms as they can (1) refocus hiring efforts to employ adaptable and customer oriented salespeople and (2) provide product knowledge training to increase salesperson expertise of firm offerings in an effort to improve customer relationship management and performance.

This study also explores a variable that is largely under the control of management: the provision of technology training for the sales force. We demonstrate why providing salespeople with training in SMT is beneficial in maintaining and satisfying customers. If firms hope to exploit the vast opportunities presented by SMT use by the sales force, the organization must provide salesperson training. When user training is incorporated into the firm's practices, SMT can be more effectively leveraged, allowing salespeople to communicate information to customers more effectively and provide personalized customer interactions. With user training, SMT also increases the diligence and knowledge behaviors of salespeople. These findings support the moderating role of user training by demonstrating that high levels of training provision result in positive relationships between levels of SMT use and salesperson product information communication, diligence, product knowledge, and adaptability.

In summary, firms must decide what resources they can designate to facilitate the use of new processes and technologies in their company and make informed decisions based on the specific goals they are trying to reach. This research provides an understanding of the impacts of SMT and organizational support in a sales force context that has not yet been empirically explored. In doing so, our findings provide managers new insight into a fast-paced, high-growth, technological tool with vast potential in the industry.

4.5. Limitations and directions for future research

Given the novelty of SMT use in the marketplace, multiple limitations exist that warrant future research in the area. While this research explores the impacts of social media use on customer relationship performance, it is possible that implementing the use of social media tools decreases a salesperson's time and effort. Social media is a dynamic tool that, due to its evolving nature, can be overwhelming for salespeople. Even with digital natives, these tools may incur a learning curve when introduced into the sales force. Future research should explore strategic initiatives that can aid in more seamless integration of social media into the customer relationship management processes. Frameworks that include stages of onboarding, assimilation, and ongoing training could strengthen our understanding of performance implications of social media infusion. Also, it would be of great importance to examine individual level moderators that may play a role in the SMT framework. For example, considering the personality traits of salespeople could provide interesting insights into the feasibility of SMT implementation across an entire sales force. Future research should also consider the changing demographics of the workplace. Research should consider the capabilities of the millennial generation as well as their work style preferences when establishing future frameworks of digital integration in the firm. Along the same lines, future researchers should include a sample clustered by target groups because SMT might have different implications for companies with a digital vs. non-digital native target customer group.

Appendix A. Measures

Scale/item

Social media technology use
1. Intensity of social media use.
2. Frequency of social media use.
User training
1. My company has extensively trained me in the use of SM tools.
2. My company has provided me complete instructions and practice in using SM tools.
3. I am getting the training I need to be able to use SM tools effectively.
Product Information communication
1. I try and make objective comparisons between products.
2. I frequently use visual aids to support my claims.
3. I acknowledge the strengths and weaknesses of my products.
Diligence
1. I make sure I can be reached when a customer needs me.
2. I return calls promptly whenever I am unavailable.
3. I provide information requested by my customers in a timely manner.
4. I make sure that I can always be reached within 24 h.
5. I provide services at the time I promise.
Product knowledge
1. I know the design and specifications of company products very well.
2. I know the applications and functions of company products very well.
3. I am able to detect causes of operating failure of company products.

4.	I keep abreast of my company's production and technological developments.
Adaptability	
1.	I vary my approach from situation to situation.
2.	I like to experiment with different approaches.
3.	I can easily use a wide variety of approaches.
4.	When I find that my approach is not working, I can easily change to another approach.
5.	It is easy for me to modify my planned presentation if the situation calls for it.
6.	I am very flexible in the approach I use.
7.	I feel confident that I can change my planned presentation when necessary.
Customer relationship performance	
Relative to your competitors	
1.	Our customers work with our firm for a long time.
2.	Once we get new customers, they tend to stay with our company.
3.	Our customers are very loyal to our firm.
4.	Our customers are satisfied with our company.
5.	Customer retention is very important to our firm.

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