APPLYING NETWORK THEORY TO THE

TECHNOLOGY TO PERFORMANCE PROFIT CHAIN:

A SOCIAL MEDIA APPLICATION

by

JAMES MITCHELL ANDZULIS

ADAM RAPP, COMMITTEE CHAIR

NIKOLAOS PANAGOPOULOS
DANIEL BACHRACH
THOMAS BAKER
RAJ AGNIHOTRI

A DISSERTATION

Submitted in partial fulfillment of the requirements
for the degree of Doctor of Philosophy
in the Department of Marketing
in the Graduate School of
The University of Alabama

TUSCALOOSA, ALABAMA

2014

ABSTRACT

It is beyond question that social media has altered the day-to-day lives of individuals in their social interactions. However, less is known about the quantifiable impact of social media on business, especially in the sales domain. As sales has progressed from a transactional, to relational, to co-creation of value endeavor, marked by substantial engagement between customer and salesperson, technology has been a regular facilitator of change, enabling information collection, use and transfer in ways once thought unimaginable. In a similar way, the use of social media technology has that same potential, as the gap between buyer and seller closes around an increasingly important salesperson or boundary spanner, with access to information and the customer like never before. However, little is known about the strategic outcomes and facilitating conditions of such social media technology usage. This research advances deeper understanding by exploring the role of salesperson social media technology usage as an antecedent to three increasingly important strategic outcomes in the sales domain. Using social exchange theory as its primary foundation, this dissertation explores the links between frequency and intensity of social media technology usage and 1) competitive intelligence, 2) communication reciprocity, and 3) value co-creation, finding positive support for each of the three hypothesized primary linear relationships in the conceptual framework. Through network theory, this work also investigates the moderating impact of important salesperson network characteristics, including size, density, heterogeneity, and quality in an effort to identify which organizations and salespeople, specifically, are most likely to benefit

from such technology investment and use. Findings support two of the moderating hypotheses, demonstrating that the size of the salesperson's network has a detrimental impact on both communication reciprocity, and value co-creation perhaps as the relationship with each and every individual customer begins to suffer at the expense of servicing the mass. Results also suggest fertile ground for future work potentially exploring the impact of three additional moderating relationships found on the cusp of partial support.

DEDICATION

Quite simply, this dissertation is dedicated to my Mom and Dad, who encouraged and supported me from the very beginning, and without whom I'd be lost.

LIST OF ABBREVIATIONS AND SYMBOLS

α	Cronbach's index of internal consistency
β	Beta: standardized regression weight
B	Unstandardized regression weight
df	Degrees of freedom: number of values free to vary
SD	Standard deviation
n	Number of subjects
p	Probability of mistakenly rejecting a true null hypothesis
H	Hypothesis
Sig.	Level of significance
NS	Not significant
SEM	Structural equation modeling
CFA	Confirmatory factor analysis
RMSEA	Root mean square error of approximation
CFI	Comparative fit index
SRMR	Standardized root mean square residual
AVE	Average variance extracted
CR	Composite reliability
X^2	Chi-squared

LIST OF ABBREVIATIONS AND SYMBOLS (continued)

Δ   Delta: the difference between two values of a measure

$<$ Less than

$=$ Equal to

%   Percentage

CRM   Customer relationship management

TPC   Technology to performance chain

SMTU   Social media technology usage

IT   Information technology

ACKNOWLEDGMENTS

I could, perhaps, write an entire volume expressing nothing but the sheer gratitude I have for the countless family members and friends who have helped me to achieve my dream, and who have supported me along the way to completing this dissertation and final degree, at long last completing my almost lifelong journey as a student. However, there are more than a handful of individuals who deserve a specific thank you for helping me to make this happen. Without them, and without their support, encouragement and even, at times, tough love, my life and my future would not be what it is today, and for that I am forever grateful and indebted to each of you in ways you will likely never know.

First and foremost, my parents have been the one constant in my life. From the very beginning, when it was just the three of us, they encouraged me to ask questions, and even more importantly, to find answers. They set the bar high and challenged me to work toward my dreams; they demanded that, in fact. They taught me the importance of sacrifice and hard work, challenging the status quo, and always asking the question, "why?" They did "without" so that my sister, Sarah, my brother, Marty, and I could each realize opportunities and success that were not within their own reach. By all accounts, including nine Associate, Bachelor, Master and now Doctorate degrees later, they have succeeded in each and every one of our accomplishments. Thank you, Mom and Dad, for demanding the most from us. We can never repay you. You've made us who we are today.

Next, I absolutely must thank Dr. Adam Rapp, chair of this dissertation, and friend. Adam has been nothing short of a force multiplier and a game-changer in my life. Adam's relentless passion for hard work and drive for success is without a doubt the reason that I have been able to meet the challenges of the doctoral program and find the success that I have while working with him. Though we are, and always will be great friends, I will always remember this time working for, and with, Adam as one of the most challenging of my life. Adam demands perfection, and his commitment to academics and teaching has been an inspiration to me. I will never be able to thank him enough, or to repay him for the difference he has made in my life both personally and professionally, but he is one of the people I can truly credit with guiding me toward success and a future career in academics, and I am forever indebted to him for that. Adam, I appreciate everything you've done for me. Thank you.

I would be remiss if I didn't also mention by name, the rest of my committee and league of superstar co-authors. Dr. Tom Baker, Dr. Dan Bachrach, Dr. Nick Panagopoulos, and Dr. Raj Agnihotri have been a solid foundation throughout this process and have taught me more than I ever thought possible in our work as co-authors on numerous papers and conference proceedings. Each of you has impacted my life and offered me encouragement as I worked towards this degree and completing my dissertation. I look forward to working with each of you for many years to come and thank you from the bottom of my heart for investing your time and support in me. I count each of you as true friends and for that I am extremely grateful.

Continuing with the academic theme, there are many teachers and professors who have impacted my life and supported me as I completed my journey to a career in academics. However, there are two, specifically, to whom I feel especially grateful. Dr. Alex Ellinger first planted the seed in my mind for pursuing a doctorate and a future in academics. Our work

together during my MBA program first taught me about research and opened my eyes to academics and the opportunity to impact business at a higher level. Without his encouragement, I would never have thought this was possible for someone from my background. You have changed my life. Thank you. Similarly, Dr. Sharon Beatty has been a tireless voice and foundation of the University of Alabama Marketing PhD program for more than a quarter century, and her commitment to students is unparalleled. Without her support and work in the trenches to secure funding and simply make things happen, a generation of doctoral students would have struggled to find success. Thank you for all you do and have done, and for being everyone's greatest proponent and advocate.

I would also like to take a moment to thank my friends and my cohort. Without the support of my "friends back home" over the last few years, I would never have survived the challenges of the program. Your love and laughs from miles away kept me engaged, motivated and excited to reach toward this dream. Similarly, my cohort, "the cohort of awesomeness," has been the backbone of my support system and the glue that kept everything together. Tyler, Katy and Jess, I am so honored to have met, and studied, and worked with each and every one of you, and I wish you all nothing but success in the years to come. You have helped me in ways that are unfortunately too numerous to list, but are certainly worthy of acknowledgment here. You are truly the best and most awesome cohort that has ever been created and I count you as more than just friends. To me, you are now family. I look forward to working with each of you for years to come, but more importantly than that, I am excited to have you in my life and can't wait to see how our lives develop over the next handful of decades.

Next, I want to take a moment to thank those who couldn't be here to realize this dream with me. My Uncle Gene and my Grandparents, especially Gram and Pops, would be so proud

to see what I've managed to accomplish since they've passed. Though you have left this Earth, your memory lives on in my heart and I remind myself frequently to try to work harder just because that's what you would expect from me.

Finally, I want to thank Stephanie, Caiden and Cole. The last few years have been difficult as I've worked through the doctoral program, but I've appreciated your support and look forward to spending our lives together as we embark on the next leg of this journey together. I am certain that the best is yet to come, and I love you.

CONTENTS

LIST OF TABLES

LIST OF FIGURES

PROLOGUE

"I'm not trying to spit in anybody's Facebook, but you can spend all the time, resources, and tweet equity you want on a social media campaign but if your sales team isn't on board, your efforts will be compromised and results will be social mediocre" – Frank Bocchino

CHAPTER 1

INTRODUCTION

Almost from the very beginning of the computer age, when British and American scientists working during World War II began to use Colossus and ENIAC computers for the purpose of aiding the allied war effort (Cringely 1996) it was readily apparent that technology was a force multiplier with the potential to change strategic imperatives. Within just a couple of decades, the wholesale adoption of burgeoning computer technology had already begun to alter the business paradigm, first, by means of mainframe computing and, later, through adoption of micro and personal computers which offered firms the ability to quickly solve business problems and further enhance operational efficiencies and interactivity. Notably, it wasn't until the Internet exploded into the public domain that the emergence of true firm—market interactivity, aided by information technology (IT), really began to alter marketing strategy in the C-Suite. Such "IT-enabled interactivity has the potential to affect all businesses and all types of products, with interactive technology fundamentally changing how all firms relate to their markets in terms of both their philosophy and their strategy" (Coviello, Milley and Marcolin 2001, p. 21). As the first decade of the 21st century came to a close, however, the evolution and appreciation of just how important such interactivity is to firm strategy became even more apparent as the next phase of this technological revolution began to take hold – social media.

Social media, which is defined at the organizational level as "the technological component of the communication, transaction and relationship building functions of a business which leverages the network of customers and prospects to promote value co-creation," is the next step in the evolution of IT-enabled interactivity and, as such "must be managed as an explicit strategic activity" (Andzulis, Panagopoulos and Rapp 2012, p. 308). Despite the fact that the "balance of power has shifted from the firm to its customers, and now relationships are being built or extended in an environment that embraces collaboration and engagement," many firms have yet to even identify which strategic function or business unit should actually maintain ownership of this increasingly important, arguably crucial, firm capability (Rapp and Panagopoulos 2012, p.301). Perhaps that's why, with the myriad negative consequences firms face in this new market environment marked by a much louder and collectively more powerful customer voice, with many more potential risks (Mondalek and Nisen 2013), some now argue that "[M]anaging the negative social-media sentiment is crucial for many industries" (Corstjens and Umblus 2012, p. 447). Still, others suggest this merely means that "companies should implement social media managers or even social media mission control centers to monitor social media activities and intervene with corrective action when necessary" (Uitz 2012, p.12).

Regardless of one's position in such a debate, it is increasingly apparent that social media technology can and should play a role in the management of customer relationships. Thus salespeople, who work at the boundary between the firm and customers, are uniquely positioned to leverage social media at the individual level toward both firm and customer advantage as social media technology closes the gap between buyer and seller. However, identifying costs and benefits associated with social media initiatives in the sales context is especially difficult as each salesperson's adoption of such technology may have differential impact on their disparate

2

sets of customers and associated relationships. Thus, while measuring results is always critical to firm performance, it becomes both evident and imperative then, that the successful firm's "ability to measure the impact of social media on sales, therefore, will become vital for marshaling scarce and expensive social-media management resources to the right products and conversation topics," (Corstjens and Umblus 2012, p.447) thus ensuring that investment in social media technology yields the greatest dividend to the long term health of the firm. Understanding the specific role of the salesperson's use of social media technology is thus critical in this regard.

Drawing upon and advancing the work of Goodhue and Thompson's (1995) Technology-to-Performance Chain (TPC) model, this research illuminates and addresses that concern. Goodhue and Thompson argue that technology must both fit the function it supports and also be used in order to be effective. In a sales context, where some have argued that TPC primarily relates to the capacity of technology to help build relationships (Ahearne et al. 2008), this suggests that salespeople must adopt and use social media technology to enhance the strategically important sales tasks which heighten relationships en route to performance. Such sales tasks, or what this work terms strategic sales outcomes, are important because social media technology can be used to facilitate each as part of the relationship building/strengthening process between salespeople and their customers, thus meeting both the use and fit criteria established by Goodhue and Thompson (1995).

Using social exchange theory (Homans 1961; Thibaut and Kelley 1959), which essentially sets forth the impetus for action between parties in a relationship, this dissertation specifically directs its focus toward three key/strategic elements of salesperson – customer relationships including competitive intelligence, communication reciprocity and value co-creation, without which sales relationships would arguably not exist. Each of the

3

aforementioned strategic outcomes can be managed by the salesperson using social media technology toward building the requisite stronger relationships necessary for long-term enhanced performance expectations. Importantly, customers and salespeople each share a role in maximizing competitive intelligence, communication reciprocity and value co-creation and information is shared and/or acted upon between parties toward mutual benefit.

Understanding these strategic outcomes, and more specifically how the frequency and intensity of social media technology usage by the individual salesperson can alter the competitive landscape at the boundary between the customer and the firm, will help firms to better plan both strategy and investment aimed at creating a sustainable competitive advantage in this domain, as well as training and exploiting salespeople to maximum benefit with customers. Accordingly, with the evidence increasingly pointing toward a growing role for social media in this latest iteration of a new technology-driven interactive business paradigm, the primary goal of this dissertation is to advance deeper understanding of salesperson social media technology usage in the sales context, by exploring its role as an antecedent to these three increasingly important strategic outcomes in the sales domain. Exploring the relationships between salesperson social media technology usage and 1) competitive intelligence, 2) communication reciprocity, and 3) value co-creation will help to establish just how social media technology is having a measurable impact in the sales domain, at the individual salesperson level. Understanding the role of the individual salesperson in this important context further advances our understanding of the dynamics of the sales domain.

Conceptual Model Overview

Employing social exchange theory (Homans 1961; Thibaut and Kelley 1959), and network theory (Granovetter 1973; Granovetter 1983; Thorelli 1986), this dissertation investigates the hypothesized positive impact of salesperson social media technology usage on three key strategic sales outcomes. Social exchange theory, working in conjunction with the aforementioned TPC conceptualization set forth by Goodhue and Thompson (1995), provides foundation for the hypothesized linear relationships between salesperson social media technology usage and key strategic sales outcomes which rely upon interaction and relationship building between salespeople and their customers. Network theory, which characterizes the relationships or ties between individuals in an interconnected, or what might be viewed as a hub and spoke system, is then used as support for the hypothesized moderating relationships between salesperson social media technology usage and individual salesperson network characteristics which are posited to weaken or strengthen the aforementioned primary linear relationships.

As depicted in Figure 1.1, the conceptual model envisions salesperson social media technology usage leading to three strategic sales outcomes including competitive intelligence, communication reciprocity and value co-creation, relationships which are posited to be moderated by the individual salesperson's network. Recognizing that relationships are the key building block in the sales profession, it is also important to understand how the size, density, heterogeneity and quality of the salesperson's network of customers might serve to impact the aforementioned linear relationships. This work thus argues that the individual salesperson's network moderates the positive relationships between social media technology usage and such key strategic sales outcomes. Each of the preceding constructs will be introduced and defined in greater detail in the next chapter.

5

Figure 1.1

Conceptual Model
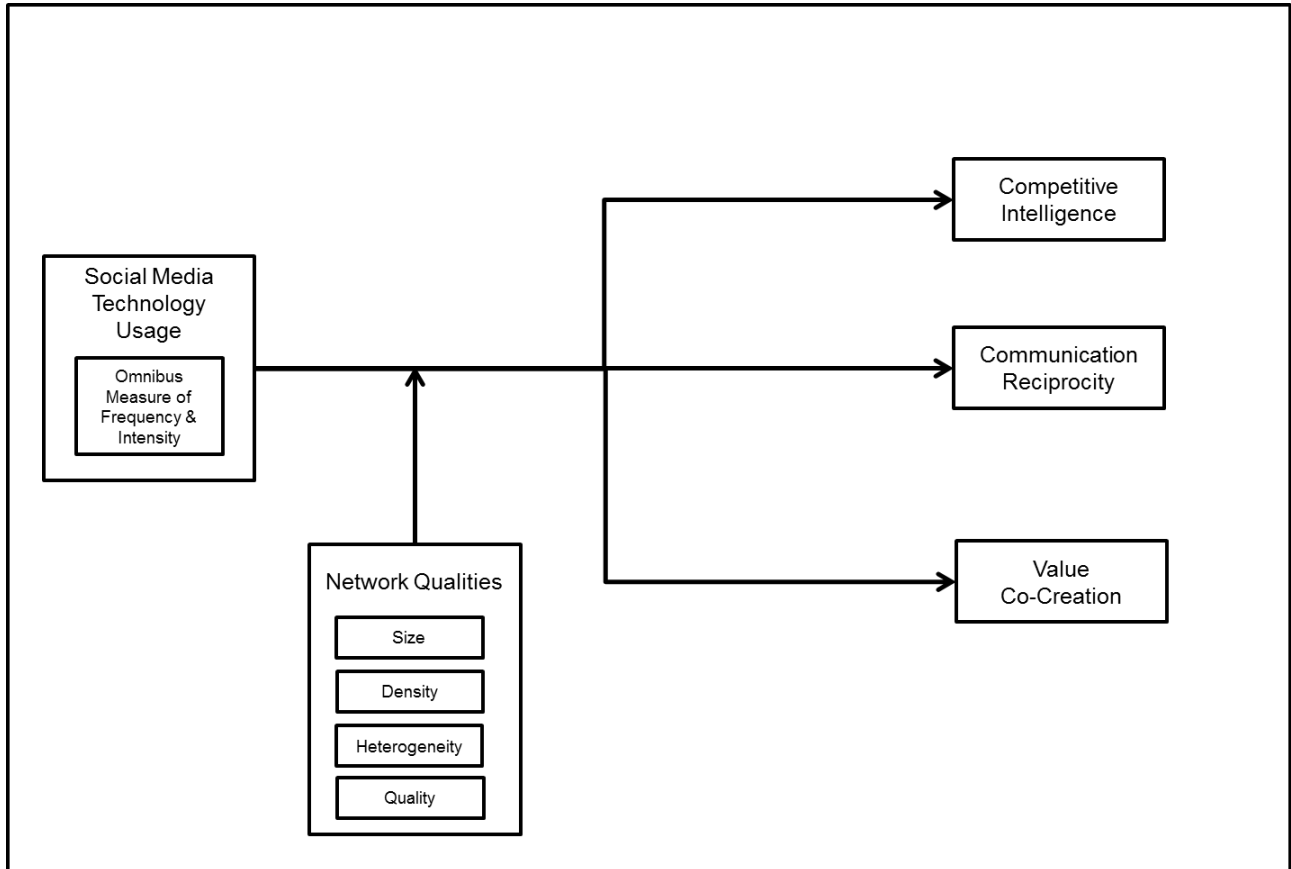
Gap/Contribution

From a contribution standpoint, this work adds to the academic literature as follows. First, extending the strategy conversation into the burgeoning realm of social media strengthens recent work which looked broadly at marketing or operations capabilities (Nath, Nachiappan and Ramanathan 2010), or more specifically at IT (Bharadwaj 2000) or CRM capabilities (Coltman 2007; Chang, Park and Chaiy 2010; Trainor, Andzulis, Rapp and Agnihotri 2013). With the increasing role that social media capability plays in the firm, and the inevitable investment of resources that necessarily follows, understanding how individual salesperson social media technology usage drives strategic relationship-dependent outcomes is of the utmost strategic importance to market-facing sales firms.

Next, answering the aforementioned calls to identify the best mechanism by which to manage or direct social media resources to their most effective application in the firm opens the discussion to a specific contextual exploration of the interactive effects of a salesperson's network characteristics/qualities on social media technology usage – strategic sales outcome relationships. This is among the first such work to look at the moderating effects of network qualities in this domain. Indeed, in the increasingly global and perpetually dynamic present competitive economic environment (Chandrasekaran and Tellis 2008) in which most firms now operate, growing networks of buyers and sellers are becoming the norm as technology facilitates myriad connections. This study therefore investigates how the role of the boundary spanning salesperson can create and/or maximize synergy with firm social media strategy. In gaining a better understanding of the linear and moderating effects proposed in this dissertation, firms will better understand how to best direct limited social media technology resources to their sales teams, as well as what impact can be expected when such resources are managed most

effectively. Using social exchange theory (Homans 1961; Thibaut and Kelley 1959) and network theory (Granovetter 1973; Thorelli 1986; Granovetter 1983; Håkansson 1989) as the basis, this research posits that individual salesperson network characteristics will moderate the positive relationships between social media technology utilization and key strategic sales outcomes. This work further argues that managing the salesperson's individual network characteristics offers an important component to maximizing the effectiveness of efforts aimed at adopting and implementing social media technology in the sales role.

Conclusion

Technology has dramatically changed the course of both human history and the business environment over the last century. The advent of the Internet continued the change at the close of the 20th century, while social media has ushered in a new era with the start of the 21st. Salespeople, who operate in boundary spanning roles between firms and customers, have tremendous opportunity to embrace this new technology for the benefit of themselves, their customers, and their firms. While research has investigated the use of technology in the sales domain, little work has explored how salesperson social media technology usage can impact the performance of the firm. In advancing work on the TPC model, and employing social exchange and network theory, this dissertation seeks to explore and fill a gap in the current literature stream, by addressing specifically how salesperson social media technology usage relates to key strategic sales outcomes. In addition, this research also explores the moderating impact of the individual salesperson's network characteristics on the aforementioned relationships in an effort to identify the management opportunities to craft and exploit salesperson networks for the mutual benefit of customers, salespeople and their firms.

Manuscript Organization

This dissertation is organized by chapter into the following sections. Chapter 1 introduces the research domain and suggests that social media's impact on the salesperson has yet to be fully investigated or understood. This chapter presents the hypothesized conceptual model, as well as a discussion of the research gap and associated contribution this research fills. Chapter 2 includes a literature review geared toward understanding the extant work that has already been undertaken in this field, while Chapter 3 sets forth the theoretical foundation from which our hypothesized model draws its support. Chapter 4 then develops and delineates study hypotheses derived from the conceptual model and associated theoretical lenses. Chapter 5 discusses the methods and data employed to complete the requisite data analyses, while Chapter 6 shares the specific results and tests of hypotheses. Finally, Chapter 7 includes a rich discussion of results, managerial and theoretical implications, as well as future research potential and limitations of the current study.

CHAPTER 2

LITERATURE REVIEW

Social Media

Calls to Research

With the sparse exception of a few recent special issues on social media, and some sporadic work focused more specifically in the area of advertising, most academic research in the sales field has largely trailed popular press news articles and even practitioner white papers and the like in this important and growing domain. In fact, Rapp and Panagopoulos (2012, p.301) recently lamented this "dearth of academic research into social media," but reiterated its importance with a specific call to advance social media focused work in the area of sales research as businesses adjust to this "new paradigm." Avlonitis and Panagopoulos (2010, p. 1047) made a similar call for research years earlier in noting that "the selling process is undergoing a social media transformation that researchers need to explore," but marketing academic researchers have been largely slow to respond, only recently beginning to extend work in other areas to encompass this growing field in response to such calls. Thus, while technology and social media have continued to evolve, and businesses continue to adapt to this important new phenomenon, calls for research have largely lagged implementation. With that being said, however, this dissertation does find strong support not only in such domain specific calls to research, but also in numerous adjacent research streams which therefore accord this research more than adequate, if not comfortable, bases in much of the following foundational work.

Extant Social Media Research

Returning for a moment to take a closer look at some of the extant academic work in the area of social media, it becomes apparent, as mentioned earlier, that much of the early research falls into the area of advertising or sales. Given that these two areas are essentially boundary spanning fields with arguably the greatest amount of customer contact, it seems logical that a phenomenon which began at the individual consumer level would first filter back into the organization through either of these channels. Accordingly, these two areas have, along with adjacent work into brand communities, at least initially, accounted for the bulk of pages dedicated to social media in our field's most respected journals.

Beginning with the area of advertising, work by Powers, Advincula, Austin, Graiko and Snyder (2012) has shown that social media is particularly useful for empowering customers with important information which aids them not only in the buying process, but in their efforts to learn about products and brands from one another. Corstjens and Umblus (2012), however, found that the potential negative impact of unmanaged social media communication by customers can be detrimental to the health of the brand if not kept in check by controlled firm efforts. They also found that the "effect of social media on brand sales depends on the type of product category and the competitive landscape of the industry" (Corstjens and Umblus 2012, p. 447). Judson, Devasagayam and Buff (2012) took a slightly different tack in looking instead at the consumer's actual perceived integration into brand communities of specific social media platforms, finding a positive relationship with satisfaction. Finally, Naylor, Lamberton and West (2012, p.105) looked specifically at the impact of consumer exposure to "mere virtual presence" of unknown others on their own purchase intention decisions and evaluations of the brand.

In work which bridges the gap between advertising and sales focused social media research, Uitz (2012) explores various approaches to measuring social media in an effort to remove some of the difficulty associated with better defining performance metrics in a field that has been often marked by subjective evaluations of success in its nascent history. In another more substantive crossover piece, Rapp, Beitelspacher, Grewal and Hughes (2013) found a positive relationship between social media use and performance of the retailer and the brand, as well as social media use and customer loyalty.

Finally, sales focused social media research has dominated research efforts to this point. While Andzulis and colleagues (2012) posited the implications of social media on the sales process, others proposed conceptual frameworks relating social media use to value creation (Agnihotri, Kothandaraman, Kashyap, and Singh 2012) or social media technology to firm performance (Trainor 2012). Other qualitative work (Marshall, Moncrief, Rudd and Lee 2012) uncovered six relevant themes related to social media technology and sales. Interestingly, to date, just a handful of empirical pieces have found publication in this domain. While Levin, Hansen and Laverie (2012) explore the motivation for sales employees to adopt social media technology, others looked more specifically at how the use of social media by B2B sales employees positively relates to several measures of salesperson and firm performance (Rodriguez, Peterson and Krishnan 2012; Groza, Peterson, Sullivan and Krishnan 2012; Schultz, Schwepker, Jr. and Good 2012a; Schultz, Schwepker and Good 2012b).

Social Media Technology Usage

Having discussed the extant research related to social media, it is perhaps prudent at this point to return the spotlight to this study's focus and antecedent: salesperson social media technology usage. As the discussion of the TPC model suggested in characterizing the importance of fit and actual use of technology, utilization implies, inherently, a step beyond mere capability. But, what is social media technology? Within the sales context specifically, and at the individual level, social media technology refers to "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 et al. 2012, p. 334). It is important to note that the earlier definition by Andzulis and colleagues (2012) introduced the notion of social media at the firm or organizational level, while Agnihotri at al. (2012) operationalizes social media at the individual level, which in this dissertation thus informs the specific salesperson use of such technology in her/his individual role. Thus, social media technology enables the salesperson to engage with customers on yet another level or, perhaps more specifically, through yet another channel.

In the formulation of social media technology usage employed in this dissertation, it's prudent to note here that there are two conceptualizations employed in one greater omnibus construct, following the approach of Ahearne et al. (2008). The definition by Agnihotri et al. (2008) hints at the first characterization of social media technology usage – intensity. Intensity refers to the sheer number of social media platforms that a salesperson may employ in her/his role. This "count" is important because it speaks to the overall presence of social media in the salesperson's role. Presumably maintenance of greater numbers of social media platforms would suggest that the salesperson might favor greater usage of social media in the performance of

her/his role. However, it doesn't capture the whole story. Frequency, irrespective of the number of platforms, captures how often the salesperson uses social media. Because the two conceptualizations are highly correlated with one another, employing an omnibus measure of social media technology usage which incorporates both frequency and intensity of social media usage by the salesperson is more likely to give the most accurate picture of its importance to the salesperson's role. Excluding one in favor of the other, is less likely to yield the true relationship between salesperson social media usage and strategic sales outcomes, especially given its potential to engage the salesperson's network.

Social media can be especially helpful for salespeople attempting to build customer networks inside and outside of their organizations by building valuable knowledge bases of diverse information sources. Social media technology, then, may provide salespeople with the opportunities, motivation, and capabilities necessary to interact with and engage customers, and adapt to their needs and requirements in order to facilitate superior service. Social media technology can therefore provide salespeople with a platform for communication, information exchange, and relationship development, when offered requisite *organizational support and facilitation* towards social media use and integration (Gupta, Armstrong, and Clayton 2011; Trainor 2012).

Strategic Sales Outcomes

As mentioned earlier, this research, in its attempt to advance the TPC model, as well as social exchange and network theory, looks at the relationship between salesperson social media technology usage and strategic sales outcomes. Competitive intelligence, communication reciprocity and value co-creation are relationship-dependent strategic outcomes that capture key elements of the interactions between a salesperson and her/his customers. Additionally, each outcome can be managed and/or exploited by the salesperson toward greater benefit for the customer, salesperson and/or firm. In each case, information is shared between the two parties toward building better relationships essential to long term performance. Notably, this work finds its genesis in a host of extant research which looked more specifically at performance as the outcome. However, given the strong relationship between this study's outcome variables and such salesperson performance, as well as the underlying aforementioned application to the TPC model, it is prudent here to discuss some of the foundational literature which underlies this dissertation, and how it relates to establishing the basis for the salesperson social media technology usage – strategic sales outcome relationships investigated herein.

Capability – Performance Link

Extant work into the relationship between firm level capabilities and organizational performance has laid the groundwork for this proposed research into the utilization of social media technology by individual salespeople. Bharadwaj (2000, p.186), found that firms with a greater IT capability were shown to demonstrate greater performance than competitors without such capability, also suggesting that "despite high investments in IT, not all firms are successful in creating an effective IT capability." His work perfectly positions this related, but admittedly more focused, salesperson level research which seeks to understand how not just the firm

15

capability or investment in technology, but the individual social media technology usage itself, as discussed in the TPC model, relates to strategically important sales outcomes. While firm level capabilities inform this research to some extent, the fit and use of technology associated with Goodhue and Thompson's (1995) TPC approach extends the work to the individual level of the boundary spanning salesperson, yielding greater opportunity for managerial action and training.

Similarly, firm level research into the link between customer relationship management (CRM) technology and performance has also uncovered a positive performance relationship in the banking industry (Coltman 2007), while Trainor and colleagues (2013) also found a positive association between CRM and customer relationship performance. Other recent firm level work in this area found a mediating role for marketing capability in the relationship between resources and performance (Chang, Park and Chaiy 2010; Nath, Nachiappan and Ramanathan 2010). Thus, the relationship between firm level technology capabilities and performance has been demonstrated time and time again across sales literature. This leaves room for exploration at the individual level, where the TPC model posits the need for both task fit and individual utilization in the relationship between technology and performance. Most importantly, however, this dissertation's overarching posited relationships between social media technology usage, which is arguably a step beyond mere capability, and the aforementioned three strategic sales outcomes, appear to be supported en masse by extant strategy literature which strongly establishes positive relationships between firm level capability and resultant firm or salesperson performance.

Technology to Performance

A rich literature on sales technology and performance (Ahearne, Jelinek, and Rapp 2005; Hunter and Perreault 2007; Sundaram, Schwarz, Jones, and Chin 2007), also offers solid theoretical basis for understanding the implications of social media and the patterns associated with social media technology usage. Notably, a great deal of sales technology research (e.g., Ahearne, Jones, Rapp and Mathieu 2008; Rapp, Agnihotri, and Forbes 2008) builds upon the conceptual foundation provided by Goodhue and Thompson's (1995) TPC model. As discussed earlier, the central proposition of the TPC model argues that to profit most from a technology initiative, "the technology must be utilized, and the technology must be a good fit with the tasks it supports" (Goodhue and Thompson 1995, p. 213).

In accordance with the foundation of the TPC approach, Ahearne et al. (2008) argue that the primary task for salespeople is to develop long-term relationships with customers and that the sales technology-performance link will be applicable only when it is mediated by relationship oriented behaviors and characteristics. Additionally, advances in sales technology research often apply the TPC model to salesperson behavior and performance models. For example, Ahearne et al. (2008) studied the influence of IT on sales performance via a mediating mechanism involving customer service, attention to personal details, adaptability, and knowledge. Additionally, Rapp et al. (2008) applied the TPC model to their study of the effects of CRM technology on adaptive selling and effort. While this dissertation doesn't directly consider salesperson behaviors, it does employ social exchange and network theory in conjunction with a TPC foundational approach to understanding the linear and moderating effects of salesperson social media technology usage and network characteristics/qualities, in driving salesperson and customer

17

relationship behavior. Thus, this research also advances understanding in this important area, and leads us next to a discussion of the specific strategic sales outcomes addressed in this work.

Competitive Intelligence Behaviors

Given the almost hypercompetitive marketplace in which today's firms operate, it is undeniable that competitive advantage is often driven by the firm's ability to collect and use information it can gather, decipher and act upon toward best meeting the demands of the market. Indeed, each firm's carefully designed value proposition is an attempt to offer the best solution to myriad customer needs, wants and whims. Best positioned to collect such information, increasingly, are salespeople who operate at the boundary of the firm and the customer. Such information is often referred to as competitive intelligence, and its collection is paramount to the firm's success.

While the notion of competitive intelligence and its value to the firm is not new to commerce, appreciation in the sales domain is gaining renewed strength as researchers attempt to uncover valuable relationships between the information itself, the technology used to collect and analyze it, and the salesperson entrusted to act as the keystone to identifying and parsing what is valuable and what is just background noise. In fact, Rapp, Agnihotri and Baker (2011) defined salesperson competitive intelligence as "individual-level knowledge about competitors and the competitive environment" (2011, p. 142). In the context of this dissertation, competitive intelligence is similarly defined as information or market research efforts related to capturing customer product preferences, and/or fundamental shifts in the industry which reveal insight into the competition.

As mentioned previously, research into competitive intelligence collection and use by the firm is not new to the academic or business press and includes some of the seminal work into

18

market orientation and market research. However, recent research in the area of competitive intelligence in the sales domain seeks to link this valuable advantage directly to the salesperson. Such work includes, most recently, work by Ahearne, Lam, Hayati and Kraus (2013) which sought to link the quality of competitive intelligence to performance through a study of the individual salesperson and sales manager's networks. Other work, by Mariadoss, Milewicz, Lee and Sahaym (2014) is perhaps even better related to this research in its investigation into how the salesperson's use of sales force automation technology impacts competitive intelligence behaviors and performance, as outcomes of salesperson knowledge.

However, and most notably, the work by Rapp et al. (2011), which set forth a conceptual framework for salesperson competitive intelligence, again noted that most competitive intelligence "literature has focused on organizations as opposed to individuals," (p. 150), and even went so far as to call for research into the techniques used to gather salesperson competitive intelligence. Without question, social media technology, which facilitates salesperson engagement with the customer, indeed fills that role as a technique by which to gather CI. This research, which uses social media technology usage as the sole and primary antecedent, opens the door to exploring not only the posited positive relationship with competitive intelligence, but also most interestingly the moderating impact of the salesperson's network qualities on that relationship. Given that sales is most certainly about building relationships, and social media has facilitated the growth of numerous social and business networks, understanding the role that network plays in shaping this key strategic outcome is paramount to firm success. While all boundary spanners build and exploit networks, identifying the network qualities which are most beneficial to competitive intelligence will allow firms to better focus resources and training toward improving outcomes.

Communication Reciprocity

Understanding the importance of communication reciprocity as a strategic sales outcome again speaks to the underlying nature of sales relationships. In order to do so, however, it is first prudent to discuss the concept of reciprocity. While the notion of reciprocity, or essentially the social obligation to return favor in kind, certainly predates the early work of Gouldner (1960), he is nonetheless largely credited as the first to examine and clarify the moral norm of reciprocity for the social sciences. However, Gouldner goes to great lengths to discredit any attempt to define the term as he lays out his case, for example, against an earlier definition characterizing reciprocity as simply "a mutually gratifying pattern of exchanging goods and services" (p.170). Perhaps, this explains why others have revisited Gouldner's work to reconsider this important moral norm (e.g. Uehara 1995). Uehara (1995) for example, found that most people prefer to under-benefit rather than over-benefit from a situation of social exchange. Such a finding again speaks to the social compulsion that parties in a relationship very often feel in relation to the others with whom they interact. Accordingly, from a business standpoint, reciprocity has also received considerable attention in social science academic research.

While many might consider reciprocity to be the forte of negotiations research, in fact it is arguably even more ideally suited to the sales domain wherein relationships dictate the communication norms and expectations of social exchange. "Communication is the human activity that links people together and creates relationships. It is at the heart of meaning-making activities not only in marketing, but also in a wide range of political, social, economic and psychological areas" (Duncan and Moriarty, p. 2). Indeed sales, as a practice, relies upon the parties in a relationship maintaining communication toward mutual benefit. Communication reciprocity is therefore a relationship imperative which facilitates sales relationships, and is

20

defined in this context as the customer's proclivity to share information with, and/or assist the salesperson. Pervan, Bove and Johnson (2009) argue that reciprocity is the key to relationship stability, especially in commercial relationships, and further suggest that accounting for such social exchange toward equilibrium can be difficult. They also suggest, in discussing the "quid pro quo" characterization of reciprocal relationship exchange, that the "response or lack of response in these situations can be critical to relational stability" (Pervan, Bove and Johnson 2009, p. 61). Therefore, in an increasingly competitive market dominated by real-time information exchange, communications expectations for the technology-enabled salesperson are also increasing, both to and from customers.

Given the nature of social media technology, and its unrivaled ability to facilitate almost constant interaction with individual or groups of customers, understanding how it can be used to best encourage communication reciprocity on the part of customers is paramount to individual salesperson and firm success. Identifying the specific impact of social media technology usage by the salesperson on individual customer communication reciprocity challenges in the field will enable the salesperson to rebalance and refocus efforts toward maintaining the ebb and flow of customer-firm relationships. From a management standpoint, understanding the expectation for customer communication reciprocity, and most importantly how it is moderated by a salesperson's network, will enable managers to direct resources to those salespeople most well positioned to translate enhanced reciprocity into stronger business relationships and hence more sales. Though resource allocation is important here, it should be noted that simply understanding how social media usage drives this important strategic outcome also warrants investigation in this regard. It is entirely possible that the frequency and intensity of social media technology

usage with some customer types may enhance the relationship, while detracting from communication reciprocity with others. This research illuminates the associated challenge.

Value Co-Creation

In this increasingly service focused economy, where many have argued that a new service dominant logic (Vargo and Lusch 2004) has indeed taken hold, the concept of co-creation of value with a firm's customers is always paramount. While Prahalad and Ramaswamy (2000) are very often credited with its initial suggestion, the concept of satisfying customers and maximizing the value proposition has arguably been at the forefront of business for the better part of the last century as firms sought to differentiate their offerings in an ever-increasing competitive marketplace. However, as technology and the customer have changed, the notion of meeting the micro needs of each customer, as opposed to just the macro needs of an entire customer segment, has forever changed the context of the value proposition. Today, co-creation of value is the expectation from customers, not the exception as products and services are increasingly tailored to their individual needs. Toward that goal, salespeople play a critical role (Alexander, Ivan, and Daniela 2012) in involving customers in the co-creation of value. Indeed, in this dissertation, co-creation of value is defined as the involvement of customers in marketing and sales, customer service, solutions and/or product development efforts, or in managing customers as though they were partial employees.

As discussed previously, the practice of sales is driven by relationships (Ahearne et al. 2008). The value of salesperson – customer relationships is determined, in large part, by the service or product offerings the firm creates and entrusts the salesperson to sell. However, as a boundary spanner between the firm and the customer, the salesperson assumes a dual advocacy role to voice the expectations, concerns and needs of both parties to the other. The importance of

this interactive relationship cannot be understated, especially in terms of communicating and facilitating the value proposition at hand. However, most research has not explored specifically how the salesperson creates value in this process. As a result, "sales' role in the creation of value in business relationships remains unclear" (Haas, Snehota and Corsaro 2012, p. 94). Accordingly, some have made calls for research in this area, including Blocker et al. (2012) who specifically highlight that most research that has taken place has been at the firm, rather than the frontline sales person level, and specifically suggest that "[R]esearchers also should explore how salespeople and buyers collectively engage in value cocreation processes" (p.20). One of the goals of this dissertation, therefore, is to do just that; to add clarity to the salesperson – customer co-creation of value process.

Because social media technology affords the salesperson the ability to interact with customers in ways once unimaginable, the gap between the firm and the customer is effectively narrowed. Indeed, Blocker and colleagues (2012) also note that "customer value is inherently interactional" (p.19), which suggests that the engagement aspect of social media is ideally suited to supporting customer co-creation of value efforts. Social media technology facilitates deeper engagement with customers and allows the salesperson to hone in on those specific micro customer demands which enable the firm to better craft value-maximizing offerings, toward their mutual benefit. Use of such technology also enhances the real-time response aspect of the relationship, which thus enables questions, issues and challenges to be addressed almost around the clock, alleviating many of the concerns that often plague the customer's buying decision, for example. In this way, the customer's participation in the co-creation of value is also facilitated through a salesperson's use of social media technology.

Understanding how customers co-create value is, and has been, of much debate since the concept was first introduced. In fact, Payne, Storbacka and Frow (2008) sought to develop a conceptual framework to better understand the process. In their research, they propose that the co-creation of value proposition is driven by "three main processes (customer, supplier, encounter)" (Payne, Storbacka and Frow 2008, p. 86). This dissertation sheds further light on the encounter process wherein social media technology usage, moderated by the salesperson's network, has the potential to build richer relationships and interactions between the salesperson and customers through its engagement facilitating properties which allow the customer to be involved directly in firm efforts to meet their demands with innovative product, service, or other custom solutions. Interestingly, it should be noted that co-creation of value need not take place only prior to the sale. Given the earlier discussion of service dominant logic, which argues that true customer value rests not in the good itself, but in the entirety of the value proposition including post transaction service, co-creation of value can also take place through the involvement of customers in crafting customized service solutions which enhance customized service efforts or advance new product development or solutions design. In this way, use of social media technology by individual salespeople to promote such value co-creation is aimed at guiding not just service delivery, but also future competitive positioning of the firm. To the extent that the customer and salesperson can work together to develop customized solutions, it makes it more difficult for competitors to break into the relationship and offer competing goods and/or services which may not be customer specific. Capturing the opportunity to work with a customer as a partner solidifies the strength of salesperson – customer relationships, and heightens the opportunity for long term performance.

Network Characteristics

Understanding the network characteristics of a given salesperson's customer base is a crucial first step in identifying how such network specific characteristics or qualities might influence the relationships between salesperson social media technology usage and the aforementioned strategic sales outcomes. Toward that goal, this study explores size, density, heterogeneity and quality of the salesperson's network in an effort to uncover actionable managerial implications, and to further inform as to which characteristics or qualities might meaningfully change the competitive landscape.

Size

Very simply, size is defined as the extent or magnitude of the salesperson's customer base, where the greater the actual number of customers, the greater is the number of nodes or individual actors in the network. Thus, the greater the reach of the salesperson into the market, the greater should be that salesperson's exposure to vast numbers of interconnected current customers, former customers, competitors, and salespeople, among others. To the extent that the salesperson, who might be envisioned as a hub, knows and maintains a greater number of customers, the greater then is the number of ties or spokes that might be expected, or bridges between ties as detailed by Granovetter (1983) and Krackhardt (1992). Such ties, when linking increasing numbers of customers might limit the exposure of the salesperson to a broad diversity of information. Therefore, it might therefore be expected that salespeople with the largest networks will be poorly positioned to first identify and understand the changing market, or to perhaps collect competitive intelligence by virtue of sheer information overload from a host of like-minded interconnected network customers repeatedly sharing similar info. This dissertation thus explores this important network characteristic in an effort to quantify the impact of

25

salesperson network size, which is very likely the long term result of the success and efforts of the individual salesperson in her or his role. Management of network size might be controlled through the hire and assignment of greater numbers of salespeople in a region, thus understanding how size can influence strategic outcomes becomes an important actionable management function.

Density

As with size, understanding salesperson network density is also critically important. Recent work by Gonzalez, Claro and Palmatier (2014) in this area has informed the definitional approach to density in this study. In this dissertation, density is defined as the extent to which a salesperson's customers are interconnected, or know and frequently communicate with each other. Again, using the hub and spoke metaphor, increased density would imply that the salesperson's role as the sole hub is diminished. Instead, numerous inter-connections or spokes between individuals and customers in the network would be characteristic of a high density network. In a less dense network, the salesperson's role as the hub is strengthened, as s/he exists as the sole point of connection between the many customers in the network.

In a typical single hub, multiple spoke salesperson network, it can be inferred that salespeople with low density networks have greater numbers of unconnected individuals who are therefore less likely (or even able) to share similar types of information or face identical market forces. Exposure to disparate information sources and, more specifically, to individuals who are not broadly connected, again increases the opportunity that the salesperson as the hub will recognize unique opportunities to capture important information about the competitive landscape. Similarly, lack of network density may ensure that the salesperson's role as firm advocate is strengthened as the salesperson's ability to be the source of valuable information is

improved with diminishing potential for network sharing, gossip and duplication. Indeed, the role of the low density network salesperson in value co-creation efforts may also be enhanced as the salesperson plays a more unique role to each customer. Understanding how customers within a network are interconnected offers management an opportunity to exploit corporate messaging or to identify powerful thought leaders in the customer network who might be groomed to act as an advocate for the salesperson's reputation, or even the firm and its products.

Heterogeneity

Returning once again to the work of Gonzalez, Claro and Palmatier (2014, p. 79), who define network heterogeneity as "the degree to which members of a network represent unique demographic categories," this dissertation leverages that approach in defining network heterogeneity in the sales context as the extent to which customers are from different industries, have different products or service needs, and generally share little in common with other customers in the salesperson's network. Thus, this network characteristic speaks to the overall disparate nature of the myriad customers in a salesperson's network. In this instance, the salesperson still acts as the hub, but the spokes go to very unique, or different, nodes who would very likely have little or no reason to interact with one another outside of their mutual shared relationship with the same salesperson, who has been essentially arbitrarily assigned by the firm.

On the opposite end of the spectrum, customers from the same industry, same geography, same social circles, and the like are very likely to share information with one another and to fall victim to the like-mindedness very often characteristic of potentially strong ties between them (Krackhardt 1992). Such customers may not need to rely on the salesperson for information because other members of their mutual network may have already experienced a problem, determined an appropriate solution, and broadcast the experience to the rest of the group, without

ever engaging the salesperson, or central hub. To the extent that such nodes or customers can be characterized as homogeneous or essentially the same, the effective reach of the network is thus diminished through what might be considered functional duplication of nodes. While this is admittedly an extreme characterization, it drives the point that network heterogeneity is the more desired state or quality due to its ability to enrich the salesperson with greater opportunity for exposure to unique information sources.

From a management perspective, salespeople are very often assigned to serve sets of customers within regions, districts or zones determined by the firm. While geography may dictate to some extent the types of customers within such assigned salesperson territories, careful examination or investigation of the customer types in adjacent territories may allow assignment of specific customers to salespeople in an effort to maximize heterogeneity for each individual salesperson, should such a network characteristic be deemed desirable by the firm.

Quality

The quality of a salesperson's network speaks primarily to the strength of the spokes, or more specifically the relationship between each node, or customer, and the salesperson, or hub. Gonzalez, Claro and Palmatier (2014) consider tie strength in their work with relationship managers, defining it as "the intensity and closeness of a tie between two actors" (p.79). In this dissertation, quality refers instead to the specific relationship between the salesperson and each individual customer, and is more correctly defined as a reflection of the salesperson as to the (positive) overall grade of her or his customers, or their essentially irreplaceable nature.

This network quality characteristic seeks to address how embedded the salesperson is with the customer base at large. Salespeople with poor quality relationships likely lack the ability to meaningfully direct or influence their decision-making, which minimizes the potential

28

of the salesperson to succeed in the role, and the firm to generate value for the customer. To the extent that salespeople have high quality relationships with their customers, salespeople would be viewed as thought leaders and solution providers in the relationship, or even trusted advisors. The quality of the relationship, in this way, determines the potential success that salespeople may have available to them. The stronger the spokes, or greater the relationship quality with each and every customer, the greater is the potential for the salesperson or hub to influence the actions of the numerous customers in the network en masse.

Conclusion

Chapter 2 summarized the academic literature that has to this point explored the constructs of interest in this dissertation. Calls for research addressing relevant gaps were discussed. Social media research in the context of the sales domain was introduced, as well as the key antecedent is this study; salesperson social media technology usage. Social media technology usage as an omnibus construct capturing both frequency and intensity of use was also detailed. Each strategic sales outcome including competitive intelligence, communication reciprocity, and value co-creation was introduced and defined. Salesperson specific network characteristics or qualities were discussed as potential moderators to the conceptual model. Finally, salesperson network size, density, heterogeneity and quality were introduced, discussed and defined. The following chapter introduces and discusses in detail, the theoretical support for this dissertation's hypothesized model, including social exchange and network theory.

CHAPTER 3

THEORETICAL FOUNDATIONS

Social Exchange Theory

The underlying theory guiding the primary hypothesized linear relationships in this work, between salesperson social media technology usage and the three strategic sales outcomes, is one which has breadth and depth of application across the whole of the marketing discipline – social exchange theory. Social exchange theory, which is widely held to have originated with the work of Homans (1961) and Thibaut and Kelley (1959), is generally viewed as a basic framework for understanding the impetus of "individual behaviors of actors in interaction with one another" (Cook and Rice 2003, p.54). Given that social media is largely considered to be a tool for engagement (Andzulis et al. 2012), understanding the psychological underpinnings at play between a salesperson and customer would be particularly informative.

Social exchange theory has been widely studied by social scientists since it was first put forth a half century ago. In fact, Emerson (1974) recognized social exchange theory as a "distinct approach" (p.335) that had only recently emerged, but spent considerable effort comparing and contrasting the various major formulations of the leading scholars at the time in an effort to characterize and critique the new "frame of reference" (p.335) in its application to social psychology. Homans (1974) also revisited the theory to improve his original work in a well-conceived revision which clarified his three major propositions of "Success," "Stimulus," and "Deprivation-Satiation," as well as "Value" and "Rationality" which as a whole summarizes

the relationship between an individual's actions and rewards/rewards history. Essentially distilling social exchange to an individual internal economic calculus, actors choose their actions, even with others and groups of others, based upon the perceived positive benefits they can expect to receive from the interaction.

While the early work of Homans (1961; 1974) focused primarily on individuals, others such as Thibaut and Kelley (1959) recognized the role of relationships that extended beyond single individuals, to small groups of individuals which, in our context, are much more representative of the modern workplace. Indeed Cropanzano and Mitchell (2005) suggest that social exchange theory is "among the most influential conceptual paradigms for understanding workplace behavior" (p.874). Others, such as Lambe, Wittman and Spekman (2001) have also characterized social exchange theory as one of the primary theoretical lenses by which academics seek to understand the modern business-to-business environment particularly characteristic of marketing and, in this context, now sales. In each instance, social exchange theory is tapped for its explicative approach to forecasting how individuals are likely to act with one another in small or group interactions, based upon their perceptions and past histories of benefit associated with the same or similar interactions. In our context, social media technology affords a new medium by which individuals, or salespeople and customers, interact and engage, but the premise behind the impetus for such interactions is largely the same. Social media merely facilitates the opportunity for perhaps more frequent, more direct, and informal interaction between the parties, which may serve to strengthen traditional salesperson – customer relationships.

In that vein, Cropanzo and Mitchell (2005) in discussing the basic tenets of social exchange theory, suggest that such "relationships evolve over time into trusting, loyal and

31

mutual commitments" guided by "rules of exchange" and subject to "principles of reciprocity" (p.875). In other words, social exchange theory carries with it an implicit understanding that all actions are subject to a return in kind rationale or social norm which keeps the relationship in balance. Were this not the case, one or more parties might routinely consume more from relationships with other individuals and groups to the point that the benefit to continuing such relationships for one of the parties would be negative, at which point basic economics would suggest that it would be best to terminate the arrangement. In our context, social exchange theory is used to explain the linear hypothesized relationships of the conceptual model, linking salesperson social media technology usage to strategic sales outcomes.

Social exchange theory, in the context of relationships between salespeople and their customers, as facilitated through the social media mechanism, should suggest positive relationships with competitive intelligence, communication reciprocity, and co-creation of value. In each instance, the effort put forth or demonstrated by the salesperson should be met with a reciprocal obligation from the customer to repay in kind any benefit that was received. While the obligation is informal, rules of exchange suggest that customers will likely want to continue receiving positive relationship benefits, so they are unlikely to let an inequity in the relationship foster. In addition, as social media facilitates greater responsivity in the relationships, customers may feel that they can quickly respond and return such favors in kind, using the same or different social media technology that yields the greatest cost efficiency to the relationship. Therefore, we expect all posited primary linear relationships in this work to be positive.

Network Theory

That the discipline of sales is built on relationships has been reiterated numerous times to this point. Similarly, the relationship between salesperson and customer has been identified as of paramount concern to this dissertation. However, barely addressed in this work thus far is the tacit acknowledgement that there are both numerous relationships and numerous interconnected players in this story; the people tasked with roles as salespeople and customers whose mission it is to create value for their respective firms. These people, or what sociologists might call actors, are very often networked with one another, and that simple truism has tremendous meaning or impact to the firm and to the research at hand.

While network theory might initially draw the thoughts of many academicians to technology and more specifically to computers, its role in social science dates back more than four decades as researchers sought to uncover the role that the strength of ties plays between individuals or nodes in a larger system. Granovetter (1973) is largely attributed as the first to characterize the importance of weak ties between individuals, in suggesting that they may in fact be more important than strong ties which tend to bind like-minded individuals, but others such as Thorelli (1986) are often credited with being among the first to "predict relations among linked entities" (Hult 2011, p. 519). Indeed Thorelli noted that "networks are ubiquitous" (1986, p. 44) in his work which both called for strategic planning and recognized the importance of networks in information exchange and services marketing.

Others have also weighed in on network theory, as Krackhardt (1992) did in suggesting that a "weak tie is likely to provide new information from disparate parts of the system" and more importantly that "no tie (or an extremely weak tie) is of little consequence; a weak tie provides maximum impact, and a strong tie provides diminished impact" (p.216). Such

sentiment was also put forth in later work by Granovetter (1983) wherein he clarified that "Weak ties are asserted to be important because their likelihood of being bridges is greater than (and that of strong ties less than) would be expected from their numbers alone" (p.229). Thus, networks of numerous individual actors (or nodes) with weak ties are often very effective at transferring information to the betterment of the entire network at large.

Network theory, then is concerned with not only the individuals or nodes in the system, but also the ties or spokes that bind each node. Earlier this paper discussed the importance of the relationship between salesperson and customer. Network theory informs this research in that it's not only the importance of each individual relationship or tie that matters, but also how each of those individuals and relationships, nodes and ties, are linked with every other in the networked system or, in this specific case, the central hub or salesperson. In this dissertation, the salesperson defines the system as each customer must, at a minimum, be linked to that central node or hub. How each of the individuals, and relationships, are linked with each other, has important ramifications for the salesperson's ability to create value and find success.

This dissertation also seeks to explore the unique characteristics of the salesperson's network. Specifically, understanding how network size, density, heterogeneity and quality can moderate the relationship between salesperson social media technology usage and key sales outcomes is important from a resource allocation and management standpoint. It is possible that salespeople with disparate networks may have different capacities to influence customer relationships, suggesting that social media strategies should perhaps also vary by salesperson network. While each person in the customer network is an individual node, the characteristics of connections between individuals and, more specifically in this research, the salesperson or hub, drive ultimate proclivity toward acting to enhance the desired strategic sales outcomes.

Conclusion

As evidenced by the discussion of the last two chapters regarding extant literature and the theoretical work which sets forth the foundation for the proposed conceptual model, a gap exists in the current understanding of how social media technology usage by a salesperson can be leveraged toward the benefit of the customer and the firm. This dissertation investigates the role of social media technology in the sales domain, as well as the moderating impact of the individual salesperson's network on the relationships with strategic sales outcomes. Chapter 4 makes the case for each of the relationships in our hypothesized model, and further delineates the specific moderating impact of each of the salesperson's individual network characteristics on the aforementioned primary linear relationships.

CHAPTER 4

HYPOTHESES

The following hypothesized relationships, as detailed in Figure 4.1, capture the proposed linear relationships linking salesperson social media technology usage with three key strategic sales outcomes, and moderated by four distinct salesperson customer network qualities.

Figure 4.1

Hypothesized Model
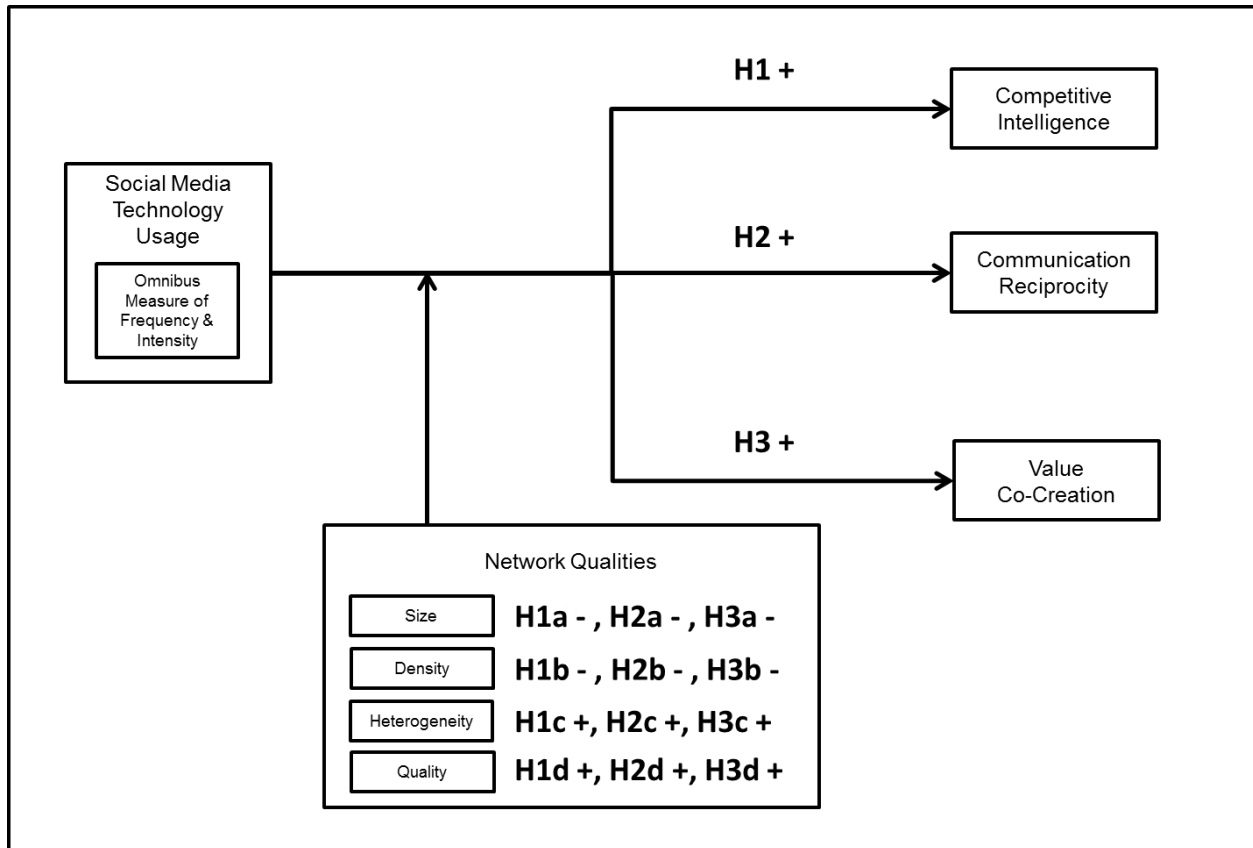
Primary Linear Relationships

Social Media Technology Usage – Competitive Intelligence Link

In so far as social media technology is viewed by the salesperson as a new, extra or additional tool by which to facilitate engagement with customers, it can likely be expected that customer interaction will increase as both salesperson and customer begin to use the additional communication channel to further shrink the gap between the firm and the customer. With increased virtual proximity, and almost round-the-clock potential interaction, the individual salesperson will be ideally suited to better know what is taking place in the customer's market, not only in terms of identifying customer latent needs, but also competitive forays into the market by newcomers and challengers, news of coming innovation, shifts in industry and customer preferences and many other changes as they take place in real time. Social media technology offers the salesperson an extra level of interaction with each customer and as such a better view of the entire competitive landscape en masse which can be used on the frontline of market research efforts.

Given the foundational underpinnings of social exchange theory (Homans 1961; Thibaut and Kelley 1959; Homans 1964), one might also expect the trust and commitment that develops in the relationship between a salesperson and customers to create an environment conducive to the free exchange of ideas, information and intelligence specific to the customer's industry and the salesperson or firm's ability to meet developing needs. Exchange rules in the relationship will dictate an implicit obligation for such sharing, which should materialize in the form of key competitive intelligence as the customer's attempts to maintain social equilibrium with the salesperson compels both open discussion and information exchange.

As mentioned earlier, social media technology empowers the salesperson with an individual level tool for communication, information exchange, and relationship development. Work by Trainor, Andzulis, Rapp and Agnihotri (2013), among others, has previously shown the potential for social media technology usage to meaningfully impact important firm capabilities and performance. In much the same way, and bolstered by a new tool geared specifically toward facilitating heightened engagement, it can be expected that salesperson social media technology usage should thus serve to also enhance competitive intelligence efforts. Salespeople, empowered with social media technology, will gain greater exposure to customer product preferences, shifts in the industry and even valuable market research in real time (Kohli, Jaworski and Kumar 1993). With such enhanced exposure, the salesperson's capacity to capture valuable market intelligence is similarly heightened. Therefore, I posit:

H1: Social media technology usage will be positively related to competitive intelligence

Social Media Technology Usage – Communication Reciprocity Link

Earlier, this paper discussed the work of Uehara (1995), who found that most people prefer to under-benefit rather than over-benefit from a situation of social exchange, in an effort to prevent disruption to the social equilibrium and, more specifically, a relationship deficit with another individual. In the social media technology enabled sales environment, this would suggest that, to the extent that a salesperson can offer timely, valuable service to customers via social media technology usage efforts, customers are therefore more likely to feel morally compelled to return, in kind, any such obligations they may feel as a result of the interaction. In this context, that repayment is very likely to take the form of information sharing, assistance, or other sporadic help a salesperson may request from a customer. Such communication reciprocity via social media technology will not only serve to validate the medium for future

38

communication, but will further cement the channel as an additional mechanism for meaningful, productive contact.

Given that communication reciprocity is a backbone or pillar of relationship stability Pervan, Bove and Johnson (2009), one might expect that a customer who is appreciative of the efforts of the salesperson and wants to maintain the relationship in good favor, will make a priority the practice of further engaging the salesperson via social media to share information or assist with salesperson requests. This again speaks to the social compulsion that parties in a relationship very often feel in relation to the important others with whom they interact. Thus, as social media technology offers salespeople increased communication opportunities and provides an increasing array of platforms for information exchange, one could expect the breadth of communication between salesperson and customer to similarly expand.

Social exchange theory again also has application here. Given the aforementioned rules of exchange and the mental calculus customers will undertake in their interactions with salespeople, it is likely that customers will feel a sense of inequity or disparity if they fail to return information, effort, or assistance in kind to the salespeople who serve them. Accordingly, the customer will be self-pressured to act to restore social equilibrium in the relationship with the salesperson, and will thus likely respond favorably to all such requests for help and the like. Therefore, it logically follows that the salesperson's use of social media technology, which enhances engagement and closes the gap between customer and firm, will have a positive impact on all such communication efforts and interactions with customers who wish to stay in favor with the salesperson. I therefore propose:

H2: Social media technology usage will be positively related to communication reciprocity.

Social Media Technology Usage – Value Co-Creation Link

At the outset of this work, social media was defined at the firm level as "the technological component of the communication, transaction and relationship building functions of a business which leverages the network of customers and prospects to promote value co-creation," (Andzulis, Panagopoulos and Rapp 2012, p. 308). By definition, this suggests that from the macro viewpoint, social media technology usage has, at its heart, the underlying goal of facilitating or perhaps maximizing customer co-creation of value. In so far as engagement with the customer leads to a greater understanding of the customer, it is logical to assume that any technology or strategy that facilitates engagement is therefore likely to enhance knowledge of the customer's evolving needs. Recalling the Agnihotri and colleagues (2012) definition of social media technology which sought to operationalize the medium at the individual salesperson level toward content creation, it is likely that the salesperson will choose to use social media technology in efforts to involve the customer in new product development, solutions specification and design, or even specific marketing and sales efforts in an attempt to blur the boundary between customer and firm in favor of a perception of effective partnership. Such partnership and alignment of interests essentially defines the notion of value co-creation.

Accordingly, salespeople tasked with using social media technology are given a powerful tool which opens a door into the customer's operations. While understanding the market at large is still very important and can inform the direction of future innovations, evolving market needs and even dynamic competition at a macro level, perhaps more important to the value maximizing proposition for any given customer is understanding at the very micro level, that specific customer's exact needs and challenges, as well as how the firm's products or services do and don't, or can or won't be customized or tailored to meet those very specific needs. Only through

40

such focused engagement can a salesperson, and thus firm, gather the customer specific information that can establish pure competitive advantage. Rather than working to meet a customer's needs with a general good or service, the customer and the firm can work together through the salesperson to co-create offerings that are specifically tailored to that customer's individual needs alone. Engagement at this micro level, facilitated by social media technology, ensures value maximization.

Involving customers in marketing and sales, new product development, or customer service and solutions efforts, and treating them as though they are partial employees (Ngo and O'Cass 2009), is the optimum state of value co-creation. Such relationships are not transactional by nature, but rather exist on the partnership end of the relationship continuum. Indeed, social exchange theory suggests that loyal and committed (Cropanzano and Mitchell 2005) relationships between salespeople and customers will create an environment which further encourages working together and repaying in kind any efforts that appear on their face to benefit one party at the expense of the other. Value co-creation in this way removes the boundary between firm and customer, and instead enlists each as a beneficiary of their mutual interactions. Given that this value co-creation represents the pinnacle of partners working together to create product or services, or even solutions that maximize value for both parties, any disparity in exchange rules will likely be quickly resolved by salesperson and/or customer action geared toward returning to the all-important goal sate of relationship equilibrium which underlies value co-creation. Therefore, I suggest:

H3: Social media technology usage will be positively related to value co-creation.

Moderating Network Relationships

As mentioned throughout this manuscript, another important aspect of this research is to study the impact of the salesperson's customer network characteristics on the relationship between salesperson social media technology usage and the aforementioned strategic sales outcomes. Understanding how each salesperson's network might impact such relationships is critical because different salespeople and customer networks may therefore require different levels and types of resources, as well as potentially different types of training related to customer service and interactions. Additionally, because Goodhue and Thompson's (1995) TPC model views the strategic sales outcomes in this work as relationship-dependent mediators between generic salesperson technology use and ultimate performance, it's important to understand how other variables might also impact relationships and outcomes that drive firm performance in an effort to identify the potential for managerial action which might promote or curtail positive or negative bottom-line impact respectively.

Given that the application of network theory to the individual salesperson's use of social media technology is essentially a new context and new research question, this dissertation takes the approach that a broad background discussion of competing arguments surrounding each moderating relationship will drive ultimate selection of the optimal hypothesized model. Accordingly, the following discussion detailing the moderating impact of salesperson customer network size, density, heterogeneity and quality will first explore alternative arguments in support of both positive and negative potential impact before establishing this dissertation's basis for selection of the optimal hypothesized relationship, whether positive or negative in its ultimate impact on each linear relationship. While social exchange and network theory might support strengthening arguments in some cases, weakening might be expected in others.

The Moderating Impact of Salesperson Network Size

Advancing the earlier discussion related to the size of a salesperson's customer network, it is logical to expect that with greater network size, comes the potential for greater reach into an increasingly connected broader market, characterized by many customer ties. This truism also suggests that there is potential for both positive and negative moderating impacts related to an increasingly large customer network.

From a positive impact perspective, greater size means that there are more actors or nodes in the system. Each unique customer offers the potential to capture one more individual snapshot or perspective of the overall market. With an increasing number of such views, it could perhaps be argued that, by sheer number of the collection of these unique perspectives, the salesperson will be well positioned to capture key competitive intelligence related to market trends or fundamental shifts in the industry (Kohli, Jaworsksi and Kumar 1993). In addition, as the salesperson's customer network grows, the perception that s/he maintains a position of power with a large group of customers might enhance any individual's moral compulsion to maintain social equilibrium with that salesperson by sharing key intelligence and other information which might be valued by the market. Again, in either of these scenarios, the size of the salesperson's network acts to enhance competitive intelligence efforts.

However, with a more expansive scope into the breadth of the entire market, as detailed earlier, a salesperson's potential for exposure to current and former customers, competitors, suppliers and even other salespeople should also increase, which magnifies the potential for numerous interconnected customers and diminished salesperson presence as the key central hub. Given this dissertation's conceptualization of the ideal salesperson as a lone central hub among a vast network of sparsely connected nodes, the greater the number of customers and others that a

salesperson knows, the more likely it is that the number of ties or spokes in the network might increase, thus diminishing the potential for numerous weak ties and diversity of information as set forth by Granovetter (1983) and Krackhardt (1992). It might therefore be expected that salespeople with the largest networks will actually be poorly positioned to first identify and understand the changing market, or to perhaps collect competitive intelligence by virtue of sheer exposure to an increasing number of network nodes or customers sharing the same information sources. Thus, with this greater reach, exposure to the most unique individuals is diminished. Unique customers are replaced by volumes of similar customers who collectively paint a very detailed, but narrow, slice of the market at the expense of a less detailed but more complete view of the entirety of the competitive landscape which would best position the salesperson to better serve the entire network of customers and importantly, the firm. Thus, based upon the sheer volume of customers typical of a larger network, the opportunity for enhanced competitive intelligence with individual customers is diminished in favor of a salesperson serving the greater whole. Therefore, I posit:

H1a: Salesperson network size will weaken the relationship between social media technology usage and competitive intelligence such that the greater the size, the less positive the expected relationship.

Similar to the discussion related to competitive intelligence, a salesperson's customer network size also has the potential to strengthen or weaken the relationship between salesperson social media technology usage and communication reciprocity. In favor of the argument for a moderating impact which strengthens the relationship, a salesperson with a large customer base is again likely to be perceived as having great power as the key player in a large network. Customers interacting with the salesperson will very likely try to curry favor not only by sharing

44

information as argued in the impact on competitive intelligence, but also by assisting the salesperson with the sporadic requests for information, help and assistance (Nitschke and Sattler 2005; Wasko and Faraj 2005). Through demonstration of a willingness to help the salesperson in such myriad ways, the customer will expect that s/he is maintaining social or relationship equilibrium, if not building upon or expanding it in an effort to become a VIP customer. While this approach may characterize some customers, the competing argument would suggest that larger networks actually weaken the aforementioned relationship with communication reciprocity.

In an environment characterized by an increasingly large salesperson customer network, it is very likely that some customers, if not most, will begin to feel that their individual relationships with the salesperson are not important as s/he serves a growing number of customers. In such an environment, the proclivity to maintain relationship equilibrium will be diminished as the customer does not reasonably expect that the salesperson can maintain the same level of relationship with all customers. As each customer begins to feel less special, or less valued by the salesperson, their compulsion to act on sporadic requests for information, help or assistance from the salesperson will be diminished. While social media technology may allow the salesperson to respond in many cases more quickly to customer requests, a larger network of customers almost certainly ensures that the level of service with each and every customer will become increasingly challenged as the sheer quantity of customer requests begins to overwhelm the capacity to serve. I therefore suggest:

H2a: Salesperson network size will weaken the relationship between social media technology usage and communication reciprocity such that the greater the size, the less positive the expected relationship.

In crafting competing arguments for the moderating impact of size on the value co-creation strategic outcome, again the case can be made for either a positive or negative impact. Value co-creation relies upon the salesperson's ability to involve customers in marketing and sales, customer service, solutions and/or product development efforts, or in managing customers as though they were partial employees (Ngo and O'Cass 2009). On the surface, this would suggest that a larger customer network would necessarily involve greater numbers of people who increasingly work in concert to develop the next generation of products and service solutions for the firm. While more customers might enhance customer involvement, it is rather unlikely that increasingly large customer bases share large numbers of customers with the same exact needs. Thus, it is more likely that the competing argument in favor of a moderating impact of salesperson network size which weakens the relationship with value co-creation is the case.

With increasing numbers of customers in salesperson networks, the opportunity for the salesperson to work with each individual in a meaningful way is markedly reduced. The potential to treat each customer as a partial employee, or a partner, is diminished when the salesperson's customer base grows to the point that interacting with each customer on a regular basis, in a meaningful way, is simply not possible. Accordingly, efforts to involve customers in sales and marketing efforts lose the support of social exchange theory when the moral compulsion to maintain social equilibrium between the parties is reduced to little more than increasingly infrequent interactions, visits and communications. I thus posit:

H3a: Salesperson network size will weaken the relationship between social media technology usage and value co-creation such that the greater the size, the less positive the expected relationship.

The Moderating Impact of Salesperson Network Density

With an appreciation that salesperson network density refers to the breadth of connections between customers in the salesperson's network, this dissertation again takes the approach that competing arguments for a positive or negative impact of salesperson network density on the relationship between salesperson social media technology usage and strategic sales outcomes is warranted. Understanding how the density or interconnectedness of a salesperson customer network can impact such outcomes is key to managing salespeople and the resources assigned to sales territories and sales initiatives. Accordingly, this dissertation again first considers the impact on competitive intelligence.

Recognizing that more dense networks imply that there are many interconnected customers in that salesperson's network, one might argue that the ability of the salesperson to collect competitive intelligence is heightened because each of the customers is likely to have richer understanding of the whole market environment faced by their own firm, as well as that of their competitors. Such an argument would suggest that a salesperson's role as a network hub is magnified as the capacity to collect more total information is heightened. This suggests that the aforementioned relationship with competitive intelligence is strengthened. Similarly, in an environment characterized by numerous interconnections between customers, the need to maintain social equilibrium is also heightened as the perception of each firm or customer is likely to be quickly shared with others in the network. Risking reputation by losing favor with the key central figure, the salesperson, would damage the firm's standing among both the salesperson and the peer network. Hence the moral compulsion to share information with the salesperson would be heightened in this environment. However, the competing argument draws support from network theory and makes a stronger case for a weakening moderating impact.

47

As discussed previously, weak ties between sparsely connected individuals maximize the opportunity for network hubs or, in this case, salespeople to capture the most diverse information which informs the general trend of the market and competitive landscape. As such, the potential for the weak ties which maximize the salesperson's exposure to this disparate information (Granovetter 1973; Granovetter 1983; Krackhardt 1992) is greatly diminished in dense networks where customers are interconnected and very likely know the same types of information. As the propensity for group think is therefore enhanced, the opportunity for the salesperson to mine the customer network for valuable competitive intelligence therefore becomes greatly diminished as well. Therefore, I posit:

H1b: Salesperson network density will weaken the relationship between social media technology usage and competitive intelligence such that the greater the density, the less positive the expected relationship.

Making the case for a positive impact of salesperson customer network density on the relationship between salesperson social media technology usage and communication reciprocity relies on some of the same arguments as were employed for competitive intelligence. Because the salesperson's customer network is interconnected, the perception that reputation or network standing matters is enhanced. Customers, knowing that many other customers in the network will quickly learn of any negative interactions between a customer and the salesperson, will act to ensure that relationship equilibrium is always maintained, especially with the key central hub, the salesperson. In this way, customers will be very likely to share information or assist salespeople with sporadic requests for assistance so that they and other members of the network can think of themselves as exemplary, or in good standing with the salesperson. However, again the argument for a negative impact must also be considered.

48

Exposure to numerous customers with many connections to other members of the salesperson's network is likely to only challenge the role of the salesperson as the central figure or hub in a network of spokes, as communication very likely freely and frequently occurs between those individual customers. To the extent that this takes place, the need to maintain relationship equilibrium with the salesperson will again be diminished as the benefits will be perceived as few, and risks to reputation even fewer. Similarly, and due in large part to the breadth of connections between the members of the network, a customer's perceived obligation to exchange rules requiring the return of favor in kind to the salesperson versus any other member of the network is likely diminished in an environment where others may be equally, if not more, important to the customer than the salesperson. In an environment marked by dense ties between customers, it becomes increasingly likely that other members of the network, very likely operating in the same or a similar industry, will have faced some of the same problems or challenges as other members of the network, or even perhaps made decisions about the offerings of the salesperson or those of a competitor. This market reality has the potential to instill power, or at the very least knowledge, in other network members to whom any given customer may start to feel more allegiance than to her or his own salesperson. Given that communication reciprocity relies upon moral compulsion by the individual customer to share in kind with the salesperson, networks characterized by enhanced density are very likely to suffer diminished exchange with the salesperson with increasing density that instead links customers to other potentially more valuable customers in the salesperson's own network. Thus, I posit:

H2b: Salesperson network density will weaken the relationship between social media technology usage and communication reciprocity such that the greater the density, the less positive the expected relationship.

Crafting an argument for the positive moderating impact of salesperson network density on the relationship with value co-creation relies primarily on the notion that interconnected customers will each embrace firm sales and marketing efforts and choose to act as advocates for the firm and its value proposition. To the extent that each customer works toward the creation of the next generation of a firm's product and service solutions, one might expect that value co-creation would therefore be enhanced. However, this argument neglects a broader reality.

As the interconnectedness of customers in the salesperson's network increases, the opportunity for the salesperson to effectively partner with each and every customer is greatly diminished as fears of competitive espionage, aiding the competition, risking competitive advantage and giving away more than they can likely ever receive in return grips individual customers. While social exchange theory suggests that customers will want to maintain relationship equilibrium with the salesperson, it also further suggests that each customer performs a unique cost-benefit analysis to determine whether such enhanced salesperson interactions have the potential to yield benefits worth the effort. In the case of value co-creation, the risk of creating value which the firm may use to later satisfy the needs of competitors is heightened, so customers who may not perceive themselves as being in a power position to make demands to protect the fruits of their individual efforts with the salesperson choose instead to simply walk away from partner-like relationships, instead investing only what is necessary to maintain good standing. In this way, salesperson networks characterized by many interconnected customers likely see diminished efforts from individual customers. I thus posit:

H3b: Salesperson network density will weaken the relationship between social media technology usage and value co-creation such that the greater the density, the less positive the expected relationship.

The Moderating Impact of Salesperson Network Heterogeneity

Although a densely connected salesperson customer network is posited to weaken each of the primary hypothesized relationships due to the numerous interconnections between them, a discussion of the potential positive or negative impact of salesperson customer network heterogeneity is now warranted. Again, moderation arguments supporting both the strengthening and weakening of relationships with each strategic outcome can be made. In this instance, the discussion will begin with an argument favoring a negative impact.

While densely connected networks lead to numerous ties between customers that begin to create a system of individuals who all know roughly the same things and share similar wants and needs, a customer network characterized by heterogeneity is one in which the customers are very different, with disparate needs and likely very different views of the competitive landscape. Whereas homogeneity implies sameness, heterogeneity implies a salesperson network containing a broad diversity of customers. Such a customer network, while likely to capture a myriad of disparate pieces of information for the salesperson, painting a picture of the market in its entirety, is less likely to allow the salesperson to hone in on the most valuable information related to her or his key customers. To use an analogy, instead of capturing the needle in the haystack, the salesperson is likely to capture the entire haystack thus obscuring the most valuable competitive intelligence and weakening the relationship between salesperson social media technology usage and competitive intelligence. However, this dissertation argues that a more heterogeneous customer salesperson network may actually work in quite the opposite way.

Because the customers in a characteristically heterogeneous network are largely very different, with different needs and relationships, it is most likely that collectively they represent an abundance of very weak ties between each other, if any. Such an environment ensures

maximum information variety (Krackhardt 1992) and sharing as sameness and like-mindedness are, again, minimized (Granovetter 1973). With maximum information variety, the salesperson is best positioned to not only collect valuable market research and broad market preference shifts, but also to have a unique perspective which will allow her or him to identify new opportunities for value propositions, whether product or services. Additionally, with a very heterogeneous customer base, the fear that each individual maintains regarding the salesperson's potential to share valuable competitive intelligence with competitors is also reduced. Given the enhanced variety of information available and this reduced hurdle to sharing it with the salesperson, I therefore argue:

H1c: Salesperson network heterogeneity will strengthen the relationship between social media technology usage and competitive intelligence such that the greater the heterogeneity, the more positive the expected relationship.

Regarding communication reciprocity, similar positive and negative moderating arguments can again be made. In favor of an impact which weakens the relationship between salesperson social media technology usage and communication reciprocity, it can be argued that with more diverse customer networks the salesperson's ability to leverage the network to help individual customers is reduced because there are less similar customers available from which the salesperson can learn. With very few competitors operating in the salesperson's customer network, the salesperson loses the potential to deliver extra value to the customer beyond that of the product or service. To the extent that this occurs, maintaining relationship equilibrium is simplified because it likely involves minimal interaction between salesperson and customer. With reduced interactions, the customer is likely to feel less moral compulsion to return in kind any favors, or to offer the salesperson information, help or assistance. Thus, communication

reciprocity is weakened in this way. However, this dissertation posits that communication

reciprocity is instead very likely strengthened.

With a broad diversity of customers, the role of the salesperson as a valuable central hub

is secured because each network member is very likely only exposed to the rest of the broader

market through that salesperson, as opposed to other interconnected members. To the extent that

the salesperson has a network of such very different customers, those customers are likely to

depend first upon the salesperson, and less so on the other members of the network, for

information. This information imbalance or differential between salesperson and customer

ensures that the traditional hub and spoke relationship is maintained, wherein the numerous

customers must largely rely upon the hub for their best glimpse of the competitive landscape.

Such reliance enhances the need to return in kind any action or information shared by the

salesperson, which means the proclivity to act as a good network member and maintain

equilibrium with the salesperson is therefore also enhanced. Given that each customer will want

to build a strong relationship with the salesperson in this environment, s/he will be very

responsive to sporadic salesperson requests for information, help or assistance and the like. Thus

communication reciprocity is enhanced as each customer works to become a VIP customer for

the salesperson to ensure that the salesperson always puts their interests first. Though this instills

a certain element of power with the salesperson, the overall impact on communication

reciprocity is positive. Therefore, I posit:

H2c: Salesperson network heterogeneity will strengthen the relationship between social media

technology usage and communication reciprocity such that the greater the heterogeneity, the

more positive the expected relationship.

Finally, arguments in support of a positive or negative moderating impact of salesperson customer network heterogeneity can also be made in regards to the relationship with value co-creation. From a weakening relationship viewpoint, the more diverse the customer base and the more disparate their needs, the less likely it is that the salesperson will be able to work with each and every customer as a partial employee to develop the unique product and service solutions that each needs. With a heterogeneous customer base, the opportunity for economies of scale and scope are replaced by individual customers, each with very unique needs that may not be able to be leveraged across the network. In this way, involving customers in sales and marketing efforts or developing within-network advocates is diminished. As such, value co-creation is weakened. However, an argument can also be made in support of a strengthening relationship.

Because salesperson customer network heterogeneity puts the salesperson in position to view the entire market and leverage unique opportunities as argued earlier, it becomes increasingly likely that the salesperson will act to innovate across industries and find solutions that satisfy multiple customers. Working with diverse customers, with disparate needs, informs the salesperson of the myriad ways that product and service offerings are utilized, and also allows customers with entirely different viewpoints the opportunity to provide unique insight into design of the next generation of solutions which will be sold across the network and industry. Working with each customer as a partner ensures that value is maximized. To the extent that a salesperson can leverage unique views toward customer benefit, value co-creation is thus enhanced. Therefore, I propose:

H3c: Salesperson network heterogeneity will strengthen the relationship between social media technology usage and value co-creation such that the greater the heterogeneity, the more positive the expected relationship.

54

The Moderating Impact of Salesperson Network Quality

Finally, the quality of the salesperson's customer network is also important here. Quality relates to the depth of relationship between the salesperson and each member of the network, or the salesperson's perception as to the overall irreplaceable nature of each customer (Netemeyer et al. 2004). Salesperson customer network quality is important because the intensity and closeness of high quality relationships ensures that the salesperson is a valued, respected resource for the customer. Whereas poor quality relationships might signal potential trouble in directing customers toward action, high quality relationships are characterized by customers who willingly accept the advice and counsel of the salesperson, and actively work to please that individual in an attempt to maintain relationship stability. Thus, arguments in support of a positive or negative moderating impact of salesperson customer network quality on strategic sales outcomes can also be made.

In making the argument that quality can weaken the relationship between salesperson social media technology usage and competitive intelligence, it is important to remember that quality essentially captures the closeness of the salesperson to her/his customers. While this may be optimal for each individual customer, in a network of customers it exposes the potential for challenges. Because the salesperson may be close with numerous customers, including competitors, any individual customer may feel less willing to share valuable information or other insights into future market preferences or direction for fear of having that information shared with competitors who might exploit it to their own advantage. Similarly, high quality relationships might also encourage group think which decreases the opportunity for the salesperson to capture the best, most complete view of the competitive landscape. In this way,

quality might actually serve to weaken the relationship with competitive intelligence. However, this dissertation argues the opposing viewpoint.

In relationships characterized by high quality, the moral obligation to maintain equilibrium and follow exchange rules (Cropanzano and Mitchell 2005) will likely be highest, thus ensuring greater proclivity toward a return in kind mindset that facilitates sharing of competitive intelligence. Such relationships are also characterized by more free information exchange as trust and loyalty become paramount in the committed relationship (Cropanzano and Mitchell 2005), and mutual benefit is seen as the goal of both actors. When the salesperson is viewed with such great regard, as is likely in high quality network relationships, the customer is less concerned with protecting sensitive information because the relationship approaches, at its best, a partnership founded in trust. Thus, the salesperson's ability to capture competitive intelligence is enhanced. Thus, I posit:

H1d: Salesperson network quality will strengthen the relationship between social media technology usage and competitive intelligence such that the greater the quality, the more positive the expected relationship.

From the standpoint of communication reciprocity, an argument can be made that high quality salesperson customer networks also have the potential to weaken the relationship between salesperson social media technology usage and this key strategic outcome. As the salesperson's relationship with each customer approaches a friendship, the customer is less likely to feel the need to do the extra things that would be necessary to earn VIP status with the salesperson. In this way, sporadic requests for information, help or assistance might not be given priority because, unless it is viewed as an emergency, the friendship is already solid and the relationship is in a state of perpetual stasis or equilibrium. Thus, communication reciprocity is

56

weakened. However, this dissertation again takes the opposite view and argues that salesperson network quality actually enhances this relationship.

While strong ties between individual customers of the salesperson's network might not necessarily be most desirable (Granovetter 1973) from a diversity of information gathering standpoint, strong ties with the salesperson most certainly are as relationship maintenance and equilibrium efforts become more important. High quality relationships between the salesperson and each customer again ensure a true hub and spoke network system wherein the salesperson's central importance to the network is unchallenged. While each and every other customer may not know the salesperson maintains similar high quality relationships with the rest of the network, the trust between that individual salesperson — customer dyad is without question, so sharing information, and actively assisting the salesperson becomes the norm. Because high quality relationships approach friendships, customers in this position may feel a greater compulsion to maintain the friendship and relationship than they would with another salesperson they don't know quite as well. Because maintenance of the social equilibrium requires helping and returning favor in kind, it is increasingly likely that customers with close relationships with their salesperson will make requests from their salesperson a priority, and act quickly and fully to satisfy them in an effort to stay in good standing as a VIP. While this does not suggest that the customer opens their books and strategy to the salesperson completely, it does suggest that sharing with the salesperson is of elevated importance. Therefore, I posit:

H2d: Salesperson network quality will strengthen the relationship between social media technology usage and communication reciprocity such that the greater the quality, the more positive the expected relationship.

Finally, salesperson customer network quality can also weaken or strengthen the relationship with value co-creation. This dissertation makes the case that both arguments warrant consideration, beginning first with the case for weakening the relationship. Because value co-creation includes treating customers as partial employees, and involving them in sales and marketing efforts, extremely close relationships or friendships between customers and salespeople might make those tasks difficult as expectations will be diminished in favor of instead maintaining the friendship. This means valuable opportunities to get the customer to act as an advocate may be lost, as well as the potential to guide the next generation of product and service offerings (Ngo and O'Cass 2009), as the salesperson chooses not to ask the customer to do extra role behaviors, or the customer ignores requests for tasks that might be burdensome or unpleasant. However, this dissertation argues the opposite in suggesting a positive impact.

In very high quality salesperson customer networks, customers and salespeople are essentially friends. Relationships have typically advanced well beyond mere transactional arrangements, and customers are closer to the partner end of the relationship continuum as the gap between the firm and the customer is obscured or closed. In such an environment, the salesperson is best positioned to involve customers as advocates for the firm's offerings, and to leverage the relationship to involve the customer in tasks that craft future product and service offerings. Because such relationships are built in trust, relationship equilibrium can be maintained because each party knows the other has her/his interests at heart. This suggests that the opportunity for value co-creation is therefore enhanced. Thus, I propose:

H3d: Salesperson network quality will strengthen the relationship between social media technology usage and value co-creation such that the greater the quality, the more positive the expected relationship.

58

Table 4.1

Summary of Research Hypotheses

Hypothesis	Independent Variable		Moderator	Dependent Variable	Direct Effect	Interaction
H1	Social Media Technology Usage		---	Competitive Intelligence	+	
H1a	Social Media Technology Usage	x	Size	Competitive Intelligence		Weakens
H1b	Social Media Technology Usage	x	Density	Competitive Intelligence		Weakens
H1c	Social Media Technology Usage	x	Heterogeneity	Competitive Intelligence		Strengthens
H1d	Social Media Technology Usage	x	Quality	Competitive Intelligence		Strengthens
H2	Social Media Technology Usage		---	Communication Reciprocity	+	
H2a	Social Media Technology Usage	x	Size	Communication Reciprocity		Weakens
H2b	Social Media Technology Usage	x	Density	Communication Reciprocity		Weakens
H2c	Social Media Technology Usage	x	Heterogeneity	Communication Reciprocity		Strengthens
H2d	Social Media Technology Usage	x	Quality	Communication Reciprocity		Strengthens
H3	Social Media Technology Usage		---	Value Co-Creation	+	
H3a	Social Media Technology Usage	x	Size	Value Co-Creation		Weakens
H3b	Social Media Technology Usage	x	Density	Value Co-Creation		Weakens
H3c	Social Media Technology Usage	x	Heterogeneity	Value Co-Creation		Strengthens
H3d	Social Media Technology Usage	x	Quality	Value Co-Creation		Strengthens

Conclusion

Chapter 4 delineates the conceptual model and hypothesized linear and interactive relationships related to salesperson social media technology usage. In addition to three primary linear relationships related to competitive intelligence, communication reciprocity and value co-creation, this dissertation also posits twelve additional moderating hypotheses related to individual salesperson network characteristics including size, density, heterogeneity, and quality. The next chapter discusses the data sample and measures used to analyze this model.

CHAPTER 5

METHODS

Data Collection and Sample Description

Toward the goal of this study, this dissertation employs an existing data set provided by a consulting firm with a mutual interest in promoting academic research in the sales domain. As a leading sales consulting firm with knowledge of academic research and practice, the firm routinely uses online surveys to collect data from its business partners. In the case of this sample, an online survey using adapted scales was shared with salespeople working across a variety of industries in an effort to capture the broad impact of social media on various common sales outcomes and other strategic variables under firm control. The data were acquired by surveying a random sample of 1200 salespeople from its partner firms spanning a broad spectrum of industries located in the United States. The respondents were representative of a wide range of sizes and types of businesses serving both the business-to-business (B2B) and business-to-consumer (B2C) markets.

Responses were received over a six-week time frame and, of the salespeople contacted, 330 – or 27.5% – completed full surveys. After removing B2C respondents (41), and those who reported that they did not use social media in their role (10), a final qualified sample of 279 B2B salesperson respondents, purportedly utilizing social media in their sales roles, was identified. Survey respondents represented a wide array of industries and size, including 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%). In

addition, 69.2% were white, and 52.6% were male. In an effort to combat potential nonresponse

bias, and following the protocol of Armstrong and Overton (1977), tests to compare early to late

respondents across the available demographics and all variables were completed with no issues

reported.

Measures

All multi-item scale measures used in this study were adapted from previously published

survey research. Scale items for the antecedent, salesperson social media technology usage,

included a self-reported count metric for intensity, and three items for frequency. The frequency

items used a 7-point Likert-type scale anchored by 1 = *never* and 7 = *always*. All remaining

outcome and moderator variable scale items used 7-point Likert-type scales anchored by 1 =

strongly disagree and 7 = *strongly agree*. Individual scale items are included in Table 5.1

through Table 5.3, and each measure is detailed in the following discussion.

Social Media Technology Usage

The omnibus measure of salesperson *social media technology usage* was developed

following the approach of Ahearne et al. (2008) in which technology usage was calculated as a

latent construct with indicators that represented both frequency and intensity of use (p. 678-679).

Our omnibus measure similarly accounted for both frequency and intensity of social media

technology usage. Because social media outlets are numerous (Mangold and Faulds 2009) and

can take various forms (Kietzmann et al. 2011), to capture intensity of social media technology

use, respondents received a list of 15 common social media technology tools/platforms 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 social media technology utilized that were not included within the list

provided. An aggregated total was then generated from the marked items to determine a single

score that captured the intensity of social media tools used (Trainor et al. 2013). Additionally, a

3-item measure of frequency of use was adapted from Jelinek et al. (2006) to assess respondents'

frequency of social media use. Finally, a correlation test was run between intensity of use

(number of social media tools used) and frequency of use which confirmed a significant

correlation ($r = .339$, $p <.01$) as expected. Thus, the omnibus measure of social media technology

usage encompassed both the extent of social media technology tools being used and the

frequency of social media use.

Table 5.1

Items: Social Media Technology Usage – Intensity

	The following is a basic list of Social Media Categories with examples of common Social Media tools. Please place a check next to each that applies to your use on the job:
	1. Blogging (i.e.Blogger, Wordpress, TypePad)
	2. Micro-blogging (i.e.Twitter, Tumblr)
	3. Instant Messaging (i.e.Google Instant Messenger, ooVoo, MicroSoft Network (MSN), Skype, Yahoo)
	4. Photo Sharing/Storage (i.e. Flickr. Twitpic)
	5. Video Hosting/Sharing/Storage (i.e. Twitvid, UStream, YouTube)
	6. Really Simple Syndication (RSS) (i.e. RSS)
	7. RSS Feed Readers (i.e. Bloglines, Google Reader)
	8. Social and Professional Networking (i.e. Classmates, FaceBook, LinkedIn, MySpace, Ning)
	9. Live Interactive Broadcasting (i.e. UStream.tv)
	10. Web-based Email (i.e. Gmail (Google), Microsoft Network (MSN) Live, Hotmail (MSN),Yahoo)
	11. Online Conferencing/Webinar (i.e. Adobe Connect, Go-to-Meeting, ooVoo, Yugma)
	12. Social Bookmarking (i.e. Delicious, Digg, Diigo, Furl, StumbleUpon)
	13. Moderated Web Community (i.e. Google, MSN, Yahoo)
	14. Unmoderated Web Community (i.e. Google, MSN, Yahoo)
	15. Presentation Sharing/Storage (i.e. SlideShare)
	16. I do not use SOCIAL MEDIA for job related responsibilities.
	17. Other _____

Table 5.2

Items: Social Media Technology Usage – Frequency

Relative to your frequency of use of Social Media, please rate the following statement on a scale ranging from 1 to 7 where [1 = Never & 7 = Always]
1. How frequently do you believe you use Social Media tools on the job?   2. How many hours do you believe you use Social Media tools on the job every week?   3. How many times do you believe you use Social Media tools on the job during a week?

Strategic Sales Outcomes

Competitive intelligence was measured by adapting 3 items from the MARKOR scale (Kohli, Jaworski and Kumar 1993) pertaining to information generation, which captured the salesperson's use of social media technology to gather important information about the customer and changing competitive landscape. The 4 item measure for *communication reciprocity* was similarly adapted from Schade, Nitschke, and Sattler (2005) and Wasko and Faraj (2005) and captured the salesperson's perception of 2-way communication efforts with customers and their desire to return in kind any information or assistance as needed. Finally, the 4 item value co-creation measure was adapted from Ngo and O'Cass (2009) and captured the salesperson's use of social media to facilitate partnering with customers to create products, services or solutions, or to involve them in specific sales and marketing efforts of the firm.

Table 5.3

Items: Strategic Sales Outcomes

Competitive Intelligence/Information Generation
Relative to Information Generation (Competitive Intelligence), please state how strongly you disagree/agree with the following statements [1 = Strongly disagree & 7 = Strongly agree]:
1. In this business, we use Social Media to conduct market research.   2. We use Social Media to detect changes in our customers' product preferences.   3. We use Social Media to detect fundamental shifts in our industry (e.g., competition).

Communication Reciprocity
Relative to 2-Way Communication with your customers, please state how strongly you disagree/agree with the following statements [1 = Strongly disagree & 7 = Strongly agree]:
1. My customers are willing to help and share information with me.   2. When I have questions, my customers are willing to assist me, even if it may cost them time and effort.   3. When I have a request for help, my customers will help me.   4. I know that when I need information, my customers will share it with me.

Value Co-Creation
Relative to Value Co-creation please state how strongly you disagree/agree with the following statements [1 = Strongly disagree & 7 = Strongly agree]:
1. We use social media to involve customers in marketing and sales.   2. We use social media to involve customers in customer service and solutions.   3. We use social media to involve customers in new product development.   4. We use social media to manage customers as partial employees.

Network Characteristic Moderators

The network *size* variable was captured using a 2 item measure adapted from Fang (2008) which

sought to characterize the salesperson's perception of the extent or magnitude of her or his

customer base/network. Similarly, the 3 item measure capturing *network density* was also

adapted from Fang (2008) and sought to ascertain the interconnectedness of the salesperson's

customers, or how well they knew each other and frequently communicated. *Network*

heterogeneity was captured using 4 items adapted from Achrol and Stern (1988) geared toward

uncovering the diversity of the salesperson's customer base and needs, in so far as they are from

different industries, have different product or service needs, and generally share little in common

with other members of the salesperson's customer network. Finally, *network quality* was

captured using 3 items adapted from Netemeyer and colleagues (2004) in work which allowed

the salesperson to assess the overall positive grade of her or his customers, assessing their

goodness or merit, or extent to which they are essentially irreplaceable.

Table 5.4

Items: Network Characteristic Moderators

Network Size
Relative to Network Size, please state how strongly you disagree/agree with the following statements [1 = Strongly disagree & 7 = Strongly agree]:
1. I have a very large group of customers I deal with.   2. I deal with a lot of customers on a regular basis.

Network Density
Relative to Network Density, please state how strongly you disagree/agree with the following statements [1 = Strongly disagree & 7 = Strongly agree]:
1. My customers are very inter-related.   2. Many of my customers know each other.   3. My customers communicate with one another frequently

Network Heterogeneity
Please state how strongly you disagree/agree [1 = Strongly disagree & 7 = Strongly agree]: My customers are very different in regards to the following:
1. Nature and size of their businesses.   2. Preferred variety of product brands/features.   3. Preferences in price/quality.   4. Demographic qualities.

Network (Customer) Quality
Relative to Customer Quality, please state how strongly you disagree/agree with the following statements [1 = Strongly disagree & 7 = Strongly agree]:
1. I have very good customers   2. My customers are some of the best in the market   3. My customers are irreplaceable

Conclusion

Chapter 5 delineates the source of the existing data sample employed in this study, as well as the demographics of the salesperson sample collected from a broad cross-section of salespeople working in diverse industries across the United States. Development of the omnibus measure for salesperson social media technology usage is also detailed, along with the source of scales adapted for each of the strategic sales outcome and network characteristic moderator variables. The next chapter discusses the analyses undertaken in this dissertation and shares the results of the study.

CHAPTER 6

RESULTS

CFA Measurement Model

Prior to the planned structural equation modeling (SEM) analysis, a CFA model was fit to the data using IBM SPSS Amos 19 in order to confirm measurement model goodness of fit statistics. This CFA measurement model yielded good fit in accordance with accepted thresholds ($\chi^2 = 465.893(247)$, p<.01; CFI=.957; RMSEA=.088; SRMR=.0468) with χ^2/df < 3 (calculated at 1.89), CFI > 0.95, RMSEA just over 0.08, and SRMR < 0.05 (Hooper, Coughlan and Mullen 2008). Although RMSEA is slightly higher than the threshold, SRMR did demonstrate excellent fit (Hooper et al. 2008). As such, the CFA model was utilized as the base for subsequent structural model tests.

Table 6.1 provides intercorrelations and descriptive information for the latent constructs employed in this conceptual model. In order to assess the validity and reliability of the aforementioned multi-item scales used in this study, a confirmatory factor analysis (CFA) was conducted following the approach of Gerbing and Anderson 1988. All values for average variance extracted (AVE) and composite reliability (CR) exceed widely accepted thresholds established in extant marketing literature (Bagozzi and Yi 1988). Providing support for evidence of discriminant validity, the average variance extracted for each construct also exceeds the squared correlations between all pairs of constructs (Fornell and Larcker 1981).

Table 1   Intercorrelations, Means, Standard Deviations, and Reliabilities

Variable	1	2	3	4	5	6	7	8	Mean (SD)	CR	AVE
1. Social Media Use*	1								0.00 (1.0)	--	--
2. Competitive Intelligence	0.658	1							4.93 (1.6)	0.92	0.80
3. Communication Reciprocity	0.657	0.407	1						5.58 (1.1)	0.90	0.70
4. Value Co-creation	0.481	0.319	0.698	1					6.01 (1.1)	0.93	0.76
5. Network Density	0.583	0.348	0.441	0.237	1				4.90 (1.5)	0.89	0.73
6. Network Size	0.610	0.435	0.672	0.539	0.396	1			5.50 (1.2)	0.82	0.70
7. Network Heterogeneity	0.650	0.361	0.643	0.527	0.367	0.570	1		5.29 (1.2)	0.90	0.68
8. Network Quality	0.629	0.361	0.841	0.731	0.393	0.655	0.612	1	5.59 (1.1)	0.86	0.67

Notes. Social media use is an omnibus measure; therefore, scale reliability tests are not applicable. CR, composite reliability. AVE, average variance extracted. All correlations were significant at p < 0.05; *n*=279.

*Values for social media use were standardized

69

Hypothesized/Structural Models

In order to complete the following structural model analyses, IBM SPSS Amos 19 was again utilized to explore the hypothesized relationships. Structural equation modeling (SEM) was employed, in conjunction with analyses of both linear and interactive network characteristic relationships, in an effort to best capture and understand the posited impact of salesperson social media technology usage on the key strategic sales outcomes including competitive intelligence, communication reciprocity and value co-creation. The following sections detail the specific approaches to the linear and interactive models used and investigated in this dissertation.

Linear Models

Adapting the approach of Rapp, Ahearne, Mathieu and Schillewaert (2006), analysis began with a series of four separate linear effects models aimed at separately establishing a baseline test of the hypothesized model (as depicted in Figure 4.1), minus each of the four independent network characteristic moderators. Such models allow for isolation and testing of the linear relationship between salesperson social media technology use and competitive intelligence (H1), communication reciprocity (H2), and value co-creation (H3). In addition, each linear effects model included one of the target network characteristic moderators in an effort to establish a baseline model for subsequently testing interactive effects of each separate moderator (Rapp et al. 2006). Following each linear effects model, the hypothesized model was fit, including each of the four network characteristic moderators: size, density, heterogeneity, and quality.

Interactive Models

To test for interaction effects, salesperson social media technology use and the individual network characteristic moderator (size, density, heterogeneity, and quality) were both mean-

70

centered and a multiplicative interaction term between the two variables was then 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 the individual constructs

that form the product term as well as the correlation between the linear terms. The resulting

reliability for the interaction between salesperson social media technology use and size (r =

0.819), density (r = 0.884), heterogeneity (r = 0.894), and quality (r = 0.844) was used to fix the

error term associated with the interaction term. A second model was then fit that included this

product term as an antecedent to competitive intelligence, communication reciprocity, and value

co-creation, assigning letters a through d to the original H1 through H3 hypotheses in order to

capture the effects of each network characteristic moderating variable on the original set of

strategic sales outcomes.

Because the linear effects model is nested within the hypothesized model, it is necessary

to analyze and compare the results of each direct effects model to each final model which

includes the interaction term (Rapp et al. 2006). If a significant ΔX^2 exists between the two

models, then the interaction is significant. This procedure for testing interactions in structural

equation models is supported by extant empirical research (Mathieu, Tannenbaum, and Salas

1992) and also recommended in method comparison research (Cortina, Chen and Dunlap 2001).

Hypothesis Testing

Linear Effects Models

The linear effects models, which were run individually with each of the network

characteristic moderator variables as previously discussed, indeed yielded acceptable or good fit,

as detailed by the goodness-of-fit statistics shown in Tables 6.2 – Table 6.5. Values for X^2/df,

CFI and RMSEA were each within rules of thumb for generally accepted threshold ranges

indicating good fit (Hooper et al. 2008). In order to determine the linear effects of salesperson

social media technology usage on our strategic sales outcomes, the significance of paths in the

linear model are examined, or in this case each of four linear models, with the exception of the

network characteristic moderator variable. The relationship between salesperson social media

technology usage and competitive intelligence was found to be both positive and significant, in

support of the first hypothesized primary linear relationship posited in H1. In fact, as shown in

Table 6.6, each of the four linear effects models confirmed this positive relationship.

Table 6.2

Standardized Parameter Estimates and Fit Statistics (Size)

Relationships	Linear Effects Model	Interaction Effects
H1: SMTU → Competitive Intelligence	0.575**	--†
H2: SMTU → Communication Reciprocity	0.634**	--†
H3: SMTU → Value Co-Creation	0.546**	--†
H1a: SMTU x Size → Competitive Intelligence		-0.026
H2a: SMTU x Size → Communication Reciprocity		-0.821*
H3a: SMTU x Size → Value Co-Creation		-0.831**
X^2 (df)	236.451(99)	214.778(93)
CFI	0.954	0.959
RMSEA	0.071	0.069

Note: SMTU = Social Media Technology Usage. N = 279

* Sig. at $p < .05$

** Sig at $p < .01$

† Linear effects are not interpreted in the presence of a higher order interaction

Table 6.3

Standardized Parameter Estimates and Fit Statistics (Density)

Relationships	Linear Effects Model	Interaction Effects
H1: SMTU → Competitive Intelligence	0.561**	--†
H2: SMTU → Communication Reciprocity	0.585**	--†
H3: SMTU → Value Co-Creation	0.493**	--†
H1a: SMTU x Density → Competitive Intelligence		-0.102
H2a: SMTU x Density → Communication Reciprocity		-0.146
H3a: SMTU x Density → Value Co-Creation		-0.215
X^2 (df)	266.235(114)	240.010(108)
CFI	0.952	0.959
RMSEA	0.069	0.066

Note: SMTU = Social Media Technology Usage. N = 279

* Sig. at $p < .05$

** Sig at $p < .01$

† Linear effects are not interpreted in the presence of a higher order interaction

Table 6.4

Standardized Parameter Estimates and Fit Statistics (Heterogeneity)

Relationships	Linear Effects Model	Interaction Effects
H1: SMTU → Competitive Intelligence	0.586**	--†
H2: SMTU → Communication Reciprocity	0.652**	--†
H3: SMTU → Value Co-Creation	0.576**	--†
H1a: SMTU x Heterogeneity → Competitive Intelligence		-0.090
H2a: SMTU x Heterogeneity → Communication Reciprocity		0.029
H3a: SMTU x Heterogeneity → Value Co-Creation		-0.182
X² (df)	283.018(130)	271.622(124)
CFI	0.955	0.957
RMSEA	0.065	0.065

Note: SMTU = Social Media Technology Usage. N = 279

* Sig. at p < .05

** Sig at p < .01

† Linear effects are not interpreted in the presence of a higher order interaction

Table 6.5

Standardized Parameter Estimates and Fit Statistics (Quality)

Relationships	Linear Effects Model	Interaction Effects
H1: SMTU → Competitive Intelligence	0.583**	--†
H2: SMTU → Communication Reciprocity	0.772**	--†
H3: SMTU → Value Co-Creation	0.674**	--†
H1a: SMTU x Quality → Competitive Intelligence		-0.025
H2a: SMTU x Quality → Communication Reciprocity		-0.046
H3a: SMTU x Quality → Value Co-Creation		-0.110
X² (df)	281.137(114)	233.708(108)
CFI	0.950	0.962
RMSEA	0.073	0.065

Note: SMTU = Social Media Technology Usage. N = 279

* Sig. at p < .05

** Sig at p < .01

† Linear effects are not interpreted in the presence of a higher order interaction

Table 6.6

Linear Effects Model Results for H1

Network Characteristic Model Tested	Hypothesis	Linear Relationship	Standardized Regression Weight β	p-value
Size	H1	SMTU → Competitive Intelligence	0.521	< .01
Density	H1	SMTU → Competitive Intelligence	0.536	< .01
Heterogeneity	H1	SMTU → Competitive Intelligence	0.509	< .01
Quality	H1	SMTU → Competitive Intelligence	0.448	< .01

Similarly, the hypothesized primary linear relationships between salesperson social media technology usage and both communication reciprocity (H2), and value co-creation (H3) were also significant and positive in support of both the dissertation linear hypotheses, as well as the foundational theoretical rationale set forth by social exchange theory and the TPC model. While evidence of support for the linear hypotheses is welcome, the most informative relationships in this dissertation rest in the interactive hypotheses, which were investigated next.

Table 6.7

Linear Effects Model Results for H2

Network Characteristic Model Tested	Hypothesis	Linear Relationship	Standardized Regression Weight β	p-value
Size	H2	SMTU → Communication Reciprocity	0.881	< .01
Density	H2	SMTU → Communication Reciprocity	0.866	< .01
Heterogeneity	H2	SMTU → Communication Reciprocity	0.868	< .01
Quality	H2	SMTU → Communication Reciprocity	0.912	< .01

Table 6.8

Linear Effects Model Results for H3

Network Characteristic Model Tested	Hypothesis	Linear Relationship	Standardized Regression Weight β	p-value
Size	H3	SMTU → Value Co-Creation	0.735	< .01
Density	H3	SMTU → Value Co-Creation	0.702	< .01
Heterogeneity	H3	SMTU → Value Co-Creation	0.743	< .01
Quality	H3	SMTU → Value Co-Creation	0.771	< .01

Interactive Models

Next, in order to test the hypothesized network characteristic moderation models, the data in Tables 6.2 through 6.5 were used to compare fit for each model against its corresponding linear effects model for each variable including size, density, heterogeneity and quality. In each case the hypothesized model demonstrated good-to-excellent fit based upon χ^2, p-value, CFI and RMSEA goodness-of-fit statistics against the aforementioned widely accepted research thresholds (Hooper et al. 2008). In addition, each hypothesized model represented a significant improvement over its associated linear effects model, as evidenced in Table 6.9, suggesting that it was advisable to move forward with examination and analysis of the four distinct hypothesized models.

Table 6.9

Hypothesized Model versus Linear Effects Models

	Size	Density	Heterogeneity	Quality
Hypothesized Model X^2	214.778	240.01	271.622	233.708
Linear Effects Model X^2	236.451	266.235	283.018	281.137
Hypothesized Model df	93	108	124	108
Linear Effects Model df	99	114	130	114
ΔX^2	21.673	26.225	11.396	47.429
Δdf	6	6	6	6
p-value	$< .01$	$< .01$	$< .10$	$< .01$

The first set of interaction hypotheses considered the impact of salesperson network size on the relationship between social media technology usage and the aforementioned strategic sales outcomes. H1a predicted that network size would negatively impact the relationship between social media technology usage and competitive intelligence. The data did not support the interactive effect as posited (H1a; $\beta = -0.014$, NS) as the relationship was not found to be significant. However, the posited moderating relationships between salesperson social media technology usage and network size, and communication reciprocity (H2a; $\beta = -0.679$, $p < .05$) and value co-creation (H3a; $\beta = -0.667$, $p < .01$) were each found to be significant and consistent with both the hypotheses and underlying social exchange and network theory logic in support of the finding. Network size was found to significantly moderate the relationship between SMTU and communication reciprocity as proposed in H2a. The moderating effect is negative indicating that as network size increases, the relationship between SMTU and communication reciprocity becomes weaker. Similarly, network size was also found to significantly moderate the relationship between SMTU and value co-creation as proposed in H3a. The moderating effect is

again negative indicating that as network size increases, the relationship between SMTU and value co-creation becomes weaker. Interestingly, these two moderating hypotheses were the only two in the study that were found to be significant, but they do represent key findings of this dissertation.

To interpret the form of these important interactions, standard practices from moderated regression analyses were used to plot the interactions (Aiken and West 1991). Specifically, the analyses plotted the relationships between salesperson social media technology usage and communication reciprocity, as well as salesperson social media technology usage and value co-creation that corresponded to the low (one SD below the mean), average (mean), and high (one SD above the mean) values of the network size moderator. These plots are included in Figure 6.1 and Figure 6.2, and demonstrate in both cases that, as social media technology usage increases by salespeople operating with smaller-to-average size customer networks, both communication reciprocity and value co-creation can be expected to increase substantially. However, the opposite is true for increasingly large salesperson networks wherein enhanced social media technology usage by salespeople has a negligible, or marginally negative impact on communication reciprocity and value co-creation respectively. In each instance, the impact of this interesting finding will be discussed in much greater detail in the next chapter so as to better understand the potential impact on the salesperson, the customer, and the firm.

Unfortunately, the remaining nine hypotheses failed to find support in this study. In order to rule out the possibility that nonsignificant interactions were the result of low power (Faul, Erfelder, Lang and Buchner 2007), a power analysis was undertaken using GPower 3.1.9.2 which confirmed that the sample size in the study far exceeded that required, and power was on the order of 0.99, thus confirming that power was not an issue behind nonsignificant results.

Figure 6.1

Size x SMTU Interaction – Communication Reciprocity
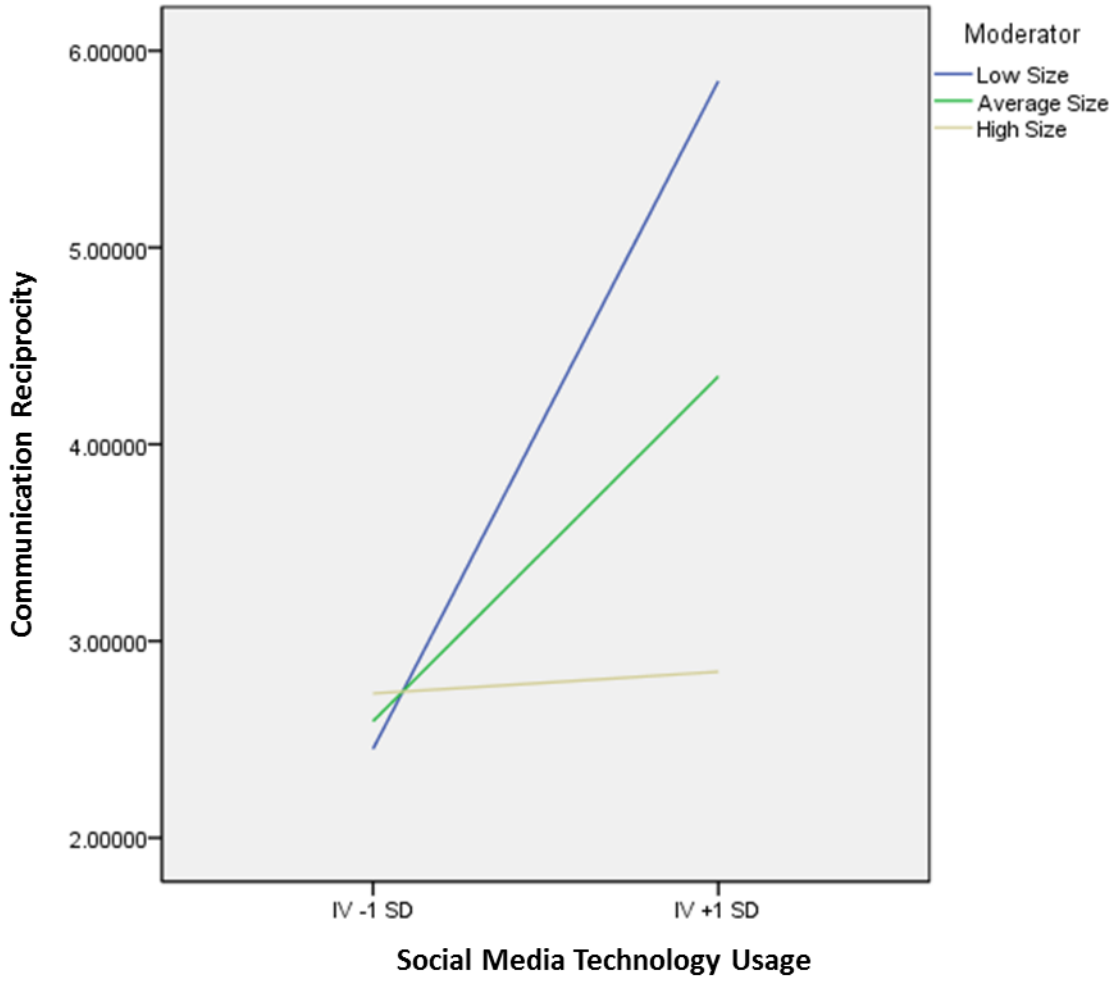
Figure 6.2

Size x SMTU Interaction – Value Co-Creation
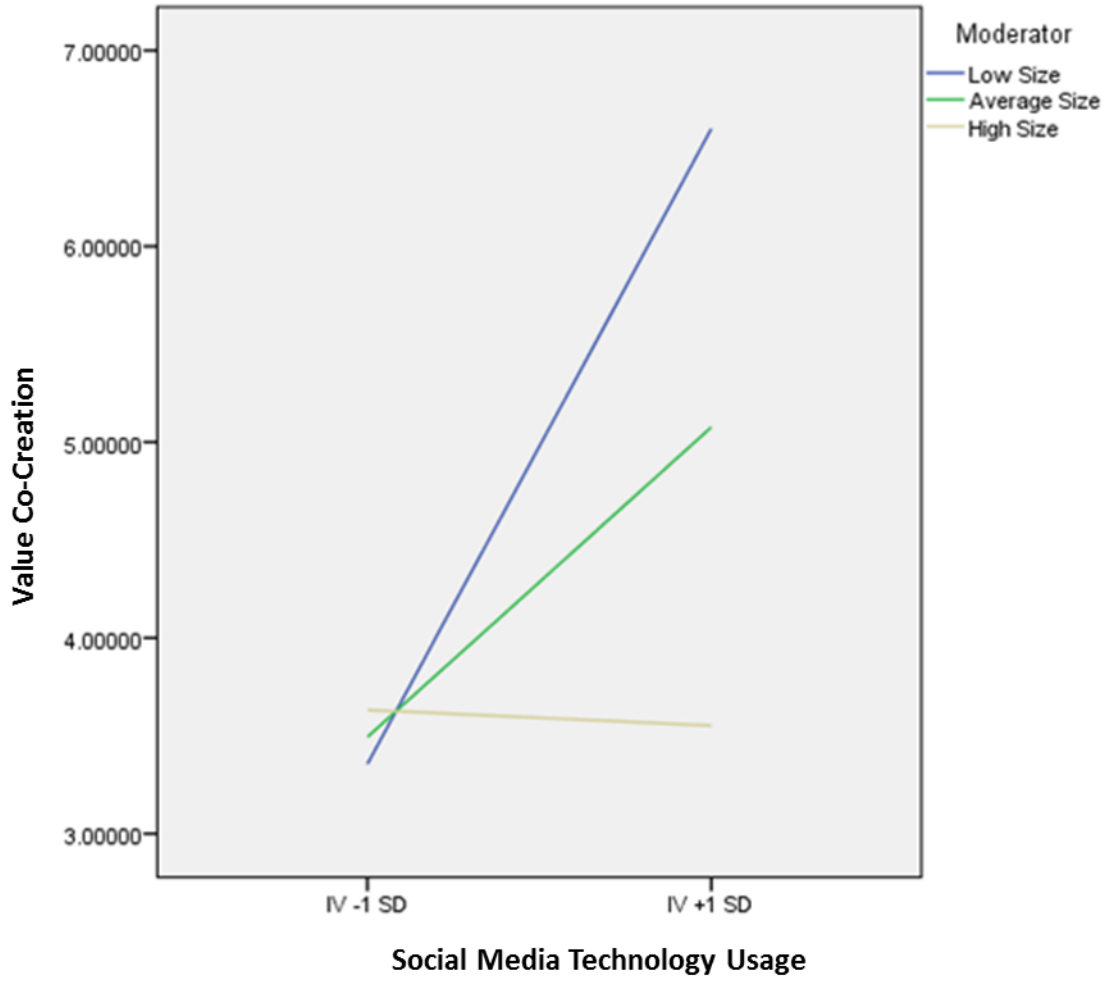
Interestingly, the hypothesized negative impact of salesperson network density on the relationships between salesperson social media technology usage and the strategic sales outcomes appeared to yield negative standardized regression weights as predicted, H1b (β = -0.055, NS), H2b (β= -0.122, NS) and H3b (β = -0.173), however each hypothesis failed to find significant support in this work. Similarly, though not hypothesized, density appeared to have a direct impact on communication reciprocity (β = - 0.429, $p < .05$) and value co-creation (β = -0.429, $p < .01$) suggesting there might be potential for future investigation in that regard. As to the moderating impact of heterogeneity, H1c (β = -0.053, NS), H2c (β= 0.026, NS) and H3c (β = -0.157, NS) no significant relationships were uncovered and thus no case for directional consistency with theoretical foundation could be established. Finally, we also failed to uncover support for a moderating influence of salesperson network quality, though it might appear that negative directional consistency in contradiction to the hypotheses seems to have been established as H1d (β = -0.015, NS), H2d (β= -0.042, NS) and H3d (β = -0.100) since each yielded negative, but nonsignificant, results. Interestingly, and again not hypothesized, quality did appear to have an individual linear impact on both communication reciprocity (β = 0.690, $p < 0.01$) and value co-creation (β = 0.634, $p < 0.01$) again suggesting opportunities for future research might be available.

Summarizing results, strong support was found for each of the three primary linear relationships, as well as two of twelve moderating hypotheses related to salesperson network characteristics. Additionally, results also uncovered the potential for additional linear effects related to salesperson network characteristics and the three strategic sales outcomes, again specifically related to communication reciprocity and value co-creation. Other than in its

primary linear effect relationship with salesperson social media technology usage, competitive

intelligence did not find support from any of the network characteristics set forth in this model.

Post Hoc Regression Analysis

Although not hypothesized, I next conducted hierarchical regression analyses using SPSS

19 to test for the presence of higher order interactions. In order to test the hypothesized

moderating role played by the different dimensions of the salesperson's social network, the four

dimensions of the network and social media were first mean-centered. I then calculated

multiplicative interactive terms between the individual dimensions of the network and social

media use for all 5-way, 4-way and 3-way interactions. The full results of these analyses are

shared in the Appendix.

Results suggest that there may be possible 3-way interactions at play in the relationship

between salesperson social media technology usage (SMTU) and value co-creation. SMTU by

size by quality ($\beta = 0.399$, $p < .017$), SMTU by density by heterogeneity ($\beta = 0.328$, $p < .037$),

and SMTU by density by quality ($\beta = -0.376$, $p < .034$) each yielded significant results, and R^2

for the model was 0.507. Similarly, results of the analyses also suggested that there may be

possible 4-way interactions at play in the relationship between salesperson social media

technology usage and communication reciprocity. SMTU by size by density by heterogeneity (β

$= -0.491$, $p < .006$) and SMTU by size by density by quality ($\beta = 0.498$, $p < .015$) were shown to

have significant relationships with communication reciprocity, while R^2 for the model was even

higher at 0.656. Thus, my results from the aforementioned SPSS analyses suggest that my model

may provide explanatory power and both fruitful and interesting results regarding salesperson

social media technology usage and network characteristic moderators that could serve as the

basis for future research which may lead to future publication.

As a result of the post hoc regression analysis using SPSS, some contradictions with SEM in regards to significant 2-ways interactions were also uncovered. While the aforementioned SEM analysis revealed that salesperson customer network size moderated the relationships between salesperson social media technology usage and both communication reciprocity and value co-creation, the SPSS analysis failed to find support for either interactive relationship. Instead, significant moderating relationships related to salesperson customer network heterogeneity were uncovered for the relationships between salesperson social media technology usage and both competitive intelligence and value co-creation.

In the spirit of the earlier discussion regarding competing arguments for hypothesis development, it was also interesting to note that both of the heterogeneity related interactive relationships uncovered via SPSS regression analysis actually demonstrated a negative impact on the primary relationships in direct contradiction to the arguments set forth in this dissertation. Accordingly, this post hoc analysis further strengthens the suggestion that additional work is warranted in this area. Perhaps using a different salesperson sample from different B2B industries might uncover more rich results related to the impact of the individual salesperson's customer network.

Finally, SPSS analysis also suggests that additional research investigating the direct relationship between each of the salesperson customer network moderators and the three strategic sales outcomes in this study is also warranted. While not the focus of this work, it was apparent as a result of this study that the salesperson's customer network has great potential to directly impact some of the mediating relationship variables that stand between technology use and performance as set forth in the TPC. Better understanding those direct impacts will further inform any work geared toward identifying potential moderating relationships in the sales field.

Conclusion

Chapter 6 discussed the analyses undertaken in this dissertation toward testing the hypothesized model. Through the use of structural equation modeling, this research uncovered support for its three primary linear relationships relating salesperson social media technology usage to competitive intelligence, communication reciprocity, and value co-creation. In addition, moderating relationships were uncovered between salesperson social media technology usage and size, as the interaction was shown to significantly weaken the relationship with communication reciprocity and value co-creation, demonstrating that, for large salesperson customer networks, social media can have a negative effect. Finally post hoc hierarchical regression analysis demonstrated the potential for both 3-way and 4-way interactions, while also revealing some future opportunities to investigate additional 2-way interactions not found in this current study through SEM.

CHAPTER 7

DISCUSSION

This dissertation sought to investigate and to gain a better understanding of the burgeoning role of social media technology in the sales domain. While the internet has been altering the face of the global marketplace for the better part of the last two decades, social media is a relatively new, but potent phenomenon with not only the potential for, but an early track record of, altering the way customers and firms, and hence, customers and salespeople may do business. It is true that very limited research has investigated the performance impact of social media at the macro firm or organizational level, but perhaps more important and the main research question of this paper is how an embrace of social media by the salesperson is likely to impact interactions at the most micro-level, with the customer directly. The entire domain of sales is built upon relationships, and social media is a tool built specifically to facilitate engagement (Andzulis et al. 2012), so understanding its impact on relationships is paramount. Additionally, because salespeople almost by definition operate within a network of numerous customers, understanding not only individual relationships with customers, but how the salesperson's network impacts those relationships is critically important. This research addresses those concerns and uncovers some interesting findings in that regard.

As detailed earlier, the crux of this study revolved around better understanding the relationship between salesperson social media technology usage and three key strategic sales outcomes including competitive intelligence, communication reciprocity, and value co-creation.

Employing social exchange theory (Homans 1961; Thibaut and Kelley 1959) for foundational support, this dissertation posited that positive relationships would exist between salesperson social media technology usage and the three strategic outcomes which rely heavily on a customer's proclivity to return in kind any information or assistance shared as a mechanism by which to maintain good social standing and relationship equilibrium.

In an attempt to advance understanding beyond the individual salesperson – customer dyad, this dissertation also employed network theory (Granovetter 1973; Granovetter 1983; Thorelli 1986) as a theoretical lens for explaining how the characteristics of a salesperson's network might moderate the aforementioned relationships between social media technology usage and the three strategic sales outcomes. Envisioning each network characteristic as an individual moderator, twelve moderation hypotheses were set forth which would either weaken (e.g. size, density), or strengthen (e.g. heterogeneity, quality) the aforementioned relationships.

Employing an existing data set of salesperson respondents, this dissertation used a final sample of 279 business-to-business salespeople who use social media technology on the job in order to test the fifteen hypothesized relationships, finding support for five as detailed in the following sections.

Table 7.1

Summary of Research Findings

Hypothesis	Independent Variable	Moderator	Dependent Variable	Direct Effect	Interaction
H1	Social Media Technology Usage	---	Competitive Intelligence	Supported	
H1a	Social Media Technology Usage	x Size	Competitive Intelligence		NS
H1b	Social Media Technology Usage	x Density	Competitive Intelligence		NS
H1c	Social Media Technology Usage	x Heterogeneity	Competitive Intelligence		NS
H1d	Social Media Technology Usage	x Quality	Competitive Intelligence		NS
H2	Social Media Technology Usage	---	Communication Reciprocity	Supported	
H2a	Social Media Technology Usage	x Size	Communication Reciprocity		Supported
H2b	Social Media Technology Usage	x Density	Communication Reciprocity		NS
H2c	Social Media Technology Usage	x Heterogeneity	Communication Reciprocity		NS
H2d	Social Media Technology Usage	x Quality	Communication Reciprocity		NS
H3	Social Media Technology Usage	---	Value Co-Creation	Supported	
H3a	Social Media Technology Usage	x Size	Value Co-Creation		Supported
H3b	Social Media Technology Usage	x Density	Value Co-Creation		NS
H3c	Social Media Technology Usage	x Heterogeneity	Value Co-Creation		NS
H3d	Social Media Technology Usage	x Quality	Value Co-Creation		NS

Linear Effects

As detailed in the results section, this dissertation uncovered support for each of its three linear effects hypotheses, essentially confirming the tests four times through a unique approach which tested the four network characteristic moderating variables (size, density, heterogeneity, and quality) individually. Strong positive directional support was found suggesting that the explanatory powers of social exchange theory as an underlying mechanism in the context of the present study were sound.

The results of the four separate linear tests revealed some consistent findings related to the standardized regression weights for each of the relationships between salesperson social media technology usage and competitive intelligence, communication reciprocity, and value co-creation. Results in Tables 6.6 through Table 6.8 demonstrate a consistent pattern with the standardized β weights. The relationship between salesperson social media technology usage and communication reciprocity appeared to yield the strongest positive relationship, with standardized β weights that ranged from 0.866 – 0.912. Value co-creation was next with standardized β weights which ranged from 0.702–0.771. Competitive intelligence thus finished in a strong third position with standardized β weights that ranged from 0.448 – 0.536.

Understanding the impact of salesperson social media technology usage on these important strategic sales outcomes allows the salesperson and the firm to begin to identify, if not qualify, some of the intangibles that warrant further investment and or training in such technology. In this study, our results suggest that salesperson technology usage is very likely to enhance efforts to facilitate communication reciprocity with customers. Logically, this makes sense as social media by definition (Andzulis et al. 2012) is about engagement. From a practical standpoint, social media offers one more channel for interacting with customers. As customers

become more comfortable with and embrace social media in their own personal lives, it follows suit that they will very likely begin to expect the same tools to be used in facilitation of business relationships, such as those typical in a sales environment, in their day-to-day jobs. Recalling that Pervan, Bove and Johnson (2009) refer to communication reciprocity as a backbone or pillar of relationships, employing an additional tool which facilitates such communication with customers only makes sense. From a salesperson standpoint, social media moves the conversation and interaction from email, phone, or face-to-face, to a more informal and often much more responsive mechanism or medium which reduces the need for planned long discussions to simple, quick, on-demand exchanges when necessary or convenient for both parties. While it doesn't change the goal of the sales job, it does change the way the salesperson must be prepared to respond and furthermore shifts the power balance to the customer (Rapp and Panagopoulos 2012).

Similarly, results in support of value co-creation are also important. Value co-creation in this context essentially refers to the proclivity of the customer to embrace an almost equal role with the salesperson, as a partner or even pseudo/partial employee of the firm. Value co-creation involves the salesperson directly involving the customer in sales or marketing efforts, or drafting them into new product, service or solution design efforts as a partner in problem solving. While social media on its own certainly can't be asked to make all of those things happen, again the engagement (Andzulis et al. 2012) that it facilitates allows the salesperson to involve the customer in small, but meaningful ways which, on the whole, equate to substantial value over the course of the relationship. Given the trust, loyalty and commitment (Cropanzano and Mitchell 2005) that can be expected from members of high quality dyad relationships, to the extent that social media technology usage can bring the parties even closer it is likely to yield benefits to the

firm. Results further suggest that salesperson social media technology usage is strongly positive

with value co-creation. Therefore use of this additional communication channel should be

reinforced with salespeople as not only a means by which to connect with customers, but as a

true point of productive value co-creation. If customers engaged via social media technology are

engaged through more frequent but smaller interactions, and the result is beneficial to the firm,

the day-to-day planning salesperson interactions with customers most appreciative of the

medium should change accordingly. It is entirely possible, in the same way that some people

prefer to interact by email or phone, or vice versa, that similar pockets of customers who prefer

social media engagement to sales calls will also emerge. The task is for the salesperson to keep a

pulse on each individual customer to ensure that service and interactions match each customer's

preferred expectations.

Competitive intelligence was the final strategic outcome in this study, and it, too, was

found to have a strongly positive relationship with salesperson social media technology usage.

In our context, competitive intelligence relates specifically to conducting market research,

detecting shifts in the competitive landscape, or identifying changes in customer preferences for

product or service offerings. This definition essentially mirrors the key elements of that set forth

in extant research by Rapp, Agnihotri and Baker (2011), with the key premise being that

competitive intelligence is gathered for use by the firm to improve its market position. More

recent work by Ahearne, Lam, Hayati and Kraus (2013) began the foray into linking competitive

intelligence efforts to the individual salesperson and the salesperson's network, but this study

attempts, at a very basic level, to simply understand if the use of social media technology by a

salesperson has the potential to further facilitate collection of such valuable market intelligence.

With support from these findings, the answer is a resounding, yes. Salespeople can again view

social media as an additional channel of engagement with customers. Each opportunity for engagement servers to further relationships that lead to free sharing of individual customer information, but furthermore offer the potential to observe what's taking place around the industry, their customers and even competition. Our work suggests that salespeople should embrace social media technology as a potential source of competitive advantage, or at the very least, an opportunity to gather at a minimum the same information available to competitors likely operating through the same or similar channels.

Thus, this dissertation, in finding support for its three primary linear hypothesized relationships, has yielded actionable opportunities for firms and managers considering empowering salespeople with social media as an additional tool by which to engage customers. While this work makes no suggestion as to the quantifiable impact on performance or other potential outcomes to this conceptual model, it does suggest that social media's impact on the qualitative intangibles that very often lead to such quantitative outcomes are certainly in place and ripe for exploitation by informed and aggressive managers willing to take the initiative. A further discussion on managerial implications will follow later in this chapter.

Interactive Effects

Turning now to a discussion of the four salesperson network characteristic moderators investigated in this study, including salesperson network size, density, heterogeneity, and quality, this dissertation also yields important key findings. Though a total of twelve moderating hypotheses were set forth, significant support was found for just two, as detailed in Tables 6.2 through Table 6.5, both related to the impact of salesperson network size. However, the potential impact of the findings should not be minimized.

Beginning with the moderating impact of size on the relationship between salesperson social media technology usage and communication reciprocity, as shown in Figure 6.1, it becomes abundantly clear as set forth by the foundational work in network theory (Granovetter 1973; Granovetter 1983; Thorelli 1986), as well as social exchange theory (Homans 1961; Thibaut and Kelley 1959), that the relationship between a customer and salesperson is subject to environmental forces and norms. In this instance, social media technology usage by the salesperson operating within a small-to-average network can expect to see substantial returns in communication reciprocity from customers. In such an environment, social media is likely seen as facilitating "extra" contact or engagement with customers, who perceive that they are receiving special attention or are simply highly valued by the salesperson, thus feeling an extra compulsion or social obligation to return in kind any information or assistance efforts put forth by the salesperson. This is especially interesting because it suggests that smaller networks are more responsive to the extra touch points or additional effort they perceive from the salesperson. Quite simply, they feel valued, so they feel morally obligated to maintain equilibrium in the relationship by returning the favor.

Interestingly, in larger salesperson networks, the impact of salesperson social media technology usage is actually negligible, or at best marginal. In this context, the salesperson, perhaps, simply has too many customers with whom he can give extra attention. Additionally, in such large networks the likelihood that the customers know and interact with each other is enhanced, which diminishes the salesperson's role as the key central hub amongst a network of connected spokes which may have numerous smaller hubs. Thus, in an environment with vast amounts of customers, the salesperson's ability to be responsive to each is likely diminished, which means the moral compulsion to maintain equilibrium and return favor in kind to the salesperson is also likely less important. For lack of a better analogy, customers become numbers and not names as network size increases appreciably. In this context, communication reciprocity with individual customers suffers at the expense of serving the whole.

In a similar vein, and depicted in Figure 6.2, the moderating impact of size on the relationship between salesperson social media technology usage and value co-creation is also negative. However, the plot again demonstrates that, in small-to-average network environments, social media again facilitates relationships with customers that enhance value co-creation. Following the same logic as that with the communication reciprocity discussion, in smaller networks it is far more likely that the customer remains as a name to the salesperson, and not simply a number. The opportunity to therefore engage the customer as a partner or pseudo employee toward meaningful sales and marketing efforts, or simple product or service offering design efforts is greater with each individual customer when the salesperson has less total customers with which to contend. The result is that social media in this environment is a valuable tool that opens another channel by which to serve the customer, likely in a more responsive form than in traditional sales call relationships. To the extent that the salesperson is

perceived as a partner truly interested in the individual customer, the proclivity to help that salesperson and maintain relationship equilibrium will be increased.

On the opposite end of the spectrum, when the salesperson's network of customers grows too large, social media technology usage actually begins to go from negligible to a negative impact on value co-creation. Again, this simply means that as the network of customers grows too large, the potential to work with each individual customer to make them feel special or to give them extra customized service is diminished. Unfortunately, with such diminishing ability to serve the individual needs of customers, likely comes a customer reliance on other members of the network with whom they are connected, who may act as smaller hubs in the network and even have faced some of the same challenges and decisions other customers are now facing, which makes that experienced customer contact valuable. To the extent that the customer perceives value from other sources in the network, allegiance and moral obligation to return favors in kind might actually shift from the salesperson to that customer, as efforts to maintain relationship equilibrium with the most valuable relationships are undertaken.

Thus, this dissertation, while failing to find support for each of its salesperson network characteristic moderator hypotheses, did in fact establish the potential importance of using social media technology to build relationships in smaller networks of customers. This might be of particular interest to new salespeople, or even to those working in isolated geographies or isolated industries which by their very nature are necessarily small. The key point is that social media can be exploited to enhance relationships with some customers, but only becomes marginal or potentially negative to communication reciprocity or value co-creation efforts when networks become increasingly large. Such findings suggest opportunity for managerial action or intervention which will be discussed next in this chapter's discussion of managerial implications.

95

Managerial Implications

Understanding the relationship between salesperson social media technology usage and the aforementioned key strategic sales outcomes, as well as the network characteristic moderators explored in this study, will better allow market facing sales firms to deploy resources to their sales teams aimed at creating the most beneficial customer and firm outcomes. While different salespeople may have different networks and use social media in different ways, understanding how to manage resources and training efforts across disparate sales networks serves to strengthen the position of most sales firms. Toward that end, there are numerous key managerial implications which warrant consideration and discussion here.

While some scholars argue for more centralized control or governance of social media efforts by the firm (Uitz 2012), findings in this dissertation certainly suggest that the salesperson should not only be supplied with such tools, but empowered to use them in an effort to better serve the dynamic, very individual needs of customers. As a matter of almost common business sense, no one would argue that firm social media messaging should not be consistent. However, social media platforms which enable specific engagement between salesperson and customer should likely be at the disposal of the sale team entrusted to serve customers. As customers begin to embrace social media in their personal lives, it is likely that they will bring some of the same desires and habits to the workplace, increasingly demanding almost real-time, sporadic unplanned access to salespeople when they are needed, not just at specified planned meeting times. Furthermore, efforts to gather market research, share information, or involve customers as partners are not initiatives that will likely take place only during such planned interactions. Managing social media correctly at the individual salesperson level will allow that salesperson to monitor the pulse of the customer in real-time, to gather information as the customer chooses to

share it, and to even identify dynamic needs as they arise and or shift in an increasingly dynamic global marketplace (Chandrasekaran and Tellis 2008). Failing to do so could drive customers to other salespeople or firms willing to interact across new evolving channels such as social media affords.

Empowering salespeople with social media is not as simple as it might at first sound. Such managerial action brings with it a host of other issues which must also then be addressed and/or resolved. First, the firm must identify and subsequently choose which social media platforms warrant investment of resources, both capital and human. Social media is a dynamic environment. This study considered 15 different platforms in its attempt to capture intensity of salesperson social media technology usage. As the economy and consumer interest change, dozens of others have and are likely to evolve. Should a firm maintain a presence on all of them? Likely, not, but this question does suggest that it's a process which must be managed like any other, preferably in accordance with firm strategy. Identifying the correct platforms is crucial to beginning the process of engaging effectively with customers.

Similarly, we earlier addressed the debate about governance or centralization of social media, or the need to speak with "one voice" using consistent messaging. Again, this is a process which must be managed and shared with salespeople so that they understand what is, and is not appropriate. Being responsive to customers is essential, but being consistent with company values and strategy is mandatory. Firms must strike this balance and drive home its importance to salespeople. It is likely that this process will need to include human resources or other groups capable of incorporating or advising on issues of ethics, sexual harassment, diversity considerations, and even public versus professional social media lives and relationships. In other words, adopting social media into the sales role requires training.

97

Training programs designed to ingratiate salespeople with the finer points of social media technology usage in performance of the job, should absolutely address some of the aforementioned issues and concerns. However, there will also need to be training related to how to incorporate social media in work-life balance, and policy expectations regarding when a salesperson is, and when a salesperson is not, on the clock, as well as expectations and contingencies for responding during off hours, weekends, holidays and even disasters. In every case, the firm must draft and direct strategy in order that the sales management team can ensure that salespeople are using tools effectively and appropriately.

Employing social media in the sales context also necessarily suggests that measurement and monitoring efforts will also be put into place. In order to identify effective and efficient use of the tool, it is imperative that salespeople properly manage it, as well as their managers and the organization at large. It is often said that it is impossible to manage something if it is not measured, but in the case of social media that may be exactly what some firms are tasked with doing unless and until appropriate metrics are developed. Again, this requires active management of social media efforts as part of corporate strategy.

Next, this dissertation has yet to discuss the very real possibility that veteran salespeople may reject social media tools on their face, because they "know better" how to get things done based on decades of experience. This research can't refute such specific claims, but it does demonstrate strong positive relationships between salesperson social media technology usage and competitive intelligence, communication reciprocity, and value co-creation. This is reiterated here to drive home the message that salespeople will, in some cases, need to be shown not only how, but why this technology is being adopted by the firm. Reinforcing benefits to salespeople will help to ensure they are more likely to adopt the technology. Work by Trainor

and colleagues (2014) easily makes the point for academics, but firms will need to realize and remember that salespeople are not likely up to speed on the latest academic research, or practices taught in business school. In fact, most of the positive findings related to social media adoption are contained in practitioner pieces and/or business newspapers or magazines. Engaging consultants or other individuals to train employees on social media technology usage may aid in the process of convincing hesitant sales veterans to adopt and adapt. In those cases where push back is greatest, firms may consider removing and replacing salespeople with those willing to adjust to the new tools necessary to do the job and compete in the 21st century.

Finally, it should also be emphasized here that social media technology usage is not so much about pushing customers to use new technology they don't want, but moving to operate in media and channels they've already embraced. If firms are unwilling to meet and engage customers in their chosen venues, other firms and other salespeople will. Thus, it is not necessary to maintain a presence in each and every social media platform, but it is critical to identify those in which customers are already comfortable operating or willing to initiate and maintain a presence. Each customer will be different, but a solid, well-planned social media strategy will account for the differences and be prepared to engage each customer in the most productive and effective manner of her or his choice.

Theoretical Implications

As a result of this work, this research expands the application of social exchange theory and network theory to the social media – sales domain. Understanding how salesperson network characteristics moderate the relationship between salesperson social media technology usage and key strategic sales outcomes strengthens the generalizability of both theories to growing streams of marketing literature. Findings thus yield several implications in that regard which warrant discussion here.

While scholars such as Lambe, Wittman and Spekman (2001) have suggested that social exchange theory is becoming the primary lens for business-to-business research, little-to-no empirical research to date has applied the framework to social media research in the sales domain. Our empirical findings demonstrate quite clearly, through three strongly positive relationships, that the foundational work of Homans (1961) and Thibaut and Kelley (1959) very clearly has application to this work's conceptual model. Given that social media technology empowers engagement between salespeople and their customers, and that such engagement is definitionally the impetus for building relationships, social media technology usage by salespeople in this context is simply another means by which salespeople serve the myriad needs of their customers. Cropanzano and Mitchell (2005) discussed the trust and loyalty building characteristics of committed relationships. This dissertation demonstrates that the moral compulsion to return in kind, favor, information, or assistance offered by the salesperson and facilitated through a digital channel is just as important as through face-to-face relationships. This, this work extends the framework to the digital realm, and more specifically to small, but important, business relationships in the sales domain. This is important as proclivity to maintain social equilibrium can, perhaps, drive sales relationship strategy bolstered by this latest channel.

Similarly, network theory, as first proposed by Granovetter (1973; 1983) and Thorelli (1986) also finds implication in this study's empirical findings. While many people today will likely hear the term network theory and think of computers or technology, as originally proposed it referred instead primarily to groups of individuals and the ties that bind them. This research repeatedly referred to a central hub and spoke visualization of salespeople and their customer networks. With these findings, this work has demonstrated that the same rationale related to weak and strong ties and their propensity or lack thereof, respectively to bring new information into a system, also has application to the sales realm and, more specifically, with facilitation through electronic channels. This dissertation has shown very clearly that small networks, presumably lacking intensive ties of similar individuals, are in fact most likely to reap benefits from the salesperson's use of social media technology. As the size of the salesperson's network grows larger, the likelihood for connections between customers is enhanced, and the ability for the salesperson to maintain a role as the central hub and receiver of the most diverse available information is diminished in favor of greater numbers of like-minded clients (Krackhardt 1992). Thus, network theory receives additional empirical support from this research, and its applicability to new contexts characteristic of the modern competitive landscape is confirmed.

This dissertation has therefore extended the application of two foundational theories of broad importance to the marketing domain, and increasing importance to the stream of social media research. While contexts may and do change, applicability of theory is challenged and work such as this breathes new life into the thinking. In this instance, this study demonstrated that social media is subject to the same rules of social society, and that networks can and do impact the underlying individuals, in this case salespeople and customers who constitute them.

<center>**Limitations**</center>

There are several challenges which this dissertation and study faced, which although not relevant to the findings at hand, are considerations for those wishing to replicate this study and/or to advance the work with new outcomes or in different contexts. Some such limitations are next discussed in an effort at full disclosure, and toward improving the field of research.

First, this entire project was undertaken with an existing sample of salesperson respondent data, related to the research questions and the conceptual model at hand. While such data were rich in their power to inform this research, use of existing data by definition limits the ability of the research to control and/or plan every element of research design to best maximize the opportunities for findings. In this instance, this dissertation was graced with a final sample of 279 business-to-business salespeople working across a broad cross-section of industries within the United States. Much beyond information on age, sex and race, little is known about the respondents regarding educational background, demographics, tenure on the job, or many other specific variables which might have allowed the sample to be further split into groups, or even to control for variables that might impact the findings in some way, whether immaterial or not. It is also not known as to whether responses are from any particular geography, or from industries more or less likely to embrace social media adoption in the course of their jobs. Nevertheless, findings our solid and significant, as well as consistent with theoretical foundation, so confidence in the merit of this research is ensured.

An additional limitation of this study relates to the ever-changing world of social media. While this data set was recent, having been solicited within the last few years, social media adoption and use by individuals has been exponential during that time. It is entirely possible that many of the salespeople excluded from this study for not using social media in their jobs, now

<center>102</center>

rely upon it almost exclusively as a means by which to interact with customers. Similarly, many customer firms may now operate in the digital realm, and may demand their salespeople service them there. Because social media is changing so quickly, with different platforms waxing and waning with public sentiment, it is again entirely possible that the relationships proposed here would be even stronger, or that the impact of the salesperson's network on such relationships may also have changed. Future work in this area might be more cognizant of the changing nature of social media and seek to account, in some way, for the transitional nature of the medium.

Another limitation of this dissertation relates to the selection of the business-to-business sales context. The business-to-consumer sales context may be even larger than that investigated in this study, and may yield different results based upon the salesperson's network. Whereas business-to-business sales somewhat confines the network itself and therefore interconnections, business-to-consumer networks might, by definition, include magnitudes of the number of individuals as the sales population is opened up to the much more general category of consumers at large. In those instances, it is perhaps impossible to truly know the scope of interconnectedness between customers, so replicating this exact study might be difficult as the salesperson is asked to characterize whether or not customers know each other. It may be, in fact, unknowable.

Finally, the source of all self-reported data in this study is from a single individual, the salesperson, who was not only asked to evaluate her or his own use of social media technology, but also the outcome and network characteristic moderator variables as well. While this does not represent a common methods variance challenge to this study's findings, as earlier discussed, the potential for much richer and/or different relationships would potentially be greater if for

example, both the salesperson and the customer were able to address sharing competitive intelligence, communication reciprocity, and value co-creation. Similarly, if customers were able to report on the salesperson's network, different opinions as to the interconnected nature, size, or even quality of relationships with the salesperson might be found. Again, the findings in this study stand for themselves as significant support was found for all linear and two moderating hypotheses, but if the study were to be replicated using different data collection under the full control of the research designer, it might be possible to uncover discrepancies between the salesperson's assertions or view of the competitive landscape, and that of the customer who undoubtedly views things from a different scope.

Thus, none of the study limitations detailed here in any way challenge the validity of the findings. Rather, they suggest normal issues of research design that all academics face in an attempt to balance study design against available data. For those wishing to replicate this study or to improve it, it would be advisable to consider some, if not all, of the limitations detailed here, in an effort to advance understanding beyond that of this work.

Future Research

As a result of this work, there are numerous opportunities for future research which might advance both the learning and knowledge of the field. This dissertation, through the use of an existing data set, sought to gain insight into the relationship between a salesperson's social media technology usage and key strategic sales outcomes. However, in an effort to maintain control and focus in the work, it did not extend the model to include some obvious additional outcome variables that typically extend from those in this study. Accordingly, such variables will be discussed next.

First, and foremost, a logical additional research question would include quantifying the impact of salesperson social media technology usage on the bottom-line performance metrics. This might include performance as a direct linear result of this study's antecedent in much the way that Trainor (2012) recommended, or it might include using strategic sales outcome variables instead as mediators, which themselves lead to performance as an outcome. Similarly, considering customer relationship performance might be an additional avenue for capturing performance beyond the usual percent-to-quota approach employed in most sales literature.

Another possible avenue for future research, as alluded to in the results discussion, might include looking more specifically at linear effects relationships between the salesperson network characteristic moderators and the strategic sales outcome variables themselves. This study, though not hypothesizing such relationships, did in fact find some evidence of relationships in that regard. Work wishing to expand upon this work's formulation of the salesperson's network might seek to survey both salespeople and customers to identify strength and direction of relationships with communication reciprocity for example.

Turning toward traditional studies in the field of management, future work might also consider issues related to salesperson work-life balance as a result of social media usage. While salesperson social media technology usage may yield some positive effects for the business environment, customer and the firm, as has been demonstrated in this research, it is also possible that enhanced interaction with customers on a potentially 24/7 real-time basis may lead to salespeople dissatisfaction in their roles, or stress, or even issues with family support as the customer's changing and endless needs lead to ever-increasing customer service expectations and associated responsiveness from the salesperson. Understanding how to incorporate social media into the work day, and to keep it during the work day, will be a challenge for firms and hence sales and social media researchers for many years to come.

As mentioned earlier, this research investigated just one context; B2B. It might be informative to consider work from the business-to-consumer standpoint, or to look at the impact of this business tool on different age and work tenure groups. Are millenials, for example, more comfortable with the medium as salespeople and/or buyers? Will the traditional work day go away in favor of on-call sales jobs that are tasked with responding as needed round the clock? Will compensation plans in such an environment need to be retooled? These are just a few of the questions that one might ask as salespeople learn to work with new tools that have the potential to disrupt the traditional marketplace.

Other work more specifically suited to the sales domain might investigate this question from a creativity or adaptive selling standpoint. As technology continues to close the gap between the buyer and seller, and co-creation of value continues to evolve to new meaning in future markets, salespeople might be empowered to not only sell products, services or solutions, but to gather and use competitive intelligence individually (Agnihotri et al., forthcoming) in real

time, in order to best meet the needs of the customer. Such empowerment in the salesperson would necessarily involve great investment by the firm, as well as great latitude by the salesperson to represent the firm's interest in an evolving way, but such ability to meet customer demands in real-time would draw together many streams of current marketing and sales research offering the potential for new and exciting findings across streams. In any case, technology such as social media is very likely to be the facilitating mechanism for such change and understanding its potential to drive customer thought or action as this study's findings suggest, should not be taken lightly.

Finally, future research might also look deeper into the weak and strong tie network discussion across the business-to-business sales environment, as facilitated by social media. Understanding not only who makes up the customer's network, but how they are related and truly interconnected would yield actionable intelligence for salespeople and managers. If salespeople can learn to identify and exploit the trusted thought leaders in their networks, or begin to quantify the impact of some connections over others, they may learn which customers have the most impact as force multipliers for driving purchasing trends. If they can identify the customers that others look to in order to mimic, they may be able to focus more effort on building strong relationships with particular elements of a network simply because dividends will be paid throughout the entirety of the network. While such work is a stretch from this current study, it does begin to identify the potential for field changing studies that build upon the findings of this dissertation.

Conclusion

This dissertation investigated the relationship between salesperson social media technology usage and three strategic sales outcomes: competitive intelligence, communication reciprocity, and value co-creation. In addition, it considered the moderating impact of four salesperson network characteristic variables including size, density, heterogeneity, and quality. Three linear effect hypotheses and twelve moderation hypotheses were developed using social exchange theory and network theory as foundational frameworks for the conceptual model.

As the result of this empirical study and analysis, significant support was found for each of the three primary linear hypotheses, as well as for two of the moderation hypotheses. Social exchange theory and network theory were shown to have application in the sales and social media domains, while clear managerial implication and actionable findings were developed on the foundation of this work. Limitations were discussed for this current study, and future research opportunities were shared for those wishing to replicate or expand upon this work.

While this dissertation did not find support for all of its hypotheses, it did contribute to understanding in the burgeoning field of social media research, while adding to knowledge in the sales domain. Rich findings demonstrate the importance of embracing new technology, and further suggest that the dynamic marketplace will guide the competitive landscape for years to come.

REFERENCES

Achrol, Ravi S., and Louis W. Stern (1988), "Environmental Determinants of Decision-Making Uncertainty in Marketing Channels," *Journal of Marketing Research*, 25(1), 36-50.

Agnihotri, Raj, Prabakar Kothandaraman, Rajiv Kashyap, and Ramendra Singh (2012), "Bringing "Social" Into Sales: The Impact of Salespeople's Social Media Use on Service Behaviors and Value Creation," *Journal of Personal Selling & Sales Management*, 32(3), 333-348.

Agnihotri, Raj, Adam Rapp, Tom Baker and James "Mick" Andzulis (2014), "The Role of Boundary Spanning Employees' Competitive Intelligence Collection and Use within the Firm: A Multi-study and Multi-level Investigation," *Journal of the Academy of Marketing Science*, forthcoming.

Ahearne, Michael, Ronald Jelinek, and Adam Rapp (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, Michael, Eli Jones, Adam Rapp, and John Mathieu (2008), "High Touch Through High Tech: The Impact of Salesperson Technology Usage on Sales Performance via Mediating Mechanisms," Management Science, 54 (4), 671–685.

Ahearne, M., Lam, S. K., Hayati, B., and Kraus, F. (2013), "Intrafunctional Competitive Intelligence and Sales Performance: A Social Network Perspective," *Journal of Marketing*, 77, 37-56.

Aiken, Leona S., and Stephen G. West (1991), *Multiple Regression: Testing and Interpreting Interactions*. Sage.

Andzulis, James "Mick," Nikolaos Panagopoulos and Adam Rapp (2012), "A Review of Social Media and Implications for the Sales Process," *Journal of Personal Selling& Sales Management*, 32(3), 305-316.

Armstrong, J. Scott, and Terry S. Overton. "Estimating Nonresponse Bias in Mail Surveys," *Journal of Marketing Research,*14(3), 396-402.

Avlonitis, George J., and Nikolaos G. Panagopoulos (2010), "Selling and Sales Management: An Introduction to the Special Section and Recommendations on Advancing the Sales Research Agenda," *Industrial Marketing Management*, 39(7), 1045-1048.

Bagozzi, Richard P., and Youjae Yi (1988), "On the Evaluation of Structural Equation Models," *Journal of the Academy of Marketing Science*, *16*(1), 74-94.

Bharadwaj, Anandhi S. (2000), "A Resource-Based Perspective on Information Technology Capability and Firm Performance: An Empirical Investigation," *MIS Quarterly*, 24(1), 169-196.

Blocker, Christopher P., Joseph P. Cannon, Nikolaos G. Panagopoulos, and Jeffrey K. Sager (2012), "The Role of the Sales Force in Value Creation and Appropriation: New Directions for Research," *Journal of Personal Selling & Sales Management*, 32(1), 15-27.

Bocchino, Frank (2013), "Selling Social Media to the Sales Team," (accessed on 12/19/2013), [available at http://socialmediahumor.blogspot.com/2013/12/selling-social-media-to-sales-team.html].

Bohrnstedt, George W., and Gerald Marwell (1978), "The Reliability of Products of Two Random Variables," *Sociological Methodology*, 254-273.

Chandrasekaran, Deepa and Gerard J. Tellis (2008), "Global Takeoff of New Products: Culture, Wealth, or Vanishing Differences?" *Marketing Science*, 27 (5), 844-860.

Chang, Woojung, Jeong Eun Park, and Seoil Chaiy (2010), "How Does CRM Technology Transform Into Organizational Performance? A Mediating Role of Marketing Capability," *Journal of Business Research*, 63(8), 849-855.

Coltman, Tim (2007), "Can Superior CRM Capabilities Improve Performance in Banking," *Journal of Financial Services Marketing*, 12(2) 102-114.

Cook, Karen S., and Eric Rice (2003), "Social Exchange Theory," In. *Handbook of Social Psychology*, 53-76.

Corstjens, Marcel and Andris Umblus (2012), "The Power of Evil: The Damage of Negative Social Media Strongly Outweigh Positive Contributions," *Journal of Advertising Research*, 52(4), 433-449.

Cortina, Jose M., Gilad Chen, and William P. Dunlap (2001), "Testing Interaction Effects in LISREL: Examination and Illustration of Available Procedures," *Organizational Research Methods*, *4*(4), 324-360.

Coviello, Nicole, Roger Milley, and Barbara Marcolin (2007), "Understanding IT-Enabled Interactivity in Contemporary Marketing," *Journal of Interactive Marketing*, 15(4), 18-33.

Cringley, Robert X. (1996), "Triumph of the Nerds," (accessed on 6/7/2013), [available at http://www.pbs.org/nerds/timeline/].

Cronbach, Lee J. (1951), "Coefficient Alpha and the Internal Structure of Tests," *Psychometrika*, 16(3), 297-334.

Cropanzano, Russell, and Marie S. Mitchell (2005), "Social Exchange Theory: An Interdisciplinary Review," *Journal of Management*, 31(6), 874-900.

Duncan, Tom, and Sandra E. Moriarty (1998), "A Communication-Based Marketing Model for Managing Relationships," *Journal of Marketing*, *62*(2), 1-13.

Emerson, Richard M. (1976), "Social Exchange Theory," *Annual Review of Sociology*, 2(1), 335.

Fang, Eric (2008), "Customer Participation and the Trade-Off between New Product Innovativeness and Speed to Market," *Journal of Marketing* 72(4), 90-104.

Faul, Franz, Edgar Erfelder, Albert-Georg Lang and Axel Buchner (2007), "G*Power 3: A Flexible Statistical Power Analysis Program for the Social, Behavioral, and Biomedical Sciences," *Behavior Research Methods*, 39, 175-191.

Fornell, Claes, and David F. Larcker (1981), "Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, *18*(1), 39-50.

Gerbing, David W., and James C. Anderson (1988), "An Updated Paradigm for Scale Development Incorporating Unidimensionality and Its Assessment," *Journal of Marketing Research,* 25(2), 186-192.

Gonzalez, Gabriel R., Danny P. Claro and Robert W. Palmatier (2014), "Synergistic Effects of Relationship Managers' Social Networks on Sales Performance," *Journal of Marketing*, *78*(1), 76-94.

Goodhue, Dale L., and Ronald L. Thompson (1995), "Task–Technology Fit and Individual Performance," *MIS Quarterly,* 19(2), 213–236.

Gouldner, Alvin. (1960), "The Norm of Reciprocity," *American Sociological Review* 25 (1960): 161-78.

Granovetter, Mark (1983), "The Strength of Weak Ties: A Network Theory Revisited," *Sociological theory*, 1(1), 201-233.

Granovetter, Mark S. (2012), "The Strength of Weak Ties," *American Journal of Sociology*, *78*(6), l360-1380.

Groza, Mark D., Robert M. Peterson, Ursula Y. Sullivan, and Vijaykumar Krishnan (2012), "Social Media and the Sales Force: The Importance of Intra-Organizational Cooperation and Training on Performance," *Marketing Management Journal*, 12(2), 118-130.

Gupta, Sunil, Kristen Armstrong, and Zachary Clayton (2011), "Social Media," Harvard Business School Case no. 9-510-095, Boston.

Haas, Alexander, Ivan Snehota and Daniela Corsaro (2012), "Creating Value in Business Relationships: The Role of Sales," *Industrial Marketing Management*, *41*(1), 94-105.

Håkansson, Håkan. (1989). *Corporate Technological Behaviour: Co-operation and Networks* (pp. 22-27). London: Routledge.

Homans, George Caspare (1961), *Social Behavior: Its Elementary Forms*. New York: Harcourt, Brace & World.

Homans, George Caspare (1974). *Social Behavior; Its Elementary Forms. Under the general editorship of Robert K. Merton*. New York: Harcourt, Brace, Jovanovich.

Hooper, Daire, Joseph Coughlan, and Michael R. Mullen (2008), "Structural equation modelling: Guidelines for determining model fit." *Electronic Journal of Business Research Methods*, 6(1), 53-60.

Hult, G. Thomas M. (2011), "Toward a Theory of the Boundary-Spanning Marketing Organization and Insights from 31 Organization Theories," *Journal of the Academy of Marketing Science*, *39*(4), 509-536.

Hunter, Gary K., and William D. Perreault, Jr. (2006), "Sales Technology Orientation Information Effectiveness, and Sales Performance", *Journal of Personal Selling & Sales Management*, 26 (2), 95-113.

Jelinek, Ronald, Michael Ahearne, John Mathieu, and Niels Schillewaert (2006), "A Longitudinal Examination of Individual, Organizational, and Contextual Factors on Sales Technology Adoption and Job Performance," *Journal of Marketing Theory and Practice*, 14 (1), 7-23.

Judson, Kimberly M., P. Raj Devasgayam, Cheryl L. Buff (2012), "Self-Perceived Brand Relevance of and Satisfaction with Social Media," *Marketing Management Journal*, 22(2), 131-144.

Kietzmann, Jan H., Kristopher Hermkens, Ian P. McCarthy, and Bruno S. Silvestre (2011), "Social Media? Get Serious! Understanding the Functional Building Blocks of Social Media," *Business Horizons*, 54 (3), 241-251.

Kohli, Ajay K., Bernard J. Jaworski, and Ajith Kumar (1993), "MARKOR: A Measure of Market Orientation," *Journal of Marketing Research*, 30(4), 467-477.

Krackhardt, David. (1992), "The Strength Of Strong Ties: The Importance of Philos in Organizations," *Networks and organizations: Structure, form, and action*, *216*, 239.

Lambe, C. Jay, C. Michael Wittman, and Robert E. Spekman (2001), "Social Exchange Theory and Research on Business-to-Business Relational Exchange," *Journal of Business-to-Business Marketing*, 8(3), 1-36.

Levin, Michael A., Jared M. Hansen, and Debra A Laverie (2012) "'Toward Understanding New Sales Employees' Participation in Marketing-Related Technology: Motivation, Voluntariness, and Past Performance," *Journal of Personal Selling & Sales Management*, 32(3), 379-393.

Mangold, W. Glynn, and David J. Faulds (2009), "Social Media: The New Hybrid Element of the Promotion Mix," *Business Horizons*, 52 (4), 357-365.

Mariadoss, Babu J., Chad Milewicz, Sangwon S. Lee and Arvin A. Sahaym (2014), "Salesperson Competitive Intelligence and Performance: The Role of Product Knowledge and Sales Force Automation Usage," *Industrial Marketing Management*, 43(1), 136-145.

Mathieu, John E., Scott I. Tannenbaum, and Eduardo Salas (1992), ""Influences of Individual and Situational Characteristics on Measures of Training Effectiveness," *Academy of Management Journal,* 35(4), 828-847.

Marshall, Greg W., William C. Moncrief, John M. Rudd, and Nick Lee (2012) "Revolution in Sales: The Impact of Social Media and Related Technology on the Selling Environment" *Journal of Personal Selling & Sales Management*, 32(3), 349-363.

Mondalek, Alexandra and Max Nisen (2013), "12 Brands That Could Have Avoided Being Embarrassed All Over the Internet,"(accessed on 6/24/13), [available at http://www.businessinsider.com/viral-social-media-fails-2013-6?op=1].

Nath, Prithwiraj, Subramanian Nachiappan, and Ramakrishnan Ramanathan (2010), "The Impact of Marketing Capability, Operations Capability and Diversification Strategy on Performance: A Resource-Based View," *Industrial Marketing Management*, 39(2) 317-329.

Naylor, Rebecca Walker, Cait Poynor Lamberton, and Patricia M. West (2012), "Beyond the "Like" Button: The Impact of Mere Virtual Presence on Brand Evaluations and Purchase Intentions in Social Media Settings," *Journal of Marketing*, 76(6), 105-120.

Netemeyer, Richard G., Balaji Krishnan, Chris Pullig, Guangping Wang, Mehmet Yagci, Dwane Dean, Joe Ricks, and Ferdinand Wirth (2004), "Developing and Validating Measures of Facets of Customer-Based Brand Equity," *Journal of Business Research* 57(2), 209-224.

Ngo, Liem Viet, and Aron O'Cass (2009), "Creating Value Offerings via Operant Resource-Based Capabilities," *Industrial Marketing Management* 38(1), 45-59.

Payne, Adrian F., Kaj Storbacka, and Pennie Frow (2008), "Managing the Co-Creation of Value," *Journal of the Academy of Marketing Science*, *36*(1), 83-96.

Powers, Todd, Dorothy Advincula, Manila S. Austin, Stacy Graiko, and Jasper Snyder (2012), "Digital and Social Media in the Purchase Decision Process: A Special Report from the Advertising Research Foundation," *Journal of Advertising Research*, 52(4), 479-489.

Prahalad, Coimbatore K., and Venkatram Ramaswamy (2000), "Co-opting Customer Competence," *Harvard Business Review*, *78*(1), 79-87.

Rapp, Adam, Raj Agnihotri and Thomas L. Baker (2011), "Conceptualizing Salesperson Competitive Intelligence: An Individual Level Perspective," *Journal of Personal Selling & Sales Management,* 31, 141-156.

Rapp, Adam, Raj Agnihotri, and Lukas Forbes (2008), "The Sales Force Technology–Performance Chain: The Role of Adaptive Selling and Effort," *Journal of Personal Selling & Sales Management,* 28 (4), 335–350.

Rapp, Adam, Michael Ahearne, John Mathieu and Niels Schillewaert (2006), "The Impact of Knowledge and Empowerment on Working Smart and Working Hard: The Moderating Role of Experience," *International Journal of Research in Marketing*, 23(3), 279-293.

Rapp, Adam and Nikolaos Panagopoulos (2012) "Perspectives on Personal Selling and Social Media: Introduction to the Special Issue," *Journal of Personal Selling & Sales Management*, 32(3), 301-304.

Rapp, Adam, Lauren Skinner Beitelspacher, Dhruv Grewal, and Douglas E. Hughes (2013), "Understanding Social Media Effects across Seller, Retailer, and Consumer Interactions," *Journal of the Academy of Marketing Science*, 41(5), 547-566.

Rodriguez, Michael, Robert M. Peterson, and Vijaykumar Krishnan (2012) "Social Media's Influence on Business-to-Business Sales Performance," *Journal of Personal Selling & Sales Management*, 32(3), 365-378.

Schade, Christian, Thomas Nitschke, and Henrik Sattler (2005), "Reciprocity with Video File Sharing: Experimental Evidence," *Advances in Consumer Research*, *32*(1), 58-64.

Schultz, Roberta J., Charles H. Schwepker, Jr., and David J. Good (2012a), "Social Media Usage: An Investigation of B2B Salespeople," *American Journal of Business*, 27(2) 174-194.

Schultz, Roberta J., Charles H. Schwepker, and David J. Good (2012b), "An Exploratory Study of Social Media in Business-to-Business Selling: Salesperson Characteristics, Activities and Performance," *Marketing Management Journal*, 22(2) 76-89.

Sundaram, Suresh, Andrew Schwarz, Eli Jones, and Wynne W. Chin (2007), "Technology Use on the Front Line: How Information Technology Enhances Individual Performance," *Journal of the Academy of Marketing Science*, 35(1) 101-12.

Pervan, Simon J., Bove, Liliana L., and Johnson Lester W. (2009). "Reciprocity as A Key Stabilizing Norm of Interpersonal Marketing Relationships: Scale Development and Validation." *Industrial Marketing Management*, 60-70.

Thibaut, John W., and Harold H. Kelley (1959), *The Social Psychology of Groups*, New York: Wiley.

Thorelli, Hans B. (1986), "Networks: Between Markets and Hierarchies," *Strategic Management Journal*, *7*(1), 37-51.

Trainor, Kevin J. (2012) "Relating Social Media Technologies to Performance: A Capabilities-Based Perspective," *Journal of Personal Selling & Sales Management*, 32(3), 317-331.

Trainor, Kevin, James "Mick" Andzulis, Adam Rapp, and Raj Agnihotri (2014), "Social Media Technology Usage and Customer Relationship Performance: A Capabilities-Based Examination of Social CRM," *Journal of Business Research*, 67(6), 1201-1208.

Uehara, Edwina S. (1995), "Reciprocity Reconsidered - Gouldners Moral Norm of Reciprocity and Social Support," *Journal of Social and Personal Relationships*, *12*(4), 483-502.

Uitz, Iris (2012), "Social Media – Is it Worth the Trouble?" *Journal of Internet Social Networking & Virtual Communities*, 2012, 1-14.

Vargo, Stephen L., and Robert F. Lusch (2004), "Evolving to a New Dominant Logic for Marketing," *Journal of Marketing*, *68*(1), 1-17.

Wasko, Molly McLure, and Samer Faraj (2005), "Why Should I Share? Examining Social Capital and Knowledge Contribution in Electronic Networks of Practice," *MIS Quarterly*, 29(1), 35-57.

REGRESSION MODEL TESTS FOR HIGHER ORDER INTERACTIONS

Model 1: Regressions of Social Media Technology Usage on Competitive Intelligence, Value Co-Creation and Communication Reciprocity

Model 1: Regression Test of Antecedent Variable on Outcome Variable Competitive Intelligence					
Model 1: R² = 0.216	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Antecedent Variables	B	Std. Error	β		
Constant	4.932	0.083		59.632	0.000
SMTU	0.886**	0.101	0.465**	8.745	0.000

Note: SMTU = Social Media Technology Usage; * $p < .05$; ** $p < .01$

Model 1: Regression Test of Antecedent Variable on Outcome Variable Value Co-Creation					
Model 1: R² = 0.105	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Antecedent Variables	B	Std. Error	β		
Constant	6.014	0.061		98.398	0.000
SMTU	0.427**	0.075	0.324**	5.708	0.000

Note: SMTU = Social Media Technology Usage; * $p < .05$; ** $p < .01$

Model 1: Regression Test of Antecedent Variable on Outcome Variable Communication Reciprocity					
Model 1: R² = 0.191	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Antecedent Variables	B	Std. Error	β		
Constant	5.578	0.057		98.204	0.000
SMTU	0.563**	0.070	0.437**	8.090	0.000

Note: SMTU = Social Media Technology Usage; * $p < .05$; ** $p < .01$

Model 2: Regressions of Social Media Technology Usage and Network Characteristic Variables on Competitive Intelligence, Value Co-Creation and Communication Reciprocity

Model 2: Regression Test of Antecedent Variables on Outcome Variable Competitive Intelligence					
Model 2: R² = 0.286	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Antecedent Variables	B	Std. Error	β		
Constant	4.932	0.080		61.916	0.000
SMTU	0.586	0.116	0.308	5.036	0.000
Size	0.278**	0.100	0.179**	2.772	0.006
Density	0.189*	0.092	0.122*	2.055	0.041
Heterogeneity	0.046	0.103	0.030	0.448	0.655
Quality	0.087	0.106	0.056	0.822	0.412

Note: SMTU = Social Media Technology Usage; * $p < .05$; ** $p < .01$

Model 2: Regression Test of Antecedent Variables on Outcome Variable Value Co-Creation					
Model 2: R² = 0.447	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Antecedent Variables	B	Std. Error	β		
Constant	6.014	0.048		124.254	0.000
SMTU	0.025	0.071	0.019	0.355	0.723
Size	0.148*	0.061	0.137*	2.421	0.016
Density	-0.066	0.056	-0.061	-1.176	0.241
Heterogeneity	0.174**	0.062	0.161**	2.785	0.006
Quality	0.529**	0.064	0.491**	8.237	0.000

Note: SMTU = Social Media Technology Usage; * $p < .05$; ** $p < .01$

Model 2: Regression Test of Antecedent Variables on Outcome Variable Communication Reciprocity					
Model 2: R² = 0.622	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Antecedent Variables	B	Std. Error	β		
Constant	5.578	0.039		142.550	0.000
SMTU	0.067	0.057	0.052	1.164	0.245
Size	0.188**	0.049	0.179**	3.815	0.000
Density	0.09*	0.045	0.085*	1.988	0.048
Heterogeneity	0.172**	0.050	0.164**	3.416	0.001
Quality	0.521**	0.052	0.495**	10.046	0.000

Note: SMTU = Social Media Technology Usage; * $p < .05$; ** $p < .01$

Model 3: Regressions of Social Media Technology Usage by Individual Network Characteristic Variable 2-way Interactions on Outcome Variables

Model 3: Regression Test of Antecedent Variables and 2-way Interactions on Outcome Variable Competitive Intelligence					
Model 3: R² = 0.305	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Antecedent Variables	B	Std. Error	β		
Constant	4.957	0.089		55.921	0.000
SMTU	0.545**	0.118	0.286**	4.601	0.000
Size	0.297**	0.107	0.191**	2.766	0.006
Density	0.175	0.101	0.113	1.740	0.083
Heterogeneity	0.014	0.104	0.009	0.132	0.895
Quality	0.160	0.114	0.103	1.409	0.160
SMTUxSize	0.055	0.116	0.036	0.476	0.635
SMTUxDensity	-0.065	0.103	-0.042	-0.630	0.529
SMTUxHeterogeneity	-0.253*	0.102	-0.175*	-2.484	0.014
SMTUxQuality	0.207	0.111	0.152	1.862	0.064

Note: SMTU = Social Media Technology Usage; * $p < .05$; ** $p < .01$

Model 3: Regression Test of Antecedent Variables and 2-way Interactions on Outcome Variable Value Co-Creation					
Model 3: R² = 0.475	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Antecedent Variables	B	Std. Error	β		
Constant	6.066	0.053		113.829	0.000
SMTU	-0.007	0.071	-0.005	-0.096	0.924
Size	0.161*	0.065	0.149*	2.490	0.013
Density	-0.017	0.061	-0.016	-0.280	0.780
Heterogeneity	0.142*	0.062	0.132*	2.275	0.024
Quality	0.499**	0.068	0.463**	7.296	0.000
SMTUxSize	0.076	0.070	0.073	1.089	0.277
SMTUxDensity	0.038	0.062	0.036	0.621	0.535
SMTUxHeterogeneity	-0.195**	0.061	-0.195**	-3.185	0.002
SMTUxQuality	-0.036	0.067	-0.038	-0.531	0.596

Note: SMTU = Social Media Technology Usage; * $p < .05$; ** $p < .01$

Model 3: Regression Test of Antecedent Variables and 2-way Interactions on Outcome Variable Communication Reciprocity					
Model 3: R² = 0.628	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Antecedent Variables	B	Std. Error	β		
Constant	5.600	0.044		127.719	0.000
SMTU	0.066	0.059	0.051	1.126	0.261
Size	0.186**	0.053	0.176**	3.496	0.001
Density	0.12*	0.050	0.114*	2.409	0.017
Heterogeneity	0.167**	0.051	0.159**	3.258	0.001
Quality	0.48**	0.056	0.456**	8.525	0.000
SMTUxSize	0.014	0.057	0.013	0.239	0.811
SMTUxDensity	0.039	0.051	0.037	0.768	0.443
SMTUxHeterogeneity	-0.013	0.050	-0.013	-0.262	0.793
SMTUxQuality	-0.091	0.055	-0.098	-1.645	0.101

Note: SMTU = Social Media Technology Usage; * $p < .05$; ** $p < .01$

Model 4: Regressions of Social Media Technology Usage by Multiple Network Characteristic Variable 3-way Interactions on Outcome Variables

Model 4: Regression Test of Antecedent Variables and 3-way Interactions on Outcome Variable Competitive Intelligence					
Model 4: R^2 = 0.316	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Antecedent Variables	B	Std. Error	β		
Constant	4.956	0.090		54.801	0.000
SMTU	0.496**	0.131	0.261**	3.790	0.000
Size	0.273*	0.114	0.175*	2.404	0.017
Density	0.176	0.103	0.113	1.711	0.088
Heterogeneity	0.050	0.111	0.032	0.455	0.650
Quality	0.123	0.123	0.079	1.001	0.318
SMTUxSize	0.074	0.131	0.049	0.567	0.571
SMTUxDensity	-0.066	0.106	-0.043	-0.627	0.531
SMTUxHeterogeneity	-0.247*	0.111	-0.17*	-2.228	0.027
SMTUxQuality	0.184	0.133	0.135	1.384	0.168
SMTUxSizexDensity	0.148	0.288	0.044	0.515	0.607
SMTUxSizexHeterogeneity	-0.096	0.351	-0.033	-0.272	0.786
SMTUxSizexQuality	0.278	0.283	0.102	0.980	0.328
SMTUxDensityxHeterogeneity	-0.208	0.267	-0.067	-0.780	0.436
SMTUxDensityxQuality	0.343	0.301	0.111	1.140	0.255
SMTUxHeterogeneityxQuality	-0.257	0.313	-0.105	-0.820	0.413

Note: SMTU = Social Media Technology Usage; * p < .05; ** p < .01

Model 4: Regression Test of Antecedent Variables and 3-way Interactions on Outcome Variable Value Co-Creation					
Model 4: R^2 = 0.507	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Antecedent Variables	B	Std. Error	β		
Constant	6.068	0.053		114.326	0.000
SMTU	-0.064	0.077	-0.049	-0.837	0.403
Size	0.158*	0.067	0.147*	2.368	0.019
Density	-0.040	0.060	-0.037	-0.666	0.506
Heterogeneity	0.083	0.065	0.077	1.280	0.202
Quality	0.481*	0.072	0.447*	6.648	0.000
SMTUxSize	0.067	0.077	0.064	0.864	0.388
SMTUxDensity	0.068	0.062	0.063	1.099	0.273
SMTUxHeterogeneity	-0.157*	0.065	-0.157*	-2.418	0.016
SMTUxQuality	-0.035	0.078	-0.037	-0.450	0.653
SMTUxSizexDensity	-0.065	0.169	-0.028	-0.384	0.701
SMTUxSizexHeterogeneity	0.048	0.206	0.024	0.235	0.815
SMTUxSizexQuality	0.399*	0.166	0.211*	2.399	0.017
SMTUxDensityxHeterogeneity	0.328*	0.157	0.152*	2.092	0.037
SMTUxDensityxQuality	-0.376*	0.177	-0.176*	-2.126	0.034
SMTUxHeterogeneityxQuality	-0.042	0.184	-0.025	-0.230	0.818

Note: SMTU = Social Media Technology Usage; * p < .05; ** p < .01

Model 4: Regression Test of Antecedent Variables and 3-way Interactions on Outcome Variable Communication Reciprocity					
Model 4: R² = 0.798	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Antecedent Variables	B	Std. Error	β		
Constant	5.595	0.045		125.731	0.000
SMTU	0.062	0.064	0.048	0.962	0.337
Size	0.158**	0.056	0.150**	2.829	0.005
Density	0.125*	0.050	0.119*	2.485	0.014
Heterogeneity	0.153**	0.054	0.145**	2.808	0.005
Quality	0.506**	0.061	0.481**	8.344	0.000
SMTUxSize	0.057	0.065	0.056	0.884	0.378
SMTUxDensity	0.039	0.052	0.037	0.745	0.457
SMTUxHeterogeneity	-0.037	0.055	-0.038	-0.687	0.493
SMTUxQuality	-0.137*	0.065	-0.148*	-2.090	0.038
SMTUxSizexDensity	0.037	0.142	0.017	0.264	0.792
SMTUxSizexHeterogeneity	0.241	0.173	0.123	1.395	0.164
SMTUxSizexQuality	-0.157	0.139	-0.085	-1.126	0.261
SMTUxDensityxHeterogeneity	0.071	0.131	0.034	0.544	0.587
SMTUxDensityxQuality	0.195	0.148	0.094	1.319	0.188
SMTUxHeterogeneityxQuality	-0.257	0.154	-0.156	-1.667	0.097

Note: SMTU = Social Media Technology Usage; * $p < .05$; ** $p < .01$

Model 5: Regressions of Social Media Technology Usage by Multiple Network Characteristic Variable 4-way Interactions on Outcome Variables

Model 5: Regression Test of Antecedent Variables and 4-way Interactions on Outcome Variable Competitive Intelligence					
Model 5: R² = 0.327	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Antecedent Variables	B	Std. Error	β		
Constant	4.947	0.091		54.140	0.000
SMTU	0.549**	0.140	0.288**	3.914	0.000
Size	0.287*	0.117	0.184*	2.442	0.015
Density	0.170	0.103	0.109	1.647	0.101
Heterogeneity	0.036	0.111	0.023	0.325	0.745
Quality	0.135	0.124	0.087	1.092	0.276
SMTUxSize	0.142	0.139	0.094	1.026	0.306
SMTUxDensity	-0.022	0.121	-0.014	-0.179	0.858
SMTUxHeterogeneity	-0.177	0.128	-0.122	-1.377	0.170
SMTUxQuality	0.206	0.137	0.151	1.508	0.133
SMTUxSizexDensity	0.208	0.315	0.062	0.659	0.510
SMTUxSizexHeterogeneity	-0.066	0.391	-0.023	-0.170	0.865
SMTUxSizexQuality	-0.054	0.373	-0.020	-0.144	0.885
SMTUxDensityxHeterogeneity	-0.398	0.311	-0.128	-1.281	0.201
SMTUxDensityxQuality	0.322	0.437	0.105	0.737	0.462
SMTUxHeterogeneityxQuality	-0.244	0.314	-0.100	-0.776	0.438
SMTUxSizexDensityxHeterogeneity	0.279	0.356	0.109	0.783	0.434
SMTUxSizexDensityxQuality	-0.253	0.364	-0.098	-0.695	0.487
SMTUxSizexHeterogeneityxQuality	-0.446	0.403	-0.221	-1.108	0.269
SMTUxDensityxHeterogeneityxQuality	-0.002	0.368	-0.001	-0.006	0.995

Note: SMTU = Social Media Technology Usage; * $p < .05$; ** $p < .01$

Model 5: Regression Test of Antecedent Variables and 4-way Interactions on Outcome Variable Value Co-Creation					
Model 5: R² = 0.523	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Antecedent Variables	B	Std. Error	β		
Constant	6.055	0.053		113.788	0.000
SMTU	-0.035	0.082	-0.027	-0.433	0.666
Size	0.177*	0.068	0.164*	2.589	0.010
Density	-0.043	0.060	-0.040	-0.713	0.477
Heterogeneity	0.076	0.065	0.070	1.166	0.245
Quality	0.478**	0.072	0.444**	6.642	0.000
SMTUxSize	0.113	0.081	0.109	1.405	0.161
SMTUxDensity	0.091	0.070	0.085	1.301	0.194
SMTUxHeterogeneity	-0.107	0.075	-0.107	-1.428	0.154
SMTUxQuality	-0.068	0.080	-0.072	-0.853	0.394
SMTUxSizexDensity	-0.121	0.184	-0.052	-0.657	0.512
SMTUxSizexHeterogeneity	-0.065	0.228	-0.032	-0.286	0.775
SMTUxSizexQuality	0.228	0.217	0.121	1.048	0.296
SMTUxDensityxHeterogeneity	0.290	0.181	0.135	1.604	0.110
SMTUxDensityxQuality	-0.161	0.255	-0.075	-0.632	0.528
SMTUxHeterogeneityxQuality	-0.019	0.183	-0.011	-0.102	0.918
SMTUxSizexDensityxHeterogeneity	-0.290	0.207	-0.164	-1.402	0.162
SMTUxSizexDensityxQuality	-0.286	0.212	-0.160	-1.349	0.179
SMTUxSizexHeterogeneityxQuality	-0.095	0.235	-0.068	-0.406	0.685
SMTUxDensityxHeterogeneityxQuality	0.410	0.215	0.273	1.911	0.057

Note: SMTU = Social Media Technology Usage; * $p < .05$; ** $p < .01$

Model 5: Regression Test of Antecedent Variables and 4-way Interactions on Outcome Variable Communication Reciprocity					
Model 5: R² = 0.656	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Antecedent Variables	B	Std. Error	β		
Constant	5.584	0.044		126.581	0.000
SMTU	0.070	0.068	0.055	1.036	0.301
Size	0.189**	0.057	0.179**	3.333	0.001
Density	0.118*	0.050	0.112*	2.364	0.019
Heterogeneity	0.148**	0.054	0.14**	2.744	0.007
Quality	0.490**	0.060	0.465**	8.210	0.000
SMTUxSize	0.018	0.067	0.017	0.264	0.792
SMTUxDensity	-0.007	0.058	-0.006	-0.114	0.909
SMTUxHeterogeneity	-0.001	0.062	-0.001	-0.021	0.983
SMTUxQuality	-0.155*	0.066	-0.168*	-2.345	0.020
SMTUxSizexDensity	-0.172	0.152	-0.076	-1.127	0.261
SMTUxSizexHeterogeneity	0.089	0.189	0.045	0.471	0.638
SMTUxSizexQuality	-0.061	0.180	-0.033	-0.339	0.735
SMTUxDensityxHeterogeneity	0.300*	0.150	0.143*	2.000	0.047
SMTUxDensityxQuality	0.319	0.211	0.153	1.513	0.131
SMTUxHeterogeneityxQuality	-0.253	0.152	-0.153	-1.665	0.097
SMTUxSizexDensityxHeterogeneity	-0.482**	0.172	-0.279**	-2.804	0.005
SMTUxSizexDensityxQuality	0.522**	0.176	0.300**	2.969	0.003
SMTUxSizexHeterogeneityxQuality	-0.043	0.195	-0.032	-0.222	0.825
SMTUxDensityxHeterogeneityxQuality	0.143	0.178	0.098	0.806	0.421

Note: SMTU = Social Media Technology Usage; * $p < .05$; ** $p < .01$

Model 6: Regressions of Social Media Technology Usage by Multiple Network Characteristic Variable 5-way Interactions on Outcome Variables

Model 6: Regression Test of Antecedent Variables and 5-way Interaction on Outcome Variable Competitive Intelligence					
Model 6: R² = 0.327	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Antecedent Variables	B	Std. Error	β		
Constant	4.948	0.092		53.778	0.000
SMTU	0.554**	0.144	0.291**	3.844	0.000
Size	0.284*	0.119	0.182*	2.390	0.018
Density	0.170	0.104	0.109	1.642	0.102
Heterogeneity	0.036	0.112	0.023	0.326	0.744
Quality	0.136	0.124	0.087	1.094	0.275
SMTUxSize	0.137	0.143	0.091	0.958	0.339
SMTUxDensity	-0.022	0.121	-0.014	-0.182	0.855
SMTUxHeterogeneity	-0.179	0.129	-0.123	-1.383	0.168
SMTUxQuality	0.199	0.144	0.146	1.383	0.168
SMTUxSizexDensity	0.197	0.323	0.059	0.611	0.542
SMTUxSizexHeterogeneity	-0.069	0.392	-0.024	-0.177	0.860
SMTUxSizexQuality	-0.049	0.375	-0.018	-0.131	0.896
SMTUxDensityxHeterogeneity	-0.422	0.346	-0.136	-1.218	0.224
SMTUxDensityxQuality	0.316	0.440	0.103	0.719	0.473
SMTUxHeterogeneityxQuality	-0.258	0.328	-0.106	-0.787	0.432
SMTUxSizexDensityxHeterogeneity	0.292	0.367	0.114	0.797	0.426
SMTUxSizexDensityxQuality	-0.220	0.422	-0.085	-0.521	0.603
SMTUxSizexHeterogeneityxQuality	-0.428	0.421	-0.212	-1.015	0.311
SMTUxDensityxHeterogeneityxQuality	-0.009	0.371	-0.004	-0.024	0.981
SMTUxSizexDensityxHeterogeneityxQuality	0.044	0.279	0.031	0.157	0.876

Note: SMTU = Social Media Technology Usage; * $p < .05$; ** $p < .01$

Model 6: Regression Test of Antecedent Variables and 5-way Interaction on Outcome Variable Value Co-Creation						
Model 6: R² = 0.529	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
Antecedent Variables	B	Std. Error	β			
Constant	6.065	0.053			113.903	0.000
SMTU	-0.001	0.083	-0.001		-0.017	0.987
Size	0.159*	0.069	0.148*		2.314	0.021
Density	-0.044	0.060	-0.041		-0.736	0.462
Heterogeneity	0.077	0.065	0.071		1.192	0.235
Quality	0.483**	0.072	0.448**		6.732	0.000
SMTUxSize	0.077	0.083	0.074		0.935	0.350
SMTUxDensity	0.088	0.070	0.082		1.259	0.209
SMTUxHeterogeneity	-0.119	0.075	-0.119		-1.591	0.113
SMTUxQuality	-0.115	0.083	-0.122		-1.381	0.168
SMTUxSizexDensity	-0.192	0.187	-0.083		-1.027	0.305
SMTUxSizexHeterogeneity	-0.084	0.227	-0.042		-0.371	0.711
SMTUxSizexQuality	0.260	0.217	0.138		1.198	0.232
SMTUxDensityxHeterogeneity	0.130	0.200	0.060		0.648	0.517
SMTUxDensityxQuality	-0.201	0.254	-0.094		-0.791	0.430
SMTUxHeterogeneityxQuality	-0.117	0.190	-0.069		-0.615	0.539
SMTUxSizexDensityxHeterogeneity	-0.199	0.212	-0.113		-0.937	0.350
SMTUxSizexDensityxQuality	-0.061	0.244	-0.034		-0.250	0.803
SMTUxSizexHeterogeneityxQuality	0.032	0.244	0.023		0.133	0.895
SMTUxDensityxHeterogeneityxQuality	0.366	0.215	0.244		1.705	0.089
SMTUxSizexDensityxHeterogeneityxQuality	0.296	0.161	0.306		1.831	0.068

Note: SMTU = Social Media Technology Usage; * $p < .05$; ** $p < .01$

Model 6: Regression Test of Antecedent Variables and 5-way Interaction on Outcome Variable Communication Reciprocity						
Model 6: R² = 0.657	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
Antecedent Variables	B	Std. Error	β			
Constant	5.583	0.044			125.680	0.000
SMTU	0.066	0.070	0.052		0.956	0.340
Size	0.191**	0.057	0.181**		3.327	0.001
Density	0.118*	0.050	0.112*		2.362	0.019
Heterogeneity	0.147**	0.054	0.14**		2.736	0.007
Quality	0.490**	0.060	0.465**		8.182	0.000
SMTUxSize	0.022	0.069	0.021		0.313	0.755
SMTUxDensity	-0.006	0.058	-0.006		-0.108	0.914
SMTUxHeterogeneity	0.000	0.062	0.000		0.000	1.000
SMTUxQuality	-0.150*	0.070	-0.162*		-2.152	0.032
SMTUxSizexDensity	-0.164	0.156	-0.073		-1.051	0.294
SMTUxSizexHeterogeneity	0.091	0.189	0.046		0.481	0.631
SMTUxSizexQuality	-0.065	0.181	-0.035		-0.357	0.722
SMTUxDensityxHeterogeneity	0.317	0.167	0.151		1.899	0.059
SMTUxDensityxQuality	0.324	0.212	0.155		1.525	0.128
SMTUxHeterogeneityxQuality	-0.242	0.158	-0.146		-1.528	0.128
SMTUxSizexDensityxHeterogeneity	-0.491**	0.177	-0.285**		-2.776	0.006
SMTUxSizexDensityxQuality	0.498*	0.204	0.286*		2.441	0.015
SMTUxSizexHeterogeneityxQuality	-0.057	0.203	-0.042		-0.280	0.780
SMTUxDensityxHeterogeneityxQuality	0.148	0.179	0.101		0.826	0.410
SMTUxSizexDensityxHeterogeneityxQuality	-0.032	0.135	-0.034		-0.237	0.813

Note: SMTU = Social Media Technology Usage; * $p < .05$; ** $p < .01$

THE UNIVERSITY OF

ALABAMA

R E S E A R C H

April 30, 2014

James Mitchell Andzulis
Department of Management & Marketing
College of Commerce & Business Administration
Box 870225

Re: IRB # EX-14-CM-062 "Applying Network Theory to the Technology
to Performance Profit Chain: A Social Media Application"

Dear Mr. Andzulis:

The University of Alabama Institutional Review Board has granted
approval for your proposed research.

Your protocol has been given exempt approval according to 45 CFR part
46.101(b)(4) as outlined below:

(4) Research involving the collection or study of existing data, documents,
records, pathological specimens, or diagnostic specimens, if these sources
are publicly available or if the information is recorded by the investigator
in such a manner that subjects cannot be identified, directly or through
identifiers linked to the subjects.

Your application will expire on April 29, 2015. If your research will
continue beyond this date, complete the relevant portions of Continuing
Review and Closure From. If you wish to modify the application,
complete the Modification of an Approved Protocol Form. When the
study closes, complete the appropriate portions of FORM: Continuing
Review and Closure.

Should you need to submit any further correspondence regarding this
proposal, please include the assigned IRB application number.

Good luck with your research.

Sincerely,

Carpantato T. Myles, MSM, CIM, CIP
Director & Research Compliance Officer
Office for Research Compliance
The University of Alabama

358 Rose Administration Building
Box 870127
Tuscaloosa, Alabama 35487-0127
(205) 348-8461
FAX (205) 348-7189
TOLL FREE (877) 820-3066

UNIVERSITY OF ALABAMA
INSTITUTIONAL REVIEW BOARD FOR THE PROTECTION OF HUMAN SUBJECTS
REQUEST FOR APPROVAL OF RESEARCH INVOLVING HUMAN SUBJECTS

I.   Identifying information

	Principal Investigator	Second Investigator	Third Investigator
Names:	James Mitchell Andzulis	Adam Rapp, Ph.D.	N/A
Department:	Marketing	Marketing	-
College:	Commerce & Business Administration	Commerce & Business Administration	-
University:	University of Alabama	University of Alabama	-
Address:	Alston 105 Box 870225 Tuscaloosa, AL 35487	133 Alston Hall Tuscaloosa, AL 35487	-
Telephone:	610-389-5731	205-348-7420	-
FAX:	205-348-6695	205-348-6695	-
E-mail:	jmandzulis@crimson.ua.edu	arapp@cba.ua.edu	-

Title of Research Project: Applying Network Theory to the Technology to Performance Profit Chain: A Social Media Application

Date Submitted:
Funding Source: N/A

Type of Proposal	☒ New	☐ Revision	☐ Renewal Please attach a renewal application	☐ Completed	☒ Exempt
			Please attach a continuing review of studies form		
			Please enter the original IRB # at the top of the page		

UA faculty or staff member signature: _

II. NOTIFICATION OF IRB ACTION (to be completed by IRB):
Type of Review: _____ Full board _____ Expedited

IRB Action:
___ Rejected   Date: _____
___ Tabled Pending Revisions   Date: _____
___ Approved Pending Revisions   Date: _____
✓ Approved-this proposal complies with University and federal regulations for the protection of human subjects.

Approval is effective until the following date: 4-29-15 SS

Items approved: ___ Research protocol   (dated_____)
                  ___ Informed consent   (dated_____)
                  ___ Recruitment materials (dated_____)
                  ___ Other   (dated_____)

Approval signature _____ Date 4/30/2014