THE BOUNDARY SPANNING MARKETING ORGANIZATION:
AN EXAMINATION OF FUNCTIONAL AND ORGANIZATIONAL INFLUENCES
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ABSTRACT

In order to develop marketing strategies and maintain a sustainable competitive advantage, marketing must successfully interact with constituencies both within and external to the firm. While interactions with external stakeholders such as customers are critical, the marketing’s ability to work within the firm determines if it can locate the resources it needs to succeed. To achieve a collaborative relationship with other functions, boundary spanning—behavior intended to establish relationships with and generate knowledge from external groups that can assist a team in meeting objectives — has become increasingly important. To address opportunities in this space, this research examines a spectrum of marketing boundary spanning activities, from the functional to the organizational level, across three essays.

The first essay explores how firm and functional orientations impact sales/marketing integration. Firms regularly pursue integration between sales and marketing to improve information and resource exchange between the two. This study examines the current level of integration, the desired future level of integration, and the difference between the two (the integration gap). Overall, this study provides a more
complex view of the factors that influence sales/marketing integration and ultimately relationship and business outcomes

The second essay uses a qualitative approach, through interviews with marketing managers, to uncover how marketers work within the organization to deliver Big Data oriented decision making. The study uses the “voice of the informant” to analyze the scope of Big Data, develop a decision-making hierarchy, describe the external and internal factors that influence the hierarchy, and identify four transition factors that allow marketing managers to become more data driven. By successfully using higher levels of customer information for decision making, managers can increase market effectiveness and profitability.

The third essay examines factors that impact the level of cooperation between the CMO and CIO. With the rapidly increasing levels of data collection and analysis within the firm, the relationship between the CMO and CIO is gaining strategic importance. Through the lens of resource dependency and the Top Management Team literature, this conceptual study proposes antecedents of CMO/CIO cooperation and several mechanisms to increase the level of cooperation between the two.

INDEX WORDS: Boundary spanning, Sales/Marketing integration, Big Data, Chief Marketing Officer (CMO)
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DEDICATION

To Amy, none of this would have been possible without you. In addition to providing endless support and encouragement, you have been completely selfless in allowing me to pursue my goals. I am extremely lucky and forever thankful to have you in my life.

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CHAPTER 1

INTRODUCTION AND LITERATURE REVIEW

Although previous research suggests that marketing is losing influence within the firm (Verhoef and Leeflang 2009), recent increases in available digital and customer data result in a new source of strategic value for the marketing organization. Marketing integrates these various new sources of information, through successful interactions with a number of constituencies both within and external to the firm, to develop a comprehensive view of customers and their needs. While interactions with external stakeholders are critical, the ability of marketing to work across functions within the firm determines if it can access the resources it needs to succeed. For example, through relationships with both the sales and technology organizations, marketing gathers a variety of qualitative and quantitative information used to drive strategic decision making and develop a sustainable competitive advantage for the firm. To achieve a cooperative relationship with other functions, boundary spanning—behavior intended to establish relationships with and generate knowledge from external individuals and groups that can assist a team in meeting objectives – has become increasingly important (Day 1994; Hult 2011; Marrone, Tesluk, and Carson 2007). Boundary spanning is critical to understanding how marketing functions within increasingly flat organizations, and yet research into boundary spanning within the firm is limited.

Strategic activities within the firm involve complex decision making, multiple parties involved in strategy setting, and simultaneous collaboration across functions, and
the level of interaction continues to increase as firms become more customer-centric and data driven (Homburg, Workman, and Jensen 2000; IBM 2011). To support strategy development, marketing strives to establish a comprehensive view of the customer and must span multiple boundaries across the entire firm to do so. As a result, it is important to examine both function and organization level interactions to provide a complete view of the marketing boundary spanning space. To provide this extensive view of boundary spanning activities, I first examine integration between the sales and marketing functions. Next, I overview how marketing works within the organization to deliver Big Data oriented decision making. Finally, I look at the executive level of the firm to examine how senior marketing and technology executives work, or do not work, together to implement innovative new strategies.

Essay 1 (Chapter 2)

Firms regularly pursue integration between sales and marketing to increase information and resource exchange between the two groups with the aim of improving relationship effectiveness and business performance (e.g., Hulland, Nenkov, and Barclay 2012; Rouziès et al. 2005). This results in a complex and continuously evolving relationship between the two functions. They have a common objective in trying to understand and meet customer needs, yet their different perspectives, sales being more short-term and marketing more long-term, can lead to poor communication between the two (e.g., Dewsnap and Jobber 2000; Homburg and Jensen 2007; Rouziès et al. 2005).

By examining the sales/marketing relationship at the functional level, the first essay provides a more comprehensive view of integration between sales and marketing while also providing the foundation for how marketing works with other functions within
the firm. In the essay, I examine how firm and functional orientations impact sales/marketing integration. This study examines the current level of integration, i.e., realized integration, the desired future level of integration, i.e., desired integration, and the difference between the two, i.e., the integration gap. I find that the combination of environmental antecedents and a function or firm level orientation impacts the level of both realized and desired integration. Furthermore, previous research largely focuses on the factors that promote integration (e.g., Cespedes 1993; Rouziès et al. 2005) or an effective relationship (e.g., Hulland et al. 2012) between the two departments, but has not explored how interactions between the two determine the difference between current and future integration needs and their impact on relationship and customer outcomes.

**Essay 2 (Chapter 3)**

As part of the increase in the overall importance of boundary spanning within the firm, marketing is now more involved with functions that collect and manage data. The ongoing evolution of marketing towards more customer-centric models and technological advances that have made data capture easier and broader in scope greatly increased the availability of customer data (Day 2006; Homburg et al. 2000; Rust, Moorman, and Bhalla 2010). Marketers see a close link between customer-centric objectives and data, since they believe it will allow them to better predict customer behavior and enhance the customer experience (Schroeck et al. 2012). Additionally, this increase in data availability from a variety of sources adds to the complexity of the marketing function and increases the need to integrate with other internal organizations (Day 2011). As a result, marketing must build relationships across the firm to ensure access to data and the appropriate decision making tools associated with the rise of “Big Data”. Marketers use
the term Big Data to describe the avalanche of information which they view as critical to providing a better understanding of customers and markets.

The second essay explores marketing’s boundary spanning role in transforming Big Data into strategic insights and business performance. As a result of the customer centric movement of the marketing organization and the rapid increase in data, the marketing relationship with technology has become more important. Boundary spanning between the two is critical, because marketing largely has an outside-in perspective, gathering external information and bringing it in to the firm, while technology oriented organizations focus more on processes within the firm, or inside-out capabilities (Day 1994). This research uses a qualitative approach, through interviews with marketing managers, to examine the scope of Big Data, develop a hierarchy of how firms use data to make marketing decisions, describe the external and internal factors that influence where a firm falls within the hierarchy, and identify four specific transition factors that allow firms to become more data driven.

Essay 3 (Chapter 4)

Finally, at the organizational level, the relationship between senior marketing and technology executives is also evolving. The surge in customer data increases demands on the Chief Marketing Officer (CMO), while also increasing the need for a closer relationship with the Chief Information Officer (CIO). One of the biggest problems CMOs face is trying to meet customer-centric objectives while dealing with an explosion of data (IBM 2011). As a result, the CMO wants to become more involved in how data is aggregated and used in customer strategies, and the CIO wants to be more involved in how insights, versus data, are developed and how these insights can be shared across the
organization (CMO Council 2010). However, there are several factors that limit the ability of the two executives to cooperate. There are conflicts around who is leading the digital marketing transformation, how data should be gathered and utilized, and the ability of the two to communicate in a common language.

Previous research primarily looks at the relationship between the CEO and functional executives or the Top Management Team (TMT) as a whole (e.g., Finkelstein 1992; Hambrick and Mason 1984), but rarely at the interactions between specific functional executives (Menz 2012). The third essay addresses this gap by exploring the relationship between the CMO and the CIO. In the third essay, I develop a conceptual model that examines the level of cooperation between the two executives. If both are committed to delivering firm objectives, it should lead to cooperation between the two executives. However, differences between the two resulting from asymmetric interdependence, the reporting structure, and their functional and educational backgrounds can lead to conflict versus cooperation. This conceptual study incorporates resource dependency theory and the TMT literature to propose antecedents of CMO/CIO cooperation and mechanisms to increase the level of cooperation between the two.

To address the complexities that marketing faces in spanning multiple boundaries, I approach these issues from both a functional and organizational perspective across the three essays. Additionally, the growing influence of technology and customer data increases the importance of both existing relationships, like those between sales and marketing, and relatively new relationships, like those between technology and marketing. Following are three essays that explore the boundary spanning marketing organization and a concluding chapter that summarizes the contribution and next steps.
CHAPTER 2

THE SALES/MARKETING INTEGRATION GAP:

THE JOINT IMPACT OF ENVIRONMENTAL, FIRM, AND FUNCTIONAL

DRIVERS ON REALIZED VERSUS DESIRED INTEGRATION

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1 Sleep, S.T., J. Hulland, and S.K. Lam. To be submitted to *Journal of Marketing*. 

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Abstract

Marketing and sales have distinct thought world differences that often inhibit their ability to work together. As a result, firms promote integration between the two groups with the ultimate aim of improving relationship effectiveness and customer performance. This study introduces the concepts of realized integration and desired, or future, integration and the difference between the two, or the integration gap. Through the lens of self-categorization theory, this study examines how both functional and firm behaviors interact with several internal and external environment factors to impact both types of integration. The study shows how these factors impact both realized and desired integration in several ways, providing a more complete view of the relationship between the two. Finally, the study finds that desired integration can negatively impact relationship outcomes reducing the positive benefits of the realized level of integration. As a result, managers need to not only promote integration, but also manage the integration gap by increasing levels of realized integration or decreasing levels of desired integration.
By working together, sales and marketing can better exchange information and resources to understand and meet customer needs (e.g., Hutt 1995; Rouziès et al. 2005; Ruekert and Walker 1987). However, differences between the two functions often work against bringing them together and instead lead to conflict. For example, within the firm limited resources must be allocated to both marketing programs and the sales force, and often times neither function feels it is adequately funded (Kotler, Rackham, and Krishnaswamy 2006). Additionally, there are “thought world” differences between the two that can lead to tension and conflict since marketing generally has a long term, project focus while sales has a short term, customer focus (Homburg and Jensen 2007). It can be extremely difficult to overcome these constraints.

Previous research has examined the impact of too little integration which can hamper information exchange essential to firm success (e.g., Hulland et al. 2012) or too much integration which can lead to a common mindset which reduces awareness of market conditions and negatively impacts performance (Homburg and Jensen 2007; Rouziès and Hulland 2014). However, it has not examined how the desire for future integration between the two functions impacts the relationship and customer results. As a result, we examine both where integration between sales and marketing is today (i.e., realized integration) and where each function believes it should be (i.e., desired integration). This distinctions is important because if there is a discrepancy between realized and desired integration (i.e., an integration gap), the relationship can be perceived as not performing optimally in its current state.

We propose that employees who believe the realized level of integration is appropriate will wish to continue in that same state going forwards since there is no
reason to alter an effective relationship. On the other hand, an integration gap will exist for those who do not feel the current level of performance is acceptable because they will desire a different level of integration going forward to improve performance (Bitner, Booms, and Tetreault 1990; Bolton and Drew 1991; Parasuraman, Zeithaml, and Berry 1988). It is not simply the level of integration that matters, but the perception of where integration is and where it should be. Once this distinction is made, actions can then be taken to close the gap by either increasing realized integration, lowering the level of desired integration, or a combination of the two.

In addition to the integration gap, we introduce a more complex view than previous research of the factors that influence the sales/marketing relationship. The relationship is not strictly between the two functions but exists within the larger context of the firm and the market as a whole. Members of sales and marketing are likely to identity with both the function and the encompassing organization (Foreman and Whetten 2002). To explain the impact of the dual identity, we include not only the environmental antecedents of integration but also the moderating effect of manager’s perceptions of function and firm level behaviors. By examining all three factors simultaneously we gain a better perspective on how to manage integration.

Finally, we expand on existing sales/marketing research by incorporating the impact of realized and desired integration on relationship and customer outcomes. Previous research has focused largely on the positive benefits of realized integration. By also evaluating the impact of desired integration, we gain a better understanding of how each type of integration influences the relationship and the business either positively or negatively.
We employ self-categorization theory (SCT) to examine the relationship between sales and marketing and how they interact with each other and the firm as a whole. Sales and marketing managers identify with distinct categories that define the group in general (Turner et al. 1987). However, they often have overlapping identities with both the function and the firm. Manager’s experiences within both the function and the firm can serve to make the firm as a whole more salient, increasing commonalities between sales and marketing, or make the function more salient, emphasizing the differences between the two (Ashforth and Johnson 2001). To address the existing gaps in the sales/marketing literature, we use SCT to address three research questions: How do internal and external environmental conditions impact realized and desired integration? How do firm and functional factors moderate the relationship between these environmental conditions and realized and desired integration? How does the level of realized and desired integration impact the relationship and customer performance?

We use data from a survey of 203 marketing and sales managers across 38 firms in the Consumer Packaged Goods (CPG) industry. Our results show that interdependence plays a significant role on the level of realized integration and that environmental conditions do not impact desired integration. More importantly, we demonstrate that the interaction of competitor strategic orientation and customer strategic orientation and the environmental antecedents have opposite effects on realized integration. In predicting desired integration, we find that the misalignment between factors driving collaboration and those that emphasize functional objectives results in higher levels of desired integration. Finally, we find that realized integration has a positive effect on both
relationship effectiveness and customer oriented business results and desired integration has a negative effect on relationship effectiveness.

Overall, managers need to be aware that the relationship between the antecedents of integration and realized and desired integration can be mixed due to boundary conditions. Managers can no longer focus solely on increasing integration to improve information exchange. Instead managers must be aware of the current and future desire for integration. Low levels of realized integration may be adequate if there is no integration gap, while high levels of realized integration may not be sufficient if both sales and marketing feel they should be even more interrelated. To address the integration gap, managers must take into account not just the integration level between sales and marketing, but also the strategic activities of the firm and the activities occurring within each specific function. Managers need to be aware of whether employees categorize themselves as part of the function or as part of the firm as a whole. Finally, managers who are not satisfied with the level of integration may feel they do not have access to appropriate information and resources, reducing their ability to adequately meet relationship and business objectives.

We organize the paper as follows. First, we briefly review the background literature on sales/marketing integration and self-categorization theory. Next, we propose hypotheses relating to the environmental main effects and moderating effects of firm and functional behaviors on actual and desired integration. We then describe the data and the analytical strategy and test the model. Finally, we summarize the results and discuss the contributions to theory and practice.
Literature Review

Sales/Marketing Relationship

Previous research shows that while the sales and marketing functions can positively affect business performance when they work together (e.g., Homburg and Jensen 2007; Homburg, Jensen, and Krohmer 2008; Lawrence and Lorsch 1967), when the two functions do not communicate with one another it can lead to a lack of cohesion, poor coordination, dissatisfaction, and negative stereotyping (Dewsnap and Jobber 2000). Because of the serious positive and negative impacts of sales/marketing integration, previous research has largely focused on outcomes such as business performance, cooperation, and relationship effectiveness (e.g., Homburg et al. 2007; Hulland et al. 2012). When the two functions interact effectively, the ability to share information and knowledge through integration enables the team to combine market and customer information for a holistic view of the strategic environment (e.g., Rouziès and Hulland 2014).

A common thread across many of these studies has been advice to increase integration. A large part of the inspiration for sales and marketing to work together is driven by the need to share resources and information to drive common outcomes or behaviors (Pfeffer and Salancik 1978). However, we argue that it is not just the level of integration that matters, but also managers’ perceptions of realized integration (where each function perceives it is today) and desired integration (where each function perceives it should in the future). When there are differences between realized and desired integration, it results in an integration gap. We propose that similar to customers, employees are likely to evaluate the quality of integration based on their long-term,
overall evaluation of its effectiveness (Bitner, Booms, and Tetreault 1990; Bolton and Drew 1991; Parasuraman, Zeithaml, and Berry 1988). For example, sales and marketing managers that believe the current level of integration results in high performance will wish to continue in that same state going forward. Those who do not feel the current level of performance is acceptable will desire a different future level of integration to improve performance, resulting in an integration gap.

**Self-Categorization Theory**

Prior research suggests both sales and marketing managers have distinct identities with their specific functions and the firm as a whole (e.g., Fisher, Maltz, and Jaworski 1997). As a result, we incorporate self-categorization theory (hereafter SCT) as our primary theoretical lens. SCT describes the cognitive processes through which one identifies with the function and the behaviors associated with the function (Turner et al. 1987). SCT theorizes that group members undergo depersonalization, whereby both sales and marketing managers perceive themselves as members of a larger category versus distinct individuals (Turner et al. 1987). This results in a shift from a personal to a social level of identity where individuals categorize themselves by their role, salesperson or marketer, with a distinct set of group attributes. Group members then characterized both those within the function and outside of the function by the category attributes and not at the individual level.

Another important component of SCT is the difference between subordinate and superordinate level classifications. Intergroup interactions are shaped by superordinate factors at the firm level and subgroup factors at the function level. The context determines which identity is salient to the individual at the time, whether it is the sales
function, the marketing function, or the firm as a whole (Hogg and Terry 2000; Turner et al. 1987). When managers within each function identify with both the function and the firm it results in the most cooperative relationship (Hogg and Terry 2000). When identifying with the entire firm, instead of the individual function, interactions become more cooperative because firm-level objectives or a common firm culture become more salient. However, when the subgroup, or function, is more salient intergroup differences become more prevalent reducing interactions across the two functions. As a result, when both sales and marketing have a common, impactful relationship with the firm, it will also improve their relationship with each other.

Lastly, the contact hypothesis component of SCT suggests that contact between the members of different groups may improve relations between the two groups (e.g., Gaertner, Dovidio, Anastasio, Bachman, and Rust 1993; Pettigrew 1998). As a result, perceptions of successful contact between the two functions can reduce the anxiety of dealing with each other, which in turn reduces intergroup bias (Hogg and Terry 2000). Through SCT, then, we can examine how factors that promote categorization with the function or the firm affect both realized and desired integration. Our key argument is that organizational constructs that are focused on individual functions, such as functional rewards and functional esprit de corps, will create an ‘us versus them’ mentality, leading to more desired integration. In contrast, organizational constructs focused on the overall firm, such as customer and competitor strategic orientation, will make the superordinate category the firm more salient, leading to more realized integration. Increasing the level of realized integration or decreasing the level of desired integration should reduce the integration gap.
Conceptual Model

Previous research from Ruekert and Walker (1987) theorizes that within the firm, the reliance of sales and marketing in terms of resource dependence and domain similarity drive the need for integration. Additionally, the competitive environment, especially when rapidly changing or complex, increases the need for marketing and sales to collaborate so that they can quickly respond to customer needs. The conceptual model in Figure 2.1 connects these three environmental dimensions - competitive intensity, interdependence, and structural mechanisms - to realized and desired integration since these dimensions have previously been shown to increase interactions with other functions (Pfeffer and Salancik 1978; Ruekert and Walker 1987). *Competitive intensity* is the level of competition the firm faces. Within the firm, resource sharing and similarity between sales and marketing impact the level of integration. Because each function does not have all of the competitive information available, it must seek it from other functions within the firm. *Interdependence* represents the extent to which the function’s tasks require the members of a system to work together to achieve their objectives (Fisher et al. 1997; Hutt 1995; Ruekert and Walker 1987). Firms can also create an internal environment that proactively integrates the marketing and sales function. One way to achieve integration is to reduce the differences between the two departments (Lawrence and Lorsch 1967) or to reduce conflict through cross functional teams (Maltz and Kohli 2000). We, thus, incorporate *structural mechanisms*, the development of cross-functional teams and liaisons that allow sales and marketing to better understand the tasks and skills performed by the other function, to capture the concept of domain similarity (Ruekert and
Walker 1987). Both interdependence and structural mechanisms can reduce the perception of a divide between the two functions by signaling the importance of collaboration between the two (Hulland et al. 2012).

We then incorporate two distinct measures of integration resulting from the three antecedents. *Perceived realized integration* represents an individual’s perceptions of the extent to which marketing and sales are currently inter-related and *perceived desired integration* represents where managers desire to see sales and marketing interconnectedness in 2 to 3 years (as measured today). The difference between these two perceptual states (realized versus desired) is the *perceived integration gap*.

--- Insert Figure 2.1 about here ---

As distinct functions, sales and marketing have a connection to their function in addition to the larger corporation. To capture these distinct identities, the model includes both firm and function level moderators. At the firm level, external information on customers and competitors exists across the firm and a common view of each requires a culture of information sharing (Homburg and Pflesser 2000). Incorporating a firm-level strategic orientation that encourages the sharing of competitor and customer information makes the firm more salient to sales and marketing. This leads to a firm level identity that increases similarities and reduces potential differences between the two functions. To capture the effect of firm level strategic behaviors on integration, we introduce strategic orientations as firm moderators. Using Narver and Slater’s (1990) classification, we look at the moderating effect of *competitor orientation* and *customer orientation* on the relationship between interdependence and competitive intensity on realized integration. Customer and competitor orientation include the activities of acquiring and disseminating
information about buyers and competitors throughout the firm. We exclude the third component of Narver and Slater’s market orientation measures, interfunctional coordination, from the analysis because it does not reflect broad strategic choices (Gatignon and Xuereb 1997). Since we are primarily interested in the connection between sales and marketing and not all functions within the firm, we capture this relationship through marketing-sales interdependence versus a firm level construct.

While firm level activities support common behaviors across functions, each department still has its own unique thought world which leads to differentiation between the two groups (Homburg and Jensen 2008; Lawrence and Lorsch 1967). The connection to the function increases identification with sales or marketing resulting in a greater level of intergroup bias (Lam 2008). Additionally, most conflict is inter-functional as both sales and marketing compete for scarce resources while being rewarded for accomplishing functional objectives (Ashforth and Mael 1989). We incorporate rewards and esprit de corps as moderators of the relationship between interdependence and structural mechanisms on desired integration. Rewards that support departmental success, or functional rewards, versus cooperative, firm-wide achievement, will make the specific sales or marketing function more salient to the individual manager. If there are common, cooperative rewards, integration is much more likely than if the rewards are function oriented (e.g., Hutt 1995; Rouziès et al. 2005; Rouziès and Hulland 2014). The second functional moderator is functional esprit de corps, which is defined as the extent to which people within either the sales or marketing function feel obligated to their corresponding functional members. The more salient the specific function, the greater in-group cohesion, the higher the differences with the firm and other functions (Turner et al.)
Previous cross-functional integration studies examine esprit de corps as a cross-functional construct that connects each function to the firm (Jaworski and Kohli 1993; Workman, Homburg, and Jensen 2003). However, we capture esprit de corps at the function level (a within-function rather than a between-function construct).

In the front end of the model, we control for both *functional power* and *customer power*. If one function has a greater level of power, it can dictate the terms of the relationship and impact integration. At the same time, customer power can also negatively impact integration as both sales and marketing managers focus on the customer versus the broader market environment (Rouziès and Hulland 2014).

The conceptual model uses different antecedents for each integration outcome since sales and marketing cannot impact realized integration, but can influence desired integration since it is a perception of the future. As a result, because sales and marketing cannot directly control the level of competitive intensity or the strategic orientation of the firm, we utilize realized integration as the outcome variable. On the other hand, sales and marketing have direct influence over the function and can introduce structural mechanisms to proactively impact future integration, so we incorporate desired integration as the outcome. Finally, interdependence interacts with both firm and functional behaviors, since it results from factors both under and outside its control. For example, sales and marketing may need to work together to meet a management request or a customer requests. As a result, for interdependence we examine the moderating effect of both firm and function factors on actual and desired integration.

Finally, we test the impact of actual and desired integration on *perceived relationship effectiveness* and *customer business results* since the outcomes of the
sales/marketing interface have traditionally been captured in terms of relationship effectiveness and market performance (Homburg and Jensen 2007; Rouziès and Hulland 2014). Relationship effectiveness captures how well sales and marketing work together to achieve customer and business goals while customer business results incorporates the components of customer satisfaction, customer value, and the overall customer relationship.

**Hypotheses**

Internal and external conditions may impact the need for integration and the ability to disseminate information across the organization (Lawrence and Lorsch 1967; Maltz and Kohli 1996; Ruekert and Walker 1987). However, for this study we do not propose specific hypothesis since the focus is on the interaction effects.²

**Firm Moderators on Realized Integration**

*Competitive Intensity and Competitor Orientation.* Strategic orientation influences behaviors at the superordinate, firm level and can focus identity as well as attitudes, goals, and practices at that level (Hogg and Terry 2000). As a result, the firm provides an inclusive context for what may be mutually exclusive functions (Ashforth and Mael 1989). In a highly competitive market, changes in prices, products, and new competitors occur rapidly supplying a regular stream of new and changing information and knowledge that increases interaction across functions (Ruekert and Walker 1987). A competitor strategic orientation encourages a single firm wide focus on the competition which similarly encourages cross-functional interactions. As a result, the competitor

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² A test of the main effects model with both realized and desired integration as outcomes showed that the only significant main effect was interdependence on realized integration ($\beta = .41, p < .01$). All other main effects were not significant.
orientation increases the salience of the firm identity, making it more likely that sales and marketing will pursue common goals and cooperate across functional boundaries (Houston, Walker, Hutt, and Reingen 2001). The common objective of working together to understand the competition further enables sales and marketing to develop a cooperative relationship outside of their functional boundaries so they can more quickly and comprehensively respond to the rapidly changing external environment (Ruekert and Walker 1987). Sales and marketing will increasingly work together to share information across functions to fully understand and use information about the competitive environment. As a result, we expect high levels of competitor strategic orientation to positively interact with competitive intensity in driving the realized level of integration.

**Hypothesis 1a:** Higher (versus lower) levels of competitor orientation positively enhance the relationship between competitive intensity and realized integration

**Competitive Intensity and Customer Orientation.** On the other hand, we argue that a customer strategic orientation dilutes the focus on the competitive threat and moves the focus to satisfying customer needs (Ohmae 1988). When competitive intensity is low, the less dynamic environment allows sales and marketing to dedicate resources to developing a complete picture of the customer, leading to increased integration between the two (Homburg et al. 2000). However, an intense, quickly changing competitive environment requires sales and marketing to use their available resources to focus not only on the customer but the competition as well. Because a business unit has limited resources that must be allocated between these two distinct activities (Choi 2002; Sleep, Bharadwaj, and Lam 2014), a combination of high customer orientation and high competitive intensity weakens the ability of the functions to develop a common goal, since it is split between
the customer and the competition, reducing the salience of the higher level identity (Homburg and Jensen 2007). The end result is less integration realized between the two groups because of the dual demands of the customer and the competition.

_Hypothesis 1b:_ Higher (versus lower) levels of customer orientation diminish the relationship between competitive intensity and realized integration

_Sales-Marketing Interdependence and Competitor and Customer Orientation._

Interdependence between sales and marketing increases the reliance of each function on the other for resources resulting in a common categorization (Turner et al. 1987). When strategic orientation is also high, the common, firm level identity becomes more salient, leading to a cooperative relationship that enhances the exchange of information and resources (Houston et al. 2001). For example, sales has face-to-face interactions with the customer that can provide real time customer or competitive information, while marketing provides support from on-going research to further validate the anecdotal input from sales. The end result is an increased willingness to share and use information since the exchange of market relevant information between product and sales occurs at the interface of the two (Cespedes 1993). As a result, we expect high levels of interdependence and either strategic orientation to lead to the highest level of realized integration.

_Hypothesis 2a:_ Higher levels of competitor orientation enhance the relationship between interdependence and realized integration

_Hypothesis 2b:_ Higher levels of customer orientation enhance the relationship between interdependence and realized integration

**Functional Moderators on Desired Integration**

In addition to firm factors, sales and marketing categorize themselves by function leading to specific functional identities. Fisher et al. (1997) specifically examined the role
of functional identification and found that managers with a high level of identification will attempt to coerce external functions into meeting their functional goals. While sales and marketing are more responsive to each other when collective or organizational objectives are more salient, when the functional identification is more salient it can create a distinct in-group and out-group (Hutt 1995). Because the actions within the function play such an important role, we also examine the impact of function specific behaviors on desired integration.

Both interdependence and structural mechanisms create multiple touch points between sales and marketing that increase their willing to work together. Sales/marketing interdependence encourages cooperation between functions to meet functions specific goals (Cheng 1983) while structural mechanisms help introduce an overarching identity between the two groups that moves members away from sources of intergroup bias and redirects them toward more constructive intergroup relations (Gaertner et al. 1989). This provides an increased sense of ownership and accountability for joint decisions (Rouziès et al. 2005). Since the two groups are more likely to interact, the contact hypothesis suggests that interactions between sales and marketing can improve relations, reduce intergroup bias, and potentially improve relations between the two groups (Gaertner et al. 1993; Hogg and Terry 2000).

A common theme across the integration literature is to emphasize cooperative, superordinate goals in order to encourage interaction across different functions (e.g., Lawrence and Lorsch 1967; Maltz and Kohli 2000). Rewards that require the achievement of cooperative goals provide an incentive for functions to work together to meet those goals (Johnson et al. 2006; Rouziès et al. 2005). On the other hand, functional
rewards encourage the achievement of functional goals that are rarely compatible and can lead to conflict (Ruekert and Walker 1987). A lack of common goals between the function and the firm can restrict joint identification (Ashforth and Mael 1989) while increasing perceived differences across functions (Turner 1975). If sales and marketing are dependent on each other to accomplish common outcomes, but rewards do not support collaboration the function faces an on-going conflict between functional and cooperative objectives. As a result, both functions likely desire additional integration since functionally oriented rewards reduce the level of contact across the two functions.

**Hypothesis 3a:** Functional rewards enhance the relationship between interdependence and desired integration

**Hypothesis 4a:** Functional rewards enhance the relationship between structural mechanisms and desired integration

Sales and marketing functions that are interdependent are better able to use problem solving to resolve conflicts resulting in an increased need for integration and a more positive view of the relationship as a whole (Lawrence and Lorsch 1967; Ruekert and Walker 1987). However, a strong esprit de corps within either function can result in a higher level of in group bias as driven by the functional categorization (Turner 1975). Those individuals who feel a close connection with their specific function are more likely to focus on issues and solutions that occur within the function rather than outside of it (Fisher et al. 1997). As a result those functions with a high level of functional esprit de corps view their function more favorably and the other function more negatively increasing intergroup bias (Hogg and Abrams 2003). The need to collaborate creates an understanding that additional integration is needed to reduce perceived stereotypes that exist between the two groups to achieve common objectives (Hogg and Abrams 2003).
Because of the higher level of intergroup bias, both functions are likely to desire additional integration since a high level of esprit de corps reduces the level of contact and information sharing across the two functions.

Both functional rewards and functional esprit de corps work opposite the contact hypothesis to drive functional interests instead of collective benefits increasing the level of desired integration. Since each function experiences the benefits of collaboration through the two antecedents, they then desire additional integration to increase valuable information sharing.

*Hypothesis 3b:* Functional esprit de corps enhances the relationship between interdependence and desired integration

*Hypothesis 4b:* Functional esprit de corps enhances the relationship between structural mechanisms and desired integration

**Integration and Performance**

The inter-functional integration literature has a long history of supporting integration as means to achieving better relationship and business results (e.g., Homburg et al. 2008; Hulland et al. 2012; Ruekert and Walker 1987). Integration enables better communication and information sharing across sales and marketing which results in cooperation and an ability to meet common goals. This improves the perceived relationship between the two functions as it increases access which reduces conflict and provides a means to resolve conflict should it occur. Additionally, previous research shows that integration between marketing and other functional managers leads to increased business performance (Song, Xie, and Dyer 2000)

*Hypothesis 5:* Realized integration will positively influence a) relationship effectiveness and b) customer business results
In general, desired integration is at a higher level than realized integration. The satisfaction literature suggests high levels of desired integration reflect dissatisfaction with the perceived quality of the existing relationship (Cronin and Taylor 1992). That dissatisfaction stems from either an inadequate exchange of information and resources or suboptimal outcomes achieved by the two functions. Without full access to resources or information, each function will make business decisions on incomplete information about customers and competitors. As a result, we expect the desired level of integration to be negative and reduce the positive impact of realized integration on relationship effectiveness and customer business results.

_Hypothesis 6:_ Desired integration will negatively influence a) relationship effectiveness and b) customer business results

**Method**

**Data**

The data was collected through a survey of members of the North American Consumer Packaged Goods Manufacturing Trade Association. The survey was sent to both sales and marketing managers across a number of firms. The survey was sent to 292 senior managers and 203 surveys with completed information were received for a response rate of 70%. There were no significant differences between early and late informants. Of the completed surveys received, the sales and marketing managers were from 38 different firms with an average of 5.34 managers per firm. The number of responding managers varied from 2 to 12 with about half the responses coming from marketing managers (2.68) and half from sales managers (2.66). All respondents were from the CPG industry. The CPG industry relies heavily on both sales and marketing
personnel for customer and strategy development, making it an important industry to study (Cespedes 1993).

**Measures**

Rouziès et al. (2005) describes the integration of sales and marketing as the overlap of two circles. We use a similar method to capture realized and desired integration. We provided respondents with a series of circles with different overlaps and asked them to select the one which best described their realized and desired integration (see Appendix). *Realized integration* captures the existing perceived level of interrelatedness between the sales and marketing functions. *Desired integration* captures an expectation of future integration.

We used three different constructs to capture the role of environmental conditions on realized and desired integration. All three, interdependence, structural mechanisms, and competitive intensity are four item scales. Interdependence is adapted from Fisher et al. (1997), structural mechanisms is adapted from Cespedes (1995), and competitive intensity is adapted from Jaworski and Kohli (1993).

For the moderators, we measure functional esprit de corps, competitor strategic orientation, and functional rewards (adapted from Walton et al. 1969) with four items each while we measure customer strategic orientation with five items. The strategic orientation scales were adapted from Narver and Slater’s (1990) market orientation scale. The esprit de corps scale was adapted from Jaworski and Kohli (1993).

Finally, we control for the effect of power both within and outside the firm. We measure functional power with three items adapted from Smith and Barclay (1997). Customer power is a single item adapted from Rouziès and Hulland (2014).
Because all data except for the team performance measure involve user responses from a single survey, we address the potential for common method bias by following Podsakoff et al.’s (2012) recommendations. In terms of procedural methods, we employed two recommended steps. First, we physically separated the dependent variables from the main effect and moderator items within the questionnaire. Next, we assured anonymity to the responders so that they would answer the questions as completely and honestly as possible. Finally, Podsakoff et al. (2012, p. 565) note that method bias can only deflate and not inflate quadratic and interaction effects. Since the primary focus of this research is on interaction effects, method bias would not account for any statistically significant interaction effects observed (Evans 1985; Siemsen, Roth, and Oliveira 2010).

Analytical Strategy

The data includes responses from multiple individuals that were nested within the sales or marketing function, and then nested within a variety of different firms. As a result, we use a multi-level approach that enables us to control for differences across individuals and firms. The data was collected at the individual level, so it provides individual perceptions of firm constructs, which we use to test our hypothesis. Previous research has shown that the perceptions of individual team members are meaningful for team level analysis (e.g., Chen et al. 2002; de Ruyter et al. 2009). Using MPlus6, we created a two level model at the individual and firm levels (Muthén and Muthén 1998-2011). The two-level model allows us to account for individual heterogeneity at the first level and firm heterogeneity at the second level. Additionally, MPlus6 allows us to simultaneous run equations 1 – 4 listed below.
In order to test for firm level differences, we calculated the ICC values and ran an ANOVA for all of the dependent variables. The results show that realized integration (ICC(1)=.18, $F=2.21$, $p < .01$), perceived relationship effectiveness (ICC(1)=.38, $F=2.21$, $p < .01$), and customer business results (ICC(1)=.35, $F=3.92$, $p < .01$) differ significantly across firms (Bliese 2000). As a result, we controlled for their random effect in the second level of the model. Desired integration does not differ across firms and its random effect was not incorporated in the second level of the model results (ICC=.05, $F=1.29$, $ns$). Ideally, we would examine cross-level interactions, but the limited power at the firm level with only 38 firms limits our ability to do so. Finally, we incorporate any differences between sales and marketing by using a dummy variable in both the main effects and full model.

Level 1 (Individual)

\[
\text{REAL}_{ij} = \beta_{0j} + \beta_{1i} \times CI + \beta_{2j} \times \text{INTERDEP} + \beta_{3j} \times \text{STRMECH} + \beta_{4j} \times \text{RPOWER} + \beta_{5j} \times \text{CPOWER} + \beta_{6j} \times \text{MOCMP} + \beta_{7j} \times \text{MOCUST} + \beta_{8j} \times \text{MRKTING} + \beta_{9j} \times \text{FIRMCOMP} \times \text{CI} + \beta_{10j} \times \text{FIRMCOMP} \times \text{INTERDEP} + \beta_{11j} \times \text{FIRMCUST} \times \text{CI} + \beta_{12j} \times \text{FIRMCUST} \times \text{INTERDEP} + \epsilon_{ij}. \quad (1)
\]

\[
\text{DES}_{ij} = \beta_{13j} + \beta_{14j} \times CI + \beta_{15j} \times \text{INTERDEP} + \beta_{16j} \times \text{STRMECH} + \beta_{17j} \times \text{RPOWER} + \beta_{18j} \times \text{CPOWER} + \beta_{19j} \times \text{REWARD} + \beta_{20j} \times \text{ESPRIT} + \beta_{21j} \times \text{MRKTING} + \beta_{22j} \times \text{FUNCREW} \times \text{INTERDEP} + \beta_{23j} \times \text{FUNCREW} \times \text{STRMECH} + \beta_{24j} \times \text{FUNCESP} \times \text{INTERDEP} + \beta_{25j} \times \text{FUNCESP} \times \text{STRMECH} + \epsilon_{ij}. \quad (2)
\]

\[
\text{RELEFF}_{ij} = \beta_{26j} + \beta_{27j} \times \text{REAL} + \beta_{28j} \times \text{DES} + \epsilon_{ij}. \quad (3)
\]

\[
\text{BUSRESCUST}_{ij} = \beta_{29j} + \beta_{30j} \times \text{REAL} + \beta_{31j} \times \text{DES} + \epsilon_{ij}. \quad (4)
\]
Level 2 (Firm)

\[ \beta_{0j} = \gamma_{00} + u_{0j} \]  \hspace{1cm} (5)

\[ \beta_{kj} = \gamma_{k0} \text{ for } k = 1, 2, 3, \ldots 12 \]  \hspace{1cm} (6)

\[ \beta_{26j} = \gamma_{260} + u_{0j} \]  \hspace{1cm} (7)

\[ \beta_{qj} = \gamma_{q0} \text{ for } q = 27, 28 \]  \hspace{1cm} (8)

\[ \beta_{29j} = \gamma_{290} + u_{0j} \]  \hspace{1cm} (9)

\[ \beta_{zj} = \gamma_{z0} \text{ for } z = 30, 31 \]  \hspace{1cm} (10)

where REAL is perceived realized integration, DES is perceived desired integration, CI is competitive intensity, INTERDEP is interdependence, STRMECH is structural mechanisms, RPOWER is relative functional power, CPOWER is customer power, FIRMCOMP is competitor strategic orientation, FIRM CUST is customer strategic orientation, FUNCREW is functional rewards, FUNCESP is functional esprit de corps, RELEFF is perceived relationship effectiveness, and BUSRESCUST is customer business results. The residuals of the endogenous variables were allowed to be correlated as conventionally done in structural equation modeling.

**Results**

*Measurement model.* To address potential validity concerns associated with using data collected by the firm, we conducted a single level confirmatory factor analysis (CFA) to test measure reliability and validity (Gerbing and Anderson 1988). All of the constructs exhibited composite reliabilities above the recommended threshold of .70, except for competitive intensity which was at .66 demonstrating convergent validity (Bagozzi and Yi 1988). For each of the latent constructs, the factor loadings were in the
range from .48 to .89, with a majority of loadings greater than .70 (see Appendix). All the loadings were statistically significant ($p < .001$).

Finally, the CFA analysis exhibited good model fit ($\chi^2 = 1224.42$, d.f. = 809, $\chi^2$/d.f. = 1.51, $p < .001$; root mean square error of approximation = .05, CFI = .90). While the $\chi^2$ was significant, the model shows good fit when evaluating the ratio of the $\chi^2$ to the degrees of freedom (Jöreskog 1967) as it falls below the commonly used criteria for good fit which is less than 2 (Wheaton et al. 1977). We used AVE to test discriminant validity by checking whether the AVEs for the latent variables were greater than their contribution to other constructs. The AVE of each construct was compared with squared correlation of all other constructs and met the above criteria, indicating discriminant validity (Fornell and Larcker 1981). Finally, given the inclusion of interaction variables, we examined the variance inflation factors (VIFs) to check for multicollinearity. The maximum VIF was 1.8, well below the threshold, indicating that multicollinearity was not an issue in this study (Draper, Smith, and Pownell 1966). Table 2.1 provides a summary of the descriptive statistics and Table 2.2 provides the correlation matrix.

--- Insert Table 2.1 about here---

--- Insert Table 2.2 about here---

**Empirical Model.** Prior to testing the model, we plotted the level of realized and desired integration by manager. Table 2.3 reports the combination of realized and desired integration indicated by all 203 responding managers. In the table, the numbers indicate how many managers selected that combination of the two integration measures. The large number of responses above the diagonal indicates that both sales and marketing managers overwhelmingly seek more rather than less integration: more integration (75%), status
quo (23%), less integration (2%). This indicates that there is still a divide between the realized level of integration and where sales and marketing feel it needs to be.

We present the estimation results in Table 2.4. The full model (AIC = 2220) exhibited better fit than the main effects model (AIC = 2254). An AIC difference of over ten provides strong support for the full model and holds even when the absolute AIC values are relatively large (Burnham and Anderson 2004). We also compared the main effects and full models with interactions using log-likelihood (LL), with the differences in the number of free parameters between the two models as the degrees of freedom. The change in model fit (-2LL) from the main model to the full model was 52 (d.f.=12, p < .01) indicating a better fit for the full model. Since we are focused on the interaction effects, we present the results from the full model.

**Moderating effect of strategic orientation.** First, we test the interaction effect of competitor and customer orientation on competitive intensity. The results do not provide support for hypothesis 1a since the result was not significant (β = .03, ns). However, the results do show a significant, negative moderating effect of customer orientation on competitive intensity for the realized integration outcome (β = −.18, p < .01). Thus, the result provides support for H1b. High customer orientation and low competitive intensity provide the highest level of integration, while a high level of competitive intensity results in the lowest level of integration (see Figure 2.2).
Next we examine the interaction effect of both types of strategic orientation on interdependence. The results provide support for hypothesis 2a, that there is a positive interaction of interdependence and competitor orientation on realized integration ($\beta = .36$, $p < .01$). When interdependence is high, a high competitor orientation results in a greater amount of integration (see Figure 2.3a). We next tested the interaction effect of interdependence and customer orientation on realized integration. We predicted a positive interaction between the two activities and the results indicate the opposite of the predicted effect ($\beta = -.23$, $p < .01$). Thus, H2b is not supported because the result is significant but in a negative direction. At high levels of customer orientation there is a substitution effect where customer orientation does not significantly impact integration (see Figure 2.3b).

---- Insert Figure 2.3a and 2.3b about here ----

*Moderating effect of functional factor.* The results also show that the interaction between functional rewards and interdependence is positive and significant in its effect on desired integration ($\beta = .28$, $p < .05$), supporting H3a. The greatest perceived need for more integration occurs when rewards are less functionally focused and when there is a low level of interdependence or sales and marketing are interdependent and rewards are functionally oriented (see Figure 2.4a). The interaction between esprit de corps and interdependence is positive when desired integration is the outcome ($\beta = .26$, $p < .01$). This result provides support for H3b. At high levels of esprit de corps, high levels of interdependence lead to a greater desire for integration. However, at low levels of esprit de corps, low interdependence leads to more desired integration (see Figure 2.4b).

---- Insert Figure 2.4a and 2.4b about here ----
The results do not provide support for H4a, which proposes a positive moderating effect of structural mechanisms on the relationship between functional rewards and desired integration ($\beta = -.04, ns$). We next test the impact of esprit de corps on structural mechanisms. For the interaction effect of esprit de corps and structural mechanisms on desired integration, the results are opposite H4b, which proposes a positive moderating effect ($\beta = -.11, p < .10$). At high levels of esprit de corps, fewer integrating mechanisms increase the level of desired integration. However, with fewer structural mechanisms, low levels of esprit de corps reduce the desire for integration since the informal relationship between the functions may already exist (see Figure 2.5).

---- Insert Figure 2.5 about here ----

We find that the sales function has a greater interest in achieving a greater level of integration than the marketing function ($\beta = -.44, p < .01$).

*Relationship and Business Outcomes.* In the second half of the model we test the impact of realized and desired integration on relationship effectiveness and customer business results. The results support hypotheses H5a and H5b that realized integration will have a positive impact on relationship effectiveness ($\beta = .55, p < .01$) and customer business results ($\beta = .25, p < .01$). As hypothesized in H6a, we find that desired integration has a negative impact on relationship effectiveness ($\beta = -.19, p < .05$). However, for H6b we find a negative, but not significant result for customer business results ($\beta = -.10, ns$).

*Controls* In the full model, functional power had a significant positive effect on ($\beta = .13, p < .05$) realized integration. Functional power was not significant on desired
integration ($\beta = .09, \text{ns}$). Customer power was significant on realized ($\beta = -.16, p < .10$) but not on desired integration ($\beta = .07, \text{ns}$).

*Moderated Mediation.* The results suggest that both realized integration and desired integration act as mediators between the three environmental factors and the relationship and business outcomes. In Table 2.5, we used MPLUS to conduct moderated mediation analysis that further explores these relationships (Preacher, Rucker, and Hayes 2007). The results show that in the case of esprit de corps, when there is more openness to intergroup relationships, and there is interdependence, desired integration mediates the positive effect on both the relationship and customer outcomes. However, in cases where esprit de corps is high, the opposite occurs and there is a negative mediating effect on both outcomes. Additionally, we find that when the customer orientation is low, the relationship with interdependence works through realized integration to have a positive effect on both the relationship and customer outcomes.

--- Insert Table 2.5 about here---

**Discussion**

Recognizing the limited empirical research into sales and marketing integration, we examine how sales and marketing categorizations impact integration and ultimately relationship and business performance. This research contributes to the marketing literature in several ways. First, this study expands the focus of sales/marketing integration by not only examining the realized level of integration but also the desired level of integration. We shed light on how the desired level of integration determines satisfaction with the existing sales/marketing relationship in addition to establishing what influences the creation of an integration gap. Next, there have been few empirical studies
that test the factors that impact sales/marketing integration. We contribute to the literature by specifically examining how function and firm level factors interact to affect the relationship. By better understanding these factors managers can implement strategic changes to reduce the integration gap. Finally, we show that realized integration and desired integration have differential effects on relationship outcomes. Previous research shows that realized integration has a positive impact on these outcomes, but it has not captured the negative impact of desired integration.

**Theoretical Implications**

*Desired versus realized integration effect.* A general theme in the integration literature is to increase integration through improved communication and common goals to improve business results. However, we are interested in determining what factors drive desired versus realized integration. We shed light on these relationships by identifying key moderators at both the function and firm levels. We do find that the desire for integration is greater among sales managers than their marketing counterparts, indicating that sales managers may not feel that they are receiving the resources and information required from the marketing function. In general, marketing has more positive view of the relationship and thus less of a desire for future integration (Hulland et al. 2012).

*Moderating effects of firm level moderators.* We found that competitor orientation and customer orientation have opposite moderating effects on both antecedents of realized integration. When interdependence is high, a high competitor orientation results in a greater amount of integration as it increases contact between the two functions resulting in increased sharing of the competitive information each function collects. However, a customer strategic orientation decreases the effect of the two antecedents on
realized integration. Contrary to the proposed hypothesis, a customer oriented strategy and a high level of interdependence results in a salient firm level identity that has a similar effect on integration as customer orientation by itself. Both interdependence and customer orientation increase interactions between the two functions resulting in a substitution effect that has a minimal impact above what customer orientation has at low levels of interdependence. In an intense competitive environment, customer orientation requires a dual focus which can reduce the level of integration. The focus moves away from only trying to satisfy customer’s wants and needs to also trying to determine the external threat of competitors. This reduces the time available to exchange resources with the other function, reducing overall integration.

However, when the firm is customer oriented and the environmental factors are low the firm level identity becomes more salient, reducing perceived differences between the functions and increasing realized integration. Sales and marketing collaborate to develop a single view of the customer as part of the overall firm identity increasing the contact between the two resulting in better resource and information sharing.

*Moderating effects of function level moderators.* At the functional level both rewards and esprit de corps result in a cross-over effect with interdependence. If the level of interdependence and the functional behaviors are in opposite directions, there is a much greater desire for integration. This finding suggests the lack of alignment between antecedents, which make the firm more salient reducing intergroup conflict, and a functional focus, which increases in intergroup differences, results in a tension between these competing needs. Sales and marketing desire additional integration to reduce the tension, since they are aware of the benefits of information and resources sharing. To
close the integration gap, actions need to be take that align sales and marketing as either a single team or independent functions. This finding contributes to the marketing literature by showing that conflicting environmental conditions and function level behaviors increase the desire for integration.

*Impact on relationship and business performance.* Diverting from prior research that places an emphasis on only realized integration, we examine not only realized integration but also desired integration. In doing so, we gain a better sense of why the current level of integration may or may not be sufficient. We empirically show that the level of realized integration has a positive impact on the relationship between sales and marketing and business results. On the other hand, if the feeling is that there is future desired integration there is a negative impact on relationship effectiveness. Because of the opposite effects of actual and desired integration, the positive impact gained through integration can be lost if sales and marketing feel that more integration is necessary going forward. This finding contributes to the marketing literature by indicating that it is not necessary just to have a high level of integration, but also to have the right level.

*Managerial Implications*

This study provides managers with a more complete and detailed view of sales marketing integration and the factors that influence the success of the relationship between the two functions. With all of the positives associated with sales/marketing integration, firms may be strictly looking to increase realized integration. However, managers also need to evaluate the level of desired integration as it negatively influences relationship effectiveness. Managers can reduce the integration gap, the difference
between realized and desired integration, by either increasing the level of realized integration or decreasing desired integration.

This study shows managers that the relationship between the antecedents of realized and desired integration can be mixed due to boundary conditions, so managers should incorporate the impact firm and functional factors when addressing the integration gap. Managers cannot assume that, for example, higher interdependence will result in higher performance. It is not just the relationship between sales and marketing that impacts integration, but also the strategic orientation of the firm and the activities occurring within each specific function. By evaluating which identity is most salient, that of the function or the firm as a whole, managers can implement changes to reduce intergroup bias and reduce the integration gap.

The differential effects of customer and competitor orientation impact how a manager can increase the level of realized integration. In a highly competitive environment, a firm level customer orientation, can lead to a dual focus on the customer and the competition reducing resources available to collaborate across functions and thus reducing realized integration. Once aware of this challenge, managers and encourage interaction across the functions to provide a single firm wide view of both the competition and the customer. Additionally, a customer orientation provides an increase in integration if interdependence is low and minimal additional benefit if interdependence is high. When the groups are independent, a customer focus is important to drive contact between the two groups, but when the functions depend on each other either interdependence or the customer orientation have a similar impact on integration. On the other hand, the combination of interdependence and a competitor orientation will increase
contact between the two groups leading to improved information and resource sharing. Managers often have problems figuring out where certain pieces of competitive information are within the firm and a salient firm level identity provides insight into which functions are aware of different things (Day 1994). Managers need to push for integration in scenarios where there is a focus on the competition and sales and marketing rely on each other for outcomes.

To close the integration gap by reducing desired integration, managers can address misalignment between the antecedents of integration and functional activities that make sales or marketing more salient. Sales and marketing managers increase integration through interdependence or structural mechanisms that connect the two, but activities within the function can reduce the salience of common activities. If the two groups depend on each other to achieve their objectives, rewards should also encourage the achievement of common objectives. Additionally, while high esprit de corps can result in a very successful functional team it also leads to a higher level of intergroup bias and managers need to encourage contact and information sharing with the other functions to overcome this bias. The higher level firm identity can be made more salient by encouraging contact between the two groups and reducing the emphasis on the function in order to lower desired integration.

Finally, managers should address the differential effects of realized and desired integration on relationship effectiveness and customer business outcomes. Realized integration has a positive impact on relationship and business outcomes (e.g., Homburg et al. 2008; Hulland et al. 2012; Ruekert and Walker 1987), however, a high level of desired integration can negate this positive impact. Managers should not only increase realized
integration, but also ensure that the level of interaction is the same as what is desired. A difference between realized and desired integration, indicates a perception that the relationship is not functioning optimally which impacts the relationship and the ability to meet customer needs. Closing the gap between the two can result in a better working relationship and a positive impact on performance.

Limitations

This research has several limitations. First, the study is cross-sectional. Cross-sectional studies are commonly found in the marketing literature. Notwithstanding, a longitudinal study that uses data collected in the future would provide additional insights into the impact of sales and marketing integration. Next, we were limited by using managers from a single industry which may limit generalizability. However, the CPG industry involves a great deal of sales and marketing interaction, so it provides an excellent empirical test. Another limitation is that it is difficult to determine causality between both types of integration and relationship effectiveness. However, we do find that there is a relationship between the two and that relationship effectiveness has often been used as an outcome of integration antecedents in previous research (e.g., Hulland et al. 2012). A final limitation is that we only have single item measures of the dependent variables. A similar measure has been previously used to capture social identity.
### Table 2.1
Descriptive Statistics and Reliability

<table>
<thead>
<tr>
<th>Variables</th>
<th>M</th>
<th>SD</th>
<th>AVE</th>
<th>CR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Customer Business Results</td>
<td>4.76</td>
<td>1.05</td>
<td>.61</td>
<td>.86</td>
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<tr>
<td>2. Relationship Effectiveness</td>
<td>4.89</td>
<td>1.09</td>
<td>.70</td>
<td>.94</td>
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<td>3. Realized Integration</td>
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<td>-a</td>
<td>-a</td>
</tr>
<tr>
<td>4. Desired Integration</td>
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<td>1.07</td>
<td>-a</td>
<td>-a</td>
</tr>
<tr>
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<tr>
<td>10. Functional Rewards</td>
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<td>1.06</td>
<td>.46</td>
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<tr>
<td>11. Esprit de Corp</td>
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a Single-item measure

Notes: N = 203. CR = Composite reliability.
Table 2.2  
Correlations

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<td>-.13</td>
<td>-.04</td>
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<td>.08</td>
<td>.08</td>
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<td>.41**</td>
<td>.18*</td>
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<td>.08</td>
<td>.17*</td>
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<td>.17*</td>
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<td>-.36**</td>
<td>.76</td>
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<tr>
<td>11. Esprit de Corp</td>
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*p < .05.  **p < .01.  a Single-item measure
Notes: N = 203. Cronbach’s alpha is on the diagonal. CR = Composite reliability.
Table 2.3
Realized versus Desired Integration

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<td>2</td>
<td>6</td>
<td>12</td>
<td>1</td>
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<td></td>
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<td>2</td>
<td>9</td>
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<td>1</td>
<td>2</td>
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Numbers above the diagonal indicate a higher desired level of integration.
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<thead>
<tr>
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<th>Desired</th>
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<tr>
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<td>-.07(.09)</td>
<td>-.05(.09)</td>
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<tr>
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<td></td>
</tr>
<tr>
<td>Competitor Orientation</td>
<td></td>
<td>.06(.10)</td>
<td></td>
</tr>
<tr>
<td>Customer Orientation</td>
<td></td>
<td>.27***(.08)</td>
<td></td>
</tr>
<tr>
<td>Competitive Intensity x Competitor Orientation (H1a)</td>
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</tr>
<tr>
<td>Competitive Intensity x Customer Orientation (H1b)</td>
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<tr>
<td>Interdependence x Competitor Orientation (H2a)</td>
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<td>Interdependence x Customer Orientation (H2b)</td>
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</tr>
<tr>
<td>Functional rewards</td>
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<td></td>
<td>-.01(.10)</td>
</tr>
<tr>
<td>Departmental Esprit de Corps</td>
<td></td>
<td></td>
<td>.04(.10)</td>
</tr>
<tr>
<td>Interdependence x Rewards (H3a)</td>
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<td>.28**(.12)</td>
<td></td>
</tr>
<tr>
<td>Interdependence x Esprit de corps (H3b)</td>
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<td>.26***(.10)</td>
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<td>Structural Mechanisms x Rewards (H4a)</td>
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<tr>
<td>Structural Mechanism x Esprit de corps (H4b)</td>
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<td>Functional Power</td>
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<td>.08(.06)</td>
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<tr>
<td>Customer Power</td>
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<td>-.16*(.10)</td>
<td>.06(.08)</td>
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<td>Relationship Effectiveness (H5)</td>
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<td>Customer Business Results (H6)</td>
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<tr>
<td></td>
<td>Change = 52*** (d.f.=12)</td>
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Two-tailed test*** p<.01, ** p<.05, *p<.10. Unstandardized coefficients.
Table 2.5
Moderated Mediation Analysis

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<th>Customer Business Results</th>
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<td>Direct Effect</td>
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<tr>
<td>Mediator</td>
<td>Conditional</td>
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<tr>
<td>Realized Int</td>
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<td>n.s.</td>
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<tr>
<td></td>
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<td>n.s.</td>
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<table>
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<th>Relationship Effectiveness</th>
<th>Customer Business Results</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Interdependence</td>
</tr>
<tr>
<td>Mediator</td>
<td>Conditional</td>
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<tr>
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<table>
<thead>
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<th>Functional Rewards as Moderator</th>
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<th>Customer Business Results</th>
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<tbody>
<tr>
<td></td>
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<td>Structural Mech</td>
</tr>
<tr>
<td>Direct Effect</td>
<td>.201*** (.07)</td>
<td>.06* (.04)</td>
</tr>
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<td>Mediator</td>
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<td>Desired Int</td>
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<td>High</td>
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<table>
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<th>Esprit de Corps as Moderator</th>
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<td></td>
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<td>CI=[-.166, -.006]</td>
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Bold indicates significant result. Variables are mean-centered. We used +1/−1 SD about the mean as the high/low values. 95% CI form bootstrap estimation of 500 runs.
Figure 2.1
Conceptual Model
Figure 2.2
Interaction between Competitive Intensity and Customer Orientation (H1b)
Figure 2.3a
Interaction between Interdependence and Competitor Orientation (H2a)

Figure 2.3b
Interaction between Interdependence and Customer Orientation (H2b)
Figure 2.4a
Interaction between Interdependence and Functional Rewards (H3a)

Figure 2.4b
Interaction between Interdependence and Esprit de Corps (H3b)
Figure 2.5
Interaction between Structural Mechanisms and Esprit de Corps (H4b)
CHAPTER 3

TRANSFORMING BIG DATA INTO CUSTOMER INSIGHTS AND BUSINESS PERFORMANCE: A MARKETING PERSPECTIVE

Abstract

Marketing increasingly has access to different types of data from a variety of sources such as customers and stakeholders. Marketing managers use the term “Big Data” to describe this avalanche of information, which they view as critical to providing a better understanding of customers and markets to support strategic actions. This research uses a qualitative approach, through interviews with marketing managers, to examine the scope of Big Data within a variety of firms, develops a hierarchy of how firms use data to make marketing decisions, describes the external and internal factors that influence where a firm falls within this hierarchy, and identifies four specific transition factors that allow firms to become more data driven. We find that the key factors that determine the level of Big Data decision making are the firm environment, competition, organizational structure, interdepartmental dynamics, and executive commitment. To transition to a higher level of data driven decision making, firms must consider their current and future capabilities in terms of data, analytics, people, and organization.
Introduction

Marketing managers have access to a greater volume and variety of data than ever before from customer transactions, social media, and on-line activities, in addition to a need for more proactive and real time analysis and decision making (Schroeck et al. 2012). The term “Big Data” captures this large increase in data availability and use. Senior executives increasingly demand new Big Data initiatives, while marketers are trying to establish the scope of Big Data and the role of data-driven decision making in improving overall business performance.

The increase in data is driven by an ongoing evolution of marketing towards more customer-centric models (Day 2006; Homburg Workman, and Jensen 2000; Rust, Moorman, and Bhalla 2010) and technological advances that have made data capture easier and broader in scope. The belief is that more customer-centric models lead to closer customer relationships, more customer value, and increased customer satisfaction (Kumar, Venkatsen, and Reinartz 2008; Lee, Sridhar, Henderson, and Palmatier 2012). As a result of the avalanche of new data, marketing organizations now concentrate on understanding individual customers as well as markets (IBM 2011). Marketers see a close link between customer-centric objectives and Big Data, since they believe data will allow them to better predict customer behavior and enhance the customer experience (Schroeck et al. 2012).

There is, however, no standard solution for integrating Big Data into the marketing organization even though there seems to be exponentially increasing interest in
Despite interest in the term, marketing organizations vary not only in their need to use data to understand their customers, but also in the existing capabilities they have within the firm to acquire, disseminate and use this knowledge. As a result, we take a multi-step approach to address the following research questions: (1) What do managers view as the scope of Big Data?, (2) What are the different levels of data-driven decision making found in marketing organizations?, and (3) What are the specific transition factors that enable marketing to implement Big Data decision making?

By conducting a marketing specific analysis of Big Data, we expand on previous studies that largely focus on the technology (See Table 3.1). By using the marketing lens, we gain the previously neglected perspective of the information user, which adds to the previous insights.

---Insert Table 3.1 about here---

In order to address the research questions, we use a qualitative approach, conducting interviews with managers and consultants who use data within marketing organizations, “an entity encompassing marketing activities that cross a firm’s internal and external customer value–creating business processes and networks for the purposes of satisfying the needs and wants of important stakeholders” (Hult 2011, p.509). Because Big Data is a large and evolving concept, in-depth interviews provide a flexible method to most appropriately capture marketers’ diverse perspectives and to help support theory building (Bucklin and Gupta 1999). In the following sections, we first discuss the

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4 For example, a search on the term “Big Data” in Factiva showed 112 results in 2009, 1,965 in 2011, and over 16,000 in 2013. This search included only Top Sources as identified by Factiva – Dow Jones, Major News and Business Publications, Press Releases, Reuters, and the Wall Street Journal.
grounded theory methodology used to develop our Big Data models. Next, we briefly explore the scope of Big Data before explaining the Big Data hierarchy, the components of each stage in the hierarchy, and the transition factors that impact the movement form stage to stage in the hierarchy. Finally, we address the impact of data-driven decision making on firm performance.

**Methodology**

While the business press provides a general definition for Big Data and espouses the benefits of incorporating Big Data as part of marketing strategy, discussions with managers reveal that the scope and strategy are much more complex (e.g., Manyika et al. 2011; McAfee and Brynjolfsson 2012; Schroeck et al. 2012). In order to capture this complexity, we employ a grounded theory approach that allows us to combine existing findings within the business press with the actual experiences of interviewed managers to help conceptualize and refine our research questions (Glaser and Strauss 1967; Strauss and Corbin 1994). Additionally, grounded theory has proven to be useful in supporting theory building in new, substantive, and especially fast paced contexts (Locke 2001), as is the case with Big Data. Finally, grounded theory provides a valuable way to show a simplified view of the various phenomena uncovered and their linkages through conceptual models (Fischer and Otnes 2006).

**Data Collection and Procedure**

After collecting articles from the current business press on Big Data to get a broad appreciation of the concepts being discussed, we concentrated our data collection on a series of focused interviews with practicing managers. Because the data collection context grounds the study, we targeted informants who were either marketing managers
or consultants who had regular interactions with marketing data. Each interview lasted approximately 30 to 45 minutes. Interviews were conducted in person when possible, but a majority of interviews took place via phone due to geographic differences. We relied on convenience sampling to identify the initial set of informants. A protocol document was created to guide the interview process and ensure the consistent coverage of relevant topics during the interviews. Table 3.2 summarizes the data collection process.

Since data collection and analysis occur simultaneously when employing grounded theory, several steps were taken to ensure accurate capture of information provided by informants. Each interview was recorded and then transcribed. Both the transcripts and relevant business press articles were entered into Atlas.ti qualitative software and coded. Through the coding process similarities across interviews were captured in general categories. Additionally, constant comparison of the collected data resulted in the evolution of the research questions, constructs, and their linkages (Fischer and Otnes 2006).

The method’s iterative nature requires immediate analysis of data in order to drive future interviews and observations. As a result, after the first several interviews, future informants were selected to provide a more complete view of data and marketing analytic capabilities (Corbin and Strauss 1990) and to critically test the emerging conceptual framework. Additionally, the protocol document was refined throughout the interview process based on the analysis of the previous data. Overall, we conducted a set of 16 interviews for theory and construct development and Table 3.3 provides a summary of the informants. The informants were from 15 different companies across a variety of
industries. The two informants from the same company were in different organizations at different locations. Interviews were conducted until they provided minimal additional insight indicating we reached a saturation point (Eisenhardt 1989).

---Insert Table 3.3 about here---

**Conceptual Model**

The proposed conceptual model is based on a multi-step approach to examining how marketers evaluate and implement Big Data as a strategic tool. The first step involves determining the perceived scope of Big Data from informant interviews and the existing literature. Second, we develop a Big Data hierarchy model that captures the different ways that marketing uses data in decision making to develop predictive business insights. Third, we examine the various external and internal factors that determine where marketing resides within the Big Data hierarchy. Finally, we examine four transition activities that provide guidance on how to integrate Big Data into marketing’s overall strategy. Each of the following sections use the “voice of the informant” to illustrate key concepts.

**Big Data Scope**

*In the past, storage was expensive, bandwidth was expensive, computational horsepower was expensive, and therefore you stored a limited amount of customer data, and didn’t really have the ability to do any kind of substantive predictive analytics on it. Now storage is cheap, bandwidth is cheap and computational power is cheap, therefore you can capture and integrate all kinds of data and then run predictive algorithms on top of it to pull out the factors that matter in winning business. (Vice President, Marketing)*

To date, Big Data has often been defined in terms of the “three Vs” – volume (scale of data), variety (the number of data forms), and velocity (the speed by which data is created, processed and analyzed) (Schroeck et al. 2012). However, informants
generally associate this classification with consultants and the Information Technology (IT) department. When specifically asked to define Big Data, marketing managers emphasized either that using data is not something entirely new or that their biggest issues came from consolidating data sources.

*We’ve been talking about unstructured data; they weren’t really listening until it got a new name, which was Big Data. So when you talk to business people about structured versus unstructured data they don’t have the technical depth to understand what that means.* (Director, Business Analytics)

Because of the previous awareness of unstructured data (data that does not reside in fixed fields), some informants rejected the idea that Big Data is a “new” thing. Big Data was referred to as “something that’s talked about by consultants”, “a big huge consulting buzz word that’s flying around”, and as “a marketing term. It’s just spin”. While the term Big Data introduced the importance of data and its value in understanding the customer to many senior executives, marketers have been aware of the value of data and insights prior to the use of the term Big Data.

*Our issue isn’t so much the volume of data, our issue is that we have disparate data coming in, so we have to makes sense of all the data points. We need to understand how to interpret multiple types of sources coming in and put them up against each other so we can make a story of that data* (Global Director, Digital Analytics)

Managers also repeatedly mentioned the difficulty associated with working with a variety of existing data sources and consolidating the data to identify and understand customers. The view of customer data has changed from what is available in a CRM database to capturing the customer’s every interaction with the firm. Managers now have access to data from more sources (e.g., databases, on-line, social media) and in more formats (unstructured data consisting of text, audio, or video) than ever before. As a
result, it is difficult to consolidate these disparate sources to develop a single unified view of the customer.

**Big Data Hierarchy**

*The first thing the data has to be cleaned .... That’s the first step. Then quickly we get to the point where everyone is comfortable with what I’ll call a reporting mindset. I evolve that into a query mindset... You don’t quite know what the right questions are so you have to build a platform that will basically help you answer tied into the business, a static report doesn’t do that.* (Director, Consumer Insights)

To capture the current use of marketing data based on our informant interviews, we propose a Big Data hierarchy that encompasses four distinct types of decision making that relate to the four components of the wisdom hierarchy from the MIS literature (Ackoff 1989; Rowley 2007). The wisdom hierarchy contains four increasingly demanding types of content of the human mind: data, information, knowledge, and wisdom, each of which builds upon the one(s) below it (Ackoff 1989). In addition to identifying distinct components that build upon one another, the wisdom hierarchy identifies and describes the processes involved in transforming an entity at a lower level to a higher level (Rowley 2007). The combination of a foundation in data, distinct informational blocks that build upon one another, and an interest in transitional processes capture many of the elements that marketers face when evaluating Big Data.

---Insert Figure 3.1 about here---

McAfee and Brynjolfsson (2012) encourage managers to move from HIPPO (Highest Paid Person’s Opinion) to data driven decision making. However, our informants described a process that is more complex and involves several distinct data driven categories. We identify HIPPO, Historical, Inquiry, and Big Data decision making
as the four components of the Big Data hierarchy based on the input from informants (see Figure 3.1). These stages are then summarized—in terms of the capabilities required—in Table 3.4. The hierarchy builds from left to right and bottom to top in terms of the capabilities to evolve at each step. Each level is a distinct phase that builds on the capabilities from the previous phase. Following we describe the four stages of the model and their relation to the wisdom hierarchy.

---Insert Table 3.4 about here---

**HIPPO**

*It was lightning in a bottle, so things took off very rapidly. We could introduce a product to the market with great success without really doing any research. We certainly had sales data coming from our systems, but our systems aren’t very mature either.* (Vice President, Global Brand Development)

Marketing organizations that reside at the bottom of the Big Data hierarchy (Table 3.4), which corresponds to data in the wisdom hierarchy, rely largely on HIPPO decision making. These managers base business decisions on experience and intuition rather than a collection of facts and data (McAfee and Brynjolfsson 2012). Data is the product of observation and consists of symbols that represent objects and events (Ackoff 1989).

While data serves as the foundation of the Big Data hierarchy, when it is unorganized and unprocessed, it provides no value without context and interpretation (Rowley 2007). Data on its own, no matter what the quantity, must be transformed into a relevant form in order to provide value (Frické 2009). Reasons that marketers may embrace HIPPO decision making include: (1) their firm has a powerful management team in place that believes it can manage best through experience, (2) the firm collects data but does not have the necessary capabilities to turn data into insights, or (3) the firm is growing at such a rapid rate there is no time or perceived need to implement data based decision making.
Historical

Reporting is how to build a report, it is not analysis. You create information and data with insight into relationships. For example, correlations for promotions. (Director, Finance)

In this second step, marketers begin to make use of data by inferring information and using it to answer questions such as who, what, where, when, and why (Ackoff 1989). This is consistent with the information step in the wisdom hierarchy. Information is data that has been organized, formatted and shaped so that the data has meaning and makes decision making easier (Awad and Ghaziri 2004; Rowley 2007). In the Big Data context, marketers use historical data as a starting point for decision making. Data is organized into databases and reports are created that provide insights into certain aspects of the business. As a first step in the process, marketers work with other functions to organize data so that is readily available to the people and systems that need it to turn into information (Schroeck et al. 2012). Data needs to be accurate, easily extractable, and properly managed. If not, marketers will use incomplete or bad data because it’s all that’s available to justify business decisions. Incomplete data can be a result of limited customer or market data, poor internal data management, or a combination of the two.

[There are] lots of holes in [the] data ... if anything, it’s relied on too much. Another way to put it is it’s used in ways that it’s not even intended to be used, for lack of a better choice, or solution. (Manager, Market Research)

Once data is provided in a usable form, report development takes place. These reports are standardized for continuous usage where the information is updated on a regular basis. However, the same information is reported from time period to time period and relies on correlations versus causation to provide business insights. In historical
decision making, managers are making use of data, but information is mostly backwards looking and presented in a standardized, static manner.

Inquiry

*I would say where the opportunity exists is you’ve got three decision makers that are using three different data sets, where 60% is common and 40% is unique for each one. The opportunity is to turn that 40% unique with all three decision makers so that hopefully brings incremental insight.* (Director, Marketing Analytics)

At this stage, the process of decision making goes from static reporting to increasingly addressing specific management and business issues as they arise. This decision making stage corresponds with knowledge in the wisdom hierarchy. For both the knowledge and wisdom stages of the wisdom hierarchy there is an increasing requirement on human decision making and judgment versus simply using information as it currently exists (Zeleny 1987). Knowledge equals know how, and can be obtained from either another who has it or from actual experience. Information is turned into instructions (Frické 2009) and managers are better able to diagnose and adapt to the business situations (Ackoff 1989). The combination of data, information, personal experience, and judgment are integrated to address management issues.

Managers become active participants in requesting and managing the foundational data and available information. Managers can query specific data based on the business need instead of relying on static reports. Knowledge is not given and fixed ahead of time (Zeleny 1987). At this stage, managers receive valuable segmentation data versus simple correlations, but they have still not implemented advanced analytics at the customer level. The need to address business questions through a focus on the customer requires marketing to improve communication with other functions throughout the firm. Managers
drive the need for knowledge, and as a result must actively participate in identifying the right data sources and tools through a relationship with the function that manages and collects data. However, at the Inquiry level the focus is often on products and brands versus the customer which prevents a single enterprise view (Rust et al. 2010).

**Big Data**

*My sense is that if someone ... with basic analytical abilities can go into some system and just choose three or four criteria and extract the data...that’s just segmentation or analysis. If it takes someone, if it takes a machine algorithm, different models that it’s running through, and dependent data to figure out what this data does and it’s trying to predict, that’s more what I would describe as Big Data.* (Chief Operating Officer)

*Where do they shop, what are their interests, what are the demographic elements? We utilize all of these data elements when appropriate to become more and more sophisticated in how we design our customer centric strategies.* (Senior Director, On-line retailer)

At this stage, marketers have a complete view of the customer and are not only addressing immediate business issues, but also proactively determining future business strategy. Big Data decision making corresponds with wisdom in the wisdom hierarchy. At the wisdom level, the focus is on increasing effectiveness and development and improving the potential for what can be done with what is available (Ackoff 1999). The process starts with data, but wisdom can only be obtained by processing all three previous components: data, information, and knowledge (Rowley 2007). Through wisdom, it is possible to balance both short run and long run interests, and as a result both current and future business needs (Ackoff 1999).

At the Big Data level, managers have access to firm wide data that includes a variety of data feeds and is available in real time. The information available provides a complete view of the customer and all of their interactions with the firm, so that analysis...
can occur at the customer level. The analytic tools and methods allow managers to use historical customer trends to predict future behavior and rapidly adjust to changing customer behaviors or needs.

In order to share wisdom and participate in Big Data driven decision making, all those individuals who are affected by the decision should be involved in making the decision (Ackoff 1989). Through a customer oriented view, the objectives of individual functions become less important and collaboration becomes more important in order to allow the flow of customer information across the firm (Rust et al. 2010). Wisdom cannot be automated (Ackoff 1989) and it is the combination of data and human knowledge and judgment that provides a complete and predictive view of customer activities.

**Factors that Facilitate Big Data**

In addition to identifying the four general categories of data driven decision making, as described above, our discussions with informants also uncovered several factors that describe where marketing generally falls within the hierarchy. Informants identified several factors, external and internal to the firm, that were common across informants and impacted marketing’s use of data. First, we explore external factors such as firm complexity, business characteristics, and competition that drive the level of Big Data decision making, then we examine internal factors such as organizational characteristics, structural alignment, interdepartmental dynamics, and commitment to data that also play a role. In Table 3.5, we provide examples of internal and external factors by stage of the Big Data Hierarchy.

---Insert Table 3.5 about here---

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External Factors

Firm Complexity

Our organization is so large... you're going to figure out how to matrix the information across [the organization] based on where, and who sees value, and what information, which takes a while to figure out and learn (Vice President, Customer and Business Intelligence).

Through the years of all these mergers and acquisitions, some of the data has been brought together at levels and some of it hasn’t. And so there’s still, if you look at [the company] as a whole, there’s still lots of man hours put into making the data usable versus analyzing the data for insight. (Director, Marketing Analytics)

The complexity of the business plays an important role in how firms utilize data. In capturing firm complexity, we are specifically considering the horizontal differentiation, or the number of divisions or business units found in the firm (Moorman et al. 1993). Small firms and those with a singular business focus, resulting in fewer distinct business units, are better able to develop the backend data systems necessary to implement Big Data decision making. Less complex firms generally provided a closer connection between departments and overall a lower level of data to manage. These businesses also have easier access to data versus having to collect information across multiple business units. As a result, these firms are better able to capture and use data as part of the decision making process through a single, enterprise wide data warehouses as the foundation for the Big Data strategy.

On the other hand, marketers within a more complex structure found it difficult to move to Big Data decision making. These organizations are in general data focused and have used some segment of data for decision making for a long period of time. However, they face significant challenges because of the size and complexity of the business.
Complex firms have reduced visibility into data sources and difficulty overcoming the siloed nature of the firm to reach a level of Big Data decision making. This leads to an overlap in data usage resulting in a suboptimal use of available information.

**Business characteristics**

*B2C has more data, because the transaction volume is very high and the customer volume is very high ... In B2B you’ve got well compensated specialists who sell the product. In the B2C world, generally the customer may be doing a little bit of research, but is ultimately buying the product in a vast marketplace, independent of a salesperson, so therefore the B2C companies have to be so much more sophisticated to ... put the right product in the face of the customer. (Vice President, Marketing)*

Since large amounts of data drive the need for Big Data analytics and skills, the business environment influences the amounts and type of data available. The nature of the customer base plays the first important role. In general, business-to-consumer (B2C) firms have a larger transaction volume and less direct customer interaction. Business-to-business firms (B2B), however, rely on relationship selling for high revenue, low volume transactions and thus have greater knowledge of clients. In addition to the customer base, industry sectors such as healthcare, financial services, and retail have a large number of transactions and capture a large amount of customer data (Manyika et al. 2011). Firms that have a larger influx of data will see a greater need for Big Data decision making.

**Competition**

*It got to the point where they had to be data driven, much more data driven.... They had competitors that we were going against us. We couldn’t size the business and manage the business effectively with gut instinct. (Director, Consumer Insights)*

Finally, the level of competition plays a role. If organizations are in a relatively stable, low transaction environment, data plays a much less significant role than for
organizations in a dynamic, competitive environment. When competitive intensity is higher, it drives marketers toward more data driven strategies in order to survive in the market. As firms collect customer level data and the information becomes larger and more complex, it continues to drive marketing organizations up the Big Data hierarchy. However, a lack of competitive intensity reduces the need to leverage the benefits of Big Data resulting in minimal or no adoption (Manyika et al. 2011)

**Proposition 1:** Big Data driven decision making is more likely to occur in (a) less complex firms, (b) B2C (versus B2B) firms, and (c) in highly competitive, high transaction volume industries.

**Internal Factors**

**Organizational characteristics**

*To be effective in the area... you had to partner. So IT was a big partner... You have to work with marketing, you have to work with operations, you have to work with finance to develop a ... structure that you would want to have. (Director, Consumer Insights)*

*Customer insights moved out of marketing and into the larger organization...Basically they started a customer insights practice within all of the company. (Program Manager; Customer Modeling)*

Within the firm, there exist three organizational characteristics that determine how an organization coordinates work (e.g., marketing data and analytics): formalization, centralization, and specialization (Mintzberg 1979; Olson et al. 2005). Formalization refers to the formal rules and procedures that govern decision making and relationships. When customer information drives decisions, the information must flow freely throughout the organization (Rust et al. 2010). As a result, firms with formal organizations that clearly delineated the roles and requirements of the specific function
are less likely to communicate across functions, reducing the level of data driven decision making.

Because of the collaborative nature of Big Data decision making, centralization, where decision making occurs at the top of the organization, has a similar negative impact on an organization’s ability to use data. Because of the massive quantities of data available and the time needed to analyze it, centralized organizations rely more on speed than data since the organization relies on a small group of top managers to determine the business direction. On the other hand, in less centralized organizations, managers are close to the customer and have decision making authority (Ruekert, Walker, and Roering 1985). The ability to quickly make decision based on customer interaction and available data in a less centralized manner will be more prevalent in data driven organizations.

Finally, specialization, the degree to which tasks and activities are divided in the organization, plays a critical role in the Big Data hierarchy. Marketing organizations that have adopted a Big Data mindset rely heavily on specialists in distinct competitive intelligence or marketing analytics groups. These organizations incorporate a mix of technology, analytic, and marketing skills to specifically address data and analytic issues. The larger the degree of specialization, the higher the firm generally appears in the Big Data hierarchy.

Structural Alignment

*We are striving to be a customer-centric organization... we came to the realization that it's ultimately the same person that comes to the site today and checks out the mobile application tomorrow and shops for herself today and for her family tomorrow. From the strategic perspective we are definitely striving to be a customer-focused organization and a lifestyle brand.* (Senior Director, Online retailer)
The company has made a huge transformation ... from an engineering development company to a marketing company that's very consumer focused. Now what we do is we spent a lot of time deeply understanding consumer needs and opportunities...So we build brands around consumer needs, developing consumer focused equities, but basically we want to stand for something for the consumer, and we develop the ability around that. (Global Director, Digital Analytics)

Firms traditionally implement one of four organizational structural alignments to address customer needs: functional, customer, product, or geographic (Lee et al. 2012). Structural alignment establishes how the firm is organized internally to meet business objectives. Each of our informants described their firm as either product or customer centric. The product centric organizations were organized by specific product types and placed a higher focus on product innovation and the market as a whole versus an understanding of each customer. As a result, these organizations were less likely to use data in marketing decisions based on their limited customer data and the siloed nature of the product companies.

On the other hand, customer-centric structures were already using data driven decision making. These organizations focus on a single enterprise wide view of the customer in terms of both data collection and cooperation between various departments within the firm. Additionally, several informants mentioned that they migrated from a product to a customer-centric mindset and in conjunction with this strategic change they increased the focus on data-driven decision making.

Interdepartmental dynamics

This Big Data path has opened the door of communication across organizations to try and build relationships to where we can leverage the value that each of us is creating. To me that has been a positive that’s come out of this that wasn’t expected. (Director, Marketing Analytics)
Another distinction between stages in the Big Data hierarchy is how marketing interacts with other functions within the firm to collect, store, and manage available data. Those firms at the top of the hierarchy, view integration between marketing and data functions, such as IT, Business Intelligence (BI), and Finance, as a critical component for providing strategic insights and improving firm performance (Wade and Hulland 2004). As one marketing manager explained, “it’s very cross-functional, I interface with a lot of different people... Our data’s just very valuable and used in lots of different ways.”

A single view of the customer requires participation by not just marketing, but all functions (Narver and Slater 1990). Organizations that continue to function without collaboration across units find it difficult to create this common view, and often only have access to data and tools within marketing versus utilizing the resources of the entire company. A strong, on-going business and data collaboration process provides access to information that currently exists, but is not visible in siloed organizations. Multi-functional cooperation increases visibility to data and analytic techniques across the company.

**Executive Commitment**

*We are an extremely data driven company in general and have been since our new CEO came on board ... Once he came in, we became a fact based, analytical, data driven company in every aspect of what we do, not just marketing.* (Vice President, Marketing)

*It’s actually my first experience, where I see that data analytics, data driven decision [making] really goes from the very top of the organization.* (Senior Director, On-line retailer)

*Our Chief Marketing Officer, our Chief Financial Officer, and all the way up to our CEO are heavily engaged and aligned that data and analytics are critical to our future success.* (Global Director, Digital Analytics)
The firm’s commitment to using data is a final factor that impacts a firm’s position in the Big Data hierarchy. While every informant stated that their firm uses some level of data to drive decisions, there were often caveats about how data was actually being used. For organizations at the top of the hierarchy, data is a fundamental part of the decision making process and that commitment is largely driven by the CEO and senior executives. In many cases senior management came from an analytical background, such as engineering, which served as the foundation for using data driven solutions in the business environment. Previous research shows that the background of top managers is related to the firm’s strategy (e.g., Hambrick and Mason 1984). As a result, Big Data decision making fits the existing culture of the organization as dictated by senior management.

*I think before we had a leader that came from a sales background. So everything there is interactions and relationships and stuff like that, and so that's less data driven, and I think my experience with sales people in general is that when you talk to them about analytics, they always remember their biggest and their first, right?* (Program Manager, Customer Modeling)

*Because it was such a buzz, the president...was at a meeting ... and it was like, hey, they're doing a lot of big data things. What are we doing, and so it came to me* (Director, Global Market Research Excellence)

On the other hand, firms that are not data oriented are just hearing the term Big Data for the first time. There exists an exploratory period where management is figuring out exactly what Big Data means and how it applies to the firms’ current capabilities (Schroek et al. 2011).

**Proposition 2:** Big Data decision making is more common in (a) customer-centric organizations with (b) a high level of cross-functional coordination led by (c) analytically oriented executives.
Transition Activities

*I think there's some leadership in now that's very data driven, but it's taken a while to change the mentality.* (Program Manager, Customer Modeling)

Over 70% of executives are just beginning to educate themselves on Big Data or exploring how it applies to their firm (Schroeck et al. 2012). However, not every organization is ready for or needs to implement Big Data decision making. Implementing Big Data decision making is expensive and time consuming, so senior managers require an adequate return. By understanding their current position within the Big Data hierarchy, marketers can determine how far they need to advance their current capabilities. Some marketers use data driven decision making and are simply making the next step, while others are completely new to the concept. As a result, there may be several transitional steps to advance up the Big Data hierarchy. In Figure 3.2, we show how the previously discussed Big Data factors impact the current level of data driven decision making. Additionally, informants identified four transitional activities that can move an organization through the various stages.

---Insert Figure 3.2 about here---

That’s what kind of worries me about the industry as a whole. Every time I do conferences I see just how far behind people are. They’re just trying to master basics. (Senior Research Manager)

*I don’t know how to use Big Data and analytics to effectively impact my business. I just don’t know what to do. Number one obstacle.* (Business Analytics Director)

In order to implement a customer driven Big Data strategy managers need to integrate a combination of structural and cultural changes (Rust et al. 2010). To identify these areas of change, informants identified a series of thirty activities around Big Data decision making. A card sorting exercise of the 30 transitional activities was performed
by 12 academics and managers familiar with Big Data. The end result of hierarchical clustering analysis was four categories of transition activities to advance data driven decision making (Johnson 1967). Below, we discuss these four key activities (shown in the lower panel of figure 3.2): data, analytics, people, and organization.

Data

*I've been working on this for two and a half years, and I would say ... that accessing the data, and getting the data, and who has the data, and who owns the data, and how do you make sense of the data, and is the data pure, and all of that stuff, that's still an ongoing opportunity.* (Vice President, Customer and Business Intelligence)

In order to turn data into strategic insights, firms need data that is readily available to the people and systems that need it (Schroeck et al. 2012). Big Data decision making relies not only on accessing data from these various sources but also making it available, in a usable form, to the entire department. Marketing managers needs to be able to readily access, analyze, and transform data within the firm. The most data-driven organizations incorporate a single source model, while firms exploring Big Data often first face the issue of consolidating various data sources. Next, consolidated data provides a way to communicate and collaborate across the organization. There is a single view of the customer and not a focus on who owns what data or analytic tools.

*A warehouse has to be enterprise wide... You can have nodes in the warehouse for marketing or customer service or CRM, other elements of the business, but you need to have a data warehouse to really ...make the most complete use of data* (Director, Customer Insights)

As the foundation of the Big Data hierarchy, data issues need to be addressed as a first transitional step. Marketers need to not just gather data or try and link it together, but instead gain a thorough understanding of where the data comes from, its quality, and how
it is going to be used. By addressing these issues and making the data available throughout the enterprise the organization can transition to more advanced data driven decision making.

**Analytics**

*You need to explain why it needs to be implemented and why we can expect positive impact from this type of tool or this type of solution. So I would say the education aspect and improvement in communication, as easy as it sounds, and not technical at all, it’s one of the big things. Because if you really want to see your solutions implemented and affecting the business you need to make sure you get the buy in from the entire organization* (Senior Director, On-line retailer)

*It’s a question about value for execs as well. It costs a lot of money to implement. At [previous firm], we had the money and the analytic resources. A million dollars is nothing to them. At [current firm] there is no money and no people.* (Director, Finance)

Because of the unique skill set needed to produce the predictive analytics associated with Big Data decision making, managers must determine what level of analytics to provide. Overall the decision to implement Big Data analytics depends on the combination of additional value to the firm and existing capabilities. Marketers need to ensure that users and senior managers see the value in the analytics. Transitioning analytics functionality consists of understanding the level of data and analysis needed to run the business in addition to communicating the value of the solution selected. Implementing analytic tools that are either not used or not understood comes at a significant cost with minimal value.

**People**

*The BI people don’t understand how the business works well enough to ask the right questions, and the marketing people can’t figure out how to get the quant people to articulate the questions and find the answers that they need.* (Business Analytics Director)
I did find that when the sales guys needed data, they didn’t necessarily know how to ask the questions the right way and the database guys were just answering the question the way it was asked and that really was the underlying issue. (Chief Operating Officer)

You could hire four data scientists and two people who understand the business and the products, but have them advise the data scientists. Don’t hire six data scientists, because you’re screwed. (Vice President, Customer and Business Intelligence)

Multiple backgrounds

A common problem with Big Data is the inability of marketing to work with the other functions in the organization that provide data because they do not speak the same language. Marketers often frame requests in terms of business needs, while the data groups focus more on technical aspects such as architecture. This leads to conflict across the two groups. In order to successfully transition to Big Data decision making, the marketing organization needs to speak multiple languages that capture both the business needs as expressed by marketing and the technical needs being expressed by the data owners. Data oriented marketing organizations achieve this goal by no longer just bringing individuals with marketing or business backgrounds into the organization, but also incorporating technology and mathematical backgrounds into the team. The integrated team is then able to communicate with other departments and perform analysis within marketing versus having to reach out to another organization.

We actually hired an IT professional and put him on my staff... He kept a close relationship with the IT organization, but his priorities were marketing’s priorities.....understanding of the marketing function, a broader understanding of what we needed, that you couldn’t do with an IT guy who would come in and do a project with you (Director, Consumer Insights)
The combination of marketing and technology backgrounds provides a common language, decreases the reliance on external departments, and creates an entire organization that understands the invaluable link between data, technology, and insights.

**Make or Buy**

*Company* is a data driven organization. What’s not clear is how much should be done inside *company* versus outside. ... Is it something that *company* employees should do or ... invest in others, or ...buy other analyses from the outside? And I think it waffles. It’s like anything, what’s a core competency of a company that they should own and what should they contract out? (*Director, Global Market Research Excellence*)

In addition to integrating a mix of skills into the marketing team, firms need to establish whether they have the capabilities to transform data into insights. With Big Data, both the data and analytics are more complex, requiring a mix of advanced technological and analytic capabilities (Schroeck et al. 2012). However, in most organizations there exists a shortage of the necessary skills or tools to analyze data (Manyika et al. 2011). A marketing manager commented that at his firm “the knowledge skills and abilities are missing. If you have great people, you can just plug and play into analytic roles.” Managers must make a decision whether to build analytic capabilities in-house or outsource them to external vendors.

*We built our own home grown analytic platform, and so what’s working is this system ... I’m smiling. I mean [it tells us] almost everything we need to know about what it takes for someone to move from being a prospect to being a client. (Vice President, Marketing)*

Data driven organizations, or organizations that place a large emphasis on technical ability, generally have the resources within the firm to quickly retrain individuals on Big Data analytics. This includes both perspectives, having the business sense in addition to the individual level knowledge to request and interpret data. The
individuals that build and execute such marketing analytics generally have higher level degrees and understand the difference between reporting, collecting and displaying data, and analytics, for providing business insights.

So we’ve made the strategic choice not to staff those PhD mathematicians. For a lot of reasons, we’ve decided that it’s more efficient for us just to outsource that work. One of the reasons is that it's expensive to hire people in the US to do that kind of stuff, and the ability to keep them is even more difficult...We’ve made the decision not to staff those people internally and provide a career path for them. (Global Director, Digital Analytics)

The firm doesn’t do the actual data analysis just data shaping. There are a number of outside consultants that use the transformed data to turn it into insights. (Marketing Retention Consultant)

Firms that do not have existing analytical capabilities, may decide that based on current capabilities it makes better business sense to hire external consultants or analytic firms than to try and build the function within the organization. This type of analytic outsourcing generally takes two forms: the consultants work at the firm and are integrated with daily activities or an outside firm is hired and the analysis is conducted externally. These relationships often result from a business decision not to hire the analytical resources because they do not currently exist within the organization and do not mesh with the overall marketing strategy.

The big opportunity comes with a lot of risk. It might not work. It could be $10M and it might fail, like predictive analytics, and so you could be losing money. But if you want to play ...There's a huge opportunity if it works. (Director, Global Market Research Excellence)

The cost associated with building or outsourcing Big Data analytic capabilities, plays an important role in the strategic decision whether or not to advance in the Big Data hierarchy. As an informant mentioned, the decision to outsource the analytic capability
using an external vendor “has a huge price tag and is a big investment.” If senior managers do not see a potential return on the investment, the organization will be content to retain the current level of analytic skills.

Organization

So we can get all these data sources, we can make strong correlations, we can understand where value is existing in the marketplace, getting the organization to change, adapt to what that data is telling you is always the biggest challenge. (Vice President, Global Brand Development)

You have to work with marketing, you have to work with operations, and you have to work with finance... You have to work with them as partners to help develop the vision for what is the strategy. (Director, Consumer Insights)

The organizational transition is a process that involves adopting a customer-centric, data driven strategy and then creating a culture and organization to support the single strategy. The first step in the process involves including multiple functions in the strategy making process with a view on the customer versus functional objectives. When each unit has specific incentives and objectives, the focus is on those goals versus the customer as a whole (Anderson 1982). As a result, each specific function should buy into and actively participate in customer-centric strategy development.

Structure

The marketing organizational structure should support Big Data, cross-functional integration, and the transformation of data into insights. As customer information becomes more critical to firm strategy the organizational structures that restrict information flow need to be removed (Rust et al. 2010). Following, we summarize three organizational structures: retain the status quo, integrate marketing and analytics, and develop a center of competency.
Status quo

*I maintained a bi-weekly sessions with the head of IT just reinforcing the vision of what we were trying to get to, what the priorities were, and looking at how we are progressing. We need to be able to makes sure that they, one, felt some accountability, but, two, had a clear awareness of what we’re facing on a day-to-day basis. (Director, Consumer Insights)*

*I think there’s always friction between the IT group and the marketing group* *(Global Director, Digital Analytics)*

The status quo involves retaining marketing and the data organization as distinct functions but with a higher level of integration and communication to encourage better understanding between the organizations. However, there is often an existing animosity between the two groups that must first be overcome. In addition to language differences, the IT group supports projects both for the entire firm and for functions besides marketing. As a result, marketing data and project needs are not always a priority which can lead to one off data solutions that resided in marketing. Additionally, there can be cultural differences between the two that discourage collaboration. The typical IT process involves gathering requirements then developing a solution. Marketing, on the other hand, works continuously across a variety of different functions to gather customer information resulting in a more collaborative form of interaction. These cultural differences can lead to frustration in working with the other department.

*Many folks in IT would love to say just tell me what you want, fill out my template with your request and I’ll scope it. I’ll give you a timeframe and then just leave me alone. I’m going to be behind closed doors doing what I do, but you’ve got to be much more interactive* *(Director, Consumer Insights)*

The status quo approach relies on boundary spanning and information exchange versus a new organizational structure to implement Big Data programs. By encouraging
regular interaction between the technology and marketing departments, they can develop a better relationship leading to common objectives that overcome the different cultures and perspectives of the two groups.

Marketing analytics

*So within marketing there are definitely groups that we maintain, that we support. So one of the biggest users of our services is the Customer Relationship Management group. Acquisition is also part of the marketing group that utilizes our insights on an on-going basis.* (Senior Director, On-line retailer)

The typical approach taken to embed technology into marketing is to create a marketing analytics unit within the function. This group serves as a direct liaison between the technology group and the rest of the marketing organization. The marketing analytics group works with technology to gather core data and the marketing organization has a single point of contact for data and analytic needs. This reduces multiple requests for data from throughout the marketing organization and simplifies the data gathering process. Integration of the two organizations also improves the transfer of knowledge between marketing and the data organizations. There is an on-going relationship between the marketing analytics department and the data organization which increases commonalities between the two.

Center of competency

*Separate organization just focused on the customer…you’ll see that the most successful way to do this is to have an agnostic group. An agnostic group that does not report in to anybody but the CEO, or you're going to have a lot of people with a lot of opinions, and that's how you get out of that is by having an agnostic group in the center of a large corporate organization.* (Vice President, Customer and Business Insights)

A final organizational structure involves completely separating the data and analytics function from both the marketing and data organizations. A firm-wide center of
A competency has access to all corporate data and provides data and analytics support to any organization within the firm. By having a dedicated Big Data organization, the marketing function no longer needs to fight with the rest of the firm for data resources. Another benefit is that because the center of competency has a distinct set of data collection and analytic skills, it can provide training and knowledge to each of the functions using it. Overall, a separate organization provides an independent integration point that reduces intra-organizational conflict. A large tradeoff exists between rapid access to Big Data information and analytics and the cost associated with creating the organization.

A common theme across all organizational strategies and structures is the need for collaboration within and across functions. For data-driven decision making, the collaboration exists across multiple levels of the organization including developing an overall customer centric strategy, making data accessible across the organization, and managing the data and analytics process after implantation. Customer oriented organizational objectives will reduce functional barriers and create a singular focus on the customer.

_The worst thing that you can do is to try and establish your ownership of the area. Because objectively, you can’t. You create the best, the most efficient solutions, when you have a collaborative environment between the teams with different kinds of skills. Then the solutions are the most meaningful._ (Senior Director, Online retailer)

However, implementing organizational change is a complicated process and informants mentioned the time it takes to create a singularly focused collaborative organization. Previous research has shown that even organizations that work closely together can have vastly different strategic and performance objectives that may be
difficult to overcome (Homburg and Jensen 2007). Informants repeatedly noted that the process of change was a slow process.

*At this point, it works well, but again it was a process. I was the first person to be hired to have this ownership of marketing analytics and I built out a team and throughout the years we figured out how to work together.* (Senior Director, Online retailer)

A majority of firms are just beginning to explore the benefits of Big Data. Only 6% of firms in a recent IBM survey are actively implementing Big Data initiatives and advanced analytics (Schroeck et al. 2012). The remainder of respondents are either exploring Big Data or just beginning the engagement process. As a result fully transitioning the entire organization is a multi-year process. The combination of an integrated customer based strategy and a collaborative organization to support it are the key components of Big Data decision making success.

*Proposition 3:* (a) Accessible data, (b) analytic tools, (c) employees with analytic skills, and (d) a collaborative organizational environment enhance the ability to become a Big Data driven organization.

**Performance**

*We can truly track ROI, which I think is a rare thing .... I literally know the ROI of every program we run and I can thin slice to find pieces of programs that operate at better ROIs, so I can focus the programs on that and cut in areas where we have bad ROI.* (Vice President, Marketing)

*We've made a lot of our progress on e-commerce insights available to a huge cross-functional team, and it's completely changed how our e-commerce...It's grown over 30% last year. Some of our businesses are up 200%.* (Global Director Digital Analytics)

*The response ... was that our negative sentiment went back to normal rates within 24 hours of making that decision, and we reduced the ... customers that were escalating on this issue by 60% in 24 hours.* (Vice President, Customer and Business Intelligence)
What's our return going to be? I don't know, it's -- I can't quantify it, but the return is we're going to understand our customers better. (Director, Global Market Research Excellence)

The various transition elements show that implementing Big Data decision making is a long, complex, and potentially expensive process. As a result, marketers want to feel confident that their investment in Big Data decision making will lead to improved business performance. Previous research shows, that when data drives managerial decision making, firms experience increases in productivity as well as higher return on equity and better asset utilization (Brynjolfsson, Hitt, and Kim 2011). Additionally, since Big Data decision making is largely driven by an enterprise wide view of the customer, the ability to use customer information also drives business performance. The belief is that more customer-centric models lead to closer relationships, more customer value, and increased customer satisfaction (Kumar et al. 2008; Lee at al. 2012) and that when data is turned into insights it creates value in the form of customer knowledge and service response which leads to an increase in profitability and a competitive advantage (Manyika et al. 2011; Schroeck et al. 2012). Figure 3.3 summarizes the proposed impact of Big Data driven decision making on business performance through the use of customer information (Jayachandran et al. 2005). We capture business performance in terms of market effectiveness, achievement of the firm’s market related goals (e.g., sales, share), and profitability (Morgan, Vorhies, and Mason 2009).

---Insert Figure 3.3 about here---

Informants provided several examples of the impact of Big Data driven decision making. At the most basic level, Big Data enabled marketers to answer business related questions that they were unable to answer without data.
They weren’t getting the answers to the questions, the big questions, they were asking. And that was mostly the predictive analytics. What is happening with our business, what’s the future of our business? We’re missing our revenue goals every quarter, for the last several quarters. They’re not getting good answers.... When I came in there were a lot of pissing contests around I think or I believe, and I’m from the in God we trust, from everybody else we want data. (Director, Consumer Insights)

Big Data also allows marketing to better track internal metrics. The ability to establish marketing’s contribution to the firm and the return on investment is an ongoing challenge for the marketing organization (Rust, Lemon, and Zeithaml 2004). However, with Big Data decision making firms can track ROI at the individual program level and use that information to justify programs to senior managers in addition to adjusting both investments and spending on specific marketing programs.

The combination of increased information accessibility across the firm, an improved view into customers and their actions, and a project level view of marketing ROI, enables the use of Big Data to positively impact overall firm performance. Again, there is a significant cost in terms of financial, organizational, and managerial resources required to properly and effectively implement Big Data. As data driven CRM initiatives have shown, there is significant business risk associated with large technology oriented programs (Bohling et al. 2006). Big Data decision making requires years of technological, organizational, and cultural change that come at a significant cost. However, when successfully integrated into the firm’s overall culture and decision making processes, there can be a significant positive impact on business performance.

In a year, we doubled marketing’s contribution of revenue to the business. (Vice President, Marketing)
**Proposition 4:** Big Data decision making improves the availability and use of customer information, resulting in improved (a) market effectiveness and (b) profitability.

**Discussion**

Our findings contribute to the marketing literature in the following ways. First, we provide marketer specific insights into the scope and use of Big Data. Previous studies on Big Data are largely at the firm level and emphasize the technology aspects versus the user’s view. By developing a hierarchy of how firms use data to make marketing decisions we provide a foundation for understanding marketing’s current use of data for decision making, the current capabilities of the organization, and what additional building blocks are necessary to become a Big Data organization. Next, by describing the general factors that influence where marketing falls in the hierarchy, managers will have a better understanding of their status quo and any necessary changes. Not all marketing organizations are ready, or necessarily need, to incorporate Big Data and data-driven decision making into the marketing process. Finally, the marketing literature does not currently address how marketers become more Big Data oriented. To this point there has been minimal academic research around the marketing organization’s use of data. Big Data research is largely found in the computer science and statistics fields in reference to how firms technologically deal with the challenges associated with large quantities and types of data (e.g., Gorton et al. 2008). Emerging marketing trends focus on Big Data as a better data source for conducting marketing research (e.g., Chintagunta, Hanssens, and Hauser 2012), but research that specifically examines how the marketing organization uses Big Data is sparse. Finally, the transition activities allow marketers to understand specific factors that must be addressed to be able to implement Big Data successfully.
Managers cannot simply institute Big Data strategy. They must understand their current capabilities and how far they are from Big Data decision making in order to undertake such a strategy.

Another important consideration is how Big Data builds on existing studies into customer relationship management (CRM), another customer-oriented, data-driven marketing strategy. First, our informants view Big Data as distinct and a next step in the understanding of the customer.

At [company] we had different groups. It wouldn’t call it necessarily Big Data but we had our CRM group that was looking at customer insights. (COO)

Obviously for CRM the need to collect data, analyze that data, and create models and decisions based on that data ... is critical. So it really gets into how people are trying to use, some of the ways people are trying to use Big Data today (Global Director, Digital Analytics)

Informants view CRM as a precursor of Big Data, but a distinctly different marketing strategy. A majority of CRM implementations were made at the business unit level in customer oriented functions such as marketing, sales, and customer service with a focus on customer retention and loyalty (Bohling et al. 2006). Big Data, on the other hand, is a more far reaching approach to developing data-driven decision making. With Big Data, marketers must exhibit a combination of technology, analytic, and marketing skills to ask the right questions and develop insights. We contribute beyond the CRM literature by showing that Big Data is unique in the data, human, and organizational resources that must be integrated to successfully use data for decision making.

The limitations of this study are that the propositions have not yet been empirically tested. While the informants provided excellent insight into the current state of Big Data, it is an evolving field that requires additional testing. Another limitation is
that while we reached a theoretical saturation point, it is impossible to capture the factors that may differentially influence a specific industry or firm. In sampling, we attempted to speak with firms that fell at each stage within the hierarchy. However, there may still be other difference within each stage. This research captures generalizations and common themes across managers, but should not be seen applicable to every firm.

Conclusion

Big Data decision making requires consideration of marketing’s current capabilities and needs, and a combination of strategic and organizational changes to implement the strategy. The customer-centric strategies of today’s firm provide a great volume and variety of data and firms that clearly understand their existing market position, the value of Big Data, and their internal capabilities will turn data into strategic insights that provide value to both customer and the firm. This research provides an overview of the factors the marketing organization must evaluate in terms of their current situation and future capabilities. Following, we briefly discuss how our findings address the proposed research questions.

Big Data scope

Marketing managers have a different perspective on the scope of Big Data than that usually presented in the business literature. While not necessarily a new area for marketers, the term Big Data raised awareness with executives about the rapidly increasing use of data to drive decision making that many marketers already faced. Additionally, the biggest challenge managers face with Big Data is the variety of data sources. Trying to develop a single firm wide view of the customer or combining both on
and off-line data sources is an on-going challenge that marketers need to address before developing analytic tools.

**Big Data Hierarchy**

The Big Data hierarchy identifies the different characteristics of marketing organizations in relation to how they make data driven decisions. The business press gives the impression that all firms should implement a Big Data strategy, however, the hierarchy allows managers to determine their current data related capabilities based on a combination of internal and external factors, such as industry and organizational focus. Based on their current stage, managers can better determine the investments necessary to move up the hierarchy and more importantly determine which stage is most relevant to their business.

**Transition Factors**

For firms interested in incorporating higher level data driven decision making, we identify a series of activities that transition firms from one stage in the Big Data hierarchy to the next. We identify four distinct transition factors: data, analytics, people, and organization. Marketers have previously used data and analytics to their advantage, but the combination of these capabilities and the necessary people and organizational skills are unique. With Big Data, both the data and analytics are more complex, requiring a mix of advanced technological and analytic capabilities (Schroeck et al. 2012). As a result organizations need a combination of both marketing and technical skills. Less data driven organizations face several options for incorporating analytical skills including building from within using existing resources, hiring external consultants, or hiring an external vendor. Finally, integration of the marketing and data organizations allows for the
transfer of knowledge to improve existing skills. These resources can be used either in a separate organization or as a liaison between organizations to drive change (Manyika et al. 2011).

The next step in this research is to empirically test the propositions developed through the informant interviews. There is diversity in how marketing uses Big Data to make decisions, and much of the focus is on firms that have successfully made the transition, even though they are the vast minority. The overwhelming positive view of Big Data driven decision making indicates that there are a number of factors preventing marketers from using data to its fullest. An empirical test will provide better insight into what prevents a firm from successfully integrating Big Data into its marketing strategy. A second area for further study is the overall impact of Big Data on firm performance. As shown by other large enterprise wide initiatives such as CRM, there can be huge costs and minimal returns associated with large, multi-year strategy implementations.
Table 3.1
Literature Review Summary

<table>
<thead>
<tr>
<th></th>
<th>Marketing Emphasis</th>
<th>Big Data</th>
<th>Decision Making Hierarchy</th>
<th>Implementation/Transition</th>
<th>Analytics</th>
<th>Technical Architecture</th>
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</thead>
<tbody>
<tr>
<td>This Paper</td>
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<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
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<tr>
<td>Davenport and Harris (2007)</td>
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<td></td>
<td></td>
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<td>X</td>
<td></td>
</tr>
<tr>
<td>Mayer-Schonberger and Cukier (2013)</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
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<tr>
<td>Franks (2012)</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Davenport (2014)</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Step</td>
<td>Activities</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td>-----------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Getting Started</td>
<td>Read consulting reports and business press for recent findings on Big Data</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selecting Cases</td>
<td>Identify individuals who have a combination of marketing and data responsibilities. Convenience sample of personal and academic contacts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crafting Instruments and Protocols</td>
<td>Develop protocol document with questions of interest. Updated protocol after each interview to follow up on new findings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entering the Field</td>
<td>Conduct interviews in person or via phone. Transcribe and evaluate interview recording</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Analyzing the Data</td>
<td>Aggregate interview transcriptions and secondary research articles in Atlas.ti software. Identify common themes and highlight specific quotations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enfolding Literature</td>
<td>Compare findings to the existing academic literature with a specific focus on customer-centric research</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reaching Closure</td>
<td>Conduct interviews until recurring themes appear with minimal new insight. Validate findings with additional marketers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table 3.3
Summary of Informants

<table>
<thead>
<tr>
<th>Informant</th>
<th>Position</th>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Marketing Retention Consultant</td>
<td>Independent Consultant</td>
</tr>
<tr>
<td>2</td>
<td>Business Analytics Director</td>
<td>Global Technology Firm</td>
</tr>
<tr>
<td>3</td>
<td>Director, Marketing Analytics</td>
<td>Global Telecommunications Firm</td>
</tr>
<tr>
<td>4</td>
<td>Director, Finance, Marketing and Sales Analytics</td>
<td>National Restaurant Chain</td>
</tr>
<tr>
<td>5</td>
<td>Manager, Market Research</td>
<td>Global Pharmaceutical Firm</td>
</tr>
<tr>
<td>6</td>
<td>Senior Research Manager</td>
<td>Global Consumer Products Firm</td>
</tr>
<tr>
<td>7</td>
<td>Vice President, Marketing</td>
<td>Global Technology Firm</td>
</tr>
<tr>
<td>8</td>
<td>Director, Consumer Insights</td>
<td>Global Printing and Imaging Firm</td>
</tr>
<tr>
<td>9</td>
<td>Senior Director, Analytics and Research</td>
<td>On-line Retailer</td>
</tr>
<tr>
<td>10</td>
<td>Chief Operating Officer</td>
<td>On-line Insurer</td>
</tr>
<tr>
<td>11</td>
<td>Global Director, Digital Analytics</td>
<td>Global CPG Firm</td>
</tr>
<tr>
<td>12</td>
<td>Vice President, Customer and Business Intelligence</td>
<td>Global Telecommunications Firm</td>
</tr>
<tr>
<td>13</td>
<td>Program Manager, Customer Modeling</td>
<td>Global Technology Firm</td>
</tr>
<tr>
<td>14</td>
<td>Vice President, Global Brand Development</td>
<td>Global Consumer Products Firm</td>
</tr>
<tr>
<td>15</td>
<td>Vice President, Customer Analytics and Big Data</td>
<td>Global Telecommunications Firm</td>
</tr>
<tr>
<td>16</td>
<td>Director, Global Market Research Excellence</td>
<td>Global Pharmaceutical Firm</td>
</tr>
</tbody>
</table>
Table 3.4
Big Data Hierarchy

<table>
<thead>
<tr>
<th>Levels of the Wisdom Hierarchy</th>
<th>Levels of the Big Data Hierarchy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low</strong></td>
<td><strong>High</strong></td>
</tr>
<tr>
<td><strong>Wisdom</strong></td>
<td><strong>Highest Paid Person's Opinion (HIPPO) Driven Decision Making</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Historical Driven Decision Making</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Inquiry Driven Decision Making</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Big Data Driven Decision Making</strong></td>
</tr>
<tr>
<td><strong>Knowledge</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Information</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Data</strong></td>
<td></td>
</tr>
</tbody>
</table>

- **Wisdom**
  - Highest Paid Person's Opinion (HIPPO) Driven Decision Making
  - Historical Driven Decision Making
  - Inquiry Driven Decision Making
  - Big Data Driven Decision Making

- **Knowledge**
  - Data driven decision making
  - Combination of management and data supported marketing decisions

- **Information**
  - Managers drive need for information
  - Relationship between marketing and data sourcing organization
  - Segmentation capabilities

- **Data**
  - Limited access to data
  - Data available through variety of sources
  - Data input into a single data warehouse
  - Data in a single, internal warehouse
  - Unstructured data incorporated
  - Complete customer view

- **Ability to query and request specific marketing information**
  - Ad-hoc data querying
  - Data available through variety of sources
  - Structured data from multiple sources

- **Ability to pull and analyze information throughout the firm**
  - Access to real time data
  - Data available through variety of sources
  - Structured data from multiple sources

- **Limited access to data**
  - Data available, but not used
  - Organized or structured data
  - Data in a single, internal warehouse

- **Incomplete product view**
  - Product level view
  - Division level view
  - Firm level view

- **Standardized reports support decision making (dashboards)**
  - Correlation analysis
  - Ad-hoc data querying
  - Access to real time data

- **Ability to pull and analyze information throughout the firm**
  - Access to real time data
  - Data in a single, internal warehouse

- **Ability to pull and analyze information throughout the firm**
  - Access to real time data
  - Data in a single, internal warehouse
### Table 3.5
Internal and External Factors

<table>
<thead>
<tr>
<th>External Factors</th>
<th>HIPPO(^5) Decision Making</th>
<th>Historical Decision Making</th>
<th>Inquery Decision Making</th>
<th>Big Data Decision Making</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm Complexity</td>
<td>Small, young firm without the specific resources or tools to examine data</td>
<td>Medium to large firm with a single business focus and access to transactional data.</td>
<td>Large, complex firm including distinct business units and multiple acquisitions.</td>
<td>Single, enterprise wide customer view or simple organizational structure</td>
</tr>
<tr>
<td></td>
<td>B2C business with limited access to data</td>
<td>Low transaction industry</td>
<td>High transaction industry</td>
<td>High transaction industry</td>
</tr>
<tr>
<td>Competitive Intensity</td>
<td>Low competition</td>
<td>Medium to high level of competition</td>
<td>High level of competition</td>
<td>Very high level of competition</td>
</tr>
<tr>
<td>Internal Factors</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organizational Characteristics</td>
<td>Formalized, centralized, less specialized</td>
<td>Formalized, less centralized, less specialized</td>
<td>Formalized, less centralized, specialized</td>
<td>Less formalized, less centralized, more specialized</td>
</tr>
<tr>
<td>Structural Alignment</td>
<td>Functional</td>
<td>Product centric</td>
<td>Product centric with siloes by product</td>
<td>Customer centric</td>
</tr>
<tr>
<td>Interdepartmental Dynamics</td>
<td>Limited coordination with other functions.</td>
<td>Departmental objectives</td>
<td>Collaborative across the business unit</td>
<td>Collaborative across the firm</td>
</tr>
<tr>
<td>Executive Commitment(^6)</td>
<td>No Big Data initiative</td>
<td>Focused on knowledge gathering</td>
<td>Piloting Big Data requirements</td>
<td>Deploying Big Data and applying analytics</td>
</tr>
</tbody>
</table>

\(^5\) Highest Paid Person’s Opinion  
\(^6\) Adapted from Schroek et al. 2012, p13 Big data adoption stages
Figure 3.1
Big Data Hierarchy and Transition Points
Figure 3.2
Conceptual Model – Big Data Decision Making
CHAPTER 4

CMO/CIO COOPERATION IN THE ERA OF BIG DATA 7

7 Sleep, S.T., J. Hulland, and R. Gooner. To be submitted to AMS Review.
Abstract

The CMO and CIO often fight for recognition and impact on strategic decision making within the Top Management Team (TMT), if they are included at all. Technological improvements have greatly increased the ability to gather customer data which elevates the role of the CMO and CIO and requires them to start working together more closely. There has been limited research on the relationship between senior executives outside of that with the CEO, and this study fills that gap by exploring CMO/CIO cooperation. To analyze the dynamics of the CMO/CIO relationship, we developed a conceptual framework that captures three antecedents of cooperation, interdependence, CMO/CIO structure, and CMO/CIO diversity. Additionally, the study identifies four cooperation mechanisms that can mediate the relationship between these antecedents and CMO/CIO cooperation.
The CMOs budget will soon outweigh the CIOs budget, because so much of what we are going to do is data and technology oriented. (Vice President, Customer Analytics and Big Data)

Introduction

Traditionally, the Marketing and Information Technology (IT) functions have distinct and often incompatible approaches to the collection, dissemination, and use of data. Marketing needs data quickly transformed into information and insights on products and customers and the competitive marketplace requires customized responses. IT, on the other hand, is more internally focused and places a premium on data security, privacy, and structure (Schroeck et al. 2012). On a more transactional level, it is usually the IT organization that collects and organizes the data, and the marketing group that uses the data. However, an integrated approach between the two functions around data management and analysis is becoming increasingly important, and challenging, as firms collect an exponentially growing amount of data from customers and markets.

At the lead of this integrated approach are the Chief Marketing Officer (CMO) and the Chief Information Officer (CIO), who are moving from a situation where each had distinct responsibilities to a new arrangement that demands more collaborative, integrated activities. One of the biggest problems Chief Marketing Officers (CMOs) face is trying to meet customer-centric objectives while dealing with an explosion of data (IBM 2011). Customer-centric strategies and the need to synthesize Big Data increase the need for the two functions to interact and cooperate to deliver customer-centric strategies and a seamless customer experience. Additionally, the CMO and CIO have a greater interest in the other’s traditional business scope. As a result, the CMO wants to become more involved in how data is aggregated and used in customer strategies, and the CIO
wants to be more involved in how insights, versus data, are developed and how these insights can be shared across the organization (CMO Council 2010). Figure 4.1 summarizes both the shared and unique elements that the CMO and CIO are responsible for in a typical organization.

--- Insert Figure 4.1 about here ----

Even though the CMO and CIO are becoming more dependent on each other to achieve enterprise objectives, the relationship is often not cooperative. Marketing relies heavily on outside-in capabilities that enable the business to anticipate market activities and connect other organizational capabilities to the external environment. While IT emphasizes inside-out processes that occur within the firm and are activated by market requirements, the competition, and external opportunities. As a result, the two organizations need to establish spanning capabilities, such as strategy development, that integrate outside-in and inside-out capabilities (Day 1994; Wade and Hulland 2004). They also often have different objectives, budgetary controls, and a lack of shared governance and vision (CMO Council 2010). As a result, marketing will frequently resort to creating its own technology solutions since it feels that IT is not making marketing’s needs a priority. On the other hand, IT’s focus on data privacy, security, and structure encompasses the entire firm, versus just the marketing organization, and may be limited in terms of available support resources.

With the increasing importance of data to marketing, we focus on the CMO and CIO because they are the executives who are most involved in this issue (Jackson 1992). This conceptual approach examines different factors that can lead to cooperation, or a lack of cooperation, between the CMO and CIO and mechanisms that can improve the
relationship between the two. Using the lens of resource dependency theory, we explore how the CMO’s connection with the customer and the CIO’s role as data steward impact the level of cooperation between the two executives’ departments. Additionally, we borrow from the Top Management Team (TMT) literature to examine how the structure of the TMT and relationships within the TMT influence cooperation between the CMO and CIO. We use this approach to answer the following questions: (1) What is the current state of the CMO/CIO relationship?, (2) How do resource needs, reporting structure, and background differences impact CMO/CIO cooperation?, and (3) What mechanisms can be used to facilitate cooperation?

The research makes several contributions. First, it is one of the first studies to specifically examine the CMO/CIO relationship. Overall, there has been a lack of research on relationships between TMT members outside of those with the CEO. Additionally, the CMO/CIO relationship is a relatively new one in terms of importance to the firm, and it is becoming more and more critical as data-driven decision making increases. Next, it introduces a conceptual model of the factors that impact CMO/CIO cooperation, and suggests several mechanisms for improving cooperation between the executives. Finally, it contributes to the CMO literature by looking beyond the influence of the CMO within the firm to examining how the CMO builds and maintains relationships within the TMT. CMOs have at times struggled to play a critical role in the firm’s strategic decision making. By evaluating the relationship with other functional executives, marketing can have greater impact across the firm and within the TMT.

In order to examine the relationship between the CMO and CIO we take the following approach. First, we explore the Top Management Team (TMT), CMO, and
CIO literatures, then we develop a conceptual model that explores potential sources of cooperation and conflict between the two executives, and finally we summarize the positive impact of CMO/CIO cooperation on the firm.

**Background**

The TMT literature largely focuses on the CEO, the Board of Directors, and the composition of the top management team (e.g., Finkelstein 1992; Finkelstein, Hambrick, and Cannella 2009; Hambrick and Mason 1984). Additionally, TMT research focuses on sources of power within the TMT. Finkelstein (1992) identified the important role that structural power, based on organizational structure and hierarchical authority, plays in determining influence within the TMT. The closer the reporting level of the executive to the CEO, the greater the level of influence and power. The CMO and CIO often will report at different levels, or not be part of the TMT at all, which can influence the relationship between the two, since power plays a critical role in strategy making.

Recently, there has been a greater focus on functional TMT members, but many of these studies are oriented toward the structural position of that specific role within the executive suite (e.g., Nath and Mahajan 2008). As a result, there is a gap in the existing literature that specifically examines the working relationship between functional executives outside of their relationships with the CEO (Menz 2012).

Similar to the TMT literature, the CMO literature to date largely explores the need for a CMO in the organization and examines different factors that provide the CMO with power and influence (e.g., Nath and Mahajan 2008; Nath and Mahajan 2011; Boyd, Chandy, and Cuhna 2010). These studies show that CMOs have greater power when they
have ownership of the sales function or when the other members of the TMT lack marketing experience.

The CIO is one of the most researched functional members of the TMT (Menz 2012). Similar to studies looking at CMO effectiveness, the CIO literature largely focuses on the relevance and impact of the position within the larger TMT. Recently, these studies have examined factors that determine the CIO’s strategic decision making authority and specific leadership profiles (e.g., Preston, Chen, and Leidner 2008a, Preston, Leidner, and Chen 2008b). While these studies explore the ability of the CIO to work with the TMT in addition to examining the CFO/CIO relationship (Banker et al. 2011), they do not specifically examine the CIO’s relationship with the CMO.

Another common theme in the marketing literature is the decreasing role of marketing and the CMO in terms of influence within the firm (e.g., Verhoef and Leeflang 2009). It is an on-going challenge for CMOs to validate their contribution to the firm and there is concern over the average tenure of the role within the organization. However, the increase in customer-centric strategies and the accompanying increase in data, provide an opportunity for the CMO to reclaim an important role within the TMT. However, the ability to work with the CIO will likely be critical in the success of these new customer oriented strategies

**The CMO/CIO Relationship**

*Current state.* The relationship between the CMO and CIO is critical to customer-centric programs since they rely on rapid access to data across the entire enterprise (CMO Council 2013). A recent study by a consulting firm found that 70% of top performing companies had a strong relationship between the CIO and the CMO (Curren, DeGarmo,
and Sviokla 2014). There are, however, several factors that may still limit the ability of the two executives to cooperate. There are conflicts around who is leading the digital marketing transformation, how data should be gathered and utilized, and the ability of the two to communicate in a common language.

In the conceptual model in Figure 4.2, we identify several factors that lead to cooperation as the outcome of the CIO and CMO relationship. We define cooperation as the frequency of interaction and the amount of information and resources shared (Olson et al. 2001). When there is resource sharing and the two executives are similar in terms of reporting structure and background, a cooperative relationship may naturally develop between the two. However, when differences exist, we identify a series of cooperation mechanisms that can be used to improve the relationship. Following, we discuss three potential antecedents of cooperation. In the next section, we identify four cooperation mechanisms.

--- Insert Figure 2 about here ----

*Interdependence.* To examine these sources of cooperation and conflict, we specifically look at the level of interdependence between the executives and their position within the TMT. Based on resource dependence theory, power in organizations results from interdependencies with resources in the external environment (Pfeffer and Salancik 1978). While the customer view would seem to support the role of the CMO, the power structure can be altered through information use (Eisenhardt and Bourgeois 1988). The CIO largely controls available data sources, how they are integrated, and how they are made available, distinctly limiting the power of the CMO to utilize customer data. On the other hand, the CIO depends on marketing to use IT for its data needs versus developing
independent data resources within the marketing organization and/or going outside the firm to meet those needs. Dependence on the other function increases when one function has control over resources that are vital to the achievement of the other’s goal (Nath and Mahajan 2008). Without collaboration, this leads to a lack of cooperation, and in many cases conflict, as each side holds resources the other needs.

As a result of these shared needs, the CMO and CIO are interdependent on each other to meet their corporate objectives. Interdependence occurs when one party does not control all of the factors necessary to achieve an action or outcome desired by the action (Pfeffer and Salancik 1978). At the executive level, interdependence more specifically focuses on the ability of the firm to meet performance goals based on resource and information sharing within the TMT (Finkelstein et al. 2009). In the case of the CMO and CIO, the two executives rely on each other for information and resources, in the form of data and analytic tools, to successfully meet firm objectives. When both IT and Marketing are similarly dependent on each other, this leads to symmetric interdependence. When there is a symmetric level of dependence, the relationship is more stable leading to a higher level of trust between the two executives and an increased level of information exchange (Kumar, Scheer, and Steenkamp 1995). The end result should be more cooperation between the CMO and CIO.

However, it often occurs that the two functions are not equally dependent on each other, which leads to one partner having more power. The result is interdependence asymmetry, where a focal executive is more dependent on a partner than that partner is on the focal executive (Emerson 1962). Control over resources further increases the dependence of one executive on another (Nath and Mahajan 2011). For example, the CIO
may control all of the data in the firm and own the process for implementing new analytical tools that can better help understand customer needs. Other the other hand, the CMO may have access to customer data that is not managed by IT and resources that allows the function to create its own tools reducing marketing’s dependence on IT. Because asymmetric interdependence results in one partner being more powerful than the other, this leads to higher levels of aggression and conflict by both parties (Kumar et al. 1995; Lawler, Ford, and Blegen 1988). The more powerful party has less motivation to avoid conflict while the more dependent party expects to be exploited and attacks preemptively. The end result is a relationship that is more dysfunctional, less stable, and less trusting than a symmetric relationship (Kumar et al. 1995). This is likely to reduce information and resource sharing and cooperation between the CMO and CIO.

Proposition 1: CMOs that are dependent on the CIO for data and analytic needs will have a less cooperative relationship with the CIO.

Relationship structure. The structure of the TMT also impacts the relationship between the CMO and CIO. There is a structural choice around whether specific functional roles are included in the TMT at all and, if so, how far removed they are from the CEO. Structural power is based on the formal organizational structure and hierarchical authority (Hambrick 1981) and has previously been used to examine CMO power within the TMT (Nath and Mahajan 2011). In the case of the CMO and CIO it is possible that both executives report to the CEO, only one reports to the CEO, or neither report to the CEO. The number of levels between the executive and the CEO determines the level of structural power within the TMT (Nath and Mahajan 2011). Previous research shows that the reporting level of the executive relates to whether the function is strategically important within the firm (Preston et al. 2008a). The closer the executive is to the CEO
the greater the impact on strategic decisions, and if the CMO and CIO exist at different structural levels, one will have structural power over the other.

When the distribution of power in a TMT is unequal, power plays a critical role in the strategic choices made (Child 1972). For example, in the case of a data intensive initiative, a more powerful CMO can direct a customer-centric strategy that incorporates the outside-in approach of the marketing role. However, a more powerful CIO may focus more on the technology and tools due to their focus on internal success. If the executives report at different levels, the difference in the power structure can lead to a subordinate versus cooperative relationship since the greater an executive’s structural power the greater the level of control over colleagues’ actions (Finkelstein 1992). On the other hand, when there is similar power between the two, there is a greater likelihood that the two will work together since one does not have power, or dependence, over the other (Emerson 1962).

**Relationship diversity.** In addition to the structural alignment of the CMO and CIO, the level of diversity between the two executives can also impact the level of cooperation. Diversity captures the similarity or dissimilarity between members of the TMT and in general focuses on demographic characteristics such as education and functional background and tenure.

The CMO and CIO are likely to differ significantly in terms of educational and functional background. Since the marketing role is more business oriented and focuses outside the firm, we expect CMOs to largely have a business education and functional experience with customer oriented functions such as marketing and sales. CIOs, however, are more likely to have a technical educational background and experience in functions
within the firms such as IT or operations. This leads to significant differences between
the two and demographic heterogeneity has been found to reduce informal
communications, information exchange, and by implication organizational performance
(Finkelstein et al. 2009; Smith et al. 1994). As a result diversity is likely to limit the level
of cooperation between the two executives. On the other hand, the longer the joint tenure,
the greater the similarities between members of the TMT, since they are part of a stable,
social environment (Katz 1982) which will likely lead to increased cooperation between
the two.

*Proposition 2:* CMOs and CIOs that (a) have different levels of structural power
and (b) are more diverse will have more difficulty in establishing a
cooperative relationship.

**Cooperation Mechanisms**

The need for cooperation in the CMO/CIO relationship is largely driven by
customer-centrism and data. However, the two sides have different views of how the
relationship should be established. From the marketing side, the feeling is that customer
insights reside with the CMO, but IT may not provide adequate or timely support with the
right data and analytic platforms. The CIO, however, wants to be more strategically
involved with marketing provided they receive the budget and resources to support
integration. When the CMO and CIO have a symmetric dependence on each other or
have a similar level of structural power, it is more likely to lead to cooperation between
the two executives resulting in higher levels of resource exchange. However, when there
the level of interdependence is asymmetric or the structural power between the two
executives differs, there is a greater likelihood of conflict versus coordination and less
cooperation and collaboration between the CMO and CIO. As described in more detail
below, we identify a series of cooperation mechanisms that may encourage resource sharing between the CMO and CIO (see Figure 4.2).

*Common Goals.* A common goal makes the objectives of the firm more salient than the specific objectives of the function, leading to an increase in cooperation and resource sharing across the two functions (Fisher, Maltz, and Jaworski 1997; Rouziès et al. 2005). When the focus is on the firm versus the specific function, it leads to an organizational identity that increases similarities and reduces potential differences between the two functions. Creating a goal, such as increasing customer satisfaction or customer retention, as part of a larger customer orientation strategy can increase cooperation. In order to fully understand the customer, executives must look beyond functional boundaries and incorporate all customer interactions with the firm in order to develop a single view of the customer’s total experience (Day 2006; Homburg, Workman, and Jensen 2000).

A big part of understanding the customer is gathering data from across a variety of sources, CRM systems, transaction history, on-line purchases, and face-to-face interaction, to develop a single customer view. The ability to gather this data and put it in a useable form falls heavily on the CIO, while using that data to increase sales falls on the CMO. By creating a common goal around the customer, the two need to work together to combine data and insights to drive sales. To ensure that both organizations support the goal, common metrics across the two functions can be used to measure achievement and success. Consensus and cooperation occur when members of the TMT are able to unite around a common understanding of what the firm wants to accomplish (Wiersema and Bantel 1992). A common firm level goal will encourage the CMO and CIO to overcome power differences and functional objectives in pursuit of that goal.
Proposition 3: A common firm level goal that makes firm objectives more salient than functional objectives will increase cooperation between the CMO and CIO.

Collective task. In addition to implementing an overarching goal that makes the firm more salient than the function, a second method to increase cooperation is to have both the CMO and CIO participate in a collective task that requires interaction and resource and information sharing across functions in order to complete the task (Olson, Walker, and Ruekert 1995). A collective task provides the opportunity to drive cooperation through a smaller scale initiative focused on resource sharing versus building organizational identification through common goals. A collective task that aligns both organizations around customer data can overcome the difference in power between the two functions (Ernst, Hoyer, and Rübsaamen 2010). For example, implementing a Big Data initiative is a common strategic objective that many firms are exploring and implementing. By assigning the development and implementation of a Big Data initiative to both the CMO and the CIO, they will have a common task that requires participation from both functions in order to succeed. The collective task requires the sharing of information and resources to complete the task which increases the overall level of cooperation (Ruekert and Walker 1987). Additionally, the joint task encourages the CMO to focus on an internal project, usually the domain of the CIO, while making CIO more aware of the number of data sources coming from outside of the organization. This provides a boundary spanning mechanism to further increase cooperation between the two (Day 1994).

Furthermore, a common task increases the level of interdependence between the CMO and CIO. Even in cases where interdependence is asymmetric, increasing the
overall level of interdependence between two partners can reduce the amount of conflict 
(Kumar et al. 1995). When the overall level of interdependence is high there is a greater 
benefit to cooperation and less to be gained through conflict. If the CMO and CIO engage 
in politics or a power struggle in completing the collective task, it will likely result in an 
incomplete or suboptimal outcome for the task. Since these activities are occurring at the 
highest levels of the organization, the negative outcome will be visible to the CEO 
resulting in a negative perception of both executives.

**Proposition 4:** A collective task that increases interdependence and increases 
resource sharing from both IT and marketing will increase 
cooperation between the CMO and CIO.

**Behavioral Integration.** The relationships within the TMT also play a critical role in the 
level of cooperation between the CMO and the CIO. Increasing behavioral integration, 
the degree to which the TMT engages in mutual and collective interaction that results in 
collaborative behavior, information exchange, and joint decision making, can increase the 
level of executive cooperation (Simsek et al. 2005). Through a process of rational 
persuasion and personal appeal, executives can create significant relationships with 
commitment by both parties (Enns, Huff, and Higgins 2003). By developing these close 
relationships with other members of the TMT, the CMO and CIO can not only increase 
the level of cooperation, but also improve their strategic decision making authority 
(Preston et al. 2008b).

The CEO plays a critical role in increasing the level of behavioral integration. In 
many cases, each member of the TMT has a relationship with the CEO, but the entire 
group does not interact as a team. CEOs are in a unique position where they can shape the 
behaviors of the entire TMT. If the CEO has a vision for the firm, then decisions and
actions will be framed by that vision (Finkelstein et al. 2009). If that vision includes a
closer connection between the CMO and CIO, the CEO will implement goals and tasks to
courage cooperation.

Additionally, CEOs that have a collectivist orientation and emphasize the goals of
the larger group over personal interests create a collaborative environment that
encourages information sharing and joint decision making (Simsek et al. 2005). One
example is to develop overlapping or ambiguous roles or assignments that pull executives
together outside of their specific function (Hambrick 1994). However, several recent
surveys show that CEOs are often not leading the charge for collaboration between the
CMO and CIO (CMO Council 2013). By playing a more active role, the CEO can use
position to implement a culture that drives cooperation between the CMO and the CIO.

Other means of increasing behavioral integration include increasing the tenure of
executives that work together. CMOs have a notoriously short lifespan and by keeping
the two executives together for an extended period, they are better able to gather
interpersonal information about each other which should increase opportunities for
collaboration. Behaviorally integrated teams have a basis for action which manifests itself
through the sharing of information, resources, and decisions (Hambrick 1994).

Proposition 5: A behaviorally integrated TMT will increase cooperation between
the CMO and CIO.

Leadership Development. Once the CMO and CIO reach the executive suite, it is difficult
to overcome differences in the functional and educational backgrounds of the two. To
increase cooperation at the highest levels, firms can implement strategies that reduce
background differences. As marketing becomes more technology oriented there are a
number of marketing analytics programs that can serve as a hiring resource or training
ground (Davenport 2014). Marketers can enter the program to learn the technical side of the business and while IT professionals can benefit from the business component of the program.

In addition to education, firms can implement job rotation programs for high potential employees that include positions in both marketing and IT. Previously, there was limited interaction between the two, so there was little need to develop this skill set. Job rotations provide an opportunity to better understand the culture and activities of the other function while building a network that spans the firm (Rouziès et al. 2005). The program must be tied to leadership development programs or incorporate high potential employees so that future executives receive the benefits of cross-functional integration before they reach the executive level. A large driver of conflict is the inability of the two organizations to speak the same language and reducing background differences can increase communication and collaboration. By reducing differences that occur prior to entering the TMT, it is possible to increase the level of cooperation between the CMO and CIO.

Proposition 6: Decreasing the functional and educational differences between the CMO and the CIO through (a) education and (b) job rotations will increase cooperation between the two.

Benefits of Cooperation

With the increasing emphasis on customer-centric business strategies and data-driven decision making, cooperation between the CMO and CIO has significantly increased in importance. The ability to share resources in terms of data and customer knowledge across the two organizations will play an important role in developing and impacting firm wide strategies. The ability to bridge the gap between functions and
departments through cooperate relationships can lead to a superior competitive position and improved firm performance (Wade and Hulland 2004).

Both the CMO and CIO have previously operated across other functions in order to achieve business success. Although sales and marketing have different short and long term perspectives, CMOs have overcome these differences to develop a cooperative and effective relationship between the two functions which increases CMO power (Nath and Mahajan 2011). Collaboration between the two also leads to a greater impact on strategic decision while social integration and consensus within the TMT improves the effectiveness of strategy implementation (Finkelstein et al. 2009). Resource sharing through a cooperative relationship results in a greater impact on the overall business and a more significant strategic role for both the CMO and CIO.

When the CMO and CIO are similar in terms of interdependence, power, and background a cooperative relationship will more easily form. However, when one or more of these factors do not exist then increasing cooperation through common goals, a collective task, behavioral integration, or leadership development may be necessary to reduce power differences and other sources of conflict. The lack of clear goals can cause problems between the CMO and CIO (CMO Council 2013). Additionally, when there are power differences, politics become more prevalent and can negatively influence firm performance, so it is important to manage these differences (Eisenhardt and Bourgeois 1998). The CMO is increasingly gaining power because of the focus on the customer which drives data usage and analytical tools. A collaborative and cooperative relationship with the CIO can reduce conflict and increase access to a valuable resource, data, which the CIO often controls. Furthermore the ability to span the boundary between the external
customer and internal operations provides an important avenue to deliver superior insights that drive strategic decision making (Day 1994).

**Proposition 7:** A cooperative relationship between the CMO and CIO will increase (a) customer insights, (b) strategic influence, and (c) firm performance.

**Conclusion**

The focus on the customer and the rapid increase in available data are driving the need for the CMO and CIO to jointly manage the internal and external activities of the firm. However, there are numerous differences between the two in terms of focus (internal or external), language (business or technology), and background that can limit the ability of the two to form a cooperative relationship. Additionally, there may be differences in the reporting structure and the ownership of resources that can further increase this divide. The resulting power struggle and conflict can prevent the firm as a whole from achieving a data based competitive advantage. The CMO and CIO can improve cooperation by collaborating on a task, developing common goals, and developing a relationship that encourages collaboration and resource sharing. The relationship has achieved success when there is a shared vision of success, strategic decisions are moving to the boardroom indicating influence within the TMT, and there is a single, end-to-end view of the customer (CMO Council 2010).

While there is a large quantity of research on TMTs and CEOs, there is a limited quantity of research that evaluates the relationship between specific functional members of the TMT. The CMO/CIO relationship is relatively new and provides an interesting context in which to explore the developing relationship. Additionally, the rise of customer centricity and data has revitalized the role of the CMO. Several years ago, it
looked as if the CMO position was becoming a dinosaur, now the opportunity exists for the CMO to take an impactful role in development of firm strategy. This framework provides the foundation for examining the relationship between the CMO and CIO within the TMT and several cooperation mechanisms that can improve their ability to collaborate and shape strategic decisions.

**Implications and Next Steps**

The current CMO/CIO relationship has significant implications on the strategic impact of each executive going forward. The two have long struggled for an influential position within the TMT and they are often not even members of the highest executive level (Nath and Mahajan 2008). The increase in digital and customer data provides an opportunity for the CMO to play an expanded role in the TMT as they have a better access to data, a clear understanding of the customer, and the analytical tools to justify marketing spend. The CIO, however, faces a threat from the data increase as marketing continues to directly collect and analyze data without the support of IT. A cooperative relationship between the two enables them to combine their specific capabilities to better meet customer and firm needs.

The next step is to empirically test the conceptual model proposed. Collecting data on the antecedents and mechanisms leading to cooperation would best be accomplished through a survey of CMOs and CIOs. However, it is extremely difficult to find executives willing to take the time to complete surveys, leading to low response rates and potentially an inadequate number of responses. Another option is to build on the approach taken by Nath and Mahajan (2008, 2011) and use secondary data as a source. Gathering secondary data on structural power, joint tenure, and educational and
functional background, provides the foundation to conduct an empirical test of cooperation. The challenge will be in collecting data on the cooperative mechanisms.

The model should also be expanded to include business outcomes. We have survey data from a consulting firm indicating that the CMO/CIO relationship leads to better performance (Curren et al. 2014), but extending that study to include the structural power of each executive, can capture how differences between the CMO and CIO impact business results. Additionally, just exploring whether the firm has a CMO, a CIO, or both and the impact on firm performance provides another avenue for exploration.

Beyond the CMO/CIO relationship, there is still very limited research on relationships between functional executives. The CMO regularly interacts with a number of different executives based on the business need. For example, further examining the CMO/CFO relationship to see how it impacts the funding of marketing initiatives is just one example of another opportunity to expand the research on executive relationships.
Figure 4.1
CMO/CIO Objectives and Capabilities

CIO Objectives and Capabilities
Internal Focus

- Manage IT infrastructure and services
- Control and reduce operating costs
- Innovative IT investments
- Infrastructure standardization
- Process improvement
- IT governance
- Internal and external security measures
- Compliance with industry regulations
- Reliable data access

CMO Objectives and Capabilities
External Focus

- Customer-centric orientation
- Seamless Customer Experience
- Personalization
- Digital strategy
- Relationship building
- Advertising
- Marketing research
- New product development
- Market planning
- Monitoring the customer landscape
- Providing customer insights
- Brand strategy
Figure 4.2
CMO/CIO Cooperation

Interdependence

CMO/CIO Structure
CMO/CIO Diversity

Asymmetric

Symmetric

Cooperation Mechanisms
Common Goals
Collective Task
Behavioral Integration
Leadership Development

CMO/CIO Cooperation
CHAPTER 5
CONCLUSIONS

By taking a broad view of marketing’s boundary spanning role, the three essays provide insight into marketing’s ability to gather information and resources from across the firm as customer and data-driven strategies become more influential. Marketing wants access to a single enterprise wide view of the customer within the firm while externally providing a unified customer experience. Both activities present challenges to the marketing organization due to the number and variety of interactions the customer has with the firm. Marketing can reinvigorate its role as the owner of the customer by drawing information from across the firm to provide the consolidated customer view and experience.

The three essays progress from functional to organizational level boundary spanning. By starting at the functional level and providing a more detailed analysis of the vital interactions between sales and marketing, the first essay provides insight into a critical relationship that involves the exchange of resources. Additionally, it provides a foundation for the benefits of boundary spanning and relationship activities that extends into the next two essays.

Beyond the well-established relationship with sales, marketing increasingly needs to gather information and build relationships with data oriented functions such as IT. Marketing largely looks outside the firm, while IT is internally focused, so there has been limited relationship building between the two. However, marketing cannot make use of large amounts of disparate data unless they develop a boundary spanning capability that
connects the two functions (Day 1994). The second study provides a unique perspective by examining the data user’s view of Big Data and establishes frameworks for an area that is still ambiguous and evolving.

Finally, the need for boundary spanning extends to the executive suite where cooperation between the CMO and CIO can increase the strategic influence of both executives. Cooperation between the two will allow them to be at the forefront of the emerging marketing data and analytics movement. Additionally, the study provides insight into an executive relationship that must overcome different perspectives, one internal and one external, to deliver value to the firm.

**Contribution**

**Theory.** Research to date largely examines marketing’s specific relationships with distinct functions such as Sales and R&D (e.g., Holger, Hoyer, and Rübsaamen 2010; Rouziès et al. 2005). While these relationships are critical, marketing does more than interact with salespeople and develop new products. The enterprise view of the customer involves relationships across the firm especially with functions that control data. By examining multiple functions, I provide an expanded view of boundary spanning within the firm and the critical role it plays.

These three essays contribute to the marketing literature in several ways. First, instead of focusing on the specific factors that increase or decrease sales marketing integration, I introduce the concept of the integration gap and the impact of both function and firm level factors on realized and desired integration. Overall, this study provides a more complex view of the factors that influence sales/marketing integration and ultimately relationship and business outcomes.
Next, by looking at how marketing is using Big Data, I examine a high priority research area as identified by the Marketing Science Institute, while also expanding into an area that has largely been ignored: the integration of the marketing and technology functions. By providing the perspective of the user, I show that Big Data and the decision making associated with Big Data are still unsettled. By providing a framework, based on user views, the study places structure around the experiences of marketing managers across a variety of firms. The study moves beyond just examining how marketing uses data to providing a better understanding of how the marketing organization must adapt to successfully collect and use data.

Finally, much of the executive top management team (TMT) literature has focused on just the CMO or the role of CEOs and other functional executives (e.g., Nath and Mahajan 2008). Most of the research on both the CMO and CIO focuses on justifying their role within the TMT or how they can expand their strategic influence (e.g., Preston et al 2008a; Nath and Mahajan 2011). I expand the literature by looking at the relationship between senior marketing and technology executives and providing a conceptual framework for empirical testing of the model. Cooperation between functional executives has received little attention and cooperation between the CMO and CIO can lead to an increase in the strategic decision making importance of both roles.

Overall, this research contributes to the marketing field by broadening the scope of pervious sales/marketing integration research and using that study as a foundation for examining the relationship that between marketing and the technology function at both the managerial and executive levels.
Managerial. This research also provides insights for marketing practitioners. Managers spend a large part of their day interacting with superiors, subordinates, and other organizations (Hutt 1995). Using these interactions to collect information and resources that support marketing activities can lead to a better understand of the customer and better performance. In order to successfully navigate the organization, managers must clearly understand both the factors that support cross-functional strategy development and those that hinder it. Common objectives, goals, and/or rewards at the firm level result in a closer association with the firm than with the individual function. As a result, the function becomes less salient and the firm becomes more salient leading to a firm wide focus on similar objectives. Managers need to overcome the challenges presented by high esprit de corps, function specific rewards, and siloed data structures to take full advantage of information exchange.

Customer data provides another avenue of competitive advantage that managers often struggle to exploit. Boundary spanning with IT and other functions that own data is becoming more important but also more challenging as the level of customer data continues to increase (Schroek et al. 2011). Managers want a single, comprehensive view of the customer so that marketing can be conducted at the individual level. However, the numerous touch points that each customer has with the firm, and consolidating all of the touch points into insights, is extremely challenging. As a first step, managers need to understand the current capabilities of the firm in terms of their ability to implement and use data driven decision making. Contrary to the general feeling in the business press, not every firm needs to make the investment in Big Data. It is an expensive undertaking which is not fully understood by senior managers. However, once the decision has been
made to use Big Data, firms must hire the right people and develop an organizational structure that supports predictive, data driven decision making. Only when marketing managers can span multiple boundaries across the firm and work as a single organization is it possible to have a complete view of the customer.

Finally, cooperation by senior executives such as the CMO and CIO influences the ability of the firm to develop and use customer-centric insights. If the two executives work independently, it can result in multiple systems for data and analysis increasing the complexity of boundary spanning within the firm. However, if the two cooperate, it increases access to information and resources while developing a common goals and objectives across the two functions. A recent consulting study shows the benefits of executive cooperation as over 70% of top performing companies had a strong relationship between the CIO and the CMO versus 45% of non-top performers (Curren et al. 2014).

Overall, providing an understanding of the factors that increase or decrease boundary spanning provides insight into relationship building and resource accessibility across the firm. A thorough understanding of the customer through information and resource exchange at the functional and organizational levels leads to an increased ability to predict customer behavior and enhance the customer experience (Schroeck et al. 2012) which leads to closer customer relationships, more customer value, and increased customer satisfaction (Kumar, Venkatsen, and Reinartz 2008; Lee, Sridhar, Henderson, and Palmatier 2012).

Next Steps

In addition to filling gaps in the existing literature the three essays provide the basis for additional research. First, the qualitative study on the marketing organization
and Big Data and the conceptual model on the CMO/CIO relationship can each be tested empirically. Many of the internal and external factors, such as firm complexity and organizational structure, which impact the level of customer information use within the second essay, can be measured through existing constructs. Additionally, the outcome measures of customer information use (Jayachandran et al. 2005) and marketing effectiveness and profitability (Morgan et al. 2009) are existing scales. For the CMO/CIO study, secondary measures around structural power and executive backgrounds provide the basis for an empirical test of cooperation.

In addition to empirical tests of essays two and three, marketing’s relationship with functions outside of sales and R&D are under researched and should be examined further. The increasing use of data by marketing provides the foundation for further exploration of the relationship between Marketing and IT. In addition to further examining the boundary spanning capabilities of each functions, power will play a significant role in how the two organizations work together and who controls customer data. Customer data provides marketing with the opportunity to gain additional influence within the firm and the relationship with IT may support or reduce the level of influence.

Another important functional boundary spanning relationship is that between marketing and finance. Previous research largely examines how marketing can contribute to the firm’s finances and profitability versus the relationship between the two functions (e.g., de Ruyter and Wetzel 2000; Srivastava Shervani, and Fahey 1998). However, the relationship within the firm also plays a critical role since finance often controls the level of funding available to the marketing organization. In addition to the nature of the relationship, the focus of the firm in terms of being stockholder driven or brand driven
can significantly impact the relationship, marketing’s role, and the impact on business results. The evolving boundary spanning role of the marketing organization provides multiple opportunities to examine how activities within the firm enable marketers to understand and respond to customer needs while positively impacting firm performance.
REFERENCES


Brynjolfsson, Erik, Lorin Hitt, and Heekyung Kim (2011), "Strength in Numbers: How Does Data-Driven Decision making Affect Firm Performance?" *Available at SSRN 1819486*.


Foreman, Peter and David A. Whetten (2002), 'Members' Identification with Multiple-Identity Organizations,' *Organization Science*, 13(6), 618–635.


Franks, Bill (2012), *Taming the Big Data Title Wave*, John Wiley and Sons, Inc.: Hoboken, NJ.


# APPENDIX

## Main Effects

<table>
<thead>
<tr>
<th>Interdependence (Fisher et al. 1997) - Likert scale ranging from 1 (“strongly disagree”) to 7 (“strongly agree”)</th>
<th>Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>We both recognize that we need each other to accomplish our objectives.</td>
<td>.66</td>
</tr>
<tr>
<td>We are both dependent on the other to be successful.</td>
<td>.87</td>
</tr>
<tr>
<td>We would be just as effective without working with Sales. (r)</td>
<td>.58</td>
</tr>
<tr>
<td>Sales (Marketing) does not seem to need our help. (r)</td>
<td>.69</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Structural Mechanisms (Cespedes 1995) - Likert scale ranging from 1 (“strongly disagree”) to 7 (“strongly agree”)</th>
<th>Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formal liaison people are used between Sales and Marketing.</td>
<td>.64</td>
</tr>
<tr>
<td>We use field marketing specialists.</td>
<td>.54</td>
</tr>
<tr>
<td>Cross-functional account teams are formally established.</td>
<td>.54</td>
</tr>
<tr>
<td>Cross-functional project teams are formally established.</td>
<td>.67</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Competitive Intensity (Jaworski and Kohli 1993) - Likert scale ranging from 1 (“strongly disagree”) to 7 (“strongly agree”)</th>
<th>Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competition in this category is cutthroat.</td>
<td>.75</td>
</tr>
<tr>
<td>Anything that one competitor can offer, others can match readily.</td>
<td>.48</td>
</tr>
<tr>
<td>Price competition is a hallmark of this category.</td>
<td>.53</td>
</tr>
<tr>
<td>One hears of a new competitive move almost every day.</td>
<td>.50</td>
</tr>
</tbody>
</table>
## Moderators

### Competitor Orientation (Narver and Slater 1990) - Likert scale ranging from 1 (“strongly disagree”) to 7 (“strongly agree”)

<table>
<thead>
<tr>
<th>Item</th>
<th>Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>We rapidly respond to competitive actions that threaten us.</td>
<td>.58</td>
</tr>
<tr>
<td>Our salespeople regularly share information concerning competitors’ strategies within the business unit.</td>
<td>.54</td>
</tr>
<tr>
<td>Top management of the business unit regularly discusses competitors’ strengths and strategies.</td>
<td>.72</td>
</tr>
<tr>
<td>We target customers where we have an opportunity for competitive advantage.</td>
<td>.66</td>
</tr>
</tbody>
</table>

### Customer Orientation (Narver and Slater 1990) - Likert scale ranging from 1 (“strongly disagree”) to 7 (“strongly agree”)

<table>
<thead>
<tr>
<th>Item</th>
<th>Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>We constantly monitor our level of commitment and orientation to serving customers’ needs.</td>
<td>.86</td>
</tr>
<tr>
<td>Our business objectives are driven primarily by customer satisfaction.</td>
<td>.74</td>
</tr>
<tr>
<td>Our strategy for competitive advantage is based on our understanding of customer needs.</td>
<td>.84</td>
</tr>
<tr>
<td>Our strategies are driven by beliefs about how we can create greater value for customers.</td>
<td>.83</td>
</tr>
<tr>
<td>We measure customer satisfaction systematically and frequently.</td>
<td>.58</td>
</tr>
</tbody>
</table>

### Functional Rewards (Walton et al. 1969) - Likert scale ranging from 1 (“strongly disagree”) to 7 (“strongly agree”)

<table>
<thead>
<tr>
<th>Item</th>
<th>Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evidence of cooperation between departments is acknowledged by superiors in my business unit.</td>
<td>.54</td>
</tr>
<tr>
<td>There is little recognition given for considering another department’s problems.</td>
<td>.75</td>
</tr>
<tr>
<td>People pretty well look out for their own interests.</td>
<td>.72</td>
</tr>
<tr>
<td>My business unit blames departments for errors rather than seeking the causes of the errors.</td>
<td>.67</td>
</tr>
</tbody>
</table>

### Departmental Esprit de Corps (Jaworski and Kohli 1993) - Likert scale ranging from 1 (“strongly disagree”) to 7 (“strongly agree”)

<table>
<thead>
<tr>
<th>Item</th>
<th>Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>People feel good about working in this department.</td>
<td>.71</td>
</tr>
<tr>
<td>People in this department encourage each other to work together as a team.</td>
<td>.85</td>
</tr>
<tr>
<td>There is a lot of department spirit.</td>
<td>.89</td>
</tr>
<tr>
<td>People in this department communicate well with one another.</td>
<td>.78</td>
</tr>
</tbody>
</table>
**Controls**

<table>
<thead>
<tr>
<th>Customer Power - Likert scale ranging from 1 (&quot;strongly disagree&quot;) to 7 (&quot;strongly agree&quot;)</th>
<th>Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Our customers are placing more emphasis on supply chain management.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Functional Power (Smith and Barclay 1997) Likert scale ranging from 1 (&quot;marketing is stronger&quot;) to 7 (&quot;sales is stronger&quot;)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Who has…</td>
<td></td>
</tr>
<tr>
<td>Power within the business unit. (.67)</td>
<td>.67</td>
</tr>
<tr>
<td>Influence within the business unit. (.81)</td>
<td>.81</td>
</tr>
<tr>
<td>Leadership within the business unit. (.58)</td>
<td>.58</td>
</tr>
</tbody>
</table>

**Outcome Variables**

<table>
<thead>
<tr>
<th>Realized Integration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imagine that the circles below represent the Sales and Marketing departments in your business unit. Please indicate the extent to which the two departments are interrelated/interconnected by circling only one letter (A – H).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Desired Integration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Which circle in the question above best represents where you would like to see Sales and Marketing in 2 to 3 years?</td>
</tr>
</tbody>
</table>

A  
Far apart

B  
Close, but separate

C  
Very small overlap

D  
Small overlap

E  
Moderate overlap

F  
Large overlap

G  
Very large overlap

H  
Near total or complete overlap
### Relationship Effectiveness - Likert scale ranging from 1 (“strongly disagree”) to 7 (“strongly agree”)

<table>
<thead>
<tr>
<th>Statement</th>
<th>Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall, we have both been satisfied with our working relationship.</td>
<td>.83</td>
</tr>
<tr>
<td>The customers we deal with together are pleased with our work.</td>
<td>.69</td>
</tr>
<tr>
<td>We have conducted a lot of successful business together.</td>
<td>.78</td>
</tr>
<tr>
<td>From a performance perspective, our working relationship has been very</td>
<td>.90</td>
</tr>
<tr>
<td>effective.</td>
<td></td>
</tr>
<tr>
<td>The time we have spent developing and maintaining our relationship with</td>
<td>.81</td>
</tr>
<tr>
<td>Sales has been worthwhile. (.81)</td>
<td></td>
</tr>
<tr>
<td>We have met our responsibilities and commitments to each other.</td>
<td>.87</td>
</tr>
<tr>
<td>Our working relationship has been productive.</td>
<td>.94</td>
</tr>
</tbody>
</table>

### Customer Results - Likert scale ranging from 1 (“strongly disagree”) to 7 (“strongly agree”)

<table>
<thead>
<tr>
<th>Statement</th>
<th>Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>In the past 6 months, our business unit has had................</td>
<td>.82</td>
</tr>
<tr>
<td>Increased customer satisfaction.</td>
<td></td>
</tr>
<tr>
<td>Increased customer value.</td>
<td>.75</td>
</tr>
<tr>
<td>A greater focus on customers.</td>
<td>.72</td>
</tr>
<tr>
<td>Stronger relationships with its customers.</td>
<td>.82</td>
</tr>
</tbody>
</table>