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Measuring the Financial Benefits of Cross-Functional Integration Influences Management's Behavior

Matias G. Enz[1] and Douglas M. Lambert[2]

[1] *Universidad Nacional de Rosario*
[2] *The Ohio State University*

While many have suggested that cross-functional, cross-firm integration is beneficial, functional managers will have competing priorities and thus different perceptions of its benefits. Performance measurements tend to reward functional behaviors and are often in conflict across functions. Since senior management is held responsible for financial results, the benefits of cross-functional integration should be measured in financial terms. The supply chain management literature provides little insight about the behavioral changes that can result when managers are provided with financial measures of the value created with customers and suppliers. Using a case study approach, the authors measured value in perceptual and financial terms using pairs of buyer–supplier relationships. In each pair of relationships, one involved cross-functional teams and the other did not. Managers perceived that the relationships with cross-functional involvement were more profitable. However, it was not until managers received financial measures showing the impact of joint initiatives on the profitability of each pair of relationships that their behaviors changed with regard to the implementation of cross-functional relationships with key customers and suppliers. We developed a conceptual model comprised of five theoretical propositions that characterize the role of financial measurements as an enabler of cross-functional integration and value co-creation.

Keywords: cross-functional integration; supply chain management; financial measurements of value

INTRODUCTION

The implementation of cross-functional processes with key customers and suppliers is recognized as a cornerstone of supply chain management (Cooper et al. 1997; Daugherty et al. 2009). By interacting in cross-functional, cross-firm teams, managers of functions such as Sales, Marketing, Logistics, Operations, Purchasing, Research and Development (R&D), and Finance, can exchange ideas with customers and suppliers, and leverage their functions' capabilities to jointly create value for the firms that they represent. The involvement of customer and supplier representatives in cross-functional teams has been shown to be key for developing innovative products (Von Hippel 2005), improving the coordination of sales and operation plans (Oliva and Watson 2011), and implementing effective product return processes (Mollenkopf et al. 2011). According to the relational view of competitive advantage (Dyer and Singh 1998), critical resources and capabilities extend beyond firm boundaries, and the management of interfirm relationships is a source of relational rent. Dyer and Singh (1998, 662) defined relational rent as "a supernormal profit jointly generated in an exchange relationship that cannot be generated by either firm in isolation and can be created only through the joint idiosyncratic contributions of the specific alliance partners." Despite the central role that relational rent plays in supply chain management, little is known about how and why contributions to relational rent are judged, and how managers' behaviors change as a result of these judgments (Greer and Ford 2009; Omar et al. 2012).

Successful business relationships depend on the alignment of expectations and management's understanding of the value of such relationships. However, the individuals involved have experiences, goals, and power that have been shaped by the business function and the company to which they belong (Ryals 2005; Lambert 2008). Perception biases are likely to occur in the area of business-to-business relationships as managers' rationality is bound due to complexity and lack of memory (Kaufmann et al. 2009). Individual managers are rarely familiar with all of the initiatives that occur within a relationship (which could encompass initiatives such as product development, manufacturing process improvement, quality improvement, and the provision of market information). Even if managers are familiar with all of these initiatives, they may lack the specialized knowledge required to form an accurate perception of the value generated because financial data typically are not available by initiative. This makes survey-based research methods inappropriate when quantification of the financial impact of buyer and supplier relationships is required.

The long-term development of supply chain relationships depends on management's assessment of the value that is obtained from the organization's relationships. Thus, there is a pressing need to identify strategies for debiasing perceptions in supply chain environments and to evaluate their effectiveness in aligning individuals' behaviors (Kaufmann et al. 2009). Single informant research methods are not appropriate for addressing such questions because the determination of value is idiosyncratic to each of the many individuals that interact in the relationship (Vargo and Lusch 2004).

The predominance of silo-based organizational structures and measurement systems that reward functional performance are barriers for implementing cross-functional, cross-firm teams (Fawcett and Magnan 2002; Sabath and Whipple 2004). In order for functional managers to allocate resources to cross-functional relationships, the value of cross-functional initiatives needs to be understood within the firm and within customer and supplier firms. If positive financial results are associated with the development of closer relationships with customers and suppliers, then top manag-

Corresponding author:
Matias G. Enz, Centro de Estudios Interdisciplinarios, Universidad Nacional de Rosario, Maipú 1065, Rosario (2000), Argentina; E-mail: matias.enz@gmail.com

ers, functional managers, and customers and suppliers, may be more likely to participate in supply chain initiatives (Richey et al. 2010). In spite of the importance of financial information for decision making, most companies do not have disaggregated information readily available to calculate the incremental impact of closer customer or supplier relationships on overall profitability (Cokins 2011). Most metrics used to measure supply chain management performance are actually measurements of functional performance and do not provide information about how specific management decisions contribute to the profitability of the firms involved in the supply chain (Lambert and Pohlen 2001). If managers want to capture the attention of "C" level (CEO, COO, CFO) executives, they should demonstrate the contribution of supply chain management initiatives to the company's profitability (Filbeck et al. 2005). Differences in perceptions of the profit impact of the relationships with customers or suppliers can be detrimental to the successful implementation of supply chain management (Lambert and Pohlen 2001).

Our goal for this research was to address the lack of theoretical insight in the supply chain management literature about the importance of financial measurements for debiasing managers' perceptions about the value of supplier and customer relationships. Using the relational view (Dyer and Singh 1998) as the theoretical underpinning, we analyzed how managers changed their perceptions and policies toward pairs of comparable relationships after they were provided with financial measures of the value that was being created in each relationship. The relational view was chosen because the research was focused on cross-functional, cross-firm business processes as a fundamental means for creating relational rent (Dyer and Singh 1998; Lambert 2008). The primary research question was: "How does the availability of financial measurements of relationship value affect managers' perceptions and behaviors toward relationships with customers and suppliers?"

Two pairs of buyer–supplier relationships were studied using a case study approach. In each pair of relationships, one involved cross-functional teams and the other did not. We describe the managers' initial perceptions of the value created in each relationship. Next, we quantify the incremental improvements in firm profitability related to specific initiatives that were conducted within each relationship during a three-year period and we compare the results with the managers' perceptions. Then, we describe how managers' perceptions and behaviors toward the relationships changed during the three years after the financial information was made available to them.

In the next section, we provide a review of the appropriate literature which is followed by the research methodology. Then, we present the findings, the theoretical and managerial implications, and limitations and opportunities for future research. The paper ends with a summary of the conclusions.

LITERATURE REVIEW

Three literature streams were reviewed to frame our research: (1) cross-functional integration in supply chain management, (2) management's value judgments in business-to-business relationships, and (3) financial measurements of supply chain performance.

Cross-functional integration in supply chain management

There is a growing recognition that companies no longer compete as individual entities but rather as part of a wider network of companies (Chen et al. 2009; Christopher 2013). The strength of these networks is determined in large part by the quality of the relationships that connect companies across the supply chain and by the business processes that underpin them (Lambert and Pohlen 2001; Frankel et al. 2008). While the resource-based view of the firm attributes competitive advantage to the ownership and control of unique resources and capabilities by a single firm, the relational view proposed by Dyer and Singh (1998) extends this theory by considering interfirm relationships as an important unit of analysis for understanding differential business performance. According to the relational view, relational rents are created when firms combine, exchange, or invest in idiosyncratic assets, knowledge-sharing routines, complementary resources and capabilities, and effective governance mechanisms (Dyer and Singh 1998). The implementation of cross-functional, cross-firm business processes provides managers with boundary spanning responsibilities that facilitate the exchange of knowledge and skills across internal and external organizational boundaries (Aldrich and Herker 1977; Hult 2011). According to the service-dominant logic of marketing, when customers and suppliers are involved in supply chain processes, their roles change from passive receivers and providers of products to active innovators and co-creators of value (Vargo and Lusch 2004; Von Hippel 2005). Transaction cost economics (TCE) suggests that the governance structure and ultimate performance of a business relationship are influenced by the level of specific investments and managers' opportunistic behaviors (Williamson 1975). Market governance (e.g., supply chain integration) is favored when adaptation, managers' uncertainty, and safeguarding costs are low (Rindfleisch and Heide 1997). When these transaction costs are high, business activities tend to be performed internally (Rindfleisch and Heide 1997). TCE is related to our research in that financial performance measurements can reduce managers' uncertainty about the value of a relationship and favor supply chain integration. However, the relational view was the theoretical underpinning of our research because the focus was not on the efficacy of exchange, but on the changes of managers' perceptions of relational rent and the subsequent changes in behaviors.

Research on cross-functional integration has identified the benefits and challenges of implementing cross-functional teams, determined the factors that enable desirable outcomes, developed governance structures, and described behavioral dynamics within the teams (Hackman 1987; Trent and Monczka 1994; Hirunyawipada et al. 2010). However, most of this research has been focused on teams formed with members from a single company (Troy et al. 2008; Hyung-Jin Park et al. 2009). The complex, multifunctional nature of supply chain management suggests that the implementation of cross-functional processes across firms is more challenging than implementing cross-functional teams within a single firm or initiatives with customers and suppliers that do not require the involvement of multiple functions (Greer and Ford 2009). Collaboration is appropriate for customers or suppliers who are viewed as strategic. For low volume customers with low growth potential and suppliers of noncritical items, typically collaboration would not be appropriate.

Lambert and Pohlen (2001) identified customer relationship management (CRM) and supplier relationship management (SRM) as the cross-functional links in the supply chain. The CRM process teams of the seller organization and the SRM process teams of the buyer organization segment customers and suppliers to identify the key relationships where cross-functional teams should be implemented. Cross-functional involvement enables the identification of the wide range of capabilities (and weaknesses) that exist in the various functional areas in order to develop customized offerings that are competitive and realistic (Daugherty et al. 2009). In addition, functional managers can determine how their functions will support key customer and supplier relationships to increase value co-creation and achieve the profitability targets of the firm. It is important that all functional representatives involved in the cross-functional, cross-firm teams have similar perceptions and expectations about the value of the customer and supplier relationships (Mollenkopf et al. 2011). One of the most important barriers to the implementation of cross-functional, supply chain management processes is that top management and functional managers need to recognize the strategic and tactical implications of developing close relationships with key customers and suppliers (Daugherty et al. 2006; Fawcett et al. 2008). Perceptions of value and expectations of future financial gains determine how management allocates resources and efforts.

Management's value judgments in business-to-business relationships

Customer value has been conceptualized as perceptual in nature, either as the perceived economic worth of a seller's offering or as the experience perceived by a customer during the interaction with a seller's offering (Woodruff and Flint 2006). Perception is the process by which individuals organize, identify, and interpret sensory information to represent and understand the environment (Pisharodi and Langley 1990). Equity theory (Adams 1965) predicts that when individuals perceive inequity in a social exchange, a motivation develops to restore equity that may lead to the alteration of the levels of collaboration or to the termination of the relationship. Goal-directed theories, which are based on the premise that consumers make purchases to achieve one or more desired goals, have been used to explain the relationship between perceptions of value and customer purchasing responses (Pisharodi and Langley 1990; Bagozzi and Dholakia 1999). These theories were developed in the field of organizational psychology with the individual as the unit of analysis. Considering that most business situations involve interactions in social environments, recent research has been focused on extending these individual-based theories to the group level and to a lesser degree to the level of the organization as a whole (Latham and Locke 2007; Che-Ha et al. 2014). For example, goal-directed theories were used to examine the relationship between a particular team goal orientation and creativity (Gong et al. 2013) and to explain how team composition affects the relationship between the team's cultural diversity and performance (Pieterse et al. 2013).

In business-to-business settings, perceptions are shaped by factors such as the organizational function and the hierarchical level to which the individual belongs, the degree of involvement of the individual in the interactions that occur across the relationship, and the existence of formal supplier performance evaluation systems. Lack of agreement on the value of a buyer–supplier relationship has been identified as a major difficulty for developing long-term business relationships (Pelled and Adler 1994; Christopher and Jüttner 2000).

There is little research that explains the impact of diverging or converging opinions about supplier performance within supplier teams on the development of relationships (Buffa and Ross 2011). Research has shown that multifunctional product development teams can have conflicts as a result of selective perceptions based on functional representation (Pelled and Adler 1994). Strategies to mitigate the influence of the lack of consensus and decision making bias in cross-functional teams have been developed in the fields of psychology and decision theory, but their application to supply chain management is limited (Kaufmann et al. 2009; Buffa and Ross 2011). Research on the link between the formation of perceptions in cross-functional teams and the effect on purchasing decisions is required to understand the changes that are necessary to successfully implement supply chain management.

For supply chain collaboration to be successful, individuals within each organizational function need to change and adopt a mindset that enables cross-firm, cross-functional collaboration (Omar et al. 2012). Change is initiated by events that destabilize the existing organizational equilibrium, which leads to the modification of behaviors and ultimately to the institutionalization of the new way of working at improved levels of performance (Lewin 1947). Such destabilization can be caused by performance measurement systems that report the gaps between current and desired performance. Recognition of the opportunities that can be achieved by collaborating with key suppliers or customers is a first step toward developing a supply chain orientation (Omar et al. 2012).

Financial measurements of supply chain performance

Practitioners and scholars are under increased pressure to demonstrate how supply chain assets and capabilities impact business performance (Anderson et al. 2006). The lack of appropriate financial information to measure the benefits and costs of committing functional resources to cross-functional teams has been identified as one of the reasons for the lack of progress in achieving cross-functional integration (Sabath and Whipple 2004; Richey et al. 2010), but this affirmation has not been examined empirically.

The ultimate measure of supply chain management success is the positive change in profitability for both the buyer and seller organizations over time (Lambert and Pohlen 2001). However, most organizations' accounting systems cannot provide disaggregated information to calculate the revenue minus avoidable costs associated with individual relationships. In many companies that have customer profitability reports, the impact of a relationship on overall profitability is distorted by the allocation of joint costs and fixed costs. These allocations are based on subjective and arbitrary criteria. Often, even variable costs are captured in aggregate and must be allocated using percentage of sales or other methods that do not accurately represent the costs incurred in serving an individual customer or dealing with a specific supplier.

Metrics commonly used in supply chain management include order fill rates, inventory turnover ratios, order cycle time, and logistics costs per unit delivered (Griffis et al. 2007). These metrics are focused on measuring the efficiency of the activities conducted within the Logistics function and are often in conflict with each other as well as the metrics used in other organizational functions. Performance measurement systems should provide a complete picture about how management decisions contribute to the profitability of each firm in a supply chain relationship (Lambert and Pohlen 2001; Esper et al. 2010). Supplier performance measurements included in the academic literature typically consist of scorecard-based systems to monitor suppliers in aspects such as purchasing price, delivery reliability, quality and responsiveness (Buffa and Ross 2011). Total cost of ownership (TCO) is a measure of the total cost of doing business with a particular supplier, looking beyond price and including costs such as transportation, inventory holding, administrative, disposal, and quality (Ellram 1994; Waller and Fawcett 2012). The implementation of TCO has been associated with better cross-functional integration and improved communication of business priorities with suppliers. However, measurements based on TCO are limited because they are not designed to capture revenue gains and profit contribution made possible by the supplier (Lambert and Schwieterman 2012). Suppliers can be an important source of ideas for new products, quality improvements, market knowledge and access to new markets that, if leveraged, can lead to increased revenue and profitability for the customer firm. If a supplier's contributions to revenue and profits are not measured and rewarded, the supplier's capabilities might remain unrecognized by the customer's sales, marketing and new product development functions, leading to missed opportunities for value co-creation.

There is little empirical research that explores the triggers that change managers' perceptions of value and the strength of the different triggers for actualizing changes in management behavior in a supply chain setting. Financial measurements of organizational performance have been shown to have a strong influence on managers' behaviors, but the role of financial measurements in supply chain management needs further research. Using a longitudinal approach, we explored the perceptual and behavioral changes that occurred after managers were provided with financial information about the value created in two pairs of business relationships.

METHODOLOGY

The research design was a longitudinal, multiple case study with three phases. In Phase 1, qualitative data analysis was conducted over a period of one year to analyze managers' perceptions in two pairs of buyer–supplier relationships with different levels of cross-functional involvement. One pair was between a company (which will be identified as The Restaurant Chain) and two of its suppliers (Supplier A and Supplier B). The other pair was between a company (which will be identified as The Manufacturer) and two of its customers (Retailer A and Retailer B). Based on the qualitative data collected in 46 interviews with representatives of the major organizational functions of the six firms, we explored the enablers and the benefits of cross-functional involvement.

In Phase 2, we identified the joint initiatives that were conducted within each relationship, and we helped management measure in financial terms the impact of the initiatives on the profitability of The Restaurant Chain and The Manufacturer. Before the research, management in the two companies did not have this information because the accounting systems were not capable of reporting the profit contribution of the initiatives using revenues minus avoidable costs. In this research, we reported only the profit impact of joint initiatives conducted within each relationship to avoid confounding the findings by using total profitability of the supplier or customer, which may be influenced by factors beyond the relationship (e.g., brand image, competitiveness of price, and product quality). The financial measurements were compared with the managers' perceptions identified during Phase 1.

Following recommendations from the action research literature (Stringer 2007; Näslund et al. 2010), we provided management of The Restaurant Chain and The Manufacturer with the financial measurements in early 2010. Action research is a form of case study research that has an increased emphasis on the practical relevance of the theories developed (Stringer 2007). Following a rigorous methodology, action research enables a team of co-participants (such as researchers and managers) to introduce changes in complex social systems (e.g., business-to-business relationships) and study the effects. Our intervention in the case studies was designed to enable us to observe the perceptual and behavioral changes that occurred when managers started using financial measurements of relationship value. The possibility of working with managers to develop theories that could be applied directly in their companies was a determining factor in identifying companies that would support our research. Management of The Restaurant Chain decided to participate in the research because its purchasing organization had been recently restructured and the newly appointed EVP of Supply Chain Management wanted to increase collaboration with key suppliers. Management of The Manufacturer decided to participate because they could not understand why they were able to integrate all major functions with one of their key customers, but not with another key customer that had similar characteristics and much higher volume. Action research is gaining increased support in the field of supply chain management as journal editors emphasize the need for research that is meaningful for managers (Frankel et al. 2005; Näslund et al. 2010; Buffa and Ross 2011). We based Phase 2 of the methodology on Stringer's (2007) action research approach and we verified that all the applicable recommendations provided by Näslund et al. (2010) were satisfied. Phase 2 of the research is described later in this section.

Phase 3 started in January 2011, when three key managers of The Restaurant Chain and two key managers of The Manufacturer were interviewed to understand how perceptions and behaviors toward the two pairs of relationships had changed after the financial information was made available to them. The qualitative analysis of the data collected during the interviews was complemented with documentation and information about the evolution of The Restaurant Chain's purchases from Supplier A and Supplier B, and of The Manufacturer's sales to Retailer A and Retailer B for fiscal years 2010, 2011, and 2012.

By design, the research consisted of two embedded units of analysis (Yin 2009), with the main unit of analysis at the relationship level and the smallest unit at the individual manager level. Our goal was to compare the value of different relationships using perceptual and financial measurements, and to analyze how managers changed their perceptions and behaviors after they were provided with the financial measurements.

Case selection and data collection

Theoretical sampling was used to select the companies and the relationships because it enables the researcher to decide what data to collect based entirely upon the theory that is being developed (Mello and Flint 2009; Yin 2009). A pair of relationships where the focal firm was the customer (i.e., the relationships between The Restaurant Chain and its two suppliers) and a pair of relationships where the focal firm was the supplier (i.e., the relationships between The Manufacturer and two of its customers) were selected in order that both buyer and supplier perspectives were considered. As described next, The Restaurant Chain had a cross-functional relationship with Supplier A (and not with Supplier B), and The Manufacturer had a cross-functional relationship with Retailer A (and not with Retailer B).

The Restaurant Chain owned and operated more than 500 full-service restaurants in the United States. The company's revenues were in excess of $1 billion. Management considered Supplier A and Supplier B to be strategic suppliers. The products supplied by Supplier A and Supplier B belonged to similar categories, but there was not 100% overlap. Both companies represented a significant volume of purchases for The Restaurant Chain. The major difference between the two relationships was that managers in the relationship between The Restaurant Chain and Supplier A (which will be identified as Restaurant Chain/Supplier A) regularly interacted in cross-functional teams, while managers in the relationship between The Restaurant Chain and Supplier B (which will be identified as Restaurant Chain/Supplier B) did not. Supplier A was a global food company with annual revenues of more than $40 billion. The division included in this research was dedicated to the food service industry. The total sales from Supplier A to The Restaurant Chain were $16.7 million in 2008. Supplier B was an international provider of food products with annual revenues in excess of $40 billion. The business unit included in the research provided products and services for the restaurant industry. The total sales from Supplier B to The Restaurant Chain were $18.5 million in 2008.

The Manufacturer was a food products company that sold refrigerated grocery and fresh meat products. The products were sold in more than 15,000 grocery stores in 49 U.S. states. The company's revenue was more than $250 million. Retailer A and Retailer B were considered strategic by The Manufacturer's management and both represented a significant volume of The Manufacturer's sales. Retailer A was a supermarket chain with annual sales of more than $5 billion. Retailer A bought $14.5 million of The Manufacturer's products in 2008. Retailer B was a supermarket chain with annual sales of more than $15 billion. The Manufacturer's sales to Retailer B were $43.0 million in 2008. The major difference between the two relationships was that managers in the relationship between The Manufacturer and Retailer A (which will be identified as Manufacturer/Retailer A) participated regularly in cross-functional teams, while managers in the relationship between The Manufacturer and Retailer B (which will be identified as Manufacturer/Retailer B) did not.

In Phase 1 of the research, management at The Restaurant Chain identified the functional representatives that had been involved in the relationships with Supplier A and Supplier B for the last two years, and management at The Manufacturer identified the individuals that had been involved in the relationships with Retailer A and Retailer B for the same period of time. Using a snowball approach (Miles and Huberman 1994), these individuals were interviewed and asked to identify other individuals with whom they communicated about each of the relationships on at least a monthly basis. These persons were interviewed at a later stage. A total of 46 managers were interviewed: nine from The Restaurant Chain, seven from Supplier A, 11 from Supplier B, 10 from The Manufacturer, eight from Retailer A, and one from Retailer B. Retailer B's buyer was the single point of contact between The Manufacturer and Retailer B. The managers represented functions such as: (1) R&D (nine informants), (2) Logistics (eight informants), (3) Sales (seven informants), (4) Operations (five informants), (5) Marketing (four informants), (6) Purchasing (four informants), (7) Finance (four informants), (8) Production (four informants), and (9) IT (one informant).

A questionnaire was used, which included the following seven questions:

1. What are the team's goals for the cross-functional initiative?
2. What are the accomplishments of the team?
3. What are some initiatives that did not meet the expectations? Why?
4. What are the main three contributions from each function of your company and the customer [supplier] that was involved on the team?
5. How are the outcomes from the team's initiatives measured and communicated to both firms and to other business functions?
6. What are the benefits for your department from your participation on the team?
7. How will having participated in this team affect the way you participate in future teams?

The questionnaire was used to guide the conversation, but flexibility was maintained to permit inquiry about unforeseen topics that emerged during the conversation and were valuable for the research. The examples of value creation that the interviewees could provide were of special interest, so they were asked to illustrate their responses with anecdotes. The interviews were audio-recorded and transcribed verbatim. To better assess the value that was co-created in the cross-functional teams, the interviewees were asked to provide supporting documentation whenever possible. The collected documentation included copies of project plans, project reports, and internal memos.

Phase 1: Analyzing managers' perceptions of value creation

The analysis of the managers' perceptions was based on the transcripts that were prepared after each interview and was aided by using the NVivo qualitative data analysis software (Version 10; QSR International, Victoria, Australia). Using the open coding technique and selecting phrases as the recording unit, one of the researchers assigned codes (i.e., labels that provide units of meaning to descriptive data) to the relevant concepts that appeared in the transcripts (Miles and Huberman 1994; Strauss and Corbin 1998). When discrepant opinions between respondents appeared, the reasons were investigated and managers contacted a second time for clarification. For this purpose, factors such as company, supplier or customer, function, hierarchy level, and other case characteristics were assessed for common patterns (Miles and Huberman 1994). A case study approach enables consensus building across respondents or the discovery of the reasons behind a lack of consensus (Baba 1988). The codes were not static, they were reviewed and refined as information from new cases was made available (a technique called constant comparison), which helped to keep the codes consistent across cases. To increase the reliability of the results, the coding was verified independently by the other researcher, who sorted the managers' quotations according to the codes that had emerged during open coding. An interrater reliability analysis using Cohen's Kappa statistic was performed to determine consistency among raters (Cohen 1960). In the first round of coding, the Cohen's Kappa score averaged 0.74. To improve the agreement between the raters, discrepancies in interpretation were identified and addressed. One code was deleted, three codes were reworded, and five managers' quotations were recoded. A second measurement of Cohen's Kappa gave an average score of 0.91. Kappa scores above 0.76 are considered excellent indicators of interrater agreement (Landis and Koch 1977).

The codes were further organized into categories considering how the findings (i.e., patterns) matched across cases (Miles and Huberman 1994). When the categories that emerged could be related to previous research, we relabeled them using terminology from the literature (e.g., supply chain orientation) to ground our findings in the existing literature (Eisenhardt 1989; Yin 2009; Wuttke et al. 2013). The categories were causally related to develop a conceptual model and theoretical propositions grounded in the data. Codes such as "contractual agreements," "horizontal organization," and "reasons for not having financial measurements" were excluded from the model because they were not directly related to the research question (i.e., how the availability of financial measurements of relationship value affect managers' perceptions and behaviors toward relationships with customers and suppliers).

Phase 2: Measuring value in financial terms

The Restaurant Chain and The Manufacturer did not have disaggregated financial information that presented a meaningful and current picture of the value that was being created in each joint initiative, so the researchers assisted them in developing the measurements. The method for measuring value creation in financial terms was adapted from the customer and supplier profitability reports recommended by Lambert (2008). Profitability reports are designed to calculate the profit contribution of a particular customer or supplier (or segments of them) and include measurements of all sources of revenue that can be attributed to the relationship, minus avoidable costs (i.e., costs that would disappear if the revenue associated with the relationship disappears). Fixed overheads and costs that are common to multiple customers and are not affected by the way a customer relationship is managed are not included in the profitability report. To avoid confounding the research findings by including factors that affect a firm's profitability, but are not related to specific initiatives worked on in each relationship (e.g., brand image, competitiveness of price and product quality), we only calculated the profit impact of the initiatives that were conducted within each relationship. For initiatives that resulted in cost saving, only out-of-pocket cost savings were included. For initiatives that involved revenue increases, revenue minus avoidable costs was used to determine the profit impact.

For the relationships Restaurant Chain/Supplier A and Restaurant Chain/Supplier B, the first step was based on the approach used by Ford and McDowell (1999), which consisted of identifying and validating the joint initiatives conducted in each relationship. The 27 interviews with managers of The Restaurant Chain, Supplier A, and Supplier B were used to identify joint initiatives in each relationship. Financial information that enabled the quantification of the financial outcomes of each initiative was requested. For revenue generation initiatives, the contribution toward the joint costs and fixed costs was measured. For cost reduction initiatives, the net savings were measured. The cost information that was used to quantify the financial impact of revenue generation and cost reduction initiatives did not include the allocation of joint costs or overhead costs. The financial outcomes from each initiative identified were calculated for the last three fiscal years (2007, 2008, and 2009), and projected into the next fiscal year (2010). The projections for fiscal year 2010 were based on the sales forecasts and purchase plans provided by managers. In the relationships that we studied, no capital investments were made. If financial investments had been required, the net present value of the cash flows over the life of the investment would have been calculated.

The financial measurements of value were compared with the managers' perceptions of the value of each relationship. In early 2010, managers in The Restaurant Chain and The Manufacturer were provided written reports that summarized the financial measurements. Focus groups and presentations were organized to discuss the financial measurements with the individuals of The Restaurant Chain and The Manufacturer that had participated in Phase 1 of the research.

Phase 3: Analyzing managers' changes in perceptions and behaviors toward cross-functional, cross-firm integration

One goal in our research was to explore why managers struggle to implement cross-functional, cross-firm integration, even when their experience and intuition indicate that a cross-functional approach to supply chain management leads to better performance. According to the literature review, a possible explanation is the lack of financial measurements that capture the contribution of suppliers and customers to company profitability, but this proposition had not been explored empirically in a supply chain context (Lambert and Pohlen 2001; Cokins 2011). To explore the role of financial measurements as an enabler of cross-functional, cross-firm integration, we interviewed for a second time a subsample of managers of The Restaurant Chain and The Manufacturer who had key responsibilities in the two pairs of relationships. The interviews were conducted in January 2012 (17 months after the financial measurements were provided to the managers). The Purchasing Director, the Senior VP of Product Innovation and the EVP of Supply Chain Management of The Restaurant Chain were asked how and why their perceptions and behaviors toward Supplier A and Supplier B had changed after the financial information was made available to them. The President and the VP of Sales of The Manufacturer were asked similar questions about the relationships with Retailer A and Retailer B. The qualitative data were complemented with documentation and information about The Restaurant Chain's purchases from Supplier A and Supplier B for fiscal years 2010, 2011, and 2012, and The Manufacturer's sales to Retailer A and Retailer B for the same years.

The construct validity of the qualitative analysis conducted during Phase 1 and Phase 3 of the research (i.e., establishing correct operational measures of the concepts that are being studied) was controlled by using multiple sources of evidence, establishing a chain of evidence, and having key informants review the draft case study report (Yin 2009). Internal validity (i.e., ensuring that the causal relationships between variables are accurately identified) was increased during the data analysis phase by applying pattern-matching, explanation building, and addressing rival explanations techniques (Miles and Huberman 1994). Reliability (i.e., obtaining the same results when the research is replicated in a different sample) was improved by developing a research protocol and a research database, and using a second rater to conduct an interrater reliability analysis (the final Cohen's Kappa score was 0.91). The findings are presented in the next section.

FINDINGS

In this section, we describe how management perceptions and behaviors toward customers and suppliers changed when managers were provided with financial measures of the value created in each relationship. The findings are organized in three subsections. First, the managers' initial perceptions of the value of each relationship are described. Second, the financial measurements of value creation are provided. Finally, the changes in managers' perceptions and the actions that were taken after the financial information was made available to them are described.

Initial perceptions of the value of each relationship

As expected, based on the predictions of the relational view (Dyer and Singh 1998), all of the managers interviewed at The Restaurant Chain identified the relationship with Supplier A as the one that was creating more value when compared to the relationship with Supplier B and all of the managers interviewed at The Manufacturer identified the relationship with Retailer A as the one that was creating more value when compared to the relationship with Retailer B. However, these assessments were based on managers' perceptions only as the value created was not measured in financial terms for any of the four relationships. The quotations shown in Table 1 illustrate how managers compared each pair of relationships. One of the goals in our research was to contribute to the relational view by measuring relational value in financial terms and exploring how managers' perceptions of relational value and behaviors changed after the financial measurements were made available to them. In Phase 2 of this research, managers' perceptions were confirmed when we calculated the financial benefits of each pair of relationships for The Restaurant Chain and for The Manufacturer.

Enablers and benefits of cross-functional integration: a preliminary model based on managers' perceptions

As an initial step in answering the research question, we developed a conceptual model of the enablers and benefits of cross-functional integration based on the qualitative analysis of managers' perceptions. The final model and the five propositions that resulted from the analysis are shown in Figure 1. In Appendix A, we provide examples of managers' quotations to illustrate how codes emerged from the interview data and to show how codes were grouped into the categories that led to the conceptual model. In Appendix B, we show the frequency with which the codes were mentioned by each interviewee.

The analysis of the interview transcripts led to the identification of a broad set of enablers of cross-functional, cross-firm integration. The most recurrent codes that emerged from the interview transcripts were related to shared vision, cooperation, trust, team member attitude, and top management commitment that were present in the two relationships with integrated cross-functional teams (see Appendix A). For example, The Manufacturer's sales manager for the Retailer A account said: "We work pretty good together as a team [with Retailer A] because our senior managers, who are our mentors if you will, saw the value of everybody working together in this relationship." Our findings support the concept of supply chain orientation (Esper et al. 2010; Omar et al. 2012) because managers believed that to implement cross-functional, cross-firm teams, top management and key functional managers needed to recognize the strategic and tactical implications of managing cross-functional relationships with key customers and suppliers. Thus, the codes were grouped under a category that we labeled "Supply Chain Orientation." Based on the analysis, our first proposition is:

Figure 1: A model of the enablers and benefits of cross-functional integration: the importance of financial measurements.

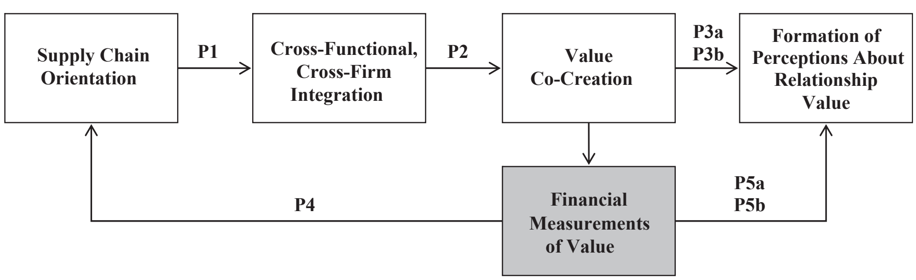

Table 1: The Restaurant Chain managers' perceptions about relationships Restaurant Chain/Supplier A and Restaurant Chain/Supplier B, and The Manufacturer managers' perceptions about relationships Manufacturer/Retailer A and Manufacturer/Retailer B

Manager	The Restaurant Chain managers' perceptions about relationships Restaurant Chain/Supplier A and Restaurant Chain/Supplier B
Purchasing Manager of The Restaurant Chain	"The relationship with Supplier A has evolved to one where key people in one firm have direct access to key people in the other firm." "Supplier A has been involved with as many different groups within our firm as they can, so they really brought valuable things to us. Supplier B is more just sales oriented, suggestions have to come from us." "The first visit that I ever had from a Supplier B representative was basically to sell boxed beef. That is the business that they are in, they sell commodities."
R&D Manager of The Restaurant Chain	"Supplier B never really worked with our product development group, they never really worked with Marketing, we never talked about logistics, we just bought a product at a price." "Supplier B considers us a very important customer, but they have basically been selling us quality, service, and price. We need more than that."
R&D Manager of The Restaurant Chain	"Our relationship with Supplier A has been unique for a number of years. It is a very deep relationship. As deep as any other supplier relationship as far as how many parts of both businesses we all touch. And that is one of the reasons that we consider it a good relationship." "Supplier A and Supplier B are just different companies. Supplier B is what I have always referred to as a boxed beef company. That is their mentality."
Logistics Manager of The Restaurant Chain	"The relationship with Supplier B has been very good. At times we wished that they would be better on the technical services and solutions that they provide." "Both suppliers have great resources, but Supplier A brings their resources to us while Supplier B does not."
Marketing Manager of The Restaurant Chain	"We don't have a lot of suppliers that get involved with our Marketing and R&D groups as Supplier A does. This has been effective for both companies." "We have been to Supplier B and talked about risk management and our marketing needs. But marketing is not their strength." "Supplier B does not help me. If I ask, they might put together a sales brochure or send me information that they bought from somebody else. I do not think they have much of a marketing group. If someone of Supplier B says that they give us a lot of market information, I have not seen it."
Operations Manager of The Restaurant Chain	"If we were rating suppliers on value added, my score would be higher for Supplier A than Supplier B. But if we only consider price and quality, they would probably come fairly equal."
Manager	**The Manufacturer managers' perceptions about the relationships Manufacturer/Retailer A and Manufacturer/Retailer B**
Account Manager of The Manufacturer	"I have found that relationships work better when we and the supplier involve many functions. Except for the relationship with Retailer A, this seldom happens." "We cannot go beyond the buyer into Retailer B's organization to show the great things that we could do together."
Finance Manager of The Manufacturer	"The relationship with Retailer B is not as nearly as in-depth as the relationship with Retailer A as far as reaching the number of people that Retailer A reaches." "We appreciate the buyer at Retailer B, but Retailer A is just much more engaged with us." "We meet regularly with their merchandising and purchasing people [Retailer A] to prepare the promotion plan and coordinate how it will be implemented."

Continued.

Table 1: (Continued)

Manager	The Manufacturer managers' perceptions about the relationships Manufacturer/Retailer A and Manufacturer/Retailer B
Marketing Manager of The Manufacturer	"There have been some nice initiatives that came out of the relationship with Retailer A." "I know many people at Retailer A, but I never met the buyer of Retailer B."
Logistics Manager of The Manufacturer	"Even though Retailer B is a huge company, we do not get access to all those other components that we get from Retailer A." "For Retailer B, I have to make sure that our product is in their stores at the right time and without any damage. That is the only thing they want from me." "We are working with Retailer A on transitioning to a centralized distribution system. This is a huge project for us and requires inputs from many people in both organizations."
R&D Manager of The Manufacturer	"They [Retailer B] just don't see the value that we can provide".

Proposition 1: A supply chain orientation at both the buyer and the supplier side of a relationship supports cross-functional, cross-firm integration.

Phrases within the interview transcripts that indicated that managers had (or had not) implemented cross-functional, cross-firm teams in any of the relationships, were coded with the label "cross-functional, cross-firm integration." Examples of the quotations that were assigned to this code are included in Table 1 and in Appendix A. Managers attributed the higher value created in relationship Restaurant Chain/Supplier A and Manufacturer/Retailer A to the existence of cross-functional teams. A common pattern that was identified during the qualitative analysis was that cross-functional integration enabled: (1) an improved communication of needs, (2) the discovery of latent needs, (3) the access to resources and ideas, and (4) the exchange of value-added services (see Appendix A).

The code "improved communication of needs" was created to include phrases with words like limitations, needs, wants, problems, "what is important for the other," goals, objectives, and opportunities, which managers used to describe how customer and supplier needs were better understood when people interacted in cross-functional teams. Managers found that it was easier to achieve consensus about customer requirements and supplier preferences when all key individuals "had direct lines of communication" instead of "having to funnel everything through the account manager and purchasing manager."[1] It was observed that functional managers from Supplier B, who were not in close contact with The Restaurant Chain, had difficulties understanding how their functions could help the other organization.

The benefits of cross-functional relationships included the possibility of "discovering, and addressing latent needs," a label that we used for a code. Latent needs are issues and problems that individuals and organizations face which have not yet been realized, so their identification by actors external to the organization is a key driver of customer satisfaction (Narver et al. 2004). The marketing manager of Supplier A illustrated this point when referring to the relationship Restaurant Chain/Supplier A: "Our relationship has gone beyond having a single point of contact. Now, we can come up with ideas on our own, anticipating [The Restaurant Chain's] needs proactively. We can do that because we know [The Restaurant Chain] so well and we have the resources to do so." Customers involved in cross-functional relationships also developed a better understanding of how they could assist suppliers to make them better co-creators of value.

Twelve managers used terms such as strengths, competences, resources, and characteristics to refer to the competences that can be accessed by interacting with the functions from the other organization. We coded the phrases that included these words as "access to resources and ideas." Since Supplier A was a large company (more than $40 billion in sales) and had a consumer goods business, managers at The Restaurant Chain saw value in using their commercial capabilities "because they do a lot more market research and R&D than we do." Managers at Retailer A valued that The Manufacturer was using their own transportation

[1]The quotations belong to the logistics manager of The Manufacturer, and the buyer of Retailer A.

fleet to "backhaul some of [Retailer A's] products when it makes economic sense." A purchasing manager of The Restaurant Chain said: "The value of a cross-functional relationship is that it allows us to understand [Supplier A's] characteristics really well. If you ever lose the relationship, then you lose the opportunity to use the strengths within that organization."

A common pattern that was identified in the relationships with cross-functional integration was that there was extensive "exchange of value-added services." Managers involved in the relationships between The Restaurant Chain and Supplier A, and The Manufacturer and Retailer A described numerous services that were exchanged beyond the basic purpose of the relationships, which was to supply raw materials for The Restaurant Chain and grocery products for Retailer A. As the Purchasing Manager of The Restaurant Chain described, cross-functional involvement enabled the exchange of services: "Supplier A has been involved with as many different groups within our firm as they can, so they really brought valuable things to us." A quotation from the Logistics Manager of The Manufacturer is used to illustrate the lack of emphasis on value-added services that existed in the noncross-functional relationships: "For Retailer B, I have to make sure that our product is in their stores at the right time and without any damage. That is the only thing they want from me."

Drawing from the literature on the Service-Dominant Logic of Marketing (Vargo and Lusch 2004), we categorized the codes "improved communication of needs," "discovering and addressing latent needs," "access to resources and ideas," and "exchange of value-added services" under a category that we labeled "value co-creation." Thus, we posit:

Proposition 2: Cross-functional, cross-firm integration is a key enabler of value co-creation.

We found that managers perceived that the relationships with more cross-functional involvement were more profitable as a result of the joint initiatives. However, they did not understand the magnitude of the impact of the initiatives on profitability because they did not quantify the value created in financial terms. Referring to this issue, the marketing manager from Supplier A said: "All the benefits of cross-functional integration are nice, but they are difficult to measure and demonstrate." A R&D manager of The Restaurant Chain explained: "We know that what [Supplier A] brings to the relationship is worth something. But its measurement is still subjective. We are working on trying to quantify the value." The purchasing managers of both The Restaurant Chain and Retailer A saw the efforts made by Supplier A and The Manufacturer, respectively, as "a long-term investment that might not be rewarded with more business."[2] Risks that could cause the relationship Restaurant Chain/Supplier A and Manufacturer/Retailer A to deteriorate were described as: pressure to reduce prices, the lack of financial measurements that captured the incremental benefits of each relationship in a holistic way, and different perceptions of the value of each relationship across functions. The buyer of Retailer A said "The benefits that we obtain from them [The Manufacturer] are hard to quantify. There is such pressure on trying to get the best price possible, that you tend not to give them credit for the value that they bring. And, that is not a great thing, because it might make them think about pulling away some of the extra services that they provide to us. This is something that we would have to rethink." The codes that emerged from the qualitative analysis were: (1) "lack of financial measurements," (2) "subjectivity of perceptions of value," and (3) "conflicting perceptions about the relationship," which were categorized under "Formation of Perceptions about Relationship Value,". The quotations provided in Appendix A illustrate how the qualitative data analysis was conducted. As the comparison of similar situations enables individuals to adjust intuitive predictions and expand the decision maker's bound of rationality (Adams 1965; Bazerman and Moore 2008; Kaufmann et al. 2009), we posit:

Proposition 3a: Managers are capable of identifying that the profit impact of initiatives conducted in a cross-functional relationship is higher than in a buyer and salesperson relationship.

Proposition 3b: Managers do not recognize the magnitude of the difference in profit impact of the initiatives conducted in a cross-functional relationship and a buyer and salesperson relationship.

Financial measurements of value created

Phase 2 of the research consisted of measuring value in financial terms in the two pairs of relationships, as described in the methodology section (for more specific information on how the numbers were calculated, see Enz and Lambert 2012). A summary of the results follows.

Measurement of value creation for The Restaurant Chain in relationship Restaurant Chain/Supplier A. The primary focus in the relationship Restaurant Chain/Supplier A was on developing new products that could be commercialized by The Restaurant Chain. Five products resulted from joint initiatives which were developed with high levels of cross-functional involvement at the stages of idea generation, conceptualization, and commercialization. Four informants from The Restaurant Chain agreed that the products would have not existed without the involvement of the managers from Supplier A. Based on The Restaurant Chain's sales forecasts for the fiscal year 2010, the five products were projected to generate a contribution of $25.9 million for The Restaurant Chain. The contribution generated by similar initiatives in 2007, 2008, and 2009 were $20.9 million, $22.7 million and $28.7 million, respectively. Prior to this research, these measurements were not captured or reported to The Restaurant Chain's management.

Measurement of value creation for The Restaurant Chain in relationship Restaurant Chain/Supplier B. The relationship Restaurant Chain/Supplier B did not involve cross-functional teams. The activities between the companies were coordinated through a salesperson and a buyer. Ideas for new products were generated by managers in The Restaurant Chain, while managers in Supplier B were responsible for developing a concept that satisfied

[2] The quotation belongs to the purchasing manager of The Restaurant Chain.

the customer requirements. Two new products were developed as the result of the relationship which in 2010 were projected to generate a contribution of $54,461 for The Restaurant Chain. Also, three cost reduction initiatives were implemented. At the request of The Restaurant Chain's buyer, the supplier salesperson asked the R&D managers at Supplier B to reformulate three products. The financial outcome for The Restaurant Chain from the three cost reduction initiatives was $304,644 in savings, which when added to the financial outcomes of the product development initiatives, totaled a projected contribution of $359,105 for The Restaurant Chain in 2010. This amount compares to profit improvements of $112,683 and $322,662 that were obtained in 2008 and 2009, respectively. In 2007, no incremental value was created through joint product development or joint cost reduction initiatives. The value created for The Restaurant Chain in the relationship Restaurant Chain/Supplier B was significantly lower than the value created in the relationship Restaurant Chain/Supplier A in each of the four years.

Measurement of value creation for The Manufacturer in relationship Manufacturer/Retailer A. The relationship Manufacturer/Retailer A was cross-functional. Managers from both firms were involved in a cross-functional initiative to transform the distribution system to deliver products from The Manufacturer to Retailer A from a direct store delivery method to central distribution center delivery method. The initiative improved the profitability for The Manufacturer by $4.1 million. Based on the experience gained in this project, The Manufacturer's management approached other customers about implementing warehouse delivery.

Measurement of value creation for The Manufacturer in relationship Manufacturer/Retailer B. No joint initiatives were conducted in the relationship Manufacturer/Retailer B. A buyer at Retailer B mediated the communication between the representatives of the different functions on both sides. This person expected good levels of service, quality, and price from The Manufacturer, but did not want to participate in joint initiatives. As there were no collaborative initiatives with Retailer B, the impact on The Manufacturer's profitability was zero.

The financial measurements of value creation supported managers' perceptions about the relationships that were having the greatest impact on profitability. However, managers did not realize the magnitude of the difference in value creation until they were provided with the financial measurements of the profit impact of the initiatives. In the next section, we describe how managers changed their behaviors toward customers and suppliers in the 17 months after we provided them with the financial measurements.

How financial measurements changed behaviors toward the relationships

Phase 3 of the research started 17 months after the financial measurements were provided to managers of The Restaurant Chain and The Manufacturer. Interviews were conducted to assess the changes in managers' perceptions and behaviors toward the relationships. The Restaurant Chain's purchases from Supplier A and Supplier B for 2008, 2009, 2010, 2011, and 2012 are shown in Table 2. In 2009, The Restaurant Chain's purchases from Supplier A and Supplier B decreased due to the bad economy. The financial measurements were provided to managers at The Restaurant Chain early in the 2010 fiscal year. The EVP of Supply Chain Management of The Restaurant Chain explained that the financial measurements led them to segment suppliers according to volume of spend and their potential for value co-creation. Supplier A was assigned to the "strategic" segment of suppliers, and purchases from them remained stable in 2010 and increased $2.6 million in 2011, and $0.5 million in 2012. The relationship Restaurant Chain/Supplier A continued to grow and new cross-functional initiatives were launched. The EVP of Supply Chain Management of The Restaurant Chain explained: "Supplier A is now engaged in even more things than just providing raw ingredients to the back of our restaurants. They are a big player in the retail industry, so they have great consumer insights for us. For example, their marketing and finance people are interacting with our purchasing, logistics, and marketing people to determine what products to sell and how to display them in our restaurants." This information was important to managers in The Restaurant Chain because the restaurants contained a store that sold a variety of food items and memorabilia.

Management knew that Supplier A was a better supplier than Supplier B and put less pressure on Supplier A than Supplier B for lower prices. But, it was not until the financial measurements revealed the difference in magnitude of the incremental value

Table 2: The Restaurant Chain's purchases from Supplier A and Supplier B

	The Restaurant Chain purchases from Supplier A		The Restaurant Chain purchases from Supplier B	
Fiscal year*	**Dollars spent**	**Cumulative increase/decrease from 2008**	**Dollars spent**	**Cumulative increase/decrease from 2008†**
2008	$16,682,275		$18,471,595	
2009‡	$15,641,571	−$1,040,704	$14,226,747	−$4,244,848
2010§	$15,618,038	−$1,064,237	$11,164,415	−$7,307,180
2011	$18,232,230	$1,549,955	$5,143,524	−$13,328,071
2012	$18,784,710	$2,102,435	$3,721,537	−$14,750,058

Notes: *The fiscal year for The Restaurant Chain ends in the first quarter of each year. For example, fiscal year 2012 ended in April 2012.
†All of the business that Supplier B lost in 2010, 2011, and 2012 did not go to Supplier A because the products that the two companies supplied were not entirely complementary. The business was captured by other suppliers that were willing to collaborate in cross-functional teams.
‡The bad economy in 2008 affected purchases for the year ending April 2009.
§The financial measurements were provided to managers at The Restaurant Chain early in the 2010 fiscal year.

Table 3: The Manufacturer's sales to Retailer A and Retailer B

	The Manufacturer sales to Retailer A		The Manufacturer sales to Retailer B	
Fiscal year*	**Sales**	**Cumulative increase/ decrease from 2008**	**Sales**	**Cumulative increase/ decrease from 2008**
2008	$13,702,372		$41,205,176	
2009	$14,464,972	$762,600	$42,978,615	$1,773,439
2010†	$16,508,650	$2,806,278	$42,844,239	$1,639,063
2011	$16,409,872	$2,707,500	$43,445,192	$2,240,016
2012	$16,845,076	$3,142,704	$44,769,663	$3,564,487

Notes: *The Manufacturer's fiscal year ends in the first quarter of each year. For example, fiscal year 2012 ended in the first quarter of 2012.
†The financial measurements were provided to managers at The Manufacturer early in the 2010 fiscal year.

being created in the two relationships that The Restaurant Chain's purchases from Supplier B fell from $11.1 million in 2010, to $5.1 million in 2011 and to $3.7 million in 2012. According to the Purchasing Director of The Restaurant Chain: "the relationship became totally transactional. By the end of this year, we will have purchased only 25% of the volume that we once purchased from [Supplier B]." The reason behind this decision was that Supplier B was not involving multiple functions in the relationship and was not thinking about value co-creation. The Purchasing Director of The Restaurant Chain explained: "You need more than one person to create a team. They lost 75% of their business because they are not interested in interacting with us on multiple fronts." Other suppliers started capturing the sales that Supplier B lost. The EVP of Supply Chain Management of The Restaurant Chain explained: "From the 75% of business that Supplier B lost, about half of it was allocated to another supplier that has engaged with us in a more cross-functional relationship. They stepped up to the table with innovation. They are engaging their R&D and manufacturing managers with our people to develop new product offerings and to find better packaging methods. Last year we purchased $2.0 million from this supplier and we have quadrupled that amount this year." Managers in The Restaurant Chain started using financial measures to evaluate value co-creation in strategic relationships with suppliers of other product categories. In addition, a senior vice-president at The Restaurant Chain stated that: "any supplier who wants to be viewed as strategic must have the willingness and capability to work in cross-functional teams and think in terms of value co-creation."

Based on this research, managers at The Manufacturer implemented profitability reports for all major customers. The Manufacturer's VP of Sales said: "now we are able to analyze the profitability with Retailer A and Retailer B on a regular basis. The profitability reports are giving everybody in our company better visibility of the returns from our investments. Our functional managers now know how much money each customer account is making or losing. Every month they have to explain the reasons for the results and what their functions will do to sustain or improve the profitability of each relationship." According to the President of The Manufacturer, new initiatives that led to the reduction of distribution costs and to more effective promotion plans were found as a result of having the profitability reports available. The new initiatives were implemented using cross-functional, cross-firm teams. In the words of The Manufacturer's VP of Sales: "we needed the involvement of multiple functions and the help that [Retailer A] provides us to implement these initiatives." The relationship Manufacturer/Retailer B was becoming more cross-functional. The Manufacturer's managers were being given access to more individuals in Retailer B, rather than having to channel all communications through the buyer as in the past. The Manufacturer's VP of Sales said: "They are bringing other managers into the relationship now, which is creating more opportunities to work with people with different backgrounds." Table 3 shows The Manufacturer's sales to Retailer A and Retailer B for 2008, 2009, 2010, 2011, and 2012. Our research started in fiscal year 2009, and the financial measurements were provided to managers at The Manufacturer in the first quarter of fiscal year 2010. Sales to Retailer A remained stable in the period 2011/2012, while sales to Retailer B increased $0.6 million in 2011 and $1.3 million in 2012 reflecting the increased cross-functional involvement.

A revised model of the enablers and benefits of cross-functional integration: the importance of financial measurements

Using an action research approach enables researchers to intervene in complex social systems with practical experiments to observe the effects and refine the understanding of the phenomena that is being studied (Ross et al. 2006). In our research, managers perceived that the relationships with more cross-functional involvement were more profitable. But without the financial measurements, managers could not determine the magnitude of the difference in incremental profitability between the relationships. Not knowing the financial benefits could have led to decisions that would have deteriorated the relationships where value co-creation was higher. For example, prior to our intervention, a R&D manager of The Restaurant Chain said: "If we are getting the same quality as Supplier A or believe we will get the same service, then we are pretty much going to go with whoever has that lowest price." In Retailer A, the buyer said "We do love partnerships. But it is tougher these days, when everybody needs more business and some suppliers come in with really low pricing. It is tough to say no, to be happy to give the business to our partner. In the last two plus years, our mission has become to look under every pebble for every part of a penny we can find." The R&D manager of The Restaurant Chain recognized:

"If they never get anything out of the relationship other than just give, give, give... eventually they will pull away."

It was only when managers were provided with financial measurements of value that they changed how they managed the portfolio of relationships. This is illustrated by the EVP of Supply Chain Management of The Restaurant Chain: "The financial measurements confirmed our belief that for key suppliers to do more business with us and to maintain business with us, they need to be cross-functional." Thus, we offer the following propositions:

Proposition 4: The availability of financial measurements of value co-creation increases managers' commitment to support the transition to a supply chain orientation.

Proposition 5a: The availability of financial measurements of value co-creation changes managers' perceptions about customer relationships.

Proposition 5b: The availability of financial measurements of value co-creation changes managers' perceptions about supplier relationships.

The model of the enablers and benefits of cross-functional integration is described in Figure 1.

THEORETICAL AND MANAGERIAL IMPLICATIONS

In this research, we addressed a gap in the supply chain management literature about the behavioral changes that can result when the outcomes of cross-functional, cross-firm initiatives are measured in financial terms and used to make customer and supplier management decisions. Our findings suggest that when complexity in a business relationship increases and value creation occurs through a diverse set of cross-functional processes, management needs financial measurements to refine their perceptions. The availability of information about the profit impact of the initiatives conducted with customers or suppliers is an effective way to mobilize management to implement cross-functional, cross-firm teams with key customers and suppliers. The model and propositions developed in this research advance supply chain management theory because little is known about how and why contributions to relational rent are judged and how managers change their companies' relationships with customers and suppliers as a result of these judgments (Greer and Ford 2009; Omar et al. 2012). Using an action research approach enabled us to observe at the organizational level the effects of providing managers with financial measurements. This is important because most research that addresses the triggers that change managers' behaviors are focused on the individual as the unit of analysis (Latham and Locke 2007; Kaufmann et al. 2009; Buffa and Ross 2011).

Our research has implications for managers who want their firms to become supply chain oriented and integrated with customers and suppliers by implementing cross-functional, cross-firm teams. The findings suggest that measuring the value of customer and supplier relationships in financial terms is a means of gaining the commitment of executives from all major organizational functions to dedicate resources to cross-functional initiatives. Because most corporate accounting systems are not designed to provide financial information based on revenues minus avoidable costs, this research may provide management with an incentive to invest in such capabilities. For example, in the case of The Restaurant Chain, the value created in the two pairs of relationships in 2009 was similar to the value created during years 2007, and 2008 but managers did not have financial measurements available to them. It was not until management at The Restaurant Chain received the financial measurements from the researchers, that they changed their behavior and purchased much less from Supplier B. Over the period 2010, 2011, and 2012, The Restaurant Chain increased purchases from Supplier A by 20.0% and reduced purchases from Supplier B by 73.8%. Perceptions of value were not sufficient to motivate managers to reallocate the volume of business given to each supplier, or it would have occurred prior to management receiving the financial measures. In the pair of cases where the focal firm was the supplier (i.e., the relationships between The Manufacturer and two of its key retailers), The Manufacturer increased the efforts to be more cross-functional with Retailer B after management was given the financial reports from the research because sales were three times larger than sales to Retailer A. As a result, sales to Retailer B increased 1.4% in 2011 and 3.0% in 2012, years during which the overall company's sales did not grow.

LIMITATIONS AND OPPORTUNITIES FOR FUTURE RESEARCH

Our research was designed to explore the enablers and the benefits of cross-functional involvement in supply chain relationships following an interpretivist paradigm. Data were collected in depth, but only from six companies (i.e., two pairs of comparable relationships), which limits the generalizability of the findings. It is difficult to find companies whose management will give access to pairs of key customer or supplier relationships and share sensitive financial information for research purposes. Colleagues could build on our conceptual model to develop a predictive model and verify our propositions through additional inductive and deductive research.

The action research approach used in Phase 2 of our research consisted of one intervention (i.e., helping managers calculate the financial measurements and delivering the written reports and presentations about the results). Action research scholars recommend conducting several "look – think – act" cycles to refine the theory being developed (Stringer 2007, 8; Näslund et al. 2010). Additional research cycles could focus on understanding how the awareness of the importance of cross-functional, cross-firm integration and financial measurements was diffused across the network of companies that belonged to the focal companies' supply chains.

Although our case study approach was longitudinal, we studied relationships that already existed. Also, in Phase 3 of the research we did not explore how the movement of business from buyer and salesperson relationships to cross-functional relationships was managed. There is a need for research to develop and test practical frameworks that managers can use to implement cross-functional relationships with key customers or suppliers (Daugherty et al. 2009). Given the relevance for theory and practice of such frameworks, action research is an appropriate methodology to use. Other supply chain phenomena that could benefit from interpretivist research are the social and individual dynamics that occur when implementing cross-functional, cross-firm teams (Omar et al. 2012). Of particular interest would be to understand how culture and managers' goal orientations (Pieterse et al. 2013) affect the influence of financial measurements on individual behaviors.

Financial measurements of value co-creation were found to be a key enabler of supply chain orientation. The financial measurements that we used were based on joint initiatives conducted in the past. The challenge for managers is to identify the relationships with the highest potential for value co-creation when there are relationships with little history of collaboration. Also, as more resources are assigned to a relationship, there might be diminishing returns in terms of the value co-created. Research is needed to provide managers with methods to identify the relationships that have the greatest potential for value co-creation. How the risks and rewards of cross-functional integration should be shared between the customer and supplier firms is another opportunity for further research.

Based on the findings of this research, future research could focus on comparing the long-term profit implications of managing customer and supplier relationships with the objective of growing the business, versus focusing on cost savings. Academics and practitioners often view the focus of supply chain management as cost reduction, with little emphasis on income generation (Christopher 2013). This will not change if the fundamental measurements of supply chain management are focused on costs.

Additional research topics include how to select and reward the members of cross-functional, cross-firms teams to maximize team performance. Research that involves the interaction of cross-functional teams from two independent companies is rare and represents another area with potential (Troy et al. 2008). Another opportunity for future research is to determine how risks and rewards should be shared in these relationships.

A survey-based approach and a deductive case study approach could be used to test the theoretical propositions posited in this research. The survey-based approach could be used to test the relationships among "Supply Chain Orientation," "Cross-functional, Cross-firm Integration," "Value Co-creation," and "Formation of perceptions about Relationship Value" (Propositions $\mathbf{P_1}$, $\mathbf{P_2}$, and $\mathbf{P_{3a}}$). Propositions $\mathbf{P_{3b}}$, $\mathbf{P_4}$, $\mathbf{P_{5a}}$, and $\mathbf{P_{5b}}$, would be very hard to test using a survey-based approach because it would require collecting and analyzing detailed financial data, and assessing managers' changes in perceptions and behaviors once the financial measurements are presented to them. Based on the findings of this research, even if managers indicate that they use financial measurements of customer and supplier profitability, it would be very difficult to evaluate the quality of the measurements with a survey questionnaire. Further, it would be unlikely that respondents would have financial measurements related to specific initiatives worked on in the relationship. In this research, we needed to guide managers through the calculation of the financial measurements. Propositions $\mathbf{P_1}$, $\mathbf{P_2}$, and $\mathbf{P_{3a}}$ could be operationalized using the scales (or an adaptation of the scales) indicated in Appendix C. These scales were identified after the research was conducted and they were not used to develop the model and propositions shown in Figure 1. The scales are offered as examples and their appropriateness for operationalizing the constructs of the theoretical model should be validated in future research. As the variation of managers' perceptions within and across organizations is a central topic in our research, multiple respondents with representation from the major organizational functions of the two firms involved in a relationship should be used as the survey sampling unit (Roh et al. 2013).

A deductive case study approach would overcome the drawbacks of a survey-based approach and would enable testing propositions $\mathbf{P_{3b}}$, $\mathbf{P_4}$, $\mathbf{P_{5a}}$, and $\mathbf{P_{5b}}$, but the generalizability of the results would be reduced. Despite being a methodology that is used less than inductive case studies, deductive case studies can be used for testing theory (Johnston et al. 1999; Barratt et al. 2011). Each case study would not be equivalent to a "sampling unit" in inferential statistics, but rather it would be used to confirm or falsify the theoretical propositions (Yin 2009). The deductive case studies should be longitudinal to enable the researcher to obtain measurements of the profit contribution of initiatives worked on in the relationships, to provide the financial measurements to managers, and to evaluate if managers change their perceptions and behaviors toward suppliers and customers as predicted in this research.

CONCLUSIONS

For individuals involved in a business-to-business relationship, the value of the relationship is determined experientially and idiosyncratically (Vargo and Lusch 2004). The differences in perceptions that often exist among representatives of the buyer and supplier firms' various organizational functions are a barrier for implementing supply chain management (Esper et al. 2010). Researchers have been encouraged to identify strategies for debiasing perceptions in supply chain environments and to explore why and how managers change their commitment to support the implementation of supply chain management (Kaufmann et al. 2009; Omar et al. 2012).

Using an action research approach, we explored the enablers and benefits of cross-functional integration in buyer–supplier dyads. The longitudinal case studies led us to develop five propositions and a model that characterize the role of financial measurements as an enabler of cross-functional integration and value co-creation. Many supplier and customer decisions are made without proper financial measurements of value creation. As a result, the benefits of developing cross-functional relationships with key customers and suppliers are underestimated. Our findings suggest that managers should implement financial measurement systems to demonstrate the value of buyer–supplier relationships in order to gain the commitment of executives from all major organizational functions to dedicate resources to cross-functional initiatives. Managers who embrace financial measurements of value co-creation can create competitively compelling offerings that benefit not only their own companies but also key customers, key suppliers, and end customers.

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APPENDIX A

EXAMPLES OF MANAGERS' QUOTATIONS AND HOW THEY LED TO THE MODEL CODES AND CATEGORIES*

Category	Codes	Selection of coded data – Manager's quotations
Supply chain orientation	Shared vision	"There has to be clarity in the team that you are partners, clarity within each organization, and clarity across both organizations." – R&D Manager of Supplier A "Since Retailer B is an enormous company, they have always considered us a small grain of sand on their beach." – Logistics Manager of The Manufacturer
	Cooperation	"It is all about the commitment to work for the joint benefit of the relationship." – Buyer of Retailer A "We love it when suppliers try to sell us more than just a product, when they work with our product development folks to show them what's new, when they work with our marketing managers to show them market trends." – Purchasing Manager of The Restaurant Chain
	Trust	"It took a lot of time to build the trust that enabled us get access to their organization. You have got to get some wins along the way to show your customer that you really want to help them. You have got to show some good faith too." – Account Manager of The Manufacturer "Once trust is built up they are more willing to say: 'OK, here is how you can help. I know you are a good supplier, you probably have this thing that would help us.'" – Sales Manager of Supplier A
	Team member attitude	"The Marketing Director [of Supplier A] is a great conduit into their company. He would go and start clawing in his internal network without taking a no for an answer. And he generally would find a way to make it happen." – Purchasing Manager of The Restaurant Chain "We have such a great relationship that everyone feels free and comfortable in calling me, and I feel comfortable too." – Sales Manager of Supplier A
	Top management commitment	"We work pretty good together as a team [with Retailer A] because our senior managers, who are our mentors if you will, saw the value of everybody working together in this relationship." – Sales Manager of The Manufacturer "You really need the commitment at the top. If I did not have that support at the top, I would have a hard time getting people from other functions to support me."– Sales Manager from Supplier A
Cross-functional, cross-firm integration	N/A	"Relationships seem to work much more smoothly when our functional managers and their functional managers already know each other." – Purchasing Manager of The Restaurant Chain "We encourage our suppliers to interact with us in cross-functional teams." – Purchasing Manager of The Restaurant Chain "It is very important that we feel that our suppliers pay attention to all our various organizational functions' needs." – Buyer of Retailer A "Not every supplier has the capabilities to interact with us in multiple fronts. But certainly, where they do, we try to hook them up with the appropriate functional counterparts in our organization." – R&D Manager of The Restaurant Chain

Continued.

APPENDIX A (Continued)

Category	Codes	Selection of coded data – Manager's quotations
Value co-creation	Improved communication of needs	"One of the advantages that [The Manufacturer] has by getting close to our company is that they really can see what we need upfront and get involved early on. So, they have an advantage over our other suppliers that comes from having a cross-functional relationship with us." – Buyer of Retailer A "Sometimes the people from Supplier A know more about what we are doing than I do, which is great. Which is the way it ought to be." – Purchasing Manager of The Restaurant Chain "Cross-functional involvement is much better than if communication starts out with me or the supplier's account manager. It would take longer to get everybody on the same page." – Purchasing Manager of The Restaurant Chain
	Discovering and addressing latent needs	"Supplier A brought some ideas to us that we did not think of, and we have actually gone with a couple of those, so we encourage this." – R&D Manager of The Restaurant Chain "We come up with projects on our own, even though it wasn't requested from Retailer A. We can do that because we know them so well and we have the resources to do so." – Marketing Manager of The Manufacturer "When I say being proactive I mean not waiting for a specific project to come in but anticipate their needs. And then focus on those things and say: here are some ways that we have thought of about helping your business." – Marketing Manager of Supplier A
	Access to resources and ideas	"Many functional managers of The Restaurant Chain have worked closely with us, so they understand our capabilities better." Sales Manager of Supplier A "The value of a cross-functional relationship is that it allows us to understand [Supplier A's] characteristics really well. If you ever lose the relationship, then you lose the opportunity to use the strengths within that organization." – Purchasing Manager of The Restaurant Chain "We bring all our resources to get The Restaurant Chain to understand strategically who their consumers are and what they're looking for. We are able to help them as opposed to coming in and having an agenda to sell a particular item." – Marketing Manager of Supplier A
	Exchange of value-added services	"We can work on the specific project that they need help on. But what we can also do is to be more involved at a strategic level and proactively engage with regards to their products and how to position them." – R&D Manager of Supplier A "If we were rating suppliers on value added, my score would be higher for Supplier A than Supplier B." – Operations Manager of The Restaurant Chain "Supplier B is a little different company than Supplier A because they are not as customer oriented." – Marketing Manager of The Restaurant Chain
Formation of perceptions about relationship value	Lack of financial measurements	"What is it worth to our company to have a supplier that can respond to things quickly? We have no way of measuring." – Buyer of Retailer B "We do not have anything official and formal to measure our suppliers' contributions, so it is kind of what you remember that they have done." – R&D Manager of The Restaurant Chain "I wish we had financial measures that would give the correct weight to quality, service, price, and all those peripheral areas where some suppliers contribute such as marketing, logistics, and R&D. I think that we should work towards that, it would make us realize which suppliers deserve our business" – Purchasing Manager of The Restaurant Chain

Continued.

APPENDIX A (Continued)

Category	Codes	Selection of coded data – Manager's quotations
	Subjectivity of perceptions of value	"Value is abstract, it is subjective, it is qualitative, not quantitative. It is easy to measure value when your relationship is transactional, but not when you have a relationship like ours with The Restaurant Chain" – R&D Manager of Supplier A "We know that what [The Manufacturer] brings to the relationship is worth something. But its measurement is still directional, we are working on trying to measure it." – Logistics Manager of Retailer A "Without good systems you cannot make those connections [i.e., measurements] between companies, so it is very subjective." – Account Manager of Supplier A
	Conflicting perceptions about the relationship	"The way in which [The Manufacturer] engages with us creates the good feelings that will make you want to work with them again. Now, it doesn't mean that they are always going to get the business… and I can probably cite you several examples of times that they thought they had some of our business and then it went through their fingers. Generally due to issues related to price." – Buyer of Retailer A "All the resources that [The Manufacturer] brings to us are just to build the relationship. It is an investment that they make. They are investing in the future and hoping that it will pay off, that we will give them more business. But there is no guarantee to it. At least that is the way we have operated." – Finance Manager of Retailer A "Measuring value is an issue that we are having with several of our suppliers. They say: ' We are bringing you all of this value'. And I say: 'OK, quantify it for me, show me'. And it is hard, it takes time and effort." – Buyer of Retailer B

Note: *The following codes were identified during the analysis of the interview transcripts, but were not included in the conceptual model because they were considered to be out of the scope of the paper or were mentioned less frequently by the interviewees: "Compatible organizational structures," "Team design," "Organizational capabilities," "Account manager's personality," "Power imbalances," "Operational efficiency," "Industry type," "Multidivisional companies," "Corporate strategies," and "Frequency of interactions."

APPENDIX B

FREQUENCY IN WHICH CODES WERE MENTIONED BY EACH INTERVIEWEE

		Formation of perceptions about relationship value			Supply chain orientation					Value co-creation					
Company	Interviewee job title	Conflicting perceptions about the relationship	Lack of financial measurements	Subjectivity of perceptions of value	Cooperation	Shared vision	Team member attitude	Top management commitment	Trust	Access to resources and ideas	Discovering and addressing latent needs	Exchange of value-added services	Improved communication of needs	Cross-functional, cross-firm integration	Total
The Restaurant Chain	Logistics Manager 1				1	1		1						1	5
	Logistics Manager 2				1						1				2
	Marketing Manager			1					1	1	1	1		1	6
	Operations Manager 1		1				1								2
	Operations Manager 2				2							1		1	4
	Purchasing Manager	2	1	1	1		1			1		1	2	2	12
	R&D Manager 1	1					2			1			1	1	6
	R&D Manager 2		1						1		1			1	4
	R&D Manager 3									1				2	3
Supplier A	Account Manager			1		1	1		1		1		2	2	9
	Finance Manager		2					1							3
	Marketing manager		1				1			1	2			1	6
	Operations Manager	1			1							1		1	4
	Purchasing Manager									1					1
	R&D Manager			1		1					2	1	1	1	7
	Sales Manager							1	1	1				1	4

Continued.

APPENDIX B (Continued)

		Formation of perceptions about relationship value			Supply chain orientation					Value co-creation					
Company	Interviewee job title	Conflicting perceptions about the relationship	Lack of financial measurements	Subjectivity of perceptions of value	Cooperation	Shared vision	Team member attitude	Top management commitment	Trust	Access to resources and ideas	Discovering and addressing latent needs	Exchange of value-added services	Improved communication of needs	Cross-functional, cross-firm integration	Total
Supplier B	Marketing manager			1		1					1				3
	Finance Manager		1	1									1		3
	Production Manager 1				1			1	1						3
	Production Manager 2							1							1
	R&D Manager 1			1										1	2
	R&D Manager 2									1			1	1	3
	R&D Manager 3	1	1	1											3
	R&D Manager 4												1		1
	Sales Manager 1	2				2		1						1	6
	Sales Manager 2	1		1					1				1	2	6
	Sales Manager 3	1		1											2

Continued.

APPENDIX B (Continued)

		Formation of perceptions about relationship value			Supply chain orientation					Value co-creation					
Company	**Interviewee job title**	**Conflicting perceptions about the relationship**	**Lack of financial measurements**	**Subjectivity of perceptions of value**	**Cooperation**	**Shared vision**	**Team member attitude**	**Top management commitment**	**Trust**	**Access to resources and ideas**	**Discovering and addressing latent needs**	**Exchange of value-added services**	**Improved communication of needs**	**Cross-functional, cross-firm integration**	**Total**
The Manufacturer	Account Manager	1	1					1	1			1		2	7
	Finance Manager		1												1
	Logistics Manager 1					1				1	1			1	4
	Logistics Manager 2											1		1	2
	Marketing manager			1		1						1			3
	Operations Manager								1			1		1	3
	Production Manager 1						1								1
	Production Manager 2													1	1
	R&D Manager	1								2			1	1	5
	Sales Manager		1		1			1						1	4
Retailer A	Buyer	2		1	1								2	1	7
	Finance Manager	1	1					1				1		1	5
	IT Manager		1												1
	Logistics Manager 1			1	1				1	2				1	6
	Logistics Manager 2	1									1				2
	Logistics Manager 3			1	1	1							1	2	6
	Logistics Manager 4	1					1		1		1			1	5
	Operations Manager		1					2							3
Retailer B	Buyer	1	1												
	Total	17	15	14	11	9	8	11	10	13	12	11	14	34	179

APPENDIX C: SCALES THAT COULD BE USED TO OPERATIONALIZE THE CONSTRUCTS OF THE THEORETICAL MODEL

Construct	Scale name and source	Description and sample items
Supply chain orientation	Supply chain orientation (Min and Mentzer 2004)	The scale is comprised of 20 items that measure six secondary order factors: • Credibility • Benevolence • Commitment • Cooperative norms • Compatibility • Top management support
Cross-functional, cross-firm integration	Cross-functional coordination (Eng 2006)	The scale is based on Ellinger (2000) and Pinto et al. (1993). Items include: • We are encouraged to work together across functions in our supply chain* • We share resources, ideas and information between functions in our supply chain • We informally work together as a team with our supply chain members • We achieve goals collectively with our supply chain members • We adapt our business processes together with other functions to develop strategies
Value co-creation	Responsive customer orientation; Proactive customer orientation (Blocker et al. 2011)	The two-factor scale includes the concepts of “improved communication of needs,” “discovering and addressing latent needs,” and “access to resources and ideas” that emerged as codes in our research. The scale would need to be adapted to operationalize value co-creation as perceived by the supplier’s managers. The scales consist of the following items. *Responsive Customer Orientation:* This supplier: • Always responds effectively when we ask them to make changes • Takes immediate action when we tell them we’ve changed what we want from the relationship • Reacts quickly to our requests for changes • Is always flexible to adapt to changes that we request • Never stops short of fully accommodating our requests for changes • Is always willing to accommodate our requests for changes *Proactive Customer Orientation* This supplier: • Excels at anticipating changes in what we need from them before we even ask • Seems to spend time studying changes in our business environment so they can exercise better foresight about our future needs • Successfully anticipates changes in our needs • Presents new solutions to us that we actually need but did not think to ask about • Is always looking for clues that might reveal changes in what we value beyond what we currently ask of them • Presents new ideas to us that help us keep pace with our changing environment

Continued.

APPENDIX C: (Continued)

Construct	Scale name and source	Description and sample items
Formation of perceptions about relationship value	Relationship value (Ulaga and Eggert 2006)	The scale was designed to be used by managers in the customer side of the relationship, by comparing to other suppliers. The scale should be adapted for operationalizing relationship value from the perspective of the supplier managers. The items included are: • Compared with the second supplier the main supplier adds more value to the relationship • Compared with the second supplier we gain more in our relationship with the main supplier • Compared with the second supplier the relationship with the main supplier is more valuable • Compared with the second supplier the main supplier creates more value for us when comparing all costs and benefits in the relationship

Note: *We recommend that researchers change the question to “We are encouraged to work together across functions with key customers and suppliers” because in most companies it would not be financially advantageous to implement cross-functional teams with all customers and suppliers.

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SHORT BIOGRAPHIES

Matias G. Enz (PhD The Ohio State University) is an Assistant Professor of Supply Chain Management at Universidad Nacional de Rosario (Argentina), a member of The Global Supply Chain Forum research team at The Ohio State University, and a Research Fellow at Cranfield University (UK). His research interests are in the areas of supply chain management, business relationships, and interorganizational collaboration. He also holds an Industrial Engineering degree from Universidad Nacional de Rosario (Argentina).

Douglas M. Lambert (PhD The Ohio State University) holds the Raymond E. Mason Chair, is Professor of Marketing and Logistics, and Director of The Global Supply Chain Forum, Fisher College of Business, at The Ohio State University. His research interests include supply chain management, the role of partnerships in achieving a competitive advantage, and measuring and selling value. He has published more than 100 articles in numerous journals including *Harvard Business Review*, *Journal of Business Logistics*, and *Journal of Retailing*, and is editor of *Supply Chain Management: Processes, Partnerships, Performance* which is in its 4th edition.