CO-CREATION OF VALUE: MANAGING CROSS-FUNCTIONAL INTERACTIONS IN BUYER-SUPPLIER RELATIONSHIPS

Dissertation

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

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2009

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ABSTRACT

The involvement of representatives from multiple organizational functions is recommended for developing close relationships with key customers and suppliers. The way in which cross-functional interactions are managed can determine the success or failure of a buyer-supplier relationship in terms of the ability to co-create value. The goal for this research was to provide a deeper understanding of the role of cross-functional involvement in fostering the co-creation of value in interorganizational buyer-supplier relationships. Two pairs of relationships with different levels of cross-functional involvement were compared. Data were collected from interviews with 46 managers and from financial records. Value co-creation was estimated in financial terms and was compared with the managers’ perceptions of value. The results indicate that the relationships in which more cross-functional initiatives were conducted achieved higher levels of value co-creation. However, managers normally did not use financial measurements that captured total value co-creation. Without sound measurements of value co-creation, managers base their decisions on price or perceptions that can be inaccurate, incomplete or biased. The qualitative data collected from the interviews were used (1) to describe the reasons for managers not measuring value co-creation in financial
terms, (2) to explain the mechanisms by which value was co-created when more functions were involved, and (3) to identify the challenges and the success factors associated with implementing cross-functional teams with key customers and suppliers. Managers can use the research findings to quantify the financial value of buyer-supplier relationships. With this information, customers and suppliers can be segmented and managed based on total value co-creation and not on perceptual measurements of value. The findings can be used to demonstrate top managers and functional managers the financial value of developing cross-functional relationships and to gain their commitment to develop cross-functional relationships. Managers can use the findings to implement cross-functional teams that foster the co-creation of value with key customers and suppliers. Past research on relationship marketing was conducted using perceptual data from few managers from one side of the dyad. The development of better measurements of the financial impact of marketing investments was identified as an imperative for improving marketing thought (Brown et al. 2005). Academics will find this research useful because financial measurements were developed to determine the value of buyer-supplier relationships. Also, the literature on value co-creation and on cross-functional teams was taken to the next step by demonstrating the relevance of developing cross-functional teams in business-to-business contexts. Opportunities for further research on value co-creation were described.
DEDICATION

This dissertation is dedicated to my beloved wife María Eugenia
ACKNOWLEDGEMENTS

First and foremost I want to thank my advisor Dr. Douglas M. Lambert. He recognized the potential in the topic of value co-creation and encouraged me to pursue it in my dissertation. I appreciate all his contributions of time, guidance and funding to make this research better. He is an example of passion for research, dedication, and commitment to excellence. His determination to find companies to conduct case studies and his involvement to motivate managers to participate in the research were fundamental to make this dissertation possible. All his help is greatly appreciated.

Special thanks go to Dr. A. Michael Knemeyer who has always been approachable and willing to discuss issues related to my dissertation and to provide friendly advice on my career as an academic. His insightful feedback about the content of the dissertation helped to raise the quality of the dissertation.

My appreciation also goes to Sebastian Garcia-Dastugue. He played an important role in my decision to pursue an academic career, and he continued to encourage me throughout the Ph.D. program. His advice was especially relevant for me because he shares and understands my cultural background. His detailed comments considerably improved the readability and content of the dissertation.
Keely Croxton deserves my gratitude for becoming involved in my dissertation committee at an advanced stage. This is just an example of her passion to help doctoral students. Having her in the dissertation committee greatly improved the quality of the dissertation.

My deepest appreciation goes to all the managers that sponsored this research and to those that participated in the interviews. Finding executives that were committed to sponsor the research was difficult. Executives not only had to convince managers at the multiple functions of their own companies, but they also had to gain the commitment of multiple executives at their customer and supplier firms. Only leaders that are passionate, generous and that feel that can make a contribution to knowledge can achieve this. I was lucky enough to find a group of managers that have these qualities. They contributed their time and shared their opinions openly. I am particularly indebted to those managers that were contacted more often than it was agreed initially to ask for more data. My hope is that the findings from this research can compensate their effort.

The members of the Global Supply Chain Forum (GSCF) have contributed immensely to this dissertation. I would like to thank them for their active participation during my presentations and for providing feedback that helped me to refine the research and assess its impact on industry. Again, I wish to thank my advisor Dr. Lambert for involving me in the GSCF, which is an incredible source of business expertise and of relevant research ideas.

Many faculty, staff, and students at the Fisher College of Business assisted and encouraged me during the course of my studies. I am especially grateful to Dr. Robert
Burnkrant, Dr. Martha Cooper, Dr. Walter Zinn, Dr. John Saldanha, Dr. W.C. Benton, Dr. Michael Browne, and Shirley Gaddis. My friends Francois Charvet, Rudi Leuschner, Ned Sandlin, Cuneyt Eroglu, Ping Wang, Tim Petit, Chris Randall, Erin Silvert-Noftle, Steve Robeano, Steve Hills and the people at CIBER are very special for me. I thank Ignacio Sanchez Chiappe for being the person who first suggested me to apply to the doctoral program in logistics at The Ohio State University.

Finally, my deep gratitude goes to the people that I love. This adventure would not have been as enjoyable without my wife Maria Eugenia. I admire and love her energy and her patience in caring for our family, even when she gave up an important part of her life to do so. To my two baby daughters Catalina and Juli. You illuminate my life and you make each day more joyful. It is great to share my life with you, and I hope that when you grow you realize what we have achieved together and remember these glorious days at this, your buckeye state. To my family and Maria’s family. Thank you so much for your support, even when we know how much you missed us and how much you would have liked to see your granddaughters, great-granddaughters, nieces, and cousins grow. We would not have made it without you. To our old friends that are always in our hearts and to the new friends that we made. The love that we have received from you is and will always be with us. We now have another journey before us. As always, I thank god for who we are, what we have, and for guiding our lives.
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CHAPTER 1
INTRODUCTION

Faced with increased pressure to reduce costs and improve revenues, managers are looking for ways to enhance the value that their firms create for customers. Managers increasingly realize that segmentation and the development of close relationships with key customers and suppliers are essential for achieving their goals (Lambert 2008). Close buyer-supplier relationships enable the co-creation of value, which is manifested in increased customer loyalty (Ganesan 1994), increased efficiencies (Stank et al. 2003) and increased innovation (Huston and Sakkab 2006). Value is co-created when the parties involved in a relationship combine their knowledge and skills in order to achieve higher profits. In a business-to-consumer context, the consumer is a co-creator of value when he/she engages in activities such as design, marketing, delivery, installation, consumption and maintenance (Vargo and Lusch 2004). By designing and managing the consumer interactions in these activities, managers can develop and realize value co-creation opportunities (Ramani and Kumar 2008; Payne, Storbacka and Frow 2008). The consumer’s perception of the value that he/she receives is influenced by the way in which the interactions are managed.
Developing relationships that foster the co-creation of value is more challenging in business-to-business contexts than in business-to-consumer contexts. In a business-to-business context, knowledge and skills reside in the various functions of the companies involved in the relationship (Vargo and Lusch 2004; Lambert and García-Dastugue 2006). Individuals from the various functions need to interact in order to exchange information that enables value co-creation, but conflicting goals, misaligned performance measures and different cultures can become barriers (Ballantyne and Varey 2006; Lambert 2008). The assessment of the value that is co-created should not be left to the perceptions of the individuals that participate in the exchange. The perceptions of value usually differ among individuals from different functions and from different sides of the relationship (Baba 1988; Mezias and Starbuck 2003). Perceptions and emotions play a determinant role in a business-to-consumer context, but should not be as important in business-to-business contexts (Payne, Storbacka and Frow 2008). Managers on both sides of the relationship need objective financial information to make sound decision about how to manage suppliers and customers (Dudick 1987; Lambert and García-Dastugue 2006).

Traditional accounting systems do not provide the financial information that managers need to allocate resources to the most profitable customers and suppliers (Lambert 2008). The financial outcomes of the initiatives conducted in a buyer-supplier relationship are not measured by specific customer or supplier accounts. Similarly, marketing and logistics costs are recorded in aggregated accounts, which prevents the assignment of these costs to the individual customers or suppliers.
In this dissertation, value co-creation in buyer-supplier relationships was investigated. A case study approach was used to measure value co-creation in financial terms. Relationships with different levels of cross-functional involvement were compared in order to understand the mechanisms by which value was co-created and the factors that prevented and fostered performance. In this chapter, I will present the problem statement, the research objectives, the research questions, an overview of the methodology, a summary of the research contributions, and an outline of the rest of the dissertation.

1.1 Problem statement

The management problems and the gaps in the literature that motivated this dissertation on value co-creation are presented in this section. The management of buyer-supplier relationships is one of the top priorities in most organizations (Dwyer, Schurr and Oh 1987; Day 2000). This has become increasingly relevant as companies rely on their upstream and downstream supply chain members to conduct business activities that were previously performed in-house (Webster 1992; Day 2000). It is through better relationship management that loyalty, trust, and the commitment to work together are developed (Morgan and Hunt 1994; Sirdeshmukh, Singh, and Sabol 2002). In buyer-supplier relationships, firms can complement their strengths and overcome their weaknesses by leveraging their resources and capabilities. Customers can be better served, costs reduced, and knowledge shared in order to uncover value co-creation opportunities (Ramirez 1999). Collaboration in buyer-supplier relationships is an important driver of value creation (Jap 1999; Soonhong et al. 2005).
However, establishing and maintaining close buyer-supplier relationships is challenging. A relationship structured ineffectively may result in frustration and in an unnecessary waste of valuable resources for the organizations that are involved (Lambert, Emmelhainz, and Gardner 1996). The segmentation of customers and suppliers based on their potential for co-creating value is a cornerstone of effective relationship management (Lambert 2008). Important research has been conducted to assist in the selection and development of the appropriate type of relationship. Lambert, Emmelhainz and Gardner (1996) developed The Partnership Model, which consists of a series of sessions in which representatives of the customer and the supplier companies assess the drivers and the facilitators of partnership, determine the right type of partnership and develop action plans to adjust the partnership components to a prescribed level. Opportunities for value creation can be detected during the partnership session. However, the partnership model does not reveal how the components should be managed and how value co-creation should be measured after the relationship has been configured. Other opportunities for value co-creation can arise from the day-to-day interactions between the members of both companies. The understanding about co-creation of value can be broadened if the interactions between members of the organizations are analyzed over time. This view is supported by Payne, Storbacka and Frow (2008, p. 85), who call for a process view of value co-creation, which “accentuates the need to view the relationship between the provider and the customer as a longitudinal, dynamic, and interactive set of experiences and activities.”
This dissertation represents an empirical investigation of how managers manage the cross-functional interactions with key customers and suppliers in order to foster the co-creation of value. Interactions were defined as the exchange processes that occur at all levels within a buyer-supplier relationship (Payne, Storbacka and Frow 2008). Daily interactions are the essential activities in which a relationship comes to life. When properly managed, interactions create a unique environment for co-creating value (Normann and Ramirez 1993; Etgar 2008).

Researchers in the area of relationship management have explained the variables that influence buyer-supplier relationship performance, the causal ordering of variables, and the environmental conditions that moderate the effects on performance\(^1\). However, the research is typically limited to providing a static picture of the mechanisms that lead to value co-creation. Researchers strived to test hypotheses that depict “what” needs to be done “when” certain conditions exist, in order to achieve the desired level of relationship performance. Researchers used survey based research methods in order to achieve generalizations (Palmatier et al. 2006). A drawback from survey based research is that the findings are often highly abstract and simplified, and do not capture the subtle mechanisms that occur on a daily basis at all levels of a relationship (Baba 1988, Yin 1989). For instance, questions about how value is co-created, why cross-functional interaction fosters the co-creation of value, and how managers measure and communicate the value co-created are not addressed. Moreover, surveys are usually designed for a single respondent that belongs to a single organization in the relationship. Single-

\(^1\) A review of the literature on relationship management is provided in Chapter 2.
respondent surveys do not adequately capture the multi-functional and multi-organizational issues that are inherent in buyer-supplier relationships (Baba 1988; Boyer and Verma 2000; Handfield 2002; Zacharia and Mentzer 2004).

More detailed descriptions about the conditions that foster or prevent value co-creation and the methods that can be used to measure value co-creation are needed. As noted by Lambert, Knemeyer and Gardner (2004), “One difficulty when moving research from theory to practice is that researchers often ignore the complexities of implementing their models.” There is a need to understand not only the “whats” (e.g., what leads to value co-creation?) and the “whens” (e.g., when is value co-created?), but also the “whys” (e.g., why do cross-functional buyer-supplier relationships foster the co-creation of value?) and the “hows” (e.g., how is value co-creation measured and communicated?). Most literature about co-creation of value is focused on business-to-consumer relationships (Bendapudi and Leone 2003; Payne, Storbacka and Frow 2008). That is, the scope is limited to the interactions that occur between a firm’s resources (i.e., employees, technology, and physical surroundings) and an individual consumer (Bitner 1992). Co-production in the business-to-consumer literature is seen not only as an opportunity to reduce a firm’s costs, but also as a means to affect the consumer’s emotional responses by creating an appealing experience (Prahalad and Ramaswamy 2004). The contributions from the business-to-consumer literature are not completely translatable to co-production situations that occur in interorganizational relationships. Interorganizational relationships are characterized by multiple touch points between

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2 A review of the literature on consumer participation in the co-production of goods and services can be found in Bendapudi and Leone (2003).
multiple entities (individuals from the various functions and resources in general) in both organizations. In order to manage interactions in this more complex business-to-business context, the coordination of multiple organizational functions from both organizations becomes paramount (Lambert and García-Dastugue 2006). The diverse knowledge and capabilities required to compete are increasingly spread across different supply chain members and across different organizational functions (Lambert 2008). Individuals with different expertise need to come together and share their specific skills and knowledge. Cross-functional collaboration can lead to the co-creation of value by leveraging the knowledge and capabilities that reside in the different business functions of an interorganizational relationship (Lambert and García-Dastugue 2006).

A growing number of scholars are supporting the view that the implementation of cross-functional business processes is key to achieving competitive advantage (Day 1994; Cooper, Lambert and Pagh 1997; Srivastava, Shervani and Fahey 1999; Vargo and Lusch 2004). Research on team and group management provides insights about the factors that influence team performance and about how to design teams (e.g., Hackman 1987, Campion, Medsker and Higgs 1993, Delgado et al. 2008). However, most research focuses on team dynamics that occur within a single company (Trent and Monczka 1994). Research that involves the interaction of cross-functional teams with members that belong to two independent companies is rare. There is a need to explore how value is co-created when individuals from multiple functions from both firms in a buyer-supplier relationship interact.
This research addressed the gaps in the literature by comparing two pairs of buyer-supplier relationships with different levels of cross-functional involvement. Managers and academics will find the research findings interesting. Recommendations about how to foster value co-creation in buyer-supplier relationships are provided and a method to measure value co-creation in financial terms is suggested. Having presented the managerial problems and the gaps in the literature, the research objectives are formalized next.

1.2 Research objectives

The primary purpose for this research was to explain the mechanisms by which value is co-created when individuals from multiple functions are involved in a buyer-supplier relationship. In order to achieve this goal it was necessary to measure the value co-created in the relationships that participated in the research as objectively as possible. Therefore, another purpose of this research was to develop a method to measure value co-creation in financial terms. In summary, the research objectives were:

1. To develop a method that managers can use to measure value co-creation in buyer-supplier relationships.
2. To inform managers about the mechanisms by which value is co-created.
3. To explain the challenges and key success factors for developing cross-functional teams across organizations.
4. To provide managers with guidelines to address the challenges and success factors for implementing cross-functional teams.
1.3 Research questions

After establishing the research objectives, a set of research questions were formulated:

1. How is the value that is co-created in cross-functional relationships measured and communicated?
2. Why does cross-functional involvement lead to co-creation of value?
3. How are cross-functional interactions between organizations designed and managed?

Given the nature of the research questions, a case study approach was used to address them. An overview of the methodology is provided in the next section.

1.4 Overview of the methodology

A case study approach is appropriate for exploratory studies that are focused on phenomena that have not received sufficient research attention. It was particularly appropriate for this research because the topic involves the understanding of complex social phenomena (Yin 1989) that occur in cross-functional interactions. The utilization of the case study method allows the researcher to acquire various individuals’ perceptions about a phenomenon and to assess holistically a larger number of contextual factors, which would not be possible if using a quantitative method.

Data were collected by interviewing individuals on both sides of four buyer-supplier relationships. The interviewees were specifically selected in order to represent a diverse set of organizational functions and responsibilities. Relationships were selected applying a theoretical sampling method, which establishes that cases should be selected
in order to enable the comparison of contrasting situations. Recommendations from the literature on how to implement the case study approach and on how to conduct qualitative data analysis were followed to increase the internal and external validity of the findings (e.g., Eisenhardt 1989, Yin 1989, Miles and Huberman 1994). For example, multiple sources of data such as observations from meetings, financial reports, archive records, and interviews with managers from multiple functions and companies were used to increase construct validity.

The analysis of the qualitative and the financial data led to answers to the research questions. The contributions of this research are presented in the next section. A more thorough description of the research methodology is presented in Chapter 3.

1.5 Contributions

This research resulted in a number of contributions for managers and to the literature. Managers should find the research useful for four reasons. First, an assessment of the challenges that managers faced in measuring value co-creation is provided. To complement this information, a method for measuring value co-creation in buyer-supplier relationships was developed. Using this method, managers can base the decisions that impact their key buyer-supplier relationships on the total value co-created instead of based on price alone or perceptions that may be wrong. Second, the mechanisms that lead to value co-creation are described. Managers can use this information to communicate the benefits of cross-functional involvement in order to gain the commitment of key individuals. Third, the key success factors for implementing cross-functional teams with suppliers or customers are described. The factors that can put at risk the success of cross-
functional teams are highlighted. Managers can use this information to evaluate the feasibility of implementing cross-functional teams and to increase the chances of developing teams that foster co-creation of value.

Academics should find the research useful for a number of reasons. First, the literature on value co-creation is focused primarily on business-to-consumer contexts. This research extends and validates the notion of value co-creation in business-to-business contexts. Second, the evaluation of value co-creation in the marketing literature was based on management perceptions. In this research, a method for measuring value co-creation in financial terms is provided. The method was used in the relationships that participated in the research to demonstrate quantitatively the importance of cross-functional involvement in enhancing value co-creation. Third, explanations are provided about how value is co-created in terms of service provision, exchange of knowledge and skills, and joint initiatives. The conceptual framework that was developed based on the literature was extended and validated.

1.6 Outline of the study

In this introductory chapter, the problem statement, the research objectives, the research questions, the methodology, and the contributions were described. The rest of the dissertation is organized into five chapters.

Chapter 2 includes a literature review. The chapter starts with an explanation of the concept of value co-creation through the lenses of six schools of marketing thought. Then, a conceptual framework is presented to clarify the understanding of value co-creation used in this research. The chapter ends with a review of previous academic work
that provided partial answers to the research questions. The literature review includes comments about the contributions and limitations of each piece, thus providing clarity as to the contribution of the current study to the literature.

Chapter 3 contains a description of the research methodology. The chapter starts with an overview of the case study approach in general. The research design and the research methodology are presented next. The chapter includes a description of the sample selection procedures, the data collection instruments, the data collection process, and the data coding and data analysis techniques that were used. Every effort was made to ensure the robustness of the study.

Chapter 4 contains the main findings of the research. The chapter reports on the outcomes of the data analysis in relation to the three research questions. The first question is addressed by describing the methods that managers used to measure and communicate value co-creation. The second question is addressed with an explanation of the mechanisms that enabled value co-creation in the cross-functional relationships. The third question is addressed by describing the approaches that managers used to manage the cross-functional relationships.

Chapter 5 describes a method for measuring value co-creation in financial terms. The use of the method is illustrated by measuring value co-creation in the relationships that participated in the research. The initiatives conducted in each relationship and their outcomes are compared between cases. Conclusions about the role of cross-functional involvement in value co-creation and about the importance of measuring relationship performance in financial terms are provided.
Chapter 6 includes a summary of the research and the major conclusions. The limitations of the study and directions for future research are provided. At the end, the contributions for both managers and academics are emphasized.
CHAPTER 2
LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

2.1 Introduction

A literature review was conducted to develop a better understanding of the concept of value co-creation. The outcomes of the literature review are described and the gaps in the literature are identified in this section. A conceptual framework based on the insights gained from the literature review is presented at the end of the chapter.

2.2 Value creation

It is generally accepted that the ultimate goal for any business is to create value for the stakeholders (Woodruff 1997). This explains why the concept of value has historically been an object of extensive research inquiry (Payne and Holt 2001). Value has received attention from the fields of economics, strategy, sociology, psychology, logistics and marketing. Especially in the marketing literature, researchers have strived to define value (e.g., Woodruff 1997), to understand how customers perceive value (e.g., Anderson and Narus 1998), and to determine the drivers of value (e.g., Narver and Slater 1990).
These efforts resulted in broad acceptance of the importance of value creation as a research topic. However, it has not been possible to come to an agreed-upon, universal, and precise conceptualization of value (Payne and Holt 2001). Several conceptualizations coexist, some reinforce each other, while some others are contradictory (Vargo and Lusch 2004). This divergence is understandable considering that consumers’ perceptions of value are highly abstract, subjective and situational. Consequently, it was important to review the literature in order to get acquainted with the different interpretations of value. The goal was to clarify the view of value creation that is used in this research.

2.3 Conceptualization of value in different schools of thought

In this section, a summary of each of six schools of thought that have addressed the concept of value is presented. The schools were classified according to two different views about value: the industrial view of value and the co-productive view of value. Finally, conclusions are presented and the position used in this study is explained.

The six schools of thought were based on the description of the evolution of marketing thought provided by Vargo and Lusch (2004). The six schools of thought that are reviewed for their view of value are: 1) the Resource Based View of the firm (RBV) school, 2) the Value Chain (VC) school, 3) the Transaction Cost Economics (TCE) school, the Functional View of Marketing (FVM) school, the Relationship Marketing (RM) school, and the Supply Chain Management (SCM) school.

Table 1 shows the six schools of thought along with a summary of their main premises, their view of value, and examples of representative academic work.
## Table 1. Conceptualization of value within different schools of thought

<table>
<thead>
<tr>
<th>School</th>
<th>Key Premises</th>
<th>View of value</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Resource Based View of the firm (RBV) school</td>
<td>Competitive advantage is derived from the resources that a firm controls. The resources have to be difficult to imitate, to transfer, or to substitute. Resources include assets, capabilities, processes, attributes, information and knowledge.</td>
<td>Value resides in the resources that through their rarity, inimitability and non-substitutability allow the exploitation of opportunities and the neutralization of threats.</td>
<td>Penrose (1959); Schumpeter (1983); Wernerfelt (1984); Barney (1986, 1991); Priem and Butler (2001)</td>
</tr>
<tr>
<td>The Value Chain (VC) school</td>
<td>Competitive advantage and value are created by effectively performing a sequence of linked activities.</td>
<td>Value is the amount that customers are willing to pay for what is offered by the firm.</td>
<td>Porter (1985)</td>
</tr>
<tr>
<td>The Transaction Cost Economics (TCE) school</td>
<td>Costs and difficulties associated with market transactions sometimes favor hierarchies (or in-house production) and sometimes markets as economic governance structures. This balance is affected by coordination costs, operational risk, opportunism risk, asset specificity, uncertainty and trust.</td>
<td>Value is determined by the efficiency of the transactions.</td>
<td>Coase (1937, 1960); Klein, Crawford and Alchian (1978); Williamson (1981, 1985)</td>
</tr>
<tr>
<td>The Functional View of Marketing (FVM) school</td>
<td>Marketing is a decision-making activity directed at satisfying customers at a profit by targeting a market and making optimal decisions on the marketing mix.</td>
<td>Value arises from optimizing the marketing mix. The focus is on the firm’s internal variables, while demand and external forces are seen independent and non-controllable.</td>
<td>McKitterick (1957); McCarthy (1960); Kotler (1967); Anderson (1982); Håkansson and Waluszewski (2005)</td>
</tr>
<tr>
<td>The Relationship Marketing (RM) school</td>
<td>Concerns attracting, developing and retaining customer relationships. Refers to all marketing activities directed towards establishing, developing, and maintaining successful relational exchanges.</td>
<td>Value arises from customer retention rather than individual transactions, and helping the customer to achieve his/her objectives.</td>
<td>Berry (1983); Dwyer, Schurr and Oh (1987); Webster (1992); Morgan and Hunt (1994); Gummesson (1994, 2002); Sheth and Parvatiyar (2000)</td>
</tr>
<tr>
<td>The Supply Chain Management (SCM) school</td>
<td>It is the integration of key business processes from end user through original suppliers that provides products, services, and information that add value for customers and other stakeholders.</td>
<td>Value is created from transactional efficiencies and enhanced relationships when key business processes are integrated within and across members of the supply chain.</td>
<td>Cooper, Lambert, Pagh (1997); LaLonde (1998); Mentzer et al. (2001); Christopher and Towill (2002); Lambert (2008)</td>
</tr>
</tbody>
</table>
2.4 The industrial view versus the co-productive view of value

According to Ramirez (1999), the concept of value has evolved over time from an industrial view to a co-productive view. Table 2 shows the characteristics of the industrial view and the co-productive view of value.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Industrial view</th>
<th>Co-productive view</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Schools</strong></td>
<td>Resource Based View</td>
<td>Relationship Marketing</td>
</tr>
<tr>
<td></td>
<td>Value Chain</td>
<td>Supply Chain Management</td>
</tr>
<tr>
<td></td>
<td>Transaction Cost Economics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Functional View of Marketing</td>
<td></td>
</tr>
<tr>
<td>1- Modality of value creation</td>
<td>Value creation is discrete, sequential, and unidirectionally transitive.</td>
<td>Value creation is continuous, simultaneous, and interactive.</td>
</tr>
<tr>
<td></td>
<td>Value added and is best described in ‘value chains’.</td>
<td>Values are co-invented, combined and reconciled.</td>
</tr>
<tr>
<td></td>
<td>Value is ‘realised’ at the transaction, only for the supplier (event).</td>
<td>Value is co-produced with the customer, over time—for both co-producers.</td>
</tr>
<tr>
<td></td>
<td>Value is a function of utility and rarity.</td>
<td>Exchange is the source of utility and rarity.</td>
</tr>
<tr>
<td>2- Measurement of value</td>
<td>All managed values can be measured in terms of price.</td>
<td>Perceptions of managed values cannot be monetized.</td>
</tr>
<tr>
<td></td>
<td>Values are ‘objective’.</td>
<td>Values are established interactively.</td>
</tr>
<tr>
<td></td>
<td>Firm and activity are the units of analysis.</td>
<td>Interactions (offerings) are the units of analysis.</td>
</tr>
<tr>
<td>3- Roles of the economic actors</td>
<td>Customers ‘destroy’ value during consumption.</td>
<td>Customers (co-)create value.</td>
</tr>
<tr>
<td></td>
<td>Consumption is not a factor of production.</td>
<td>Customers are managed as factors of production (assets).</td>
</tr>
<tr>
<td></td>
<td>Actors are seen as holding one primary role at a time.</td>
<td>Actors are seen as holding several different roles simultaneously.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cross-functional involvement is key.</td>
</tr>
<tr>
<td>4- Role of services</td>
<td>Services are a ‘separate’ activity.</td>
<td>Services are a framework for all activities.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Services are considered as co-produced.</td>
</tr>
</tbody>
</table>

Table 2. Views of value in different schools of thought
The characteristics of the industrial view and the co-productive view of value shown in Table 2 were organized according to four criteria: 1) the modality of value creation, 2) the measurement of value, 3) the roles that each economic actor plays, and 4) the role of services. The six schools of thought (i.e., the RBV, VC, TCE, FVM, RM, and SCM schools) were placed in the right hand side or in the left hand side columns of Table 2 depending on whether they have an industrial or a co-productive view of value. It is important to note that the relative location of a school in the industrial–co-productive dichotomy is not an indication of superiority over the other schools. Each school is appropriate for a different set of business contexts and value creating conditions. For example, relationship marketing should be adopted only with key customers and when the adequate motivations and supporting factors are in place (Ganesan 1994; Day 2000). Managing close relationships is resource intensive, making a transaction-oriented strategy more adequate for less critical customers and suppliers (Lambert, Emmelhainz and Gardner 1996). In the rest of this section, the criteria used to distinguish between the industrial and the co-productive view of value and to place each school of thought in Table 2 are explained.

2.4.1 Modality of value creation

From an industrial perspective, the producer and the customer should be separated. Each organization should be focused on a specific set of production activities to achieve specialization and economies of scale (Vargo and Lusch 2004). The Value Chain (VC) school introduced by Porter (1985) embraces this premise. It has its roots in the principles of assembly lines, where work is done sequentially to gain manufacturing
efficiencies (Ramírez 1999). In this school, value is added at each stage of the chain, and then transferred to the next stage. These perspectives are shared by the RBV, the TCE and the FVM schools. They all are based on the assumption that the levers for achieving competitive advantage can be pulled within the firm. In the RBV case, it is the resources that are under a firm’s control that can lead to value creation. In the case of the TCE school, the key decision is whether the value producing activities should be performed in–house or outsourced to an external company, but not performed jointly\(^3\). Under the FVM school, the marketing mix variables that need to be optimized lie within the firm, while external factors do not enter into the equation. These schools share a static view of value. Value depends on the utility and the rarity of a firm’s resources and on the way in which the marketing mix variables are configured. Value creation is assumed to occur when the product is delivered and when the transaction ends.

In contrast, the RM and the SCM schools are closer to a co-productive view of value. The different types of exchanges that occur in a buyer-supplier relationship are considered as opportunities to co-create value. Value is co-created through interactions between the firms over time, and not in a single transaction.

The SCM school does not have a clear position in the dimension of modality of value creation. Several supply chain management definitions and models coexist with different views of the modality of value creation (Lambert et al. 2005). Some models such as the Supply Chain Operations Reference (SCOR) are more oriented toward the industrial view presented in Figure 1. The SCOR model describes the supply chain as a

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\(^3\) An intermediate, more relational TCE mechanism was proposed later (Williamson 1991).
sequence of source, make, and deliver processes (Supply-Chain Council 2008). The interaction between firms occurs only at the intersection of the supplier’s deliver process and the customer’s source process. In contrast, other supply chain management models such as The Global Supply Chain Forum (GSCF) framework put more emphasis on the buyer-supplier relationships that are formed in a supply chain context. The GSCF advocates for the integration of eight key business processes (Customer Relationship Management, Supplier Relationship Management, Customer Service Management, Demand Management, Order Fulfillment, Manufacturing Flow Management, Product Development and Commercialization, and Returns Management), underscores the role of relationship management and cross-functional involvement, and has the objective of creating economic value for the key members of the supply chain through joint improvement activities (Lambert 2008). For this research, the co-productive view of supply chain management as exemplified by the GSCF is used. Thus, the SCM school of thought was located in the co-productive extreme in Table 2.

2.4.2 Measurement of value

Given the central role of transactions in the industrial view, value is conceived as a quantifiable attribute, which is realized at the moment of the exchange. For instance, referring to the VC school, Porter (1985, p.38) defines value as “the amount buyers are willing to pay for what a firm provides them.” Therefore, it is assumed in the VC school

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4 The SCOR model also includes the plan and returns processes. The returns process is connected in sequence across companies.
that value can be captured objectively using price as the single metric. Similarly, under the RBV school, value is a function of the resources’ utility and rarity, while the utility and rarity of the buyer-supplier relationship is not considered.

Schools that are more inclined toward the co-production view recognize that value is not limited to the price paid in a single transaction. Price reflects only a portion of the total value that can be created in a relationship (Shafir, Simonson and Tversky 1993). Other sources of value such as the outcomes from cost reduction initiatives, joint product development initiatives, and joint marketing initiatives exist in a buyer-supplier relationship. The important role of the individuals’ perceptions of value is accepted in the co-productive view. Individuals assess and judge the trade-offs between what they receive from the relationship (benefits, utilities, solutions) and what they give up (resources, price, effort) (Woodruff 1997). These assessments can occur at a conscious or unconscious level, and can be done at different times (Gardial et al. 1994). In a B2B context, perceptions need to be validated with objective measurements of value co-creation (Mezias and Starbuck 2003; Ulaga 2006). Value in a co-productive view is assumed to be idiosyncratic and contingent on the interactions between individuals that occur in the relationship over time.

2.4.3 Roles of the economic actors

The VC, RBV and FVM schools are based on the notion that value creation is the exclusive responsibility of the supplier until the moment of the transaction. Without any additional interaction, the role of the customer is limited to the consumption of the value created for him/her. Ramirez (1999) goes a step further, arguing that when the customer
consumes the good, the value created for him/her is destroyed. He bases his observation on current accounting practices, in which the value of a good is depreciated over time as it is used. Eventually, the good reaches a value of zero at the end of its lifetime.

In the co-productive view, customers take a more active role in the relationship. They engage in value co-creation activities that span across different organizational functions. Customers become a factor of production as well. They can participate in designing and customizing products and services, in improving manufacturing and logistics processes, and in facilitating the management of the demand, among other activities. This stresses the relevance of the customer’s knowledge and skills and of how they are combined with those of the supplier. In this sense, cross-functional integration becomes key for leveraging the capabilities that reside in the functions of the two companies (Lambert and García-Dastugue 2006).

2.4.4 Role of services

Services in the industrial view are considered separated in time and place from the production and consumption of goods. For example, Porter’s (1985, p.40) RBV considers services as “activities associated with the enhancement or maintenance of the value of the product, such as repair, training, parts supply and product installation.” The focus is on enhancing the value of the product with a service. In the schools of thought that embrace a co-productive view such as RM and SCM, services are at the center of the exchange. The focus changes to managing the intangible aspects of the relationships and to developing opportunities to co-create value. Customers are seen as interested in the
services that products provide and not in the product itself. In Vargo and Lusch’s (2004, p.8) words, “products are distribution mechanisms for service provision.”

2.5 From value creation to value co-creation.

Schools that are based on the industrial view were developed in a business context that is different than today’s (Ramirez 1999). In the industrial era, markets were not saturated with products so competition tended to be driven primarily by price. The main source of efficiency was in the achievement of economies of scale. Managers strived to centralize as many competences as possible, limiting the participation of suppliers and customers until the transfer of the product’s ownership (Hayes et al. 2005). The lack of modern information technology further complicated the coordination of activities with external entities (García-Dastugue and Lambert 2003).

In the industrial view, the creation of value is viewed as embedded in the product, created by the supplier for the customer, and transferred in a transaction. Interaction, collaboration and exchange of knowledge and ideas are reduced to the point of a transaction. Only some activities such as exchanging information about the product and some post-sale services are performed before and after the transaction, but are not seen as opportunities to co-create value. Figure 1 illustrates this view.
Figure 1. Industrial and Co-productive views of value.

With customers becoming more demanding, competition intensifying and environments growing in complexity, managers tended to rely on key suppliers and customers to compete (Ulaga and Eggert 2006; Lambert 2008). Increased levels of outsourcing and collaboration were enabled by advances in communications and information technology (Stock and Lambert 2001; Ramani and Kumar 2008). The integration of key business processes across firms became necessary to capture opportunities to add value (Hammer 2001; Cooper, Lambert and Pagh 1997). The notion
of creating value for the customer was slowly changing to the notion of creating value with the customer, or co-creating value (Vargo and Lusch 2004).

The concept of value co-creation emerged as a response to the aforementioned changes. Value co-creation implies that several entities participate simultaneously in the creation of value. In a B2B context, two or more organizations share their resources in activities that are expected to deliver superior outcomes for all the parties involved (Lambert 2008). As illustrated in Figure 1, the customer extends its value creation activities to the production stage, which was previously the exclusive responsibility of the supplier (Lengnick-Hall 1996; Ramirez 1999). In the same way, the supplier extends its value creating activities to support the customer’s consumption activities (Choi and Hartley 1996; Lambert 2008). The interaction is not limited to the transaction but is opened to the whole spectrum of value creation activities (Heide and John 1990). The supplier’s customer relationship management process and the customer’s supplier relationship management process become the critical linkages to manage the value co-creation activities (Lambert 2008).

2.6 A conceptual framework for value co-creation

The co-productive view of value was used for this research because the goal is to understand how managers from multiple functions interact in a buyer-supplier relationship to co-create value. A conceptual framework for value co-creation is described in this section. In case study research, it is essential to develop a preliminary theory and make explicit what is known before entering the field (Yin 1989). A well-articulated conceptual framework can provide guidance on what data to collect and the
analysis techniques to use. Additionally, it assists the reader in understanding the context of the research and its purposes.

The conceptual framework used in this study is shown in Figure 2. Value co-creation is composed of three dimensions: 1) service orientation, 2) transfer of knowledge and skills, and 3) joint initiatives. The three dimensions emerged from the literature review presented in the previous sections. The three dimensions are also central in a new dominant logic of marketing proposed by Vargo and Lusch (2004). In their view (p.1), “… marketing has shifted much of its dominant logic away from the exchange of tangible goods (manufactured things) and towards the exchange of intangibles (services), specialized skills and knowledge, and initiatives (doing things for and with).”

Figure 2. Conceptual framework for value co-creation
Figure 2 reveals the central role of interactions between organizations. Indeed, a key proposition in this research is that value is co-created through interactions. Cross-functional involvement is expected to play a key role as well. Another central proposition is that cross-functional involvement makes interactions more productive and results in superior value co-creation. In the reminder of this section, the literature that supports the propositions that are implicit in the conceptual framework is reviewed.

2.6.1 Value co-creation through a service orientation

The first characteristic of value co-creation is related to the role that customers and suppliers play in the co-creation activities. In the co-creation view, delivery and consumption occurs simultaneously rather than sequentially. Quoting Vargo and Lusch (2004): “Value co-creation is a model of inseparability of the one who offers, the offer, and the consumer” (p.11). The simultaneity of delivery and consumption is one of the main characteristics that distinguish services from products (Shostack 1982). Therefore, the concept of value co-creation is closely related to the concept of services.

In fact, value co-creation is included as one of the eight fundamental premises of what Vargo and Lusch (2004) called “the service-dominant logic.” In their view, the traditional division between goods and services in marketing is obsolete. They proposed eight fundamental premises that characterize this new service logic: 1) the application of specialized skills and knowledge is the fundamental unit of exchange; 2) indirect exchange masks the fundamental unit of exchange; 3) goods are distribution mechanisms for service provision; 4) knowledge is the fundamental source of competitive advantage; 5) all economies are service economies; 6) the customer is always a co-producer; 7) the
entire enterprise can only make value propositions; and 8) a service centered view is
customer oriented and relational. In summary, although goods are still an important part
of a firm’s offering, intangible aspects, interactions and relationships are central.

In this research, services are defined as “the application of specialized
competences (knowledge and skills) through deeds, processes and performances for the
benefit of another entity or the entity itself” (Vargo and Lusch 2004, p.2). This definition
is broader than traditional definitions of a service as anything that does not result in
manufactured output (Rathmell 1966). Customer solutions, which have been defined as
customized and integrated combinations of goods and services, embody this view
(Davies, Brady and Hobday 2006; Sawhney 2006; Tuli, Kohli and Bharadwaj 2007).

In a business-to-business context, services can be focused on different business
activities, and their provision is done through processes that need to be integrated across
companies and across companies. Cooper, Lambert and Pagh (1997) identified eight key
business processes: Customer Relationship Management, Customer Service
Management, Demand Management, Order Fulfillment, Manufacturing Flow
Management, Procurement, Product Development and Commercialization, and Returns
Channel. The implementation of these business processes can be used to successfully
manage buyer-supplier relationships in the context of a service dominant logic (Lambert
and García-Dastugue 2006).

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5 The eight key business processes of supply chain management were later defined as: Customer
Relationship Management, Supplier Relationship Management, Customer Service Management, Demand
Management, Order Fulfillment, Manufacturing Flow Management, Product Development and
Commercialization, and Returns Management (Lambert 2008).
Exchanges that are based on the service aspects of an offering constitute an opportunity to build close relationships. Service provision requires interaction, customization and the participation of both the provider and the consumer at the same time. This interaction generates a primary form of service experience. In contrast, when the exchange is based solely on goods, there are fewer opportunities to develop customer relationships. Goods may be instrumental in a relationship as mechanisms for service provision, but as inanimate objects, they cannot interact by themselves (Vargo and Lusch 2004).

In a service environment, the principles of relationship marketing are especially relevant. Customer satisfaction is less about products and more about relationships because a customer’s perceptions are formed through their interaction experience with the offering as a whole (Grönroos 1990; Duncan and Moriarty 1998; Berthon and John 2006). The customers’ perceptions of the service delivery processes may be more important determinants of satisfaction than their perceptions of the quality of the outcome itself (Grönroos 1984; Tuli, Kohli and Bharadwaj 2007). Scholars in the European Industrial Marketing and Purchasing (IMP) school such as Gummesson (1998) together with other scholars (e.g., Glynn and Lehtinen 1995, Vargo and Lusch 2004) contend that service marketing research and its emphasis on interactions constitutes one of the most crucial contributions to relationship marketing.
2.6.2 Value co-creation through knowledge and skills

Co-creation of value occurs through the application of the complementary knowledge and skills that each organization brings to the exchange (Vargo and Lusch 2004). Core competencies in this environment are not physical assets but intangible resources that can produce effects such as skills and technology (Prahalad and Hamel 1990; Glazer 1991; Day 1994; Constantin and Lusch 1994).

Knowledge can be thought of as being comprised of explicit and tacit forms (Nonaka and Takeuchi 1995). The explicit form is the part of knowledge that a firm has recognized, captured, duplicated and circulated within the organization. The tacit form refers to employee know-how or competencies gained through observation, imitation and mutual experience. Usually, managers focus on the development and diffusion of the first form: explicit knowledge. This is evidenced in, for instance, the large investments in technologies such as Customer Relationship Management (CRM) software to store and access customer information. Contrary to what was initially expected, managers report having obtained mixed results from CRM software implementation (Rigby, Reichheld and Scheffer 2002; Day 2003). One of the reasons is that CRM software is used to capture and manage explicit knowledge about the customer but it is not used to develop tacit knowledge. In Gummesson’s (2006, p. 341) words: “CRM technology seems to have become a novel way of molding and managing captive customers rather than cooperating with customers.”

Although both types of knowledge are important, tacit knowledge can be applied directly to create value. According to the service-dominant logic of marketing, the tacit form of knowledge is the key resource and should be the focus of the exchange in a
relationship (Vargo and Lusch 2004). Tacit knowledge is developed and renewed through learning, which results from experience and dialogue with others (Ballantyne and Varey 2006). Ballantyne and Varey (2006) call for a more dialogical way of interacting between companies. They argue that the dominant forms of marketing communication such as advertising and customer service contacts are monological (one-way), consist of discrete and unopen messages, and are decoupled from interaction. In contrast, they recommend an interactive ongoing process of learning that can only take place when the individuals at both ends of the relationship watch, listen, read and understand each other to the extent that further communication can follow on. They maintain that dialogue is an ideal form of communication for co-creating value, because it fosters the renewal of tacit knowledge and can lead to new and unique ideas.

The more functions that are involved in the relationship, the richer the dialogue. Interaction allows the participants from each function to see the information from a bigger context and encourages discussion, which can generate feedback, amplifications or modifications that were not originally considered (Glazer 1991; Quinn 1992). Organizational learning is a three-stage process that encompasses the acquisition of information, its dissemination throughout the organizations, and its shared interpretation (Sinkula 1994). Managing cross-functional interaction between companies can enhance each of these stages. Individuals in buyer and seller firms need to interact and collaborate to learn from each other and to adapt to the other’s needs (Vargo and Lusch 2004). Therefore, the interactions between companies should be cross-functional to facilitate the learning that leads to co-creation of value.
2.6.3 Value co-creation through joint initiatives

Managers who are interested in co-creating value with their key customers and suppliers share their knowledge and skills in order to identify opportunities, decide which ones to prioritize, and develop innovative responses. Opportunities for co-creating value can emerge in both sides of the relationship and in the business processes that link the firms together (Lambert 2008). In co-creation of value, the efficiency on the other side of the relationship becomes as important as the company’s own efficiency. Managers proactively work to improve the efficiencies of both their own company and the other company (Ramirez 1999).

Value is co-created not only when the customer uses the product (value-in-use), but also from joint initiatives to develop new products, to reduce costs or to increase revenue. To unleash the potential of co-creation of value, managers should look for innovation opportunities in these three areas (Tuli, Kohli and Bharadwaj 2007; Michel, Brown and Gallan 2008). According to Ramirez (1999), the focus of management changes from “…what happens to the good after purchase, to what happens to the customer’s value creating processes” (p. 59, emphasis added). Initiatives such as supplier suggestion programs (Hartley, Greer and Park 2002), supplier development activities (Hartley and Choi 1996), and early supplier involvement in new product development (McIvor, Humphreys, and Cadden 2006), have been used to capture innovation opportunities that extend beyond a single firm’s boundaries.

In summary, interactions should be designed in order to facilitate the joint identification of value creation opportunities, and to leverage knowledge and skills to respond in innovative ways. The supplier’s knowledge and skills should be part of the
offering so that they help the customer to innovate (Michel, Brown, and Gallan 2008). The relationship should be based on interactions which members perceive as being helpful for making better use of their resources (Payne, Storbacka and Frow 2008).

2.6.4 Interaction

Scholars in the relationship marketing field have demonstrated the importance of variables such as trust, commitment, dependence, shared values, and communication in the development of successful business relationships (Dwyer, Schurr and Oh 1987; Morgan and Hunt 1994; Ganesan 1994; Duncan and Moriarty 1998). In this research, the premise that relationships and value co-creation are affected by the way in which interactions are managed was included. Consequently, the design and management of the features and patterns of interaction were considered relevant aspects in the management of close relationships (Heide and Miner 1992; Ramani and Kumar 2008). ‘Interactions’ was placed in a central position in the conceptual framework shown in Figure 2.

Interaction is defined as the reciprocal influence of persons or things on each other (MWOD 2008). Interactions have been called service encounters, critical touch points and interaction processes in the business-to-consumer service management literature (Solomon et al. 1985; Payne, Storbacka and Frow 2008). In the marketing literature, interactions are seen as the activities of exchanging resources and collaborating that take place in customer and supplier relationships (Payne, Storbacka and Frow 2008). Indeed, marketing relationships are manifested through the continuous and dynamic interactions between organizations that occur across time and place (Berthon and John 2006; Grönroos 2006). In the words of Lambert and García-Dastugue (2006, p.157), “the
management of close business relationships becomes the management of the multiple points of contact between the functions of the organizations involved.” The “interaction approach,” a model of relationships in industrial markets developed by the Industrial Marketing and Purchasing (IMP) group in Europe, is based on the notion that business exchange is conducted through interaction (Ford, Håkansson and Johanson 1986; Gummesson 2006). Ramani and Kumar (2008) developed and tested a composite construct of interaction orientation that consists of the customer concept (defined as the belief that the unit of analysis of every marketing action is the individual customer), the interaction response capacity, and the customer empowerment. The integration of all the organization’s functions to manage these “touch points” offers one way to enable the co-creation of value (Lambert and García-Dastugue 2006; Duncan and Moriarty 2006).

Interactions allow the transfer of knowledge and skills, the provision of services, and the detection of opportunities for value creation. Berthon and John (2006) contended that: “At the root of the dominant logic of marketing lies the notion of interaction. It is through interactions that information is exchanged and knowledge generated, and it is through interactions that services are co-designed, co-created, and consumed. Interactions constitute the very fabric of exchange” (p. 196). Payne, Storbacka and Frow (2008) proposed a framework of value co-creation where interaction occurs between the supplier’s and the customer’s value-creating activities. They argued that managers need to map and manage the customer and supplier interactions to identify co-creation opportunities. Ballantyne and Varey (2006) viewed the dialogue enabled by interactions as the way to co-create solutions for market and supply problems. Day (2004) recognized
that interaction in terms of mutual commitments and cross-functional coordination is a requirement for firms to pursue a true service-dominant logic.

The goal for this research was to understand how cross-functional interactions are managed in order to foster the co-creation of value. This responds to the call of marketing scholars to move the unit of analysis from the entities in an exchange (customers and suppliers) to the interactions between them (e.g., Ramirez 1999, Berthon and John 2006, Lusch and Vargo 2006).

2.6.5 Cross-functional involvement

Cross-functional involvement is defined as “the formal and informal direct contact among employees across functions” (Jaworski and Kohli 1993, p.56). Interactions in a business relationship involve various organizational functions because the specific capabilities needed to provide all the aspects of the offering reside in different functions. However, in order to design and deliver a coherent service, the various functions need to be coordinated. Indeed, customers view the lack of coordination across functions as a key weakness of many suppliers (Tuli, Kohli and Bharadwaj 2007). The necessary coordination is achieved through the implementation of cross-functional teams and cross-functional business processes (Day 1997; Srivastava, Shervani and Fahey 1999; Lambert 2008). According to the premises of the research framework illustrated in Figure 2, co-creation of value is more feasible in relationships in which participants place emphasis on being service-oriented, on transferring their knowledge and skills, and on finding and working on joint initiatives. Each of these three elements of value co-creation can be enhanced if the participating organizations involve all business functions in the exchange
(Hauser and Clausing 1988; Lambert and García-Dastugue 2006; Payne, Storbacka and Frow 2008). The importance of cross-functional involvement for enhancing the three elements of value co-creation is described in the rest of this section.

2.6.5.1 Service Orientation

By definition, the co-creation of value requires that both organizations in a relationship extend their traditional areas of action. The supplier gets involved in the consumption activities of the customer, and the customer gets involved in the production activities of the supplier. This results in a loss of the centrality of the product in the exchange. The source of competitive advantage becomes the value derived from the services that are provided within the relationship. Services are not limited to those that are provided to support the use of a product – or value-in-use (Vargo and Lusch 2004). For example, a supplier of raw materials can utilize its expertise in the raw materials market to inform the customer about the trends in prices and about the alternative financial mechanisms that can be used to protect against price fluctuations.

The opportunities for creating value-in-use can arise from multiple areas that may require the application of a variety of competencies. Therefore, the services will be provided by the function or functions where the specialized skills to produce the service reside (Lambert and García-Dastugue 2006). This requires that the managers in the functions involved act in a coordinated manner to ensure that all the ‘touches’ between the organizations are managed consistently (Duncan and Moriarty 2006).
2.6.5.2 Transfer of knowledge and skills

As relationships become closer and more developed, organizations tend to base their exchange on a broader set of skills and knowledge (Lambert and Knemeyer 2004). Customers expect broader and more coherent offerings and assess the relationship performance as a whole (Duncan and Moriarty 1998; Berthon and John 2006). Suppliers have the opportunity to gather better intelligence about the customer and respond to it (Kohli and Jaworski 1990; Narver and Slater 1990). The knowledge and skills necessary to accomplish these tasks reside in the different organizational functions (Kohli and Jaworski 1990; Lambert and García-Dastugue 2006). From their daily interactions with the other organization, managers in the various functions gain insights about the other’s specific needs and difficulties. They can employ their knowledge to identify opportunities, to design better offerings, and discover constraints that could put the delivery of the offering at risk (Lambert 2008). This is relevant in dynamic business environments because what is valued by the customer might not be identified at the beginning of the relationship but rather evolve over time (Rust 2004).

The exchange of ideas between people with different perspectives may result in solutions that would not have arisen in other circumstances. When functional barriers are removed, the ability to learn is improved (Slater and Narver 1995). Core competences arise from collective learning, coordinating diverse skills, and a deep commitment to working across organizational boundaries (Prahalad and Hamel 1990). Functional activities need to be integrated to base the exchange in a broader set of skills and knowledge (Lambert and García-Dastugue 2006; Payne, Storbacka and Frow 2008).
2.6.5.3 Joint initiatives

In order to leverage the organization’s capability to detect and respond to value creating opportunities, activities need to be integrated across functions (Kohli and Jaworski 1990; Narver and Slater 1990). Opportunities can emerge from a large set of business activities. If managers in different functions share customer information, they can develop a richer understanding of customer needs, which facilitates the customization and improvement of their products and services (Murthi and Sarkar 2003). Organizations that involve other functions in marketing decisions achieve better performance in the market (Hirschhorn and Gilmore 1992; Krohmer, Homburg and Workman 2002). The more functions that are involved in this effort, the more chances exist to uncover new ideas (Lambert and García-Dastugue 2006). The more varied sources of expertise that are combined, the more chances for generating innovative ideas (Hauser and Clausing 1988).

As described in this section, a cornerstone for co-creating value in a buyer-supplier relationship is the development of cross-functional teams. In the next section, the literature on cross-functional teams is reviewed.

2.7 Designing and managing cross-functional teams.

Most of the literature on cross-functional teams is focused on teams that operate within an organization. However, some aspects are applicable to the design and management of cross-functional teams that span across organizations in a supply chain.

Cross-functional teams are working groups created to make decisions, which have links to multiple sub-units and are designed as an overlay to existing functional organizations (Galbraith 1994). Well-managed cross-functional teams within an
organization have been shown to foster innovation, reduce transaction costs, promote
Enhancing intra-organizational teams by including individuals from key suppliers and/or
customers can create further opportunities. For instance, Trent and Monczka (1994)
found that supplier involvement was the main driver of performance in cross-functional
sourcing teams.

Simply forming and using cross-functional teams does not guarantee that
performance will improve. Designing and managing cross-functional teams presents
several challenges. The teams need to be compatible with their organization’s often rigid
structures, their incentive mechanisms and their culture (Ford and Randolph 1992). New
and greater challenges arise when individuals from other organizations are included. For
example: What is the team’s autonomy from both companies? What organization
assumes the leadership for the team? How are the personal relationships between the
team members affected? How are gains and losses distributed across organizations?
Teams that are not properly designed can waste the time and the energy of their members,
and can foment conflicts both with the rest of the organization and within the team
(Hackman 1987). Mixed results were obtained in research exploring the benefits of
involving suppliers in new product development projects. Increased innovation can be
offset by higher time-to-market due to coordination difficulties. It can be argued that the
organizational context and the design and management of cross-functional teams play a
significant role in the outcomes of the team (Brown and Eisenhardt 1995, Denison, Hart
and Kahn 1996).
A framework developed by McGrath (1964) was used to organize the literature on cross-functional teams. The framework is depicted in Figure 3 and it consists of three elements: input factors (at the individual, the group and the environmental levels), team interaction, and outputs (subdivided in performance and other outcomes). It was assumed for the model that the team interactions mediate the relationship between the input factors and the outcomes (Hackman 1987). For example, if a team that is formally rewarded (input factor) achieves a better outcome than a team that is not rewarded, it must be possible to observe different team dynamics among them (e.g., team members that spend different amounts of time in team activities).

Adapted from: Hackman (1987)

Figure 3. Categorization of the literature on cross-functional teams
The research on cross-functional teams is focused on different elements of the framework. Research focused on team interaction (central square in Figure 3) has been conducted in the field of behavioral science (Tuckman 1965; Hare 1976). Research focused on the link between the input factors and the team interactions variables addressed the effects of factors such as team size, team composition, and context on team dynamics (e.g., Schutz 1960, Thomas and Fink 1961, Bales 1970, Bitner 1992). Research focused on the link between team interactions and outcome variables emphasized the effect of the team interactions (e.g., individuals’ personality, leadership, group decision making among others) on the team’s outcomes (e.g., Hackman, Brousseau, and Weiss 1976; Janis 1982). Although not specified in the framework developed by McGrath (1964), the direct link between input and output variables was also a subject of study. In this area, researchers investigated the direct effect of input variables such as the availability of material resources, group composition, availability of information systems and group norms on group effectiveness (Hackman 1987; Trent and Monczka 1994; Denison, Hart and Khan 1996)

In general, research in the area of cross-functional teams is not focused on interorganizational teams. Only a few scholars explain how the cross-functional teams’ outcomes are affected when the team includes members from key customers and suppliers. An exception is Trent and Monczka (1994), who found that one of the most important factors for the success of cross-functional teams is the participation of selected suppliers when required. However, the authors focused exclusively on sourcing teams dedicated to purchasing activities or decisions that involve supply base management.
Their research focused on cross-functional teams that existed within a single organization, the authors collected data from only one side of each dyad.

In the area of collaborative product development, scholars investigated the outcomes of incorporating members of supplier organizations into a firm’s product development team. The empirical results in this area were mixed and contradictory (Brown and Eisenhardt 1995; Denison, Hart and Kahn 1996). For instance, Imai et al. (1985), Eisenhardt (1989), Gupta and Wilemon (1990), and Clark and Fujimoto (1990) associated collaboration with faster product development. In contrast, the results obtained by Clark (1989), King and Peneleskey (1992), and Eisenhardt and Tabrizi (1995) show a negative impact on development time, which was attributed to the difficulty of coordinating joint initiatives. However, these studies are focused on the role of the supplier on the team. They do not explain the phenomenon of involving individuals from multiple functions from both sides of a buyer-supplier relationship.

Throughout the sections of Chapter 2, a literature review was presented. The literature review was used to clarify the concept of value co-creation, to develop a conceptual framework, and to understand how each element of the conceptual framework was addressed in the literature. In the next section, the literature that provided partial answers to the research questions posited in this research is reviewed.

2.8 Frameworks, tools and models proposed in the literature.

The literature that provides partial answers to the research questions posited in this research is summarized in three tables. A summary of the literature on value co-creation is presented in Table 3. A selection of the literature on interactions is shown in
Table 4. A summary of the literature on cross-functional teams is presented in Table 5. The goal is to illustrate the main gaps that remain unaddressed in the literature related to the three research questions: 1) How is the value that is co-created in cross-functional relationships measured and communicated? 2) Why does cross-functional involvement lead to co-creation of value?, and 3) How are cross-functional interactions between organizations designed and managed? Each table describes the main findings and the methodologies used in the selected articles. Two additional columns were included in the tables to indicate if the authors addressed the issue of cross-functional teams (CFT), and whether the research was conducted in a business-to-consumer (B2C) or business-to-business (B2B) context.
<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Contributions</th>
<th>Research Method</th>
<th>CFT(*)</th>
<th>Context</th>
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</thead>
</table>
| Lengnick-Hall (1996)              | – Examined the roles that customers can play in organizations (i.e.: as a resource, as a co-producer, as a buyer, as a user, and as a product).  
– Identified three factors that are key to effective co-production: the clarity of the task, the customer’s ability to do the work, and the motivation to do the work. | Conceptual paper              | No     | B2C     |
| Prahalad and Ramaswamy (2000)     | – Identified the drivers of consumer involvement in co-creation of value: access to information, a global view, networking, experimentation and activism.  
– Proposed the DART model of value co-creation, which is based on Dialogue, Access, Risk assessment, and Transparency. | Conceptual paper              | No     | B2C     |
| Bendapudi and Leone (2003)        | – Examined a customer’s psychological response (i.e.: satisfaction) to participation in production.  
– Found that a person who participates in co-production is subject to self-serving bias (i.e.: the assignment of responsibilities for jointly produced outcomes), and that this tendency is reduced when the customer has a choice of whether he/she participates in production. | Statistical analysis          | No     | B2C     |
| Payne, Storbacka and Frow (2008)  | – Developed a conceptual framework for value co-creation in which the management of interactions is central.  
– Determined categories of interactions based on type (communication, usage and service encounters) and objective (emotion, cognition, and action supporting).  
– Illustrated the application of the framework in a B2C environment. | Field-based research (interviews and direct observation) | No     | B2C     |
| Etgar (2008)                      | – Developed a five stage co-production process (development of antecedent conditions, development of motivations, calculation of costs-benefits, activation and evaluation).  
– Described the antecedent conditions and the motivations for consumers to participate in co-production.  
– Identified five phases of the production process in which the consumer can become involved (consumption, distribution, assembly, manufacturing, design, and initiation phases). | Conceptual paper              | No     | B2C     |


Table 3. Literature on value co-creation
<table>
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<th>Author(s)</th>
<th>Contributions</th>
<th>Research Method</th>
<th>CFT(^*)</th>
<th>Context</th>
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</table>
| Solomon et al. (1985)  | - Proposed that the dyadic interaction is an important determinant of the customer’s global satisfaction with a service.  
- Presented a theoretical framework that summarizes the critical components of service encounters.                                                                                 | Conceptual paper    | No         | B2C and B2B   |
| Heide and Miner (1992) | - Demonstrated that the features of interaction affect interorganizational cooperation.  
- Found that the extendedness of the interaction, the consistency of the service, and the frequency of contact increase the chances of cooperative behavior.                         | Statistical analysis| No         | B2B          |
| Berthon and John (2006)| - Highlighted the importance of interaction design and management for co-creation of value.  
- Categorized the dimensions of interactions that suppliers need to manage: content, process, structure and sequence.  
- Provided seven dimensions of the value that customer can obtain from well managed interactions.  
| Duncan and Moriarty (2006)| - Posited that Integrated Marketing Communication’s (IMC’s) touch points offer one way to operationalize the service dominant logic.  
- Defined IMC as “an ongoing, dialogic, interactive and cross-functional process of brand communication planning, execution and evaluation.”  
- Proposed that touch points (interactions) are key resources that produce value, which strengthens relationships.                              | Conceptual paper    | No         | B2C          |

Table 4. Literature on interactions
### Table 4 continued

<table>
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<tr>
<th>Author(s)</th>
<th>Contributions</th>
<th>Research Method</th>
<th>CFT*</th>
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| Tuli, Kohli and Bharadwaj (2007) | – Identified that suppliers tend to view the ‘solutions’ they provide as bundles of goods and services, while customers expect a more relational approach.  
– Proposed that a solution should be a set of customer-supplier relational processes (interactions).  
– Delineated four stages where interactions need to be managed: requirements definition, customization and integration, deployment, and post-deployment support.  
– Identified both supplier and customer variables that affect the effectiveness of a solution (Supplier variables: cross-functional coordination; documentation emphasis, incentive externality, customer interactor stability, and process articulator; Customer variables: customer adaptiveness, political counseling, and operational counseling). | Field study (interviews and workshops with customers and suppliers on both sides of the relationship) | No | B2B |
| Jayawardhena et al. (2007) | – Defined a model of service encounter quality (comprised of professionalism, civility, friendliness and competence), developed measurement scales and tested the model.  
– Found a positive effect of service encounter quality on customer satisfaction, service quality and loyalty. | Field based research and statistical analysis (SEM) | No | B2B |
| Ramani and Kumar (2008) | – Defined “interaction orientation” as a firm’s ability to interact with its customers and to take advantage of the information obtained from customers to achieve profitable relationships.  
– Developed a scale and identified the components of interaction orientation (customer concept, interaction response capacity, customer empowerment, and customer value management).  
– Related interaction orientation to customer level and to managers’ perceptions of performance, and examined the antecedents of interaction orientation. | Field base research and statistical analysis (SEM) on both sides of the dyad. | No | B2C and B2B |

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<tr>
<th>Author(s)</th>
<th>Contributions</th>
<th>Research Method</th>
<th>CFT(*)</th>
<th>Context</th>
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<tr>
<td>Hackman (1976)</td>
<td>– Proposed that the overall effectiveness of work groups is a joint function of the level of effort that group members expend, the team member’s knowledge and skills, and the strategies used by the group in relation to the task that needs to be accomplished.&lt;br&gt;– Developed a framework for designing and managing groups that is focused on the group characteristics (the structure, composition and norms of the group), the organizational context (rewards, education, material resources and information systems), and the group synergies (the interactions between members).</td>
<td>Conceptual paper</td>
<td>Yes</td>
<td>Within firms</td>
</tr>
<tr>
<td>Trent and Monczka (1994)</td>
<td>– Investigated the factors that impact cross-functional sourcing team performance.&lt;br&gt;– Found that the availability of key resources, the participation of selected suppliers, higher levels of internal and external decision making authority, effective team leadership, and higher levels of effort, are critical to the team’s success.</td>
<td>Field based research (interviews and surveys)</td>
<td>Yes</td>
<td>Within firms</td>
</tr>
<tr>
<td>Denison, Hart and Kahn (1996)</td>
<td>– Developed a framework for studying cross-functional teams comprised of three domains: organizational context, internal processes and outcome measures.&lt;br&gt;– Identified the elements within each domain (i.e., resource availability and autonomy for “organizational context”; norms, creativity and effort for “process”; and learning, time compression and satisfaction for “outcomes”).</td>
<td>Field based research (interviews) and Statistical analysis</td>
<td>Yes</td>
<td>Within firms</td>
</tr>
<tr>
<td>Krohmer, Homburg and Workman (2002)</td>
<td>– Demonstrated that the active influence of cross-functional groups over marketing activities improves the effectiveness, efficiency and adaptiveness of organizations.&lt;br&gt;– Found that cross-functional teams are less important in situations of high dynamism.</td>
<td>Statistical analysis</td>
<td>Yes</td>
<td>Within firms</td>
</tr>
<tr>
<td>Cooper, Lambert and Pagh (1997); Lambert (2008)</td>
<td>– Developed a relationship-oriented and process-based supply chain framework.&lt;br&gt;– Identified eight cross-functional processes that must be linked with key customers and suppliers.&lt;br&gt;– Described the role of the business functions in the eight supply chain management processes.</td>
<td>Field based research (case studies)</td>
<td>Yes</td>
<td>B2C and B2B</td>
</tr>
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Table 5. Literature on cross-functional teams
From the analysis of Table 3, Table 4, and Table 5, three observations can be made. First, research with focus on either the co-creation of value or interactions, does not address the issue of cross-functional involvement. Likewise, research conducted with a focus on cross-functional involvement is limited to intra-organizational teams. That is, research is limited to teams that cut across functional boundaries, but do not include both sides of a business relationship. Some authors acknowledged the relevance of cross-functional involvement in business relationships (e.g., Duncan and Moriarty 2006, Tuli, Kohli and Bharadwaj 2007) and the benefits of including supply chain members in cross-functional teams (e.g., Trent and Monczka 1994). Thus, there is a need to explain the role of cross-functional involvement in the co-creation of value with members of the supply chain.

Second, research with a focus on co-creation of value is usually conceptual (in four out of six cases). Most authors developed their frameworks building from theories originated in related fields such as organization theory, services marketing, strategic management, integrated marketing communication, or relationship management (e.g., Lengnick-Hall 1996, Duncan and Moriarty 2006). Other authors illustrate how firms have involved the consumer in co-production activities (e.g., Prahalad and Ramaswamy 2000). An exception is Bendapudi and Leone (2003), who examined a consumer’s satisfaction to participation in co-production by means of statistical analysis of experimental data. There is a need to conduct research that is empirically grounded.

Third, researchers investigated the phenomenon of co-creation of value in a business-to-consumer context (in six out of six cases). Researchers have analyzed the
involvement of the end-user in activities such as product design, product manufacturing, product assembly, delivery, and maintenance among others (Payne, Storbacka and Frow 2008). The early work in the area was focused largely on the firm, and the benefits of co-production were defined in terms of productivity gains, and reduced labor costs (Fitzsimmons 1985). A broader perspective arose later in the marketing literature, with authors viewing co-production activities as opportunities to increase customer satisfaction through the delivery of experiences (Prahalad and Ramaswamy 2000). The phenomenon of co-creation of value in business-to-business relationships has not received research attention (in zero out of six cases). There are significant differences between the two contexts. The knowledge that is an essential part for co-creating value (Vargo and Lusch 2004) is disseminated across the various organizational functions of the customer and the supplier firms. Therefore, there is a need to extend the current knowledge about the role of cross-functional involvement in co-creation of value to a B2B context.

Having identified the gaps in the literature, this research was conducted to provide a better theoretical and practical understanding of the role of cross-functional teams in value co-creation. Managers can use the research findings to make more informed decisions about implementing cross-functional teams in key interorganizational relationships. The recommendations can be used to design and manage cross-functional teams and to measure the value that is co-created in the relationship. The research methodology is described in Chapter 3.
CHAPTER 3

METHODOLOGY

A description of the research methodology is presented in this chapter. The chapter starts with an overview of the research questions, the methodology chosen, and the sample characteristics. The second section describes the research design. More specifically, the strengths of the methodology chosen are stated, its use in related academic areas is described, its selection is justified, and its validation requirements are presented. The third section provides a description of the actual research procedures that were followed and the instruments that were used for data collection. In the last section, the procedures for data analysis are described.

3.1 Overview

The main goal for this research was to explain the role of cross-functional involvement in value co-creation. The research questions were:

1. How is the value that is co-created in cross-functional relationships measured and communicated?
2. Why does cross-functional involvement lead to co-creation of value?

3. How are cross-functional interactions between organizations designed and managed?

In order to answer these questions, in-depth case studies were conducted in four buyer-supplier relationships. An embedded case study design with three units of analysis was chosen. An embedded case study design involves more than one unit of analysis to give attention to different aspects of the phenomena under study (Yin 1989). The first unit of analysis was defined at the buyer-supplier relationship level. Two pairs of relationships with different levels of cross-functional involvement were compared in order to replicate the findings. The second unit of analysis was at the cross-functional team level. Within each relationship, the dynamics of different teams were investigated. The third unit of analysis was at the individual level. The individuals that participated in each team and that belonged to different functions from both sides of the relationship were interviewed.

In the case study approach the unit of analysis does not correspond to a sampling unit and should not be chosen randomly as in statistical methods. The objective of using theoretical sampling is not to obtain statistical generalizations but theoretical generalizations (Ellram 1996). That is, cases are selected in a controlled fashion to explore contrasts and to replicate previous findings. Cases that have different characteristics are selected to contrast how the system behaves under different situations. Cases that have similar characteristics are selected to verify if the findings are replicated.
in similar conditions. This process continues until the theory is refined to a level that the researcher is confident that no important factor is left unexplored.

Four buyer-supplier relationships were analyzed. Two relationships were between a company (which will be identified as Company A) and two of its suppliers (Company B and Company C). The other two relationships were between Company D and two of its customers (Company E and Company F). The data collection involved different sources of evidence for the three levels of analysis in each relationship. The main source was interviews with managers from different organizational functions that had varying levels of responsibility in the cross-functional relationships that were analyzed. Financial data were used to measure value co-creation. Other sources of evidence were documentation and direct observation of how managers interacted with their suppliers. The use of multiple sources of evidence helped to gather richer perspectives about the phenomenon and enhance the validity of the results (Yin 1989).

3.2 Research design

This section begins with an overview of the case study approach. Then the reasons for selecting this approach are presented. Examples of case study research in the area of value co-creation are provided.

The case study approach is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between the phenomenon and the context are not evident (Yin 1989). According to Meredith (1998): “Case studies typically involve multiple methods and tools for data collection from a
number of entities by a direct observer(s) in a single, natural setting that considers temporal and contextual aspects of the phenomenon under study” (p. 442).

Case studies can be classified as explanatory, exploratory, or descriptive (Yin 1989; Ellram 1996; Miles and Huberman 1994). Explanatory case studies are best suited for answering the “why” and “how” questions. Exploratory case studies are appropriate in situations where there is an initial understanding of the phenomena and clear questions that want to be addressed. Exploratory case studies should be reserved for researching situations where little prior understanding of the phenomenon exists. The researcher pursues insights that can lead to the formulation of meaningful research questions. Descriptive case studies are limited to descriptions of what the researcher observes, with little concern about the development of statements that can be generalized to other situations. Although the three types of case studies can overlap, the main type of case study used in this research is explanatory. According to Miles and Huberman (1994), an explanatory case study approach has four characteristics:

1. It involves extensive contact between the researcher and the real life situation.
2. The researcher’s role is to gain a holistic view of the situation. That is, a systemic, integrated and comprehensive understanding of the implicit and explicit rules that govern the situation.

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6 The justification of the adoption of the case study approach is provided in Section 3.2.2
3. The researcher can use his/her intuition and previous knowledge gained from experience or existing literature to enrich the theory\(^7\).

4. The main goal is to explain the ways that people come to understand, account for, take action and manage their day-to-day situations.

A case study approach is used because the researcher had the opportunity to participate as a direct observer in the cross-functional interactions. This provided the researcher with a valuable understanding that would have been lost if not included in the analysis.

### 3.2.1 Use of the case study approach in related business research

The use of the case study approach has been gaining acceptance in business research during the last decade (Ellram 1996; Halinen and Törnroos 2005; Barratt, Choi, and Mei 2007). This can be attributed to a call from scholars for empirical research that explains contemporary business issues in a real world context (Meredith 1998). Additionally, the lack of rigor that was usually attributed to qualitative research has been strengthened with a number of publications covering methodological aspects of qualitative research (e.g., Eisenhardt 1989, Yin 1989, Miles and Huberman 1994, Strauss and Corbin 1998). The design of this research incorporated the recommendations provided in the literature.

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\(^7\) A contrasting research method is grounded theory where the researcher has a more passive role. The researcher develops the theory exclusively based on the interviewees’ accounts, consciously limiting his/her influence on the results (Yin 1989).
The case study approach has been used successfully in academic areas that are closely related to the topic of co-creation of value in buyer-supplier relationships. For instance, Wu and Choi (2005) studied the relationships between pairs of suppliers of eight organizations to develop a classification scheme for supplier-supplier relationships and to hypothesize about the implications of the schemes on performance. Lambert, Knemeyer, and Gardner (2004) described the development process of a model for structuring business relationships using 18 cases plus 20 additional cases for its validation. The partnership model has been used to structure successfully more than 80 interorganizational relationships (Lambert, Knemeyer, and Gardner 2010). Based on in-depth interviews with key managers, Flint et al. (2005) used the case study approach to develop a logistics innovation process composed of five recurrent activities. Anderson, Håkansson, and Johanson (1994) studied two business networks and provided a conceptualization and a set of measurements designed to evaluate the network constructs that have an effect on cooperation. Trent and Monczka (1994) investigated the factors that impact cross-functional team performance.

The case study approach is not suitable for all research purposes and situations. Its use has to be carefully justified (Eisenhardt 1989; Ellram 1996). In the next section, four reasons that make the case study approach the proper strategy for this research are presented.
3.2.2 Justification of the adoption of the case study approach

The adequacy of the case study approach as a methodology for buyer-supplier relationships research has been supported by many authors (e.g., Stuart et al. 2002, Halinen and Törnroos 2005, Barratt, Choi, and Mei 2007). The case study approach was chosen as the research methodology for this dissertation based on four primary reasons.

First, the research questions are in the form of “how” and “why” questions. These questions invite answers that are explanatory in nature. For example, the first research question asks for an explanation of the methods that managers use to estimate the value that is co-created. The second research question asks for an explanation of the reasons why cross-functional interaction can foster value co-creation. The third question requires an explanation about the factors that prevent or foster the performance of cross-functional teams. According to Yin 1989, the type of research question is the first condition to consider when choosing the research methodology. The appropriate methodology for answering “how” and “why” questions is the case study approach (Eisenhardt 1989; Ellram 1996; Meredith 1998). It is only through qualitative research methods such as case studies that the researcher can preserve the chronological flow, trace which events led to which consequences and derive comprehensive explanations (Miles and Huberman 1994). In contrast, when the research questions are in the form of “who”, “what”, “where”, “how many” or “how much”, a survey based approach is recommended. In these other situations, the research goal is usually to describe the incidence or prevalence of a phenomenon, or to predict certain outcomes (Yin 1989). Survey based research is
effective in areas that can be understood using closed-ended questions (Carter, Ellram, and Tate 2007), which is not the case of this research.

Second, the topic of cross-functional interactions for co-creation of value has not received enough research attention (see Section 2.8). The case study approach is recommended for researching situations where little is known about the phenomena. The goal is to achieve valid explanations by revealing variables and relationships that previously have not been considered. It is only during a case study interview that an investigator can probe unseen constructs and explore their logical associations (McCutcheon and Meredith 1993). If a survey-based approach had been used in this research, it would have implied that the factors that influence co-creation of value were known in advance. This was not the case, making the case study approach the preferred option.

Third, cross-functional interactions between two organizations are complex social phenomena. As such, the consideration of a large number of factors is required to completely understand the effects on value co-creation. Cross-functional interactions are the moments when people with different cultural and professional backgrounds, and with diverging goals come together to perform an activity that is expected to create value. At the beginning of the research, the elements that were part of cross-functional interactions were not clearly discernible from the elements that were part of their context. For example, should the physical settings where the cross-functional interactions occur be considered as part of the interaction or as part of the context? Does the method used to measure value co-creation influence the success of the cross-functional team? The case
study approach is recommended for exploring situations where the phenomenon and the context are not evident (Yin 1989). The researcher can deliberately cover many contextual factors if he/she believes that they are pertinent. In contrast, survey-based methods divorce the phenomenon from its context, limiting the number of variables that can be included in the model.

Fourth, central to the conceptual framework described in Chapter 2 are cross-functional teams and interorganizational relationships. In these situations, special consideration has to be given to the identification of the key respondents because there is usually no single source of information that represents the point of view of the organizations as a whole (Seidler 1974; Phillips 1981). Individuals from different companies, and from each function within each company, may have different perspectives about the issues related to co-creation of value. For instance, it is highly improbable that an individual from manufacturing can provide clear perspectives about the practices and decision making that takes place in the marketing function or in the supplier or the customer firms. Furthermore, there is evidence that individuals at different organizational hierarchies have different perspectives about a phenomenon (Lincoln and Zeitz 1980; Phillips 1981; Kathuria, Porth, and Joshi 1999). This is particularly important because cross-functional interactions at lower organizational levels can differ from what was initially planned for the relationship at higher organizational levels. Therefore, in order to increase the validity of the results, it was necessary to gather the opinion from representatives of all the functions that participate in cross-functional teams and from
different organizational levels (Kumar, Stern, and Anderson 1993; Baba 1988; Boyer and Verma 2000; Handfield 2002; Zacharia and Mentzer 2004).

The case study approach has proven to be more adequate than statistical methods for exploring situations involving multiple respondents (Baba 1988). It enables consensus building across respondents or the discovery of the reasons behind a lack of consensus. The case study approach can provide a holistic perspective in cases where the system’s properties cannot necessarily be understood independently of each other (Yin 1989). In terms of viability, surveying multiple informants per company in a large sample of firm dyads is practically unfeasible. This is reflected in the large number of survey research that is conducted using single respondents (Baba 1988, Boyer and Verma 2000).

In summary, the benefits of the case study approach arise from the possibility of the researcher collecting data in close proximity to the real life situation. That is, the interaction between the researcher and the key individuals is direct and based on dialogue, instead of being mediated by a survey questionnaire. This favors the detection of non-obvious issues, and enhances the empirical validity of the results (Miles and Huberman 1994). The ability to contrast evidence from different cases leads to a greater chance of developing novel theories (Eisenhardt 1989).

3.2.3 Validation requirements

Despite the aforementioned benefits, the case study approach is subject to methodological problems if proper precautions are not taken. Rigor in the validation procedures is critical because the level of subjectivity involved, the risk of researcher
bias, the concerns about generalizability, and the risk of low parsimony are higher than in quantitative research (Yin 1989). The subject of validity in qualitative research has been addressed by various authors (e.g. Miles and Huberman 1994, Ellram 1996, Meredith 1998, Stuart et al. 2002). These authors’ recommendations were incorporated in the design of this research.

Yin (1989) proposed four tests to increase the validity of case study research and a number of tactics for dealing with each test. Table 6 presents the four tests along with the tactics and the research phase where each tactic should be applied. A more detailed description about how each tactic was applied in this research is provided in the next section.

The first test deals with construct validity. Construct validity is achieved by establishing correct operational measures of the concepts that are being studied. The goal is to ensure that the researcher’s understanding of the constructs genuinely reflects the views of the respondents. Suggested tactics for increasing construct validity are: using multiple sources of evidence, establishing a chain of evidence and having key informants review the draft case study report. In this research, the concepts that emerged during the data collection and data analysis steps were subjected to a validation procedure that is described in the research protocol (See APPENDIX A). When a new concept emerged during an interview, its meaning was discussed with the interviewee to ensure a common interpretation. For example, the meaning of “co-creation of value” was discussed with each interviewee prior to the data collection process to ensure a common understanding. For this purpose, the conceptual model presented in Chapter 2 was used. The meaning of
the concept was then discussed with other managers in subsequent interviews to confirm that they shared the same interpretation. Documentation that supported the point being made was requested whenever possible. At the end of the data collection stage, a draft of the case study report was sent to the managers for review in order to confirm that their opinions were accurately reflected.

<table>
<thead>
<tr>
<th>Test</th>
<th>Case Study Tactic</th>
<th>Phase of research in which the tactic occurs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construct validity</td>
<td>Use multiple sources of evidence</td>
<td>Data collection</td>
</tr>
<tr>
<td></td>
<td>Establish chain of evidence</td>
<td>Data collection</td>
</tr>
<tr>
<td></td>
<td>Have key informants review the draft case study report</td>
<td>Composition</td>
</tr>
<tr>
<td>Internal validity</td>
<td>Do pattern-matching</td>
<td>Data analysis</td>
</tr>
<tr>
<td></td>
<td>Do explanation-building</td>
<td>Data analysis</td>
</tr>
<tr>
<td></td>
<td>Address rival explanations</td>
<td>Data analysis</td>
</tr>
<tr>
<td></td>
<td>Use logic models</td>
<td>Data analysis</td>
</tr>
<tr>
<td>External validity</td>
<td>Use theory in single-case studies</td>
<td>Research design</td>
</tr>
<tr>
<td></td>
<td>Use replication logic in multiple-case studies</td>
<td>Research design</td>
</tr>
<tr>
<td>Reliability</td>
<td>Use case study protocol</td>
<td>Data collection</td>
</tr>
<tr>
<td></td>
<td>Develop case study database</td>
<td>Data collection</td>
</tr>
</tbody>
</table>

Adapted from Yin (1989)

Table 6. Case study tactics from four design tests
The second test is related to internal validity. Internal validity is achieved when the causal relationships between variables are accurately identified. If the researcher fails to include a significant antecedent, or describes a relationship that is false or only present under particular conditions, the research will be said to lack internal validity. The tactics to prevent this issue are applied in the analysis phase. The researcher should do pattern-matching, explanation building, address rival explanations, and use logic models (Miles and Huberman 1994). Pattern matching consists of comparing an empirically based pattern with a predicted one. If the patterns coincide, it helps the case study to strengthen its internal validity. In this research, the predicted pattern was that value co-creation (measured in financial terms) would be higher in the cross-functional relationships than in the relationships with less cross-functional involvement. The proposition was supported with the financial data that was collected. Rival explanations of value co-creation were tested. For example it was theorized that the volume of sales in a relationship could be a more important driver of value co-creation than cross-functional involvement. The rival explanation was discarded when a relationship with lower business volume and more cross-functional involvement was found to be co-creating more value.

The third test is related to external validity. External validity is defined as the extent to which the findings can be generalized beyond the cases that were used for the research. The research needs to be designed in order to increase its applicability to other situations and establish the domain to which the findings can be extrapolated. The tactics are to compare the findings with existing theory and to use a replication logic. In this
research, the replication logic was used. Once the characteristics of a successful cross-functional team were identified, new cases that presented similar characteristics were investigated to confirm that the results were as predicted.

The fourth test deals with reliability. Research is reliable if it can be replicated in a different sample, and the same results are obtained. The goal is to minimize the errors and biases. In this sense, clear documentation of the steps conducted is paramount. The tactics that are suggested for the fourth test are using a research protocol and developing a research database. Both of these strategies were used in this research. A researcher that is interested in replicating this research can use the directions and instruments provided in the research protocol (See APPENDIX A). The evidence that supports the conclusions was kept in a research database. The research protocol and the research database are described later in this chapter. The next section is focused on the specific procedures that were used to conduct the research.

### 3.3 Methodology

For the purpose of this study, a cross-functional and cross-firm team was operationalized as a group of three or more individuals that represent the two organizations and belong to at least two organizational functions, which are brought together to conduct an initiative. The teams could have been created for either an ongoing assignment or a discrete project with a specific goal. The nature of the assignments can be multiple. For example, teams that participated in product development initiatives, cost reduction initiatives, and revenue generation initiatives were analyzed.
3.3.1 Sample characteristics

The companies that participated in the study are leaders in their industry. Their managers’ experiences were particularly informative with respect to the research questions under study. The executive management of the companies involved in this research was committed to understanding how to better implement cross-functional teams with key customers or suppliers. This was reflected in the access that was provided to conduct interviews, to participate in meetings and to gather financial data. An overview of the sample characteristics is shown in Table 7.

| Number of firms included in the research | 6 |
| Number of buyer-supplier relationships  | 4 |
| Number of functions represented in the sample | 9 |
| Number of individuals interviewed       | 46 |
| Average duration of the interviews      | 47.4 min |

Table 7. Overview of the sample characteristics

The two sponsor companies selected to participate in this research (Company A and Company D) were known to have used cross-functional teams with their customers or suppliers, or were in the process of implementing them. Following a theoretical sampling approach, managers from the sponsor companies were asked to identify two relationships with customers or suppliers with the following conditions:
1. A relationship with a supplier or a customer firm in which cross-functional involvement was a common practice, and

2. A relationship with a supplier or a customer firm in which cross-functional involvement was NOT a common practice.

The two relationships had to be considered key by the focal company’s management. Additionally, the two relationships had to be with suppliers/customers that belonged to a similar product category. This approach helped to isolate the effect of the levels of cross-functional involvement from other variables.

The collection of data started in the relationship that presented more cross-functional involvement. This enabled the researcher to identify the value co-creation opportunities that were generated on the teams with more cross-functional involvement. This enabled the researcher to assess and compare if the same opportunities were created in the relationship with less cross-functional involvement, and to understand the reasons for the differences.

3.3.2 Companies and relationships profiles

A total of six companies were included in the research. In order to protect their identities they were identified as Company A, Company B, Company C, Company D, Company E, and Company F. The six firms formed four buyer-supplier relationships: 1) Relationship AB (between the customer Company A and the supplier Company B), 2) Relationship AC (between the customer Company A and the supplier Company C), 3)
Relationship DE (between the supplier Company D and the customer Company E), and 4) Relationship DF (between the supplier Company D and the customer Company F).

Relationships AB and AC were compared. Company A’s management considered Company B and Company C strategic suppliers. The products they supplied belonged to similar categories, and they both represented a significant volume of purchase for Company A. As described in the previous section, the major difference between the two relationships was that managers in Relationship AB participated regularly in cross-functional teams, while managers in Relationship AC did not.

Similarly, relationships DE and DF were compared. Company E and Company F were retailers which were considered strategic to Company D’s management, and both represented a significant volume of Company D’s sales. The major difference between the two relationships was that managers in Relationship DE participated regularly in cross-functional teams, while managers in Relationship DF did not. The characteristics of the firms that were included in the research are described next.

3.3.2.1 Company A

Company A was a full-service restaurant chain that owned and operated more than 500 restaurants in the United States. The company’s revenues were in excess of $1 billion.
3.3.2.2 Company B

Company B was a global food company with annual revenues of more than $40 billion. The research was conducted in a division dedicated to serve the food service industry. The division’s revenue was more than $4 billion. The total sales from Company B to Company A were $14.0 million in 2008. The relationship between Company A and Company B had high levels of cross-functional involvement.

3.3.2.3 Company C

Company C was an international provider of food products with annual revenues in excess of $40 billion. The company had more than 30 business units. The research was conducted in a business unit that provided products and services for the restaurant industry. The total sales from Company C to Company A was $11.7 million in 2008. The relationship between Company A and Company C had low levels of cross-functional involvement.

3.3.2.4 Company D

Company D was a food company dedicated to the distribution of refrigerated grocery and fresh meat products. The products are available for purchase in more than 15,000 grocery stores in 49 U.S. states. The company’s revenue was more than $250 million.
3.3.2.5 Company E

Company E was a supermarket chain with annual sales of more than $5 billion. Company E bought $14.5 million of Company D’s products in 2008. The relationship between Company E and Company D had high levels of cross-functional involvement.

3.3.2.6 Company F

Company F was a supermarket chain with annual sales of more than $15 billion. Company F commercializes the refrigerated and frozen products of Company D. Company D’s sales to Company F were $43.0 million. No cross-functional initiatives were identified in Relationship DF.

3.3.3 Identification of respondents

In order to uncover how value is co-created and to increase the validity of the findings, it was important to have the perspective of all the individuals that participate in the cross-functional teams. The following procedure was used to ensure that the key members of each team were identified and interviewed.

For each interorganizational relationship, management was asked to identify cross-functional teams that had achieved different levels of success. The perception of success was verified from managers on both sides of the buyer-supplier relationship. Managers identified the functional representatives that interacted with individuals from the other company. The individuals identified by managers were interviewed first. During
the interviews, a snowball technique was used (Miles and Huberman 1994). Following the approach used by Carter, Ellram, and Tate (2007), the individuals were asked to identify other individuals with whom they communicated on at least a monthly basis in regards to the team’s activities. These persons were interviewed at a later stage. A histogram that shows the number of informants that were interviewed at each function is provided in Figure 4. Figure 5 shows the number individuals that were interviewed from each company.

Figure 4. Number of informants per function
3.3.4 Research instruments

Prior to data collection, three research instruments were prepared: 1) a case study protocol, 2) an interview guide, and 3) a structure for a research database. In this section, the use and the importance of these three instruments is explained.

3.3.4.1 Case study protocol

The case study protocol is a document that contains the directions that a researcher follows during the data collection phase. The use of a protocol increases the reliability of a case study research because it provides evidence about the procedures and rules that are used to collect data (Yin 1989; Eisenhardt 1989; Miles and Huberman
1994). Since it helps to maintain uniformity of the data collection method, it is recommended when the research involves multiple case studies (Yin 1989). The research protocol that was used in this research is presented in APPENDIX A. It includes an overview of the research, the field procedures, the structure of the research database, indications for conducting a pilot case study, an outline for the case study reports, and the interview guide. The focus of the protocol should be on the individual case study (Yin 1989). The embedded research design that was chosen for this research consisted of three units of analysis: 1) at the relationship level, 2) at level of the cross-functional teams within each relationship, and 3) at the level of the individuals that participate in each cross-functional team. Therefore, the protocol and the data collection procedures are organized around these three levels of analysis.

3.3.4.2 Interview guide

The interview guide is presented in Section A.7 of APPENDIX A. It consists of open-ended questions that guide the conversation during the interviews. The questions were derived from the research framework presented in Chapter 2, and capture different aspects related to the three original research questions: 1) How is the value that is co-created in cross-functional relationships measured and communicated? 2) Why does cross-functional involvement lead to co-creation of value? 3) How are cross-functional interactions between organizations designed and managed? The interview guide was validated by means of a pilot case study.
3.3.4.3 Pilot case studies

The pilot case studies consisted of using and testing the research instruments with managers from organizations that did not participate in the formal research. The experience was useful for refining the data collection plans with respect to both the content and the procedures to be followed (Yin 1989). The pilot case studies did not follow the field procedures exactly as they are specified in the research protocol because of the limited number of buyer-supplier relationships available to participate in the large scale research. Four managers with experience in cross-functional teams, but who did not necessarily belong to the same teams or organizations were interviewed.

Table 8 provides information about the background of the managers that participated in the pilot case study. The inquiries were focused on the interview guide, and resulted in the incorporation of several suggestions about the content and the wording of the questions. For example, one manager suggested rewording a question from “What were the contributions from each function of your company and the customer [supplier] that was involved on the team?” to “What were the main three contributions from each function of your company and the customer [supplier] that was involved on the team?” Asking interviewees for a specific number of items resulted in more specific answers.
<table>
<thead>
<tr>
<th>Pilot case</th>
<th>Manager’s function</th>
<th>Manager’s industry</th>
<th>Company’s revenue</th>
<th>Manager’s experience in cross-functional teams</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sales</td>
<td>Manufacturing and distribution of medical supplies</td>
<td>$87 billion</td>
<td>Supply chain process improvement teams, six sigma teams and IT implementation teams</td>
</tr>
<tr>
<td>2</td>
<td>Operations</td>
<td>Manufacturing and distribution of medical supplies</td>
<td>$87 billion</td>
<td>Sales and operations planning initiatives with members of the own company and from suppliers and customers</td>
</tr>
<tr>
<td>3</td>
<td>Logistics</td>
<td>Logistics services</td>
<td>€57.2 billion</td>
<td>Logistics process improvement with individuals from the multiple functions at the customer organizations</td>
</tr>
<tr>
<td>4</td>
<td>Sales</td>
<td>Specialty adhesives</td>
<td>€1.8 billion</td>
<td>Product and service development with customers</td>
</tr>
</tbody>
</table>

Table 8. Background of the managers that participated in pilot case studies

3.3.4.4 Research database

The data collected were kept in a research database in order to maintain a chain of evidence from the findings to the original data. Maintaining a formal and organized database enables other investigators to review the evidence directly and not be limited to the case study report, which increases the reliability of the research (Ellram 1996). The database was organized by four subjects: data related to the interviewees, data related to the teams, data related to the buyer-supplier relationships and data generated from the analysis. The contents are:

1. Data related to the interviewees: demographic information (e.g., name, contact information, position in the organization and responsibility on the
team), interview audio recordings, interview transcripts, and interview field notes.

2. Data related to the teams: general information (e.g., team goals, longevity, perceptions about performance), audio recordings and narratives from the observation of team meetings, and documentation (e.g., project plans, project reports, financial information, internal memos, performance assessments).

3. Data related to the buyer-supplier relationships: documentation (e.g., contracts, supplier evaluations), supplier and customer financial information, and narratives about the history of the relationship.

4. Data generated from the analysis: communications with interviewees, case study notes, codes and categories generated during the analysis, narratives, reports from the QDA software, and data that was used in the calculations of value.

### 3.3.5 The interviews

Individuals were selected for the interviews using the field procedure that is included in the research protocol (see Table 20). Before the interviews, the individuals were sent an email that included information about the research along with the interview guide.

The interviews were conducted in person at a location determined by the firms’ management. The interviews were expected to last one hour, and the actual average time
was 47.4 minutes. A typical interview started with a short overview of the research and an explanation of the methodology prior to beginning the formal questioning. The informants were then asked about their roles on the team (e.g., years in their current position, responsibility on the team, percentage of their time spent in team activities, years of experience in other cross-functional teams). The interviewees were asked for permission to audio-record the conversation and it was promised that his/her identity would not be disclosed. All 46 interviewees accepted the usage of a voice-recorder.

The interview guide was used to focus the conversation, but the questions were customized to the particular context of the interview and were addressed in a conversational mode. Flexibility was kept to permit inquiry about unforeseen topics that emerged during the conversation and that were valuable for the research. The examples of value co-creation that the interviewees could provide were of special interest, so they were asked to illustrate their responses with anecdotes as much as possible. The interviewees’ accounts were used as a first step to measure value co-creation in financial terms. In order to better assess the value that was co-created in the cross-functional team, the interviewee was asked to provide supporting documentation whenever possible. The collected documentation consisted of project plans, project reports, financial estimations of costs and benefits, internal memos, and performance assessments among others, and were stored in the research database. A final question asked the interviewee about any

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8 The method used to estimate value co-creation in financial terms is described in Chapter 5.
area relevant to the research that he/she thought to be important but was not covered during the interview.

At the end of the interview, the interviewees were asked to identify other individuals that participated both formally or informally on the team. The criterion that was used to identify additional team members was defined as: “The individuals with whom the interviewee communicated on at least a monthly basis in regards to the team’s initiative.” This information was used to identify other individuals to interview. Additionally, the interviewees were asked about the possibility for the researcher to participate in team meetings as an observant.

At the closing of the interview the future steps of the research were explained. The interviewee was asked if he/she could be contacted for clarification purposes, and that he/she would receive a draft report to review before the final report was written. After the interview, an email was sent expressing appreciation for the individual’s cooperation, and reminding them of the steps that would follow. The audio recordings were transcribed verbatim. Both the audio recordings and the transcriptions were stored in the research database.

### 3.3.6 Data analysis

The data analysis stage started right after the first interview and continued in parallel with the remainder of the data collection stage. Overlapping the data collection and the data analysis stages in the case study approach is important because the researcher can better recall what was discussed during the interviews. Additionally, it
allows interpreting the new information in the light of the theory that is emerging from previous observations (Miles and Huberman 1994).

A qualitative data analysis (QDA) software was used to aid in the analysis of the data. QDA software are databases that facilitate the organization and analysis of complex non-numerical unstructured data. The software provided tools for manipulating text transcripts and audio files, coding text, creating and organizing code categories, annotating ideas, and visualizing graphical representations. These tools proved to be effective in simplifying the process of data analysis and in enhancing the validity of the findings. Counting with an organized and easily accessible database increased the research reliability (Yin 1989). Additionally, the software enables the traceability from the researcher’s conclusions to the data that originated the conclusions (both in text and audio format). As Figure 6 illustrates, the reader can reconstruct the logical steps that were followed to interpret and analyze the data. This information increases the internal validity of the research.
Figure 6. QDA software enables the traceability of the data
One of the main challenges in the case study approach is to achieve valid and reliable results from the analysis of a large amount of qualitative data (Eisenhardt 1989). The large amount of data that is collected can be overwhelming. In order to ensure that the four tests for validity proposed by Yin (1989) are met, the data analysis strategy was established before entering the field (Ellram 1996). The data analysis strategy consisted of three phases, which corresponded to the three levels of the embedded research design. The first level was at the individual level, which consisted of the within-case analysis of the data contained in the interview transcripts. A second level of analysis was at the team level, which consisted of a cross-case analysis of the data collected from all the individuals of a team. The third level of analysis was at the buyer-supplier relationship level. The outcomes of the analysis of the various teams were compared. In this section, a more detailed description of each level of analysis is provided.

3.3.6.1 First level of analysis- The individual

The analysis was based on the transcripts that were prepared after each interview. The transcripts and the audio recordings were uploaded to the QDA software. The software kept the transcripts’ passages linked to the corresponding audio file segment. This enabled the researcher to refer easily to the original conversation and listen to the tones that the interviewees used, which cannot be captured in a transcription. Two techniques for data analysis were used: open coding and pattern coding.

The first technique, called open coding, was used to reduce the large amount of data into meaningful pieces. In open coding, the goal is to review the field notes and
dissect them into meaningful pieces while keeping the relationships between the parts intact (Miles and Huberman 1994). Using the software, the passages of the transcripts that were believed to be key for addressing one or more of the research questions were selected and highlighted. The conceptual framework presented in Chapter 2 was useful for identifying key pieces of data. Codes were assigned to the relevant concepts that appeared in the passages that were highlighted. Codes are tags or labels that assign units of meaning to descriptive or inferential information (Miles and Huberman 1994). An inductive approach to coding was taken. That is, the researcher did not develop a list of codes in anticipation of the data collection phase. This approach has the advantage of allowing a better understanding about how a concept is related to its context, and of helping the researcher to remain open to different interpretations (Miles and Huberman 1994). Codes were given names that the researcher believed were descriptive enough to condense pieces of text in a few words. Each code was then given a definition that described its content. The list of codes and their definitions are shown in APPENDIX B. Every time a passage in a transcript referred to an existing code, the code was assigned to that passage. For example, the following passages were included in a code named ‘Communication of needs and capabilities.’

“We listen to what they tell us. Hopefully we are interacting with them or listening to them. Their needs can be identified by doing our research about their business and trying to understand them. But needs can be communicated also from their functions to our functions. If they have a quality problem, they would typically go directly to our leader of quality assurance because they have a relationship there” – commented by a sales manager from Company B
“At least in the last two years, I have not seen someone from their company go into our plants and really understand what the operation is capable of, and what we do and what the things are that need to happen in order to give them the product that they want.” – commented by a plant manager from Company C.

The second technique, called pattern coding, was used to organize the codes in categories. Pattern coding (or axial coding) consists of searching for threads that tie together the codes defined in the open coding stage into a smaller number of sets, themes, or constructs (Miles and Huberman 1994, Ellram 1996). The goal is to identify emerging themes, configurations, or explanations that are meaningful and parsimonious. Each category that was created was related to a research question or construct. The codes and categories were not static. They were reviewed and refined as information from new cases was made available (a technique called constant comparison). The constant comparison technique helped to keep the codes consistent across cases. The categorization of nodes is shown in APPENDIX B.

3.3.6.2 Second level of analysis – The cross-functional team

The second level of analysis started after two interviews from the same team were analyzed at the first level. The codes that emerged from each individual’s opinions were compared across cases within the same team. The cross-case analysis had three goals. The first goal was to expand and complete the categories with data and examples that were mentioned in other cases. This resulted in a more complete coding. The second goal was to detect discrepancies between the respondents’ opinions. When discrepant views appeared, the reasons were investigated. For this purpose, factors such as company,
supplier/customer side, function, hierarchy level, and other case characteristics were assessed in search for common patterns (Miles and Huberman 1994). In cases when the reasons for the conflicts were not evident to the researcher, the individuals were contacted a second time for clarification. The resolution of these inconsistencies led to the emergence of new codes, categories and relationships, which enriched the theory. The third goal was to increase the internal validity of the results by triangulation. Having multiple respondents offering their views about a topic and discovering the underlying reasons for the discrepancies increase the research’s construct validity and internal validity (Yin 1989).

3.3.6.3 Third level of analysis – The relationship

The third level of analysis consisted of a cross-case comparison of the outcomes obtained for each team at the second level of analysis. For this purpose, a technique called selective coding was used. Selective coding is the process of seeking and analyzing alternative patterns to explain the main phenomenon of interest (Strauss and Corbin 1998). It is done by selecting a central category, identifying groups of cases that differ in relation to the central category, and explaining the reasons behind the differences. The researcher looks selectively for cases that illustrate the central category and make comparison and contrasts (Neuman 2003). For multicase studies, selective coding is the basis for theory development because it helps to distinguish common themes and causal processes (Miles and Huberman 1994). For example, a central category in this research was value co-creation. Based on the subcategories associated with co-creation of value,
the researcher asked: Is there another common factor between the teams that were effective in co-creating value? Is there a difference between the teams that were successful and those that were not as successful? What are the differences and why do they affect value co-creation? Teams that achieved different levels of value co-creation were identified, and the reasons for the different outcomes were explained based on the teams’ characteristics. As recommended by Ellram (1996), the pattern matching technique was used. Patterns that were found to lead to value co-creation were compared with the predicted patterns from previous research (i.e.: cross-functional involvement). Alternative explanations of patterns were explored to demonstrate that they do not account as much for the co-creation of value. Pattern matching increases external validity because the researcher is forced to identify the conditions under which the phenomenon holds (Yin 1989; Miles and Huberman 1994).

The outcomes of this stage were cognitive maps that depicted the logical relationships between the codes and the categories that emerged from the data. The cognitive maps were used in Chapter 4 to answer the research questions. The conceptual maps were stored in the research database. A screenshot from the QDA software showing a cognitive map about the consequences of developing a better understanding of the needs on the other side of the relationship is provided in Figure 7. An explanation of the cognitive map is provided in Section 4.2.1 where the advantages of developing cross-functional buyer-supplier relationships are described.
Figure 7. Sample cognitive map generated during this research using the QDA software

3.4 Summary

In this chapter, a description of the research design and the methodology were provided. The case study was selected as the approach to use, and four buyer-supplier relationships were investigated. A description of the relationships and the cross-functional interactions that occur within them was provided.

Chapter 4 provides the findings that resulted from the analysis of the data. The three research questions are addressed and the perspectives from managers about the value co-creation are described.
Chapter 3 described the research design and the methodology used to analyze the data. This chapter reports on the outcomes of the data analysis in relation to the research questions posed in Chapter 1:

1. How is the value that is co-created in cross-functional relationships measured and communicated?
2. Why does cross-functional involvement lead to co-creation of value?
3. How are cross-functional interactions between organizations designed and managed?

The next three sections address the three research questions. The first question is addressed by describing the methods that managers used to measure and communicate the value that was co-created in the relationships. In order to address the second question, a description of the reasons and mechanisms that enabled value co-creation in the cross-functional relationships is provided. For the third question, the approaches that managers used to design and manage cross-functional relationships are described.
4.1 How is the value that is co-created in cross-functional relationships measured and communicated?

In this section, the first research question is addressed. None of the six companies that participated in the research had a method for measuring value co-creation in financial terms. Managers in general were aware of the importance of having such a method, but there were barriers that prevented its implementation. This section starts with a description of the barriers that managers faced in measuring value co-creation in financial terms. Although there were minor differences in the methods used to measure value co-creation, there were differences in how value co-creation was communicated. Therefore, the approaches that managers used to communicate the value that was co-created in relationships with high and low levels of cross-functional involvement are compared in a second part of the section. Finally, the importance of having a method for measuring value co-creation in financial terms is described based on the managers’ comments.

4.1.1 Barriers to the measurement of value co-creation in financial terms

Managers considered having a method for measuring value co-creation in financial terms important. However, they typically said that they did not know how to design or implement such methods. Table 9 shows quotations from managers to illustrate this point.
Table 9. Quotations describing the difficulty of implementing financial measurements of value co-creation

The managers who had tried to implement a value co-creation measuring system faced four types of obstacles that frustrated the attempt: 1) the difficulty in capturing the various sources of value that were co-created in the cross-functional relationship, 2) the difficulty in estimating the value co-created for the other company, 3) the difficulty in
determining how much of the success was a result of the contributions from each party, and 4) the costs of administrating the measuring system.

4.1.1.1 Difficulty in capturing the various sources of value that were co-created in the cross-functional relationship

Eighteen managers found estimating value co-creation especially difficult in cross-functional relationships. In transactional relationships, the scope of the exchange is limited to the product or the service that is provided. The value adding activities are done in sequence, first by the supplier and then by the customer with little interaction occurring. In the words of an R&D manager from a supplier firm: "We have tried to estimate the value that my function brings to a customer relationship, and the only time we were able to do so is in the more transactional relationships. You go to a customer and you show them a new product idea that uses one of our branded products. They take it and it goes to market six months later. In transactional relationships you can immediately measure the results against the time you spent on that account."

Measuring value co-creation in a cross-functional relationship requires the determination of the impact that an initiative had on a wide variety of aspects. For instance, in one of the cases a supplier provided information to a customer’s team about new consumer trends in the customer’s market. The many functional managers that

9 The number of managers that mentioned each statement is provided for descriptive purposes only. These numbers should not be interpreted as the strength of the statement being made. Qualitative data analysis is not an adequate methodology to describe the incidence or prevalence of a phenomenon (Yin 1989). For instance the focus given to a specific interview question varied as the research progressed.
participated in this initiative obtained benefits. For example, the information provided was used to develop new products, to refine marketing plans, and to guide the renovation of the layout of the company’s stores. Some outcomes from the initiatives could be identified\(^{10}\), but other outcomes could not be quantified directly. Managers said that even if they did not apply what they had learned directly, the information helped them to stay up-to-date about new trends, which in turn affected their future ideas and the strategies that they devised. The consequences of an initiative can even fall beyond the relationship. As an example, a manager said: "The insights that our customer gets from us help them across multiple product lines. Even for products that they do not buy from our company. They are able to use the knowledge that we provide them to negotiate with their other vendors." Therefore, one of the key decisions that managers have to make in order to estimate value in a cross-functional relationship is about the scope and the time in which the effects of an initiative will be framed. Nine managers believed that the subjectivity involved in this decision can lead to inaccuracies if an important aspect is missed or if an effect is double counted. However, this complication should not be an excuse to stop measuring value. Managers should focus on measuring the quantifiable aspects of value with a method that reduces subjectivity as much as possible.

The projection of value co-creation into the future was mentioned as another source of subjectivity by seven managers. These managers said that measurements of value should be based on the future cash flows generated through an initiative and not on

\(^{10}\) The outcomes from this initiative correspond to initiative AB4 and AB5 shown in Table 13.
what was accomplished in the past. This would involve making a number of subjective decisions that have to be incorporated into the measurement of value co-creation. Some questions that need to be considered are: Will the amount of value that was co-created in the past be sustained in the future? If so, will value be co-created at the same pace, at a slower pace or at a faster pace? Is there a limit to value co-creation where a saturation of ideas occurs? Or, do the synergy of resources and the ever-changing environment continuously lead to new opportunities? However, when managers measure and understand the real value co-created in the past, they can influence the relationship to continue co-creating value in the future. Borrowing from the literature on lean manufacturing, continuous improvement is guided by a process of monitoring and measuring against the strategic objectives (Womack, Jones, and Roos 1990), which in buyer-supplier relationships is the co-creation of value.

4.1.1.2 Difficulty in estimating the value co-created for the other company

Seven managers mentioned that the estimation of the value co-created for the other side of the relationship was difficult. All the challenges that managers faced when trying to measure the value co-created for their own firms were exacerbated when they tried to understand all the implications of their efforts on the other company. Quoting an R&D manager from a supplier firm: “We are only measuring the value in terms of our company’s sales. We do not quantify the value that we create for our customer, so that estimation is very subjective.” Even in the closer relationships, managers would not share with their counterparts at the other company all the information that was needed to
determine a financial figure for value co-creation. As a manager explained: "You can put an approximate dollar amount on the resources and time you have spent on an initiative. The hard part is to measure what exactly you and your customer get as a return based on the resources that are used in the relationship. You cannot make those connections between companies, so it is very subjective."

4.1.1.3 Difficulty in determining how much of the success was a result of the contributions from each party

A third challenge for the measurement of value co-creation mentioned by 16 managers was the difficulty in determining how much of the success was a result of the contributions from each party. In other words, managers had difficulty estimating the amount of value co-created that was due to contributions from the customer or due to contributions from the supplier. This distinction was not always clear, had to be made subjectively, was controversial, and was something that managers preferred to avoid. For example, managers were hesitant to provide an estimate of what percentage of an idea for a new product was due to information provided by a supplier. An R&D manager from a supplier firm commented: “To say that this company was responsible for exactly this item is probably a bit of a stretch. The contribution from each side is hard to determine because the customer may give you a general, broad, idea of what they are looking for. Out of that you refine the concept. It is hard to quantify and say that a specific input is responsible for a specific output.” The knowledge that each participant communicates during the interaction in the cross-functional team becomes part of the teams’ collective
knowledge. At some point, it becomes very difficult to determine the origin of an idea. However, managers should not be focused on trying to identify what side of the relationship contributed more to an idea. If the resulting value of an idea would not have materialized in the absence of the relationship and the benefits are satisfactory for both sides, then the percentage contribution to the original idea should not be a major concern. The goal for measuring value co-creation should be to determine the relationships with the potential to be more profitable in order to assign more resources to them.

4.1.1.4 The costs of administrating the measuring system

Three managers believed that the costs of administrating a system capable of effectively measuring value co-creation would be so high that it would outweigh the benefits of implementing it. In the words of a purchasing manager: “We tried and failed a couple years ago to implement a formal charter for every initiative, but it became so complicated that we stopped doing it.” Other two managers were concerned that the administration of the system could lead to increased bureaucracy that could limit the creativity of the teams. However these managers were referring to systems that recorded the contribution from each individual involved in the relationship in order to allocate costs. This detailed level of aggregation is not necessary for measuring the profitability of a relationship. The value that is co-created in a key relationship should be of sufficient magnitude to make the costs of the measuring system insignificant. If the profit is not substantial without the allocation of joint costs, the importance of the relationship should be reassessed.
4.1.2 Communication of value co-creation

Although there were no significant differences in the sophistication of the systems designed to measure value co-creation in the relationships that participated in the research, there were differences in the ways managers communicated the value that they believed was being co-created.

In the relationships that had more cross-functional involvement, management had a longer-term expectation of realizing the benefits from the initiatives in which they participated. They did not need to verify that they would obtain a direct benefit in order to participate in a cross-functional initiative. Once it was determined that a supplier or a customer was strategic, management would allocate resources to the other company to help co-create value. The six interviewees from Company B believed that if the other company could be more profitable, then it would result in more business for their own company. As one of the managers said: “We made a committed effort to help Company A because we think it is the right thing to do. We feel that what is good for them is good for us, and you can’t go wrong.” This opinion was validated by eight managers from Company A. As the relationship manager from Company A said: “They know the long-term value of getting involved with as many different groups within our company as they can. They have brought valuable things for us such as market information, product ideas, and solutions for some of our problems. And obviously, they would hope that eventually their efforts would lead to more business for them. But it has not always resulted directly in more sales for them. It might take a long time for that to come to fruition, so it is an investment that they make.” The supplier’s management demonstrated the commitment
to the relationship by participating in teams with its competitors when the customer required it and by suggesting ideas that would not directly increase their own sales. There was an understanding in Company B that some deals could be lost, but that in the long term their efforts were rewarded.

The managers who participated in cross-functional teams were focused on effectively communicating the value that they were helping to co-create rather than on negotiating price concessions. An R&D representative from a supplier commented: "We do not try to use the value that we create for our customer as a negotiation tool. We do not say: Here is what we did for you this past year, this is the total dollar amount that we have added up. We do not do that in this relationship, maybe with other less strategic accounts. Our presence in the customer company is enough to communicate the value that we bring.” Having cross-functional interactions with the customer helped the supplier demonstrate the value that they were providing because they were able to communicate with the various individuals involved in the buying decision (i.e., influencers, specifiers, buyers, users, gatekeepers). Every individual from the supplier that participated in a customer team had the underlying responsibility of selling the value that he/she was contributing to the customer. Relationship managers were responsible for other methods of communicating the value that was being co-created. For example, a monthly report was sent to all the people involved on the team and to the senior managers from both companies. The report included the status of the initiatives that were under way, and a summary of the sales of each product.
In the relationships with less cross-functional involvement, there was at least one side that was less willing to accept the uncertainty of not realizing a short-term return on the investment of allocating resources to a cross-functional initiative. As perceived by six managers in Company A, the managers in Company C needed a clearer stipulation about the direct benefits that their firms would obtain before committing their resources. Four managers at Company C gave insights that supported this idea. For example, the sales manager mentioned: "I believe that the most successful relationships are built upon a clear understanding of behaviors and expectations: If I do this, you do that. If I get you this, you are going to pay me this and we are going to be satisfied. When you cannot put that together, then in the simplest terms it is going to be a nightmare.” These more risk averse attitudes were usually the consequence of an underlying dissatisfaction with the other party’s behavior over time that eroded trust. One manager argued that there were instances when the customer did not want to pay appropriately for a suggestion made by the supplier. He described how managers in his firm reacted by saying: "One of the learnings that we have had from the relationship with this customer is that the next time we would still bring our ideas, but we would make sure that we are very clear about the price implications.”

4.1.3 Importance of measuring value co-creation in financial terms

Twenty-two managers acknowledged that a key determinant of the long-term success of a close buyer-supplier relationship is that both sides obtain a fair return on the investment that they make in the relationship. This was particularly important in
relationships that had developed cross-functional teams because implementing these teams requires effort, commitment of costly resources, and time to realize the benefits. The resources that are committed to the relationship compete against projects that are being conducted in other relationships. Therefore, the value that is co-created has to be demonstrated to be higher than the value that can be created outside of the relationship.

Without financial measurements of value co-creation, managers are more subject to the influence of perceptions that are inaccurate, incomplete or biased (Lambert 2008). Performance metrics that are focused on measuring price instead of value co-creation might drive decisions that can challenge the other side’s commitment to the relationship. For example, one of the customer firms that participated in a relationship that achieved high levels of value co-creation used a price minimization criterion to select suppliers for some of their products. In one occasion, the purchasing manager auctioned a product that could have been provided by the supplier that was involved in the relationship that was co-creating higher value. Although this action led to a price reduction for the commodity, no analysis was made about the impact on the relationship with the supplier that was helping to co-create value. As a sales manager from the customer said: “We are evolving more to a focus on price when we deal with our suppliers. We are bidding and using other mechanisms to reduce their prices. The fear that I have is that if we keep doing that, we are going to lose our close relationships to the point where we are not going to understand the value that the supplier can provide us as well as we do now.” Additionally, not measuring the financial value being created led to perceptions that were not consistent across the two companies. It was observed frequently during the interviews that the
contribution that one side believed it was making to the relationship was not being acknowledged by the other side. For example, five managers at Company C remembered that they collaborated in 18 product development initiatives with individuals at Company A and were aware of the cost that the initiatives had represented. However, at Company A, these initiatives were not considered because they did not lead to the commercialization of any product.

Managers identified four actions that they would take if the relationship deteriorated: 1) reallocating resources to another more profitable relationship, 2) changing from a proactive attitude towards value co-creation to a more reactive one, 3) requiring clearer rules of engagement such as gain sharing agreements, and 4) having a tougher position on price negotiations. These actions were taken by managers at a company that had low levels of cross-functional involvement. Quoting the sales person: “In the past they used to consider the total value that we brought. I don’t think they do it anymore. My feeling is that they are much more focused on buying cheaper products. They are not as focused on service or value creation. There has been in the last two or three years a big move to cost cutting and being economical. And that is fine, but then we may not provide as many services to them.” He added: “If they just look for the cheapest we are not the best suppliers for them. There are other customers that are willing to pay for our services. If they start getting transactional, then they need to find cheap suppliers.”

In summary, two approaches to estimating value coexisted. The first approach consisted of a quantitative evaluation of the price that was paid for a good (in the case of
the customers), or of the customer profitability as measured using accounting information (in the case of the supplier). However, these measurements did not include the value that was co-created in initiatives such as product development and commercialization, joint improvements in manufacturing and product quality, and distribution network redesign. The second approach was based on the managers’ perceptions about the value that was being co-created in the relationship. In general, managers believed that implementing a measurement system that incorporated all the possible sources of value co-creation from a relationship was difficult. However, even when the outcomes from such a system are not exact, it enables managers to focus on value co-creation instead of just using price. In Chapter 5, the approach that was used to measure value co-creation in this research is described.

4.2 Why does cross-functional involvement lead to co-creation of value?

In this section, the qualitative data collected from the interviews with managers are used to describe the reasons and the mechanisms by which cross-functional integration led to co-creation of value. From the analysis of the managers’ accounts, three categories of mechanisms were identified: 1) the development of a better understanding of the other company’s business, 2) the access to costly resources, 3) and the access to a wider diversity of services.
4.2.1 The development of a better understanding of the other company’s business

The benefits of having a better understanding of the other company’s business were observed on both sides of the cross-functional relationships. For the suppliers, participating in cross-functional activities with key customers provided the opportunity to understand better the customers’ needs and the strategies that they use to compete in their markets. The understanding of the customer’s business that was achieved in the cross-functional relationships was deeper, more comprehensive and more timely than in the relationships without cross-functional interaction. Cross-functional relationships facilitated the discovery of opportunities in anticipation of the competition. In the words of one of the purchasing managers: "One of the advantages that a supplier gets by getting close to your company by interacting on multiple fronts is that they really can see what you need upfront and get involved early on. So they tend to have an advantage over the other suppliers because they know your company better. So there are advantages that simply come from having a good cross-functional relationship with your customer."

For the customers, cross-functional interactions with key suppliers enabled managers to understand how the supplier could help their companies be more competitive. Additionally, customers developed a better understanding about the assistance that their suppliers needed from them in order to become better co-creators of value. A sales manager’s statement illustrates this point: “The value of a cross-functional relationship is that it allows you to understand your vendor’s characteristics really well. If you ever lose the relationship, then you lose the opportunity to find the strengths within that organization.”
When managers were asked to explain what they meant by the phrase "to understand the other company’s business" they referred to having an understanding of two types of factors. The first factor was related to needs. Fourteen managers used words like limitations, needs, wants, problems, what is important for them, goals, objectives and opportunities among others to refer to any need that the other company’s management had and that when exploited resulted in value co-creation. Even though the word chosen to label this factor was “needs”, the meaning is wide enough to encompass a company’s strategic goals or a specific problem in any aspect of the business. These needs can be manifest or latent, and can be present both on the supplier side and on the customer side. A more detailed description of the elements that are included in the definition of needs is provided later in this section.

The second factor was related to capabilities. In 12 interviews, managers used the terms strengths, capabilities, resources, and characteristics among others to refer to any capability that can be accessed by interacting with the functions from the other organization. The word capability was chosen to summarize this second factor. Formally defined, capabilities are the socially complex routines that determine the efficiency with which firms transform inputs into outputs (Collis 1994).

During the interviews, managers described their experiences in cross-firm initiatives that had different levels of cross-functional participation. From these accounts, it was detected that it is important to distinguish between two types of needs and capabilities: latent and manifest. The benefits of cross-functional relationships were more evident for certain type of needs and capabilities. Four categories were identified that
enabled the understanding of the other company’s business. Table 10 shows a definition of each category along with references to initiatives that led to value co-creation. Table 11 illustrates the four categories with quotations from managers. In the rest of the section, the four categories are described, the benefits of cross-functional involvement for each of them are explained, and the concepts of reactive value co-creation and proactive value co-creation are defined.

<table>
<thead>
<tr>
<th>Cross-functional involvement led to a better understanding of:</th>
<th>Needs</th>
<th>Capabilities</th>
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</thead>
<tbody>
<tr>
<td>Manifest</td>
<td>Manifest needs: The needs, goals and opportunities that are known to managers and that are expected to be fulfilled by engaging in a close relationship with another company.</td>
<td>Manifest capabilities: The capabilities that are believed to be valued in the other company and become part of the offering.</td>
</tr>
<tr>
<td>Latent</td>
<td>Latent needs: The opportunities to co-create value that are unknown to the managers of the two companies in a relationship.</td>
<td>Latent capabilities: The capabilities that are not known to be valued in the other company and do not become part of the offering.</td>
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Table 10. Categories of needs and capabilities
<table>
<thead>
<tr>
<th>Needs</th>
<th>Capabilities</th>
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<tbody>
<tr>
<td>• “We respond to them in an ‘as needed basis’ They tell us what to do</td>
<td>• “The managers of one of their business units have worked more closely</td>
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<tr>
<td>and we go and work on it. But the benefit is to do something that is</td>
<td>with us so they understand our capabilities better.” (Manufacturing</td>
</tr>
<tr>
<td>above and beyond that.” (Manufacturing manager from a supplier) (*)</td>
<td>manager from a supplier)</td>
</tr>
<tr>
<td>• “We can work on the specific project that they need help on. But what</td>
<td>• “The value of a long term relationship is that it allows you to understand</td>
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<tr>
<td>we can also do is to be more involved at a strategic level and</td>
<td>you vendor’s characteristics really well. If you ever lose the</td>
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<tr>
<td>proactively engaging with regards to their products and how to position</td>
<td>relationship then you lose the opportunity to find the strengths within</td>
</tr>
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<td>them.” (R&amp;D manager from a supplier)</td>
<td>that organization.” (Sales manager from a customer)</td>
</tr>
<tr>
<td>• “They have a new product and based on their history and experience</td>
<td>• “We are helping them forecast what will happen in the future with their</td>
</tr>
<tr>
<td>with us they believe it can be a good fit, so they come and offer it.</td>
<td>raw materials. Because we have an army of people that all they do is</td>
</tr>
<tr>
<td>It is reactive somehow, they know what might work for us.” (Sales</td>
<td>forecast trends.” (R&amp;D manager from supplier)</td>
</tr>
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<td>manager from a customer)</td>
<td>• “Our job is to make sure that the specifications clearly define what the</td>
</tr>
<tr>
<td>• “When we plan together we tell them what we would like into a certain</td>
<td>managers at Company A want and deliver it to the specification.” (</td>
</tr>
<tr>
<td>category of products.” (sales manager from a customer)</td>
<td>manufacturing manager from a supplier)</td>
</tr>
<tr>
<td>• “The specific needs of the customers tend to get a little filtered</td>
<td>• “It is at a strategic level where I think that we can help them because</td>
</tr>
<tr>
<td>sometimes by the sales person.” (manufacturing manager from a supplier)</td>
<td>of the size and skills of our organization.” (R&amp;D manager from a supplier)</td>
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<tr>
<td>• “Once that trust is built up they are more willing to tell you: ‘OK,</td>
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<td>here is how you can help. I know you are a good supplier, you probably</td>
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<td>have this thing that would help us’”’ (R&amp;D manager from a supplier)</td>
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<td>• “When they can clearly articulate what they want in a simple way the</td>
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<td>relationship is easy. They have to be able to say: ‘This is what we need,</td>
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<td>this is what is important to us’” (sales manager from a supplier)</td>
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Table 11. Quotations supporting the four categories of needs and capabilities
<table>
<thead>
<tr>
<th>Needs</th>
<th>Capabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>• “We respond to them in an ‘as needed basis’. They tell us what to do and we go and work on it. But the benefit is to do something that is above and beyond that.” (Manufacturing manager from a supplier)</td>
<td>• “As they are more knowledgeable of our capabilities they are going to see things in a different light in terms of understanding.” (Manufacturing manager from a supplier)</td>
</tr>
<tr>
<td>• “We can work on the specific project that you need help on. But what we can also do is to be more involved at a strategic level and proactively engaging with regards to their products and how to position them.” (R&amp;D manager from a supplier)</td>
<td>• “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.” (R&amp;D manager from a supplier)</td>
</tr>
<tr>
<td>• “They have brought some ideas to us that we did not think of and that we have actually gone with a couple of those, so we encourage that.” (Purchasing manager from a supplier)</td>
<td>• “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’” (R&amp;D manager from a supplier)</td>
</tr>
<tr>
<td>• “Our relationship has gone beyond just working on a project by project basis to getting immersed in their business. We come up with projects on our own, even though it wasn’t requested from them. We can do that because we know them so well and we have the resources to do so.” (Marketing manager from a supplier)</td>
<td>• “We brought them proactively what we felt was a very valid idea.” (sales manager from a supplier)</td>
</tr>
<tr>
<td>• “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.” (R&amp;D manager from a supplier)</td>
<td>• “Pricing, analyzing margins and measuring customer service are areas that I think they probably have some expertise, but we have not begun a conversation yet.” (marketing manager from a customer)</td>
</tr>
<tr>
<td>• “Sometimes the people from the supplier know more about what we are doing than I do. Which is great. Which is the way it ought to be.” (Sales manager from a customer)</td>
<td>• “And we bring all our resources, to get Company A 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.” (sales manager from a supplier)</td>
</tr>
<tr>
<td>• “Suppliers will bring lots of ideas. Some of them we have already gotten before by ourselves but there are some that are proactive.” (Purchasing manager from a customer)</td>
<td>• “If you have a good partner and there are bright people there, to me there is always something that you can learn that had not occurred to you that way, or they might see the world differently.” (Marketing manager from a customer)</td>
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</tbody>
</table>

(*) Note: quotations that address more than one category were repeated in all the relevant quadrants. In these cases, the text in italic shows the part of the quotation that relates to the category where it was included.
4.2.1.1 Manifest needs

Manifest needs are the needs, goals and opportunities that management wants to satisfy by engaging in a close relationship with another company. These needs are known and can be communicated directly to the other party. At a strategic level, the manifest needs become the drivers to engage in a close relationship with a customer or a supplier. At an operational level, manifest needs are the specific initiatives for which management wants the other company to become involved.

In a business setting, manifest needs should be determined with input from the various functional managers. Representatives of different functions might be aware of needs that can be addressed with the resources of the other company. For example, a marketing manager at a customer organization commented that a key supplier had an expertise in pricing and profitability analysis that could be valuable for her company. Management should have a good understanding of the needs that exist in all of the functions within their companies and know how these needs can be satisfied by developing a close relationship with a buyer or a supplier. Figure 8 illustrates a set of manifest needs that drove the management of a buying firm to participate in a relationship with a selling firm.
4.2.1.2 Manifest capabilities

Capabilities were classified also as manifest and latent. A manifest capability is a capability possessed in a company and that management believes will be valued in the other organization. Manifest capabilities may become part of the offering that the supplier proposes to the customers. Capabilities that are useful to another company exist in every function of the organization. Management should assess the capabilities that exist in all the organization’s functions with the input from every functional manager. The manifest capabilities that exist at a selling firm are represented Figure 8. A subset of

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11 Figure 8 illustrates a situation in which the manifest needs are at the buying side and the capabilities are provided from the selling side. However, the situation can be reversed because both sides possess needs that can be satisfied through the relationship and capabilities that can be used at the other side.
the capabilities at the selling firm can be used to satisfy a subset of the manifest needs at
the buying firm. The subset of needs that can be addressed with the capabilities at the
selling firm are represented as the shaded area in Figure 8. The more overlap between
needs and capabilities in a relationship, the more opportunities to co-create value.

4.2.1.3 Reactive value co-creation and cross-functional involvement

Value co-creation can be classified in terms of whether the cross-functional team
addresses a manifest need or a latent need of one of the parties that participate in the
relationship\textsuperscript{12}. When a need from a company is manifested, the managers from the other
company react trying to provide a solution based on its manifested capabilities.
Therefore, the value that is co-created in this context was defined as reactive value co-
creation. Figure 8 shows reactive value being co-created from the intersection of the
manifest needs and capabilities from both sides of the relationship.

The cross-functional relationships that participated in the research had advantages
for co-creating value in a reactive way over the others. Five managers acknowledged that
when the companies were cross-functionally integrated, the supplier received the
requirement from the customer earlier than competitors did. In general, when a need that
could be satisfied by a supplier was detected in the customer organization, it was
communicated to the procurement manager. However, if cross-functional links with the
supplier existed, the need would be communicated directly to the appropriate individuals

\textsuperscript{12} The categorization of needs in either manifest or latent is an oversimplification. A need can have some
elements that are known and other elements that are realized from the interaction with an external entity.
in the other company. This facilitated a quicker response from the supplier that was involved in the cross-functional relationship than was possible from the other suppliers. Additionally, the broader understanding of the situation that drove a customer’s request enabled the suppliers to better interpret, react and exploit the opportunity. In one case, a customer had a quality problem with a product provided by one of its suppliers that was involved in a cross-functional relationship. The knowledge that the supplier’s manufacturing and quality managers had about the customer’s priorities and the customer’s manufacturing system contributed to a quick solution to the problem.

The earlier a customer or a supplier is involved in a joint initiative, the more opportunities there are to co-create value. The largest part of the cost is determined in the early stages of a project. For example, in product development projects it is estimated that 80 percent of the final costs are determined during the design phase, while only 20 percent of the costs are determined after the prototyping and production phase (Brown and Eisenhardt 1995). Therefore, a supplier or a customer that is involved early has the opportunity to co-create value on a larger scale. Additionally, the variety of knowledge and the range of possibilities that are opened in the earlier stages of an initiative make firms that can interact cross-functionally particularly attractive to collaborate. For example, in one of the product ideation sessions in which I participated as an observer, the topics discussed included marketing trends and consumer behavior, product characteristics, distribution strategies, financial expectations, and quality and regulatory issues. The combination of knowledge from the multiple functions from both the customer and the supplier led to co-creation of value and the satisfaction of the customer
with the supplier’s participation. From this initiative, five products (products AB1, AB2, AB3, AB4 and AB5) were developed, which led to a gross margin of $28.7 million for Company A and increased Company B’s sales to $1.1 million in 2008 (See Section 5.2.1). In later stages of the product development projects, the activities were conducted by functional specialists, but keeping a link to the relationship managers.

Other suppliers with the same level of importance but that did not rely on cross-functional teams were not prepared to contribute as much in the early stages of the development of products. These suppliers participated in the later stages of the product development initiatives AC1 and AC2 that are shown in Section 5.2.2. The value co-created from these initiatives for the supplier in 2009 was $49,948. The percentage of the total product development projects that resulted in the commercialization of a new product was higher in the supplier relationship that had more cross-functional involvement. According to the R&D manager of the company that co-created less value, the lack of communication between the managers of the various functions and between managers on both sides of the relationship was a significant barrier.

4.2.1.4 Latent needs

Managers are usually not aware of all the opportunities that can arise from developing a close relationship with a supplier or a customer. New needs arise over time as managers in the two organizations learn from each other. In the relationships that participated in the research, the needs that initially drove management to become
involved in the relationship changed over time. This occurred through the discovery of latent needs.

Latent needs (or unrecognized needs) are opportunities to co-create value that are unknown to the managers of the two companies in a relationship. Latent needs are not known before the relationship is formed and would not be known in the absence of the relationship. As latent needs are not known, they cannot be communicated to the other company’s managers. The identification of latent needs requires a type of knowledge or a perspective that is not available in the organization. By definition, latent needs can emerge only from the interaction between a company’s individuals with an external entity such as a supplier or a customer. For instance, the discovery of latent needs was evident in the process of product development and commercialization in the cross-functional relationships that participated in the research. Representatives of the supplier’s marketing, R&D, manufacturing and finance functions interacted with their counterparts at the customer company in ideation sessions. The supplier’s representatives provided information that assisted in identifying market trends, developing marketing strategies, and defining and developing new product lines for the customer. Figure 9 illustrates the latent needs that were detected at the buying firm as a result of the interaction with individuals from the supplier. The set of opportunities to co-create value was augmented in this way. A subset of these latent needs that were recently discovered can be satisfied by means of the manifest capabilities that exist on the selling side. This subset is represented as a new shaded area in Figure 9.
The detection and fulfillment of latent needs by a supplier or a customer appeared to create extraordinary satisfaction for managers. The reason was that latent needs are by definition not known to managers, thus making the fulfillment of the needs unexpected. A supplier or a customer that can address successfully the other organization’s latent needs is in a position to help in co-creating value that exceeds the expectations at the other company. Capturing and addressing latent needs demonstrates a proactive behavior.

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13 Figure 8 illustrates a situation in which the manifest needs are at the buying side and the capabilities are provided from the selling side. However, the situation can be reversed because both sides possess needs that can be satisfied through the relationship and capabilities that can be used at the other side.
that can become key to differentiating the firm from its competitors. This was explicitly mentioned by six managers. One of them said: “What you want are proactive suppliers. We do not see them that much, but that is what you want. Some suppliers have actually brought ideas to us that we did not think of and that we have implemented. We encourage that behavior.” Therefore, proactive value co-creation was defined as the ability to detect and capitalize on the latent needs of a key supplier or customer. A manager defined being proactive as: “Being proactive means not waiting for a specific project to come in, but focusing on things that we can do and going to the customer and telling them about the ways that we think that we can help them in their business.” Once a latent need is identified it becomes a manifest need. Therefore, efforts to proactively co-create value have to be a long term strategy.

4.2.1.5 Latent capabilities

A third mechanism to co-create value was enabled by the detection of latent capabilities. In the examples provided in Figure 8 and in Figure 9, it was assumed that managers at the selling firm knew exactly which set of capabilities to allocate to the relationship. This set of capabilities was defined as manifest capabilities. However, it was observed that functional managers who were not in close contact with the other organization seemed to have difficulties understanding how their functions could help the other organization. Some of the functions’ capabilities remained unrecognized or latent. Latent capabilities were defined as the capabilities that an organization possesses in any function but which are not known to be useful to the other party. It is only through close
communication between functional managers of both organizations that these capabilities can be recognized and applied. In the words of a manufacturing manager at a supplier company: “I have not seen anyone from our customer go into our plants and really understand our operation, what we do and what are the things that need to happen in order to give them the product that they want. So I think that if they could see with their eyes how the product is made and get a little bit more engaged, it would be very beneficial for them.”

Managers that were involved in cross-functional relationships could identify not only the capabilities that they provide to the other company, but also the capabilities at the other company that were useful to them. Since latent capabilities can exist in any function, cross-functional involvement makes latent capabilities more visible. It is through the exploration that occurs in a cross-functional relationship that these capabilities can emerge. For example, a supplier had a distribution network that could reach a retailer efficiently that was too expensive for the customer to reach with its own distribution network. By involving the logistics representatives of the supplier on the customer team, it was possible to detect this capability and open a new market for the customer. Figure 10 illustrates a situation in which the capabilities on the selling side are extended beyond the capabilities that were manifested in a previous instance. The new set of capabilities that is uncovered serves to co-create value by satisfying a bigger subset of manifest and latent needs on the buying side. The value co-created in this way was not expected in the previous instance of the relationship, thus constituting proactive value co-creation.
4.2.1.6 Proactive value co-creation and cross-functional involvement

A proactive attitude towards value co-creation led to extraordinary satisfaction with the relationship because the resulting value co-created surpassed the expectations of managers. There are a number of conditions that have to be met for the supplier and the customer to be engaged in a relationship that fosters proactive value co-creation, but

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14 Figure 10 illustrates a situation in which the manifest needs are at the buying side and the capabilities are provided from the selling side. However, the situation can be reversed because both sides possess needs that can be satisfied through the relationship and capabilities that can be used at the other side.
cross-functional involvement is a key condition. Suppliers and customers cannot detect the other company managers’ latent needs and capabilities in isolation. The detection of latent needs and capabilities requires prior knowledge of the other organization in issues related to the various activities conducted in the functions. For example, a manager noted: “There are some suppliers that are proactive, but to get there they really need to understand your business a lot better. Without an understanding of what you need and what you are doing they can work on things that you do not need or come with ideas that you have already identified.” Companies that had representatives of the various functions interacting in cross-functional teams with individuals from the other company had an advantage in terms of developing the necessary knowledge. The understanding of the other businesses from the various perspectives that each function provided was key. Latent opportunities may arise in any area of a business at any moment. Therefore, managers from companies that covered more business activities were able to detect more opportunities that were more profitable.

In contrast, the suppliers that had less cross-functional involvement were more reactive and less proactive. In one case, the customer’s key account manager acted as a gatekeeper, limiting the interaction between the supplier representatives and the individuals of the other functions. The inability to communicate the needs and capabilities across functions was an impediment to detect opportunities in the various business areas, and the supplier was confined to behaving in a reactive way. In another

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15 Other success factors for proactive value co-creation are described in Section 4.3
case, a relationship a had suffered a deterioration over time due to the customer’s focus on price and a lack of coherence in the requests from the different parts of the customer organization. This situation induced the supplier to limit the proactive participation of the representatives of functions other than sales. According to six managers on the customer side, the supplier sales manager waited for the requests from the customer rather than involving the other functions to look for value co-creation opportunities proactively. The supplier’s sales manager revealed this more reactive attitude when he said: "All I can ask is that they come and tell me what they need us to do, so that I then can communicate it to all of our functions. But when their needs are unclear, conflicting, they just don’t know, or one part of the company wants one thing and the other another thing, it is difficult to do."

In summary, cross-functional involvement facilitates the understanding of the other party’s business. The dialogue and sharing of the different perspectives that exist in the multiple functions on both sides of the relationship enables a better understanding and a faster response to the other side’s manifest needs and capabilities. It also enables the detection of latent needs and capabilities that lead to value that would not have been co-created in absence of the relationship. The ability to co-create value from the exploitation of expressed needs and capabilities was defined as reactive value co-creation. The ability to co-create value from the exploitation of latent needs and capabilities was defined as proactive value co-creation. Proactive co-creation of value led to extraordinary satisfaction of the managers at the other firm.
4.2.2 Access to costly resources

Fourteen managers mentioned that interacting in cross-functional teams with members of a key customer or supplier provided managers with access to a wider assortment of resources than if they had worked in isolation. These resources were primarily individuals with abilities and knowledge that management found expensive or difficult to develop internally. For example, a supplier maintained a specialized function exclusively dedicated to forecast the prices of the commodities they sold. These capabilities were used to inform customers about their markets’ trends, to recommend purchasing strategies, and to develop financing alternatives. The supplier was able to develop and sustain this function because the required investment could be leveraged across a number of customers. Just as a supplier consolidates the production of raw materials and obtains economies of scale, it also acts as a consolidator of knowledge and capabilities related to a commodity. Managers at the supplier firms that participated in cross-functional relationships had developed capabilities that the various functional managers at the customer found valuable: ideas to promote the customer’s products, information about the customer’s market trends, methods to improve the quality of products, best practices in distribution, methods to forecast the customer’s commodity prices, financial tools, and research to help in product innovation. In all cases, managers at the customer companies said that these capabilities could not be developed internally due to the high costs involved.

The access to resources of the other company grew as more individuals were involved on the teams that operated within the relationship. In a typical relationship, the
A salesperson has a limited number of contacts that she/he can influence in his/her own company. If a customer needs to access a resource in the supplier organization, the availability might be limited. In contrast, when the interaction occurred through a cross-functional team, the various members from different functions had more opportunities to reach and influence a specific individual to obtain access to resources in their company. In the words of an operations manager: "I have the ability to tie deeper into our operations organization and reach all these different skills. So whoever our sales manager cannot reach, I can reach. And whoever I cannot reach, the marketing representative on the team can reach. You expand your reach exponentially once you have someone on the team who is actually in the halls of our headquarters.”

The access to the network of resources provided by different functions from a supplier or a customer increases switching costs. Switching costs are the costs that would be incurred as a result of replacing a supplier or a customer with another one, or with another source of equivalent knowledge such as developing a capability internally. Typical switching costs categories are the costs of finding, testing and developing a relationship with a supplier or a customer (Ryals and McDonald 2008). Even when alternative suppliers exist that could provide similar products and services, the organization will have to reinvest in developing the relationship and implementing the mechanisms that lead to cross-functional teams. Establishing productive cross-functional teams takes time and the commitment of expensive resources, and not all organizations are prepared to develop cross-functional teams.
Eight managers believed that the advantage of having access to the other firms’ resources was particularly important when the resources were unique or could not be economically replicated internally. In one situation, the need for external resources was generated when a company experienced human resources reductions. A manager claimed: "One of the reasons we have been looking at cross-functional alliances is because we’ve been cutting our resources over time, so we view our suppliers as resources. If we need someone to help us with development and we do not have the people ourselves, we tap into our suppliers, particularly if they are willing to do it for us."

In the relationships where higher co-creation of value was taking place, managers were less focused on cost reduction by eliminating duplicated resources. I hypothesized that if managers had access to the resources that the other company could provide, and they were able to integrate them effectively in cross-functional teams, they could be tempted to eliminate the resources that were duplicated. However, three managers indicated that this was not the ultimate reason for forming teams. The goal was to obtain better outcomes by leveraging the capabilities that existed in both companies. Even when the supplier brought individuals with similar backgrounds to those that existed in their own company, there were better opportunities to co-create value if both sides were involved in the cross-functional team. As a manager explained: "We can solve some issues from within our organization but we would not have the benefit of interacting with all the resources that our supplier brings." Additionally, in most cases managers said that the individuals that were allocated to a cross-functional team had their main
responsibilities within their functions. So even when they could be replaced on the team, they still had responsibilities in the functional organization.

4.2.3 Access to a wider diversity of services

The richness of the services that can be provided by a supplier to a customer increases both in variety and in depth when more functions are involved in the relationship. In terms of variety, each area that participates in the relationship can contribute with its representatives’ distinct knowledge. In terms of depth, the more functions that are involved the more complete and robust projects can be implemented. Seventeen managers mentioned aspects related to the benefit of getting access to a wider diversity of services. According to a procurement manager, the extra services that a key customer can receive are “an external consultant service that is not included in the price that the customer pays and that is part of the total value that is provided.” A procurement manager showed his satisfaction with suppliers that were focused on added services when he said: “We love when a supplier tries to sell us more than just the product. For example, when they try to work with our product development folks to show them what is new and what are the trends. We do like to know new ideas and so we encourage them to develop that type of cross-functional relationship with us.”

Cross-functional relationships were a better medium to communicate information related to a function than through a salesperson. Managers felt more confident when they obtained this information from the individuals that were specialists in the area. A manager observed that when there was a quality issue where the customer needed help,
they did not want the sales representative to bring the solution. They were more confident when the quality manager from the supplier was involved directly. In other words, even if the salesperson can bring the information, on some occasions managers prefer to interact directly with the expert on the team.

Five managers indicated that the exposure to individuals from multiple functions from another company provides managers with a fresh perspective about their business and the environment. Suppliers might have information about how to reach markets that the customers may find useful. This can be a consequence of the supplier having other businesses in which they operate with a segment of customers that management of the other company wants to reach. To quote a sales manager: "We know our own customers, but our goal is not only to satisfy them but to appeal to a broader base of customers. So by getting our supplier involved, we can look at a broader spectrum of opportunities. Because they are a great partner, they do lots of research with consumers who might be potential customers of ours as well as current ones." A supplier that achieved high levels of value co-creation shared information with its customers about how other companies were approaching common problems. A manager from a supplier organization explained: "We provide a kind of external consultant service, another point of view. We are quite big in several commodities, so our customers want us to give them insights, just from another point of view so that they can measure against others."

In this section, the second research question was addressed. Three mechanisms by which value was co-created were described. In the next section, the third research question is addressed to report about the common barriers that can put at risk the
effectiveness of cross-functional teams to co-create value. The success factors that are key for managers to consider are reported as well.

4.3 How are cross-functional interactions between organizations designed and managed?

In this section, a description of the factors that were key to managing cross-functional relationships is provided. These factors were barriers that managers should avoid or enablers that when present fostered the co-creation of value. The factors that managers considered key were: 1) the clear understanding of the joint expectations and perceptions of the relationship, 2) the trust in the other party’s motivations for engaging in cross-functional teams, 3) the commitment to the relationship, 4) the costs of implementing cross-functional teams, 5) the need for organizational structures that enable co-creation of value, 6) the role of the relationship managers, and 7) the need for adequate internal communication.

4.3.1 The clear understanding of the joint expectations and perceptions of the relationship

All relationships that were studied in this research were regarded as strategic by the managers on both sides of the relationship. However, managers’ satisfaction with the other side was different between the relationships that lead to value co-creation and those that did not. The basis for the dissatisfaction was a gap between the managers’ expectations and perceptions.
Managers had expectations of the other company’s management behaviors, which were created either from the reputation of the other company or by a comparison with other similar relationships. Managers also formed perceptions of the behaviors at the other company. When the perceived behaviors did not meet the expectations, manager’s disappointment increased. Disappointed managers on one side behaved in ways that in turn frustrated managers on the other side, generating a vicious cycle that damaged the relationship. Figure 11 illustrates this cycle, which was observed in one of the relationships that did not co-create value. In this case, management in the customer firm was aware of the variety and potential of the resources that existed in the supplier organization (1). However, they perceived that the supplier had gradually been reducing the amount of resources that were dedicated to the relationship, and that there was less participation in value co-creation initiatives (2). In the words of a manager: “This supplier provides quality, service, and price. They do a pretty nice job with that. But even though they have great resources, we do not get access to all of them as we do in our other relationship.” This gap between the customer’s manager expectations and perceptions led to increased dissatisfaction with this supplier. Quoting a sales manager from the customer: “So, are we as loyal to them as we are to the other relationship? No, and if someone comes along and has a better product at a price than they do, we will probably jump ship.” The customer responded by negotiating price concessions (3).

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16 Numbers in parenthesis refer to a text box in Figure 11. Quotations from managers are provided in the figure to support each stage of the cycle.
Quotations from managers are included to support each stage of the cycle.

Figure 11. The clear understanding of the joint expectations and perceptions of the relationship.
On the supplier’s side, managers had similar expectations of the customers. They considered the customer important and wanted to develop relationships based on value co-creation (5). However, the perception was that in the past they had shared their resources with this customer, but it had not led to the increase in business that they were expecting. Moreover, they perceived that the customer was focused on reducing prices, which was a behavior that was not coherent with the expectations for a service based on value. Quoting the sales manager of the supplier: “My feeling is that they are much more focused on buying stuff cheaper. They are not as focused on service. There has been in the last two or three years a big move to cost cutting and being economical” (4). The customer consequently decided to reallocate some resources to other relationships (6). In turn, the customer perceived the supplier to lack the commitment to provide resources (2). The lack of communication of expectations and perceptions between managers at the two companies summed to the lack of measurements of value co-creation generated a vicious cycle that was eroding the relationship.

In a second case, management at the supplier firm perceived that they possessed capabilities and that the customer was not taking advantage of these capabilities. Management could not understand the reasons for the customer not accepting a more complete service. On the other side of the relationship, which had a strong presence of a purchasing manager as a gatekeeper, the supplier was just expected to meet the targets on product quality, delivery and price with minimal intervention of the customer. The relationship manager at the customer was not willing to share the company’s resources to co-create value with the supplier.
In the relationships that co-created value, each side’s drivers to engage in the relationship and the perceptions of the other side’s commitment were consistent. Although there had not been a formal attempt to identify and share the expectations and perceptions such as described in The Partnership Model (Lambert, Emmelhainz and Gardner 1996), the communication that was enabled by cross-functional interaction seemed to accomplish that goal. Relationship managers maintained a close dialogue with the managers of the other organization, that was reinforced in the interactions of the cross-functional teams. All members that participated on the teams seemed to know what both organizations were expecting from the team and acted accordingly. This was confirmed by comparing the opinions of six managers on the customer side and seven managers on the supplier side.

4.3.2 The trust in the other party’s motivations for engaging in cross-functional teams

A concern that the three managers on the customer side of the relationships mentioned was that suppliers could use the opportunity to participate in the cross-functional teams with the sole objective of increasing their own products’ sales. As a manager explained: "As a rule, most suppliers would use the teams as a sales tactic or a technique to sell more of an item that they produce. But this has never come up with the supplier that helped us to co-create value.” Another manager had a similar view: "That was one of the fears that I had 20 years ago when I started inviting suppliers to participate in cross-functional teams. We thought that once we invited all these people the only thing
we would ever hear was going to be about things that they could sell us. And that has not really been the case in the relationship that led to more value.”

Three managers saw a more selfish attitude in the suppliers of the relationships that did not achieve as much value co-creation: “They are always looking for ways to optimize, but it is optimize within their world, as long as we play within their framework.” Trust was reinforced when the suppliers’ management demonstrated their willingness to work on the actual needs of the customer without taking a selfish position. The lack of credibility in the supplier’s management’s motivations could jeopardize the success of the cross-functional teams. In the words of a sales manager from a customer firm: “We could not have that high level of interactivity with that supplier if we knew that they use the team as a sales tactic or a technique to sell more of an item they produce. That is one of the reasons that it works so well.”

The customer’s managers’ motivations have to be trusted by the supplier as well. As a manager from a customer firm said: “Our suppliers are not going to come to us if we do not treat them right or reward them for bringing us the best ideas. We have learnt over the years that we do not get the best ideas coming to us if we use the old arms-length way, like: You do something for us and we bid it out and you get nothing. We are moving more towards the carrot as opposed as the stick in the relationship. We try to make it win-win.”
4.3.3 The commitment to the relationship

Cross-functional relationships required the commitment of individuals at three levels: 1) the commitment by top managers at both companies to the relationship, 2) the commitment of the functional managers to the relationship, and 3) the commitment of the team members to the relationship.

First, cross-functional teams with individuals from both the customer and the supplier firms are embedded in the interorganizational relationship between the firms. Therefore, according to six managers, the success of the team depends on the commitment of top management to the relationship. The commitment by top managers was higher in the cases that co-created more value. In one case, I observed the supplier’s top managers spending an entire day in the customer’s headquarters, where they participated in the activities of a cross-functional team and where they met with the CEO and other top managers from the customer. In the companies that did not co-create value, four managers believed that there was a lack of involvement from the companies’ leaders. The sales representative from a supplier said: “If you designate a relationship to be strategic, there is a minimum commitment that you have to have. You have to have senior level, very high level in both organizations supporting the relationship.” He later commented about the lack of commitment by top managers on the customer side: “We really don’t have a senior level sponsor in this customer firm any more. We don’t really know who he is and we have never met him.”

Second, the commitment of all the functional managers to the relationship was key to ensuring that their functions’ resources were allocated to the cross-function teams

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as needed. According to three managers, involving the multiple functions in matters that are related to the management of buyer-supplier relationship helped to reduce the reluctance of functional managers to become engaged in the relationship. In order to achieve effective integration with customers and suppliers, each function in both companies has to adapt its structures and its ways of working. As a marketing manager noted: “The only thing that can get in the way of a functional manager participating on a team with our customers is when it makes their job harder, not easier. Because there is a way that they are used to doing things in their functions versus what is expected from them on the team.” Involving individuals in decision making from the inception of an idea gives them the possibility of communicating their concerns and increasing the feeling of responsibility for the success of the project. A procurement manager from one of the supplier firms referred to this in the following terms: "Procurement cannot do it on its own, it has to be aligned with the other functions. So, one of the reasons that we have a supplier relationship team comprised of the three big functions is because we need it to push any initiative through our company. If procurement tried to do it on its own, it would be viewed as another procurement initiative and we might not get the support from the other functions. I think this is key for a relationship to work.” Another manager commented: “It has to be cross-functional. In our company, it just will not work if it is not cross-functional. If the idea is viewed as our own department's initiative, it is going to fail from day one.”

Third, the individuals that participated in the cross-functional teams that achieved better outcomes were committed to the relationship. This was confirmed by the
assessments of six managers on both sides. On the supplier side, a manager stated: “When you participate in these initiatives you have to assume that you are in the shoes of the customer that you are working with. As soon as I step foot on the airplane coming to visit them I put myself in the mindset of being one of their employees.” On the customer side, a top manager recognized: “Sometimes I have people from the supplier in here and I don’t know whether they are our people or the supplier’s people. I mean, we are all talking about the same thing. Sometimes they know more about what we are doing than I do, which is great. That is the way it ought to be.”

4.3.4 The costs of implementing cross-functional teams

One of the biggest roadblocks to implementing cross-functional teams was the cost of implementation. This issue was discussed in particular with seven managers. Individuals have to be reallocated from their normal functions and the administrative costs to coordinate teams are high. As one of the managers said: “The biggest challenge is the commitment to the amount of resources you have to put against the teams, in terms of time and dollars.” Additionally, the development of a relationship that relies on cross-functional teams takes time, and the benefits may not be realized in the short term. For instance, another manager said: "What I think is key for a cross-functional relationship to create value is to have the stamina to work on it. Because it takes quite a long time to develop. In alliance that I have been working on for four years, it took a couple of years before it started taking some momentum."
Given the high costs of implementing cross-functional teams, managers considered key four aspects: 1) to maintain the priorities of the relationship over time, 2) to select the initiatives to address with cross-functional teams, 3) to avoid the accumulation of unfinished initiatives, and 4) to customize the approach to manage the cross-functional teams according to the relationship characteristics.

4.3.4.1 The maintenance of the priorities of the relationship over time

One of the main concerns of managers was about the risk that the other party’s commitment to the relationship can change over time. Seven informants agreed on this point. The priorities of the relationship might change from a focus on value to a focus on price. As a manager said: “Commitment to the relationship cycles back and forth. At some point it is all about cost, then it is all about value, and then goes back to all about cost.” Two factors that lead to a change in priorities were detected: key employee turnover and economic pressure. When a key functional manager whom is committed to the relationship is replaced, the new manager might not understand the value that was co-created through the team. Another manager said: "With the high amount of turnover in our company, if you end up with someone that does not believe in cross-functional teams you could undo everything you have been working on.” Under unfavorable economic conditions managers could react by focusing on functional efficiencies that might be in conflict with the relationship’s goals. As a manager described: "It depends on the environment, on how the company is doing. The better the company is doing the more you try to focus on partnership win-wins. When times get tough you can see some folks
pulling away from the team. It is important to keep a consistent message in good and bad times."

4.3.4.2 *Selection of the initiatives to address with cross-functional teams*

The resources that were allocated to the relationship had to be used efficiently. Therefore, the initiatives that were going to be addressed with a cross-functional team had to be carefully selected. In the words of an operations manager: "What we do not want to do is to have this core team made up of functional areas across the entire company working on low priority initiatives. We talk about those with my staff and we talk about those with the business unit president.” The approaches to prioritize initiatives were discussed with nine interviewees. In the relationships that co-created value, the various functional managers participated in the evaluation of the initiatives and provided their points of view about the benefits and the challenges of implementing them. The relationship managers acted as facilitators who coordinated the evaluation and analysis with the various functional managers. In one case, the decision about the allocation of the resources to the key relationship was done by a steering committee comprised of three senior managers that belonged to the functions that were believed to be the most important: Procurement, R&D and Operations. This steering committee controlled the outcomes of the projects and was key to ensuring the commitment from the functional managers.
4.3.4.3 Accumulation of unfinished initiatives

In the relationships that did not co-create value, there had been attempts to develop cross-functional teams, but a high proportion of them did not achieve any visible outcome or were abandoned. For instance, in one relationship a supplier had been involved in the development of 18 products for which investments were made in ideation, prototyping and plant testing. However, none of these products were launched by the customer, and no explanation about the reasons was given. Five out of eleven managers interviewed at this supplier showed frustration because they expected that their efforts for allocating resources to the team would be rewarded. When managers perceived that the cross-functional team efforts did not lead to visible outcomes, the future commitment to cross-functional initiatives was jeopardized. An R&D manager from a supplier that participated in a relationship that did not lead to value co-creation expressed his frustration saying: “We are now focusing on projects that have more potential, that we think are more likely to succeed. We have put in place a product development process with them that so far is working. We have at least three new projects that are starting implementation phase at the plant and good business numbers for both the customers and for ourselves.” The main reason for the failure of the projects was the inefficient project management of the initiatives.

4.3.4.4 Customization of the approach to manage the cross-functional teams

Through the cases studied, it was not possible to detect a common project management approach among the relationships that led to more value co-creation.
Management from each company appeared to have their own techniques. This was in line with a manager’s perception: “Everybody is different. I have a few key customers that I have visited four times at their headquarters this year. Then there is a smaller customer that I go once a year with the salesperson and take them through an overall view of what is going on in their raw materials market.” The management of a cross-functional team depends on the relationship, on the needs that are being addressed, the criticality of the initiative, the type of initiative and the culture and ways of working in the companies that are participating. Projects varied in the number of individuals that participated, in the level of formalization, in the reporting and controlling approaches, and in the arrangement and frequency of the meetings.

4.3.5 The need for organizational structures that enable co-creation of value

Seventeen managers mentioned issues related to the importance of having organizational structures that support value co-creation. In particular, value co-creation is difficult when more than one business unit is involved in at least one side of the relationship. A manager said: “If you made the decision to designate them as a special account, then everybody has to be on board, because one or two businesses that are not on board can derail the whole thing. So that is the most important part: Keeping everybody committed.”

Company C was divided into more than 30 business units. Each business unit had its own structure and financial goals, making the units practically independent from each other. Five of the 76 business units provided different products or services to Company
A. Depending on the volumes purchased, the importance of Company A was different for each business unit. This caused that the commitment to participate in cross-functional teams with the customer to not be consistent across the entire supplier organization. Quoting one of Company C’s managers: “We are sending a mixed message. We are a single company but in reality we are broken up into five different pieces. And some pieces might have other priorities.” This issue was observed in another customer firm, which was divided in two business units that dealt with the same supplier. The product lines and the managers that dealt with the supplier were different between the two divisions. For example, a plant manager illustrated the behavior of each division saying: "Every time there was a new product to be developed for one of the divisions, their people were there, at the plant, working with us hand in hand. That was not necessarily the case with the other division. In the last two years I have not seen anyone from their company come into our plants.” Managers from the relationships that enabled the co-creation of value did not face the challenges of an adverse internal structure. One of these companies recently had undergone a major restructuring from a division based on functions to a division based on customers. The performance and reward systems that were previously designed by function were now based on the customers’ profitability. Collaboration and communication were fostered in this way.

The companies’ internal structures were a factor that influenced the ability to co-create value in two other relationships. In the first case, a retailer considered its distribution organization as a separate profit center because it served both the firms’ own retail outlets and other outlets that were franchised. This fostered the commitment of the
managers of the distribution organization to participate in cross-functional initiatives with the suppliers to reduce costs and to improve profitability. In the case of another retailer (which participated in a relationship that did not co-create value), the logistics managers were less interested in participating in cross-functional teams with the supplier because they were not accountable for the results. In the last case, the contact between organizations was through the customer’s relationship manager.

4.3.6 The role of the relationship managers

The roles of the relationship managers ranged from being the single point of contact between two organizations to acting as facilitators of the cross-functional teams. The relationships in which the relationship manager acted as the single point of contact between the two firms led to less co-creation of value. The functional managers on one side of the relationship could not communicate with the functional managers on the other side of the relationship. Therefore, the detection of needs and capabilities depended exclusively on the relationship manager’s abilities. The relationship manager used his own criteria to filter the messages that he/she believed were important. However, given the complexity of the relationships that participated in the research, it was difficult for a single person to capture the needs and capabilities that existed both in the customer and in his/her own organization. As a manager said: "Our company is so diverse in its offerings that there is no single person who can represent all our functions. So instead of having a single person managing the relationship we have tried to engage the functions’ heads on the team where we can.” Twenty-nine informants talked about the role of the
relationship manager and 13 referred specifically to the negative aspects of having a single point of contact between the two firms.

Having a single person centralizing the communication between the companies hindered the proactive component of value co-creation. As described in Section 4.2.1.6, proactive value co-creation is fostered when individuals from different functions on both sides of the relationship interact. Additionally, in order to sustain a proactive behavior, feedback had to be provided to managers that bring suggestions and ideas. Without this feedback, suppliers felt that their efforts were not being considered. Managers mentioned that without cross-functional communication many ideas were filtered by the relationship managers or were not transmitted to the adequate functional managers. Quoting a purchasing manager: "We have found in the past that the biggest complaint from suppliers is that they say that they submit ideas but they never hear anything back. In the past the procurement function was like a filter so who knows where the idea went. So as we move towards alliances and supplier relationship management we have incorporated new methods to make sure that the ideas get to the right people, so that the suppliers feel that they are being responded, and they are getting an explanation of why we either did or did not go with their idea."

In the relationships that were favorable to value co-creation, the relationship manager had a facilitating role. The relationship managers were responsible for overseeing the relationship, demonstrating the value that was being created, keeping everybody on the team updated in the progress of the different projects, collecting
information about needs and capabilities from the various functional managers, and gaining the commitment from the functional managers involved in the relationship.

4.3.7 The need for adequate internal communication

A key factor that was common in the relationships that co-created more value was better communication that existed within each company. In particular, it was observed that there was a common understanding about the capabilities that each function brought and could bring to the relationships. Similarly, the needs that management wanted to satisfy through the relationship were consistently understood in every function\(^\text{17}\). To make this statement, the opinions of 20 managers involved in cross-functional relationships were analyzed and compared with the opinions of 22 managers involved in relationship that were not considered cross-functional.

In the relationships in which less value co-creation was observed, internal communication was not as effective. In one of these relationships, the customer’s functional managers had a passive role, only communicating with the purchasing manager when an exception occurred in the normal operations. The information that was transmitted from the supplier to the customer’s functions was filtered, resulting in little understanding within the company about the supplier’s needs and capabilities. In the supplier organization of that same relationship, the sales managers were attempting to

\(^{17}\) The understanding of the company needs and capabilities correspond to manifest needs and manifest capabilities as defined in Section 4.2
communicate to the purchasing manager the extra value that they believed their organization could provide. However, the barriers to communication between functions in the customer organization were difficult to overcome.

In another relationship, an R&D manager believed that the lack of cross-functional participation in the relationship was deterring the development of new products with a customer: “When there is no participation of all the relevant functions to analyze each phase of the development process, you may end with a product that does not meet the expected price or that is unfeasible from a manufacturing standpoint. You should not move to the next phase until everybody agrees that it makes sense. So down the road, both our customer and us realize that we cannot come to the right solution. In the meanwhile, a lot of time has been spent and a lot of resources have been used.” He was referring to the importance of having a coherent understanding between the functions in his own company and in the customer’s company.

In one of the less cross-functional relationships in which the communication between the functional managers of the two companies was mediated by a sales manager, the functional managers attempted to demonstrate to the sales manager what their functions could provide to the customers. An operations manager described it as an education effort: "My group started educating the sales force about what the operations function is responsible. We want the folks that are in closer connection to the customer to know specifically what we, at operations, are capable of doing. We have been putting together a list of our capabilities and what we can share with customers so that it is helpful for the sales force and to the marketing team. Because they are in the field, they
come up here on some occasions but their job is out in the field selling to our customers. The lack of proximity is actually a downside that we recognize among ourselves."

Therefore, a necessary condition for value co-creation is that the needs and capabilities that were presented in Section 4.2.1 are known and communicated in a consistent manner across all functions. In a supplier manager’s words: “When you receive conflicting messages from your customer, or one side is different than the other side, you are in a situation in which you do not know what they want.” Cross-functional involvement allows each functional manager to know what the needs and the capabilities of the other party are, and interact to look for opportunities in the areas that could lead to more value co-creation. Additionally, functional managers can communicate more accurately the value that they can contribute towards the objectives in the other company. Ten managers suggested that all the functions should participate in the evaluation of the supplier’s performance and in the segmentation of suppliers and customers. Each function can provide different perspectives about a supplier’s strengths and weaknesses.

4.4 Summary

In this chapter, I addressed the three research questions that were posed for the research based on the data collected during the interviews. Managers can find the information presented in each section of the chapter useful for three reasons. The first section can be used to identify the challenges of and the importance of measuring value co-creation in financial terms. The second section can be used to recognize the mechanisms that lead to value co-creation and to assess which mechanisms create higher
satisfaction on the other side of the relationship. The third section describes the success factors and the barriers that managers interested in developing cross-functional teams with key customers or suppliers have to consider to reach the desired level of value co-creation.

In the next Chapter, a method for measuring value co-creation in key buyer-supplier relationships is described. The method was used to measure value co-creation in the relationships that participated in the research. The results show that cross-functional involvement in buyer-supplier relationships contributed to higher levels of value co-creation. Recommendations for using the measurement method are provided.
CHAPTER 5
MEASUREMENT OF VALUE CO-CREATION

In this chapter, a method for measuring value co-creation in financial terms is presented. The first section describes the method. The second section illustrates the application of the method by measuring value co-creation in the relationships studied in the research. The joint initiatives conducted in each relationship and their outcomes are compared between cases with different levels of cross-functional involvement. The chapter ends with the conclusions derived from the analysis of the financial information.

5.1 Method for measuring value co-creation

The method for measuring value co-creation was adapted from the customer and supplier profitability reports recommended by Lambert (2008). The adaptations were necessary for three reasons. First, managers in Company A were measuring only the purchasing costs associated with relationships AB and AC. However, when suppliers are engaged in activities that result in changes in revenue and profit, both total costs of ownership and the financial impact on revenue and profit should be measured (Lambert and Burduroglu 2000). Second, even when customer profitability reports and supplier
total cost reports accurately measure profit or total cost, they may not be capturing the incremental profits or costs associated to specific value co-creation initiatives conducted in the relationship. An awareness of the financial outcomes from the specific initiatives is needed for effectively allocating resources to relationships in the future. It is necessary to determine the change in profit associated with each initiative. Third, the financial information available from the companies was structured differently than what was recommended in the literature to construct customer and supplier profitability reports, making it necessary to determine the revenue and cost data that was needed to calculate the profitability of the relationships. The method for measuring value co-creation consisted of seven steps: 1) identify the joint initiatives conducted in the relationship and 2) determine if profitability or total cost reports are available. If profitability or total cost reports are available, step five should be followed. If profitability or total cost reports are not available, 3) determine the revenue and cost data that must be obtained, and 4) calculate value co-creation for each side of the relationship. Once value co-creation is measured, 5) quantify the revenues and costs associated with the joint initiatives, 6) analyze the financial data, track performance, and make decisions, and 7) set goals for value co-creation. Figure 12 describes the method for measuring value co-creation. Next, an explanation of each step of the method is provided.
Figure 12. Method for measuring value co-creation

Step 1 Identify the joint initiatives conducted in the relationship

Step 2 Determine if profitability or total cost reports are available

Step 3 Determine the revenue and cost data that must be obtained

Step 4 Calculate value co-creation for each side of the relationship

Step 5 Quantify the revenues and costs associated with the joint initiatives

Step 6 Analyze financial data, track performance, and make decisions

Step 7 Set goals for value co-creation
5.1.1 Step 1: Identify the joint initiatives conducted in the relationship

The first step of the measurement method consisted of identifying and validating the joint initiatives conducted in each relationship. The 46 interviews with managers were used to identify joint initiatives. Initiatives that involved cross-functional teams and initiatives that did not involve cross-functional teams were included in a list. During the interviews, managers were asked to relate examples from their experience with these initiatives. The researcher took note of the examples and inquired about the dates of the initiatives, the level of cross-functional involvement, and the descriptions of the outcomes. Financial information that enabled the quantification of the outcomes was requested. At the end of each interview, the managers were asked if they remembered other initiatives in which they collaborated with members from the other firm. Given that the sample was comprised of managers from multiple functions and from both sides of the relationships, a wide variety of initiatives could be assessed. As new managers were interviewed, they were asked about the initiatives that were on the list. The informants had different opinions about the results, the characteristics and the degree of cross-functional involvement. For example, a manager at a customer firm mentioned that his function helped one of the suppliers obtain access to a new customer. However, when the supplier’s sales manager was asked to confirm this, he said that the sales generated from the new customer were viewed as insignificant. The different opinions enabled the refinement of the list of initiatives.

Once the list was completed, the initiatives were categorized in two groups: revenue generation initiatives and cost reduction initiatives. Based on the managers’
assessments, a scale was developed to indicate the stage of the initiative in which the cross-functional team was engaged. The scale for revenue generation initiatives comprised: 1) idea generation (i.e., generating ideas or brainstorming of new products), 2) conceptualization (i.e., selecting the best ideas and developing the technical and marketing details), 3) business analysis (i.e., estimating the likely revenue and costs), 4) implementation (i.e., developing the operations, logistics and quality control plans), and 5) commercialization (i.e., launching the idea and promoting the product). The scales for cost reduction initiatives comprised: 1) idea generation, 2) business analysis, 3) planning, 4) execution, and 5) control.

The initiatives that did not meet the following three criteria were eliminated. First, the initiatives had to have resulted from the interaction between individuals from both sides of the relationship. For example, a manufacturing manager identified product quality as a driver of value to the customer. However, this was not included in the final list of initiatives because the level of quality was achieved without the involvement of the customer. Second, the initiatives had to have been implemented in the last three years. According to managers in Company A and Company D, a horizon of three years was appropriate to capture initiatives that still had an effect on the companies’ bottom-lines. Third, at least one firm of the two in a relationship had to have achieved significant benefits. For example, managers identified product development initiatives on which they had collaborated with their counterparts but that did not result in any product being introduced to the market. In other cases, the initiatives identified did not result in significant increases in sales according to the informants’ estimations. Managers were
asked to estimate if sales increased more than 0.1% of the total sales volume of the relationship as a result of the initiative. Initiatives that did not reach this cut-off were not considered in the measurement of value co-creation. The outcome from the identification and validation of joint initiatives was a categorization of the initiatives conducted in each relationship with the date of implementation and an evaluation of the level of cross-functional involvement. A detailed description of each initiative was kept in the research database.

5.1.2 Step 2: Determine if profitability or total cost reports are available

Effective customer and supplier relationship management requires that managers understand the profit impact of their decisions (Lambert and Sterling 1987). Customer and supplier profitability reports provide managers with the financial information that they need to make sound decisions. The profitability of a customer (or a customer segment) is calculated using revenues and avoidable costs. Fixed overhead and costs that are common to multiple customers and are not affected by the way a customer relationship is managed should not be included in the profitability report. Any attempt to allocate joint fixed costs to a customer is based on subjective and arbitrary criteria and would distort the real profitability of a customer (Lambert and Sterling 1987). According to Lambert (2008, p.41): “The goal is to deduct from revenue all costs that would disappear if the revenue disappears.”

The lack of quality information available in a company’s accounting systems can be a complication for developing customer profitability reports and total cost reports.
Two situations are possible: A first situation occurs when managers have developed standard customer profitability reports or total cost reports, have access to all the required information, and can construct them on a regular basis. Managers in this situation have an advantage in estimating value co-creation. In these cases, Step 5 of the method should be followed next. A second situation occurs when managers do not have customer profitability reports or total cost reports available because they do not have the necessary information or use average costs for some or all of the costs. In these situations, managers should determine the revenue and cost data that must be obtained (Step 3 of the method).

5.1.3 Step 3: Determine the revenue and cost data that must be obtained

When the companies’ accounting systems are not designed to provide the required information, managers have to determine the revenue and the cost data that must be obtained. These data must enable managers to replicate the customer profitability report (or the supplier profitability report) as accurately as possible, and to quantify the revenues and costs associated with the joint activities identified in Step 1 of the method. Initially, managers might have to use estimation techniques to obtain the necessary information to measure value co-creation. For example, regression analysis can be used to determine the fixed and variable components of costs. Table 12 shows the information required to construct a profitability report for a manufacturer selling to a retailer.
<table>
<thead>
<tr>
<th>Supplier (manufacturer)</th>
<th>Retailer</th>
</tr>
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<tbody>
<tr>
<td>Net Sales</td>
<td></td>
</tr>
<tr>
<td>Cost of Goods Sold (Variable Mfg. Cost)</td>
<td></td>
</tr>
<tr>
<td>Manufacturing Contribution</td>
<td></td>
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<tr>
<td></td>
<td></td>
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<tr>
<td>Variable Marketing and Logistics Costs:</td>
<td></td>
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<tr>
<td>Sales Commissions</td>
<td></td>
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<tr>
<td>Transportation</td>
<td></td>
</tr>
<tr>
<td>Warehousing (Handling in and out)</td>
<td></td>
</tr>
<tr>
<td>Special Packaging</td>
<td></td>
</tr>
<tr>
<td>Order Processing</td>
<td></td>
</tr>
<tr>
<td>Charge for investment in Accts. Rec.</td>
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</tr>
<tr>
<td>Contribution Margin</td>
<td></td>
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<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Assignable Non-variable Costs:</td>
<td></td>
</tr>
<tr>
<td>Salaries</td>
<td></td>
</tr>
<tr>
<td>Segment Related Advertising</td>
<td></td>
</tr>
<tr>
<td>Slotting Allowances</td>
<td></td>
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<tr>
<td>Inventory Carrying Costs</td>
<td></td>
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<tr>
<td>Segment Controllable Margin</td>
<td></td>
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<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Charge for Dedicated Assets Used</td>
<td></td>
</tr>
<tr>
<td>Net Segment Margin</td>
<td></td>
</tr>
</tbody>
</table>

Adapted from Lambert and Pohlen (2001)

Table 12. Customer profitability report

As shown in Table 12, variable costs are deducted from net sales to calculate a manufacturing contribution. Variable marketing and logistics costs are deducted to obtain the contribution margin. Assignable non-variable costs are deducted to calculate a segment controllable margin. A charge for dedicated assets is subtracted to obtain the net segment margin. The steps for constructing supplier profitability reports are similar if the customer is a wholesaler or a retailer. Managers at manufacturing firms should use total cost reports for the suppliers of undifferentiated raw materials. Total cost reports should
include the price paid for the products purchased to the supplier plus transportation costs, inventory carrying costs, financial impact of the terms of sale, ordering costs, receiving costs, quality costs, and administrative costs. If there are revenue implications associated with one supplier versus another, such as might be the case if there are differences in product quality or in the level of support provided to develop new products, the associated revenues and costs also must be measured (Lambert and Burduroglu 2000).

Even though managers can use cost and revenue estimations initially, it is imperative that the companies’ accounting systems are continuously adapted to improve the accuracy of the measurements of value co-creation (Lambert and Sterling 1987). The accounting information systems should be designed to record costs by fixed and variable components, and code revenues and costs with details of the customer or the supplier that generated them (Lambert 2008). The benefits of using measures of value co-creation should be demonstrated to top management in order to obtain the necessary support to improve the company’s accounting systems. The accuracy of the profitability reports and the total cost reports should be improved until they become a standard statement accepted by all the key individuals on both sides of the relationship.

5.1.4 Step 4: Calculate value co-creation for each side of the relationship

Once the necessary revenue and cost data were obtained, financial measurements associated to the benefits of the relationships were calculated. The gross margins generated for Company D were used for relationships DE and DF. Customer profitability reports could not be completely constructed because some of the costs shown in Table 12
were not available. For example, investments in account receivables, inventory carrying costs, and charges for dedicated assets were not available from Company D. Total cost analysis was used to measure the value co-created for Company A in Relationship AB and AC. The total cost analysis included purchase costs and transportation costs because other cost elements such as ordering costs, receiving costs, quality costs, administrative costs, and the financial impact of the terms of sale was not measured in Company A. Considerable effort was necessary in order to obtain numbers that measured the value co-created in the four relationships studied.

Ideally, management from both companies share financial information and collaborate in the measurement of value co-creation. When this occurs, fact-based negotiations between the parties are enabled (Lambert 2008). In this research, financial data were provided from one company in each relationship. Due to confidentiality issues, managers at some of the participant companies were reluctant to provide financial data. In these cases, an estimation of the benefits for the other party was based on the data supplied by the other firm. For example, for suppliers that helped a customer with the development and commercialization of a new product, the increase in sales of the raw materials that they provided for the new product was used. The best measure would have been the incremental profitability for the supplier that was generated from the joint initiatives.
5.1.5 Step 5: Quantify the revenues and costs associated with the joint initiatives

If customer or supplier profitability reports are available, it is easier for managers to identify the financial implications of developing relationships with customers and suppliers. However, this may not be the case if the accounting system that provides the customer profitability reports and total cost reports does not have the capability to identify the incremental sales or cost reductions that resulted from joint initiatives. For example, the reduction in Company D’s costs that resulted from the cost reduction initiative DE1 (conducted jointly with individuals from Company E) was not being measured. Similarly, the gross margins generated for Company A from initiatives AB1, AB2, AB3, AB4, and AB5 conducted jointly with managers from Company B, and from initiatives AC1 and AC2 conducted jointly with managers from Company C were not reflected in any financial measurement used to evaluate Company A suppliers’ performances. An estimation of the value co-created in joint initiatives should be determined whenever the outcomes are not reflected in the profitability reports or the total cost reports because it provides a more complete appreciation of the total value co-created in the buyer-supplier relationships.

The fifth step of the method involved the collection of financial information to quantify the outcomes from the initiatives identified in Step 1. For revenue generation initiatives, the increases in gross margin were measured. For cost reduction initiatives, the resulting savings were measured. The cost information that was used to quantify the financial outcomes of revenue generation and cost reduction initiatives did not include the allocation of overhead costs. The allocation of aggregated costs using subjective and
arbitrary bases would have distorted the identification of the most profitable customers (Lambert and Sterling 1987, Lambert and Pohlen 2001). The financial outcomes from each initiative included in the list developed in Step 1 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.

5.1.6 Step 6: Analyze the financial data, track performance, and make decisions.

The decisions about the assignment of resources to a relationship should be based on the potential of a relationship to co-create value. In the sixth step of the method, the financial information was analyzed to identify the relationships with more potential to co-create value. The financial measurements of the outcomes from the joint initiatives were combined with the profitability reports or the total cost reports to analyze the value co-created for each company in the relationship. A comparison of the relationship characteristics, the type of initiatives conducted, and the level of cross-functional involvement enabled the determination of the factors that foster the co-creation of value. The value that is co-created in a relationship should be tracked over time. This enables managers to evaluate the effects on value co-creation of assigning different amounts of resources to the relationship and to determine the level of investment that maximizes the profitability of the relationship. The results of the analyses conducted in the research are described in Section 5.2.
5.1.7 Step 7: Set goals for value co-creation

The objective of developing close relationships with key customers and suppliers is to increase value co-creation. Managers that have implemented a method for measuring value co-creation can use the method to set goals and compare the performance of various relationships. Goals should be set based on the potential of the relationships to co-create value and should be communicated to all the functional managers from both sides of the relationship. Once the goals are set, Step 1 of the method should be repeated.

The method has limitations. First, the identification of cross-functional initiatives was based on the recall of managers, which inexorably includes some degree of subjectivity. However, the triangulation of the information provided by the managers from multiple functions and from both sides of the relationship increased the validity of the list of initiatives developed in Step 1. Second, the measurement of value co-creation is based on the outcomes from past initiatives. The fact that a relationship was effective in co-creating value at a certain rate in the past does not imply that the rate will be the same in the future. However, it is reasonable to predict that this will be the case if no important changes in the relationship variables occur and resource commitment are not changed. In the next section, the application of the method is illustrated by measuring value co-creation in the relationships studied in this research.
5.2 Measurement of value co-creation in the relationships that were studied in the research

The method for measuring value co-creation was applied in the relationships that were studied in the research. In the next sections, the value co-created in each relationship is measured and comparisons are made between relationships with different levels of cross-functional involvement.

5.2.1 Measurement of value co-creation in Relationship AB

The focus in the relationship between Company A and Company B was on developing new products that could be commercialized at Company A. Five products resulted from the collaborative initiatives: AB1, AB2, AB3, AB4, and AB5. According to the marketing and R&D managers from Company A, these products did not replace other products that were being commercialized at Company A. The five products were new concepts introduced to expand the variety of choice at Company A stores, so the they did not reduce the revenue from other existing products.

5.2.1.1 Value co-creation for Company A

Table 13 shows the outcomes for Company A related to the joint initiatives conducted in Relationship AB. The commercialization of Product AB1 provided a gross margin of $22.7 million to Company A during the previous three fiscal years ($3.4 million in 2007, $10.0 million in 2008 and $9.3 million in 2009). The commercialization of Product AB2 generated a gross margin of $49.3 million in the same period of time.
($17.5 million in 2007, $12.7 million in 2008, and $19.1 million in 2009). The unit gross margin of Product AB1 was $4.70 and of product AB2 was $5.05, which were lower than $5.16, the unit gross margin of an average product of Company A. Products AB1 and AB2 had been part of Company A’s offering since they were launched in 2006. In an industry where innovation and the introduction of new products are key, these two products became classics for Company A’s consumers. Product AB3 was launched in fall 2008 and during the first six months of existence the gross margin obtained was $474,508. This product was not a core product so it did not reach the same sales levels as products AB1 and AB2. However, being a new concept, it was believed to have affected the consumer’s perceptions of innovativeness that management was trying to develop.

The teams involved in the relationship created a continuous pipeline of new products. Two products (Product AB4 and Product AB5) were developed but had not been launched at the time of this research. Since the two products AB4 and AB5 had not been commercialized, managers were not able to provide a reliable estimation of the projected gross margin for 2010. Table 13 shows that products AB1, AB2, AB3, AB4 and AB5 were developed with high levels of cross-functional involvement at the stages of idea generation, conceptualization and implementation. In fact, four informants from Company A agreed that the products would have not existed without the involvement of the managers from Company B.
Table 13. Outcomes for Company A of the joint initiatives in Relationship AB

Based on the sales forecast from the managers at Company A for the fiscal year 2010, Product AB1 was projected to generate $8.8 million in gross margin, Product AB2 was projected to generate $16.5 million and Product AB3 was projected to generate $0.5 million. The result from the three revenue generation initiatives for FY2010 was projected to be $25.9 million. This amount represented 3.4% of the expected gross margin for fiscal year 2010 of Company A. No cost reduction initiatives were identified in this relationship.

Table 14 shows Company A’s total purchases from Company B, which were projected to be $9.5 million for fiscal year 2010. The value generated for Company A in joint initiatives was 2.7 times (or 270%) higher than the total purchases from Company B. This result highlights the importance of measuring the value generated in a...
relationship that is not captured in the traditional accounting measurements. With a complete awareness of the value drivers of the relationship, managers at Company A can understand that focusing on reducing Company B’s prices is less relevant than maintaining a close cross-functional relationship that fosters value co-creation.

<table>
<thead>
<tr>
<th>Company A</th>
<th>Company B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Purchases from Company B</td>
<td>$9,500,000</td>
</tr>
<tr>
<td>Value from joint initiatives</td>
<td>$25,874,693</td>
</tr>
<tr>
<td>Ratio Value to total purchases</td>
<td>270%</td>
</tr>
</tbody>
</table>

Table 14. Measurement of value co-creation for Company A from relationship AB

5.2.1.2 Value co-creation for Company B

The measurement of value co-creation for Company B is shown in Table 15. For participating in the revenue generation initiatives that led to the development of products AB1, AB2, AB3, AB4, and AB5, Company B increased its sales to Company A. Product AB1 used two raw materials supplied by Company B: Raw Material 1 and Raw Material 2. The combined increase in sales was $758,000 in 2007 and $863,000 in 2008 (9.4% and 9.0% of the total sales in 2007 and 2008 respectively\(^{18} \). Product AB2 was comprised of two raw materials that were provided by Company B: Raw Material 3 and Raw Material

\(^{18}\) Sales from Company B to Company A were $8.1 million in 2007 and $9.5 million in 2008.
4. The combined increase in sales was $63,805 in 2007, was $90,665 in 2008, and $36,190 in the first four months of 2009 (representing a 1% of the total sales in 2008). Product AB3 had a single raw material provided by Company B: Raw Material 5. The increase in sales from the development of Product AB3 was $162,000 in 2008 (representing a 1.7% of the total sales in that year) and $81,000 in the first four months of 2009.

The combined sales increase for Company B from participating in the development of products AB1, AB2 and AB3 was $821,805 in 2007, $1,116,065 in 2008 and $117,190 in the first four months of 2009. The sales derived from these cross-functional initiatives represented 11.7% of Company B’s total sales to Company A in 2008. Based on the sales forecast of product AB1, AB2 and AB3 for fiscal year 2010, the increase in sales for Company B was projected to be $889,962 ($627,943 from the raw materials for Product AB1, $79,769 from the raw materials for Product AB2, and $182,250 from the raw material for Product AB3). The projected sales from these five raw materials represent 9.3% of the projected 2010 purchases of Company A from Company B. In this relationship, no cost reduction initiatives were identified.
Value co-creation for company B

Incremental purchases from new products developed in collaboratively

<table>
<thead>
<tr>
<th>Product developed / Ingredient supplied</th>
<th>Date launched</th>
<th>2007</th>
<th>2008</th>
<th>2009 (up to May-20)</th>
<th>Projected FY 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product AB1</td>
<td>Winter 2006</td>
<td>$616,000</td>
<td>$693,000</td>
<td></td>
<td>$504,013</td>
</tr>
<tr>
<td>Raw material 1</td>
<td></td>
<td>$142,000</td>
<td>$170,400</td>
<td></td>
<td>$123,930</td>
</tr>
<tr>
<td>Product AB2</td>
<td>Fall 2006</td>
<td>$63,805</td>
<td>$58,427</td>
<td>$20,118</td>
<td>$59,498</td>
</tr>
<tr>
<td>Raw material 3</td>
<td></td>
<td>$162,000</td>
<td>$81,000</td>
<td>$182,250</td>
<td>$182,250</td>
</tr>
<tr>
<td>Raw material 4</td>
<td></td>
<td>$32,238</td>
<td>$16,072</td>
<td>$20,271</td>
<td>$20,271</td>
</tr>
<tr>
<td>Product AB3</td>
<td>Fall 2008</td>
<td>$63,805</td>
<td>$58,427</td>
<td>$20,118</td>
<td>$59,498</td>
</tr>
<tr>
<td>Raw material 5</td>
<td></td>
<td>$162,000</td>
<td>$81,000</td>
<td>$182,250</td>
<td>$182,250</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>$821,805</td>
<td>$1,116,065</td>
<td>$117,190</td>
<td>$889,962</td>
</tr>
</tbody>
</table>

Projected co-creation of value for FY2010: $889,962

Table 15. Outcomes for Company B of the joint initiatives in Relationship AB

5.2.2 Measurement of value co-creation in Relationship AC

The relationship between Company A and Company C was identified as having lower levels of cross-functional involvement than Relationship AB. Managers in Company A and Company C were not measuring the value co-created in the relationship, which led to conflicting expectations and perceptions about the level of commitment that management at the other company had to the relationship. Under these circumstances, managers at Company A and Company C did not assign the resources that existed in their company’s various functions to the relationship. The participation of Company C in the product development activities was limited to the stages of business analysis, planning and execution. In other words, the ideas were generated by managers in Company A, while managers in Company C were responsible for developing a concept that satisfied
the customer requirements. The development was conducted in isolation from the customer. Once developed and approved, managers at Company C did not provide further assistance during the introduction and the commercialization phases. Two new products were developed and three cost reduction initiatives were conducted in Relationship AC.

5.2.2.1 Value co-creation for Company A

Two products that were developed in this relationship were commercialized by Company A since 2007 (See Table 16). The gross margin generated by Product AC2 in its first seven months of existence in fiscal year 2008 was $4,883. In fiscal year 2009, Product AC2 generated $5,722, while Product AC1 generated $44,226 since its introduction in September 2008. The projected gross margins for 2010 of Product AC1 was $35,789 and of Product AC2 was $18,672. The total gross margin projected for 2010 from Products AC1 and AC2 was $54,416.

Table 16 also shows the financial outcomes for Company A from joint initiatives conducted in Relationship AC. Three cost reduction initiatives were conducted in this relationship: AC3, AC4, and AC5. All of them consisted of the reformulation of the raw materials that Company C sold to Company A. The resulting products were less expensive while maintaining their quality. Company A saved a total of $107,800 in 2008 and $272,714 in 2009. The projections for FY2010 were $304,644 in savings. The level of cross-functional involvement for initiatives AC3, AC4, and AC5 was low. The initiatives started with a request from the procurement managers at Company A for the supplier to work on reducing the costs of the products. With minor guidelines provided
by the R&D personnel of Company A, the supplier R&D and sales functions worked on
the reformulation of the products. Adding the projected outcomes of the joint revenue
generation initiatives and of joint cost reduction initiative, the projected outcome for
Company A in 2010 was $359,060.

<table>
<thead>
<tr>
<th>Product developed</th>
<th>Date launched</th>
<th>Gross Margin</th>
<th>Stage that supplier was involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product AC1</td>
<td>Sep-2008</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Product AC2</td>
<td>Sep-2007</td>
<td>-</td>
<td>$4,883</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>$0</td>
<td>$4,883</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cost reduction initiative</th>
<th>Date of initiative</th>
<th>Cost reduction</th>
<th>Stage that supplier was involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost reduction initiative AC3</td>
<td>Aug-2008</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cost reduction initiative AC4</td>
<td>Aug-2009</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cost reduction initiative AC5</td>
<td>Aug-2010</td>
<td>-</td>
<td>$107,800</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>$0</td>
<td>$107,800</td>
</tr>
</tbody>
</table>

Projected co-creation of value for FY2010: $359,060

Table 16. Outcomes for Company A of the joint initiatives in Relationship AC

Table 17 shows Company A’s total purchases from Company C, which were
projected at $11.7 million for fiscal year 2010. The projected outcomes of joint initiatives
for Company A in 2010 were $359,060, which represented 3.0% of the total purchases
from Company B. The value co-created for Company A in Relationship AC was significantly lower than the value co-created in Relationship AB.

<table>
<thead>
<tr>
<th>Company A</th>
<th>Company C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Purchase to Company C</td>
<td>$11,700,000</td>
</tr>
<tr>
<td>Value from joint initiatives</td>
<td>$359,060</td>
</tr>
<tr>
<td>Ratio Value to total purchases</td>
<td>3.0%</td>
</tr>
</tbody>
</table>

Table 17. Measurement of value co-creation for Company A from Relationship AC

5.2.2.2 Value co-creation for Company C

Company C supplied Company A with Raw Material 6 and Raw Material 7 for manufacturing Products AC1 and AC2 respectively. The total increase in sales of Raw Material 5 and Raw Material 6 resulting from the development of Products AC1 and AC2 were $94,210 in 2007, $311,724 in 2008 and $122,332 in the first four months of 2009 (see Table 18). The sales of Raw Material 6 and Raw Material 7 in 2008 represented 2.6% of the total volume sold to Company A. The projected sales to company A for the two products in fiscal year 2010 were $334,427 (2.8% of total sales). Informants from Company C did not provide information to measure the value co-created for their side of the relationship. However, all the managers interviewed in Company C indicated that the
increase in sales had not been sufficient to compensate for the development costs that they had incurred.

<table>
<thead>
<tr>
<th>Product developed / Ingredient supplied</th>
<th>Date launched</th>
<th>2007</th>
<th>2008</th>
<th>2009 (up to May 20)</th>
<th>Projected FY 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw material 6</td>
<td>September 2008</td>
<td>-</td>
<td>$48,180</td>
<td>$54,330</td>
<td>$148,537</td>
</tr>
<tr>
<td>Raw material 7</td>
<td>September 2007</td>
<td>$94,210</td>
<td>$263,544</td>
<td>$68,002</td>
<td>$185,890</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>$94,210</td>
<td>$311,724</td>
<td>$122,332</td>
<td>$334,427</td>
</tr>
</tbody>
</table>

*Projected co-creation of value for FY2010: $334,427*

Table 18. Outcomes for Company C of the joint initiatives in Relationship AC

5.2.3 Comparison between Relationship AB and AC

Interviewees at Company A recognized that Relationship AB was more cross-functional than Relationship AC. This was reflected in the type of initiatives that were conducted in each relationship and in the stages of the initiatives in which the interactions occurred (See Table 13 and Table 16). The initiatives conducted in Relationship AB were focused on the development and commercialization of new products, an area that was key for Company A and which required the commitment and cross-functional involvement of more resources from both firms. The initiatives conducted in Relationship AC were focused on the reduction of the costs of raw materials, where was less potential to co-
create value. Managers in Relationship AB interacted throughout all the stages of the product development cycle. Managers in Relationship AC interacted in the late stages of the initiatives and when the complexity of the initiative was low.

The total value co-created in joint initiatives for Company A from Relationship AB (in terms of gross margin) in the past three years was $72.5 million (an average of $24.2 million/year). The projected value co-creation for Company A for fiscal year 2010 was $25.9 million. This represented 3.4% of the projected gross margin for the business for fiscal year 2010. The value generated for Company A in joint initiatives was 2.7 times (or 270%) higher than the total purchases from Company B.

The total value co-created in joint initiatives for Company A from Relationship AC in the past three years was $435,345 (an average of $145,115 per year). The projected value co-creation for Company A for fiscal year 2010 was $359,060. This represents 0.04% of the projected gross margin for the Company A in fiscal year 2010 and 3.0% of the total purchases from Company B. Comparing the two cases, Relationship AB led to more value co-creation. Relationship AB was identified by managers to be the one where cross-functional teams had a more important role. Therefore, greater cross-functional involvement in buyer-supplier relationships led to more value co-creation in this case. However, given that Company C sold higher volumes to Company A than Company B ($11.7 million vs. $9.5 million respectively in 2008) and had higher annual sales than Company B, there was the potential for Company C to co-create more value had management made the decision to do so by investing in the relationship. Moreover, Company B was expected to increase its sales to Company A by 6.3% in fiscal year 2010.
while Company C was expected to increase their sales by 3.4%. Therefore, both firms in
the Relationship AB benefited by working on the cross-functional initiatives. The
mechanisms that drove value co-creation and the factors that facilitated or prevented
value co-creation are described in Chapter 4.

5.2.4 Measurement of value co-creation in Relationship DE

Only one cost reduction initiative was conducted in Relationship DE, which
consisted of the redesign of the distribution system for the products supplied from
Company D to Company E. The distribution system was transformed from a direct store
delivery (DSD) method to a warehouse delivery method in April of 2008. In the direct to
store delivery method, the products from Company D were delivered to the retail stores,
bypassing the warehouses of Company E. Company D owned a private fleet of trucks and
had a pool of drivers. The drivers not only transported the products but also placed them
on the store shelves and negotiated the purchase orders with the store managers.
Therefore, the truck drivers were able to influence the quantities ordered, for which they
received a sales commission from Company D. Many times this led to more products
being sold and delivered to the retail stores than was needed by the consumer. Because
the products were highly perishable, this led to a significant amount of product returns
from Company E to Company D. No intermediate stocking location was used in the DSD
distribution system so the lead times to the stores were high. Trucks had to be dispatched
frequently from the warehouses of Company D to the customer in order to prevent stock-
outs, which in turn increased the transportation costs.
In the new system, products were transported in Company D’s trucks to Company E’s warehouses. The products were stored in the warehouses and then transported to the retail stores using Company E’s private fleet. More frequent deliveries from the warehouses to the stores could be made due to the shorter distances. The costly deliveries from Company D’s warehouses to the stores were eliminated because there were safety stocks located in the retailer’s warehouses. Both variable transportation costs such as gas and maintenance, and fixed transportation such as trucks and salaries were reduced. Product returns were reduced because the drivers of Company D did not interact with the store managers and the replenishment of products was managed centrally in Company E. Stock-outs at the store level were reduced and the freshness of the product improved because of the higher frequency of deliveries to the stores. The most significant cost increase experienced by Company B was the hiring of a new broker. A retail broker was needed to stock products on the stores’ shelves and to design promotions. Warehousing costs did not increase significantly for Company E because the operations were leveraged with those performed for other suppliers.

The idea for the cost reduction initiatives DE1 originated in Company E, which had implemented a similar distribution system with other suppliers. The planning and the implementation of the initiatives required the participation of representatives of all the functions from both the supplier and the customer. The distribution and transportation managers from both firms were responsible for evaluating the feasibility of the project, designing the new distribution system and establishing the new ordering procedures. The quality managers from the supplier were involved to ensure that the quality standards
were met. The marketing representatives of the supplier and the customer interacted with the employees from the brokerage firm to establish the procedures for stocking products in the store. Company E’s purchasing managers and Company D’s sales managers forecasted the impact that the increased availability and the cheaper price of the products would have on sales. The procurement representatives of the customer and the individuals from the operations and procurement functions of the supplier coordinated the replenishment activities and the deployment of stocks. The transition from one system to the other required close coordination across functions of both companies to avoid disruptions in the distribution. The financial outcomes from the initiatives conducted in Relationship DE are estimated next.

5.2.4.1 Value co-creation for Company D

Table 19 shows the financial outcomes for Company D of the Cost reduction initiative DE1, conducted jointly in Relationship DE. The new distribution system was implemented in April 2008, and the cost savings for Company D in fiscal year 2009 were $4.1 million. For fiscal year 2010, the same savings were estimated because the sales volume to Company E was predicted to be the same as the volume in year 2009. The reduction in product returns from Company E to Company D represented 56% of the cost savings. The reduction of truck driver salaries represented 23% of the cost savings. The elimination of the sales commissions that were paid to the truck drivers represented 14% of the cost savings. The reduction in variable transportation costs was 7% as a result of fuel and maintenance cost savings, and a reduction in the size of the private fleet. The
additional expenses generated by hiring a new brokerage firm were equal to 31% of the costs saved. Based on the experience gained in this project, Company D’s management converted the distribution systems of other customers to warehouse delivery.

<table>
<thead>
<tr>
<th>Value co-creation for Company D</th>
<th>Cost reduction initiatives</th>
<th>Stage that customer was involved</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cost reduction initiative</td>
<td>Date of initiative</td>
</tr>
<tr>
<td></td>
<td>FY 2007 FY 2008 FY 2009</td>
<td>Projected FY 2010</td>
</tr>
<tr>
<td>Cost reduction initiative DE1</td>
<td>April 2008</td>
<td>$4,119,500 $4,119,500</td>
</tr>
<tr>
<td>Total</td>
<td>- -</td>
<td>$4,119,500 $4,119,500</td>
</tr>
</tbody>
</table>

Projected co-creation of value for FY2010: $4,119,500

Table 19. Outcomes for Company D of the joint initiatives in Relationship DE

Company D’s profitability report for Company E was constructed for fiscal year 2009 on a monthly basis. The margin-to-sales ratio was used to compare the value co-created in relationships DE and DF. The margin-to-sales ratio had an overall positive trend over the months. A least squares method was used to estimate the trend. The data for November 2009 and December 2009 were not included in the calculations because sales in the months of November and December are typically higher due to the seasonal effects introduced by the holidays. Including these data would have amplified the trend but reduced the fit. The slope of the trend line was 2.2%, meaning that the margin-to-

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19 Company E’s profitability report is not showed for protecting confidential information.
sales ratio tends to increase 2.2% per month ($R^2 = 0.57$). The margin-to-sales ratio increased 26.4% yearly. These results were validated with the assessments from three sales managers and one finance manager from Company D, and a purchasing manager from Company E. They agreed that since the implementation of the new distribution system and due to the closer relationship that they had developed, the profitability of both companies had increased significantly.

5.2.4.2 Value co-creation for Company E

In the new distribution system, Company E performed distribution operations such as warehousing, transportation from the warehouses to the stores, and material handling that were not performed before. The increase in the retailer’s distribution costs was compensated with a reduction of 7% in average of Company D’s product prices. The total savings from the price reduction for Company E was projected to be $1.0 million for fiscal year 2010. According to managers in Company E, the savings were used to reduce the prices to the end-consumer, which in turn led to increased sales for both Company D and Company E. Additionally, the procurement activities could be centralized in Company E, leading to a reduction of the store managers’ workload and improvements in the procurement function.

5.2.5 Measurement of value co-creation in Relationship DF

No joint initiatives were conducted in the relationship between Company F and Company D. A purchasing manager at Company F mediated the communication between
the representatives of the different functions on both sides. This person expected good
levels of service, quality and price from Company D, but did not want to participate in
joint initiatives. There was some level of communication between the distribution
functions from both companies but only for issues related to distribution at an operational
level. The retailer also provided point-of-sales data for a fee, but the analysis of the data
was left to the supplier. Management at the supplier had not been able to develop new
commercial opportunities from the data without the assistance from the retailer.

Company D’s profitability report for Company F was constructed for fiscal year
2009 on a monthly basis. Financial measures of the variable marketing and logistics
costs were not available for Company F because these data were aggregated with other
customers’ in the accounting system. According to Company D’s finance manager there
was not a way to allocate these costs without introducing significant distortions.
However, the finance manager, two representatives of the distribution function, and two
representatives of the sales function agreed that these costs had been stable over 2009.
Therefore, the variable marketing and logistics costs for Company F were estimated for
the month of June 2009, and used as a baseline for the previous year. The monthly
variable marketing and logistics cost used was $1,133,584, which equals an annual cost
of $13.6 million. At first sight, the trend of the margin-to-sales ratio appeared to be
leveled or slightly decreasing. A least squares method was used to estimate the trend but
the R^2 obtained was too low (R^2 = 0.03) to make definitive conclusions. The margin-to-

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20 Company F’s profitability report is not showed for protecting confidential information.

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sales ratio for year 2009 was 4.8%, which is lower than the margin-to-sales ratio of Company E (9.3%).

5.2.6 Comparison between Relationship DE and DF

Relationship DE had higher levels of cross-functional collaboration. Managers from different functions from both companies participated in joint initiative DE1 that resulted in $4,119,500 annual savings for Company D. No joint initiatives were detected in Relationship DF. The margin-to-sales ratio for Company E was higher than for Company F (9.3% vs. 4.8% respectively). The margin-to-sales ratio of Company E had increased 2.2% monthly in average over year 2009, while there was no evidence of an increase in Company E’s margin-to-sale ratio in that same period of time. Therefore, the notion that value co-creation is fostered in cross-functional buyer-supplier relationships was supported by the findings for the pair of relationships DE and DF.

The annual sales to Company F were $42.9 million in 2009, compared to $14.2 million to Company E in same period. The number of Company F’s stores that sold Company D’s products increased year after year. In contrast, all Company E stores were selling Company D’s products. It would appear that Company F could achieve considerable growth and value co-creation potential if managers decided to collaborate in cross-functional teams with managers of Company D.
5.3 Conclusions

A number of conclusions can be made from the analysis of the financial measurements of value co-creation. First, managers need to measure in financial terms the value that is co-created in their company’s relationships with key customers and suppliers. Without such information, managers base their decisions on price and underestimate the impact of cost-reduction initiatives and revenue-generation initiatives. This was the case in all the relationships that participated in the research. A method for measuring value co-creation was described in Section 5.1. Managers can use this method to identify the relationships with more potential to co-create value and to assign resources in the most profitable way.

Second, the joint initiatives conducted in a given relationship reinforced each other. For example, cost reduction initiatives DE1 facilitated the conversion of Company D’s distribution systems with other customers. Additionally, it enabled managers at Company D to create more efficient promotions with managers at Company E. Under the new distribution system, the responsibility of stocking the store shelves was transferred from the truck drivers to a broker that was specialized in this activity. This enabled a better understanding of the consumer’s behavior and the management of promotion decisions by a team comprised of individuals from the supplier, the customer, and the broker. The personal relationships developed between the team members and the improved communication about the needs and capabilities that were enabled during the implementation of the new distribution system positively influenced the success of the promotions.
Third, relationships that had a longer history of using cross-functional teams had more potential to co-create value. For instance, managers in Relationship AB were focused on developing and commercializing new products. This business activity was key for Company A, and it was where the most value co-creation potential existed. Additionally, the ability to work in cross-functional teams enabled managers at the supplier firms to be involved early in joint initiatives. This gave managers in relationships AB and DE an edge over other managers that were not working in cross-functional teams. The fact that in Relationship AC there was not cross-functional involvement left managers participating in cost reduction initiatives. These initiatives had less potential to co-create value but were less complex and required fewer resources. Company C’s managers were not involved in the early stages of the initiatives. No joint initiatives were conducted in Relationship DF.

Finally, managers should focus on developing cross-functional teams in the relationships with low levels of value co-creation such as Relationship AC and DF. Interestingly, these two relationships had higher sales volumes than Relationship AB and DE respectively. The potential for co-creating value was latent, but there were barriers that prevented managers from developing close cross-functional relationships. Managers should identify these barriers and address them if they believe that the relationship has potential to co-create value. As shown in this research, it is likely that if effective cross-functional teams are developed, value co-creation will materialize.

21 The barriers to creating cross-functional team are described in Section 4.3
CHAPTER 6
SUMMARY AND CONCLUSIONS

A summary of the research and the conclusions are presented in this chapter. The first section includes a review of the research objectives and the research questions. The second section provides a summary of the research methodology. The third section includes a summary of the findings. The findings are organized according to the three research questions. The fourth section describes the major conclusions. In the fifth section, the research limitations are described and suggestions for future research are provided. The chapter closes with a description of the implications for managers and academics.

6.1 Review of the research objectives and research questions

The objective for this research was to determine the role of cross-functional involvement in fostering the co-creation of value in buyer-supplier relationships. The measurement of value co-creation in financial terms was specified as a second goal. Topics that were explored were the approaches that managers used to measure value in buyer-supplier relationships, the mechanisms by which value was co-created, and the
challenges and key success factors for implementing cross-functional teams with customers and suppliers. Three research questions were formulated:

1. How is the value that is co-created in cross-functional relationships measured and communicated?
2. Why does cross-functional involvement lead to co-creation of value?
3. How are cross-functional interactions between organizations designed and managed?

6.2 Summary of the research methodology

A conceptual framework of value co-creation was developed from the review of the literatures on relationship marketing, value co-creation and cross-functional team management. Based on the conceptual framework and the type of research questions, a case study approach was selected for the research methodology.

Six companies were involved in the research, which formed four buyer-seller relationships. The companies were selected in order to form pairs of relationships with similar characteristics except for the level of cross-functional involvement. The data were collected from personal interviews, direct observation of cross-functional initiatives, and financial information provided by managers. The data from the interviews were analyzed using established qualitative data analysis techniques. The financial data collected were used to estimate the value co-creation. The managers’ perceptions about the value of the relationships were compared with the financial measurements of value co-creation.
6.3 Summary of the findings

Financial information was used to measure value co-creation in the four buyer-supplier relationships. The measurement method consisted of seven steps: 1) identify the joint initiatives conducted in the relationship and 2) determine if profitability or total cost reports are available. If profitability or total cost reports are available, step five should be followed. If profitability or total cost reports are not available, 3) determine the revenue and cost data that must be obtained, and 4) calculate value co-creation for each side of the relationship. Once value co-creation is measured, 5) quantify the revenues and costs associated with the joint initiatives, 6) analyze the financial data, track performance, and make decisions, and 7) set goals for value co-creation. The gross margins for Company A associated to relationships AB and AC and the total costs for Company D associated to relationship DE and DF were calculated. This information was complemented with financial information about the outcomes of the joint initiatives conducted within each relationship. The findings from the analysis of the financial data are described next.

First, value co-creation was higher in the relationships with more cross-functional involvement. Teams with representatives from multiple functions were able to develop and implement initiatives that had a greater financial impact. For example, the projected value co-creation for Company A for fiscal year 2010 from Relationship AB was $25.9 million, while it was $359,060 from Relationship AC (Relationship AB had higher levels of cross-functional involvement). Relationship DE was more profitable for Company D than Relationship DF. Relationship DE had higher levels of cross-functional involvement and the margin-to-sales ratio for Company E was higher (9.3% vs. 4.8% for Company F).
Second, managers needed a method for measuring value co-creation to demonstrate that the investment in cross-functional teams was beneficial. Without a method for measuring the financial benefit of the joint initiatives, managers had difficulty justifying the investment in cross-functional relationships. The method presented in this research can be used for this purpose. Third, the cross-functional initiatives conducted in a relationship reinforced each other. Better personal relationships and better understanding of the other party’s needs and capabilities fostered the discovery of more value co-creation opportunities. Fourth, management in relationships that had a longer history of using cross-functional teams, participated in initiatives that had more potential to co-create value and were more important for the success of the two companies. Initiatives AB1, AB2, AB3, AB4, and AB5 (conducted in the more cross-functional Relationship AB) were projected to lead to $25.9 million for Company A and to an increase in sales of 9.3% for Company B in fiscal year 2010. Initiatives AC1, AC2, AC3, AC4, and AC5 (conducted in the less cross-functional relationship AC) were projected to lead to $359,060 for Company A and to an increase of 2.8% in Company C’s sales for fiscal year. Managers who did not engage in cross-functional teams participated in less critical initiatives. Fifth, the potential to co-create value must be assessed in relationships that are less effective in co-creating value. It is reasonable to expect that the companies that participated in less profitable relationships had significant potential to co-create value because they had higher sales volumes than the companies that participated in more profitable relationships: Sales from Company C to Company A were $11.7 million while sales from Company B to Company A were $9.5 million, and sales from Company D to
Company F were $42.9 million while sales from Company D to Company E were $14.2 million. If the potential to co-create value is high, the barriers that prevent the formation of cross-functional teams should be addressed. Relationships with lower potential to co-create value can be profitable if they are managed with fewer resources. In the next sections, the findings from the qualitative data analysis are summarized regarding each of the three research questions.

6.3.1 How is the value that is co-created in cross-functional relationships measured and communicated?

Value co-creation was not being measured in financial terms in any of the relationships studied in the research. The financial impact of revenue generation initiatives and cost reduction initiatives were not measured and attributed to the customers or suppliers that participated in the initiatives. For example, the increased gross margin of $22.8 million for Company A in 2008 that resulted from the new products developed with its supplier Company B were not recorded as value co-created in Relationship AB. Although managers understood the importance of having a method for measuring value co-creation, four obstacles prevented them from doing so: 1) the difficulty in identifying the various sources of value co-creation, 2) the difficulty in measuring the value co-created for the other company, 3) the difficulty in determining how much of the success was a result of the contributions from each party, and 4) the costs of administrating the measuring system. The companies’ information systems did not provide the necessary revenue and cost information to measure value co-creation. At
the request of the researcher, managers used the information available from their companies’ accounting systems to estimate the impact of these initiatives on their firm’s profitability. In many cases, data were recorded in accounts without any reference to the supplier or customer that originated the cost or the saving. Once the data were aggregated, attaching the costs or the benefits to the different initiatives was difficult. Accounting information systems should be designed not only for satisfying the information requirements of external entities such as shareholders, creditors and governmental agencies but also for providing the necessary information to managers for calculating value co-creation on a regular basis. Without a financial measure of the value co-created with suppliers, managers based purchasing decisions mainly on price. These purchasing decisions were influenced to some degree by the manager’s perceptions of the suppliers’ contribution to value co-creation initiatives. Managers knew the type of initiatives in which each supplier was involved, but they were unable to assign a financial benefit to the outcomes. Managers might not be aware of the full impact of an initiative on the multiple areas of the business. When managers did recognize all the positive outcomes, there was not sufficient information to determine the financial benefit. Managers who participated in cross-functional relationships had an advantage in communicating the value that was co-created in the relationship because they could reach the various individuals involved in the buying decision (e.g., influencers, specifiers, buyers, users, gatekeepers).
6.3.2 Why does cross-functional involvement lead to co-creation of value?

Cross-functional involvement leads to value co-creation through three mechanisms: 1) the development of a better understanding of the other company’s business, 2) the access to costly resources, and 3) the access to a wider diversity of services.

The first mechanism was the development of a better understanding of the other company’s business. Through cross-functional involvement, managers could develop a better understanding of the manifest needs and manifest capabilities of the other side of the relationship. More importantly, managers increased the possibility of uncovering latent needs and latent capabilities that existed on both sides of the relationship. The first case was defined as reactive value co-creation and the second case as proactive value co-creation. Proactive value co-creation led to extraordinary satisfaction in managers, and it was the main aspect that differentiated relationships in which the financial measures of value co-creation were high. The second mechanism was the access to costly resources. Through cross-functional teams, managers could gain access to resources that were difficult or expensive to develop internally. Suppliers could maintain these resources because the investment could be leveraged across their key customers. The access to costly resources increased the switching costs. The third mechanism was the access to a wider diversity of services. The richness of the services that can be provided by a supplier to a customer increased both in variety and in depth when more functions were involved in the relationship. The exposure to individuals from multiple functions from another
company provided managers with a fresh perspective about their business and the environment.

6.3.3 How are cross-functional interactions between organizations designed and managed?

Besides the financial measurement of the benefits of a relationship, seven factors were identified as key for managing cross-functional relationships: 1) the clear understanding of the joint expectations and perceptions of the relationship, 2) the trust in the other party’s motivations for engaging in cross-functional teams, 3) the commitment to the relationship, 4) the costs of implementing cross-functional teams, 5) the need for organizational structures that enable co-creation of value, 6) the role of the relationship managers, and 7) the need for adequate internal communication.

First, managers on both sides of the relationships had expectations of the other company’s management behaviors based on the reputation of the other company, on past experience, or on the comparison with other similar relationships. Managers also had perceptions about the other side’s contributions to value co-creation. When the perceptions did not meet the expectations, managers were frustrated. Frustrated managers in turn responded in ways that were not consistent with the goal of co-creating value, leading to a vicious cycle that damaged the relationship. In these situations, the joint expectations and the joint perceptions of the relationship should be clarified using a systematic approach such as The Partnership Model (Lambert, Emmelhainz and Gardner 1996). By presenting the drivers of partnership to the other side and jointly assessing
facilitators, managers can better appreciate the reasons for the behaviors at the other company. Based on the drivers and the facilitators to partner, an appropriate relationship type can be prescribed and joint activities can be established to reflect the relationship type. The presence of individuals from multiple levels and from multiple functions in the companies participating in the partnership meetings enhances a broad consensus within and between firms.

Second, managers on both sides had to demonstrate that they were not using the cross-functional team for purposes that could be perceived as negative by managers from the other company. Protecting confidential information and not using the team as simply a mechanism for selling more products were seen as paramount. All individuals that are involved in teams with suppliers or customers should be instructed that the goal is not only to achieve benefits for their company but also to seek opportunities for value co-creation, which means that there are benefits for the other side. Managers who are not used to interacting with customers or suppliers due to the nature of their functional responsibilities should be trained in customer and supplier management (Chase and Garvin 1989). Additionally, the incentives of sales managers should not be based on revenues but on profitability and value co-creation.

Third, individuals at three levels had to be committed to the relationship: top managers at both companies, managers from the multiple functions, and individuals that participated on the team. The benefits for the company, for the functions, and for the individuals from participating in the cross-functional relationship should be measured and
communicated. Managers’ incentives should be designed based on the team’s contribution to value co-creation.

Fourth, the cost of implementing cross-functional teams was one of the biggest roadblocks. To make the investment, managers need to be certain that the priorities of managers on the other side of the relationship will not change over time. Additionally, the projects that are addressed with cross-functional teams have to be carefully selected and managed.

Fifth, the difficulty in implementing cross-functional teams increases when formal functional reporting structures exist. The organizational structures on both sides of the relationship have to be flexible enough to facilitate the implementation of cross-functional teams (Hackman 1987).

Sixth, the roles of the customer relationship manager on the supplier side and of the supplier relationship manager on the customer side were critical. In order to support the cross-functional teams, the relationship managers on both sides have to relegate their role of being the single points of contact between the two firms and become the facilitators of the teams’ activities. Relationship managers must be willing to delegate and communicate with all of the functional managers.

Finally, communication between functional managers within each company has to be effective. Managers should share their perspectives about the key customers’ and the key suppliers’ strengths and weaknesses. Communication should be supported with adequate organizational structures. For example, representatives from all functions should participate in the evaluation of key suppliers and customers, the incentive systems
based on functional efficiency should be complemented with rewards for value co-
creation, and top managers should encourage the implementation of cross-functional
initiatives.

6.4 Conclusions

This research provided an evaluation of value co-creation based on two sources of
data: perceptual data gathered from interviews with managers, and financial data used to
quantify value co-creation. By comparing the two sources of data, it was concluded that
managers could recognize the relationships that co-created more value. However,
managers were unable to quantify the value co-created in financial terms which led to an
underestimation of the benefits associated to each relationship.

The successful implementation of cross-functional relationships requires that
managers assign their best resources to the most profitable relationships. Managers
cannot afford to make such a key decision based on subjective perceptions or on
incomplete information provided by accounting systems that are not designed for such a
purpose. If subjective methods are used to allocate costs, or if the outcomes from value
creation initiatives are not identified by customer or supplier and measured in
financial terms, managers are left with a distorted view of a customer’s profitability and
the value of a supplier (Dudick 1987; Lambert and Sterling 1990). In the relationships
with low levels of cross-functional involvement, the perceptions of value differed
between managers from different functions in the same company, which showed that at
least more than one manager’s perceptions were inaccurate, incomplete or biased. In the
relationships with higher levels of cross-functional involvement, the interaction between
the teams’ members enabled the exchange of information about the benefits of the
relationship. Through cross-functional teams the perceptions and the expectations about
the outcomes of the relationship are clarified for all the individuals that have a role in the
buying decision or are affected by it.

In general, managers understood the importance of using financial measures.
However, the measures were not implemented due to concerns about the quality and the
availability of financial data, the costs and time required for the implementation, and the
difficulty to agree on a measuring method to use. Nevertheless, managers should bear in
mind that even if the measurement of value co-creation is not 100% accurate, the
measuring process is valuable by itself. The activity of gathering members from all the
involved functions from the two sides of a relationship to discuss and measure value co-
creation can lead to a better understanding of the perceptions and expectations of both
sides. Additionally, the effort can reinforce the other company’s management’s
confidence that the focus of the relationship is on value co-creation, and that the
contributions will be rewarded. Managers have difficulty rewarding the best customers
and suppliers without complete knowledge of the real value that they help to co-create.
When value co-creation is not measured and rewarded the commitment of key customers
and suppliers is jeopardized. Working on cross-functional initiatives with other firms
requires resources that could be dedicated to activities in other relationships or eliminated
in order to reduce expenses and improve cash flow. Managers have to be rewarded based
on their contributions to value co-creation as measured in this research. If measuring
value co-creation can help break down functional barriers and improve relationships, the efforts to implement measurement systems will lead to more value co-creation. Managers can use the method provided in this research for measuring value co-creation in their buyer-supplier relationships.

The topic of managing cross-functional buyer-supplier relationships needs more attention from researchers in order to understand how value is co-created in a wider range of industries and contexts. The next section describes the limitations of this research and future research opportunities.

6.5 Limitations and research opportunities

Methodological limitations must be considered. Three levels of analysis were used, which corresponded to the informant, the cross-functional team, and the relationship. At the informant level, 46 managers were interviewed. At the cross-functional initiative, 11 initiatives were compared. At the relationship level, two pairs of relationships were compared. The research was designed to enable an in-depth comparison of the opinions of the multiple managers who were involved in a relationship. High levels of internal validity and construct validity were ensured with a sample size of 46 managers at the informant level (Miles and Huberman 1994, Carter and Jennings 2002). However, four cases at the relationship level were not sufficient to enable the generalization of the findings to other industries or contexts. More research should be conducted with a larger sample of firms from other industries to further validate the conclusions.
The approach used to measure value co-creation includes some level of subjectivity. The financial measurement of value co-creation could be influenced by the managers’ recall of the initiatives in which they participated. The access to financial data from both sides of the four relationships was not possible for confidentiality reasons. Managers should bear in mind these limitations if they want to apply the measuring method recommended in this research. In order to minimize these limitations managers should involve representatives from all functions in the evaluation of value co-creation, improve the quality of the financial information available in their firms, and adapt the measuring method to their specific needs.

The scope of the research encompassed the measurement of the value that was co-created in the relationships. After measuring the value co-created, the gains should be shared in order to create incentives for managers to continue dedicating resources to the relationship. Future research should be conducted about the approaches that managers should use to share the financial gains co-created in the relationship. Based on the findings presented in Chapter 4, determining the contribution of each party to the outcomes can be a challenge for managers.

One of the main recommendations for managers is that more resources should be allocated to those relationships that have the potential to co-create more value. However, the method developed in the research measures value co-creation using past financial data. The measurement of the potential of a relationship to co-create value in the future can be challenging. Managers need to understand the effects that different levels of investment in a cross-functional relationship have on value co-creation. For example,
there might be a saturation effect that reduces the rate at which value is co-created as more resources are assigned to the relationship. More research is needed to develop a method to estimate the value co-creation potential of a relationship. In the meanwhile, managers should track value co-creation initiatives with individual suppliers and customers over time using the method presented in this research in order to measure the performance of the relationship.

Finally, the use of the case study approach enabled the examination of a broad array of issues surrounding value co-creation that would have been difficult to achieve with survey based methods. Additional research is needed to generalize the findings. For instance, the finding that proactive value co-creation leads to higher customer satisfaction levels than reactive value co-creation can be tested further.

6.6 Contributions to managers and to academics

The findings of this research can be useful for managers and academics. A description of the difficulties that managers have in measuring value co-creation in financial terms was provided. Scholars in the marketing field usually use measurements of value that are based on managers’ perceptions (Mezias and Starbuck 2003; Ulaga 2006). The limitations of using perceptual measurements of value were highlighted, and a method for measuring value in financial terms was presented and applied. Managers can use this method to demonstrate the value of buyer-supplier relationships and achieve the commitment of all the functional representatives needed for enabling value co-creation.
The key role that cross-functional teams have in co-creating value was verified. Managers from the relationships with more cross-functional involvement could implement initiatives that created more value for both sides of the relationship. Relationship AB was projected to co-create 72 times more value from cross-functional initiatives for Company A than Relationship AC in 2010. Management at Company B increased sales to Company A by 9.3% while management at Company C increased sales by 2.8%. Company D’s margin-to-sales ratio for Company E was 9.3% while Company F was 4.8%.

The mechanisms by which cross-functional involvement led to value co-creation were described. Managers can use this information to better predict the outcomes of implementing cross-functional teams in order to get the necessary commitment from top managers and their counterparts from other functions. Managers interested in implementing cross-functional teams with key customers or suppliers can learn from the experience of the individuals that participated in the research about what worked and what did not work. The seven factors that had the greatest impact on value co-creation were: 1) the clear understanding of the joint expectations and perceptions of the relationship, 2) the trust in the other party’s motivations for engaging in cross-functional teams, 3) the commitment to the relationship by top managers, functional managers and team members, 4) the costs of implementing cross-functional teams, 5) the need for organizational structures that enable co-creation of value, 6) the role of the relationship managers, and 7) the need for adequate internal communication.
Scholars have called for more research on value co-creation in a business-to-business context (Lusch and Vargo 2006; Payne, Storbacka and Frow 2008). This research was a contribution to demonstrate the importance of cross-functional buyer-supplier relationships for fostering value co-creation using financial data in addition to the perceptual measures that have been used in the past. The benefits and the challenges of value co-creation were explained in a business-to-business context. When objective measures of value co-creation are used, managers can improve the assignment of resources to relationships. The relationships in which managers do not have the willingness and the capabilities to work in cross-functional teams should receive less attention. Those customers and suppliers that are key and that can effectively interact in cross-functional teams or that have the potential to do so should be given preference. The benefits will be reflected in the degree of understanding of each other’s needs and capabilities, in the leverage of both firms’ resources, and in the access to a wider base of services.

Value co-creation should be measured with a method such as the one presented in this research. A large number of supplier and customer management decisions are based on distorted measurements of value (Lambert 2008). As a result, few managers have realized the true benefits of developing cross-functional relationships with key customers and suppliers. Managers that embrace the measurement of value co-creation and implement cross-functional teams can achieve a competitive advantage not only for their companies but also for their key customers and suppliers.
REFERENCES


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APPENDIX A. CASE STUDY RESEARCH PROTOCOL

A.1. Purpose of the protocol

The protocol is a standardized agenda that guides the data collection process. It is designed to help the researcher keep a uniform data collection procedure across cases in order to increase the research validity and reliability. An overview of the research, the field procedures, the structure of the research database, indications for conducting a pilot case study, an outline for the case study reports, and the interview guide are provided.

A.2. Research overview

The research goal was to understand why and how cross-functional interaction fosters the co-creation of value, and in doing so, to develop a model that helps managers estimate value co-creation in cross-functional relationships.

The research questions are:

1. How is the value that is co-created in cross-functional relationships measured and communicated?
2. Why does cross-functional involvement lead to co-creation of value?
3. How are cross-functional interactions between organizations designed and managed?

An embedded case study design with three levels of analysis is used. A buyer-supplier relationship constitutes a first unit of analysis. The cross-functional interactions that occur within the relationship constitute a second unit of analysis. The interviewees are the third level of analysis.

A.3. Field procedures

Table 20 describes the procedures that were followed for the data collection.
<table>
<thead>
<tr>
<th>Step</th>
<th>Activity</th>
<th>Goals</th>
<th>Participants and methods</th>
</tr>
</thead>
</table>
| 1    | Initial meeting with representatives of the sponsor company | - Inform about the project goals, the deliverables, the methodology and the confidentiality aspects.  
- Select the two customer or supplier relationships to include in the research. They should be strategic for the sponsor company and should belong to a similar industry, but should differ in the level of cross-functional involvement.  
- Identify the individuals from the different departments at the sponsor company that will participate in the interviews. Develop a schedule for the interviews.  
- Notify the interviewees about the sponsor company’s support to the research. | - The researcher and the key contacts from the sponsor company.  
- Telephone conference calls can be used.  
- Conversations last half an hour in most cases. |
| 2    | Initial meetings with key representatives of the select customers or suppliers | - Inform the key representatives of the selected firms about the project and the expected outcomes.  
- Notify about the sponsor firm’s support to the research.  
- Identify the individuals within the customer’s or supplier’s functions that will participate in the interviews. Develop a schedule for the interviews.  
- Repeat for the second select customer or supplier company. | - The researcher, the sponsor company’s representative/s, and the key contacts from the firms.  
- Telephone conference calls can be used.  
- Conversations last half an hour. |
| 3    | Data collection | - Conduct interviews with individuals:  
- from the sponsor company and the selected customer or supplier firms.  
- from each function in both the sponsor firm and the customer or supplier firms.  
- who regularly interact with the other company in the relationship.  
- Financial information will be requested about:  
- profitability and margins of products developed with the firms selected, joint cost reductions, total sales, etc.  
- Permission to access documentation or to participate in meetings may be asked. | - The researcher and individuals from the companies.  
- Interviews last one hour.  
- Follow-up calls may be needed with some individuals. |
| 4    | Data analysis and reporting | - Analyze the data collected and provide answers to the research questions.  
- Develop reports for managers and present results. | - The researcher  
- Firms that participated in the study receive a report about the findings. |

Table 20. Field procedures
A.4. Research Database

The data collected were kept in a research database in order to maintain a chain of evidence back the research findings. The database is organized into four subjects: data related to the interviewees, data related to the teams, data related to the buyer-supplier relationships and data generated from the data analysis. The contents are:

1. Data related to the interviewees: demographic information (e.g., name, contact information, position in the organization and responsibility on the team), interview audio recordings, interview transcripts, and interview field notes.

2. Data related to the teams: general information (e.g., team goals, longevity, perceptions about performance), audio recordings and narratives from the observation of team meetings, and documentation (e.g., project plans, project reports, financial information, internal memos, performance assessments).

3. Data related to the buyer-supplier relationships: documentation (e.g., contracts, supplier evaluations), supplier and customer financial information, and narratives about the history of the relationship.

4. Data generated from the analysis: communications with interviewees, case study notes, codes and categories generated during the analysis, narratives, reports from the QDA software, and data that was used in the calculations of value.
A.5. Pilot case studies

The pilot case studies consisted of using and testing the interview guide with managers from organizations that did not participate in the formal research. The pilot case studies did not follow the field procedures described in this protocol because of the limited availability of buyer-supplier relationships to participate in the large scale research. Four managers with experience in cross-functional teams, but that not necessarily belonged to the same teams or organizations were interviewed.

A.6. Case study reports

For each relationship that participated in the research, a case study report was generated and presented to the management of the firms that participated in the research. The reports contained the research findings and recommendations. They were organized in sections that cover the following topics:

1. Background of the relationship,
2. Overview of the methodology and identification of the cross-functional teams that were investigated,
3. The role of cross-functional teams in value co-creation,
4. Estimations of the value created,
5. Strategies to manage cross-functional teams,
6. Opportunities to improve cross-functional teams’ performance,
7. Recommendations, and
8. Conclusion.
A.7. Interview guide

This interview guide serves to orient our conversation during the interview. However, we will keep the conversation flexible enough to address other interesting topics as they appear.

1. What were the team’s goals for the cross-functional initiative?
2. How was the team formed and how did it evolve over time?
3. What is your role on the team?
4. What have been the accomplishments of the team for the relationship?
5. What have been some initiatives that did not meet the expectations? Why?
6. What are the main three contributions from each function of your company and the customer [supplier] that was involved on the team?
7. How are the outcomes from the team’s initiatives measured and communicated to both firms and the other business functions?
8. What are the benefits for your department from your participation on the team?
9. What were the barriers to working effectively in the cross-functional team? How were the barriers addressed?
10. What were the key managerial aspects for the success of the team?
11. How will having participated in this team affect the way you participate in future teams?
# APPENDIX B. CATEGORIZATION OF NODES

<table>
<thead>
<tr>
<th>Node structure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advantages of cross-functional involvement</td>
<td>Opinions about the advantages of developing cross-functional teams.</td>
</tr>
<tr>
<td>Access to costly resources</td>
<td>Opinions that describe the cost savings from not having to invest in resources that are available in the other organization.</td>
</tr>
<tr>
<td>Better anticipation and response to issues</td>
<td>Opinions related to how problems are more effectively and efficiently detected and solved using cross-functional teams.</td>
</tr>
<tr>
<td>Better internal communication</td>
<td>Opinions related to the role of cross-functional teams in improving the communication across functions (benefits, examples, etc.).</td>
</tr>
<tr>
<td>Better understanding of the other company business</td>
<td>Opinions related to achieving a better understanding of the other company (strategies, needs, capabilities, culture, etc).</td>
</tr>
<tr>
<td>Diversity of services</td>
<td>Opinions related to the possibility to have access to a wider range of services instead of just a product.</td>
</tr>
<tr>
<td>Early involvement in projects</td>
<td>Opinions related to the advantage of getting access to key information before other competitors and being involved in the customer's projects and plans earlier than others.</td>
</tr>
<tr>
<td>Get buy-in from all the functional managers</td>
<td>Opinions related to the resistance of functional managers to accept ideas that were originated in other functions, and about how cross-functional teams might help to overcome the problem.</td>
</tr>
<tr>
<td>Having an outsider perspective</td>
<td>Opinions about the advantages of having a fresh look about the business environment.</td>
</tr>
<tr>
<td>Increased loyalty</td>
<td>Opinions that describe the aspects related to cross-functional teams that affect the decision of allocating business to a supplier or provide a preferred treatment.</td>
</tr>
<tr>
<td>Leverage of knowledge</td>
<td>Opinions related to having access to people with different knowledge and the leverage that is produced when they interact.</td>
</tr>
</tbody>
</table>

Table 21. Categorization of nodes
<table>
<thead>
<tr>
<th>Node structure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proactive initiative</td>
<td>Opinions related to the innovation that a supplier brings by its own initiative, given the understanding of the other parties needs and anticipating requests.</td>
</tr>
<tr>
<td>Barriers to effective cross-functional involvement</td>
<td>Opinions about the barriers to implement cross-functional teams.</td>
</tr>
<tr>
<td>Changing business priorities</td>
<td>Opinions related to the factors that can make a company change their priorities from focusing on total value to costs reduction.</td>
</tr>
<tr>
<td>Commoditization of services</td>
<td>Opinions about the need to maintain the benefits of the relationship over time and to continually innovate to prevent imitation by other suppliers.</td>
</tr>
<tr>
<td>Cost of implement</td>
<td>Opinions related to the cost and effort to implement cross-functional teams.</td>
</tr>
<tr>
<td>Employee resistance</td>
<td>Opinions related to the resistance of individuals to work in the relationship and the ways to overcome it.</td>
</tr>
<tr>
<td>Relationship manager as gatekeeper</td>
<td>Opinions related to having a single point of contact (relationship manager) between the relationships.</td>
</tr>
<tr>
<td>Advantages of having a single point of contact</td>
<td>Opinions about the advantages of having a single point of contact between the organizations.</td>
</tr>
<tr>
<td>Evolution from relationship manager to facilitator</td>
<td>Opinions about the evolution of the relationship manager from being a single point of contact to a facilitator of cross-functional teams. The reasons and ways that this change occurred</td>
</tr>
<tr>
<td>The relationship manager determines the involvement</td>
<td>Opinions related to the role of the relationship manager in selecting the right people to participate in the relationship.</td>
</tr>
<tr>
<td>The relationship manager limits communication</td>
<td>Opinions about the communication problems that having a single point of contact generates in a relationship.</td>
</tr>
<tr>
<td>Key employee turnover</td>
<td>Opinions about the effect of employee turn-over on the teams' performance.</td>
</tr>
<tr>
<td>Node structure</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Using cross-functional teams to sell more product</td>
<td>Opinions related to the perception of the customer about a supplier whose only intentions are to participate on the team to sell more products.</td>
</tr>
<tr>
<td>Keys success aspects of cross-functional teams</td>
<td>Opinions that describe the key factors that enable the success of cross-functional teams.</td>
</tr>
<tr>
<td>Adequate internal structure</td>
<td>Opinions about the companies’ internal structures and organizations that facilitate or hinders the performance of the cross-functional teams.</td>
</tr>
<tr>
<td>Close business relationship</td>
<td>Relationship characteristics that facilitate the implementation of cross-functional teams.</td>
</tr>
<tr>
<td>Awareness of potential value of cross-functional teams</td>
<td>Opinions about the need for managers to have the awareness and conviction that there is value in involving different functions.</td>
</tr>
<tr>
<td>Commitment</td>
<td>Opinions about the need to have the commitment from the top managers, functional managers, and each individual that participates on the team.</td>
</tr>
<tr>
<td>Long term focus</td>
<td>Opinions about the need to focus on the long term benefits of the relationship instead of the short term.</td>
</tr>
<tr>
<td>Matched expectations</td>
<td>Opinions related to the components of The Partnership Model (assessing and communicating drivers and facilitators, setting expectations, determining the relationship level, and measuring performance).</td>
</tr>
<tr>
<td>Price vs. total value perspective</td>
<td>Opinions that indicate whether a firm in the relationship has a focus on price and productivity or value creation (quality, innovation, response time).</td>
</tr>
<tr>
<td>Supplier segmentation</td>
<td>Opinions about supplier segmentation and the development of different relationship strategies.</td>
</tr>
<tr>
<td>Support from top managers</td>
<td>Opinions related to the need to have the top organizational levels involved in the relationship.</td>
</tr>
<tr>
<td>Trust</td>
<td>Opinions about the need to trust the managers at the other firm in order to develop successful cross-functional teams.</td>
</tr>
<tr>
<td>Consistent behaviors and goals within organization</td>
<td>Opinions related to the importance of having all the internal organizations (functions and business functions) behaving consistently regarding the relationship.</td>
</tr>
<tr>
<td>Node structure</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Definition and clarification of the</td>
<td>Opinions about how the decision to involve each function is made and the importance of each functional manager having a clear understanding about their role in the relationship.</td>
</tr>
<tr>
<td>functional managers' roles</td>
<td></td>
</tr>
<tr>
<td>Feedback about ideas</td>
<td>Opinions about the importance of providing feedback about the contributions of the managers at each company and function.</td>
</tr>
<tr>
<td>Flexibility to adapt and customize</td>
<td>Opinions about the need to have the flexibility to implement the changes that arise from the suggestions made in the cross-functional teams.</td>
</tr>
<tr>
<td>interactions</td>
<td></td>
</tr>
<tr>
<td>Internal communication</td>
<td>Opinions related to the need to have good internal communication.</td>
</tr>
<tr>
<td>Management incentives</td>
<td>Opinions related to the measurement of the managers' performance and the provision of incentives.</td>
</tr>
<tr>
<td>Management of cross-functional projects</td>
<td>Opinions related to the management of cross-functional teams at an operational level.</td>
</tr>
<tr>
<td>Customization of interactions</td>
<td>Opinions that describe how cross-functional teams are customized according to the situation, project, client, etc.</td>
</tr>
<tr>
<td>Define prioritary projects</td>
<td>Opinions about how managers decide what projects to address with cross-functional teams.</td>
</tr>
<tr>
<td>Selection of team members</td>
<td>Opinions about the traits of individuals that are good candidates to form cross-functional teams.</td>
</tr>
<tr>
<td>Measurement of value</td>
<td>Opinions related to measuring the value co-created in a relationship.</td>
</tr>
<tr>
<td>Difficulty in measuring the value</td>
<td>Opinions that illustrate the difficulty of measuring total value in a relationship.</td>
</tr>
<tr>
<td>co-created</td>
<td></td>
</tr>
<tr>
<td>Gain sharing and negotiation</td>
<td>Opinions about the approaches used to compensate economically the additional value that is brought to the relationship. Includes descriptions of the negotiation process.</td>
</tr>
<tr>
<td>Importance of estimating value</td>
<td>Opinions about the importance of estimating the value that is co-created in a relationship.</td>
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<td>--------------------------------------</td>
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<td>Measuring approaches</td>
<td>Opinions about the approaches that are used to measure value.</td>
</tr>
<tr>
<td>Sell the value that is being created</td>
<td>Opinions about how managers demonstrate the value that they are creating (or that they can create) to enhance their firms' offering. Focuses on showing the value after the fact, after having measured it.</td>
</tr>
<tr>
<td>Sell the value externally</td>
<td>Opinions about how companies show the value that they are creating (or that they can create) to enhance the offering to the customer. This node is focused on selling the value after having measured it.</td>
</tr>
<tr>
<td>Sell the value internally</td>
<td>Opinions about how functions show the value that they are creating (or that they can create) to other functions in their own firm. Focuses on showing the value after the fact, after having measured it.</td>
</tr>
<tr>
<td>Meeting basic order qualifiers</td>
<td>Opinions about the need to first meet a basic level of service (order qualifiers) before focusing on differentiation by involving in cross-functional teams.</td>
</tr>
<tr>
<td>Motivation to behave proactively</td>
<td>Opinions related to the factors that motivate managers to work proactively in value co-creation for the other company.</td>
</tr>
<tr>
<td>Needs and capabilities</td>
<td>Opinions related to the need to identify and communicate the needs and capabilities of the firms in the relationship. Includes descriptions of the approaches taken by managers.</td>
</tr>
<tr>
<td>Communication of needs and capabilities to other firm</td>
<td>Opinions about how the needs and capabilities are communicated between managers of the two firms.</td>
</tr>
<tr>
<td>Knowledge of other firm’s needs and capabilities</td>
<td>Opinions about the importance of knowing the need and capabilities at the other organization.</td>
</tr>
<tr>
<td>Knowledge of own firm’s needs and capabilities</td>
<td>Opinions about how managers develop knowledge and determine their needs and capabilities.</td>
</tr>
<tr>
<td>Match needs and capabilities</td>
<td>Opinions about how managers from the two companies in the relationship match needs and capabilities.</td>
</tr>
<tr>
<td>XF evaluation of supplier</td>
<td>Opinions about the need to involve the different functions in the evaluation of the relationship. Describes the roles of the different players in the purchasing decision (buyers, influencer, user, etc.)</td>
</tr>
</tbody>
</table>