A Dyadic Study of One Firm's Relationship Portfolio

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Abstract

Business relationships are a central feature of industrial networks. However, each firm in a relationship necessarily has a different perspective simply because of the complementary nature of the association, different firm history and different place of each partner within multiple perspectives of the network and the different boundaries. Further, each firm will operate with differing managerial purpose and timeline and in addition some variations in methods of managing.

The result is that quantitative analysis of interaction within relationships requires separate examination of each party. More precisely the two firms of a relationship cannot be quantitatively examined by simply aggregating their separate perceptions concerning how they operate together. Rather firms may have asymmetric perspectives of their relationship, unless the firms work closely together and so have similar or symmetric views of their operations.

Dyad studies of firms in business relationships are the only way to develop an understanding of the different ways firms operate relationships by managing each other (ie cooperate) and managing against each other (ie compete). However, there is a paucity of quantitative empirical dyadic studies.

The literature observes that business relationships contain mixtures of cooperation and competition. This empirical paper presents a rare quantitative and qualitative dyadic study of the asymmetry and symmetry of perspectives of the strategic relationships of a single firm. The study applies regression analysis to find the active constructs explaining relationship performance by each firm. In the next part of the analysis the different forms of asymmetry and symmetry within 13 business relationships are examined, by examining the nature of the active constructs associated with each firm in the dyad.

The study finishes by highlighting the issue of asymmetry and so provides theoretical implications for future studies of interaction.

Keywords: dyad, relationship performance

Introduction

Many authors have examined business relationships and networks (Achrol and Kotler 1999; Ford et al. 2003; Håkansson 1982). It is observed that inter-organizational networks have experienced an unprecedented growth in the form of strategic alliances, acquisitions, partnerships and collaborations among firms (Möller and Svahn 2003). Moller and Svahn (2003), suggest the primary goal in pursuing business networks is to gain efficiency, growth opportunity and access to resources or a wider customer base. This is also in line with the view that business relationships and networks are often a potential source of competitive advantage (Wilkinson and Young 2002). Over the years, the growing number of forms of inter-organizational partnering depicts a large number of key players/hub firms, restricting themselves to a small number of competitive partners with complementary capabilities (Turnbull et al. 1996).

Håkansson (1982) notes, the importance of long-term business-to-business relationships, as opposed to the single episode or transaction-based relationships, illustrating the need for more academic and empirical research, on business relationships. However, the ever-growing trend of business collaborations and partnerships faces many issues when it comes to "managing" these dynamic networks and relationships (Möller and Svahn 2003). These issues arise from interactions within the relationship and across networks, where "managing" can only be applied in an imprecise way since more than one actor influences outcomes. In this paper we focus directly on managing firms in relationships composed of two firms (ie dyads); we ignore the network except as a secondary factor affecting firms and relationships.

Managing firms within industrial markets needs an understanding beyond the traditional marketing literature that was developed for the consumer markets. Ford et al. (2003) indicates that, the traditional view of consumer marketing is not applicable to the understanding of industrial business relationships as:
1. It concentrates on the purchase process of a single purchase
2. It relies on the consumer-marketing literature, with the view that buyers are individually insignificant, passive and part of a relatively homogenous market.

Halinen (1998) makes an important theoretical contribution to understanding business relationships in noting they represent two 'codes', not one. That is two firms with different purposes interact according to their own way of 'managing' within a business relationship. Each firm necessarily has different systems, processes and understandings regarding how to interact with another firm, based on past experience and strategic intention which both follow from a firm's unique identity and position within networks. The idea of two codes was recognized early within business interaction literature (Håkansson 1982), although not fully understood. The implication is that one can only consider a relationship level construct where the codes (ie signs, language, policies, procedures, systems) are equivalent. Evidently in a heterogenous environment the natural state of codes in a relationship is difference, which we term asymmetry.

Medlin (2003a) indicates that, since business relationships are formed as an outcome of interaction between two businesses, it is likely that firms in relationships will have varying perspectives and expectations. Business relationships are based on a

complementary resource and activity association, but each firm has a history and different understanding of their networks, and so each firm will operate with different managerial purpose and mode of interaction (Medlin 2003a). The result is that firms in a business relationship will naturally have different perspectives so that the dyad is asymmetric; unless the firms work very closely together and so have similar and symmetric views of their operations.

This means each firm in a relationship must be examined separately, or more precisely, relationship or dyad constructs cannot be examined by simply aggregating each firm's separate perception concerning how they operate together (Medlin 2003a). Even to apply a weighted method of aggregation without first checking for equivalence is not appropriate.

Another issue in understanding business relationships arises from a firm's need to balance their interactions with a range of firms. The portfolio of relationships in a firm's business network is a part of a firm's strategic resources (Turnbull et al. 1996). Each relationship has a place, yet each is inherently different, with some more strategically critical than others.

Relationship portfolios and network connections add another dimension to understanding relationships (Ford et al. 2003; Håkansson and Snehota 1995). The connectedness of firms in networks makes determining the effect and performance of a single relationship difficult to disentangle. Who can say whether the performance of one relationship is intrinsic to those firms, or really dependent on another firm connected to that relationship? In networks of firms there are difficulties in estimating the direct costs and benefits from each relationship. However, firms can attribute a level of performance to their individual business relationships (cf Aulakh et al. 1996; Holm et al. 1996; Medlin 2003b; Medlin 2006) and this allows an exploration of how firm managerial codes may vary across a relationship.

Dyadic studies of firms in business relationships remain the only way to fully develop our understanding of the interaction between firms (Medlin 2006). The aim of this paper is to quantitatively measure the inter-firm relationship performance and symmetry/asymmetry within the business dyads of a single organizations portfolio of relationships, and to qualitatively examine these distinctions across the firm's relationship portfolio. The paper proceeds with a review of the business-to-business relationships literature. This is followed by the discussion of research methodology, leading to the analysis of the survey results. In conclusion, the survey findings and research implications are listed.

Literature Review

A trend to build long-term buyer-seller, manufacturer and supplier relationships has been commonplace for many major companies, such as: General Motors, Xerox, Dell, Black & Decker, to name just a few (Ganesan 1994). The focus of organizations has been the pursuit of efficiency and higher economic outcomes through long-term relationships (Anderson and Weitz 1989; Ganesan 1994). Long-term relationships provide organizations with access to customers or to required resources (Håkansson and Snehota 1995). However, long-term business relationships also lead to mutual

dependence, or interdependence (Dwyer et al. 1987; Ford et al. 2003; Håkansson and Snehota 1995; Morgan and Hunt 1994). Mattson and Johanson (2006) indicate "that industrial markets were characterised by:

1. Mutual dependence between seller and buyer
2. Often long-term dynamic relationships between seller and buyer
3. Interaction between active buyers and active sellers to solve the buyer's problems, including technical problems and product development
4. Importance of organising for interaction."

These mutual and long-term aspects of relationships have lead researchers naturally to examine business networks. However, there is also a need to examine the relationships that form a network (Easton 1992). Each of the above characteristics of industrial markets represents an analogue concept from a firm's perspective within a business relationship. Further, from a firm's perspective there are both costs and benefits from relationships (Wilkinson and Young 2002). We now consider each of the characteristics of industrial markets from a firm's perspective.

Mutual dependence is the outcomes of a process (Svensson 2002) and refers to a reliance on the other to achieve a firm's goal (Andaleeb 1995). With mutualness there is on the one-hand a requirement of cooperation and complementarity between the firms (Dyer and Singh 1998), but there is also a natural tension between the firms in a relationship as they seek profits (Medlin 2006). Each inter-organizational relationship exhibits a certain level of conflict, cooperation, collaborative and self interests simultaneously (Bengtsson and Kock 1999; Medlin 2006; Young and Wilkinson 1997). This asymmetry suggests each firm in a relationship follows a separate, but also conjoined code.

The long-term interaction between firms leads to specific adaptation by each firm (Hallén et al. 1991). This long-term adaptation leads to the formation of a network of firms operating according to a 'logic' (Håkansson and Snehota 1995). However, from a firm's perspective, they face a portfolio of relationships in a network. This portfolio of relationships is a part of a firm's strategic resources (Turnbull et al. 1996). Each firm in the portfolio requires different managerial activities and resource allocation, and this suggests different prioritisation of available time according to strategic importance (Zolkiewski and Turnbull 2002). Further, each relationship in the portfolio will have different firms connected to the other party and this brings an inherent diversity to the way each relationship is managed (Zolkiewski and Turnbull 2002). Again there is likely to be an asymmetry across each relationship facing a firm.

The interactions between firms in a network also takes a specific effect at the firm level due to the difficulties of separating the costs and benefits of each relationship. Firms are rarely connected to a single other firm and so must manage a portfolio of business relationships. Portfolio management naturally brings to the fore questions of strategic priority and economic rewards and costs (Zolkiewski and Turnbull 2002). This leads managers to analyse the business relationships as separate entities, as there are trade offs between the "gains from working more closely with existing partners against the potential gains from developing new relations" (Wilkinson and Young 2002). Further, a firm must foresee whether the adaptations made in a particular relationship will provide the expected outcomes (Ford 2002; Håkansson 1982; Turnbull and Valla 1986). However, this will be difficult for firms due to the inherent

nature of diversity in the business network. The complexity of interactions across many firms makes it difficult to estimate the direct costs and benefits gained from each relationship. However, these difficulties will not stop managers from attributing profits/expenses against each partner and so deciding strategic intent, along with a variation in the way each relationship in the portfolio is managed. These differences in strategic importance will lead to a natural asymmetry in the way firms manage their relationships.

The organization of interaction within business relationships from a firm's perspective takes an interesting turn, for all interaction is joint (Ford and Håkansson 2006). The idea of joint interaction refers to the ways at least two firms cooperate on basis of complementarity of resources and/or access to customers. The single firm must cooperate to achieve profit. There is no alternative for a single firm, but to cooperate to some degree (Håkansson and Snehota 1989). This interaction between firms is based on the complementarity in either resources or access to customers, and noteworthy is the asymmetry across the relationship. The differences are an important part of how value is created. Each firm brings a different perspective and network connections which are the driver of value creation within that relationship.

The distinction between firms in business relationships suggests the examination of firms according to the complementary nature of relationships. The problems of managing a portfolio of firms within limited resources, including time, suggest that any study of the complementarity of firms in relationships must also account for strategic intent across the portfolio. However, the quantitative study of complementarity and interaction across a relationship is not easy, because of the issues in measuring dyad level constructs.

Methodological Issues with Dyad Analysis of Inter-organizational Constructs

The idea of two codes (Halinen 1998) has important implications for quantitative analysis of a business relationship. The joining of two firms within business relationships, which results from the opposing and cooperative nature of business relationships, means that each party has different perspectives. The recent comparison of dyad data by Anderson, et al. (2006) shows again that neither party to a relationship has the same perspective. There is a long history of such results (Gundlach and Cadotte 1994; Heide and John 1990; John and Reve 1982; Kim 2000). We should not expect exactly similar perspectives across a dyad; asymmetry is more natural.

The idea of two codes in business relationships means analysis of dyads must first proceed from the single firm, and then move to the dyad level. For example, Anderson and Narus (1990) and Barnes, et al. (2005) undertake analysis of buyers and suppliers independently of the other firm in the dyad. These researchers require a dyadic theory to move to a relationship level analysis. Alternate approaches that consider generating dyad level constructs by aggregation of indicators from each side of the relationship provide an average of two perspectives, effectively averaging two different points of view generated by different network positions and different codes.

This problem also exists when a weighting scheme is applied to arrive at a measure of the dyad level construct (Medlin 2003a), without first checking for equivalence and

closeness of perspective. This problem is apparent in the theoretical conclusions drawn by Anderson, et al. (2006) as they rely on constraining the measure-specific factor loadings for the responses of four respondents from two firms to be equal (pp.34-35). Comparison of measurement specificity of relationship level constructs in this study relies on a theoretically non-existent construct. One can further say that provided the firms are small in size and that the respondent chosen is the most appropriate for the study that the issues of using summed indicators in regression analysis is also not a concern.

Evidently examining dyads quantitatively is difficult. Each firm comes to the business relationship with a different purpose and may have a different way of interacting to achieve the strategic intent. This means modelling a dyad quantitatively requires a dependent variable that encompasses the behaviour of both firms, yet leaves each firm free to pursue its own goals and way of acting (Medlin and Rao 2004). To undertake analysis of dyads requires two steps. First, the firms must be grouped according to their different codes. Second, the dyad part of the analysis, involves a comparison of firms in dyads according to the way each relationship is composed of different pairs of codes. This technique of analysis requires a dependent variable that is at a relationship level and preferably measures performance (Medlin 2003b).

Theoretical Framework

Inter-organizational relationships are found in various complex forms (Ford et al., 2002). Each inter-organizational relationship exhibits a certain level of conflict, cooperation, collaborative and self interests simultaneously (Bengtsson and Kock 1999; Medlin 2006; Young and Wilkinson 1997). Firms cooperate simultaneously to gain and expand economical benefits and resources, while they "compete over the means to do this and over the division of rewards and resources" (Wilkinson and Wiley 2000).

The complementary nature of business relationships within a firm's portfolio can be analysed according to the nature of interdependence. Organizations are interdependent for sales, supplies, information, technology, development and access to other companies in the surrounding network (Turnbull et al. 1996). Given the strategic purposes of relationship portfolios and the interdependency between firms we can see that relationship must be composed of the following six strategic imperatives (see table 1). This schema is derived from two dimensions. The first is a recognition of business relationships as a means to access either resources or customers (Håkansson and Snehota 1995). The second is the geographic nature of the market; whether local or distant, which will influence the ease of interaction between the firms.

Table 1: Strategy focus

1.	Resource dependency on the other firms
2.	Stable suppliers with agreed terms and conditions
3.	Niche suppliers
4.	Entry to local market
5.	Entry to other market
6.	Other contingent factors in each dyadic relationship

Necessarily, each firm in a dyad has complementary strategies to the partner firm. Thus relationships are likely to be composed of pairs of firms pursuing complementary, but different, strategies. For example, one firm will provide a technical resource according to agreed terms (ie strategy 2), and the other firm will be dependent of continuing supply of that resource (ie strategy 1). In addition, we can see combinations of strategies even by the one firm in a relationship. For example, the supplying firm in the above example may also be pursuing a strategy of entering a local market (ie strategy 4), in addition to providing a technical resource. However, in all cases there will be a natural complementarity of strategies across the dyad so that joint action occurs.

The firm and dyad framework applied in this study is based on an empirical model that explains relationship performance. The constructs explaining relationship performance allow grouping of the firm management processes according to whether the code is substantially self or cooperative interest (Medlin 2003b; Medlin et al. 2005). The relationship performance construct captures each firm's understanding of the joint performance of the two firms relative to expectations, allowing an analysis of different behaviours of firms in relationships (Medlin, 2003).

Since interaction takes place between at least two firms, each firm may have its own perspective and expectations of outcomes from the interaction. Similarly, each firm involved in a relationship may have its set of goals and self and/or collective interests, different from the other firm (Medlin 2006). The joint action between two firms involves the use of each firm's resources, with the aim of achieving economic goals or profits. These economic outcomes are explained to be a firm's self-interest, resulting in long-term collaboration between the firms. Thus even though a joint venture may involve inter-related activities, each firm may have a self-interest in the collective outcomes. In contrast, a collective interest is explained to be central to the relationship, where each firm shares similar expectations and perspective of outcomes from a relationship (Medlin et al. 2005).

The construct indicators in the empirical model are detailed in appendix A. The model in full is available in Medlin et al. (2005). The model as examined in this paper is as follows:
Relationship Performance = f (Economic goal, Time perspective, Commitment, Trust).

Methodology

A survey was conducted to study the portfolio of relationships of a software development company based in the United Arab Emirates (UAE). The study focuses on strategic business partners from within the UAE as well as multinational organisations that have an interest in the UAE, distributors, agents, suppliers and long-term clients (joint ventures only). Firms from each side of the relationships completed the survey.

The focus firm's Managing Partner identified the participating firms and the point of contact in those firms, such as senior level management and CEOs. Each respondent was contacted introducing the nature of the study and establishing acceptance to

respond. Next, the link to a web-survey was passed to the participating firm's managers via email, and the focus firm's senior level management filled the corresponding response. In total, 26 surveys were returned, representing 13 dyads.

The strategy focus of each firm was identified by the manager of the focus firm, and this was checked by the alternate partner manager. Managers were asked to attribute any number of strategic foci.

Results

The research is based on quantitative approach that operationalises the relationship performance construct (Aulakh et al. 1996; Holm et al. 1996; Medlin 2003b; Medlin 2006). This involves three steps. First factor analysis to select indicators for measurement of constructs. Each of the constructs was uni-dimensional with Kaiser-Meyer-Olkin Measures of Sampling Adequacy ranging from 0.599 to 0.830. Aggregating indicator scores formed the measures for each construct (Li and Calantone 1998). Anderson et al. (2006) argue this approach leads to unknown degrees of informant bias. However, our sample consists of small firms and small departments whose informants were likely to fully understand the relationship and firm level constructs we examined. In these cases a sum-scale does not significantly increase measurement error, especially when care is taken with respondent selection.

Next, step-wise regression analysis was conducted of the full sample to find the general model explaining firm perception of relationship performance. This step makes explicit the active constructs, which explain variation in relationship performance. The results indicated only 'economic goals' explained relationship performance (β=0.727, t=5.192, adjusted R^2=0.509). The non-significance of other constructs is likely a result of the small sample size. To further our exploratory study each construct was regressed separately against the dependent variable. Only 'time perspective' was found to be significant (see table two).

Table 2: **Independent Regression results for Relationship Performance**

Construct	Standardised β	T value
Economic goal	0.727	5.192
Time perspective	0.579	3.478

In a further exploratory step, the model of the focus firm was examined with a stepwise regression (n=13). The result is relationship performance is explained by economic goal (β=0.689, t=3.151) with adjusted R^2= 0.427. Thus, the focus firm's model has similar active constructs to the general model.

The final step, where relationships are examined dyadically, was undertaken qualitatively because of the low number of respondents. This analysis involved examining the symmetry and asymmetry of standardised construct scores.

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Discussion

The results are discussed in three sections. First, the portfolio of the focus firm is examined according to strategy and importance of each relationship. Second, the results of the regression analysis allow comment at the firm level on the main constructs explaining relationship performance. Third, the models across each dyad are considered qualitatively. This allows comment on the effects of symmetry or asymmetry on relationship performance.

Portfolio Analysis
Table three shows the strategic focus of each relationship in the focus firm's portfolio. The strategic focus is shown as in table one, where access to resources and customers is attributed to market entry. The focus firm has developed relationships that secure resources on the one hand (ie 1, 3, 5, 9, 12) and provide access to markets on the other (ie 4, 7, 8, 13). Given the technological nature of the software industry in which the focus firm participates this pattern is to be expected.

Table 3: Portfolio Analysis by Relationship

Dyad No.	Company Code	Country	Strategy focus (as per table 1)	Strategy importance
1	FocusFirm	UAE	1, 3	High
	Other	USA	4	
2	FocusFirm	UAE	2	Low
	Other	UAE	4	
3	FocusFirm	UAE	3, 1	Medium
	Other	USA	4	
4	FocusFirm	UAE	5	Low
	Other	Italy	3,1	
5	FocusFirm	UAE	3,1	High
	Other	Canada	4	
6	FocusFirm	UAE	2,3	Medium
	Other	France	4	
7	FocusFirm	UAE	5	High
	Other	Kuwait	1	
8	FocusFirm	UAE	5	Low
	Other	India	3,1	
9	FocusFirm	UAE	1,3,6	High
	Other	UAE	3,1	
10	FocusFirm	UAE	6	Low
	Other	UAE	6	
11	FocusFirm	UAE	2,1	Medium
	Other	UAE	4,5	
12	FocusFirm	UAE	1,3,6	High
	Other	UAE	1,3	
13	FocusFirm	UAE	2,3,1,5	High
	Other	Egypt	4,5	

Firm Management Model

When all firms are considered (ie both parties to each relationship), the general view is that 'economic goals' and 'time perspective' explain variation on 'relationship performance'. A likely explanation for this observation could be that relationships between most firms analysed are very recent and or the firms themselves are too young. It would appear that the portfolio of relationships for the focus firm is still developing and has not moved beyond the simple expedient of being driven by 'economic goals'.

Relationship Analysis

There is no method that allows quantitative assessment of such a small number of dyads, however qualitative results are examinable based on the degree of similarity between firm's management models for Relationship Performance. Dyads can be composed as having symmetry or asymmetry on their measures for Relationship Performance, as well as each of the active constructs. Standardising the scores allows for comparison of differences by dyad parties according to a simple rule, where asymmetry was considered as any difference greater than 0.5. Positive values greater than 1.0 represent strong relative strength and values below –1.0 represent low relative strength. Values between –1.0 and 1.0 were considered medium values attribution on that construct. Each dyad was attributed to represent asymmetry or symmetry on each active construct. Where the two parties displayed symmetry of perspective the further step was taken to attribute the level of the construct as high, medium or low (see table 4).

On the basis of table four, a dyadic analysis of the relationships within the focus firm's portfolio shows no clear pattern. There appears to be an association between the level of strategic importance of a relationship and the ability of the focus firm to match the partner firm's attribution of relationship performance, with three of six matches compared to low strategic importance with zero of four. Dyad 11 is the only relationship where there is a high level of agreement between the parties on all constructs. There is a similarity of cultural backgrounds and low attribution on each construct. Dyads 1 and 12 represent example of where both parties attribute high relationship performance and the focus firm considers these relationships to have high strategic importance, and yet there is asymmetry of active constructs.

Future research

This study highlights again that asymmetry of perceptions across business relationships is the norm. Accepting the 'two-code' concept of business relationships highlights the need for two kinds of future research. First, a deeper theoretical understanding of the effects of combining two separate firm codes in a relationship is required. The constructs for this work are already present in the literature (cf Ford and Håkansson 2006), and these need to be developed within the concept of 'two codes'. Second, the methods for analysis of quantitative dyad data require further elaboration. Collecting dyad data is not enough; the data collected needs to reflect the nature of joint and single firm outcomes, actions and interactions. Further, a dependent variable

is required that measures a relationship level construct, so that there is some basis for theoretical analysis of two firms.

Table 4: Symmetry and Asymmetry of Perspective Across Dyads

Dyad No.	Strategic Importance	Company Code	Country	Relationship Performance (Standardized)		Time Perspective (Standardized)		EcoGoal (Standardized)	
1	High	FocusFirm	UAE	0.73	Sym	1.00	Asym	1.28	Asym
		Other	USA	1.12	High	0.39		0.53	
2	Low	FocusFirm	UAE	-0.82	Asym	-1.46	Asym	-0.21	Sym
		Other	UAE	0.21		-0.02		-0.46	Med
3	Medium	FocusFirm	UAE	-0.82	Asym	1.00	Sym	1.28	Sym
		Other	USA	0.60		1.00	High	1.28	High
4	Low	FocusFirm	UAE	-0.82	Asym	-0.64	Asym	-1.20	Asym
		Other	Italy	0.47		1.00		0.04	
5	High	FocusFirm	UAE	0.47	Sym	0.39	Sym	0.04	Asym
		Other	Canada	0.47	Med	0.59	Med	0.66	
6	Medium	FocusFirm	UAE	-0.04	Sym	-0.64	Asym	0.04	Asym
		Other	France	0.47	Med	0.18		0.66	
7	High	FocusFirm	UAE	-0.17	Asym	0.39	Asym	0.04	Sym
		Other	Kuwait	0.47		-0.23		0.04	Med
8	Low	FocusFirm	UAE	-0.82	Asym	-2.70	Asym	-0.70	Asym
		Other	India	-0.17		1.00		0.29	
9	High	FocusFirm	UAE	1.12	Asym	1.00	Asym	1.28	Asym
		Other	UAE	-2.75		-2.29		-2.68	
10	Low	FocusFirm	UAE	0.73	Asym	-0.85	Sym	0.41	Asym
		Other	UAE	-1.85		-0.23	Low	-1.20	
11	Medium	FocusFirm	UAE	-0.82	Sym	-0.23	Sym	-1.20	Sym
		Other	UAE	-1.33	Low	-0.23	Low	-1.08	Low
12	High	FocusFirm	UAE	1.12	Sym	1.00	Asym	1.28	Asym
		Other	UAE	1.12	High	-0.44		-1.20	
13	High	FocusFirm	UAE	0.21	Asym	0.59	Sym	0.04	Asym
		Other	Egypt	1.12		0.39	Med	0.78	
Key: Dyads are classified as Symmetric (i.e. Sym) where the difference on the score is 0.5 or less. Symmetric dyads are classified as High, Medium, Low according to distributions in appendix A									

The high degree of asymmetry found in this study of a portfolio of 13 relationships points to the difficulties of explaining quantitatively the interaction between firms. Future research should examine, within a dyad framework, the range of variables that represent different relationship interaction modes and relate these to variables that measure joint and single firm action. There is a growing body of quantitative techniques for dyad analysis (Aurifeille and Medlin 2006; Aurifeille and Medlin 2007), however care does need to be taken to maintain the two firm code within the analysis when the research focus shifts to the more abstract relationship level.

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Appendix A: Constructs, Sources and Indicators

CONSTRUCT (source)	Number of items	SCALES
Economic goal (Medlin et al 2005)	5	For each goal indicate its relative importance to your firm's overall strategy with regard to the focus relationship: Profit, sales, sales growth, * market share, * market share growth (extremely important - not important)
Time Perspective (Ganesan 1994)	3	1. We believe that over the long term our relationship with this partner will be profitable.
		2. Maintaining a long-term relationship with this partner is important to our firm.
		3. This relationship is important to our firm's future.
Commitment (Holm et al. 1996)	3	1. Our firm and the partner firm are very committed to each other.
		2. The partner firm is very committed to our firm.
		3. The partner firm is willing to invest time and money in developing this relationship.
		4. The partner firm appears more concerned with their own outcomes in this relationship.
Trust (Morgan and Hunt 1994)	3	1. In this relationship the other party can be counted on to do what is right.
		2. The other party is truly sincere in their promises.
		4. Our partner is perfectly credible.
Relationship performance (Aulakh et al. 1997; Holm et al. 1996)	5	Relative to your firm's expectations in the focus market what has been the performance of the inter-firm relation on the following dimensions: profit, sales, sales growth, market share, market share growth. (extremely strong -not strong)

Source: Medlin et al (2005)