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Measuring the Impact of Exchange Orientation on Relationship Value: Technical Report on Methods

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Abstract. Relationship marketing assumes that relational exchange generates greater value than transactional exchange. This conjecture warrants particular attention in the trade of wood products where exchange is traditionally transaction-based. A multiple case study was used to investigate relationships between three Canadian wood products suppliers and their customers in the North American supply chain for residential construction. This case study addresses whether a transactional or relational exchange orientation (EO) leads to a higher relationship value (RV) between suppliers and customers. The results suggest that RV is superior in a relational EO due to the occurrence of longer-term relationships and higher degrees of interdependence, commitment, trust, communication, cooperation, and coordination between organizations. The present document presents methodological developments undertaken to measure the impact of EO on RV in the context of this case study. It first details the research protocol followed for the case study, and then presents the process for operationalizing these two concepts into measurable constructs adapted to the research context.

Keywords. Measurement, case study, methods, customer-supplier relationships, relationship value, exchange orientation, wood products.

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Introduction

Relationship marketing assumes that relational exchange generates greater value than transactional exchange. This conjecture warrants particular attention in the trade of wood products where exchange is traditionally transaction-based. A multiple case study was used to investigate relationships between three Canadian wood products suppliers and their customers in the North American supply chain for residential construction (see Lefaix-Durand et al. 2007). This case study addresses whether a transactional or relational *exchange orientation* (EO) leads to a higher *relationship value* (RV) between suppliers and customers. The results suggest that RV is superior in a relational EO due to the occurrence of longer-term relationships and higher degrees of interdependence, commitment, trust, communication, cooperation, and coordination between organizations.

The present document includes methodological developments undertaken to measure the impact of EO on RV in the context of this case study. It first details the research protocol followed for the case study, and then presents the process for operationalizing these two concepts into measurable constructs adapted to the research context.

1. Case Study - Research Protocol

1.1. Phase #1. Adaptation of the Measure of RV

During the first phase of the data collection, qualitative data was collected with primary informants on the supply side with respect to the value delivered to their customers (*value for customer*), the strengths and weaknesses of their value offerings compared to the competition, and the value their customers represent (*value of customer*) (interview guide presented in Annex 1). The measure of RV was also discussed while all dimensions and indicators of this measure were individually reviewed. This step helped in adapting the measure developed by Ulaga and Eggert (2005, 2006) to the specifics of the wood products industry.

1.2. Phase #2. Selection of Relationships

The second phase consisted in selecting specific customer relationships in each company for further analysis. The six primary informants were asked to intuitively position a minimum of 2 relationships with their customers in each quadrant of a matrix with exchange orientation (very transactional to very relational) and relationship value (very low to very high) axes. In order to help primary informants with selecting relationships according to their EO, they were provided with a basic definition which stated: ‘when price counts first with a customer and where business is characterized by a one-at-a-time deal, the customer should be considered approached in a transactional EO; ‘when trust and the continuity of the relationship over time are more important determinants in the deal than price, the customer should to be considered approached in a relational EO’. For helping them with positioning relationships on the value axis, they were told that variation was sought in the importance of the relationship for both them and their customers. Finally, customers were contacted (sometimes through the sales people in daily contact with the selected customers) and asked to participate in the study.

1.3. Phase #3. Evaluation of the Relative Importance of RV Dimensions

The third phase of the data collection aimed at taking into account an important element that emerged during the first phase of the research protocol (open-ended interviews). Repeatedly, informants on the supply side observed at this stage that they had no problem rating the value delivered to customers using the measure proposed but that some of the dimensions (e.g., products and price) were far more important than others (e.g., know-how and personal interactions). Ignoring this element could result in misperceptions of the actual value of relationships. It was then decided to assess RV taking into account the relative importance of its dimensions. The case study methods allows for this flexibility in adapting the research protocol while collecting data (Eisenhardt 1989; Yin 2003).

To assess RV taking into account the relative importance of its dimensions, a weighting step was introduced in the procedure by drawing on propositions by Ulaga (2003: 690-91) for the benchmarking of suppliers' performance. First, study participants (on both the supply and the purchasing sides) were asked to rank each component of RV in terms of importance. Second, they were asked to distribute 100 points over all of these components (Questionnaire A, Annex 2). This favored a better understanding of what is more or less valuable in relationships, and a more accurate assessment of RV.

1.4. Phase #4. Assessment of Relationship Value

In the fourth phase of this case study, a questionnaire was used to quantify respondents' perceptions on RV and obtain data for meaningful comparison across analyzed relationships (Questionnaire B, Annex 3). The elements used to measure RV were similar for both suppliers and customers but the set-up for collecting data and the presentation of the questionnaire differed according to the type of informants.

On the supply side, informants were asked to rate how their company performs for each selected customer on all dimensions of RV *compared to their competitors*. The questionnaire was filled jointly during individual and face-to-face interviews. This questionnaire used a continuous interval scale ranging from 1 (much lower than competition) to 7 (much higher than competition) with 4 as a neutral mid-point (neither higher nor lower than the competition).

On the demand side, data was collected by means of a phone interview supported by an online access to the questionnaire for a visual support. The interview started with open-ended questions for collecting qualitative information about informants' definition of a 'high' and a 'low' value supplier. Then, informants were asked to rate – using the same scale – how the supplier in question (Case 1, 2 or 3) performs on all dimensions of RV *compared to their other suppliers*.

1.5. Phase #5. Assessment of Exchange Orientation

The last phase of the data collection consisted in profiling the exchange orientation in the selected relationships. This was achieved on the supply side only by means of a questionnaire (Questionnaire C, Annex 4) using a continuous interval scale ranging from 1 (very low) to 7 (very high) with 4 as a neutral mid-point (neither high nor low). Informants

were asked to rate how each relationship under scrutiny can be profiled on all variables determining their EO. The questionnaire was filled jointly with the researcher during either face-to-face or phone interviews.

2. Measures

2.1. Relationship Value (RV)

Interviews with study participants (Step #1 in the research protocol) helped to validate the measurement scale for RV developed by Ulaga and Eggert (2005, 2006). These interviews also allowed adapting indicators to the wood products industrial context and adding some dimensions and indicators to increase the model's explanatory power (Table 1). Particularly, the costs dimension was enriched with: *transaction costs* (e.g., Williamson 1975) and *psychological costs* (e.g., Ravald and Grönroos 1996).

Table 1 – Measure for relationship value (RV)

Dimensions	**Measured indicators**
Benefits	
Products / production	Quality of products; consistency of product quality over time; customization capacity; flexibility in production; range of products; complementary product line; complexity of products; value-addition (degree of) on products; production capacity; availability of products
Services	Accuracy of quotations/estimations; quality of design/drawings; ability to coordinate the different activities required by orders; speed in answering questions; ability to offer a technical advice; quality of after-sale service; quality of installation service; quality of repair and maintenance service
Delivery	Respect of due date; respect of order (right quantity and product); flexibility; volume capacity; territory coverage; quality of packaging; competence of personnel (drivers); quality of equipment (e.g., trucks)
Know-How /Innovation	Expertise / experience; ability to share knowledge and expertise; ability to develop new products; ability to assist in improving processes and methods; prototype development capacity; supply sources knowledge

Table 1 – Continued

Time-to-market	Quotation / estimation speed; prototype development speed; speed in design/drawings; production speed; delivery speed; speed of installation service; speed of repair and maintenance service; ability to fasten cycle / rotation time
Personal Interactions	Availability of supplier's personnel; easiness for reaching supplier's personnel; friendliness / courtesy; interest / relevance of interactions; ease of interactions; ease of decision-making process; ability to networking; ability to solve problems; ability to reduce concerns
Costs	
Direct costs	Price of products; profit margin realized; openness to negotiation (discounts, etc.)
Acquisition costs	Ordering costs; transportation costs; inventory-carrying costs
Operation costs	Handling costs; transformation / distribution costs; downtime costs
Transaction costs	Information research costs; trade agreements adaptation costs; trade agreements enforcement costs; coordination, control, and monitoring costs; information systems and technologies costs
Psychological costs	Time invested in relationship; energy invested in relationship; concerns generated in relationship

(Adapted from Ulaga and Eggert, 2005, 2006).

Further adaptation of Ulaga and Eggert's (2005, 2006) work was needed in the area of costs. The authors have operationalized RV as a formative higher-order construct using Structural Equation Modeling techniques which inherently addressed the 'negative impact' of costs on RV. In a case study approach, measuring the 'costs' first-order dimension proved to be more challenging than measuring the 'benefits' first-order dimension. Indeed, informants would become easily confused when simultaneously asked to evaluate what increases and what diminishes RV. To limit confusion, both *costs* and *costs reduction benefits* were explicitly assessed. First, respondents were asked to rate the *costs* generated in the relationship using a scale ranging from 1 (much lower) to 7 (much higher). With their agreement, this rating was then reversed from the mid-point (i.e., 4) to indicate the benefits received as regards *cost reductions*. For instance, if the *purchasing price* when dealing with a supplier was rated as 'somewhat higher' (i.e., 5) than when dealing with other suppliers, the *price reduction benefits* would be computed as 'somewhat lower' (i.e., 3). This

adaptation made the conceptualization of RV clearer for informants as the sum of benefits and costs reduction benefits.

On the whole, participants evaluated successively each: (1) indicator, (2) second-order dimension (as an aggregate measure of indicators), (3) first-order dimension (as an aggregate measure of second-order dimensions), and finally (4) they provided an overall rating for the relationship value (as an aggregate measure of all *benefits* and *costs reduction benefits* generated in the relationship). Inconsistencies were controlled at the levels of the first- and second-order dimensions during the collect process. To control for inconsistencies, the ratings provided by participants were compared with a mean that was computed using the weighting coefficients determined in Phase 3. The mean, computed simultaneously in the Excel file used for collecting participants' ratings, was assumed to be close to the face value of the rating provided for the second- and first-order dimensions. When disparities were noticed, which seldom occurred, informants were asked to explain the reason for their occurrence. In most cases, they were due to a slight misunderstanding of the question asked and were corrected by the informants. Due to this rigorous process and the *in-vivo* control for consistency, ratings provided for the overall RV by study participants are considered an acceptable basis for comparison across respondents and across cases.

Phases #3 and #4 in the research protocol included a collect of ratings on the same elements of RV. A sample of questions is first presented for Phase 3 in Annex 2 (Questionnaire A), and the full-length questionnaire is then presented for Phase 4 in Annex 3 (Questionnaire B).

2.2. Exchange Orientation (EO)

The concept of *exchange orientation* (EO) is operationalized into a multidimensional construct using constructs identified in the literature. For each construct under scrutiny, measurement variables are presented below and summarized in Table 2.

Proximity – The concept of proximity includes geographic location of organizations (Oerlemans and Meeus 2005; Porter 1998), perceptions of closeness, i.e., the existence of close and working relationships (Håkansson 1982; Nielson 1998), and perceptions of technical and cultural proximity, i.e., similarities in technological background, business practices, language, national culture, and so on (Ahuja 2000; Conway and Swift 2000; Evans and Bridson 2005).

Interdependence – Dependence is said to naturally emerge from repeated interaction episodes over time (Dwyer et al. 1987; Macneil 1980) and is defined as the firm's need to maintain the relationship with its partner to achieve its goals (Heide and John 1988). It is determined by the outcomes given '*comparison level for alternatives*', i.e., *'the overall economic, social, and technical outcomes available to the firm from the best alternative exchange relationship'* (Anderson and Narus 1990: 43). Common indicators are the level of irreplaceability of trade partners (Joshi and Stump 1999; Morgan and Hunt 1994; Ruyter et al. 2001), their contribution to one another's sales and profits (Anderson and Weitz 1989; Kim 1999), and the specificity of human and technical assets invested in relationships (Handfield and Bechtel 2002; Haugland 1999; Heide 1994; Nielson 1998). Interdependence characterizes the mutuality (or symmetry) of dependence between firms (Anderson and Narus 1990; Heide and John 1988).

Time orientation – The time orientation of exchange plays a central role in the transaction costs theory which states that it is possible to reduce opportunistic risks and transaction costs in business by establishing long-term relationships with trade partners (Williamson 1975, 1979). The time orientation of a relationship (short-term vs. long-term) is not only a matter of past duration of the relationship but also of expected continuity over time (Chen and Paulraj 2004; Ganesan 1994; Heide and John 1990; Kumar et al. 1995). In a context of procurement, the time horizon of a relationship is determined by how a manufacturer assesses the effectiveness and profitability of a supplier relationship. The relationship is short-term oriented if the evaluation is made on a transaction-by-transaction basis, and is long-term oriented if the relationship is evaluated over a series of transactions (Joshi and Stump 1999).

Trust – Trust has been defined as the willingness to rely on an exchange partner in whom one has confidence (Moorman et al. 1993; Morgan and Hunt 1994). Common to all different definitions used to conceptualize trust is the notion that it constitutes the belief, attitude or expectation that one's partner will act in a predictable manner, will keep his/her word, and will perform actions resulting in positive outcomes (Anderson and Narus 1990; Dwyer et al. 1987; Ruyter et al. 2001; Spekman et al. 2002; Walter et al. 2003). Its development largely depends on interpersonal variables such as shared values, perceived expertise, honesty, benevolence, competence, reliability, and predictability (Handfield and Bechtel 2002; Moorman et al. 1993).

Commitment – Relationship commitment has been defined as the belief of an exchange partner that an ongoing relationship with another is so important as to warrant maximum efforts at maintaining it, including short-term sacrifices (Geyskens et al. 1999; Morgan and Hunt 1994). Commitment is often opposed to opportunistic behavior which is defined as the pursuit of self-interest with guile (Joshi and Stump 1999), and translates, for instance, in

withholding or distorting information, failing to fulfill promises or obligations, late payments, and delivery of substandard products (Parkhe 1993).

Communication – The extent and depth in which trade partners communicate is revealed by the frequency of information exchange between actors, the type of communication tactics or methods/media used, and the content or type of information, i.e. proprietary, technical or social information (Andersen 2001; Spekman et al. 2002; Tatikonda and Stock 2003; Wiertz et al. 2004). In addition, communication reveals in 'attributes' such as sharing timely and appropriate information (Chen and Paulraj 2004; Kim 1999; Wiertz et al. 2004). Using the concept of information sharing, scholars insist on the importance of two-way dyadic interchanges, i.e., the reciprocity (or symmetry) in information exchange between buyers and sellers (Chen and Paulraj 2004; Ruyter et al. 2001). Overall, higher levels of communication are reflected by communication that is more interpersonal, that has greater frequency, and that transmits richer and more complex information (Tatikonda and Stock 2003).

Cooperation – Cooperation has been defined as the extent to which trade partners voluntarily undertake similar or complementary actions to achieve mutual or singular outcomes with expected reciprocation over time (Anderson and Narus 1990). Cooperation emerges when firms' goals are compatible (Parsons 2002), and translates into joint action and conflict solving. Joint action is defined as the extent in which parties undertake similar or complementary actions jointly rather than unilaterally (Heide and John 1990; Kim 1999). Conflict solving is the search for '*mutually acceptable compromises without having to resort to formal procedures*' (Ruyter et al. 2001: 274).

Regulation – The mechanisms used to develop and control relationships have been especially developed under the power/influence approach (e.g., Gaski and Nevin 1985) and the contractual approach (e.g., Lusch and Brown 1996). First, power has been defined as the ability of an entity to control or influence the behavior of another entity or to impose

one's will on others (Dwyer et al. 1987; Lusch and Brown 1982). The use of power among firms is translated into influence strategies which can either be coercive (e.g., promises, threats, and legalistic pleas) or non-coercive (e.g., information exchange, requests, recommendations, and discussions about business strategy) (Brown et al. 1995; Frazier and Rody 1991). Second, the level of bureaucracy characterizing the exchange is determined by the importance of centralization (i.e., the degree of vertical control in the relationship or the degree to which decision-making authority is concentrated, as opposed to shared, within the channel system), and formalization (i.e., the extent to which decision making is regulated by explicit rules and procedures) (Boyle and Dwyer 1995; Geyskens et al. 1999; Heide and John 1992). Finally, contractual agreements are said to vary along a continuum ranging from the 'explicit' (when they are formalized by written contracts establishing legal bonds) to the 'implicit' or 'normative' (when based on social bonds and expected behaviors) (Lusch and Brown 1996).

Coordination – Coordination refers to the way activities, resources and competences of firms are planned and coordinated in the exchange process. The levels of logistics and resources integration between firms and interpenetration of their boundaries determine interfirm coordination (Harland et al. 2004; Heide and John 1990). In addition, information technologies play a central role because they enable functional, geographical, and inter-temporal coordination of managerial decisions (Shapiro 2001). Thus, higher levels of coordination and planning in IRs are associated with an extended use of the Internet (e.g., for email exchange and funds transfer), and with the use of various inter-organizational information systems such as Vendor-Managed or Co-Managed Inventory systems (VMI/CMI) (e.g., Gallivan and Depledge 2003).

Structure (Structural Embeddedness) – The 'interaction approach' has established that transactions can only be examined as episodes in often long-term, embedded, and complex interfirm relationships (Hakansson 1982). The network organization is then perceived as an 'aggregate structure' of interconnected business relationships (Håkansson and Snehota 1995). Close to 'interconnectedness', 'connectivity', and 'network complexity' which

describe the links that lie within a network (Abrahamson and Fombrun 1992; Antia and Frazier 2001), structural embeddedness represents '*the extent to which a dyad's mutual contacts are connected to one another*' (Jones et al. 1997: 924).

Table 2 – Measure for exchange orientation (EO)

Constructs		**References**
	Variables measured	
Proximity		
	Closeness	(Håkansson 1982; Nielson 1998)
	Geographic proximity	(Oerlemans and Meeus 2005; Porter 1998)
	Cultural proximity	(Conway and Swift 2000; Evans and Bridson 2005)
	Technical proximity	(Ahuja 2000)
Interdependence		
	Technical specificity	(Handfield and Bechtel 2002; Haugland 1999; Heide 1994; Nielson 1998)
	Human specificity	
	Irreplaceability	(Joshi and Stump 1999; Morgan and Hunt 1994; Ruyter et al. 2001)
	Contribution to one another's business	(Anderson and Weitz 1989; Kim 1999)
	Mutuality of dependence	(Anderson and Narus 1990; Heide and John 1988)
Time Orientation		
	Duration	(Chen and Paulraj 2004; Ganesan 1994; Heide and John 1990; Kumar et al. 1995)
	Expected continuity	
	Time horizon/evaluation	(Joshi and Stump 1999)
Trust		
	Benevolence, honesty, competence, reliability, predictability	(Anderson and Narus 1990; Dwyer et al. 1987; Handfield and Bechtel 2002; Moorman et al. 1993; Spekman et al. 2002; Walter et al. 2003)
	Shared values	(Heide and John 1992; Morgan and Hunt 1994)
Commitment		
	Willingness to maintain relationship / Propensity to leave relationship	(Geyskens et al. 1999; Kumar et al. 1994; Morgan and Hunt 1994)
	Opportunism	(Joshi and Stump 1999; Parkhe 1993)
Communication		
	Frequency of exchange; Used Media; Content of information	(Andersen 2001; Spekman et al. 2002; Tatikonda and Stock 2003; Wiertz et al. 2004)
	Quality of information	(Chen and Paulraj 2004; Kim 1999; Wiertz et al. 2004)
	Symmetry / Reciprocity	(Chen and Paulraj 2004; Ruyter et al. 2001)

Table 2 – Continued

Cooperation		
	Willingness to work together	(Anderson and Narus 1990; Morgan and Hunt 1994; Tatikonda and Stock 2003)
	Joint action	(Heide and John 1990; Kim 1999)
	Goal congruence	(Parsons 2002)
	Conflict solving / mutual accommodation	(Achrol 1997; Ruyter et al. 2001).
Regulation		
	Use of power; influence strategy	(Brown et al. 1995; Dwyer et al. 1987; Frazier and Rody 1991; Gaski and Nevin 1985; Lusch and Brown 1982)
	Centralization of authority; formalization of decision-making	(Boyle and Dwyer 1995; Geyskens et al. 1999; Heide and John 1992; Lusch and Brown 1996)
	Specification of trade agreements	(Handfield and Bechtel 2002; Lusch and Brown 1996)
Coordination		
	Resources integration	(Harland et al. 2004)
	Interpenetration of organizational boundaries	(Heide and John 1990)
	Use of inter-organizational information systems	(Gallivan and Depledge 2003; Shapiro 2001)
	Logistics integration	(Chen and Paulraj 2004)
Structure		
	Structure of supply chain	(Antia and Frazier 2001; Hakansson 1982; Håkansson and Snehota 1995)
	Transparency of supply chain	
	Interconnectedness; embeddedness	(Abrahamson and Fombrun 1992; Antia and Frazier 2001; Jones et al. 1997; Ritter 2000)

Generally, the measure developed for exchange orientation (EO) includes variables that were tested empirically in the supporting literature either in industrial or services contexts. However, some variables needed to be adapted to practices in the wood products context due to a lack of information in the literature. This was the case for joint action in order to define more precisely on what firms can cooperate and for the type of trade agreements regulating relationships. A list of possible cooperative practices and a list of possible trade agreements were defined with respondents during open-ended interviews, and then used in

the questionnaire. Elements in these lists were either individually rated or qualitatively assessed by study participants.

For each construct used to assess EO, study participants provided an aggregate measure reflecting all the variables included in the measure. Because each respondent was provided with a similar platform upon which to answer questions, it is believed that responses can be compared across informants and across cases.

Conclusion

This document presents some of the methodological developments undertaken for a case study about the impact of *exchange orientation* on *relationship value* in the North American supply chain of structural wood products for residential construction. In particular, it targets the measurement process for the two constructs under scrutiny in the research context. Lefaix-Durand et al. (2007) contains complete information on the purpose, methods, results and contributions of the case study.

The measure development and the research protocol for the case study are specifically designed for investigations in the wood products industry. However, these methodological developments can be applied to other industrial or service business-to-business contexts with the required adaptations. In this sense, they represent an important methodological contribution to research on customer-supplier relationships as a means of value creation.

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Annex 1 – Interview Guide

Interview Guide – Phase #1. Discussing and adapting the measure of RV

1. Value of customer

(The value your customers represent for your company)

Q. – How would you define an important/interesting customer? In other words, what is a high value relationship with a customer?

Q. – On the contrary, how would you describe a customer who is of little interest for your company? In other words, what is a low value customer relationship?

2. Value for customer

(The value you deliver to your customers)

Q. – How would you describe the value you deliver to your customers? In other words, what makes you competitive on the market? What are the strengths of your offer?

Q. – And your weaknesses? What has made you lose business opportunities in the past? Do you know what your competitors offer that you do not?

Q. – Considering the following matrix with exchange orientation/value axis, thank you for selecting and positioning intuitively two customers to whom you consider delivering a high value and two other customers for whom the value you deliver is significantly lower.

In theory, the value of a relationship with a supplier is seen as a trade-off between:

- perceived benefits on...:

* products
* services
* delivery
* time-to-market
* know-how/innovation
* personal interactions

- ... and perceived costs...:

* direct costs
* acquisition costs
* operation costs
* transaction costs
* psychological costs

... generated over time compared to the next best alternative supplier.

More precisely, the following list presents criteria your customers may use to evaluate your performance and competitiveness, and overall the value you represent for them. Thank you for considering this list and answering for each type of benefits and costs to the following questions:

Q. – Are these elements relevant to your business?

Q. – Can you think about anything else that should be included in this list?

Benefits related to products and production:

- Quality; durability; consistency of quality over time; reliability (no defects); range (variety); availability; production capacity; customization capacity; agility in production (capacity to change during production process)

Benefits related to services:

- Type of service : estimation, design, etc. (?); value-addition and novelty of service; subcontracting activities: installation/turn-key sales, maintenance and repairing, insulation; availability of personnel; easiness to reach personnel; speed to answer questions

Benefits related to delivery:

- Respect of order (due date; right quantity and product); on-time delivery; flexibility (short-term notice, changes, etc.); speed for delivery; delivery capacity; territory coverage

Benefits related to know-how and innovation:

- Access/sharing of knowledge and know-how; supply sources knowledge; competence sources knowledge; ability to improve existing products; ability to assist in improving processes/methods; novelty of products; novelty of technology used; ability to develop new products

Benefits related to time to market:

- Speed in design/drawings; production speed; quotation / estimation speed; prototype development speed; delivery speed; speed of repair and maintenance service; ability to fasten cycle / rotation time; speed in product verification

Benefits related to personal interactions:

- Easiness for reaching supplier's personnel; friendliness / courtesy; interest / relevance of interactions; easiness of personal interactions; easiness of decision-making process; ability to networking; ability to solve problems; ability to reduce concerns; personal gratification

Benefits related to acquisition and operation costs reduction:

- Price [your ability to reduce the price, discount, openness to negotiation]; profit margin [your ability to improve your customers' margin profit]; ordering costs [your ability to reduce this cost for your customers]; delivery costs [your ability to reduce this cost for your customers]; inventory-carrying costs [your ability to reduce this cost for your customers]; downtime costs (in case of a problem in production, delivery, etc.) [your ability to reduce this cost for your customers]

Benefits related to transaction and coordination costs reduction:

- Costs and time related to information research (quotations, and so on); costs for adapting and enforcing contracts (penalties for late payment, etc.); costs related to conflicts (legal procedures, etc.); costs for monitoring and controlling the relationship and business in general (orders, deliveries, etc.); information systems and technologies costs; penalties for changes (on products, delivery dates, etc.); costs related to the time and energy invested in relationship

Annex 2 – Questionnaire A

Questionnaire A – Phase #3: Weighting the relative importance of RV dimensions

Q. – Please rank the following benefits related to 'Products and Production' in terms of importance in suppliers' evaluation:

Pr^1 – Availability (of products)
Pr^2 – Complementarily (of products)
Pr^3 – Complexity (of products)
Pr^4 – Consistency of quality over time (of products)
Pr^5 – Customization capacity (in production)
Pr^6 – Flexibility (in production)
Pr^7 – Quality (of products)
Pr^8 – Range (of products)
Pr^9 – Value-addition degree (on products)
Pr^{10} – Volume capacity (in production)

Q. – If you had to distribute 100 points over these elements to reflect their importance, how many points would you give to each of them?

Q. – Please rank the following benefits in terms of importance in suppliers' evaluation:

Pr – Products and production related benefits
S – Service related benefits
D – Delivery related benefits
K – Know-how and innovation related benefits
T – Time-to-market related benefits
Pi – Personal interactions related benefits

Q. – If you had to distribute 100 points over these elements to reflect their importance, how many points would you give to each of them?

Q. – Considering the overall benefits and costs generated in supply relationships, what comes first in suppliers' evaluation?

Benefits
Costs

Q. – If you had to distribute 100 points over these two dimensions to reflect their importance, how many points would you give to each of them?

Annex 3 – Questionnaire B

Questionnaire B – Phase #4: Assessing relationship value (RV)

Compared to [Case]'s competitors, how does [Case] perform on a scale from 1 (much lower) to 7 (much higher) on the following elements…:

1. Benefits

Q. 1a – … 'Products / Production'?

Pr^1 – Availability (of products)
Pr^2 – Complementarities (of products)
Pr^3 – Complexity (of products)
Pr^4 – Consistency of quality over time (of products)
Pr^5 – Customization capacity (in production)
Pr^6 – Flexibility (in production)
Pr^7 – Quality (of products)
Pr^8 – Range (of products)
Pr^9 – Value-addition degree (on products)
Pr^{10} – Volume capacity (in production)

Q. 1b – As an overall measure for these elements, how do you rate the benefits related to products and production?
Pr – Aggregate measure of benefits related to products and production

Q. 2a – … 'Services'?

S^1 – Ability to coordinate the different activities required by orders
S^2 – Ability to offer a technical advice
S^3 – Accuracy of quotations/estimations
S^4 – Quality of after-sale service
S^5 – Quality of design/drawings
S^6 – Quality of installation service
S^7 – Quality of repair and maintenance service
S^8 – Speed in answering questions

Q. 2b – As an overall measure for these elements, how do you rate the benefits related to services?
S – Aggregate measure of benefits related to services

Q. 3a – … 'Delivery'?

D^1 – Competence of personnel (drivers)
D^2 – Flexibility
D^3 – Quality of equipment (trucks/etc.)
D^4 – Quality of packaging
D^5 – Respect of due date
D^6 – Respect of order (quantity, product)
D^7 – Territory coverage
D^8 – Volume capacity

Q. 3b – As an overall measure for these elements, how do you rate the benefits related to delivery?
D – Aggregate measure of benefits related to delivery

Q. 4a – … 'Know-How and Innovation'?

K^1 –Ability to assist in improving processes / methods
K^2 – Ability to develop new products
K^3 – Ability to share knowledge / expertise
K^4 – Expertise / experience
K^5 – Prototype development capacity
K^6 – Supply sources knowledge

Q. 4b – As an overall measure for these elements, how do you rate the benefits related to know-how and innovation?
D – Aggregate measure of benefits related to know-how and innovation

Q. 5a – … 'Time-to-market'?

T^1 – Ability to fasten cycle / rotation time
T^2 – Delivery speed
T^3 – Design/drawings service speed
T^4 – Installation service speed
T^5 – Repair and maintenance speed
T^6 – Production speed
T^7 – Prototype development speed
T^8 – Quotation / estimation speed

Q. 5b – As an overall measure for these elements, how do you rate the benefits related to time-to-market?
T – Aggregate measure of benefits related to time-to-market

Q. 6a – … 'Personal Interactions'?

Pi^1 – Ability to networking
Pi^2 – Ability to reduce concerns
Pi^3 – Ability to solve problems
Pi^4 – Availability of personnel
Pi^5 – Easiness for reaching personnel
Pi^6 – Easiness of decision-making process
Pi^7 – Easiness of interactions
Pi^8 – Friendliness / courtesy
Pi^9 – Interest / relevance of interactions

Q. 6b – As an overall measure for these elements, how do you rate the benefits related to personal interactions?
Pi –Aggregate measure of benefits related to personal interactions

Q. 7 – As an overall measure for all these types of benefits, how do you rate the benefits delivered by [Case]?
Benefits – Aggregate measure of all benefits

2. Costs

Q. 8a – … 'Direct costs'?

Dc^1 – Openness to negotiation (e.g., discounts)
Dc^{2a} – Purchasing price
Dc^{2b} – Benefits related to purchasing price reduction
Dc^{3a} – Profit margin
Dc^{3b} – Benefits related to profit margin increase

Q. 8b – As an overall measure for these elements, how do you rate the benefits related to the reduction of direct costs?

Dc – Aggregate measure of benefits related to direct costs reduction

Q. 9a – … 'Acquisition costs'?

A^{1a} – Ordering costs
A^{1b} – Benefits related to ordering costs
A^{2a} – Transportation costs
A^{2b} – Benefits related to transportation costs
A^{3a} – Inventory-carrying costs
A^{3b} – Benefits related to inventory-carrying costs

Q. 9b – As an overall measure for these elements, how do you rate the benefits related to the reduction of acquisition costs?

A – Aggregate measure of benefits related to acquisition costs reduction

Q. 10a – … 'Operation costs'?

O^{1a} – Handling costs
O^{1b} – Benefits related to handling costs
O^{2a} – Transformation / distribution costs
O^{2a} – Benefits related to transformation / distribution costs
O^{3a} – Downtime costs (e.g., in case of non-delivery)
O^{3b} – Benefits related to downtime costs

Q. 10b – As an overall measure for these elements, how do you rate the benefits related to the reduction of operation costs?

O – Aggregate measure of benefits related to operation costs reduction

Q. 11a – … 'Transaction costs'?

Tc^{1a} – Information research costs (e.g., for quotation)
Tc^{1b} – Benefits related to information research costs
Tc^{2a} – Trade agreements adaptation (e.g., extras to agreement, charges for late payments)
Tc^{2b} – Benefits related to trade agreements adaptation
Tc^{3a} – Trade agreements enforcement costs (e.g., in case of legal action)
Tc^{3b} – Benefits related to trade agreements enforcement costs
Tc^{4a} – Coordination, control and monitoring costs
Tc^{4b} – Benefits related to coordination, control and monitoring costs
Tc^{5a} – Information systems and technologies costs
Tc^{5b} – Benefits related to information systems and technologies costs

Q. 11b – As an overall measure for these elements, how do you rate the benefits related to the reduction of transaction costs?
Tc – Aggregate measure of benefits related to Transaction Costs Reduction

Q. 12a – … 'Psychological costs'?

P^{1a} – Time invested in the relationship
P^{1b} – Benefits related to time invested in the relationship
P^{2a} – Energy invested in the relationship
P^{2b} – Benefits related to energy invested in the relationship
P^{3a} – Concerns generated
P^{3b} – Benefits related to concerns generated

Q. 12b – As an overall measure for these elements, how do you rate the benefits related to the reduction of psychological costs?
P – Aggregate measure of benefits related to psychological costs reduction

Q. 13a – As an overall measure for all these types of costs, how do you rate the costs generated by [Case]?
Costs – Aggregate measure of all costs

Q. 13b – As an overall measure for all costs reduction benefits, how do you rate [Case]'s performance?
Costs reduction benefits – Aggregate measure of all costs reduction benefits

Q. 14 – As an overall measure for all the benefits and costs reviewed, how do you rate the value generated by [Case] in your relationship with them compared to [Case]'s competitors?
Relationship Value – Aggregate measure of all benefits and costs

Annex 4 – Questionnaire C

Questionnaire C – Phase #5: Assessing exchange orientation (EO)

Please indicate for each relationship selected how the following elements rate on a scale ranging from (1) very low to (7) very high:

1. Proximity

- Closeness
  - Existence of numerous person-to-person contacts with [Firm]
  - Existence of close personal and working relationships with [Firm]
  - Degree of closeness between you and [Firm]
- Geographic proximity
  - Geographic proximity between you and [Firm]
  - In addition to this qualitative perception of distance, how distant (miles/kilometers) is your office from [Firm]'s facility
- Cultural proximity
  - Similarities in national culture between you and [Firm]
  - Similarities in legal and political system between you and [Firm]
  - Similarities in market structure between you and [Firm]
  - Similarities in business practices between you and [Firm]
  - Similarities in language (both general and technical vocabulary) between you and [Firm]
  - Degree of cultural proximity between you and [Firm]
- Technical proximity
  - Similarities in technological background (e.g., equipment, software) between you and [Firm]
  - Degree of technical proximity between you and [Firm]

- As an overall measure for these elements, how do you rate the level of proximity between you and [Firm]?

2. Interdependence

- Technical specificity
  - Level of adaptation (or modification) in products and/or production offered to [Firm]
  - Level of adaptation (or modification or investments) in equipment that you did to deal with [Firm]

    - Level of adaptation (modification or investments) in equipment that [Firm] did to deal with you
    - Level of technical specificity between you and [Firm]
- Human specificity between you and [Firm]
    - Level of interaction at the [Firm]'s facilities
    - Level of existence of visits from the manufacturing personnel to the [Firm]'s facilities
    - Level of specific knowledge/training of people in charge of the relationship with [Firm]
    - Level of human specificity between you and [Firm]
- Overall specificity of relationship between you and [Firm]
    - Difficulty (time and efforts) you would have to switch for some other customer than [Firm]
    - Difficulty (time and efforts) [Firm] would have to switch from supplier
    - Costs (money and risk) involved for you in switching from [Firm]
    - Costs (money and risk) involved for [Firm] in switching from supplier
    - Level of specificity of relationship between you and [Firm]
- Irreplaceability
    - Level of irreplaceability you represent for [Firm]
    - Level of irreplaceability [Firm] represents for you
    - Level of irreplaceability of the relationship with [Firm]
- Current contribution
    - Current contribution of [Firm] to your business (sales/purchasing volume and profits)
    - Current contribution of your business in [Firm]'s business (sales/purchasing volume and profits)
    - Current contribution to one another's business (sales/purchasing volume and profits)
- Expected contribution
    - Expected future contribution (2 years from now) of [Firm] to your business (sales/purchasing volume and profits)
    - Expected future contribution (2 years from now) of your business in [Firm]'s business (sales/purchasing volume and profits)
    - Expected contribution to one another's business (sales/purchasing volume and profits)
- What proportion of the following elements does [Firm] represent for you:
    - Sales in 2006
    - Profit margin in 2006
    - Volume of material bought in 2006
- (These elements were determined with accounting data)
- Symmetry of dependence
    - Level of dependence you have towards [Firm]
    - Level of dependence [Firm] has towards you
    - Level of dependence in the relationship with [Firm]

- As an overall measure for these elements, how do you rate the level of interdependence between you and [Firm]?

3. Time Orientation

- Duration
  - Duration of the relationship between you and [Firm]
  - In addition to this perception of duration, for how long (months/years) have you been in business with [Firm]
- Expectation of continuity
  - Level of your expectation for continuing the relationship with [Firm]
  - [Firm]'s level of expectation for continuing the relationship with you
  - Level of expectation for continuing the relationship with [Firm]
  - In addition to this perception of continuity, for how long (months/years) do you think your company will be in business with [Firm]?
- Time horizon
  - The length of time on which you assess the effectiveness and profitability of your relationship with [Firm]
  - The length of time on which [Firm] assesses the effectiveness and profitability of your relationship with them
  - Length of time of performance assessment in your relationship with [Firm]

- As an overall measure for these elements, how would you rate the long-term orientation of your relationship with [Firm]?

4. Communication

- Frequency and tactics of information exchange
  - Frequency of information exchange between you and [Firm]
  - Frequency of interactions between you and [Firm] *(1=once a year; 2=quarterly; 3=monthly; 4=weekly; 5=daily; 6=hourly; 7=continuously)*:
    - face-to-face
    - phone
    - e-mail
    - instant messenger (MSN, etc.)
    - facsimile
    - video-conference
- Content of information exchange between you and [Firm]
  - Level of proprietary or sensitive information exchanged

    - Level of technical information exchanged (for ordering, shipment, payment and delivery, etc.)
    - Level of social information exchanged (e.g., talks on outside of work interest, family, etc.)
- Quality of information exchange between you and [Firm]
    - Level of informality in information exchange
    - Level of relevance of information exchanged
    - Level of timeliness of information exchanged
- Reciprocity (or symmetry) of the information exchange between you and [Firm]
    - Level of information you exchange with [Firm]
    - Level of information [Firm] exchanges with you
    - Level of reciprocity of information exchange between you and [Firm]

- As an overall measure for these elements, how would you rate the level of communication in your relationship with [Firm]?

5. Trust

- Benevolence
    - Level of benevolence [Firm]'s representatives show towards you
    - Level of benevolence you show towards [Firm]'s representatives
    - Level of benevolence in the relationships between you and [Firm]
- Honesty
    - Level of honesty [Firm]'s representatives have towards you
    - Level of honesty you have towards [Firm]'s representatives
    - Level of honesty in the relationships between you and [Firm]
- Competence
    - Level of [Firm]'s representatives competence
    - Level of competence [Firm]'s representatives think you show
    - Level of competence deployed in the relationship between you and [Firm]
- Reliability
    - Level of [Firm]'s representatives reliability
    - Level of reliability [Firm]'s representatives think you show
    - Level of reliability in the relationship between you and [Firm]
- Predictability
    - Level of [Firm]'s representatives predictability
    - Level of predictability [Firm]'s representatives think you show
    - Level of predictability in the relationship between you and [Firm]
- Shared values
    - Level of common belief in important goals between you and [Firm]'s representatives

    - Level of common belief in appropriate behaviors between you and [Firm]'s representatives
    - Level of shared values between you and [Firm]'s representatives
- Trust
    - Your level of trust towards [Firm]'s representatives
    - [Firm]'s representatives level of trust towards you
    - As an overall measure for these elements, how would you rate the level of trust in your relationship with [Firm]?

6. Commitment

- Desire to (make short-term sacrifices to) maintain the relationship with [Firm]
    - Your desire to make short-term sacrifices to maintain the relationship with [Firm]
    - [Firm]'s desire to make short-term sacrifices to maintain the relationship with you
    - Degree of symmetry in the desire you and [Firm] have to maintain the relationship (even at the price of short-term sacrifices)
- Propensity to leave the relationship with [Firm]
    - Chances that your relationship with [Firm] will be terminated within the next one year
    - Chances that your relationship with [Firm] will be terminated within the next two years
- Opportunistic behavior
    - Your level of opportunistic behavior in the relationship with [Firm]
    - The level of opportunistic behavior of [Firm] in the relationship with you
    - Level of opportunistic behavior in the relationship with [Firm]
- Commitment
    - Your level of commitment as regards the relationship with [Firm]
    - [Firm]'s level of commitment as regards the relationship with you
    - As an overall measure for these elements, how would you rate the level of commitment to the relationship between you and [Firm]?

7. Cooperation

- Goal compatibility
    - Level of compatibility of your objectives with [Firm]'s objectives
- Level of willingness to work together as partners
    - Your level of willingness to work together as partners with [Firm]
    - The level of willingness of [Firm] to work together as partners with you

    - Level of willingness to work together as partners in the relationship with [Firm]
- Joint action
    - Please indicate the extent to which you undertake the following activities JOINTLY (as opposed to unilaterally) with [Firm]:
        - Product design
        - New product development
        - Problem analysis and resolution
        - Long-range planning and inventory levels/reserved production capacity
        - Delivery solutions (e.g., production/distribution site management, material inventory management)
        - Sales/bidding call & promotion programs
        - Local/regional advertising
        - Performance review
        - Strategic planning and development
    - Level of joint action with [Firm]
- History and level of conflict
    - Where they any noticeable conflicts in your relationship with [Firm]? How were they solved (arrangement, neutral third party, lawsuits, etc.)?
    - Level of conflict and tensions in your relationship with [Firm]
- Mutual accommodation to solve conflict
    - Your level of accommodation to solve eventual conflict with [Firm]
    - The level of accommodation of [Firm] to solve eventual conflict with you
    - Level of mutual accommodation to solve conflict in your relationship with [Firm]
- Cooperation
    - Your level of cooperation with [Firm]
    - [Firm]'s level of cooperation with you
    - As an overall measure for these elements, how would you rate the level of cooperation in your relationship with [Firm]?

8. Regulation

- Use of power
    - Your use of power (or control / influence on the [Firm]'s decisions) in the relationship
    - [Firm]'s use of power (or control / influence on your decisions) in the relationship
    - Symmetry of power use (or control / influence) between your company and [Firm]
- Coercive influence (e.g., promises and threats)
    - Your use of coercive influence on [Firm]

    - [Firm]'s use of coercive influence on you
    - Level of coercive influence between your company and [Firm]
- Non-coercive influence (e.g., requests, recommendations and discussions)
    - Your use of non-coercive influence on [Firm]
    - [Firm]'s use of non-coercive influence on you
    - Level of non-coercive influence between your company and [Firm]
- Centralization of authority (i.e., concentration of the decision-making authority)
    - Level of decision-making concentration in your company (regarding sales decisions)
    - [Firm]'s level of decision-making concentration (regarding purchasing decisions)
    - Level of concentration of the decision-making authority in the relationship between you and [Firm]
- Formalization of the decision-making process or bureaucracy (e.g., rules, administrative procedures)
    - Level of bureaucracy in your company (regarding sales decisions)
    - [Firm]'s level of bureaucracy (regarding purchasing decisions)
    - Level of bureaucracy in the relationship between you and [Firm]
- Type of trade agreements
    - Among the following examples, what type of trade agreement do you have with [Firm]? Please describe.
        - spot market
        - lumber futures
        - quarterly contracts
        - yearly contract with guaranteed prices / with short-term price adjustments (90 days, for instance)
        - long-term agreement (over a year)
        - semi-exclusive arrangements
        - exclusive arrangements
- Specification of trade agreements
    - Level of specification of contractual agreements between you and [Firm] on:
        - Pricing of material to be delivered
        - Gross margin levels
        - Quality and sizes of material to be delivered
        - Volume to be delivered
        - Minimum order sizes
        - Sales quota/volume limitation
        - Terms of delivery
        - Terms of installation/use of material (responsibilities of installer)
        - Partners' selection (framers and installers)
        - Terms of payment
        - Delay penalties
        - Claims and return goods policy
    - Level of specification of trade agreements between you and [Firm]

- As an overall measure for these elements, how would you rate the level of regulation in your relationship with [Firm]?

9. Coordination

- Integration of resources
    - Level of physical resources integration with [Firm] (e.g., on manufacturing equipment and technology)
    - Level of human resources integration with [Firm] (e.g., extensive human interaction and cross-transfer of staff between firms)
    - Level of processes integration with [Firm] (e.g., VMI)
    - Level of resources integration with [Firm]
- Interpenetration of organizational boundaries
    - Level of interpenetration of boundaries between your company and [Firm]
- Use of inter-organizational information systems (e.g., tracking advancement of estimates, material planning, delivery, etc.)
    - Level of use of Vendor-Managed Inventory or Co-Managed Inventory (VMI/CMI)
    - Level of use of Electronic Data Interchange (EDI)
    - Level of use of Collaborative Planning Forecasting and Replenishment (CPFR)
    - Level of use of Enterprise Resource Planning (ERP) systems
    - Level of use of electronic marketplaces
    - Level of IOSs use with [Firm]
- Coordination of logistics
    - Level of coordination for collecting and transporting materials between your company and [Firm]
    - Level of coordination for warehousing between your company and [Firm]
    - Level of coordination for materials handling between your company and [Firm]
    - Level of coordination for materials inspection between your company and [Firm]
    - Level of coordination of logistics with [Firm]
- As an overall measure for these elements, how would you rate the level of coordination in your relationship with [Firm]?

10. Structure

- Structure of supply chain
    - Who is the end-user of products purchased by [Firm]?

    - Before it reaches the end-user (builder, consumer), the distribution channel with [Firm] can be qualified as: one-step; two-steps; other, please specify
- Transparency in supply chain
    - Your level of knowledge on who are [Firm]'s customers
    - Your level of knowledge on who are [Firm]'s customers' customers
    - [Firm]'s level of knowledge on who are your suppliers
    - Your level of knowledge on:
        - who are your competitors (offerings/pricing) for [Firm]
        - what are your competitors' offerings and pricing for [Firm]
    - [Firm]'s level of knowledge on:
        - who are your other customers
        - what are your offerings and pricing for your other customers
    - Level of transparency on other trade actors in the supply chain with [Firm]
- Structural embeddedness
        - Level of interconnectedness with other actors when dealing with [Firm]
- As an overall measure for these elements, how would you rate the level of networked exchange (vs. dyadic exchange) in your relationship with [Firm]?