Developing an alliance scan for measurement of exploratory inter-firm relationships

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Abstract

Inter-firm relationship management has been proven to be important in the attainment of competitive advantages by looking at various aspects of relationship management (Linnarsson & Werr, 2005). However, for exploratory partnerships, the number of elements are high and interlinks are complex. This paper uses a literature review method for investigating the topic of dyadic inter-firm relations to draw insights into the relationship management categories and their respective elements. Based on relational, structural, resource and strategic dimensions, an alliance scan tool was developed to differentiate these relationship attributes and to provide key stakeholders an efficient tool for partnership decision making. This tool can be used as a starting point for future research regarding the typologies and actionable research based decisions.

Keywords: *inter-firm relationship, partnership supply chain, partnership alliance, alliance supply chain innovation, managing interfirm relationships*

INTRODUCTION

Increasingly relationship management has become a strategic decision which can bring competitive advantages through leveraging knowledge networks (Wong, Wilkinson, & Young, 2010). Some of the benefits for entering partnerships are decrease of development costs, shorter time to market, better customer requirements capturing, higher quality of products and services (Maloni & Benton, 1997), (Petersen, Handfield, & Ragatz, 2004), (Sivadas & Dwyer, 1998). Relationships can be built with suppliers, customers, manufacturers, third party providers but also with competing companies.

Nevertheless, with many benefits for entering partnership there are also risks involved. Many organizations have difficulty in accomplishing their goals (Barr, Markham, & Kingon, 2014). If partnerships are not governed properly associated costs related to time, resource and effort may be very high for the participating companies (West & Bogers, 2013). Very often alliances fail because of the "suspicion of opportunistic behavior by partners that lead to struggles and restricted communication" (Linnarsson & Werr, 2005). This could be largely attributed to the fact that well-defined, clear contracts between partners are common practices, instead of resolving conflicts through trust companies refer to contracts.

Therefore, it would be useful to determine early in the process promising partnership

opportunities, and at the same time to allow for openness without too early commitment restrictions. Exploratory partnership allows companies to familiarize themselves without firm commitments. Therefore, the focus in this research is not solely on the reasons for entering partnership but on how these partnership can be formed (Weiss, Anderson, & Lasker, 2002). On one hand, companies should be able to explore new and interesting opportunities, on the other and be able to leap the greatest benefits.

The literature on inter-firm relationships often illustrates that partnerships built on trust, collaboration and effective communication encourage partners to experiment and take risks consequently nurturing innovative alliances (Jamali, Yianni, & Abdallah, 2011). Therefore closely examining the elements affecting inter-firm relationship is important if the company wants to build robust partnerships.

The literature on inter-firm relationship is vast and include many different factors that affect successful relationships building. Some papers try to categorize these elements into affordances, for example relational pillars (trust, commitment) and structural pillars (interaction frequency) (Kim, Choi, & Skilton, 2015). However, there does not seem to be one agreed category structure. Furthermore, it becomes increasingly complex to distinguish the patterns of strategic alliances. Some scholars have looked at the patterns of formation, others at linking initial conditions to outcomes, at partnership conditions and others at implementation of formalized strategies (Doz, 1996). Hence it is not clear what an organization should look at, what elements are important and what to do with them once identified.

Moreover, these elements are presented but rarely there are recommendations on what companies can do to leverage this knowledge (Mohr & Spekman, 1994). It is crucial for companies to gain insights into proactive management of partner networks to leverage partnership benefits (Mohr & Spekman, 1994).

Most studies on inter-firm relationships look at established relations and at a very late stage of the value chain (Doz, 1996). Rapid technological growth and globalization require fast paced reactions to these technological and societal challenges (Yeniyurt, Henke, & Yalcinkaya, 2014) . There is a lack of extensive studies on the relations between building relationships and leveraging strategic advantages. Therefore, exploratory relationship management studies are rarely investigated.

This research paper tries to address the above mentioned gaps by firstly structure various elements of inter-firm relationship in the context of exploratory partnerships and argue for their categories they belong to. Secondly, a measurable alliance scan is constructed to support companies in making initial actionable decisions. The relationships considered are between two firms (dyadic relations). Since this paper considers exploratory partnership, the relations can be between buyer-seller, buyer-buyer (partners) and seller –seller (partners). Over time, it becomes clearer what type of relationships are formed. There are vast number of paths towards cooperative partnerships. As well as dynamic changes of relations that can help transform these relations and create opportunities for strategic choices (Sharma, Young, & Wilkinson, 2015).

METHODOLOGY

This paper uses a literature review method on the elements of the inter-firm relationship management and the methods of Avans (2017) for the tool development.

Set of keywords for a selected topic were utilized in search database engines such as Google Scholar, Science Direct, Emerald Insights and TU Delft catalogue. Most relevant articles were published in the following journals:, *International Journal of Operations & Production Management, The Academy of Management, Strategic Management Journal, Journal of Marketing, Journal of Business and Industrial Marketing and Journal of Academy of Marketing Science.* The key words search terms are: *buyer-supplier relationship, partnership supply chain, partnership alliance, alliance supply chain, managing interfirm relationships.* The search engines generate textual resources such as peer reviewed journal articles which provide reliable sources of knowledge. The papers were analyzed and ordered by the published date. Moreover, the number of citations was useful in scoping down the number of papers (including papers with most number of citations). Key summary points and components were noted in Excel Sheets in a table format. After reviewing several papers, the categories (table headers) were further defined. Based on the literature, synthesis and insights are drawn. Therefore, this paper has a theory based approach.

The exploratory partnership alliance scan is develop based on the research paper of Avans (2017). This alliance scan is composed of key categorized elements of relationship management and are measured on a scale according to the level of importance (1 least important to 5 most important). The alliance scan is adapted to the findings from the literature review.

LITERATURE REVIEW

Snehota (1995) developed buyer-seller relations through four different dimensions: *actors, activities, resources* and *schema.* By analyzing various relations between these dimensions, the author identified interactions which are formed over time, these are: *actor bonds* (actors´ each other perception), *activity links* (ways of doing business such as connecting technical, administrative, commercial activities*), resource ties* (actors´ resource allocation and connection of resources elements such as technological, material, knowledge, finance etc.) and *schema coupling* (actors´ goals alignment) (Snehota, 1995). These relations have been presented in a conceptual way. Scholars use these schemes to empirically explore above mentioned bonds. Due to the fact that these bonds and layers are not bounded by strict measures, scholars have generated many different categories and interpretations of the relations as can been seen from Table 1. It can be deduced that the *relationship management* sphere mainly deals with actor bonds. Nevertheless for some specific cases, other dimensions are interrelated as well. This is caused by the network effect and the fact that these layers are dependent (Snehota, 1995).

The result of the literature review is presented in Table 1. The categories section presents categories that the authors of their respective research constructed. In order to make them measurable, various elements were identified under these categories. In most cases, a description of these elements and measurement methods were presented. Methods / approaches were relevant to show whether the relationship

management was executed empirically or modelled theoretically. Moreover, used cases are also presented as they might affect the results of the studies. For example, the nature of the industry can show that there might be high imbalances in power relations; or high/low dependency on suppliers. Lastly, implications of studies are also summarized as they bring key points and values of respective studies. It also brings context and relevance to those papers.

ANALYSIS

Context

Studies on B2B in a dyadic context are between manufacturers and sellers, in mostly semiconductor /electronic industries. Since these industries are one of the first ones to enter partnerships, there is a lot of data that can be obtained. Moreover, supply chain of these industries is very complex and there are many actors involved in the development of such products (Zimmermann, Ferreira, & Moreira, 2016). Therefore, many different relations can be studied such as dyads, networks and so on.

The early studies show that most of the time, only one side of the relationship was taken – buyer perspective. To explain this, authors usually point at the time and expense considerations (Mohr & Spekman, 1994). Secondly, it could be easier to research buyers than sellers, because sellers are not usually open to share information about their buyers (Athanasopolou, 2009).

Categories

In terms of the categories of relationship management, early studies define them as characteristics / attributes / competencies / aspects / dimensions / factors which are usually referring to similar elements. These are internal structures within the relationship relating to actor bonds (Snehota, 1995). It refers to the perceptions of each other. As was mentioned before, the perception is most of the time one-sided. However, the results of these studies show that regardless of the perspective these attributes or competencies are significant. Therefore, it is clear that there is an overall category related to the *actor bond* (Snehota, 1995). The latest studies define it in a category either "relationship" or "relational". In dyadic relations considered in this paper, this relational category would refer to each party's consideration over its partners´ goals and needs. Moreover, these are exhibited through behavioral attitudes (Kim et al., 2015).

Another emergent category considers implementation issues or operational issues. It has more structured and controlled form which can be agreed upon between the two parties (Mentzer, Soonhong, & Zacharia, 2000). Referring to Snehota (1995) on buyer – seller relations, this category refers to the *activities links*. It mostly involves joint issues such as joint programs, or conflict resolution techniques. Under this implementation category, top management support, communication and conflict resolution can be included (Mohr & Spekman, 1994), (Sivadas & Dwyer, 1998), (Roy, Sivakumar, & Wilkinson, 2004). In other words, the implementation issues could be synthesized to a structural category. It refers to purely structural dimension in terms of activity links, amount and frequency of interactions (Kim et al., 2015). It usually refers to the quantity, scope and mode of communication which does not necessarily refer to the each parties´ attitudes. (Roy et al., 2004).

The third category that emerges in more recent studies refers to the resource structure (Park &

Lee, 2018). These are external to relationships since they are built within each individual company. Referring to Snehota (1995) scheme, these relations refer to *resource links*. They can be regarded as external factors since they refer to the company´s expertise and resources which were built before any potential partnership commenced (Roy et al., 2004), (Athanasopolou, 2009). Depending on parties´ needs they can investigate each others´ resource complimentarity.

The fourth category refers to the top management visions or values for entering partnerships. They refer to the *schema coupling* (Snehota, 1995). In other words, it concern parties´ goals and motives for entering partnership. It can vary from satisfaction, economic performance to innovation generation (Mentzer et al., 2000), (Roy et al., 2004). They can be considered as strategic category since they consider an overall direction of the partnership. Sharing similar goals might be useful in horizontal relations e.g. sharing risks, whereas for vertical relations these goals might differ e.g. customer satisfaction vs. high costs.

Elements

Once the categories have been identified into: relational, structural, resource and strategic. The elements of each category are identified. They are important since they can be measured either qualitatively or quantitatively.

Relational dimension

The elements identified in the literature review which are most often mentioned under the first category - relations are: trust, commitment and coordination (Table 1). In order to explain why these elements represent well the relational dimension, detailed descriptions are given below.

Trust refers to "the extent to which one partner may depend on another to look after its business interests" (Roy et al., 2004), (Morgan & Hunt, 1994). Studies show that this dimension is one of the most crucial element of a relationship. Trust can refer to competence trust which is the firm´s trust in another firm´s abilities and capacities to fulfill their obligations (Sivadas & Dwyer, 1998), (Sharma et al., 2015). It can also be a goodwill trust which is an implicit form of trusting a firm that it would look after its interests (Wong et al., 2010). The interactions are more informal and higher knowledge sharing is enabled through higher trust (Roy et al., 2004).

Commitment refers to "an ongoing relationship with another is so important as to warrant maximum efforts at maintaining it; that is the committed party believes the relationship is worth working on to ensure that it endures indefinitely" (Mentzer et al., 2000), (Mohr & Spekman, 1994). Parties expect that the relationship will be continuous, and that resources will be allocated to keep relationship and future support (Roy et al., 2004) The higher the commitment the longer term relationship is expected. On the other hand, low commitment might mean focus on the short term benefits only.

Coordination refers to the "boundary definition and reflects the set of tasks each party expects the other to perform" (Mohr & Spekman, 1994). Actors act according to each other's needs and expectations. This element suits the relational category as it is difficult to measure and is dependent on the parties´ willingness to coordinate and cooperate. High level of coordination leads to collaborative environment, whereas lower level of cooperation leads to competitive environment or arm length´s transactional nature (Lee, Olson, & Trimi, 2012).

Combining these dimensions, high trust, high commitment and high coordination lead to a cooperative environment where each party can trust that he/she would take actions to the best interests of both parties. Studies conclude that these type of relations can lead to strategic / partnership orientation (Gao, Xie, & Zhou, 2015). Moreover for vertical relations they are especially important because power imbalance play a role (Wong et al., 2010). Trust and commitment are important in mitigating fear from opportunistic behavior, in acting in a fair way and to the best interest of both parties (Mohr & Spekman, 1994).

Structural dimension

The second category which is argued in this paper refers to structural dimension. Most often it includes: communication / information sharing (mode, scope, quantity and quality) and conflict resolution mechanism / clarity of agreements (Table 1).

Communication refers to the sharing of knowledge between parties through collection and management of information, which would lead to effectiveness and efficiency (Morgan & Hunt, 1994). This is especially important for supply chain issues (Liao, Hu, & Ding, 2017). For example, through collaborative forecasting, planning and replenishment (CPFR), suppliers know in advance what their customer´s demand will be (Mentzer et al., 2000). This is relevant for the whole value chain actors. Some benefits such as cost savings and reduction of inventories are observed. The higher and more relevant information sharing, the closer the relationship can become (Mohr & Spekman, 1994). Information sharing is directly connected to communication, when information sharing is effective, meaningful and on time, the quality of communication is higher (Sivadas & Dwyer, 1998). Since communication has a broad scope, it is useful to break it down. Information sharing in quantity and mode can be highly structured through different modes (multiplexity) or task routines (Kim et al., 2015). On the other hand it can also be less structured such as through the interaction frequency.

Conflict resolution needs to be in place in case there are any conflicts. It is an important issue since it really shows how committed companies are. As observed by Mohr & Spekman (1994) “the manner in which partners resolve conflict has implications for partnership success”. There are many different techniques for conflict resolution, depending on its quality. For example, in some cases parties would engage in a cooperative joint problem solving, in other cases a third party arbitration could be involved (Mohr & Spekman, 1994). This could also be tied up to the clarity of agreement since it provides mechanisms for mutual understanding on the terms and conditions (Sivadas & Dwyer, 1998).

Highly structured relationships have their communication and agreements uniformly scripted. Usually, such high intensity would refer to complex and resource intensive projects (Kim et al., 2015). Consequently, relationship ties are tight and there is lower incentive to change partners. On the other hand, there appears to be dilemma for an early partnership involvement as high structure could mean that parties do not trust each other enough. Therefore, it is important to distinguish relational and structural dimension, as they do not necessarily have to have cause and effect structure.

Resource dimension

The third category refers to the resource structure that each company owns or contributes to the mutual project. This dimension is addressed in more recent studies and bring context to what parties can offer to each other on the operational level (Table 1). It can include knowledge, monetary, intellectual and technology (Park & Lee, 2018), (Park & Lee, 2015). Monetary and intellectual are much easier to be formalized, whereas knowledge (expertise and experience) is fuzzier.

Knowledge resource is important especially when one party does not possess knowledge in another party´s business area (Park & Lee, 2015). Consequently, one of the reasons for entering partnership would be to find complimentary resources. Some industries such as electronics and semiconductor require higher pool of resources since they have sophisticated technologies that need high expertise (Park & Lee, 2018).

Monetary resources such as direct financial investment or the number of human resources show how much effort contractually parties are willing to devote (Park & Lee, 2018).

Intellectual resource are highly relevant at early stage of partnership in order to ensure the protection of highly complex core technologies (Park & Lee, 2018). Agreements on the patent and ownership helps companies to effectively manage collaborative works.

Technological resources are especially relevant in the product industries. They refer to the technologies that each party possess and can use to develop innovations. Tacitness of technology refers to the knowledge of the party which cannot be always documented but can be exhibited through various relations (Roy et al., 2004). This is a characteristic that can evolve in business relations.

Depending on the type of relations (vertical or horizontal) and needs of each actor, the resources could be highly complementary or dissimilar. Taking resources into consideration, they can affect the relations through the company cultural differences. It might be much more difficult to integrate software companies with hardware companies (Brown & Eisenhardt, 1997). On the other hand, highly flexible companies can easily adapt to these differences (Vereijssen et al., 2017).

Strategic dimension

The last category refers to the goal´s attainment which includes shared values / goal cohesion. (Table 1). This can be linked to the strategic vision as it includes power relations and dependency on each other (Wong et al., 2010), (Athanasopolou, 2009). In general, these values can refer to many individual motivations such as innovation generation, satisfaction or economic performance.

Shared values mean "congruence of general core or dominant values between organizations" (Maxham & Netemeyer, 2003). Both parties have certain principles that lead them achieving their goals. It is a very important aspect of relationship since it identifies motives of each partners. Decisions are usually made in accordance to respective parties' values. The term which is related to the shared value in the relationship management would be a goal congruence which means that parties have similar goals and objectives. The higher shared values the easier trust is being built (Morgan & Hunt, 1994).

Implications

Most studies use hypothesis testing to find relations between various elements of the relationship management and argue for their relevance (Table 1). Some other studies find correlations between these characteristics and desired outcomes (innovativeness, business performance, satisfaction). Consequently, studies give insights into the management of relationship by looking at various aspects such as top management support, cooperative competency or relationship atmosphere. Most studies inform the body of knowledge on the relational aspects through frameworks.

Newer studies such as Wong et al. (2010) correlate various relations and try to create categories or type of relationships by distinguishing them. For example Wong et al. (2010) classify relationships as follows: disgruntled follower, manipulative leader, benevolent independent, arm´s length and close. Kim et al. (2015) identify four categories: zebra, gray, white and black according to the level of partnership vs. transcation and high intensity vs. low intensity.

Other type of studies deepens the research on relations by making granular decomposition of relationship management elements, for example by looking at various kinds of commitment (relational dimension) (Sharma et al., 2015) or various types of knowledge (resource dimension) (Loebbecke, Fenema, & Powell, 2016).

THE INTER-FIRM ALLIANCE SCAN

Once categories and their respective elements of inter-firm relationship have been identified. The next step is to recommend what can be done with them. This research paper argues for developing an ´inter-firm alliance scan´ which is a tool capturing the most important elements of relationship management and can be used to assess early process of partnership formation.

The analysis on the literature of the inter-firm alliance showed interesting insights. First of all, most papers focus on one perspective (buyer) (Athanasopolou, 2009). The alliance scan tool irrespective of the perspective can be used by both parties. In that form both parties can quantitatively and openly assess each other. This tool could help companies determine potential fit and increase the efficiency of decision making (Avans, 2017).

Secondly, studies do not agree on certain categories of relationships which make it difficult for practitioners to navigate through them. However, based on the relationship building schemes developed by Snehota (1995), the categories identified in this paper are: relational, structural, resource and strategic. Analyzing the literature, these categories include comprehensive considerations in inter-firm relationship management. Further examining subcategories, the following classification was made:

- Relational: trust, commitment, coordination
- Structural: information sharing and quality of conflict resolution
- Resource: knowledge, financial, technology and intellectual
- Strategic: shared values

The alliance scan include these classifications, which are measured on a scale from 1 to 5 as explained in the methodology section. By including these categories, both parties in a dyadic relationship can assess each other.

Thirdly, literature provides indepth studies on the relations between different elements of the inter-firm relations through frameworks, typically using regression analysis. It resulted in various types of relations being identified. As much as it gives useful managerial implications in considering various partnership constructs, it does not provide actionable insights. The alliance scan can support the decision making by for example serving as an internal assessment tool. In the longer term perspective, it could also generate data on the patterns of partnership that become more successful. For example, in the studies of Kim et al. (2015), high score on relational dimension and relatively low score on structural dimension could lead to higher innovation generation (strategic dimension). If this pattern would work in practise for a specific company, it would be adviceable to follow it. It is not argued that one configuration would always work at every setting, however it can point to certain good practices schemes.

Combining these three main insights, the alliance scan is developed (see Figure 1).

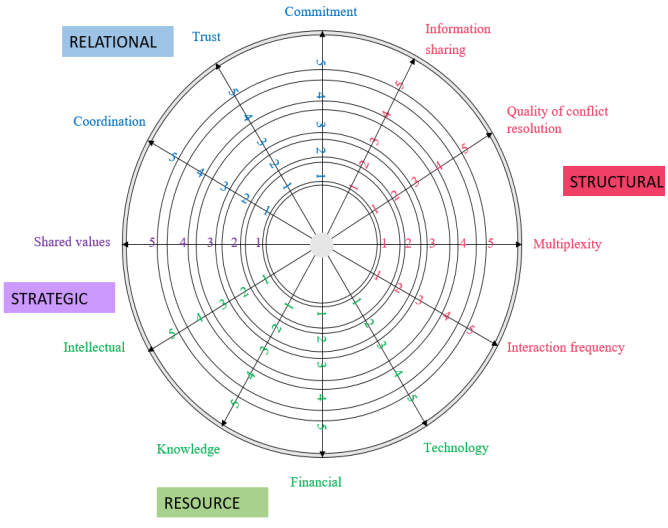

Figure 1 Alliance scan. Source: own illustration

CONCLUSION

This paper looks at literature on the exploratory inter-firm relationship. The scope of the reviewed papers is limited to the dyadic networks in a B2B relations. By reviewing the literature on this topic, the categories were drawn and argued depending on the elements and attributes. Moreover, similarities and differences between these categories allowed to construct and merge several issues together. Therefore, four categories were identified: relational, structural, resource and strategic. These four categories provide a comprehensive overview on the relationship management. The categorization of relationship attributes draw attention for a need to logically analyze certain links between them.

Further analysis on the elements of the inter-firm relationship shows that some of them are more intertwined that the other. Therefore, certain interaction between these elements create bonds and links (Snehota, 1995). For example, trust and commitment produce actor bonds. It is important to identify the elements of respective categories since they can be assessed and measured.

By looking at the implications of the study, this paper addresses the gaps in the research by developing a tool which could be used by both parties and therefore bring their perspectives. Since scholars proved the effects of the relationship attributes, this paper does not prove whether these elements indeeed affect certain outcomes. It rathers takes the most mentioned and relevant elements to help draw actionable decisions.

The alliance scan is developed to efficiently support managers in the decision making (Avans, 2017). The alliance scan contains the most crucial elements in the initial considerations, and

does not provide in depth assessment. It provides an exploratory scan over potential partnerships. It should not be overly complex since the costs for assessments need to be taken into account as well. For higher reliability, it is recommended that the alliance scan is used by several key decision makers. This could be a starting point for discussion over the opportunities in a structured manner. Hence, the alliance scan brings efficiency in a decision making through quick scans and structured discussions.

Moreover, the alliance scan helps decision makers in deciding what actions to take and what resources to put (Avans, 2017). This depend on the objectives the company wants to achieve. For example, in a cost-effective relations, the focus could be more on structural dimension. Whereas, for long term relations, trust and commitment would need more attention. It is useful not only in the pre-commitment phase when choosing and selecting partners but also in the implementation phase (Avans, 2017).

Consequently, this alliance scan suits the dynamic nature of the relationship development because it can be revisited multiple times. This tool can help to assess whether some aspects are imbalanced and need adjustments. For example, low information sharing might affect trust. Therefore, certain actions can be taken, such as changing the mode of interaction.

In conclusion, this paper addresses the gaps in the literature by developing an alliance scan which includes the most important elements of the relationship management. The tool which can be used by both parties can effectively help them make decisions over potential inter-firm relationship opportunities.

LIMITATIONS AND FUTURE RESEARCH RECOMMENDATIONS

Due to time limitations, the number of reviewed papers were limited. However, the author takes the most representative studies by the number of citations and relevance to the topic (by title and abstracts). Moreover, the insights from other literture review studies helped to scope down the number of papers.

It is recommended that the alliance scan is tested empirically to verify whether identified categories include comprehensive list of attributes. Further analysis might reveal some elements that appear to be relevant in the development of inter- firm relationships. Consequently, this tool can be further redefined and improved. Moreover, empirical tests can also help draw attention of managers to improve or structure their exploratory partnership decision making.

Once, the alliance scan is empirically tested, the typology of relationships can be drawn based on found insights. Scholars have developed many different types of relationships. However, they seem to be quite fuzzy and no actionable items are recommended. The author believes that by analyzing these four categories (relational, structural, resource and strategy) simultaneously, the typologies would include a comprehensive overview. For example by taking the overall the score for each element, a matrix (Figure 2), could be used to develop clusters and relational typologies.

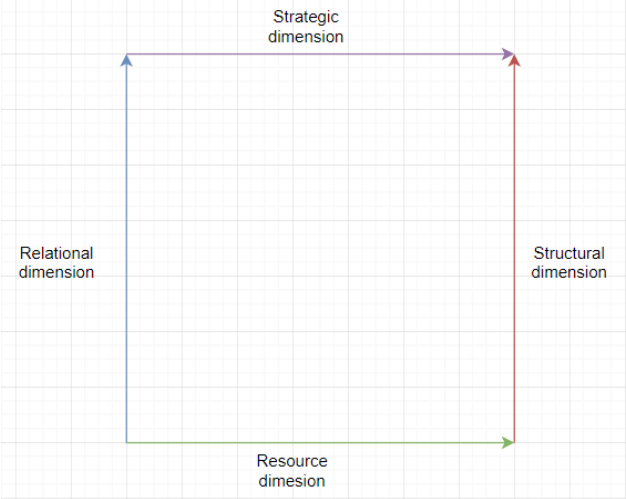

Figure 2 Typology matrix

Hence, depending on the position on the matrix, actionable items should be further developed. For example, if there is high score on relation, structure and strategy but low on resources. Whilst both companies strive to be market leaders, they can focus their attention to higher resource allocation.

The author also wants to invite researchers to create understandable and widely recongizable typologies of inter-firm relationships by including most relevant aspects.

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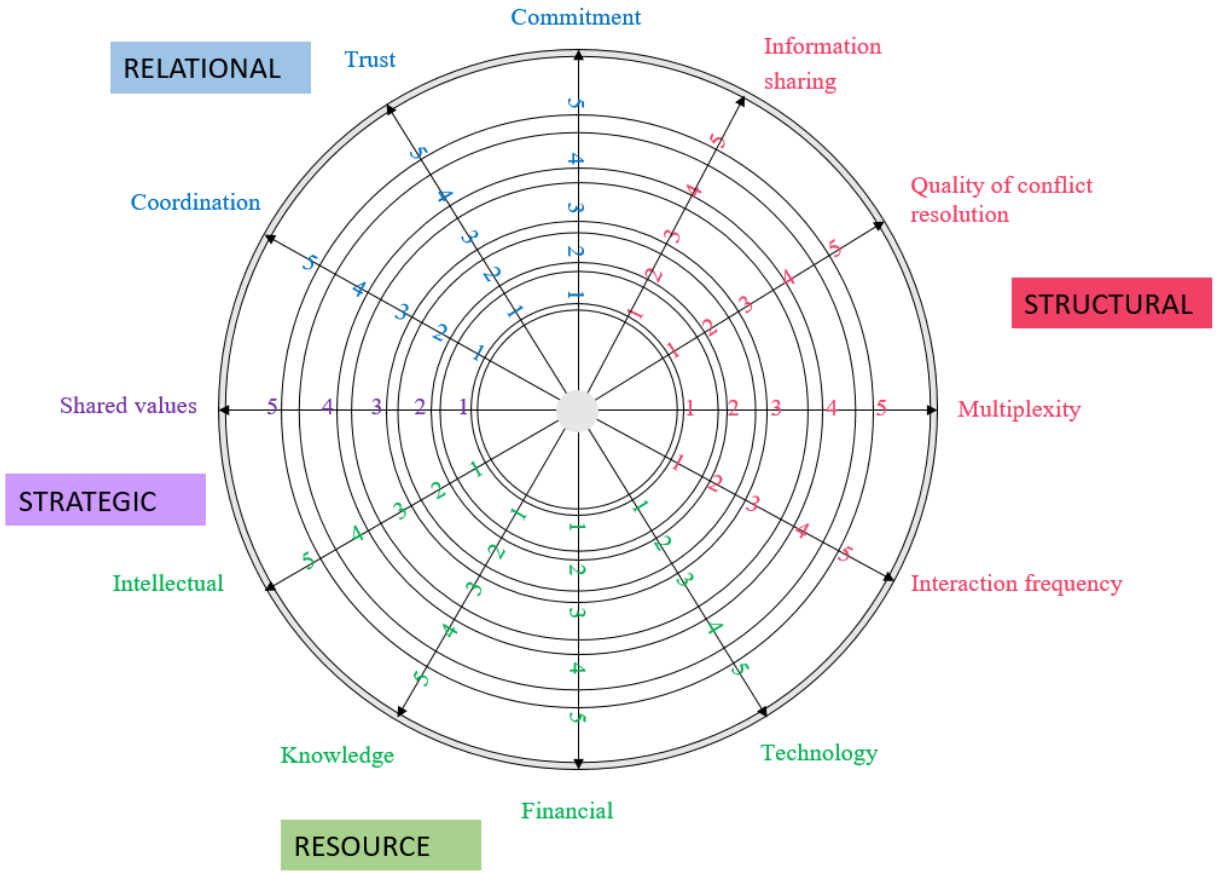

Figure 3 Alliance scan

Table 1 Literature review

Authors, year, title	**Categories**	**Elements**	**Methods / approach**	**Case**	**Implications**	**References**
Mohr and Spekman (1994) Characteristics of partnership success: partnership attributes, communication behavior and conflict resolution	(1) Attributes of the partnership (2) Communication behavior (3) Conflict resolution techniques (4) Successful partnership	(1). • Commitment, coordination, trust (2). • Quality, information sharing, participation (3). • Joint problem solving, smoothing, domination, harsh words, arbitration (4). • Satisfaction, dyadic sales	Empirical test of the model ; Surveys (statistically measured)	Vertical relationships between manufacturers and dealers in the context of computer industry; Perspective of dealer (buyer)	• Insights into better management of relationships to ensure success; • Success of partnership (satisfaction and dyadic sales); • Manner in which partners attempt to manage the future scope and tone of their relationship.	Anderson and Narus, 1990; Day and Klein, 1987; Dwyer, Schurr, and Oh, 1987; Frazier, Spekman, and O'Neal, 1988; Salmond and Spekman, 1986
Sivadas and Dwyer (1998) A comparison of organizational factors influencing new product success in internal and alliance based products	(1) Cooperative competency (2) Top management support	(1). • Trust, communication, coordination (2). • Inter – unit communication, auditability, goal cohesion, attitudinal solidarity, • Clarity of agreement, lack of resistance	Model from Zirger and Maidique (1990) based on literature review, case study research and exploratory interview in the electronic industry; Survey with multiple regression analysis	The semiconductor industry (600 sampling companies) The healthcare sector	Integration of new product development and alliance literature. Cooperative competency and top management support contribute to new product success	
Mentzer, Min and Zacharia (2000) The nature of interfirm partnering in supply chain management	(1) Partnering antecedents (2) Partnering implementation (3) Business performance outcome	(1). • Interdependence, conflict, trust, commitment, organizational compatibility, top management vision (2).	Theory expansion through hypothesis building		• Continuum exist from to strategic to operational partnering • Implementation of strategic partnering leads to sustainable	Achrol et al., (1990), Smith and Barclay (1997), Bucklin and Sengupta (1993)

		• Information sharing, technology utilization, strategic interface teams, organizational issues, joint programs, asset specificity, establish joint performance measures (3). • Economic performance, customer satisfaction and loyalty, relationship effectiveness			competitive advantage • Operational partnering leads to competitive parity • Operational partnering far easier to achieve	
Roy, Sivakumar and Wilkinson (2004) Innovation generation in supply chain relationships: a conceptual model and research proposition	(1) Factors internal to relationship (2) Factors external to relationship (3) Interaction (4) Innovation generation	(1). • Information technology adoption • Commitment (input commitment asymmetry, attitudinal commitment asymmetry) • Trust (competence trust, goodwill trust) (2). • Tacitness of technology • Stability of demand • Network connections (within industry, across industries) (3). • Quantity, scope and mode of communication	Framework based on theory building	Buyer – seller relationship in upstream supply chains	Guidepost to facilitate better management of innovation generation in supply chain relationship	Hakansson (1987); Leonard-Barton (1993); Kalakota and Whiston (1999); Anderson and Weitz (1992), Gundlach, Achrol and Mentzer (1995); Joshi and Stump (199); Barclay and Smith (1997), Nonaka and Takeuchi (1995); Bowersox, Closs and Stank (2000)

		(4). • Incremental innovation, radical innovation				
Athanasopoulou (2009) Relationship quality: a critical literature review and research agenda	(1) Dimensions of relationship quality (2) Consequences of relationship quality (3) Antecedents (4) Relationship quality (framework)	(1). • Trust, commitment, satisfaction, communication, conflict (2). • Business / service / channel performance • Relational benefits including anticipation of future interaction • Satisfaction (3). • Characteristics of two parties (similarity, expertise) • Relationship attributes (length and duration) • Offer characteristics • The role of environment (4). • Trust, commitment, customer satisfaction, conflict, cooperation, opportunism, power, adaptation, atmosphere, bonds	Cross referencing of papers published in major journals in the marketing areas (literature review on 64 studies)	Relationship of companies with customers	The development of the framework on relationship quality	
Wong, Wilkinson and Young (2010) Towards an empirically based	Relationship atmosphere	• Power and dependence • Cooperativeness and competitiveness	Empirical study on a large scale database of		Taxonomy of business relations including buyer and seller perspectives: disgruntled follower,	Gaski 1984; Hallén and Sandström 1991; Rotter

taxonomy of buyer – seller relations in business markets		• Trust and opportunism • Understanding and non -understanding • Closeness and distance • Commitment and non-commitment	buyer seller relations		manipulative leader, benevolent independent, arm´s length and close	1967; Williamson 1975; Kim and Frazier 1997a, b; Sharma et al. 2006
Sharma and Young (2013) The nature and role of different types of commitment in inter-firm relationship cooperation	Aspects of cooperative business relationships	• Commitment (value based, affective, behavioral, locked in, obligation based) • Trust • Cooperation • Relationship value • Conflict	Model association through regression and causal path analysis testing	Industrial Marketing and Purchasing Group´s multi-country study of business relationships between Indian firm and trading partners	Various kinds of commitment to build effective relationships	(Anderson and Narus, 1990; Doney and Cannon, 1997; Walter and Ritter, 2003; (Morgan and Hunt, 1994
Kim, Choi and Skilton (2015) Buyer- supplier embeddedness and patterns of innovation	(1) Relational dimension (partnership – transaction) (2) Structural dimension	(1). • Collaboration, commitment, trust, information sharing, information sharing, norms of reciprocity, forbearance, shared values, quality of conflict resolution (2). • Interaction frequency, multiplexity, transaction specific investment, task routines, mutual dependence	Literature on social embeddedness (conceptual paper)	Dyadic construct	Configurational approach to innovation patterns in inter-firm settings (dyad)	Dwyer et al., 1987; Dyer et al., 1998; Heide and John, 1990; Morgan and Hunt, 1994; Spekman, 1988; Uzzi, 1997; (Beckman and Haunschild, 2002; Marsden and Hurlbert, 1988
Park and Lee (2018) Early stage value co-creation network – business relationships	(1) Resources (2) Relationships	(1). • Monetary or human resources • Knowledge resources	Building theory from a case study Grounded theory coding	Semiconductor foundry business model (Taiwan´s foundry business model network)	The value-co creation is extended from later stage to early stage in the value chain	Daniel et al. (2002), Corsaro et al. (2012) Jaakkola and Hakanen

connecting high tech B2B actors and resources: Taiwan semiconductor business network case		(knowledge, experience, information and skills) • Technology resources • Intellectual resources (IP, patent assets) • Efficiency resources (time and effort) (2). • Trustworthiness, commitment, number of decision making capabilities		Manufacturer perspective		(2013), Hakanen (2014), Lacoste (2016), Eslami and Lakemond (2016) Vargo and Lusch (2008, 2011), Jaakkola and Hakanen (2013) Vargo (2015), Akaka and Vargo (2014) Rusanen et al. (2014)