

An overview of alliance forms: Towards an unified typology?

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Abstract

Previous studies have examined and defined alliances, networks and other forms of interfirm collaboration from different point of views. All of these studies used their own definitions of alliances, network organizations, partnerships, interfirm co-operations or other forms of collaboration. This study will explore and reveal these different kind of alliance definitions or typologies by distinguishing these definitions. This then results in a distinction of alliance definitions based on resource based view (RBV) and transaction cost economics (TCE) point of view.

Key words: alliances, collaboration, typology, networks

1 Introduction

Alliances are a pervasive phenomena in business today (Kandemir et al., 2006). Companies see alliances as a way for future growth (Elmuti and Y.Kathawala, 2001). In the last two decades this resulted in an increasing diversity of focus of alliances (Gulati, 1998). But the diversity of alliance collaboration forms can be overwhelming for firms with no history with alliances. Fortunately for managers and researchers articles about interorganizational relationships are common in business periodicals and academic journals nowadays (Barringer and Harrison, 2000). The diversity on alliance collaboration forms may already be scientifically answered. In our opinion firms that are new to enter strategic

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alliances should focus on key questions before a strategic choice for joining an alliance is made. Key questions before joining an alliance collaboration form are: what is an alliance and what kind of alliance structures are possible for the strategic goals set by the organization. But searching for a straightforward answer to the question 'what is an alliance?' will give a diffuse view. This paper will explore the current literature on alliances to get a more thorough understanding of the concept of interfirm collaboration. We have chosen to enter the research papers on collaboration from an alliance point of view. The term outsourcing can be seen as a form of collaboration. The definition of outsourcing is also not unique defined (van de Water and van Peet, 2007). This paper will however focus on collaboration out of an alliance point of view. Discussion if outsourcing is a form of an alliance is behind the scope of this paper.

In (Rangan and Yoshino, 1996) is claimed that alliances fail due to the fact that managers perceive alliances as an undifferentiated concept without subtle distinctions among types of alliances. In this paper we will examine the concept of alliances and alliance typologies. Alliance research studies aimed on alliance performance or alliance failures should be supplemented with a clear context description of what type of alliance is explored. This paper will focus on alliance types and definitions. So the research question this paper will address is: *What is an alliance?* To answer this question we will search for definitions and typologies on alliances in literature.

Alliance typologies and alliance definitions are allied. This makes trying to answer the simple question 'what is an alliance?' challenging. When we think of a typology of alliances as a classification of inter firm collaboration forms, should we regard an alliance typology as a form of an alliance definition? Or is describing an alliance typology not possible without defining the conception of an alliance first? In this paper we will outline various views on alliance classifications and alliance typologies as we have found in scientific alliance research studies. In this paper we will also search the research literature to answer the question about the difference between alliance definitions and alliance typologies.

This paper is focused on examining diverse collaboration forms at the interfirm level. So forms of alliances within a single firm or single organizational unit (legal entity) will not be considered here. Theories used on interfirm collaboration can also be valid for collaboration forms within a company. We focus in this paper on main theories used within the field for research on interfirm collaboration.

We will introduce the objectives and methodology used in this paper first. We then address and discuss different definitions of alliances. Alliance typologies found in literature are outlined and we analyze these findings on alliance

definitions and typologies in relation with theories used in alliance research. Finally we discuss the findings and give some directions for future research.

2 Objectives and methodology

The issue of this paper is to examine different views of alliance definitions and alliance typologies. Our aim is to get more information on what an alliance is. With a better understanding of what a strategic alliance is empirical and theoretical research on alliances can be easier translated to a specific context. It can be discussed that every view on alliances can be regarded as blurred by the lack of a single unified definition for collaboration within an alliance form. This because different authors use different definitions for alliances. The term 'alliances' can cover several meanings ranging from relational contracting to licensing, to logistical supply-chain relationships, to equity joint ventures (Contractor and Lorange, 2002). In the management and economic literature a number of taxonomies have been introduced for interfirm cooperation (Duysters and J.Hagedoorn, 2000). This makes it difficult to compare alliance research studies. But this paper is not about a semantic discussion on the word alliance. We will search for definitions used for alliances and taxonomies on alliances that are developed in both theoretical and empirical alliance studies. This is done to examine and evaluate definitions and typologies found in the literature. Our entry point for examining collaboration characterized by an alliance structure is finding diverse views on the definition of alliances. But collaboration can be regard as a broad concept. In a publication of Gajda (Gajda, 2003) the problem of what collaboration is, is formulated as

'..the term 'collaboration' has become a catchall to signify just about any type of inter-organizational or inter-personal relationship..'

To solve this problem on finding structure in the 'plethora of overlapping and confusing terminology' (New and I.Mitropoulos, 1995) on alliances we need to determine first more precise what we want to find and in what kind of literature. Literature on 'working together' in general is available in the fields of strategic alliances, joint ventures and networks (Kamann et al., 2004). But the current number of papers on alliance research is immense (de Rond and Bouchikhi, 2004) (Barringer and Harrison, 2000) (Borgatti and Foster, 2003).

To deal with this immense number of studies and papers on alliances in order to compose our examination we have chosen a structured approach. The goal of this approach is twofold: Firstly finding research studies and papers that claim to have examined and summarized all research studies on alliances over a defined period. And secondly finding relevant studies that have addressed research questions that are comparable or related with ours. This to get a

complete view on development of alliance definitions. The following steps have been taken when searching the literature.

- Start by searching for research studies that give an overview of alliance research over a determined period.
- Extend the search to other alliance or collaboration related research papers wherein alliance definitions or alliance typologies are outlined.
- Collect the diverse alliance definitions from alliance research papers;
- Primary focus on the last decade. Primary, because some important studies could not be ignored to our opinion.
- In the study examined it must be possible to extract a view on alliances or alliance typologies;
- We focus on scientific research studies in the field of alliances, collaboration and interfirm networking. This means that journalistic, managerial sources and reports of consultancy companies are considered to be not scientific (Podolny and K.L. Page, 1998) and will not be taken in account.
- Studies which were limited to a too sharp research boundary, research view or research question (e.g. only local or for a specific industry) were not selected. Aside from papers that manifest an important new point of view for our research.

With this chosen method we have found a great number of alliance studies. Before analyzing all collected research papers in depth we have reduced the number of papers found to the most usable studies for our research question. Further more we have filtered the list of papers to a selection that is manageable for in depth examination using one or a combination of the following criteria:

- The paper did an examination on different point of views on alliances;
- In the paper the problem on the diversity on alliance definitions in literature is noticed;
- In the paper the problem on different alliance typologies is noticed;
- In the paper an alliance typologies or classification is presented;
- In the paper an examination of alliance theoretical paradigms towards alliance definitions is done;

These criteria were chosen to be able to accomplish results on our research within the available time frame. In table 1 an overview is presented of the papers that satisfied our criteria. All research papers listed in table 1 were collected by searching the following databanks:

- JSTOR. An online journal archive.
- EBSCOhost. An electronic search service to journals from hundreds of different publishers.
- IDEAS. A bibliographic database dedicated to Economics.

- SwetsWise SwetsWise is an extensive multi disciplinary journals database search system.
- Project MUSE. Used for searching social sciences journals. Every journal is indexed and peer-reviewed.
- Google Scholar. With google scholar it is possible to search for peer-reviewed papers, theses, books, abstracts and articles, from academic publishers and other sources.

This resulted in the papers as presented in table 1.

Table 1: Overview of alliance research papers used

Study (reference)	Main question / Goal of paper	Findings
Barringer and Harrison (2000)	Presenting an overview of the literature on interorganizational relationships and discussion advantages and disadvantages of joining an interorganizational relationship.	Interorganizational relationships can be highly beneficial.
Borgatti and Foster (2003)	Review and analyze of emerging network paradigm in organizational research.	A new typology of network research is proposed which cross-classifies network studies according to dimensions of explanatory mechanisms and explanatory goals or styles.
Clarke-Hill et al. (1998)	Comparison of buying alliances and joint ventures.	Joint venture relationships seems to have some advantage.
Colombo (2003)	Analysing factors that influence firms choice of the organizational form of strategic alliances.	Contractual and competence perspectives provide valuable complementary insights into the determinants of alliance form.
Contractor and Lorange (2002)	Identify environmental and regulatory conditions which have fostered the rapid growth of alliances.	Factors are deregulation (global and national), technical change (IT) and knowledge management , and changed production and distribution factors.
Das and Teng (2000)	Develop a more encompassing resource-based theory of strategic alliances.	A theoretical framework is presented with several propositions for empirical testing.
Dussauge and Garrette (1995)	How can success in collaboration be linked with the way collaboration is organized and managed	Different alliance types have different performance.

Table 1: (continued)

Study (reference)	Main question / Goal of paper	Findings
Dussauge et al. (2000)	How do partners learn about each other's capabilities.	Link alliances lead to greater levels of learning and capability acquisition between the partners than do scale alliances.
Elmuti and Y.Kathawala (2001)	Give an overview of strategic alliances for managers.	Strategic alliances can be an important tool for competitive advantage, but detailed planning is essential before entering into an alliance.
Grandori and G.Soda (1995)	Review and organize literature on interfirm network with aim on assessing current forms and factors of influence.	A framework is developed for research on models of interfirm organizational coordination.
Gulati (1998)	Development of a social network perspective within alliance research.	Social networks are valuable conduits of information in answering 'why' questions on alliances.
Ireland et al. (2002)	Management on strategic alliance using theoretical accepted paradigms.	A number of management skills are needed for competitive alliance management.
Lawrence and ul Haq (1998)	Getting insight into presumptive action in choosing strategic alliance partners	Banking firms tend to fit a processual perspective.
Osborn et al. (1998)	Development of an integrative perspective of international alliance formation	Key founding characteristics of international alliances are embedded in one another.
Parkhe (1993)	How to get a collectively coherent body of work with an underlying theoretical structure on international joint ventures	A framework for theory development around IJVs is presented.

Table 1: (continued)

Study (reference)	Main question / Goal of paper	Findings
Podolny and K.L.Page (1998)	Better understanding of network forms of organization.	Literature is evolving to a more balanced consideration of the network form. The network form represents one of three alternative forms of governance, not one of two.
Pyka and P.Windrum (2001)	Research on the factors affecting firms choices to enter strategic alliances.	model is developed in which implications of coordination costs, dynamic uncertainty, and firm-industry feedbacks on the formation of strategic alliances are outlined.
Rangan and Yoshino (1996)	Presenting a typology for analyzing strategic implications in different kinds of alliances.	A typology of alliances is presented to support senior management with alliance strategies.
de Rond and Bouchikhi (2004)	Making a theoretical contribution to understanding alliances from a process point of view.	Broader view on dialectical tensions.
Silverman and Baum (2002)	How do rivals' alliances handle competitive pressure experienced by a firm.	Mostly harmful but the effects vary systematically with type of alliance.
Todeva and Knoke (2005)	Review of the research on strategic alliances in the last decade.	Alliance research has proceed, but there are still much questions open.

Alliance research appears to have converged on alliance design, regulation and performance (de Rond and Bouchikhi, 2004). Reviewing our collected material of table 1 we see indeed much studies that are focused on alliance design questions. Besides the research papers outlined in table 1 we have also used input of PhD studies (Heimeriks, 2004), (Wahyuni, 2003), and (Yasuda, 2003) for our analyses on alliance definitions.

Most studies on alliance structural choices have been based on the dichotomy of equity alliances versus nonequity alliances (Das and Teng, 2000). Our exploration of the alliance literature shows that there are no complete studies available that have thoroughly analyzed alliance definitions or alliance typologies. So to complete our study we have studied all collected papers of table 1 to get grip on the different point of views on alliance definitions.

From the results of the examination of the selected study material (see table 1) an overview on alliances is represented. The following sections will give a more detailed view on the analyse of the studies of table 1 in relation to the diversity of alliance definitions.

3 Overview of alliance definitions

This section presents an overview on alliance definitions found in alliance research literature. The term “alliance” is not uniquely defined in literature (see table 2). In table 2 a collection presented on different ways alliances can be defined. These definitions are collected form the alliance research studies used for this paper (see table 1). In table 2 only alliance research studies are referred to where a definition is found in. This is the reason why not all studies as summarized in table 1 are listed in table 2.

Table 2: Overview of different alliance definitions

Study (reference)	Alliance definition found in this study
Clarke-Hill et al. (1998)	Strategic alliance is a coalition of two or more organizations to achieve strategically significant goals and objectives that are mutually beneficial.
Contractor and Lorange (2002)	An alliance is any interfirm cooperation that falls between the extremes of discrete, short-term contracts and the complete merger of two or more organizations.

Table 2: (continued)

Study (reference)	Alliance definition found in this study
Das and Teng (2000)	Strategic alliances are voluntary cooperative inter-firm agreements aimed at achieving competitive advantage for the partners.
Dussauge et al. (2000)	A strategic alliances is an arrangements between two or more independent companies that choose to carry out a project or operate in a specific business area by coordinating the necessary skills and resources jointly rather than either operating on their own or merging their operations.
Elmuti and Y.Kathawala (2001)	A strategic alliance is an agreement between firms to do business together in ways that go beyond normal company to company dealings, but fall short of a merger or a full partnership
Gulati (1998)	A voluntary arrangements between firms involving exchange, sharing, or codevelopment of products, technologies, or services.
Ireland et al. (2002)	A cooperative arrangement between two or more firms to improve their position and performance by sharing resources.
Lawrence and ul Haq (1998)	A durable relationship established between two or more independent firms, involving the sharing or pooling of resources to create a mechanism (corporate or otherwise) for undertaking a business activity or activities of strategic importance to one or more of the partners for their mutual economic advantage.
Osborn et al. (1998)	An international corporate alliance is a publicly recognized exchange and or joint value creation arrangement between two or more firms (sponsors) that are headquartered in separate nations where (a) the area for exchange and/or joint value creation is specified and (b) the arrangement is expected to cover several distinct transaction periods.
Pyka and P.Windrum (2001)	Cooperative agreement between two or more autonomous firms pursuing common objectives or working towards solving common problems through a period of sustained interaction.

Table 2: (continued)

Study (reference)	Alliance definition found in this study
Rangan and Yoshino (1996)	A strategic alliance is an arrangement that links specific facets of the businesses of two or more firms. The basis of the link is a trading partnership that enhances the effectiveness of the participating firms' competitive strategies by providing for the mutually beneficial exchange of technologies, products, skills or other types of resources.
Todeva and Knoke (2005)	A strategic alliance involves at least two partner firms that remain legally independent after the alliance is formed, share benefits and managerial control over the performance of assigned tasks and make continuing contributions in one or more strategic areas, such as technology or products.

A standard definition of the word alliance can be found in a dictionary. A default way to examine the significance of the word alliance is looking at a dictionary. We have looked in the Oxford English Dictionary for the semantic meaning of alliance. In the Oxford English Dictionary the word alliance is defined as:

- (1) the state of being allied or associated. or
- (2) a union or association between countries or organizations. or
- (3) a relationship or connection.

Definitions two and three are relevant for our examination. The second definition raised the question of 'how' organizations are associated. This is through somekind of a relationship. To our opinion a more precise alliance definition is needed. This is because with the Oxford Dictionary the definition of word alliance there still remains confusion about the properties of the relationship. To our opinion it is the type of relationship or relationships that needs to be clear when speaking of alliances. One firm can have multiple alliances, but are these of the same type or not?

An analyses of table 2 gives the following observations:

- Some definitions emphasize the 'voluntary' aspect (Das and Teng, 2000) (Gulati, 1998).
- Some definitions emphasis the aspects that an alliance gives an (economic) advantage (Clarke-Hill et al., 1998) (Das and Teng, 2000) (Ireland et al.,

- 2002) (Lawrence and ul Haq, 1998) (Rangan and Yoshino, 1996) (Todeva and Knoke, 2005).
- Most definitions highlight that an alliance can exist of two or more organizations (Clarke-Hill et al., 1998) (Contractor and Lorange, 2002). (Dussauge et al., 2000) (Ireland et al., 2002) (Lawrence and ul Haq, 1998) (Osborn et al., 1998) (Pyka and P.Windrum, 2001) (Rangan and Yoshino, 1996) (Todeva and Knoke, 2005).
 - Few definitions emphasize aspects like sharing or exchange (Gulati, 1998) (Dussauge et al., 2000) (Osborn et al., 1998)
 - Not all definitions distinguish the international aspect. This can mean that it is not necessary to emphasizes this, or the definitions are generic for all purposes. However only in (Osborn et al., 1998) this aspect is emphasized. Since the study of (Osborn et al., 1998) is about global collaboration it is logic to find this aspect in this study explicit.

The different alliance definitions leads to the question what the reason can be of this differences. One reason can be that the aim of the referred studies are different. And by these diverse goals of the studies the diverse alliance definitions would have a new, broader, smaller or alternative goal or a specific purpose in the study. But maybe the differences could be explained by diverge in point of views of alliances by the authors. To investigate this we have examined the different point of views of the authors. In table 3 an overview is given on the different point of views on alliances from different authors on alliance research. Not all studies as summarized in table 1 appear in this table. We have only selected those studies in which a clear point of view on how the concept of alliances in relation with the general concept of collaboration is seen. Note that the paper of (B.Gomes-Casseres, 2003) is not captured in table 1. We regard (B.Gomes-Casseres, 2003) more as an essay than as an alliance research study.

Table 3: Overview of different point of views on alliances

Study (reference)	Point of view on alliances
Barringer and Harrison (2000)	Barringer’s view on alliances can be characterized a broad view on all aspects concerning ‘Interorganizational relationships’.
Contractor and Lorange (2002)	The characteristic of this study on the term alliances is broadly serval governance modalities from a ‘wide range’.
Gulati (1998)	Gulati view on alliances is to our opinion best summarized as a view on alliances from the sociological network perspective.

Table 3: (continued)

Study (reference)	Point of view on alliances
Podolny and K.L.Page (1998)	The view on alliance of this paper is characterized by us as a network form of organization. The view is a network form of organization, in which a network is seen as any collection of actors (N greater or equal 2) that pursue repeated, enduring exchange relations with one another and, at the same time, lack a legitimate organizational authority to arbitrate and resolve disputes that may arise during the exchange.
de Rond and Bouchikhi (2004)	This studies regards alliances are complex social phenomena.
B.Gomes-Casseres (2003))	Gomes Casseres speaks of constallations. In the view of Gomes Casseres a constellation is seen as an alternative to the single firm as a way of governing a bundle of capabilities. The definition of an alliance according to Gomes is any governance structure to manage an incomplete contract between sperate firms and in which each partner has limited control.

Analyses of the collection of views summarized in table 3 shows that alliances can be seen as a broad concept. Besides different ways of defining 'alliances' we also observed that some authors use other concepts for interfirm collaboration. In (Contractor and Lorange, 2002) we see for example terms as 'joint ventures' and 'licensing'. In (Barringer and Harrison, 2000) we noticed terms as 'consortia' and 'interlocking directorates'. In (Kamann et al., 2004) speaks of the forms like 'cooperatives' and 'consortia' when working together with other firms. To examine the difference or similarities with the alliance definition confusion we have created a table with a short overview on various terms used for interfirm collaboration. In table 4 a brief overview is presented on different collaboration forms. Some authors (Contractor and Lorange, 2002) (Gulati, 1998) consider that all these forms fall under the broad definition of an alliance.

Table 4
Alliance types

Alliance type	Definition	Study
Joint venture	A joint venture is an entity that is created when two or more firms pool a portion of their resources to create a separate jointly owned organization.	Barringer and Harrison (2000)
	IJVs are voluntary cooperative relationships in which participating firms are exposed to the risk of opportunism.	Parkhe (1993)
	Separate legal entity	Osborn et al. (1998)
	Joint ventures are simultaneously cooperative and competitive enterprises.	Ngowi (2007)
Consortia	A more complex form of symmetric bureaucratic network	Grandori and G.Soda (1995)
	Consortia are specialized joint ventures encompassing many different arrangements	Barringer and Harrison (2000)
R&D consortia	Inter-firm agreements for research and development collaboration, typically formed in fast-changing technological fields.	Todeva and Knoke (2005)
Equity Joint Ventures	Equity joint ventures are created to substantially integrate the joint efforts of partnerseparate entities in which the partners literally work together.	Das and Teng (2000)
Monitory equity alliance	In minority equity alliances, one or more partners take an equity position in others.	Das and Teng (2000)

In table 4 only a very few collaboration forms are outlined. We have chosen to show the most common forms. In (Gajda, 2003) is noticed that

The terminology used to describe collaboration is extensive. Terms include: joint ventures, consolidations, networks, partnerships, coalitions, collaboratives, alliances, consortiums, associations, conglomerates, councils, task forces, and groups. And this list is not exhaustive.

The diversity of alliance forms or collaboration forms is difficult to capture in a single definition. However to be able to extend the theoretical concepts on alliances the definitions used by authors the reason why various authors use or define these concepts needs to be clear.

Since studies on alliances have often a different focus, the used definition can of course also be different. So for example when the focus for alliance research is aimed on organizational aspects, more emphases in the definition will be put on organizational aspects also. In the following section we will see that the focus or objective in alliance research is in particular apparent when examining different typologies of alliances.

4 Typologies of alliances

This section will explore different typologies of alliances found in alliance research studies. In (Rangan and Yoshino, 1996) is claimed that a typology of alliances requires first a definition of an alliance. The previous section on alliance definitions showed that different studies used different definitions of alliances. But since alliance definitions and alliance typologies can be allied, this section will outline typologies on alliances. But since there is no single unified definition on alliances it is to be expected to see also different alliance typologies. When performing this examination we have made no hard distinction between the words typology and classification. So to avoid semantic discussions, we have first searched the literature for forms of 'alliances typologies' or 'alliance classifications'. Both combinations were searched for in order to get a complete view on how an alliance can be seen.

In Grandori and G.Soda (1995) the issue of differences or similarity between various interfirm collaboration forms is noticed. The questions that this paper addresses are:

- What are the differences between inter-firm networks as joint ventures, consortia, commercial agreements, sub-contracting e.a.?
- Can a classification of network forms be developed that might be conducive to a comparison among different forms?

- Can the different practical organizational solutions brought back to some common theoretical language?

To answer these questions a framework is developed. So in (Grandori and G.Soda, 1995) a classification of collaboration forms is distinguished in three dimensions:

- (1) Formalized collaboration or not (due to the support of exchange or associational formal contracts).
- (2) Centralized or parity-based.
- (3) Characteristic mix of coordination mechanisms.

In Gulati (1998) is noticed that research shows that alliance structures can be distinguished in terms of the degree of hierarchical elements they embody and the extent to which they replicate the control and coordination features associated with organizations. This means that at the one end are joint ventures, which is here seen as two firms creating a new entity in which they share equity. And at the other end are alliances with no sharing of equity that have few hierarchical controls built into them. This typology of alliance types from 'loose' to 'tight' alliance forms is seen in different studies (Duysters and J.Hagedoorn, 2000) (Clarke-Hill et al., 1998) (de Caldas Lima, 2006).

In (Contractor and Lorange, 2002) another way of alliance typology is noticed. In this study two types of alliances are distinguished: horizontal alliances and vertically alliances. This alliance typology is in (Contractor and Lorange, 2002) further outlined. Summarized:

- Horizontally linked alliances can for example be R&D divisions of two firms that cooperate. Or collaboration on marketing as the jointly campaigns by Disney, McDonalds and Coca Cola (Contractor and Lorange, 2002).
- Vertically linked alliances can be illustrated with firms cooperating in a logistic supply chain.

The horizontal and vertical alliance types are based on the processes of the firms in which they collaborate together.

Another typology of alliance often referred to is seen in (Nooteboom, 2004). He introduces the following configurations on collaboration:

- (1) Technology-design collaboration;
- (2) Production-product collaboration;
- (3) Product-market collaboration;
- (4) Product-product collaboration;
- (5) Collaboration in complementary know-how;

In Nooteboom (2004) is claimed that these configurations also embrace most of

the alliance forms as discussed in literature. However, in the alliance research papers (see table 1) we have explored none of these configuration where explicitly mentioned.

In Dussauge et al. (2000) is noticed that analyst categorize alliances in terms of the similarity and location of the respective contributions that the partner firms make to the alliance. The location property is not seen in the horizontal and vertically alliance typology of Contractor (Contractor and Lorange, 2002).

In Dussauge et al. (2000) a categorization of alliances is seen in scale alliances and link alliances. According to (Dussauge et al., 2000) these two type of alliances can be defined as followed:

- Scale alliances: Partners contribute similar resources pertaining to the same stage or stages in the value-chain, will produce significant economies of scale for those activities that firms carry out in collaboration.
- Link alliances: Combining different and complementary skills and resources that each partner contributes.

In Silverman and Baum (2002) again another typology of alliances is seen: Downstream alliances, upstream alliances and horizontal alliances. According to Silverman and Baum (2002) these types of alliances are defined as:

- Downstream alliances link firms in a technologybased industry to sources of complementary assets,commercialization knowledge, and capital outside of the existing industry boundaries.
- Upstream alliances link technology-based firms to sources of research knowledge.
- Horizontal alliances link firms to other firms in the same industry.

Notice the difference between the horizontal alliances as defined by (Silverman and Baum, 2002) and as defined by (Contractor and Lorange, 2002).

In Das and Teng (2000) yet another typology of alliances is proposed. The alliance typology as proposed and used in the research of (Das and Teng, 2000) is:

- (1) Joint ventures;
- (2) Minority equity alliances;
- (3) Bilateral contract-based alliances;
- (4) Unilateral contract-based alliances;

The goal of the typology of Das and Teng (2000) was examination on how different resource types would influence the choice of alliance structures.

In Colombo (2003) the alliance forms equity joint ventures, non-equity bilat-

eral collaborations and non equity unilateral agreements are distinguished.

The typology of alliances defined in Rangan and Yoshino (1996) is based on difference on two characteristics: The conflict potential and the extent of organizational interaction. With a distribution in four dimensions the following typology of alliances is presented in (Rangan and Yoshino, 1996):

- Procompetitive alliances.
- Noncompetitive alliances.
- Competitive alliances.
- Precompetitive alliances.

This alliance typology was set up to support managers active in alliances.

Alliance typologies are not always called typologies. Some times studies refer to alliance typology as alliance classifications for example in Das and Teng (2000) and Todeva and Knoke (2005). In Osborn et al. (1998) alliance typologies are called administrative forms. In (Osborn et al., 1998) a data set is used to make a distinguishment in the alliance types: supply agreements, technical agreements, joint ventures and partial equity purchases. So it can be argued that to make a uniform taxonomy of alliance types or collaborative forms is to use a database. This database needs to filled with at least descriptions of collaborative agreements to find patterns. And of course much data on alliance forms seen in practice. With the descriptions it may be possible to distinguish alliances types. In (Dussauge and Garrette, 1995) a taxonomy of alliances is created in this way. In this study an agglomerative hierarchical clustering method is used, aimed at dealing with categorical variables. The result is that in (Dussauge and Garrette, 1995) four classes of collaboration are distinguished:

- (1) R&D Agreements.
- (2) Unstructured Co-Production projects.
- (3) Semistructured projects.
- (4) Business-based joint ventures.

Silverman and Baum (2002) gave critique on using data from databases for distinguishment among equity joint ventures, nonequity ventures, licensing agreements, and other alliance forms. According to Silverman in Silverman and Baum (2002) insight into the alliances internal working is needed. Databanks can not offer this needed detailed information.

In table 5 an overview is given of the diversity on alliance typologies as found in our exploration of alliance research studies (see table 1). Notice that the two typologies used by Dussauge (Dussauge and Garrette, 1995) and (Dussauge et al., 2000) are not adversary.

Table 5: Overview on alliance typologies

Study (reference)	Typology suggested or given
Contractor and Lorange (2002)	Horizontal and Vertical alliances
Das and Teng (2000)	Joint ventures, minority equity alliances, bilateral contract-based alliances, unilateral contract-based alliances
Dussauge and Garrette (1995)	R&D Agreements, Unstructured Co-Production projects, Semistructured projects. Business-based joint ventures.
Dussauge et al. (2000)	Scale alliances and link alliances
Rangan and Yoshino (1996)	Procompetitive alliances, noncompetitive alliances, competitive alliances and precompetitive alliances.
Silverman and Baum (2002)	Downstream alliances, upstream alliances and horizontal alliances

Summarizing the findings on alliance typologies in literature we see that alliances can be grouped into structural forms or from a functional perspective. Or the alliance typology is retrieved out of a conceptual model used to investigate a specific aspects of alliances. No clear distinction between alliance classification or alliance typology is seen in the investigated papers. A classifications can to our opinion more be viewed as an ordering by ordering rules. Alliance typologies arise when a research question requires a conceptual model as in (Colombo, 2003).

5 Theories for alliance research

This section will outline the various alliance definitions in regard to alliance theories used. Since alliance studies are done from various backgrounds such as marketing, social perspective, economic perspective (Ireland et al., 2002) (Kandemir et al., 2006) (Podolny and K.L.Page, 1998) it seems logical that alliance definitions differ. But to determine the origin of the differences of alliance definitions we examine the way how theory is used in alliance research in relation to alliance definitions or forms.

To study alliances various theories and models are used. According to Das and Teng (2000) the following theories and models are often used in alliance

research:

- Transaction cost economics (TCE).
- Resource-based view (RBV).
- Game theory.
- The strategic behavior model.
- The strategic decision making model.
- Social exchange theory.
- Power-dependence theory.

The dominant theory used in understanding phenomenon in alliances is TCE (Das and Teng, 2000) (Suarez-Villa, 1998). The type of the relationship that firms have is characterized by resources(physical), organizational, and human factors (Lorange et al., 1992). The resource-based view is appropriate for examining alliances because firms use alliances to gain access to other firms resources (Das and Teng, 2000). The resource-based view is not yet a new theory of the firm, but is seen part of a developing paradigm in strategy research (Das and Teng, 2000).

To examine if the alliance definitions and alliance typologies difference could be explained by different use of alliance theories we investigated all definitions (see table 2) again, but now in relation to the dominant theory used in the study. By doing so we found that some definitions of alliance emphasize the economic advantage that alliances can have. In our opinion these definitions are more TCE based. Other definitions emphasize more the sharing and exchange processes between partners within alliances. This relates more to the RBV approach on alliances. We were not able to explain all the differences in the definitions from this theoretic point of view however. In table 6 a short overview is given on the usage of theoretical paradigms in alliance research.

Table 6: Overview on theoretical paradigms

Study (reference)	Theory used	Goal
Colombo (2003)	TCE and RBV	To explain effects on the form of alliances.
Das and Teng (2000)	RBV	To develop a more encompassing RBV paradigm on alliance reseach.
Dussauge and Garrette (1995)	TCE	To show that alliance patterns defined are valid from a TCE perspective
Osborn et al. (1998)	TCE	To combine the concept of embeddness in alliance formation with theory.

The research of de Rond and Bouchikhi (2004) research is focused on alliance dynamics and process. The framework developed to categorize alliance research is based on a typology of process theories. The four ideal types of this framework are:

- Life-Cycle approaches;
- Teleological approaches;
- Evolutionary approaches;
- Dialectical approaches;

Theory development on interfirm collaboration is emerged from a variety of disciplines (New and I.Mitropoulos, 1995). A consequence or danger is overlapping and confusing terminology (New and I.Mitropoulos, 1995). The main learning point of this study for our research question is that we need to be aware of the iterative life-cycle process when regarding alliances.

6 Conclusions and Discussions

6.1 Conclusions

This review of alliance has emphasized on alliance definitions and alliance typologies. In this study we have reviewed studies that have had significance influence on the development of theoretical concepts for alliance research. Like many terms and concepts in management science the word 'alliance' will have different meanings for different people. Our aim was to investigate the meaning of the an alliance by looking at the definition. Alliances are not unique defined in alliance research studies.

We have shown that some of the differences in the alliance definitions can be explained by looking at the different theories used in alliance research. Some definitions put the emphasize on economic benefits and some alliance definitions put more emphasize on sharing resources. This contrast is characteristic for a TCE (transaction cost economics) or RBV (resource based view) approach towards alliances.

Alliances can be broadly defined. Many authors regard different forms of collaboration under the broad view of an alliance. The broad view of an alliance means a typology of alliances that is related to the degree of organizational independence of the firms joining the alliance. It is also noticed that a alliance when defined broad can be categorized in loose collaboration forms to acquisition forms.

6.2 Discussion

An important characteristic of alliances is their ability to transform from one form to another (Rangan and Yoshino, 1996). So to be able to manage this transformation we argue that it is desirable to have knowledge of the current form and the future appropriate form. By understanding the differences between the various alliance structures it is possible to avoid certain forms because of the disadvantages it may have.

In this paper it is observed that different studies use different typologies on alliances. This makes comparing results of alliance studies a difficult task. When researchers who want to contribute to the theoretical base on alliance aspects use more consistent typologies and definitions the still open theoretical questions will be easier to answer. In our opinion a clear definition of 'alliance' in an alliance research study prevents disorder to start with.

Static alliance forms do not exist (de Rond and Bouchikhi, 2004). The process of alliance development is crucial. Within the life-cycle process an alliance can develop from one form to another. So it can be argued that searching for an uniform definition does lead to the expected result as we have found: A collection of definitions and typologies. Diversity in alliance forms may not be all captured in one definition. But within a typology diversity in collaboration forms can be captured.

A better understanding to different types of alliances can help to exam and interpret outcomes of studies on alliance failures. We think that relating alliance failure to lack of knowledge on alliance theory and alliance types with business managers requires extensive research. So we stay far from these types of relations.

Alliances develop and evolve through dynamic processes (Gulati, 1998). The dynamics of behavior of the inter organisational relationship over time can mean that the typology of a relationship is also changing. To get more grip on these dynamic evolution aspects a more complete typology of alliance types can help.

In (Rangan and Yoshino, 1996) is claimed that an understanding of the typology of alliances can support senior management thinking on alliances. We have a tendency for join this conclusion. However we also think that a broader understanding of more aspects of interfirm collaboration are needed for being successfull in alliances.

The question what is an alliance is in this paper answered by an exploration of alliance definitions and typologies. But it is questionable if not more aspects of alliances need to be considered in order to answer the question 'what is

an alliance?'. It can be argued that governance structures, social interactions, and other dynamics aspects of alliance need to be considered also in order to give an integral answer that covers all aspects alliance face.

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