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ALLIANCE CONTRACTUAL DESIGN

Africa Ariño*
Jeffrey J. Reuer**

* Professor, General Management, IESE

** Professor, Kenan-Flagler Business School, University of North Carolina

IESE Business School - Universidad de Navarra
Avda. Pearson, 21 - 08034 Barcelona. Tel.: (+34) 93 253 42 00 Fax: (+34) 93 253 43 43
Camino del Cerro del Águila, 3 (Ctra. de Castilla, km. 5,180) - 28023 Madrid. Tel.: (+34) 91 357 08 09 Fax: (+34) 91 357 29 13

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Abstract:

Our purpose in this paper is to provide an overview of what we know about alliance contracts. After a short introduction to the contents of alliance contracts, we start by contrasting alliance contractual form and governance form. Next, we focus on two related constructs: contractual complexity and contractual completeness. We suggest that contractual complexity is a more adequate construct to investigate in the absence of information about the transaction contemplated in the contract. After that, we present the measures of contractual complexity used in past studies. Then, we go over the determinants of contractual complexity by considering their influence on contracting costs and benefits given environmental and behavioral uncertainty. Conclusions and suggestions for research are offered at the end.

Keywords: alliance contracts; collaborative relationships; contractual complexity; strategic alliances; cooperation; joint ventures

ALLIANCE CONTRACTUAL DESIGN

Introduction

"Formal contracts represent promises or obligations to perform particular actions in the future (Macneil, 1978)." "The basic purpose of making a contract (…) is to prevent change, or at least to provide compensation for it (Snyder, 1999)" (Ring, 2002: 147). Alliance partners are exposed to uncertainties about future states of nature (environmental uncertainty) and about the future behavior of the counterpart once in the alliance (behavioral uncertainty). Alliance contracts are therefore useful in providing "guidance to the courts on partner intentions should the alliance break down" (Ryall and Sampson, 2003: 3). However, contracts do something more than safeguard partners against unforeseen events or partner opportunism. There is empirical evidence that alliance contracts include terms that are legally unenforceable, such as business plans (Ryall and Sampson, 2003). Thus, it seems that alliance contracts provide an opportunity to define partner expectations, and to help them plan activities.

Despite their importance, formal contracts have received scant attention from alliance researchers. Those concerned with alliance design have focused mainly on the choice of governance form. The conditions under which an alliance is the most efficient governance form have been studied extensively (e.g., Hennart, 1988; Balakrishnan and Koza, 1993; Chi, 1994; Hennart and Reddy, 1997; Reuer and Koza, 2000). The choice of alliance form has received some attention as well, with some studies addressing the question of when an equity alliance is preferable to a non-equity structure (e.g., Pisano, 1989, 1990; Osborn and Baughn, 1990; Gulati, 1995; Oxley, 1997). Of the few empirical studies that consider alliance contracts, the earlier ones do so using contract-related variables as explanatory variables of other alliance attributes or outcomes (Parkhe, 1993; Deeds and Hill, 1998; Reuer and Ariño, 2002). The study of contract characteristics as dependent variables to be explained is very recent (Luo, 2002; Poppo and Zenger, 2002; Mayer, 2003; Reuer and Ariño, 2003; Reuer, Ariño and Mellewigt, 2003; Ryall and Sampson, 2003). Nonetheless, the literature on the economics of contracting serves as a source of inspiration for the study of alliance contracts and can provide more detailed guidance to managers as to how to set up their collaborative agreements.

Our purpose in this paper is to provide an overview of what we know about alliance contracts. After a short introduction to the contents of alliance contracts, we start by contrasting alliance contractual form and governance form. Next, we focus on two related

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constructs: contractual complexity and contractual completeness. We suggest that contractual complexity is a more adequate construct to investigate in the absence of information about the transaction contemplated in the contract. After that, we present the measures of contractual complexity used in past studies. Then, we go over the determinants of contractual complexity by considering their influence on contracting costs and benefits given environmental and behavioral uncertainty. Conclusions and suggestions for research are offered at the end.

Research on alliance contracts

Until recently, little was known about the contents of alliance contracts, primarily due to the difficulties entailed in accessing this kind of data (Ring, 2002; Ryall and Sampson, 2003). Typically, a contract outlines the roles and responsibilities of each party, the allocation of decision and control rights, the planning for various contingencies, how the parties will communicate, and how to resolve disputes (Argyres and Mayer, 2004). In a piece aimed at practitioners, Campbell and Reuer (2001) offer a comprehensive overview of the basic legal issues an alliance contract should contemplate (see Box 1 for an outline). While they focus on bilateral equity joint ventures (JVs), they make clear that many of the same considerations apply to non-equity alliances –except for issues associated with share-related provisions and so on– and to multilateral alliances –except that negotiating these contracts is probably more complex than negotiating bilateral agreements.

Box 1: Basic legal issues included in typical alliance contracts

– ***Establishment issues:***

- *Preliminary issues:*
  - confidentiality or nondisclosure agreement;
  - "lockout" provision preventing the parties from conducting parallel negotiations with a competitor.
- *Setting up the alliance:*
  - shareholdings (applicable to equity alliances only):
    - partners' contributions deemed as equal (50/50 ownership and control structure): provisions to break potential deadlocks;
    - partners' contributions not deemed as equal: provisions establishing the need to have the minority partner's approval on crucial decisions;
  - board of directors and staffing (applicable to equity alliances only):
    - proportion of managers that should come from each company;
    - what their minimum qualifications should be;
    - whether the other party may object to any individual;
    - what the level and source of remuneration should be;
  - articles of association (applicable to equity alliances only): shareholders' agreement on issues such as:
    - passing resolutions,

- share issuance, transfer, and disposal,
- appointment of directors, etc.

– place of incorporation (applicable to equity alliances only) and advisors such as lawyers or accountants.

• *Parties and framework of contract:*

– identification of the parties;
– purpose of the agreement;
– main body of the agreement specifying the obligations and restrictions on the parent companies;
– "boiler plate" clauses or standard provisions around a variety of issues;
– signature and data clauses;
– schedules that detail elements of the agreement;
– "all agreement" clause indicating that no other documents or oral agreements are part of the enforceable contract. If there is a document intended to be part of the contract, then it should be clearly incorporated within it.

• *Performance clauses:*
– duties and obligations of the partners,
– timing of any performance.

• *Restrictions on the partners:*
– non-competition or non-solicitation clauses;
– confidentiality agreements, possibly including that any public statements about the alliance must be approved by both parties;
– ownership and licensing of intellectual property rights.

• *Liability:*
– agreement on the extent to which they will be liable, possibly settling a certain amount of money;
– in case of *force majeure,* agreement on how long the situation may last before a new partner is sought or the alliance is dissolved.

– ***Post-establishment issues:***

• *Changes to the contract:*
– a clause establishing that changes to the contract will be written and signed by both parties is common;
– change control procedure: schedule, level of management that can agree to a contractual change;
– minimum number of formal meetings to review issues concerning the alliance;
– consideration of the transfer of the agreement and the obligations within it to another party.

• *Dispute resolution:*
– escalation procedure: usually a dispute is first referred to the partners' operational managers, then to senior management, then to an outsider for assistance, then to a mediation or arbitration procedure;
– recourse to the courts:
- which courts would have jurisdiction;
- whose laws will govern the agreement.

- *Share disposal (applicable to equity alliances only):*
  - circumstances in which new shares will be issued and to whom;
  - transfer of shares between the partners or to an outside party: advice notice; preemption rights;*
  - what happens with the JV's subsidiaries
  - all shares of one partner to be dealt with in a block
  - restrictions on transfer of shares to outsiders;
  - how the shares are to be valued;*
  - circumstances that trigger the transfer of shares

- Termination:
  - share disposal issues (applicable to equity alliances only)
  - circumstances under which the agreement will be terminated, including what constitutes a serious breach leading to alliance termination
  - consequences of termination: what will happen to personnel, intellectual property rights, assets, and contracts and obligations

Based on Campbell and Reuer (2001).
* For further details, refer to the original article.

Contractual form and governance form: Disentangling the confusion

Contractual forms and governance forms serve different purposes in shaping economic exchanges. Based on Williamson (1979, 1985) and other authors, James (2000: 48) states that "the specific exchanges negotiated by trading partners and the allocation of risks and trading gains resulting from them (…) constitute *a contract,*" while *governance* refers to "alternative institutional modes for organizing transactions" (Williamson, 1979: 234). Governance form solves the boundary problem, while contractual form specifies terms of trade.

Although governance form and contractual form are related, there is not necessarily a one-to-one relationship. Empirical evidence suggests that significant contractual heterogeneity within types of governance form exists. In their study of 200 contracts of biotechnology non-equity alliances, Lerner and Merges (1998) report 25 types of control rights. They analyze the incidence of these control rights, excluding from their sample terms that appear in less than 5% or in more than 95% of the contracts. Their findings show that some of the controls appear in as few as 6 percent of the contracts, and some in as many as 93 percent, with a mean number of 9.3 control rights per contract. Reuer and Ariño (2003) collected data on 8 types of contractual provisions in 91 alliances across a variety of industries. In the case of equity alliances, the incidence of provisions ranges between 39 and 82 percent of the contracts. The range varies from 26 to 58 percent in the case of non-equity alliances. In a related study of 66 alliances in the German telecommunications industry (Reuer, Ariño and Mellewigt, 2003), the same 8 provisions were analyzed. In this case, the incidence varies between 33 and 100 percent of the equity alliance contracts, and between 11 and 93 percent of the non-equity alliance contracts.

There is also emerging evidence that the incidence of contractual terms does not vary significantly between equity and non-equity alliances. Reuer and Ariño (2003) report no significant differences in the mean incidence of particular contractual provisions between

equity and non-equity alliances, with the exception of auditing rights provisions, which appear in 82 percent of the equity-alliance contracts, and only in 26 percent of the non-equity ones. The same result (44 vs. 11 percent) holds in their study with Mellewigt (2003).

Furthermore, contractual and governance form have some common and some different determinants, as Table 1 shows. Asset specificity and prior ties appear as the only common determinants to governance form (Reuer and Ariño, 2002; Reuer, Ariño and Mellewigt, 2003) and to contractual complexity (Poppo and Zenger, 2002; Reuer and Ariño, 2003; Reuer, Ariño and Mellewigt, 2003). Other determinants of governance form include transaction activities (Oxley, 1997; Pisano, 1989), technology scope (Oxley, 1997), the existence of potential alternative partners (Reuer and Ariño, 2002), and partner search costs (Reuer, Ariño and Mellewigt, 2003). On the other hand, contractual complexity seems associated to technological change (Poppo and Zenger, 2002), performance measurement difficulty (Poppo and Zenger, 2002), the alliance being time bound (Reuer and Ariño, 2003), the strategic importance assigned to the alliance (Reuer and Ariño, 2003; Reuer, Ariño and Mellewigt, 2003), and the firm's age (Reuer, Ariño and Mellewigt, 2003).

Table 1. Illustrative determinants of alliance contractual complexity and governance form

Determinants of:	**Contractual complexity**	**Governance form**	**Studies**
Asset specificity	X	X	Reuer and Ariño, 2002; Reuer, Ariño and Mellewigt, 2003
Prior ties	X	X	Poppo and Zenger, 2002; Reuer and Ariño, 2003; Reuer, Ariño and Mellewigt, 2003
Transaction activities		X	Oxley, 1997; Pisano, 1989
Technology scope		X	Oxley, 1997
Alternative partners		X	Reuer and Ariño, 2002
Partner search costs		X	Reuer, Ariño and Mellewigt, 2003
Technological change	X		Poppo and Zenger, 2002
Performance measurement difficulty	X		Poppo and Zenger, 2002
Alliance time-boundedness	X		Reuer and Ariño, 2003
Alliance strategic importance	X		Reuer and Ariño, 2003; Reuer, Ariño and Mellewigt, 2003
Firm age	X		Reuer, Ariño and Mellewigt, 2003

Confusion between contractual and governance form results in a simplified depiction of managerial control increasing as one moves from market-based to internalized exchanges. In the context of alliance research, often it is assumed that equity alliances confer greater control than non-equity alliances because shared ownership and the presence of a joint board serve as incentive alignment mechanisms in the former arrangement (e.g., Hennart, 1993; Chi, 1994). However, contracts of non-equity alliances can also incorporate numerous controls. The 25 different types of control rights reported by Lerner and Merges

(1998) provide evidence of this. Practitioners considered that the key control rights are those terms that relate to the management of the alliance: management of clinical trials, control of the initial manufacturing process, control of manufacturing after product approval, creation of exclusive territory for R&D firm, and creation of co-marketing rights for R&D firm.

In sum, contractual form and governance form serve different purposes. There is substantial contractual heterogeneity within types of governance form, while some clauses are as likely to appear in equity as in non-equity alliance contracts. Furthermore, contractual and governance form share few determinants. The two are distinct features of alliance design, and subsuming contractual features within discrete governance structures may be misleading. Thus, alliance research that delves into contract characteristics is worth the effort to better understand alliance design and the negotiation of collaborative relationships.

Contractual complexity and contractual completeness: The constructs

Contractual complexity and contractual completeness are two related concepts that often are used interchangeably in the literature, or else are confused. Williamson (1985:20) states "[drafting, negotiating, and safeguarding an agreement] can be done with a great deal of care, in which case a complex document is drafted in which numerous contingencies are recognized, and appropriate adaptations by the parties are stipulated and agreed to in advance. Or the document can be very incomplete, the gaps to be filled in by the parties as the contingencies arise." Implicitly, he is contrasting *complexity* and *incompleteness*. Later on in his book, Williamson (1985: 178) suggests that *complexity* and *completeness* do not go hand-in-hand necessarily: "[c]omplex contracts are invariably incomplete, and many are maladaptive."

In the context of air force engine procurement, Crocker and Reynolds (1993: 126) describe *incomplete* exchange agreements as those in which "contracting parties intentionally leave unspecified their duties in certain contingencies." A totally *complete* contract is one in which all potential contingencies are covered; a totally *incomplete* contract places no strictures at all on the terms under which subsequent trade may be effected. Intermediate degrees of contractual completeness specify duties for some contingencies, leaving the other possibilities to future resolution as events unfold. Clearly, term specificity is contemplated here explicitly, while contingency adaptability, only implicitly.

Along these lines, Luo (2002: 903-904) describes a *complete* contract as one that "simultaneously obviates opportunism through term specificity and bolsters adaptation through contingency adaptability." Term specificity and contingency adaptability are two dimensions of contract completeness. This characterization of contract *completeness* is consistent with Williamson's description of contractual *complexity*.

Poppo and Zenger (2002) consider more *complex* contracts to have a greater specification of promises, obligations, and processes for dispute resolution. *Complex* contracts offer details on roles and responsibilities to be performed, specify procedures for monitoring and penalties for noncompliance, and determine outcomes or outputs to be delivered. These authors' treatment of the concept captures the term specificity dimension appearing in Williamson's description of *complexity* and in Luo's (2002) characterization of *completeness*.

Ryall and Sampson (2003:12) refer to contract *completeness* as "the degree to which

required inputs, expected outputs and division of intellectual property rights are fully specified." This depiction portrays the term specificity dimension, but it does not consider the contingency adaptability component of contractual completeness (Luo, 2002). As a matter of fact, they consider contract *completeness* as just one dimension of contract "tightness," which they characterize as correlated with the number of terms in the contract.

From this brief review we may infer that contract *complexity* and contract *completeness* are confused in the literature. We contend that while contract *complexity* is a feature of a contract *per se*, contract *completeness* is relative to the attributes of the transaction. For instance, a contract governing a simple transaction may not be *complex* but may be *complete*, just as a contract for a more elaborate exchange relationship may be *complex* but not *complete*.

We define **contractual complexity** as a design feature of firms' contractual agreements that reflects the number and stringency of the provisions employed (Reuer and Ariño, 2003). A contract with many, highly stringent provisions is more *complex* than one with few, less stringent provisions. Based on Luo (2002: 904-905), we define **contractual completeness** as a design feature of firms' contractual agreements that reflects the extent to which all relevant terms and clauses are specified, and the extent to which the contract accounts for unanticipated contingencies and delineates relevant guidelines for handling these contingencies. For a given transaction, we safely may say that a contract with more specific and detailed terms is more *complete* than one with less specific and detailed terms. However, when comparing contracts across different transactions such a statement could not be upheld: a contract with fewer terms may be more *complete* than one with more detailed terms if the former specifies all the terms and clauses that are relevant to the transaction while the latter does not. In the absence of detailed knowledge about the transaction a contract refers to, we believe it is preferable to focus on contract *complexity* than on contract *completeness*, as assessing the latter requires information that researchers often lack.

Contractual complexity and contractual completeness: The measures

In this section, we review measures of contractual complexity and contractual completeness used in alliance studies (see Table 2). Although we believe they are all measures of contractual complexity, we will respect the authors' labels, be they complexity, completeness or anything else.

Table 2. Measure of alliance contrctual complexity used in the literature

Study	Measure
Parkhe 1993	Contractual safeguards = $\frac{1}{36}\sum_{i=1}^{8} D_i$, D_i = i if provision i exists; D_i = 0 otherwise Provisions: (1) periodic written reports of all relevant transactions; (2) prompt written notice of any departures from the agreement; (3) the right to examine and audit all relevant records through a firm of CPAs; (4) designation of certain information as proprietary and subject to confidentiality provisions of the contract; (5) non-use of proprietary information even after termination of agreement; (6) termination of agreement; (7) arbitration clauses; and (8) lawsuit provisions.
Deeds & Hill (1998)	Contractual safeguards = $\frac{1}{8}\sum_{i=1}^{8} D_i$, D_i = 1 if provision i exists; D_i = 0 otherwise Provisions: same as Parkhe (1993)
Poppo & Zenger (2002)	Contractual complexity: 1-item (7-point scale): "the formal contract is highly customized and required considerable work"
Reuer & Ariño (2002)	Contractual complexity: same measure as Parkhe (1993)
Luo (2202)	Two dimensions of contract completeness confirmed through factor analysis: • Term specificity: mean of responses assessing the degree to which a JV contract specifies relevant terms and clauses concerning the following (5-point scale) (detailed terms and clauses were listed under each of these categories, but are not reported): (1) how to set up the JV; (2) how to operate and manage the JV; and (3) how to cooperate and resolve conflict between partners; (4) how to terminate the JV. • Contingency adaptability: mean of responses stating the extent to which (5-point scale): (1) term specification is adaptive for issues that are particularly vulnerable to an uncertain environment or resource availability; (2) the contract has specified major principles or guidelines for handling unanticipated contingencies as they arise; and (3) the contract has provided alternative solutions for responding to various contingencies that are likely to arise.
Reuer & Ariño (2003)	Contractual complexity: • same measure as Parkhe (1993) • modified measure: X_i = 1 if provision i exists; X_i = 0 otherwise Two dimensions of contractual complexity identified through factor analysis of tetrachoric correlations among provisions (same mathematical formulas as before): • Partner control: provisions (4) to (8) (see Parkhe, 1993) • Operations control: provisions (1) to (3) (see Parkhe, 1993)
Reuer, Ariño & Mellewigt (2003)	Contractual complexity: same measures as Parkhe (1993) and Reuer & Ariño (2002)
Ryall & Sampson (2003)	Contract completeness: • $\sum_{i=1}^{6} X_i$, X_i = 1 if completeness clause i exists; X_i = 0 otherwise • dummy variable = 1 if the contract contains three or more completeness clauses; 0 otherwise Completeness clauses: (1) development specifications (such as tolerances) included; (2) time frame for completion of each stage specified; (3) number of employees to be contributed specified; (4) specific persons stipulated for management or other development work; (5) specific technologies to be contributed described; and (6) intellectual property rights defined over specific technologies.

Parkhe (1993) develops a measure of contractual safeguards. Specifically, he developed a checklist of contractual safeguards obtained from a computer-assisted search of the legal literature (cf. Macneil, 1978, 1981; Narasimhan, 1989; Practicing Law Institute, 1986) and documented eight provisions (see Table 2). These different types of alliance safeguards are arrayed in increasing order of strength or severity, so a weighting scheme for the stringency of contractual provisions can be adopted to arrive at the global measure of contractual complexity that appears in Table 2. This measure works as follows. Di equals one if the first provision was employed, zero otherwise; two if the second provision was employed, zero otherwise; and so on. The summation term therefore ranges from 0 to 36, and the division by 36 yields a measure ranging from zero to one. When the variable takes on a value of zero, none of the eight provisions listed above are in place. When the variable assumes its maximum value of one, all of the eight provisions appear in the alliance agreement.

Deeds and Hill (1998) modify Parkhe's measure in the following way. They asked respondents to report on the inclusion in the contract of the same provisions as Parkhe (1993). However, they use as a measure of contractual safeguards the proportion of the total items included in the alliance (see Table 2), so they do not weight individual provisions by their stringency.

Reuer and Ariño (2002) use Parkhe's measure of contractual safeguards, which they refer to as contractual complexity in later articles (Reuer and Ariño, 2003; Reuer, Ariño and Mellewigt, 2003). For comparative purposes, Reuer and Ariño (2003) assign each provision the same weight (see this modified measure in Table 2). The authors obtain the same results with this unweighted measure—similar to the one used by Deeds and Hill (1998)—as with Parkhe's original weighted measure, which provided evidence that the stringency weights did not influence interpretations of the antecedents of more or less complex alliance agreements.

More importantly, Reuer and Ariño (2003) explore whether contractual complexity is a multidimensional construct. They use exploratory factor analysis of tetrachoric correlations among the provisions used in Parkhe's measure. They find that the provisions load on the two factors in accordance with their order of stringency, and none of the provisions load in a manner inconsistent with their ranked stringency.

They label the first factor "partner control," as provisions loading highly on it deal with concerns about the partner's behavior outside the alliance itself, such as the use of information outside of the scope of the alliance, the ending of the collaborative agreement, and the use of outside parties to resolve disputes. The authors label the second factor "operations control," as it relates more directly to the monitoring of the collaborative agreement during its lifespan.

Poppo and Zenger (2002) measure contractual complexity by asking respondents to indicate their level of agreement with the following statement: the formal contract is highly customized and required considerable work (1 = strongly disagree, 7 = strongly agree).

As said earlier, Luo (2002) identifies two dimensions of contract completeness: term specificity, and contingency adaptability. These dimensions are measured as specified in Table 2. Factor analysis confirmed the existence of term specificity and contingency adaptability as two factors. Luo explains that informants were asked to assess contract completeness, benchmarking with the industry's standard regarding the desired level of this completeness. However, it looks as if this instruction referred only to term specificity, but not to contingency adaptability. If this is so, Luo's measures are measures of contractual completeness; otherwise, they measure contractual complexity.

Ryall and Sampson (2003) examine contract terms using a coding scheme that considers contract completeness not as a characteristic of the entire contract, but just of some of the terms considered in it. More specifically, their coding scheme considers three mutually exclusive dimensions: contract completeness, monitoring, and penalties. For instance, the existence of a term related to "content of reviews specified" contributes to the monitoring dimension, but does not add to contract completeness. The terms considered to affect contract completeness and the measures of this construct are shown in Table 2. Terms excluded from the measure of contract completeness comprise monitoring terms (reviews of development work required, timing of reviews specified, content of reviews specified, physical audits of development work permitted, and reviews required of both firms), and penalty terms (financial penalties for underperformance, and right to terminate for underperformance – as distinct from 'material breach'). In this way, although they acknowledge that contracts are multidimensional, contract completeness is considered as unidimensional.

Despite the variety of labels used, all these measures seize the domain of the contractual complexity concept: although to different extents, they capture the number and stringency of the provisions used. However—with the possible exception of Luo's (2002) measure as already discussed—they do not capture the contractual completeness concept, as they do not depict whether all relevant terms and clauses are specified. The identification of distinct dimensions in some of the measures (Luo, 2002; Reuer and Ariño, 2003) allows more fine-grained analyses than can be performed with more global, or unidimensional, measures. Most measures may be applied across a broad spectrum of alliance contracts, as they are not specific to the alliance purpose, an exception being the measure used by Ryall and Sampson (2003), which is quite particular to technology alliances.

So far, we have argued that selecting contractual forms and governance forms are two distinct issues in alliance management. We have dug into the contents of alliance contracts and have argued that contractual complexity and contractual completeness are two separate constructs. We advocate that, without detailed knowledge of firms' exchange relationships, it is generally more appropriate to talk about contractual complexity than contractual completeness. Our review of contract-related measures shows that in fact they are measures of contractual complexity, not of contractual completeness – maybe with the exception of Luo's (2002) measures. We turn now to the conditions identified in the literature that drive contractual complexity. We introduce them with a brief consideration of the nature of contracting costs and benefits.

Determinants of contractual complexity

Contractual provisions can be costly to negotiate, monitor, and enforce. Yet these costs are efficient for firms to bear when the safeguards reduce the costs and performance losses from exchange hazards that stem from both environmental and behavioral uncertainties (Ring and Van de Ven, 1992). Conditions leading to higher environmental uncertainty augment contracting costs and would result in less complex agreements, while conditions increasing the likelihood of opportunistic behavior augment the potential losses from misbehavior and would result in more complex contracts (Crocker and Reynolds, 1993).

Contracting involves both *ex ante* and *ex post* costs (Williamson, 1985). *Ex ante* costs include those of formalizing the agreement – determining a partner's legal competence to contract; reaching agreement on corresponding rights and responsibilities; conducting a legal search; and finding a means of legally employing the resources (Ring, 2002). They also include costs associated with gathering information about, and crafting optimal responses to,

a potentially large set of feasible contingencies (Crocker and Reynolds, 1993). *Ex post* costs are associated with contract renegotiation (Ring, 2002): legal fees, reorganization expenses, opportunity costs due to management time (Reuer and Ariño, 2002), as well as costly activities designed to shift the increasing risk of cost uncertainty (Crocker and Reynolds, 1993).

Ex ante and *ex post* contracting costs are interdependent (Williamson, 1985), and the two are to be considered interactively (Ring, 2002). Conditions "that generate increased contracting costs should result in efficient contracts being less complete, whereas conditions that exacerbate the potential for ex post inefficiencies should lead to more exhaustive agreements" (Crocker and Reynolds, 1993:127).

In this section, we review a number of conditions that may affect *ex ante* and *ex post* contracting costs, as well as contracting benefits. The illustrative conditions are the level of transaction specific investments, the existence of prior ties, whether the alliance is time-bound or open-ended, the strategic importance partners assign to the alliance, and the level of the costs associated to searching for alternative partners. For each condition, we elaborate briefly on how it influences contractual complexity, and we present related research results.

Transaction specific investments

When asset specificity is low, resources can be deployed to other relationships or businesses without difficulty, and partner identity is not important (Klein, Crawford, and Alchian, 1978; Williamson, 1991). As the partner cannot threaten to hold up the firm under this condition, the firm has little incentive to bear the costs associated with designing a more complex contract in an attempt to stabilize the relationship. However, when a firm makes transaction-specific investments in an alliance, the partner can jeopardize the alliance by threatening dissolution, which would mean the firm would lose the value of specialized assets. Faced with such threats, managers must evaluate the value losses and *ex post* renegotiation costs they would experience from hold-up behavior against the additional costs of negotiating safeguards into their alliance contracts *ex ante*. As the potential value loss increases with investments in specific assets, managers will find it advantageous to negotiate more complex contracts to cover the consequences of breach and termination as well as designing the processes by which such threats will be handled (Dyer, 1997; Poppo and Zenger, 2002; Reuer and Ariño, 2003).

Poppo and Zenger (2002) find support for this conjecture, as their results indicate the use of more customized, complex contracts as asset specificity increases. Reuer and Ariño (2003) show similar findings: the greater the transaction-specific investment in an alliance, the greater the number and stringency of contractual provisions built into the alliance contract. This result holds using unidimensional, weighted and non-weighted, measures of contract complexity. The authors' disaggregated analysis contemplating two dimensions of contract complexity –partner-control provision and operations-control provisions– suggests that firms use the more stringent provisions oriented to control the partner as asset specificity increases, but the presence or absence of transaction-specific investments has no apparent influence on the usage of weaker contractual provisions designed for monitoring an alliance's operations.

In contrast, Reuer, Ariño and Mellewigt (2003) find no significant influence of asset specificity on contractual complexity; instead, asset specificity relates to the decision to adopt an equity alliance over a non-equity alliance. In order to examine whether asset specificity

leads to greater contractual complexity in alliances without additional governance mechanisms in place, these authors performed their analyses in a sub-sample of non-equity alliances, obtaining similar non-significant results. This outcome contrasts with prior evidence on contract design and the role of transaction-specific investments (e.g., Joskow, 1988; Poppo and Zenger, 2002). As asset specificity has been associated with contractual complexity in non-alliance domains (e.g., Joskow, 1988), the authors attribute their findings to the empirical setting – German telecommunications companies. Given the high technological uncertainty in this environment, the likelihood of contractual renegotiation is very high, so complex contracts are also likely to require costly renegotiations. Faced with the risk of hold-up under these circumstances, managers may prefer to protect themselves by turning to a governance solution instead of a contractual solution (e.g., Poppo and Zenger, 2002).

Prior ties

Although the threat of opportunism will be a function of the particular attributes of the alliance in question, it can also be shaped by firms' prior collaborative histories with one another. Relational contracts are possible because repeated exchanges between firms induce cooperation as the possibility of putting an end to relations acts as a self-enforcing sanction (e.g., Telser, 1980). By contrast, firms entering into relationships with new partners support these relationships with formal contractual provisions and rely upon the court system for enforcement (Johnson, McMillan, and Woodruff, 2002). Thus, on the one hand, the existence of previous relationships among the partners reduces behavioral uncertainty and may allow for a lower level of contractual complexity. On the other hand, those previous relationships result in lower contracting costs, thus allowing the partners to negotiate more complex contracts without incurring higher costs. We turn now to examine these two separate effects.

There are two mechanisms by which successive collaborative relationships between firms can reduce behavioral uncertainty and thus make it possible for firms to avoid the costs of designing more complex alliances. The first mechanism is the trust that emerges from successive collaborative relationships between firms and that may be a substitute for more elaborate governance. Trust is an efficient substitute for formal contractual provisions because the firms have already invested in relationship building and have borne set-up costs, which would need to be incurred for alternative safeguards (e.g., Klein, 1980). Dyer (1997) suggests that Japanese automakers' networks have lower transaction costs than their U.S. counterparts because they engage in repeated exchanges. Related evidence from buyer-supplier relations confirms that interorganizational trust allows firms to economize on negotiation costs (Zaheer, McEvily, and Perrone, 1998). In sum, repeat alliances pose less moral hazard concerns (Gulati, 1998) than first-time alliances because the partner's behavior is more predictable, as is its competence to deliver the expected contributions (Ring, 2002).

A second mechanism by which successive collaborative relationships between firms reduce behavioral uncertainty is the development of interorganizational routines. In addition, such routines allow firms to avoid the costs of detailing mechanisms for monitoring and coordination (Gulati, 1998; Zollo, Reuer, and Singh, 2002). As firms enter into repeated collaborative agreements with each other, partners develop a better understanding of each other's procedures, management systems, cultures, and so forth. This mutual understanding can help firms alleviate problems related to coordination, conflict resolution, or information gathering that otherwise can be addressed by means of formal contractual provisions. Parkhe (1993) shows that partners' cooperative history reduces coordination efforts and compliance costs; in turn, these diminish the need for contractual safeguards. Similarly, Dyer and Singh

(1998) suggest that the relationship-specific knowledge that emerges from frequent and intense partner interactions builds a firm's relational capabilities, which can improve the efficiency of alliances. Whether prior strategic alliances between firms enhance the development of interorganizational trust and/or routines, such prior relationships result in a reduced behavioral uncertainty and allow firms to avoid more complex contracts.

However, as already anticipated, when the parties share a history of frequent exchange in which promises have been fulfilled, contract negotiation costs are lower (Ring, 2002). Thus, prior ties may allow for the design of complex contracts without incurring the same costs as partners transacting for the first time have to bear for a similar level of contractual complexity. Ring (2002) suggests that when partners have worked together in other alliances, they have discussed certain conditions and agreed on them already; to the extent that some of these conditions are "boilerplate" or common terms, including them in a new alliance contract entails no additional cost. In addition, partners with prior relationships have developed a mutual knowledge that allows them to discuss behavioral uncertainty issues that would be extremely costly for newly transacting partners to address – or even identify. "Previous cooperation fosters a climate of openness that is essential to discussing behavioral problems (…). By the same token, two parties that have cooperated earlier tend to be more collaborative in adapting to unanticipated environmental hazards. In order to jointly gain greater rents from cooperation and adaptation, they are likely to keep a contract's contingency adaptability at a high level" (Luo, 2002: 907). Prior relationships allow partners to learn what they need to specify and what contingencies to consider (Mayer, 2003).

In sum, these arguments suggest that past relationships diminish behavioral uncertainty, be this because of the trust built through those relationships or because of the development of coordination mechanisms and routines. In either case, past relationships would allow for the use of less complex contracts. However, past relationships also reduce contracting costs and make partners aware of issues hard to identify in the absence of a certain mutual knowledge. Consequently, contracts may turn out to be more complex in the presence of prior ties. Which of these effects dominates will dictate the use of complex contracts as substitutes or complements to trust.

Reuer and Ariño (2003) find that in the presence of prior alliances firms specify fewer provisions relating to alliance operation control. However, the existence of prior ties does not influence the use of provisions concerning partner control. These results support the argument that the routines built through past relationships preclude the need to use contracts in order to set up coordination mechanisms, thus resulting in less complex contracts. Conversely, these findings undermine the argument that contracts are used as substitutes for trust. Along the same lines, Luo (2002) finds no significant association between previous cooperation and the use of specific terms to obviate opportunism in the contract.

Ryall and Sampson (2003) show that when firms are engaged in multiple alliances with the same partner, some "boilerplate" provisions such as arbitration clauses are identical between alliance contracts. This provides evidence that partners economize contracting costs by incorporating into their new contracts clauses already negotiated and agreed upon for past contracts. Reuer, Zollo, and Singh (2002) also find that firms tend to be more apt to alter alliance contracts when they have collaborated with each other in the past.

Poppo and Zenger (2002) find that prior relationships between firms lead to more detailed contracts. Ryall and Sampson (2003) interpret this result to provide evidence that prior relationships allow partners to learn more about each other and draft better, and perhaps tighter, contracts. Consistent with this, Luo (2002) shows that previous cooperation is

significantly and positively associated with contingency adaptability. Ryall and Sampson (2003) find that contracts are more detailed when firms have allied with each other previously; however, contracts are less complex in the case of concurrent alliances with the same partner, even when alliance duration and technology breadth are controlled for. These authors' interpretation of these findings is that "firms gain experience in drafting effective collaborative agreements with prior alliances, which allows these firms to specify rights, obligations and development costs at lower cost. In contrast, concurrent alliance relationships with the same partner may operate as an informal means to deter non-cooperative behavior, since such behavior can affect the future prospects not only of the current alliance, but also of the concurrent alliance" (p.4). This interpretation is consistent with the fact that learning about what to specify and what contingencies to consider may be derived from prior ties, while concurrent ties may provide this learning opportunity only at a later time. Luo's (2002) argument that previous cooperation allows the companies to discuss –and agree upon– issues that newly transacting partners would not be able even to identify is in consonance with this set of research findings.

Overall, the results from recent research we have reviewed tend to back the claim that contracts are used as complements to, and not as substitutes for, trust. This is not necessarily in contradiction with findings from past research showing that firms with prior collaborative agreements tend to choose non-equity alliances over equity alliances (c.f., Gulati 1995; Oxley, 1997), given the distinction we traced earlier in this chapter between contractual form and governance form.

Time boundedness

Strategic alliances designed to operate for a pre-specified length of time experience lower environmental uncertainty than alliances with open-ended durations. In the former case, partners are in better shape to anticipate different future states and efficiently specify their duties and rights under these different states (e.g., Noldeke and Schmidt, 1995). As partners have negotiated explicit time bounds on their alliances, they are also more likely to be aware of related issues covered in alliance contracts, such as ownership of proprietary technology, disclosure of confidential information, and alliance termination. Conversely, when firms place no bounds on the duration of the alliance, it can be costly to anticipate future economic conditions and craft contractual provisions that provide adequate responses. So as to avoid these transaction costs, firms tend to rely on incomplete contracts under these conditions (Crocker and Reynolds, 1993).

The presence or absence of time bounds on alliances can affect not only the level of environmental uncertainty faced by the partners, but also the level of behavioral uncertainty. Open-ended alliances are self-enforcing agreements in that the potential gains from future collaboration provide a safeguard against opportunistic behavior meant to appropriate more immediate payoffs (Telser, 1980). As suggested by Hill (1990), opportunism is viable if the future is *not* important to the provoker. By contrast, the shadow of the future is shorter in time-bound alliances, which do not support a tit-for-tat equilibrium of cooperation that can protect from opportunism (Axelrod, 1984). Given these characteristics, time-bound alliances do not lend themselves to act as self-enforcing agreements, and formal contractual provisions may be required to safeguard them.

In sum, alliances with a pre-specified duration entail lower environmental but higher behavioral uncertainty than open-ended alliances. Lower environmental uncertainty entails lower contracting costs, which is likely to result in more complex contracts, while higher

behavioral uncertainty likewise provides incentives to design more complex contracts. Thus, alliances with a pre-specified duration can be expected to have more complex contracts than open-ended alliances.

Turning to empirical evidence, Crocker and Reynolds (1993) find –albeit in a non-alliance context– that more distant dates of contract performance lead to more incomplete exchange agreements because of the higher environmental uncertainty and the consequently increased costs of implementing more complete contracts. Luo (2002) shows that the longer a JV is expected to last, the higher it ranks in terms of contingency adaptability, resulting in more complex contracts along the contract dimension that deals with environmental uncertainty.

Focusing on the impact of behavioral uncertainty, Parkhe (1993) shows that long time horizons decrease uncertainty regarding potential opportunism, which in turn diminishes the need for complex contracts. Luo (2002) finds a negative impact of expected duration on term specificity, and Reuer and Ariño (2003) provide evidence that alliance agreements with specified durations tend to rely more heavily on partner control provisions, but less on operations control provisions.

Taken together, these findings suggest that open-ended alliances result in complex contracts to the extent that they incorporate provisions for contingency adaptability and control of alliance operation. Other than this, open-ended alliances tend to use less complex contracts than alliances with a pre-specified duration.

Strategic importance of the alliance

Increasingly, alliances are between actual or potential competitors, involve two-way knowledge transfers, and have global market aspirations (e.g. Hagedoorn, 1993; Gomes-Casseres, 1996). As a reflection of these changes, firms are applying more disciplined processes for selecting partners and negotiating collaborative agreements (e.g., Harbison and Pekar, 1998) and are implementing positions or functions dedicated to managing their strategic alliances (e.g., Kale, Dyer, and Singh, 2002). As a result, partners are more exposed to the hazards such alliances involve (Koza and Lewin, 1998; Singh and Mitchell, 1996), which include the risk of having a competitor appropriate key strategic resources (Khanna, Gulati, and Nohria, 1998; Branstetter and Sakakibara, 2002). Firms are therefore justified in bearing additional costs to clarify rights and obligations concerning the scope of the alliance (Borys and Jemison, 1989), ownership claims on proprietary technology provided to or created during the alliance, and the management of the alliance's termination. In light of these risks, managers will also have an incentive to detail the ways in which strategically important alliances will be monitored and any disputes that arise will be resolved as the alliance evolves (Ring and Van de Ven, 1994; Doz, 1996). Additionally, strategically important alliances tend to involve more complexity (Hagedoorn, 1993), making it more costly to reach agreement for establishing mutual consent (Ring, 2002). The strategic importance a firm assigns to an alliance reflects the firm's attitude and commitment to it (Deeds and Hill, 1998). The more valuable the contributed resources, the more extended contract negotiations will be (Ring, 2002). Thus, managers will be more willing to dedicate the additional resources that negotiating a complex contract entails when the contract is for a strategically important alliance.

Reuer and Ariño (2003) and Reuer, Ariño and Mellewigt (2003) demonstrate that the greater the strategic importance of an alliance, the more complex the alliance contract is.

These results hold when using a unidimensional measure of contractual complexity, both weighted and non-weighted. However, when using disaggregate measures, Reuer and Ariño (2003) find that the strategic importance of alliances shapes the usage of partner control provisions in alliance contracts, but has no impact on firms' adoption of the provisions for alliance operation control. These results speak of the importance that behavioral uncertainty takes in strategically important agreements.

Search costs

Searching for potential exchange partners can be costly given the various expenses incurred when scrutinizing potential partners, and the need to involve a good number of agents in the process (e.g., Arrow, 1974). Screening potential exchange partners takes time and negotiation entails delays, and these costs are non-trivial (Wernerfelt, 2004). These inefficiencies in the market for alliance partners suggest that alliance termination may affect firms unfavorably, even if their commitments to a collaborative arrangement are not entirely partner-specific. Because search costs for an alliance partner are sunk and these costs would need to be incurred in locating a new partner, the firm has an incentive to design a more complex contract to allocate duties, design processes for unforeseeable outcomes, and specify exchanges and remedies in more precise terms. The greater the search costs involved in locating a partner for a particular transaction, the greater the firm's incentive to bear the costs of designing more complex contractual arrangements. By contrast, if the firm can find an alternative partner with relative ease, the contract can be comparatively simple, since the costs of switching to another exchange partner will be lower, and it is therefore more likely that the relationship will be self-enforcing. Empirical evidence on the incidence of search costs on alliance contractual complexity is scarce, with Reuer, Ariño and Mellewigt (2003) finding that the greater the search costs for an alliance partner, the greater the complexity of the alliance contract.

Conclusion

Our purpose in this paper has been to offer an overview of research on strategic alliance contracts, still scarce given the difficulties in accessing this kind of data. We have distinguished alliance contractual form and governance form, as these are often confused in the literature, even though they serve different purposes. We have traced the distinction between two related constructs frequently mixed in the literature: contractual complexity and contractual completeness. It seems to us that in the absence of detailed knowledge about transaction attributes it is more appropriate to consider and refer to contractual complexity than to contractual completeness. In fact, most of the measures used in the literature –though labeled in different ways– in fact assess contractual complexity rather than completeness. Finally, we have examined the conditions that may warrant the design of more or less complex alliance contracts depending on their effect on environmental and behavioral uncertainties, and thus on the costs and benefits of contracting.

More work remains to be done. One area that has received virtually no attention is that of contracting as a process, the outcome of which goes beyond a legal document. "In contracting, the legal requirement of mutual consent and commitment –a meeting of the minds– is achieved by (a) process of sense making" (Ring and Van de Ven, 1994: 100). And sense making may result in a psychological contract which may complement or serve as a substitute for a formal document. In Ring and Van de Ven's (1994) framework, contracting is

a part of the commitments stage of alliances, a stage in which "the 'wills of the parties meet' (Commons, 1950) when they reach an agreement on the obligations and rules for future action in the relationship" (p.98). Sense making will occur only if the parties interact intensively. Through these interactions, the parties assess their possible compatibility and start forming opinions about one another. The parties may develop a psychological contract about the terms of the relationship (Ring and Van de Ven, 1994), a benefit of the contracting process that is not considered in discussions of contracting costs and benefits. Arguably, both a legal contract and a psychological contract are necessary for the satisfactory development of an alliance. On the one hand, an excessive focus on legal issues may lead to distrust among parties. On the other hand, the absence of formal legal structures paves the way to an abuse of trust. Thus, a balance between formal and informal aspects of contracting may be desirable. A well managed contracting process, centered in sense-making and mutual understanding, can produce both a tight legal contract that sets specific terms and ways to adapt under a number of contingencies, and a psychological contract that allows the parties to reach mutually satisfactory agreements when facing unforeseen circumstances. We believe that research into alliance contracts along these lines will be important to move beyond the literature's current emphasis on discrete governance structures, and also to provide more detailed guidance to managers designing and negotiating collaborative agreements.

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