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One more only if it is one of us. The number of partners and the stock market reaction to domestic and international alliance formation in EU telecom firms

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Abstract

In this paper, we analyze the interaction between two dimensions of strategic alliances whose real impact on the potential value of an alliance has not yet been highlighted: the number of partners and the direct competition among them. Building on the resource-based view, as well as on the relational view of alliances, we argue that increases in the number of partners are positively valued by the stock market when the alliance is formed by competing firms that belong to different countries. Multiparty alliances are thus positively valued when they allow a quick internationalization by affording access to resources owned by competing firms from different countries. An empirical test of stock market reaction to alliances announced by European telecom firms between 1986 and 2001 has confirmed our hypotheses.

Keywords: Strategic alliances between competitors; Number of partners; Event study; Telecom industry; Europe

1. Introduction

Multiparty agreements are growing both in number and in importance (Makino & Beamish, 1999; Zeng & Chen, 2003). As they allow resource combinations from several

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firms, they allow the partners involved to take advantage of market opportunities out of reach for individual or even dyads of firms (Beamish & Kachra, 2003). In addition, multicountry alliances and networks are changing the traditional path of international expansion to such an extent that Dunning (1995) has suggested that some of the main theories in the field of International Business should be reexamined. Although some of these features have been highlighted in previous research on alliance management, the papers examining the multiparty context focus mainly on the negative side, that is, on the increased complexities associated with a higher number of partners. Therefore, these alliances are seen as less stable, less successful and not as long-lasting as dyadic agreements (García-Canal, Valdés-Llaneza, & Ariño, 2003; Oxley, 1997; Park & Russo, 1996). Thus, the analysis of the determinant factors of the net effect of the number of partners on firm value has been neglected and deserves more attention.

In addition, the relationship between asymmetries in the industry of the partners and alliance performance is less clear than one could expect. Initially, it seems that when all the partners belong to the same industry potential conflicts of interests between partners may make alliances unstable and complex to manage (Park & Ungson, 2001). However, intra-industry alliances can also entail important synergies. Although resource complementarity is the driver of the synergistic potential of strategic alliances (Harrison, Hitt, Hoskisson, & Ireland, 2001), this does not mean that alliances need to be formed between partners from different industries. As Dussauge and Garrette (1999, p. 117) point out, "the main benefits of combining complementary skills appear in fact to accrue within the boundaries of existing industries". In addition, cooperation between competing partners also entails more opportunities for collusion (Porter & Fuller, 1986). Thus, previous literature on the potential value of strategic alliances is not of much help in order to understand the real impact of the number of partners and the direct competition amongst them on alliance outcomes. Furthermore, this literature does not offer sufficient insights to answer some of the questions, which may arise during the negotiation phase of the cooperative project, such as the following: How many partners are needed to successfully carry out a cooperative project? With whom should a firm form an alliance?

This paper analyzes the interaction between these two dimensions of strategic alliances (number of partners and direct competition amongst those partners) with the aim of clarifying their real effect on the potential value of the alliance. This interaction has not yet been analyzed, and we argue that a deep analysis would help us to better understand the synergistic potential of strategic alliances. In particular, we argue that increases in the number of partners reduce the potential value creation of the alliance when it is a cross-industry agreement. To the contrary, when all the partners belong to the same industry, their effect on potential value creation will be positive. We also argue that multiparty alliances are specially valued when formed by partners from different countries, as they contribute to speeding up the international growth of the partners involved. We will ground our propositions on the resource-based view (Barney, 1991; Peteraf, 1993) complemented with the relational view of alliances (Dyer & Singh, 1998; Kale, Dyer, & Singh, 2002). While the resource-based view highlights the importance of combining complementary firm-specific resources, the relational view analyzes how easy it is to obtain rents from these resource combinations. We will measure potential value creation through stock market reaction to the formation of the alliance. Event study techniques are increasingly used to analyze the performance consequences of firms' decisions (McWilliams & Siegel, 1997). In fact, there is already a wide literature dealing

with stock market reaction to alliance formation (Merchant & Schendel, 2000; Park, Mezias, & Song, 2004) but there is no clear evidence regarding the determining factors of this reaction.

2. Background

Strategic alliances are organizational arrangements designed in order to profit from unique and valuable combinations of resources which no one partner can replicate due to the heterogeneity and the imperfect mobility of resources (Das & Teng, 2001; Eisenhardt & Schoonhoven, 1996; Madhok & Tallman, 1998). Consequently, alliances allow firms to profit from rents that can only be obtained by working jointly. These rents are those that Dyer and Singh (1998) call relational rents, and Madhok and Tallman (1998) call collaboration specific quasi-rents. However, assembling partners' resources and hence attaining relational rents is far from easy and requires a great deal of effort by all the partners. A key element within the relational view is the so-called relation-specific investments. Madhok and Tallman (1998, p. 331) define these as "expenditures dedicated toward the relationship—not just money, but also managerial time, energy and effort". These investments condition value creation and contribute to the development of what Dyer and Singh (1998) call sources of relational rents. Through these investments, partners can determine the optimal level of investments in specific assets, develop knowledge sharing routines, identify complementary resources and capabilities and design effective self-enforcing governance mechanisms (Dyer & Singh, 1998). By making relational investments, strategic alliances can evolve towards what are called self-enforcing agreements. These investments are sunk costs that have value as long as the relationship is alive. For this reason, the partners have incentives to behave cooperatively in order to recover their relational investments not only in the current alliance but also in new cooperative projects which may result from the evolution of the relationship (García-Canal et al., 2003).

In this context, increasing the number of partners also raises the rents the alliance may generate. Firstly, the amount of resources pooled by the partners increases, which makes it more difficult for a single firm to have the same level of resources available (Beamish & Kachra, 2003). Secondly, the higher the number of partners, the higher the positive feedback and network externalities that partners can achieve from the alliance (Doz & Hamel, 1998), since their chances to impose the technology or the product configuration developed in the alliance as a standard or a dominant design increase (Afuah, 1999). In fact, each new partner brings its distribution channels to the alliance, amongst other valuable resources, which is why the chances of successfully introducing the product or technology developed by the alliance increase. Thus, as the number of partners increases, it is easier for those partners to gain critical mass in order to effectively accomplish a specific task. This not only means being able to achieve economies of scale, but also the ability to take advantage of several market opportunities which require a certain geographical scope. As a result, relational rents, that is, those rents that cannot be obtained by a single firm alone, also increase.

As regards direct competition, when all the partners have interests in the same industry it is easier for them to define resource combinations that can exploit synergies among them. All the benefits traditionally associated with alliances (e.g. those concerning efficiency and learning), are easier to achieve in the context of intra-industry agreements, because there

are more activities to be shared, and absorptive capacity is higher (Dussauge, Garrette, & Mitchell, 2000). Since partners are located in the same industry, there are more overlaps in their value chains. Learning opportunities are also higher. On the one hand, partners have more opportunities to assimilate their counterparts' abilities effectively because the knowledge obtained from competing in the same industry gives them absorptive capability (Cohen & Levinthal, 1990). In addition, they can easily take advantage of the acquired knowledge: since they compete in the same industry, it is easier for them to exploit what they have learned immediately (Park & Russo, 1996).

Although both factors could lead to higher relational rents, previous research analyzing their impact on stock market reaction to alliance formation presents mixed results. Some researchers have found a positive impact of direct competition on abnormal returns in alliance formation (Chan, Kensinger, & Martin, 1997; Koh & Venkatraman, 1991; Park & Kim, 1997; Wu & Wei, 1998). In contrast, others have found a negative (Balakrishnan & Koza, 1993; Reuer & Koza, 2000) or a non-significant effect (Merchant & Schendel, 2000). Regarding the number of partners, whereas Vidal and García-Canal (2003) found a negative impact on abnormal returns, Kim and Park (2002) found a non-significant effect. These mixed results could be explained by taking into account the dual effect mentioned previously. In effect, the number of partners and the direct competition among them may also diminish the net gains of the alliance. First, as previous research has shown, a higher number of partners augments coordination and motivation costs (Oxley, 1997), as is the case of relational investments. Each new partner requires additional efforts so the total amount of relational investments needed to make the alliance work is higher (García-Canal et al., 2003). As a consequence, partners have fewer incentives to invest in the relationship, which may diminish the functioning of the alliance. Additionally, a higher number of partners makes the development of the agreement more difficult. A new partner not only increases the required amount of relational investments, it also reduces the chances to profit from these investments, given that it is more difficult to define new projects which satisfy the requirements of all the partners. A final factor limiting the value created by these alliances is that each new partner makes it more difficult to put the reciprocity mechanism into practice (Parkhe, 1993). For all of these reasons, as the number of partners increases it is increasingly difficult to structure strategic alliances as self-enforcing agreements (García-Canal et al., 2003).

With regard to direct competition, it also increases conflicts of interests between partners (Park & Ungson, 2001). Specifically, conflicts associated with learning could block the functioning of the alliance. Although learning is a possible benefit of the alliance, it is also a factor which can potentially damage the relationship (Park & Russo, 1996). This is due to the fact that partners may be reluctant to make the relational investments that an agreement would require because of fear of undesired knowledge transfers (Kale, Singh, & Perlmutter, 2000). We have to take into account that relational investments usually entail sharing valuable information with partners, and also that direct competition is a factor that can deter partners from doing so. As a consequence the amount of resources effectively pooled will be lower and the coordination will be more difficult. A large amount of previous research has highlighted the dangers associated with collaboration between competing firms (Hamel, Doz, & Prahalad, 1989; Pucik, 1988), although the empirical evidence has not always confirmed these dangers (Hennart, Roehl, & Zietlow, 1999).

3. The interaction between number of partners and direct competition

In this paper, we maintain that most of the benefits associated with a high number of partners accrue when all the said partners are competitors. When a multiparty alliance involves only partners from the same industry, the projects that they carry out can benefit from economies of scale not only because they are more numerous, but also because they belong to the same industry (Dussauge & Garrette, 1999). In fact, as all of them have interests in the same industry, it is easier for them to find activities to share in order to enjoy important economies of scale. These economies of scale are conditioned by the size of the market the alliance may accomplish. Thus, an additional partner can be critical for success. Having one more partner means that the alliance can rely on their distribution channels, among other resources, and, depending on the terms of the contract, that this partner is not available to other alliances made for the same purpose (Kogut, 1988; Vickers, 1985). For this reason, there is sometimes some positive feedback on the number of partners within the alliance. Once a certain size is achieved, the scale economies and the subsequent advantages pertaining to size cannot be replicated by any other firm or even other alliances within the same industry (Beamish & Kachra, 2003; Doz & Hamel, 1998). In addition, the alliance can also be aimed at re-shaping competition within the industry, and the higher the number of partners the higher the chances of succeeding in implementing this reshaping (Hwang & Burgers, 1997). By reshaping competition we are not just suggesting that a strategic alliance is a means of cartelizing an industry, but also that it improves the competitive position of the firms involved since it allows them to take advantage of certain market opportunities which require some degree of intra-industry coordination. These situations are decisions regarding setting standards, dominant designs as well as setting up a worldwide network, among others (Doz & Hamel, 1998). In these situations, an increase in the number of partners helps to achieve larger economies of scale as well as to increase the odds of success in exploiting this new market opportunity. Recent evidence suggests the importance of collective competition to the extent that industries are increasingly being transformed by the formation of so-called strategic blocks or constellations, which is to say, agreements by which competitors are transformed into allies to undertake initiatives requiring critical mass (Duysters, Hagedoorn, & Lemmens, 2003; Gimeno, 2004; Gomes-Casseres, 1996; Nohria & García-Pont, 1991). Summing up, although a higher number of partners in an alliance always increases the amount of firm-specific resources available, when all the partners belong to the same industry the combination of their resources generates a competitive advantage against competitors not included in the alliance because of the difficulty of replicating the said combination of resources.

However, in order to generate positive expectations from investors, intra-industry multiparty alliances not only need to be designed in such a way that valuable firm specific resources could be pooled, but also in such a way that potential conflicts of interests stemming from direct competition and number of partners could be solved. In particular, two main sources of conflicts of interests may block the development of the alliance. On the one hand, firms have to commit resources and efforts to coordinating their actions with other partners and to monitoring them in order to prevent free-riding behavior. On the other hand, firms are sharing valuable resources and knowledge which may be appropriated by their partners (Hamel et al., 1989; Hamel, 1991; Inkpen & Beamish, 1997; Kogut, 1988; Oxley, 1997). A rise in the number of partners augments all these

management costs. As the number of partners increases, the appropriability hazards (Oxley, 1997) are higher as there are more partners able to learn from firm resources. In addition, free-riding hazards also increase as partners may have the incentive of profiting from valuable resources offered by their partners without contributing any of their own resources. Thus, coordination costs increase because the alliance is more complex (Killing, 1988). However, when all of the partners are direct competitors, free riding and appropriability hazards can be reduced for two reasons. Firstly, it is easier for the firms to monitor the behavior of their partners while the resources they are pooling are pretty similar to their own resources (Balakrishnan & Koza, 1993). Secondly, there is more overlap in their capabilities, so the multiplicative effect of the number of partners on learning opportunities is lower when all of them are direct competitors (Khanna, Gulati, & Nohria, 1998). In addition, as all of the partners belong to the same industry it is easier for them to define projects to be carried out by all of them in the future. Thus, adding a new partner in an intra-industry alliance not only makes the replication of the pooled resources by other competitors more difficult but also generates less conflicts of interest than if the new partner were from a different industry. For these reasons, the following hypothesis can be formulated:

H1. An increase in the number of partners in an alliance would increase the abnormal returns associated with the formation of the said alliance, provided all the members belong to the same industry.

On the contrary, when firms belong to different industries, the addition of new partners (i.e. the formation of an alliance involving an additional partner) usually leads to a reduction in the potential value of the alliance. This is due to the fact that cross-industry alliances are aimed at exploiting specific opportunities stemming from the combination of resources developed in different industries. Therefore, the key point in these cases is not to pool resources from numerous firms but rather to combine complementary resources from different industries (Dussauge & Garrette, 1999). Thus, having more partners does not add much in the way of positive benefits in this case. One additional partner can bring expertise related to a specific industry as far as its resources are valuable and firm specific. This means that one single partner from each industry can independently generate the potential value stemming from combinations of firm-specific assets. Other competitors can easily replicate this combination of resources by forming another cross-industry alliance, as the number of potential candidates for a multiparty cross-industry alliance is higher than for a multiparty intra-industry one. Thus, whereas adding an additional partner always increases the potential value of the alliance when all of them are competitors, adding an additional partner from another industry does not always make sense. Free-riding problems are amplified in alliances between firms from different industries, since more learning opportunities arise and, because of information asymmetry problems, it becomes more difficult to monitor the behavior of firms transferring resources developed in different industries to the alliance (Balakrishnan & Koza, 1993). As there are less marginal benefits from new partners and higher monitoring costs, firms will be reluctant to share the potential value stemming from cross-industry agreements with additional allies. On this basis, we propose the following hypothesis:

H2. An increase in the number of partners of an alliance would reduce the abnormal returns associated with the formation of the said alliance, provided all of the members do not belong to the same industry.

4. International intra-industry alliances

An additional dimension to be taken into account in multiparty intra-industry alliances is the country of origin of the partners involved. International alliances have been traditionally used to speed up the entry of a foreign firm into a new market. Anderson and Gatignon (1986) show several ways in which firms can enter a foreign country through different types of alliances. Besides these "local alliances", firms can also use other types of alliances to speed up their internationalization process (García-Canal, López-Duarte, Rialp, & Valdés-Llaneza, 2002; Yoshino & Rangan, 1995). Specifically, they can set up the so-called global or multicountry alliances through which firms can gain access simultaneously to several foreign markets and/or plan a coordinated global strategy (Dunning, 1995; Lei & Slocum, 1992; Nohria & García-Pont, 1991; Ohmae, 1989). In comparison to local alliances, global alliances can lead to a more effective acceleration of the international expansion of parent firms, as partners can improve their competitive position in several countries at the same time, as well as gaining access to firm specific resources developed in different environments (Dunning, 1995; García-Canal et al., 2002; Yoshino & Rangan, 1995). These global alliances make more sense between partners from the same industry, as the complementarities in international networks and the coordination of a global strategy require competing firms (Vidal & García-Canal, 2003).

In this context, the higher the number of different countries of origin of the partners involved in an intra-industry global alliance, the higher its potential synergies (Ohmae, 1989; Porter & Fuller, 1986). As the number of countries of origin of the partners involved in an intra-industry global alliance increases, the participating firms have higher chances of completing an international network and generating learning opportunities (Yoshino & Rangan, 1995). Having partners from different countries also generates more learning opportunities, as partners can gain access to resources developed in different competitive environments (Hamel et al., 1989). In fact, Beamish and Kachra (2003) argue that the main advantage of multiparty alliances is having complementary and heterogeneous resources from different partners. Specifically they argue that this heterogeneity is a source of additional synergies as partners can take advantage of different sources of resource contribution. This reasoning leads them to predict that resource heterogeneity in multiparty alliances is increased when the partners come from different countries. These combinations of heterogeneous resources can be easily transformed into synergies in the case of intra-industry alliances, as argued in Hypothesis 1. Taking all of these arguments into account, we propose the following hypotheses:

H3. An increase in the number of countries of origin of the partners involved in an alliance would raise the abnormal returns associated with the formation of this alliance, provided all the partners belong to the same industry.

On the contrary, multiparty intra-industry alliances in which all of the firms have the same country of origin have less potential to achieve synergies. As the number of partners from the same country increases, resource heterogeneity decreases and resource redundancy and conflicts of interests increase. If the alliance is aimed at expanding the

international scope of the firm, one partner from each country should be enough to provide access to each market, as the aim of these alliances is to expand the international scope of the firm (Porter & Fuller, 1986; Yoshino & Rangan, 1995). Partners' resources are, thus, less heterogeneous and more redundant. Finally, when forming an alliance between competing firms from different countries, the balance between competition and cooperation can be easily maintained because each partner can concentrate on its own market, so there are less overlaps between their previous geographic scope and, as a consequence, lower conflicts of interest than in alliances between competing firms from the same country (García-Canal et al., 2002). In fact, if the overlap between partners' international presence is high, conflicts of interests between partners could easily arise, thus hindering the development of trust (Park & Ungson, 2001). As conflicts of interests are higher and trust development becomes more difficult, increases in the number of partners from the same country in international alliances formed by competing firms have fewer chances of developing and generating relational rents. For these reasons, we may form the following hypothesis:

H4. An increase in the number of partners from the same country would reduce the abnormal returns associated with the formation of an alliance, provided all the partners belong to the same industry.

5. Empirical setting, data and method

5.1. Empirical setting

We focus our analysis on the strategic alliances carried out between 1986 and 2001 by Telecom Service Providers located in the European Union. Since the latter half of the 1980s, such firms have suffered important environmental changes, such as the technological development relating wireless communications and Internet as well as market deregulation and privatizations (Joshi, Kashlak, & Sherman, 1998; Trillas, 2002; Zahra, Ireland, Gutiérrez, & Hitt, 2000). As a consequence of these changes these firms have become extremely dependent upon external resources for their competitiveness. We believe that this empirical setting provides an excellent opportunity for studying the impact of the number of partners on stock market reaction to intra- and inter-industry alliances. Firstly, in this industry there have been a huge number of alliances through which firms tried to gain access to external resources. Secondly, this is an industry in which critical mass is an important driver of competitiveness (Sarkar, Cavusgil, & Aulakh, 1999) and for this reason there have been a lot of multiparty alliances.

5.2. Sample

In order to test the previously formulated hypotheses, an initial sample including all of the alliances carried out by at least one European telecommunications company between 1986 and 2001 was obtained from the SDC database. We chose this industry for a number of reasons: Firstly, the propensity that exists in this industry for external growth. Alliances are a method commonly used in this industry to expand boundaries—instead of organic growth. We could also see a significant increase in this kind of operation especially in the 1990s (Joshi et al., 1998), mainly due to the globalization and deregulation which have

transformed the global landscape of the industry during the last few years. Secondly, the large scale of some projects, as well as the opportunities associated with operating in several countries at once have generated a large number of multiparty alliances (Oh, 1996; Sarkar et al., 1999). We focused specifically on the providers of telecommunication services, i.e. those firms whose main SIC code is 4812 (radiotelephone communications) and/or 4813 (telephone communications, except radiotelephone). We also included in the sample those firms classified under the SIC 4899 (communications services, not elsewhere classified) and whose "business description" in the database is that of telecommunications services providers. Such was the case of British Telecom and Mannesmann. After carefully reviewing the corporate information of our firms, we classified them as follows: (Group I) Specifically fixed-line operators; (Group II) Specifically mobile phone operators; and (Group III) Fixed and wireless telecom firms. Thus, companies such as Colt Telecom were considered fixed-line operators, Mannesmann or Vodafone were put together as mobile phone operators, and Telefónica, Deutsche Telekom or British Telecom, among others, were classified as fixed and wireless operators. We thank an anonymous reviewer for this insight. A total of 736 alliances for the studied period were selected. Our goal was to analyze how the formation of these alliances affected the share price of the European telecom company. We have treated each abnormal return as a separate case: we have calculated the abnormal return for all the European telecom operators signing a strategic alliance. Because of the methodology used, each alliance announcement had to meet the following criteria so as to be included in the final sample:

(a) The European firm's daily stock prices were available in the DataStream database.
(b) The precise date of the alliance announcement could be identified in the Lexis–Nexis database.
(c) No major confounding announcement that could contaminate the effect of the studied event was made within a ± 5-day period on either side of the announcement day. Following McWilliams and Siegel (1997), all those observations in which there have been further news during this period concerning capital operations, dividend payments, contracts with the State, acquisitions, other alliances different to those studied or decisions concerning changes in a key executive of the studied companies have been eliminated from the original sample.

After the elimination of all the events that did not fit the above criteria, the final sample consisted of 336 experiences of European telecom firms in strategic alliances. Table 1 shows the distribution of these experiences according to the number of partners of the alliance. As we can see, according to previous research (Morris & Hergert, 1987) dyadic alliances are the most frequent ones, but there is an important number of multiparty alliances involving up to sixteen partners. Table 2 shows the listed firms included in our sample and the number of events in which they were involved.

5.3. Dependent variable

We use the cumulative abnormal returns between ± 3 trading days around the public announcement of the alliances as the dependent variable. We used this period because it is the widest window within which we can guarantee the non-contamination of our events. We follow Brown and Warner's procedure (1985), as well as McWilliams and Siegel's

Table 1
Distribution of the collaborative experiences according to the number of partners[a]

Number of partners	Number of alliances	Number of events
2	239	244
3	37	41
4	12	15
5	11	13
6	8	8
7	3	4
8	1	2
9	2	2
10	1	1
12	3	4
14	1	1
16	1	1
Total	319	336

[a]Each alliance generates one event for each European telecom firm involved in it, and to which stock prices were available. In this sense: (a) the 239 alliances between two partners generate 244 valid events because there are 5 alliances in which stock prices of both partners were available; (b) there are 4 alliances involving three partners with sock prices available for two of them, generating four events more than the number of alliances (37–41); (c) the 12 alliances involving four partners generate 15 events because there were information available for two partners in three of them; (d) in the case of the 11 alliances among five partners, there is one with stock prices available for three of them, generating 13 valid events; (e) there is an alliance among seven partners in which information about two of them were available; (f) the alliance among eight partners generates two events because stock prices were available for European partners; (g) finally, there is an alliance involving twelve partners in which there are stock prices available for two of those partners with European nationality, generating one event more than the number of alliances (3–4). Data about all these alliances are available upon request.

(1997) guidelines, in order to determine the reaction in the stock price of the financial assets under the announcement of certain relevant events. Abnormal returns are defined as the difference between actual returns and those returns that should be expected according to a Market Model (Sharpe, 1964). We used the "Global Index" provided by DataStream as the market reference index. This is a market index for each stock market, and is built using the same criteria for each one of them. Thus, the index includes the main listed firms in each market in terms of capitalization (120 titles on average in each case) and is corrected by dividend payments as well as by seasoned equity offerings or stock reductions. The estimation of the Market Model was carried out over a 180-day period beginning 200 days before the date of the announcement ($t = -200$) and finishing 21 days before this same date ($t = -21$); $t = 0$ being the announcement date. We have excluded the 20 days prior to the announcement from the estimation of the Market Model so as to remove data that might be affected by the event. Their inclusion might have led to an undervaluation of the abnormal returns, since the effect of the announcement would have partially been incorporated into the expected returns.

In order to overcome the problems associated with the use of prices formed in different stock markets, we also used the Market Adjusted Returns to calculate abnormal returns. In this model α and β coefficients of the traditional Market Model are equal to 0 and 1, respectively. Therefore, these coefficients do not need to be estimated, and any potential contamination of the estimation period is avoided. However, the main advantage of this

Table 2
Listed firms in our sample

Company name	Number of events	%
British Telecom	93	27.68
Cable & Wireless	56	16.67
Colt Telecom	2	0.60
Deutsche Telekom	10	2.98
Energis	2	0.60
France Telecom	6	1.79
KPN	17	5.06
Mannesmann	27	8.04
MobilCom Communikationstechnik	1	0.30
Netcall	1	0.30
Ing. C. Olivetti	43	12.80
Scottish Telecom	2	0.60
Sonera	1	0.30
Tele Danmark	2	0.60
Telefónica	31	9.23
Telewest Communications	5	1.49
Telindus Group	1	0.30
Telecom Italia	35	10.42
Vodafone	1	0.30
Total	336	100.00

method is that it also allows us to check the robustness of the results of our estimations. As we are using prices formed in different stock markets, some biases may exist. By using abnormal returns calculated by a different method, we can analyze to what extent our results are robust as regards our independent variables, according to the method used to calculate abnormal returns. This model is also used by some authors (see Fuller, Netter, & Stegemoller, 2002, for instance) when there is a high probability that previous events could be included in the estimation period of the Market Model, thus making β estimations less meaningful.

Table 3 shows the results of the event study using the Market Model and the Market Adjusted Returns Model. When using the Market Model, we observed an average abnormal return of −0.06% on the same day of the announcement of the alliance, although the null hypothesis that this average abnormal return is equal to zero cannot be rejected. As for the percentage of positive events, we observe that between 46% and 52% of the firms in the sample obtained positive abnormal returns, and that the major market reaction—although it is not significant—took place in the interval (−3,3). Similarly, when using the Market Adjusted Returns Model, all results are similar to those above. It is important to highlight that it is irrelevant to our study whether or not the average abnormal returns for the whole sample are significant. What we are trying to explain is not whether average abnormal returns are significantly different from zero, but rather whether multiparty alliances generate different abnormal returns in intra-industry and cross-industry alliances. In fact, when analyzing the average abnormal returns in different subsamples, we found that, on average, both multiparty-intra-industry and dyadic-cross-industry alliances generated positive and significant abnormal returns. On the contrary, multiparty-cross-industry and dyadic-intra-industry agreements generated negative and

Table 3
Abnormal returns experienced by firms (%)[a]

Period	Market Model		Market Adjusted Returns Model	
	Abnormal returns (%)	% Pos.	Abnormal returns (%)	% Pos.
Day −5	0.01	47	0.01	47
Day −4	0.06†	49	0.13*	49
Day −3	−0.07	49	−0.06	49
Day −2	−0.09†	43	−0.04	43
Day –1	0.14**	52	0.13**	52
Day 0	−0.06	46	−0.04	46
Day 1	−0.18*	47	−0.16*	47
Day 2	−0.13*	47	−0.11†	47
Day 3	−0.01*	51	0.04	51
Day 4	0.05	52	0.14*	52
Day 5	0.25	49	0.22**	49
(−4,4)	−0.28	49	0.04	46
(−3,3)	−0.39	46	−0.23	47
(−2,2)	−0.31†	47	−0.21	47
(−1,1)	−0.09	48	−0.07	51

$^{\dagger}p<0.10$, $^{*}p<0.05$, $^{**}p<0.01$, $^{***}p<0.001$.

[a]For each accumulation period, abnormal returns obtained, as well as the percentage of positive events detected, are showed. The abnormal returns were calculated following two alternative models (Market Model and Market Adjusted Returns Model), in order to check for the robustness of the results of the estimations presented in Table 5.

significant abnormal returns. In order to reduce the length of the paper these estimates are not presented, although they are available from the authors upon request.

5.4. Independent variables

In order to test our first and second hypotheses, we have used three variables: PARTNERS, COMPETITORS and COMPETITORS × PARTNERS (the interaction effect between them). PARTNERS is a continuous variable measuring the number of partners in an alliance. This information was obtained from the SDC database. COMPETITORS is a dummy variable, valued 1 when the partners are direct competitors, and 0 otherwise. First of all, this variable takes the value 0 in any alliance including at least one firm whose main SIC at the four-digit level is different from 4812, 4813 or 4899. In all of the alliances formed only by firms from the telecommunications industry we considered that all partners are direct competitors when all of them are involved in the same business within the telecom industry. Thus, if the alliance only comprises companies belonging to Group I (specifically fixed-line operators) or Groups I or III (fixed and wireless telecom firms), COMPETITORS takes the value 1. The same happens in alliances formed only by mobile phone operators (Group II) or by companies from Groups II and III, or even in alliances formed only by firms from Group III. The COMPETITORS variable takes value 0 when the alliance comprises companies from Groups I and II simultaneously. As we mention later, we also used an alternative variable valued one when all of the partners belong to the telecom industry (they have 4812, 4813 or 4899—as defined when explaining our sample—as a four-digit primary SIC code). The results of our estimations remain

unchanged. In order to estimate the interaction between these two variables, we multiplied them to create the COMPETITORS × PARTNERS variable.

In addition, to test our third and fourth hypotheses, the PARTNERS variable was split into two new variables. PARTNER NATIONALITIES, a variable measuring the number of different nationalities (countries of origin of the partners) present in the alliance, was built using information from the SDC database. PARTNERS PER COUNTRY is a variable measuring the average number of partners from the same country included in the alliance. This variable was built by dividing the PARTNERS variable by PARTNER NATIONALITIES. As we are interested on the effect of these variables in the case of intra-industry alliances we also included the following interaction effects: COMPETITORS × PARTNER NATIONALITIES and COMPETITORS × PARTNERS PER COUNTRY.

5.5. Control variables

To test the robustness of our results, we also included several control variables in our estimations. Firstly, firm and year dummies were introduced with the aim of controlling the possible influence of time and any unobserved heterogeneity inherent to each company on the abnormal returns. Secondly, several dummy variables were introduced in order to control the influence that the specific characteristics of an alliance could exert over the abnormal returns. INTERNATIONAL SAME BUSINESS is a variable valued 1 in those alliances aimed at coordinating operations in a foreign country within the main business of the European operator involved. The main business of the analyzed firm was defined according to the three previous groups already mentioned: (I: fixed-line operators, II: mobile phone operators, and III: fixed and wireless telecom firms). Some studies (Finnerty, Owers, & Rogers, 1986; Park & Kim, 1997) have considered that the international or domestic identity of an alliance could be a determinant factor in the abnormal returns associated with the operation. DOMESTIC DIVERSIFICATION is a variable valued 1 in those alliances designed to perform activities in the home country of the European operator involved outside its main business within the telecom industry. Previous literature has taken into account the relatedness between alliance activities and partner activities. Its results show that this relatedness increases the abnormal returns associated with the formation of the alliance. In this respect, Koh and Venkatraman (1991) and Merchant and Schendel (2000) find that the higher the relatedness between alliance activities and partner activities, the higher the abnormal returns. INTERNATIONAL DIVERSIFICATION is a variable valued 1 in those alliances aimed at performing activities outside the home country of the European operator involved, and outside its main business within the telecom industry. Note that the domestic alliances within the main business of the firm studied acts as the reference group. JV is a variable valued 1 in those alliances that have led to the creation of a joint venture. One of the most important classifications commonly used in literature about alliances distinguishes between joint ventures and contractual agreements (Gulati, 1995), and the inclusion of this variable allows controlling for this fact. Finally, R&D, MANUFACTURING and MARKETING are three dummy variables valued one, if the alliance entails, among others, R&D, MANUFACTURING or MARKETING activities, respectively. These variables allow us to control the functional roles of the alliance. Many previous studies have examined how the alliance functional role, especially R&D alliances (Das, Sen, & Sengupta, 1998; Merchant & Schendel, 2000), could affect the abnormal returns of the firm's shareholders.

Other control variables were the following. Firstly, to control the experience in alliance management—an important attribute according to Anand and Khanna (2000), Kale et al. (2002) and Ireland, Hitt, and Vaidyanath (2002)—we created the variable ALLIANCE EXPERIENCE, defined as the number of previous alliances that a company has signed before. While building this variable, we did keep in mind the operations included in the initial sample (736). Secondly, we also took into account the debt ratio of the firm (DEBT). These data was obtained from the revision of the companies' annual reports, as well as from DataStream and direct and electronic conversations with representatives from each firm. Finally, we also introduced one control in our estimations related to the external environment of the alliance, proxied by cultural distance (Barkema & Vermeulen, 1997). To control the cultural distance we created the variable CULTURAL DISTANCE by means of the Kogut and Singh index (1988), using Hofstede's (2001) revised measures as input. When it involved more than two partners, we followed the procedure employed by Kim and Park (2002). Specifically, for each pair of partners we calculated the Kogut and Singh (1988) index and, afterward, the average between these indexes. We included this control, as it is a variable typically used in literature on stock market reaction to business combinations, although the empirical evidence is mixed (Merchant & Schendel, 2000; Very, Lubatkin, Calori, & Veiga, 1997).

Table 4 presents the means, standard deviations and correlation matrix of the variables used in the models. Given the high correlation between each of the interaction terms calculated to test our hypotheses and the main effects, we mean-centered the relevant continuous variables (PARTNERS, PARTNER NATIONALITIES and PARTNERS PER COUNTRY) before calculating the interactions. Following established practice, the dichotomous main effect of the variable COMPETITORS was not centered (Jaccard & Turrisi, 2003).

5.6. *Method of analysis*

We estimated three regressions with robust standard errors using each approach to calculate abnormal returns (Market Model or Market Adjusted Returns). In the first model, we only introduced the control variables previously described. In the second model we also introduced the independent variables COMPETITORS and PARTNERS, on the one hand, or COMPETITORS, PARTNER NATIONALITIES and PARTNERS PER COUNTRY, on the other, depending on the hypotheses considered. Finally, in the last model we introduced all the variables described above.

Note that our observations might have non-independence problems regarding our events. As mentioned before, each alliance could generate as many events as European Telecom operators with stock prices available were involved. To deal with this possible lack of independence among the events generated by the same alliance (see Table 1), we used the *cluster* option included in STATA Special Edition 8.0 for Windows software. Adequate modeling of multi-level clustering of observations can improve the estimates of the standard errors on the coefficients and provide more reliable *t*-statistics (Wooldridge, 2003). Specifically, the *cluster* option indicates that the observations are independent across groups (clusters) but not necessarily independent within groups. To use this option we defined a variable (ALLIANCE NUMBER), which identified the alliance generating each event. We used this variable in the *cluster* option to avoid non-independence problems.

Table 4
Means, standard deviations and correlations[a]

	Mean	S.D.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
(1) CUM. ABN. RET. [−3,3] (%)	−0.49	4.55	1.00																	
(2) INTERNATIONAL SAME BUSINESS	0.20	0.40	0.00	1.00																
(3) DOMESTIC DIVERSIFICATION	0.28	0.45	0.11	−0.31	1.00															
(4) INTERNATIONAL DIVERSIFICATION	0.44	0.50	−0.04	−0.45	−0.45	1.00														
(5) CULTURAL DISTANCE	0.92	1.07	0.00	0.36	−0.26	−0.01	1.00													
(6) JV	0.50	0.50	−0.01	0.22	0.06	−0.19	0.13	1.00												
(7) R&D	0.15	0.36	0.04	−0.01	−0.19	0.25	−0.06	−0.08	1.00											
(8) MANUFACTURING	0.07	0.25	0.01	−0.08	0.17	−0.05	0.02	0.15	−0.08	1.00										
(9) MARKETING	0.14	0.35	0.05	−0.06	−0.02	0.08	−0.08	−0.05	0.01	−0.01	1.00									
(10) PARTNERS	0.00	1.90	−0.05	0.16	−0.16	0.05	0.08	0.13	0.17	0.01	−0.15	1.00								
(11) PARTNER NATIONALITIES	0.00	1.34	0.00	0.31	−0.44	0.26	0.23	0.09	0.28	−0.04	−0.10	0.72	1.00							
(12) PARTNERS PER COUNTRY	0.00	0.85	−0.05	−0.22	0.48	−0.41	−0.24	0.09	−0.17	0.09	−0.07	0.32	−0.33	1.00						
(13) COMPETITORS	0.18	0.38	−0.03	0.19	−0.17	−0.06	0.23	−0.02	0.02	−0.06	0.03	−0.08	0.05	−0.15	1.00					
(14) COMPETITORS × PARTNERS	−0.06	0.42	0.11	−0.17	0.00	0.18	−0.14	0.03	0.22	0.02	−0.08	0.22	0.27	0.03	−0.29	1.00				
(15) COMPETITORS × PARTNER NATIONALITIES	0.03	0.47	0.10	0.04	−0.13	0.19	0.10	0.05	0.25	0.01	−0.09	0.16	0.35	−0.17	0.12	0.76	1.00			
(16) COMPETITORS × PARTNERS PER COUNTRY	−0.05	0.26	−0.01	−0.28	0.18	−0.09	−0.31	−0.06	−0.08	0.00	0.04	0.02	−0.20	0.32	−0.40	0.09	−0.46	1.00		
(17) ALLIANCE EXPERIENCE	42.92	36.10	−0.02	−0.02	−0.04	0.03	0.00	−0.17	−0.17	−0.13	0.00	−0.07	−0.09	−0.01	−0.04	−0.05	−0.04	−0.02	1.00	
(18) DEBT	0.49	0.14	−0.09	−0.15	−0.01	0.16	−0.08	−0.16	0.16	−0.08	0.03	−0.01	0.01	−0.02	−0.05	0.07	0.04	0.04	−0.06	1.00

[a]Given the high correlation between each of the interaction terms calculated to test our hypotheses and the main effects, we mean-centered the relevant continuous variables (PARTNERS, PARTNER NATIONALITIES and PARTNERS PER COUNTRY) before calculating the interactions. Following established practice, the dichotomous main effect of the variable COMPETITORS was not centered.

6. Results

The testing of our working hypotheses was carried out in two phases. In the first phase we tested our Hypotheses 1 and 2 by estimating several regression models with robust standard errors (i.e. considering alliance clusters) using the Market Model (1a, 2a and 3a Models) or the Market Adjusted Returns Model (1b, 2b and 3b Models) to calculate the dependent variable. These models include the following independent variables: PARTNERS, COMPETITORS and COMPETITORS × PARTNERS. Table 5 illustrates the results obtained. To test our Hypotheses 3 and 4, we use the same estimation technique, but we include COMPETITORS, PARTNER NATIONALITIES, PARTNERS PER COUNTRY as independent variables, and the interaction terms between the last two and COMPETITORS. Those estimations are presented in Table 6. Each model presented in these tables includes the value of the coefficients of the independent variables, their robust standard errors (in parenthesis) and an indication of their significance level. In Table 5, Models 1a and 1b include several control variables commonly used in literature on stock market reaction to alliance formation. In both tables, Models 2a and 2b also include the independent variables that measure the direct effect of the number of partners and the direct competition among them on the abnormal returns of an alliance. Models 3a and 3b also include the interaction effect of the number of partners and direct competition. Taken as a whole, our results confirm the main prediction of our theoretical model, regardless the estimation model used to calculate abnormal returns. Our estimates regarding the independent variables not only have the expected sign but are also significant. We also used an alternative procedure to build the variable competitors. Specifically, we considered that partners were direct competitors when all of them belong to the telecom industry (they have 4812, 4813 or 4899—as defined when explaining our sample—as a four-digit primary SIC code). The results of our estimations remained unchanged. These results are available upon request.

Analyzing the results of the independent variables for Hypotheses 1 and 2 (Table 5), we can see that the interaction effect between COMPETITORS and PARTNERS is positive and significant, while the coefficient of PARTNERS is negative, although not always significant. To analyze the net effect of these variables properly, as well as to test our hypotheses, we have to focus our attention on Models 3a and 3b, which include the interaction effect between these two variables. When partners are not competitors, we can see that an increase in the number of partners leads to a decrease in abnormal returns, as the PARTNERS variable coefficient suggests. However, when partners are competitors, the net effect of an increase in the number of partners is the sum of the coefficients of the PARTNERS and the COMPETITORS × PARTNERS variables. This net effect is always positive in the two models (3a and 3b) and is also significant in all of them, with a p-value lower than 0.05 (the joint significance of these two coefficients was measured through a t-test). Our first two hypotheses are thus confirmed, since the marginal effect of the number of partners is positive when all of them are competitors and negative when at least one of them belongs to a different industry. The results of the COMPETITORS variable also confirm our prediction. Although this variable has a non-significant coefficient, the interaction effect with the number of partners is positive. For this reason, the net effect of the COMPETITORS variable will be dependent on the number of partners: it is always positive (the minimum number of partners is 2) and it increases as the number of partners rises. This confirms that, when

Table 5
Regression models with robust standard errors[a]

Independent variables	Market Model			Market Adjusted Returns Model		
	Model 1a	Model 2a	Model 3a	Model 1b	Model 2b	Model 3b
Year dummies	Included	Included	Included	Included	Included	Included
Company dummies	Included	Included	Included	Included	Included	Included
Intercept	6.34 (4.14)	6.58 (4.18)	6.85 (4.21)	6.28 (4.99)	6.43 (5.02)	6.63 (5.03)
COMPETITORS		−0.29 (0.75)	0.11 (0.67)		−0.25 (0.71)	0.06 (0.65)
PARTNERS		−0.23* (0.12)	−0.28* (0.12)		−0.16 (0.10)	−0.20* (0.10)
COMPETITORS × PARTNERS			1.53** (0.54)			1.17* (0.51)
Control variables						
JV	−0.42 (0.66)	−0.37 (0.66)	−0.46 (0.64)	−0.36 (0.65)	−0.33 (0.66)	−0.40 (0.65)
R&D	0.57 (0.70)	0.68 (0.69)	0.53 (0.67)	0.82 (0.70)	0.90 (0.70)	0.78 (0.68)
MANUFACTURING	−0.65 (0.96)	−0.61 (0.97)	−0.64 (0.97)	−0.16 (1.02)	−0.14 (1.03)	−0.16 (1.03)
MARKETING	0.08 (0.56)	−0.12 (0.57)	0.00 (0.57)	0.22 (0.52)	0.09 (0.54)	0.18 (0.54)
CULTURAL DISTANCE	0.17 (0.24)	0.18 (0.25)	0.21 (0.25)	0.14 (0.25)	0.15 (0.26)	0.17 (0.26)
INTERNATIONAL SAME BUSINESS	1.15 (1.21)	1.24 (1.22)	1.41 (1.22)	1.19 (1.23)	1.25 (1.24)	1.38 (1.25)
DOMESTIC DIVERSIFICATION	2.85* (1.15)	2.72* (1.16)	2.71* (1.16)	2.67* (1.16)	2.57* (1.19)	2.56* (1.19)
INTERNATIONAL DIVERSIFICATION	1.08 (1.14)	1.05 (1.15)	0.94 (1.16)	0.76 (1.14)	0.73 (1.17)	0.64 (1.17)
ALLIANCE EXPERIENCE	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)	−0.00 (0.02)	−0.00 (0.02)	−0.00 (0.02)
DEBT	−10.33 (6.72)	−10.78 (6.73)	−11.73 (6.70)	−8.81 (7.07)	−9.08 (7.09)	−9.81 (7.12)
R^2 (%)	14.17	14.91	16.19	14.32	14.67	15.40
N	336	336	336	336	336	336

$^{\dagger}p<0.10$, $^{*}p<0.05$, $^{**}p<0.01$, $^{***}p<0.001$.

[a]The dependent variable is the Cumulative Abnormal Returns, in percentage, over the period [−3,3] (CAR [−3,3]). Abnormal returns were calculated using the Market Model, as well as the Market Adjusted Returns Model, in order to check for the robustness of the estimations. The number of company dummies included in the models is 18. The number of year dummies included in the models is 14. The coefficients of the company and year dummies are omitted in order to simplify the presentation of these results. Coefficients are estimated using the *robust cluster estimation* of STATA S/E 8.0 in order to avoid the non-independence of events stemming from the same alliance.

Table 6
Regression models with robust standard errors[a]

Independent variables	Market Model		Market Adjusted Returns Model	
	Model 2a	Model 3a	Model 2b	Model 3b
Year dummies	Included	Included	Included	Included
Company dummies	Included	Included	Included	Included
Intercept	7.84† (4.28)	7.95† (4.32)	7.43 (5.11)	7.52 (5.12)
COMPETITORS	−0.29 (0.75)	−0.16 (0.76)	−0.23 (0.71)	−0.13 (0.73)
PARTNER NATIONALITIES	−0.05 (0.14)	−0.18 (0.15)	0.03 (0.13)	−0.06 (0.14)
PARTNERS PER COUNTRY	−0.87* (0.44)	−0.94* (0.45)	−0.60* (0.29)	−0.65* (0.29)
COMPETITORS × PARTNER NATIONALITIES		1.62** (0.54)		1.19* (0.51)
COMPETITORS × PARTNERS PER COUNTRY		1.64 (1.18)		1.21 (1.12)
Control variables				
JV	−0.32 (0.66)	−0.39 (0.64)	−0.30 (0.66)	−0.36 (0.65)
R&D	0.49 (0.69)	0.32 (0.67)	0.74 (0.70)	0.61 (0.69)
MANUFACTURING	−0.68 (0.96)	−0.70 (0.96)	−0.19 (1.02)	−0.21 (1.02)
MARKETING	−0.10 (0.57)	−0.01 (0.57)	0.13 (0.53)	0.20 (0.54)
CULTURAL DISTANCE	0.12 (0.25)	0.15 (0.26)	0.10 (0.26)	0.12 (0.27)
INTERNATIONAL SAME BUSINESS	0.09 (1.26)	0.38 (1.34)	0.35 (1.33)	0.57 (1.41)
DOMESTIC DIVERSIFICATION	2.58* (1.11)	2.58* (1.20)	2.49* (1.18)	2.48* (1.26)
INTERNATIONAL DIVERSIFICATION	−0.06 (1.15)	−0.09 (1.22)	−0.11 (1.24)	−0.13 (1.30)
ALLIANCE EXPERIENCE	0.01 (0.02)	0.01 (0.02)	−0.00 (0.02)	−0.00 (0.02)
DEBT	−10.57 (6.76)	−11.64† (6.72)	−8.92 (7.12)	−9.72 (7.17)
R^2 (%)	15.60	16.94	14.99	15.70
N	336	336	336	336

$^{\dagger}p<0.10$, $^{*}p<0.05$, $^{**}p<0.01$, $^{***}p<0.001$.

[a]The dependent variable is the Cumulative Abnormal Returns, in percentage, over the period [−3,3] (CAR [−3,3]). Abnormal returns were calculated using the Market Model, as well as the Market Adjusted Returns Model, in order to check for the robustness of the estimations. The number of company dummies included in the models is 18. The number of year dummies included in the models is 14. The coefficients of the company and year dummies are omitted in order to simplify the presentation of these results. Coefficients are estimated using the *robust cluster estimation* of STATA S/E 8.0 in order to avoid the non-independence of events stemming from the same alliance. Models 1a and 1b are not included in this table because they are the same as in Table 5.

allying with partners from the same industry (at least, within the telecom industry), the more the merrier.

Taking the results of the independent variables for Hypotheses 3 and 4 (Table 6) into account now, we can see that multiparty alliances formed by competing firms are specially valued by the stock market when they are formed by partners from different countries. The results of the COMPETITORS × PARTNER NATIONALITIES variable (see Models 3a and 3b in Table 6) show that the higher the number of nationalities involved in an intra-industry alliance, the higher the abnormal returns. This result is exclusive of intra-industry alliances, as the variable PARTNER NATIONALITIES does not have a significant effect. Hypothesis 3 is thus confirmed. The results of the PARTNERS PER COUNTRY variable are also noteworthy. The results of our models show that as the average number of partners from the same country involved in an alliance increases, abnormal returns

decrease. Although we predicted this effect for intra-industry alliances, our results show that this effect is present both in intra-industry and cross-industry alliances, as PARTNERS PER COUNTRY presents a negative and significant coefficient and the COMPETITORS × PARTNERS PER COUNTRY variable does not have a significant effect. Hypothesis 4 is confirmed, although the negative effect of the number of partners per country is present not only in intra-industry alliances, but also in cross-industry alliances. This clear penalization of multiple partners from the same country can be explained by taking into account the specificities of the industry and the time period analyzed. Our sample comprises alliances formed by telecommunications firms from the European Union during a period in which most firms were facing technological changes and the coming of the so-called single market for telecommunications. Obviously, within this context it seems logical that the stock market sees more resource complementarities in foreign firms than in domestic ones, taking also into account the relative small size of some of the countries of the European Union.

Regarding control variables, the most remarkable result is that the stock market seems to value alliances to diversify mainly when the operation is domestic. International alliances used to diversify are not valued differently than domestic alliances formed to perform activities within the borders of the telecommunications industry. The other control variables did not show significant results, which is not particularly surprising in view of the mixed results provided by the literature on stock market reaction to alliance formation (Gulati, 1998; Merchant & Schendel, 2000).

7. Discussion and conclusions

The most important contribution of our study is to show when and why forming multiparty alliances is valued positively by the stock market. An increase in the number of partners has been traditionally viewed as negative when dealing with alliance outcomes. Additional coordination costs, free rider problems and complexity seem to generate costs for multiparty alliances which can be higher than the potential benefits brought by a new partner to the alliance. This view is not unrealistic. Previous research shows how important these problems are. Multiparty alliances are more unstable (Dussauge et al., 2000; Hennart & Zeng, 2002). One of the reasons of this instability is that the reciprocity mechanism is more difficult to put into practice (Parkhe, 1993). As the number of partners rises, it is more difficult to punish non-cooperative behavior without worsening the situation of the other partners. However, these problems associated with a higher number of partners are not impossible to overcome. Although trust-based mechanisms are difficult to implement, they can be replaced by formal control mechanisms (Das & Teng, 2001). In fact, previous research shows that joint ventures are increasingly used as the number of partners rises. Thus, if a good governance mechanism can be implemented, the alliance, however complex, may still achieve its objectives. In fact, not all multiparty alliances are equally unstable. Hwang and Burgers (1997) show four different contexts for multiparty alliances. In two of them firms are able to achieve equilibrium: when there are monitoring mechanisms and when there is a winner-takes-all situation, as happens in the cases of competition between standards. We can see that in fact, the number of partners has a positive influence in the second case.

Alliances between competitors have been traditionally viewed as learning races (Hamel, 1991; Khanna et al., 1998). Many studies have shown how learning opportunities drive

alliances to a vicious circle situation (Hamel, 1991). In fact, direct competition introduces an important problem associated with the management of the alliance: it is easier to learn from the partners and to take advantage of these learning opportunities. In addition, once the new knowledge has been assimilated, the resources contributed by the partner are less necessary. Alliances between competitors should solve this problem in order to achieve their goals. Kale et al. (2000) show the importance of what they call alliance capabilities, that is to say, the ability to develop conflict resolution mechanisms or build relational capital. By developing these capabilities, firms are able to learn while protecting their own resources and turning a vicious circle into a virtuous one, as Doz (1996) has shown. The development of these capabilities is more important in those alliances, which are meant to exploit complementary knowledge between partners than in those ones designed to pool similar resources in order to achieve a critical mass. As multiparty alliances are aimed at achieving a critical mass, learning opportunities are less important in such cases. In addition, the advantages of multiparty alliances are more difficult for each individual partner to replicate. As a result of all this, the incentives to leave the alliance and to behave in a non-cooperative way decrease when the number of partners augments. The conflicts of interests associated with direct competition can, therefore, be overcome by multiparty alliances.

Our results show that the stock market preference for multiparty alliances between competitors can be explained by the presence of partners from different countries. Thus, co-opting more competing partners from different countries raises the performance expectations of the alliance, whilst having several competing partners form the same country reduces such expectations. This result can be explained if we take into account the current environment. In the current era of alliance capitalism, firms become global not only through organic growth or mergers and acquisitions but also through strategic alliances (Dunning, 1995; Ohmae, 1989). In this context, multiparty intra-industry alliances are a valuable means by which firms may complete their international networks (Nohria & García-Pont, 1991; Porter & Fuller, 1986). This type of alliances can generate higher performance expectations among investors when they include partners from different countries, as participating firms can quickly expand their geographical scope. In addition, alliances with no redundancies in partners' nationalities are also easy to organize, as partners may divide activities among them on a country basis. This division of work has the advantage of reducing the incentive problems that could arise when firms work jointly.

An alternative explanation for our results regarding the positive valuation of multiparty alliances created by competing firms could be elaborated by taking into account the anticompetitive effect of multiparty agreements. Firms forming multiparty alliances may profit from implicit collusive agreements between the partners reached while negotiating and managing the alliance. In this case, the positive reaction of the stock market could be explained not only by the synergies associated with the cooperative project, but also by the collusion which may stem from the coordinated behavior agreed upon within the alliance. An important limitation of our study is that we cannot calculate which part of the abnormal returns is attributable to the synergies of the alliance and which may be attributed to the increases in market power by the partners. Nevertheless, by making a more detailed analysis of our results and our data we can shed some light on this debate. One interesting result in this regard is that domestic collusion, at least in the telecommunications industry, is not rewarded by the stock market. Our results show that allying with more partners from the same country—even if they are competitors and

thus having more chances to collude with vis-à-vis rivals in that country—reduces abnormal returns, as the results of the PARTNERS PER COUNTRY variable in all the models in Table 6. The stock market does not seem to value increases in market power stemming from multiparty domestic alliances. However, the positive effect on abnormal returns of the number of partner nationalities involved could be explained by the fact that these partners may effectively reduce their rivalry in the international arena. In fact, Nohria and García-Pont (1991), Gomes-Casseres (1996) and García-Pont and Nohria (2002) show that in global industries firms are forming multiparty alliances in order to be able to compete at a global scale. However, although firms forming these alliances reduce their rivalry, they compete fiercely against other alliance networks (Gomes-Casseres, 1996). In addition it is worthy of note that Bonardi's (2004) results show that the formation of global alliances in regulated industries cannot be explained only by market power explanations. Thus, the anticompetitive impact of multiparty international alliances in global industries is not clear.

With the aim of refining our estimations in order to identify contexts in which inter-industry multiparty alliances can lead to anticompetitive effects, we also re-estimated our models analyzing not only the interaction between the number of partners and intra-industry alliances, but also the interaction between the number of partners and alliances involving other firms from the value chain. To do so we include the variable VERTICAL INTEGRATION in our models, a dummy variable which takes value 1 when the alliance is formed only by telecom firms and firms located forward or backward in their value chain, and 0 otherwise. In order to see if there was an interaction effect between this variable and the number of partners involved in the alliance, we also introduced the VERTICAL INTEGRATION × PARTNERS variable into the new regression models. We assumed that the higher the number of partners in these alliances, the higher the partners' chances of reaching vertical collusive agreements. Thus, if the stock market is valuing multiparty alliances between competitors positively because of its anticompetitive effect, it should also value positively multiparty alliances between telecommunications operators and other firms in their value chain for their vertical collusive impact. The results of these new estimations are not shown in the paper in order to meet the editorial constraints of the journal regarding the length of our paper, but are available from the authors upon request. The results of these estimations regarding the initial variables in our models remain unchanged and there were no significant effects of variables VERTICAL INTEGRATION and VERTICAL INTEGRATION × PARTNERS on the abnormal returns. These results show that the number of partners did not have a different effect upon the valuation of alliances involving other firms from the value chain than that observable in other cross-industry alliances. Thus, increases in the number of partners only have a positive effect in intra-industry alliances and not in all alliances having a potential anticompetitive effect. Summing up, although our method cannot isolate the stock market valuation of alliances' synergies from the valuation of their anticompetitive effect, our results are not supportive of the idea that the impact of multiparty alliances on abnormal returns may be explained only by expected gains from collusion.

Our results need to be analyzed in the context of the industry to which all of the firms in our sample belong. All of our alliances were formed at least by one European telecom operator. Firms in the telecom industry have suffered important environmental changes such as the technological development related to mobile communications and Internet as well as market deregulation, especially inside the European Union (Trillas, 2002). The new

situation has forced companies to adapt quickly by means of gaining access to new resources which seemed to be more relevant under the new environment, mostly through alliances (Ohmae, 1989). This is an advantage for the purposes of our study, since we have a sufficient amount of information within the same industry. Nevertheless, some of our results could be biased by our sample. For instance, multiparty alliances may be valued favorably by the stock market in view of the high fixed costs of this industry. In addition, international multiparty alliances may be the preferred means of external growth due to the network and regulated nature of this industry. Bonardi (2004) shows that truly global strategies are difficult to implement in regulated industries, at least through FDIs, as the opportunities to enter into a foreign country depend on political decisions regarding privatizations and deregulation. In effect, entering in a foreign country through an FDI is only possible when the industry has been deregulated, and the timing of this process is dependent on political decisions over which foreign firms can have but little influence. Thus, telecom firms willing to expand abroad have less strategic options than other MNEs in order to develop their international strategy (Sarkar et al., 1999). Within this context, international alliances are especially valuable as they are the only entry mode that allows telecommunications firms to be proactive and to expand abroad without having to wait for liberalizations or privatizations, as they can be formed without having to take an equity position in a foreign telecommunications operator. Our results would seem to show that, by rewarding multiparty alliances involving telecom partners from different nations, investors are showing a preference for the only type of alliance allowing telecommunications companies to pursue a global strategy. International alliances involving partners from different countries are especially interesting in this industry as they allow not only a quick and proactive internationalization but also greater synergies between the telecommunication networks of the partners. Sarkar et al. (1999) show that gaining access to complementary international networks is critical for telecommunication firms to optimize traffic handling. Thus, the main implication for the management of telecommunication firms is that firms should be proactive in their internationalization process and when allying with other telecommunication firms, the more the merrier … but only provided the partners come from different countries or, at least, only an optimization of the telecommunications network of the company is allowed.

Some interesting insights emerge from this paper that may be helpful for practitioners, even outside the telecommunications industry. Our results show that investors value expectations of rapid growth in the international arena. Specifically, these expectations are higher when firms ally with competing firms from different countries. Multiparty intra-industry alliances are thus a valuable tool to complete the firm's international network. This type of alliances may be especially useful for those firms with low levels of internationalization and with the need to expand their international scope quickly.

Although we believe that our study provides useful insights for the investigation of the impact of the number of partners and of direct competition on alliance outcomes, some characteristics of our study could limit indiscriminate, widespread extrapolation of our conclusions. First of all, we only analyzed one side of stock market reaction: EU partners operating in the telecom industry, only obtaining certain relevant information for these partners. As some of the partners of these firms were not listed firms, we focused our attention on the EU telecom firms, so as not to reduce our sample size. However, this did not permit us to introduce certain controls which would have been interesting, such as the relative size of the partners. Secondly, the results may be influenced by the particular

characteristics of our sample: all the alliances collected in the database were made up of European telecom operators. Obviously, results could not be applicable to other industries. It therefore seems that further research based on data from other industries and other countries is needed in order to reach conclusions which may be generalized to all alliances, irrespective of the industry or the home country of the investing firm.

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