Stock Market Response to Acquisitions and Alliances in the European Telecom Industry: An Information Asymmetry Perspective

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This paper investigates two kinds of strategic combinations carried out by the European telecom operators between 1986 and 2001: acquisitions, on the one hand, and strategic alliances, on the other. The aim of the paper is twofold. First, it analyzes the behavior adopted by these companies to adapt to an environment that, after the processes of globalization and privatization presents a clearly different structure. Second, it focuses on the effect that internationalization and diversification could exert over the returns obtained by the European telecom firms involved in acquisitions and alliances, differentiating when such strategic combinations are more profitable for the shareholders of the firms that carry them out.

Keywords: Acquisitions, alliances, telecommunications industry, event study, Europe.

I. Introduction

In recent years, stock exchanges of several countries have been uneasy about the behavior of telecom operators' shares. Investors noticed that new business opportunities —but also threats—were stemming from this industry. These opportunities and threats came from three different, although related, facts. First, market globalization introduced new communication needs, which had to be exploited by telecom firms in order to maintain or increase their market share. Second, the privatization of companies and market deregulation clearly changed the rules of the game, and forced firms to carry out several operations so as to continue being competitive. Third, there were technological changes that obscured the borders between telecommunication services and other related industries, such as media or information processing.

These facts—globalization, deregulation, and technological change—provoked what was called a competitive shock in the telecom industry. In this new competitive setting, firms must engage in new strategies to maintain their competitive position. Under the conditions of the new environment, firms have usually required a broader set of strategic capabilities than the ones they have possessed, and they have had to determine how to acquire these further capabilities [1]. Some examples of these capabilities are access to telecom networks, specialist knowledge about new technologies, or the development of new management systems. Thus, access to new resources, for which there has been a highly inefficient market (firm-specific resources) has become a prime issue in every manager's mind. Among the strategic combinations (SCs) used to achieve this objective, mergers and acquisitions and strategic alliances have

been two of the most usual combinations [2], [3].

Both mechanisms have been widely studied from different research angles. These works have analyzed whether acquisitions and alliances increase the wealth of the shareholders of the firms that carry them out. They have also studied the factors that could affect the returns that these SCs could generate.[1] Among these factors, internationalization and diversification are characteristics of these processes whose impact on the returns obtained for acquisitions and alliances when firms try to achieve external growth is an issue which presents mixed empirical evidence. However, apart from [2] and [5], this kind of study has not been carried out in the telecom industry. While [5] analyzes the stock market reaction to the formation of acquisitions, [2] analyzes this reaction when firms become involved in alliances. Nevertheless, the selection between acquisitions and alliances when firms try to undertake external growth is an issue that has not been analyzed yet, at least in the telecom industry. Thus, a research opportunity presents itself, specifically, to analyze how diversification and internationalization affect the returns obtained by the firms that carry out acquisitions or alliances. This work attempts to fill this gap by analyzing mergers and acquisitions and strategic alliances[2] carried out by the European telecom companies between 1986 and 2001. It specifically focuses on situations in which such SCs allow firms to internationalize and/or diversify their activities.

This paper is organized as follows. In the next section, we develop a theoretical framework using arguments from the information asymmetry perspective. This framework analyzes the stock market response to the announcement of acquisitions and alliances carried out to expand firms' boundaries. Then, the data sources used to create a sample of acquisitions and alliances are identified. In the fourth section, we study whether different propensities to form acquisitions or alliances exist, depending on whether the intention is to internationalize or to diversify. Then the results of an event study are shown in order to determine the influence of internationalization and diversification on the share price of the companies expanding their boundaries. In the sixth section, the main conclusions of the paper are presented. Finally, the methodology used to carry out the event study is explained in the appendix.

II. Theoretical Framework

Many theories have been used to try to explain the stock market response to acquisitions and strategic alliances, as well as

to analyze how some factors related to the SCs could affect this response. In this section, we develop a theoretical framework to try to explain the stock market reaction to acquisitions and alliances carried out by firms in order to internationalize and/or diversify their activities. This theoretical framework is based on the information asymmetry perspective [7], [8].

From the viewpoint of information asymmetry, alliances are a means to protect those firms willing to gain access to external resources from adverse selection [9]. When the quality and the value of the resources that a firm needs are not well known and difficult to measure, the firm may fall into problems of adverse selection or a 'lemon' problem [7], because these kinds of resources are usually undervalued and firms owning the most valuable resources may not be willing to sell them.

To protect firms from this problem, they may use more flexible SCs that could be more easily terminated once the information asymmetry problem is overcome. One of the main differences between acquisitions and alliances is, precisely, the flexibility inherent in each SC. On the one hand, acquisitions are a high-commitment means of gaining access to external resources. First, the price to be paid is the value of the whole set of the assets of the target firm. Second, the level of difficulty involved in turning back to the initial situation is high [10]. Making strategic alliances, on the other hand, is a more flexible means of gaining access to external resources because there is no need to pay the market value of those external resources, and the alliance can be more easily dissolved [11]. Strategic alliances formed during a process of convergence between two markets are, in fact, real options which offer a firm protection against uncertainty by substantially reducing the amount of the investment and giving access to new learning opportunities [12], [13].

However, acquisitions offer some critical advantages over alliances when the managers of the bidding firm have enough information to correctly value the target firm. In these situations, there is no need to share ownership because the probability of falling into the problem of adverse selection is much lower. Moreover, an alliance would be less desirable because the partner may extract benefits that would otherwise accrue to the parent firm.[3] As [14] pointed out, firms usually have "desires for control," which may be more easily gained through acquisitions.

Consequently, when information asymmetry is high, the cost of a wrong decision is higher in the case of acquisitions than in the case of strategic alliances, and in both cases the firm can make use of the external resources of the target or partner. The flexibility associated with alliances, thus, should be more highly valued by the stock market in these situations. However, when this information asymmetry is low, the flexibility of

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1) See [4] for an overview.

2) Following [6], we define 'strategic alliance' as any kind of joint strategic decision made by two or more independent firms to coordinate part of their actions in order to achieve a shared goal.

3) For example, the partners may use the alliance to obtain proprietary information that could be used for their own benefit. We thank an anonymous reviewer for this comment.

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alliances is less valued by the stock market since the real value of the external resources can be easily calculated. In fact, previous works like [15], [16], or [17], among others, show that the stock market tends to value acquisitions that imply diversification of the activities of a firm negatively. In the case of alliances, many empirical works show that strategic alliances are negatively valued by the stock market the higher the similarity between partners' businesses is. This is the case argued in works like [18], [19], and [20], among others.

Taking all these arguments into account, we formulate the following hypotheses:

Hypothesis 1: Acquisitions will enjoy announcement period returns that are higher than alliance announcement period returns in low-information asymmetry settings.

Hypothesis 2: Alliances will enjoy announcement period returns that are higher than acquisition announcement period returns in high-information asymmetry settings.

III. Data Sources and Sample Selection

In order to analyze the behavior followed by firms wishing to adapt to a new competitive environment, as well as to test the previous hypotheses, we built a sample which included all acquisitions and strategic alliances carried out by telecommunication services providers located in the European Union between 1986 and 2001.

In order to build this sample, we carried out a search in the SDC database[4] for all the alliances signed by the telecommunication service providers located in the fifteen countries forming the European Union in 2001, as well as those mergers and acquisitions in which one of these firms was identified by SDC as the bidder. In order to be included in the final sample, each SC had to fit the following criteria:

a) The SIC code of the European firm involved was 4812 (wireless telecommunications) or 4813 (fixed telecommunications). Firms classified under the SIC 4899 (communications services, not elsewhere classified) and described in the SDC database under the field 'Acquiror Short Business Description' as providers of telecommunications services were also considered in the sample. This was the case with British Telecom and Mannesmann.

b) All SCs were completed.

Following these criteria, 643 acquisitions and 736 alliances were identified. Table 1 shows the businesses towards which

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4) The SDC database is the most reliable source for identifying mergers and acquisitions as well as strategic alliances worldwide, and has been widely used in the fields of strategy, management, and finance.

Table 1. Target businesses in the sample.

Business	Acquisitions	Alliances	Total
Telecom operators (fixed and wireless)	320	235	555
Telecom equipment manufacturing	21	110	131
Network development	0	47	47
Telecom equipment distribution	11	23	34
Contents (TV)	40	32	72
Publications (directories)	12	0	12
Hardware manufacturing	11	24	35
Communication software development	38	62	100
Internet service provider	97	97	194
Other businesses	93	106	199
Total	643	736	1379

firms expanded. Similarly, Table 2 shows the countries in which a firm entered through an acquisition or an alliance.

IV. Internationalization and Diversification through Acquisitions and Alliances

In this section we briefly describe the SCs carried out by the European telecom operators in order to internationalize, as well as to diversify their activities. The aim of this section is to identify the propensity of these firms to carry out acquisitions or alliances when they expand their boundaries. Moreover, we try to detect any difference between the propensity observed for the whole sample of SCs and the propensity observed for each kind of SC.

1. Internationalization

In order to classify each SC, we have considered three categories according to the nationality of the firms involved: domestic (all firms belong to the same country), European (all firms belong to the European Union), and non-EU (at least one firm comes from a country outside the European Union). We have differentiated between European and non-EU SCs for the following reasons. First, the introduction of the single currency in the European Union was perceived to be one of the key stepping-stones towards the creation of a truly integrated single financial market in Europe [21]. In fact, the single currency has improved market integration, which in turn means business reorganization has become more attractive, as it offers the potential to take advantage of new opportunities. Second, the

Table 2. Target countries in the sample.

Country	Acquisitions	Alliances	Total	Country	Acquisitions	Alliances	Total
Antilles	0	1	1	Japan	12	20	32
Argentina	9	2	11	Kazakhstan	0	1	1
Armenia	1	0	1	Lithuania	3	3	6
Australia	4	7	11	Luxemburg	2	2	4
Austria	22	2	24	Macao	0	1	1
Belarus	1	1	2	Malaysia	4	0	4
Belgium	10	5	15	Mauritius	1	0	1
Bermuda	0	1	1	Mexico	4	1	5
Bolivia	1	0	1	Moldova	0	2	2
Brasil	11	2	13	Morocco	0	1	1
Bulgaria	0	2	2	Netherlands	44	29	73
Calada	4	6	10	New Zealand	5	0	5
Chile	4	0	4	Norway	10	1	11
China	1	9	10	Panama	1	1	2
Colombia	1	0	1	Paraguay	2	0	2
Congo	0	1	1	Peru	1	0	1
Croatia	1	0	1	Philippines	3	3	6
Czech Republic	8	9	17	Poland	3	3	6
Denmark	11	4	15	Portugal	9	5	14
Dominican Republic	0	2	2	Puerto Rico	1	0	1
Ecuador	0	1	1	Romania	3	2	5
El Salvador	1	1	2	Russia	6	18	24
Estonia	1	1	2	Singapore	0	10	10
Finland	14	3	17	Slovakia	3	1	4
France	44	24	68	South Korea	1	1	2
Gabon	1	0	1	Spain	33	44	77
Germany	86	60	146	Sweden	16	7	23
Greece	5	3	8	Switzerland	14	1	15
Guatemala	1	0	1	Taiwan	0	1	1
Hong Kong	4	4	8	Tanzania	0	1	1
Hungary	15	4	19	Thailand	0	2	2
Iceland	1	0	1	Trinidad and Tobago	1	0	1
India	3	10	13	Ukraine	1	2	3
Indonesia	3	4	7	United Kingdom	89	105	194
Ireland	6	5	11	USA	37	115	152
Israel	6	6	12	Uzbekistan	0	1	1
Italy	48	53	101	Venezuela	2	0	2
Ivory Coast	1	1	2	Yugoslavia	1	0	1
Jamaica	2	0	2	Several Countries	0	118	118
Total:	**643 Acquisitions**		**736 Alliances**		**1379 Strategic combinations**		

integration of national economies and the increase in deregulation in a large number of economic sectors, including the telecommunications industry, has decreased the cost of transactions across European borders, thus facilitating the creation of the European single market. Both reasons have triggered many SCs carried out between firms belonging to the European Union.

As shown in Table 3, cross-border SCs are the most frequent (994 cross-border SCs versus 385 domestic ones). Among these cross-border SCs, those involving firms from outside the European Union are the most common (Approximately 70% of the cross-border SCs are of this kind.); however, considering that domestic SCs are a special case within the European category, the number of SCs inside and outside Europe is similar (691 and 688, respectively). Focusing on acquisitions and alliances separately, acquisitions are the preferred means to expand when the geographical scope is small (domestic and European SCs), whereas alliances are more common when firms expand their operations outside Europe.

Table 3 also shows the Chi-squared test, which allows us to detect whether the propensity to choose acquisitions or alliances in each geographic scope differs from the overall propensity observed for all the operations. These differences are especially noteworthy in the case of domestic and European SCs, in which acquisitions are more usual. In this table Haberman's adjusted standardized residuals [22] are also shown. As one of the variables included in this table has more than two categories, the Chi-squared test has some limitations in terms of the analysis of specific cells in the contingency table; however, adjusted standardized residuals allow us to identify pairs of categories in which differences between observed and expected (according to the overall propensity) frequencies are statistically significant.

Amongst the countries involved in SCs outside Europe, firms from the USA are the most common (32% approximately). This result is similar to those found by [23] and to the studies

Table 3. Geographical scope of the SCs.

	Acquisitions	Alliances	Total
Domestic	235 (6.6)	150 (-6.6)	385
Inside EU	201 (7.7)	102 (-7.7)	303
Outside EU	207 (-12.2)	434 (12.2)	691
Total	643	736	1379
Chi-squared: 151.219 (2 d.f.) (p<0.0001)			

Note. The numbers in parentheses are adjusted standardized residuals.

Table 4. Business scope of the SCs.

	Acquisitions	Alliances	Total
Same business (telecom)	321 (6.8)	233 (-6.8)	554
Diversification	322 (-6.8)	503 (6.8)	825
Total	643	736	1379
Chi-squared: 46.126 (2 d.f.) (p<0.0001)			

Note. The numbers in parentheses are adjusted standardized residuals.

revised by [24]. These studies show that most of the alliances formed by firms from the European Union are international, subscribed to with companies outside Europe and giving preference to American partners over Japanese ones.[5] In effect, the alliances in the sample involving Japanese partners represent less than a 4% of the total number of cases.

2. Diversification

Two categories of diversification are considered in order to study this phenomenon: same business (SCs inside the telecom industry, which do not imply diversification) and diversification (SCs outside the telecom industry). As shown in Table 4, the business scope of most of the SCs in the sample is not the telecom industry. However, while diversifying acquisitions are used in 39% of the cases (322 of 825 cases), the percentage of alliances that allow coordinating activities in businesses other than telecom is higher than 60% (503 of 825 cases).

As commented upon in section II, this fact can be explained by taking into account the fact that alliances are more flexible operations than acquisitions. In fact, acquisitions are more irreversible, as the integration of the firms involved supposes a global reorganization of resources. Additionally, in acquisitions, firms pay for all the resources of the target companies, whereas in alliances this does not happen. This kind of agreement is based on reciprocal access to certain resources—usually intangible— that can be shared at a very low marginal cost [25].

In SCs inside the telecom industry, the propensity of firms to choose acquisitions or alliances to expand is, to some extent, different from the general propensity observed for all the operations (alliances are the preferred means used). In this situation, acquisitions are more usual than alliances, this fact

5) Actually, this analysis must be treated with caution, as it does not prove that American partners are preferred over Japanese partners, because the number of Japanese firms is much lower than the number of American firms. It would be better to compare the ratio of American partners over the total number of American firms available to the ratio of Japanese partners over the total number of Japanese firms available, but we were not able to obtain this information. Our thanks to an anonymous reviewer for this comment.

Table 5. Number of events in the sample.

	Acquisitions			Alliances		
	Same business	Diversification	Total	Same business	Diversification	Total
Domestic	36 (-4.2)	68 (4.2)	104	14 (1.7)	70 (-1.7)	84
Inside EU	42 (0.1)	40 (-0.1)	82	7 (0.8)	39 (-0.8)	46
Outside EU	60 (4.4)	25 (-4.4)	85	22 (-2.0)	220 (2.0)	242
Total	138	133	271	43	329	372
Chi-squared	24.233 (2 d.f.) (p<0.0001)			4.188 (2 d.f.) (p<0.1235)		

Note. The numbers in parentheses are adjusted standardized residuals.

being statistically significant according to a Pearson's Chi-squared test. The theoretical framework presented earlier allows us to explain this fact. In SCs within the core business of the firm, it is easier to value the resources acquired, as these resources are similar to those that the firm already has [9]. Thus, the flexibility associated with alliances is not critical, as the probability of a mistake in the valuation of the resources is lower.

V. Stock Market Response to Acquisitions and Alliances

This section shows the results of an event study carried out with the cases of the initial sample 1,379 SCs which fit the criteria described in the appendix. The final sample includes 271 acquisitions and 372 alliances subscribed to by European telecom operators. Table 5 summarizes the studied cases, according to the geographical and diversifying groups defined in the sections above—domestic, European, and non-EU SCs, on the one hand, and same business and diversification SCs, on the other. Although the number of cases included in the final samples is lower, the propensities to form each kind of SC do not significantly differ from those presented in the previous section.

Regarding the samples studied, average abnormal returns were accumulated during the three natural days before and after the SC announcement. This period was the widest window in which the non-contamination of the event could be guaranteed. Tables 6 and 7 present the results for the acquisitions and alliances subsamples respectively. In each quadrant, the average cumulative abnormal returns, the percentage of cases with positive abnormal returns, and the total number of events can be observed. Taken as a whole, our results confirm the main predictions of our theoretical framework.

In acquisitions, bidders obtained negative abnormal returns on average when carrying out this type of SC. This result is

Table 6. Average abnormal returns (acquisitions).

	Same business	Diversification	Total
Domestic	0.01%	-0.81% *	-0.53% *
	47.2%	45.6%	46.2%
	36	68	104
Inside EU	2.26% *	-0.89% **	0.72%
	57.1%	30.0%	43.9%
	42	40	82
Outside EU	-0.20%	-3.05% ***	-1.04% *
	43.3%	24.0%	37.6%
	60	25	85
Total	0.60%	-1.26% ***	-0.31%**
	48.6%	36.8%	42.8%
	138	133	271

Notes. 1. Each quadrant shows the average accumulated abnormal returns, the percentage of cases with a positive abnormal return, and the number of events studied.
2. * p < 0.1   ** p < 0.05   *** p<0.01

consistent with previous works, especially in finance literature. Works like [26]-[30], among others, present similar results. However, in the case of the alliances, although in all intervals returns obtained were on average negative, these abnormal returns were not statistically significant.

As for the percentage of positive events, we observed that between 24% and 64% of the firms in both samples obtained positive abnormal returns. These high percentages showed that strategic alliances and acquisitions were sometimes beneficial and sometimes disadvantageous for firms.

Our first hypothesis is confirmed. Average abnormal returns for acquisitions are consistently higher than average abnormal returns for alliances when the SC involves firms from the same

(telecom) industry.[6] Moreover, in the lowest information asymmetry setting (SCs with telecom operators from the European Union), acquisitions obtain, on average, the highest abnormal returns, while alliances obtain average abnormal returns that do not statistically differ from zero.

Our second hypothesis is also confirmed. Average abnormal returns for alliances are consistently higher than average abnormal returns for acquisitions in diversifying SCs. Moreover, in the highest information asymmetry setting (diversifying SCs with firms outside the European Union), acquisitions obtain, on average, the lowest abnormal returns (–3.05%), while alliances obtain average abnormal returns of –0.44%.

Table 7. Average abnormal returns (alliances).

	Same business	Diversification	Total
Domestic	-0.75%	-0.25%	-0.33%
	64.3%	47.1%	50.0%
	14	70	84
Inside EU	0.09%	1.26% *	1.08% *
	57.1%	51.3%	52.2%
	7	39	46
Outside EU	-2.40% *	-0.44% *	-0.62% **
	36.4%	44.5%	43.8%
	22	220	242
Total	-1.46%	-0.20%	-0.34%
	48.8%	45.9%	46.2%
	43	329	372

Notes. 1. Each quadrant shows the average accumulated abnormal returns, the percentage of cases with a positive abnormal return, and the number of events studied.
2. $* p < 0.1$ $** p < 0.05$ $*** p < 0.01$

VI. Discussion and Conclusions

This paper analyses mergers and acquisitions and strategic alliances carried out by the European telecom companies between 1986 and 2001. Our attention is focused on situations in which such SCs allow firms to internationalize and/or diversify their activities. Specifically, the value creation or

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6) We used the T-test for the significance of the difference between the means of two independent samples, so as to compare whether the cell-by-cell differences are statistically significant between tables 6 and 7. This test showed that every difference between the average abnormal returns of acquisitions and alliances is statistically significant. For example, 2.26% abnormal returns obtained in acquisitions of telecom operators inside the European Union is statistically different from 0.09% abnormal returns of alliances of this kind. The results of these tests are available upon request.

destruction of these SCs is analyzed. Although there is a vast literature dealing with the stock market reaction to SCs aimed at expanding firm boundaries, internationalization and diversification are characteristics of expansion for which there is mixed empirical evidence as regards their impact on the returns generated.

Our main predictions were the following: a) that acquisitions generally enjoy higher announcement period returns than alliances when the uncertainty about the real value of the resources of the target/partner firms is higher; and b) that alliances generally enjoy higher announcement period returns than acquisitions when this uncertainty is lower. We based our hypotheses on two premises, in accordance with the information asymmetry perspective: first, that the commitment associated with acquisitions is more highly valued by the stock market when uncertainty about the real value of the resources acquired is lower; second, that flexibility of strategic alliances is more highly valued by the stock market when this uncertainty is higher. Our predictions were confirmed by an event study, which analyzed the abnormal returns associated with SCs carried out by European telecom firms. As discussed below, the overall pattern of results provided insights regarding the importance of the right choice between acquisitions and alliances when firms face problems of information asymmetry in valuing the resources that they need to acquire, as this choice clearly affects the stock market valuation of SCs.

Our results regarding asymmetric information related to the real value of the target/partner's resources support the two hypotheses of this work. On the one hand, when firms carry out SCs with direct competitors, the commitment associated with acquisitions is not a problem because it is easier for the firm to know the real value of the target's resources, as these resources are similar to its own resources [9]. Moreover, acquisitions of international competitors allow firms to exploit scale as well as network economies derived from the higher geographic scope and the possibility of attending more efficiently to international customers. Therefore geographic complementarity of the firms involved in the acquisitions, as well as low information asymmetry about the value of the competitor's resources, could benefit the firms carrying out the acquisitions.

Within the industry studied in this paper, network effects [31], [32] are particularly relevant. The globalization of markets has resulted in a strong demand for better and less costly communication services [33]. Recognition of these new needs has prompted telecom operators to undergo several changes. Essentially, this industry has suffered a fundamental shift from an engineering-dominated sector to one that is commercially oriented [34]. Now, the services provided to customers may determine which firms are better competitors and, consequently, which ones have a competitive advantage. Taking this into

account, joining the networks of two firms from different countries generates network effects, as it allows them to give a better service to their international, customers [35]. However, networks must be interconnected, and the highest network economies arise when they are geographically adjacent [36] because there are more cross-country opportunities. Thus, when the target firm in an acquisition belongs to a distant country, lower network economies exist.

In particular, the market globalization and the privatization of telecom firms in Europe have been occurring in recent years [3]. Therefore, in the European market, connecting the networks of telecom operators in the European Union could generate important advantages to the firms involved.

On the other hand, when firms carry out SCs outside their core business, they have to face higher levels of uncertainty about the real value of the resources involved in an SC. Valuation of resources is more difficult due to bounded rationality [37], as these resources are dissimilar [38]. Moreover, there are fewer network effects associated with such SCs, as these SCs presumably do not join communication networks.

Thus, when firms try to accede to complementary resources via diversifying SCs, the commitment associated with acquisitions [39] becomes more hazardous, as the risk of placing a wrong valuation on the acquired resources is higher. However, the flexibility associated with alliances allows the problems of a wrong valuation to be avoided, as it is easier and less costly to opt out of the deal.

Another difference between acquisitions and alliances is that the former could be more strongly affected by digestibility problems [40].[7] In fact, through acquisitions, firms could buy more resources than they really need. Firms could be paying the market value of resources that could be difficult to use or even to resell. SCs outside the core business of the firms imply a greater risk due to the lower level of knowledge firms have about the necessary resources to compete and/or the lack of these resources. Besides, acquired resources could be heterogeneous and difficult to integrate with those already owned by firms. For this reason, less risky SCs and those with less digestibility problems would be more attractive for firms entering into other businesses. This fact explains why alliances are more usual when firms try to go beyond their core businesses' limits.

Summing up, basing our argument on the information asymmetry perspective, the main conclusions of the study are as follows:

a) Acquisitions will enjoy announcement period returns that are higher than alliance announcement period returns in low-information asymmetry settings.

b) Alliances will enjoy announcement period returns that are higher than acquisition announcement period returns in high-information asymmetry settings.

The contribution of this paper is a detailed analysis of the stock market reaction to acquisitions and alliances when a firm uses these SCs to undertake external growth. As we have shown, reactions depend on the geographical and business scope of the SC; therefore, firms must pay special attention to these factors in order to choose the SC with the potential of being most highly valued by the stock market.

Certain limitations in the study must be taken into account when analyzing our results. First, the results may be influenced by the particular characteristics of our sample: All of the acquisitions and alliances collected in the database were made by European telecom operators. Obviously, results may not apply to other industries. Nevertheless, the findings may shed light on the choice between acquisitions and alliances for those firms belonging to industries which have suffered a critical change in their environment. For instance, results may be especially relevant for banking and utilities industries, among others. Another limitation is that, for the sake of simplicity, we did not consider any control variable in the study. However, we did run multiple linear regression models considering control variables that generally support the results of the paper. These models are available upon request.

It seems, therefore, that further research using data from other industries and other countries is needed in order to reach conclusions which can be generalized to all acquisitions and alliances, irrespective of the investing firm's industry or home country.

Appendix

Standard event study methodology was used to measure the abnormal returns generated by acquisitions and alliances. The aim of this methodology is to determine the effect upon the stock prices of firms which announce certain relevant events. This reaction is calculated following Brown and Warner's procedure [41]. Abnormal returns are defined as the difference between actual returns and those returns normally expected according to any model of valuation of risk-prone financial assets. The expression used to calculate these abnormal returns is:

$$RA_{kt} = R_{kt} - \widetilde{R}_{kt} , \qquad (1)$$

where RA_{kt} is the residual, abnormal, or excess return of share k in day t; R_{kt} is the real return obtained by share k in day t, once corrected by dividend payments as well as by seasoned equity offerings or stock reductions; and $\widetilde{R}_{kt}$ is the expected return of

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7) As [40] pointed out, digestibility problems may arise when the assets that are desirable could not be disentangled from the non-desired assets.

share k in day t, calculated following the market model of [42].

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. The twenty days prior to the announcement were excluded 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 under valuation of the abnormal returns, since the effect of the announcement would have partially been incorporated in the expected returns.

Abnormal returns were calculated following (1) for all of the days in the event window. The cumulated abnormal returns were obtained by aggregating the abnormal returns of the days in which there is a high stock market reaction.

Event study methodology was used in the initial sample of 643 acquisitions and 736 alliances, although because of the methodology used, each SC 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 Thomson Financial DataStream[8] database.

b) The precise date of the alliance announcement could be identified in the Lexis-Nexis database.[9]

c) No major confounding announcement that could contaminate the effect of the studied event was made within a ± 5-day period around the announcement day.

Following [45], all those observations in which there was further news concerning capital operations; declaration of dividends; contracts with the State; acquisitions or 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 events which did not fit these criteria, the final sample used in the third section of this work was formed by 372 alliances and 271 acquisitions carried out by European telecom companies.

Acknowledgement

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8) This database contains, among other data, the stock prices of all the companies publicly traded in all the major European stock exchanges. For our study, the relevant data of this database is the Total Return Index, which reflects the variation in the stock price of each company in relation to a specific date. This index is already prepared to conduct event studies and is corrected for dividend payments and equity operations. Therefore, this information is very useful in order to develop an event study.

9) References [43] and [44], among others, have showed that the announcement date that appears in SDC does not always coincide with the first day of announcement of an acquisition or alliance. The exact measure of this date is crucial for an event study, so every announcement date was verified through systematic searches in Lexis-Nexis database.

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