

**RESOURCE DEPENDENCE AND BALANCING OPERATIONS IN ALLIANCES:**

**THE ROLE OF MARKET REDEFINITION STRATEGIES**

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**Abstract**

This article studies how market redefinition strategies can contribute to the balancing of bargaining power in alliances. Relying on resource dependence theory, we study the causes of disproportionate power in alliances and describe various balancing operations that can be implemented to reduce dependence. In previous contributions, the existence of alternative sources for these resources was given exogenously, such that the set of balancing operations was rather limited. Implementing a multiple case study on air-rail intermodal strategies, we stress on the possibility for a firm to pro-actively design its market boundaries in order to look for new substitutes. These market redefinition strategies reduce the dependence upon the powerful partner and offer new strategic options in terms of partnership for the focal firm. In addition, we also observe that firms can implement processes in order to increase the quality of the substitution offered by these new substitutes. We draw several theoretical and managerial implications concerning the role of market redefinition strategies in alliance development.

## **Introduction**

As a firm grows, it needs more resources (Lewis & Churchill, 1983; McKelvie & Wiklund, 2010) to deal with the requirements of each stage of its life cycle. However, a firm can't possess all the resources needed (Penrose, 1959; Rumelt, 1984) and may rely on alliances to access critical resources (Das & Teng, 2000; Dyer & Singh, 1998). This resource-based view of alliances can be completed by a resource dependence view (Pfeffer & Salancik, 1978). Within this framework, resource dependent firms try to manage their access to resources in an uncertain environment. Alliances are then a way to reduce their uncertain resource access by absorbing these constraints (Hillman et al., 2009). However when an alliance is created, new issues may emerge such as the management of the bargaining power between partners (Emerson, 1962; Huxham & Beech, 2008; Yan & Gray, 1994). Indeed, if one of the partners has too much power, it will try to keep most of the value created within the alliance (Cook et al., 1983; Cox et al., 2000). In addition, when one of the partners is not easily substitutable (Bae & Gargiulo, 2004; Xia, 2011), the power imbalance is accentuated, increasing the likelihood of an hold-up by the most powerful one (Klein et al., 1978). Considering the danger of a powerful partner, it is crucial to understand how a firm can reduce its dependence upon a partner by developing new forms of balancing operations (Emerson, 1962).

Building on the resource dependence theory (RDT) literature (Hillman et al., 2009; Pfeffer & Salancik, 1978; Pfeffer, 2005), we study the issue of power in alliances (Casciaro & Piskorski, 2005; Xia, 2011). The RDT is a particularly relevant framework since it integrates the concept of power (throughout dependence upon a partner) to study relations between actors and not only for alliances (Huxham & Beech, 2008). Considering the specific case of alliances, this power imbalance can come from a unique position in the alliance network (Cook et al., 1983; Gnyawali & Madhavan, 2001; Polidoro et al., 2011), from a specific access to critical resources

(Medcof, 2001) or from the low strategic importance of the alliance for one of the partners (Inkpen & Beamish, 1997). Whatever the source of power imbalance, the more powerful partner usually extracts more value from the partnership at the expense of the weaker (Friedkin, 1986). To avoid this situation, the weaker firm can implement a set of actions reducing the power imbalance. Applied to alliances, these balancing operations (Emerson, 1962) can involve using a third party to moderate the threat of the powerful partner (Bae & Gargiulo, 2004) or finding other partners to access these resources (Xia, 2011). In fact, the RDT view of alliances is very agential since it poses that a firm can manage power in its alliance portfolio (Huxham & Beech, 2008). We investigate new possibilities of actions to reduce the dependence upon a partner (and consequently its power).

Recent contributions have stressed on the central role of substitutability of partners on the instability of alliances (Greve et al., 2013; Xia, 2011). The presence of outside options clearly impacts the relations between partners as they consider the possibility of partnering with other firms if the alliance fails. However, most articles adopt a narrow vision of substitutes by remaining within the same market. The market and the firms in it are thus exogenously given to the focal firm which has no choice else than working with them. This is in contradiction with various contributions considering that firms can pro-actively define their market (Geroski, 1998; Kim & Mauborgne, 2005; Santos & Eisenhardt, 2009). By redefining its market boundaries, a firm can increase the substitutability of its partners and consequently reduce their bargaining power. In fact as it contributes to the convergence of markets (Hacklin et al., 2009; Pennings & Puranam, 2001), the firm reduces its dependence upon its powerful partners and finds more profitable ways to access critical resources. We implement an inductive analysis (Thomas, 2006) to understand how market redefinitions and bargaining power of partners are related. We conduct this work by studying air-rail intermodal strategies, i.e. alliances in which an airline

cooperates with a rail operator to access cities it can't serve alone (for legal or economic reasons). Focusing on the French market, we observe that these alliances have been created in order to bypass the national airline whose power is too strong. By redefining the boundaries of their markets, these airlines have increased the number of outside options in order to select the most profitable one. These market redefinition strategies are clearly designed in order to reduce the dependence upon a powerful partner. In addition, we also observe that firms can implement processes in order to increase the quality of the substitution offered by these new substitutes. Contrary to previous contributions that have focused on the importance of substitutability on alliance survival (Xia, 2011) or alliance withdrawal (Greve et al., 2013), we study power issues when entering an alliance and, therefore, when particular attention is paid to the bargaining power that shapes the negotiation of new deal.

This research is structured as follows. First, we begin by reviewing the existing literature on power in alliances and on market redefinition strategies. We then detail our methods and introduce the empirical setting of the research. In a third part, we present our main findings and details the ins and outs of these market redefinition strategies. In the following part, we draw theoretical propositions from the case while putting these results in perspective. Finally, in the last part, we conclude and propose directions for future research.

## **Theoretical background**

To study how resource dependent firms can implement market redefinition strategies to reduce power imbalance, we have to position ourselves in the existing literature. We draw from three different approaches. First, we justify the use of alliances by firms using the RDT. In a second time, we try to understand how power can emerge in alliances and describe solutions offered to

balance it. Finally, we address the issue of market redefinitions as strategies implemented by firms.

### ***Resource dependence and alliances***

The main idea of the Resource Dependence Theory has been to understand the behavior of an organization by replacing it in its environment (Pfeffer & Salancik, 1978). According to them, a firm's behavior is essentially affected by the way it accesses the critical resources it needs in its environment. In fact, the concept of power plays a crucial role in the RDT, since having control over strategic resources is essential (Ulrich & Barney, 1984). Firms try to reduce other's power over them, while increasing their own power over others (Hillman et al., 2009). This new vision of firms poses that firms are not autonomous entities, and are consequently highly interdependent. This interdependence creates uncertainty for the firm that has to manage it by different actions. To reduce this resource dependence, the firm can absorb this constraint by creating either mergers or alliances (Haleblian et al., 2009). Following Gulati (1998), we define an alliance as a voluntary arrangement between firms involving exchange, sharing, or codevelopment of products, technologies, or services. Empirically, Park and Mezas (2005) found that alliances formed in period of low munificence (i.e. few resources available in the environment) were characterized by higher stock market reactions, confirming the idea that alliances are a way to get control over scarce resources.

However, this notion of resource interdependence is too vague because it combines different dimensions that need to be distinguished (Casciaro & Piskorski, 2005; Gulati & Sytch, 2007). This ambiguity comes from the symmetry implied by the notion of resource interdependence which is rarely true. In fact, in most dyadic relations, one of the actors is more powerful than the other one. Casciaro & Piskorski (2005) suggested distinguishing two

dimensions of resource interdependence: power imbalance and mutual dependence. Power imbalance evaluates the difference in the power of each actor over the other. It can be measured as the difference or the ratio between the two dependencies (Lawler & Yoon, 1996). In parallel, mutual dependence is a way to assess the existence of bilateral dependencies in the dyad. It can be calculated as the sum or the average of actors' dependence upon the other ones (Bacharach & Lawler, 1981). This distinction is central because it changes the predictions of the RDT. Casciaro & Piskorski (2005) highlighted that the higher the power imbalance in a dyad the lower the likelihood of creating an alliance. Indeed, the more powerful partner has no incentive to create an alliance with the weak one because it would mean relinquishing its power and favorable conditions it can get. On the contrary, when mutual dependence is high, both firms have a strong incentive to cooperate as they have very few outside options. Based on these results, we clearly see that power plays a central role in alliance formation. More precisely, we observe that power imbalance is crucial in explaining alliance dynamics.

### ***Power imbalance and balancing operations***

Until the 1960s, there was not any real formalization of power. Almost everybody agreed on Weber's definition of power as the ability of an actor to realize his will even against the will of other actors. This vision of power was problematic since it implied that an actor is powerful without considering the context. In his seminal contribution, Emerson (1962:32) noted that "power is a property of a social relation; it is not an attribute of an actor". Consequently, an actor  $i$  is not powerful; it has power over another actor (actor  $j$ ). The power of actor  $i$  over actor  $j$  ( $P_{ij}$ ) can then be defined as the amount of resistance on the part of  $j$  that can be potentially overcome by  $i$ . In fact, the power implicitly resides in the other's dependence: the more dependent the partner is, the more power the focal firm has over the partner. The dependence of actor  $i$  upon

actor  $j$  ( $D_{ij}$ ) is (1) directly proportional to  $i$ 's needs for resources that are mediated by  $j$  and (2) inversely proportional to the number of alternative actors able to provide the same resources to  $i$ . Emerson (1962) linked power and dependence with the following equation:  $P_{ij}=D_{ji}$ . If we apply these definitions of power to resources, we can say that actor  $i$  has power over  $j$  implies that (1) actor  $j$  needs actor  $i$  to realize its objectives and (2) actor  $j$  has a privileged access to resources that are critical for actor  $j$ .

As observed by Huxham & Beech (2008), the question of power in inter-organizational relationships has always been associated to the idea of imbalance. The difference in terms of power (i.e. dependence) between two actors is central to explain alliance dynamics. Considering that power imbalance can be harmful, Emerson (1962) defined a set of balancing operations. A first option consists in reducing the cost of the relationship by reducing the resistance that can be overcome. By adjusting its goals towards the ones of the powerful partner, the weaker firm suffers less from the power that may be exerted. A second option involves reducing the importance of goals that can be mediated by the powerful actor. In this case, the weaker firm diminishes the likelihood of a hostile intervention by the stronger firm. Finally, the third option is to cultivate alternative sources to reach the objective (for instance by cooperating with other firms having access to the same critical resources) in order to make the powerful partner less essential.

Applied to alliances, these balancing operations involve different solutions such as using a third party to moderate the threat of the powerful partner (Bae & Gargiulo, 2004) or finding other partners to access these resources (Xia, 2011). The common idea behind these contributions is to change the structure of the alliance network in order to reduce the bargaining power of brokers (Burt, 1992; Ryall & Sorenson, 2007). These actions consist in reducing the centrality of the powerful partner either in the strategy or in the network of the focal firm. If these balancing

operations are rather useful, they remain in a traditional scope: the firm can avoid or bypass a partner, but always within the same market. Other options could thus be investigated such as redefining its market.

### ***Redefinition of market boundaries***

Alliances have always been related to the question of market redefinition. In fact, one of the first justifications for alliance creation was to enter new markets (Kogut, 1988; Dussauge & Garrette, 1999), especially international ones (Pan & Tse, 2000; Tse et al., 1997). Historically, markets have been seen as an exogenous element of the environment in which the firm was evolving. The structure and the characteristics of the market were given to the firm whose conduct was rather pre-determined (Porter, 1980).

In the 1990s, a new vision of markets emerged with the idea that strategy was not necessarily passive but could result from an original vision of the market (Hamel & Prahalad, 1994). According to this new approach, firms can impact pro-actively their environment by changing the rules of the industry (Kim & Mauborgne, 2005; Roy, 2009). This modeling role of the firm is even stronger when the market is relatively new and undefined (Santos & Eisenhardt, 2009). The reality might be a bit more subtle as firms may structure their environment while being affected by it (Geroski, 1998). The structure of the market is the result of these interactions as firms, by their actions, contribute to the emergence and the strengthening of specific market boundaries (Depeyre & Dumez, 2008).

Alliances are among the actions implemented by firms to structure their market. They are particularly relevant when the market is emergent as they allows the first entrepreneurs to position their market vis-à-vis the other ones (Ozcan & Eisenhardt, 2009). By creating alliances or bundles of products, firms can combine neighboring markets and blur the existing boundaries

(Bauer, 2005; Chiambaretto & Dumez, 2012). These strategies contribute to the convergence of existing markets and give opportunities to change the rules on the markets (Hacklin et al., 2009; Lind, 2005; Pennings & Puranam, 2001). In fact, inter-industry alliances not only change the rules of the market, but they also aim at improving the competitive position of the firm within its new reference market.

Combining these different insights, we observe that most solutions to reduce power imbalance within alliances remained within the same market. This traditional vision maintains the market or the network as elements exogenously given. In parallel, we described the emergence of a new literature considering that markets can be actively designed by firms. Drawing from these proactive strategies, we aim at seeing how market redefinition strategies can be used to implement balancing operations.

## **Research methods**

### ***Research design and empirical setting***

To analyze how market redefinition strategies can improve the balance of alliances, we implemented an inductive multiple case study (Yin, 2009). This inductive approach is particularly relevant to study an emergent phenomenon such as market redefinition strategies (Glaser & Strauss, 1967; Eisenhardt, 1989). This method is ideal to answer questions such as “how”, “what” or “why”, which is the case here. In fact, the primary purpose of this inductive analysis is to allow research findings to emerge from frequent and significant themes present in raw data (Thomas, 2006). The repetition of certain themes allows the researcher to give a central role to them in the elaboration of a new theory. However, we must remain careful concerning the external validity of our results by keeping them in their context (DeRose, 1992; Yin, 2012).

To study these market redefinition strategies, we looked for markets that were converging, that is to say markets whose boundaries were getting blurred (Choi & Valikangas, 2001). This convergence should be explained from different drivers such as technology and actors' strategies (Hacklin et al., 2009). In addition, in order to link these market redefinition strategies to alliances, we should also observe cross-industry strategies such as alliances (Stieglitz, 2003). Two converging markets were meeting all the criteria required: the air and rail transport industries in Europe. Over the last twenty years, the development of the high-speed train (HST) has been intensive in Europe (Givoni, 2006). With an increased speed, the train turned out to be a reliable alternative to planes for short distances (below 800km) and competition between the two modes became fierce (Ivaldi & Vibes, 2008). The convergence of the markets from the customers' point of view became official as legal cases clearly posed that air and rail transport modes belong now to the same relevant market (Chiambaretto & Decker, 2012). Beyond this competitive view, some authors have noted the emergence of cooperative strategies between airline and rail operators (Givoni & Banister, 2006, 2007). These cooperative strategies refer to the notion of intermodality which can be defined as "the characteristic of a transport system, that allows at least two different modes to be used in an integrated manner in a door-to door transport chain" (European Commission, 1997; p.6). Airlines may then create alliances with rail operators either to substitute non-profitable flights or to increase the size of the network by accessing new cities by train. These intermodal strategies play a more central role in airlines' strategies as the number of intermodal passengers increased significantly. For instance, at Paris-CDG airport, air-rail intermodal traffic increased by more than 300% between 1999 and 2011 while the air traffic increased by less than 50% during the same period (Direction Générale de l'Aviation Civile, 2011). These market redefinition strategies are particularly active and pose the question of the role of the bargaining power in their formation.

### *Data collection*

We collected data from primary and secondary sources in order to gather more information and increase the quality of our data by triangulation techniques (Eisenhardt, 1989; Gibbert et al., 2008; Lincoln & Guba, 1985). Data was collected during the 2009-2012 period, when air and rail services were already considered as belonging to the same relevant market. During this period, several intermodal agreements existed in Europe and we had the opportunity to discuss with partners from more than 60% of the existing intermodal agreements. Concerning the primary data, we conducted 43 semi-structured interviews in 27 different organizations. We tried to diversify the institutions studied in order to take into account the point of view of all stakeholders. Different types of organizations have been analyzed: airlines using (or having used) intermodal strategies, airlines that refused to use intermodality, airports, rail operators, etc. We interviewed different categories of managers: country managers, alliance managers, marketing directors depending on the firm. Every time, the goal was to interview the person in charge of signing the intermodal alliance. These interviews ranged from 35 to 135 min with an average length of 73 min. We notified managers that these interviews would remain confidential and to ensure confidentiality, notes were taken manually. In parallel, we collected secondary data from various sources: press articles, internal documents, official reports, etc. Secondary data was used to understand the context in which each organization was evolving at the time of the interviews while verifying the reality of the declarations made. The different sources are summarized in the Table 1. Once these elements collected, they have been coded in order to test the existence of patterns in the decision process leading to the formation of an intermodal alliance (Miles & Huberman, 1994).

*[Insert Table 1 around here]*

## **Findings**

Before developing our findings, we briefly describe the context of our study and define some notations. We study how airlines want to access cities in a given country. Several actors interact on this market. NAL is the national airline of the focal country. It is the most powerful actor at the airport of the national capital city (NCC). Especially, this actor is central because it is often the only airline able to carry passengers to a national secondary city (NSC). This focal country is surrounded by other countries which also have airlines. We name FAL the foreign airline of a neighboring country. FAL has access to some secondary cities of the focal country and may act as a substitute to access these NSC if passengers connect at the foreign capital city (FCC). Moreover, we note IAL the international airline of a distant country that can fly only to capital cities (NCC and FCC). The capital city of this international country is named ICC, while secondary cities are called ISC. Our study results from the study of several international airlines such that we will note IAL1, IAL2, etc. Finally, we note the NRO the national rail operator of the focal country. The NRO links the national capital city to secondary cities. These different actors and notations are summarized in the Figure 1. The patterns identified in the following parts resonate in most interviewees. The extracts highlighted in the article are those showing the best the reasoning of the different stakeholders.

*[Insert Figure 1 around here]*

### ***The necessity to create alliances to access markets***

Most airlines aim at having a global network, in other words they want to develop their commercial presence throughout the world. These expansion strategies can be explained by a set of factors concerning costs and revenues. Concerning revenues, a large number of destinations increases the attractiveness of the airline compared to its competitors. This effect is essentially

due to network effects, such that every time a new destination is added, the number of potential routes increases exponentially (Goedeking, 2010). Beyond this purely mechanical effect, a larger network improves the brand recognition of the airline throughout the world. With more destinations in its portfolio, an airline increases the likelihood of being chosen by a passenger, essentially frequent flyer ones who want to earn and burn their miles within the same airline (Shaw, 2011). Concerning costs, it is important to remind that airlines are characterized by very high fixed costs. Consequently, an extended network usually contributes to the development of economies of scale and scope, improving the load factor on main routes while decreasing the unit cost per passenger (Belobaba et al., 2009; Holloway, 2008). By increasing revenues and decreasing costs, large networks should improve the profitability of airlines.

If some airlines have tried in the past to develop alone a truly global network, most of them failed to do so (such as Pan American World Airways which went bankrupt in 1991). It is actually very hard for a single airline to offer all destinations throughout the globe, either because they lack resources (financial resources, planes, etc.) or because they do not have traffic rights (Odoni, 2009; Park, 1997). In order to compensate the missing resources or traffic rights, airlines rely on alliances to access distant cities. A vice-president of an airline confirmed this reasoning:

*“Our airline can’t open routes to all cities. We have to consider the market of a foreign country globally and create an alliance with a local airline to improve our access beyond the city we serve.”* (Marketing Vice-President, NAL)

As we can see in this excerpt, airlines rely on alliances to bypass entry barriers (Gudmundsson & Lechner, 2006; Iatrou & Oretti, 2007). This vision of alliances is essentially relevant for complementary alliances, that is to say alliances that link the network of two airlines to increase the number of destinations offered. These complementary alliances are generally opposed to parallel alliances created to deal with over-capacity issues (Oum et al., 1996; Park, 1997). In our

case, we focus on complementary alliances giving the international airline (IAL) access to secondary cities in the focal country.

### ***Partner selection and bargaining power***

Once an airline has decided to create an alliance to serve a given city, it must select a partner. Depending on the composition of its previous alliance portfolio (Wassmer, 2010; Wassmer & Dussauge, 2012), the international airline may face different situations.

***If several airlines serve the national secondary city targeted.*** When a country is large enough to host several domestic airlines or when the secondary city target is attractive for foreign markets, there might be several airlines serving the secondary city. Going back to Figure 1, if we take the example of NSC1, the secondary city is served by the national airline NAL but also by FAL, the airline from the neighboring country. From the point of view of the international airline IAL, having the choice between several partners is a good thing for at least two reasons. First, it puts IAL in a good position in the bargaining process and second, it allows finding a partner that fits well with its own characteristics. The existence of several partners offers benefits to IAL as it may choose between different substitutes and put them in competition. For instance, partnering with FAL is a way to access secondary cities in the focal country without having to cooperate with the national airline NAL.

*“A passenger living in NSC1 can fly to ICC [International Capital City] using our alliance with FAL. Indeed, FAL offers flights towards four secondary cities in the [focal] country. In fact, the alliance allows us to increase our offer to and from regional cities without having to use new resources.”* (Country manager, IAL 1)

To select the partner, the international airline IAL takes into account several characteristics. Different criteria were frequently mentioned by managers during the interviews: network complementarity, technical and brand compatibility, financial health, membership to a global

alliance (such as Star Alliance, Skyteam or Oneworld), etc. For instance, when the potential partner belongs to the same global alliance as the international airline, the negotiation will be friendlier as they might already cooperate on other markets. The sharing of the jointly created value is central in the bargaining process. Very often, the partner is selected according to the share of the benefits given to the international airline. The more value a potential partner wants to keep, the lower its attractiveness compared to the other airlines.

*If only the national airline serves the secondary city targeted.* For some specific destinations, economic or legal constraints may lead to the presence of a single airline: the national airline NAL. When only one firm has access to resources, and if these resources are critical to other firms, this single firm becomes a broker and can take advantage of its position (Burt, 1992; Ryall & Sorenson, 2007). This almost monopolistic position allows the national airline to be the only firm offering flights from and to this destination. Consequently, it is very unlikely that it may relinquish this advantage to another firm, especially a competitor. This is explained by the marketing director of IAL2.

*“We are clearly in competition with NAL on the route between NCC and ICC. There is no reason for them to cooperate with us and give us access to NSC.”* (Marketing director, IAL 2)

If the international airline IAL really wants to access these destinations, the national airline clearly enjoys a very high bargaining power because of the absence of substitutes. Under these circumstances, the national airline NAL agrees to sign an agreement to give access to these secondary cities, but the price paid by the international airline IAL is very high. The country manager of IAL 3 explains this feeding mechanism and the pricing policy:

*“To feed international flights, airlines must sign partnerships with other airlines to bring passenger from secondary cities to the capital city they serve. If the foreign airline has a pro-rate agreement with the national airline, then a reasonable share of the total price of the ticket is given to the national airline. However, if it is a simple agreement, the national airline asks for a very high price (more than 500\$) for the feeding flight, which is*

*absolutely not profitable for the international airline. These pro-rate agreements are signed only if the national airline accepts to do so. But it doesn't have any incentive to sign a pro-rate agreement with a competitor. (Country manager, IAL 3)*

In this configuration, the national airline NAL tries to extract as much value as possible from the agreement. The more dependent the international airline is the higher the price charged to the airline for the feeding flights. This agreement clearly reduces the competitiveness of the international airline IAL on long-distance flights, such that it may want to find more profitable solutions.

In order to be as exhaustive as possible, we must note that this bargaining power is not always used by the national airline NAL. Indeed, the national airline NAL can face a symmetrical situation as it wants to access secondary cities in foreign countries. If NAL exerts too much pressure on IAL to access the national secondary cities, it may face the same problem in the partner's country. Consequently, when both airlines (NAL and IAL) are dependent, the bargaining power of partners is far more balanced. This is confirmed by one of the country managers interviewed:

*“When we have to serve key markets, we sign special agreements with NAL (for instance for the city NSC2). The price charged is high but it is the result of a negotiation. In fact, it is a two-way negotiation as we discuss the price to access the secondary cities using NAL, while NAL discusses the price to access our secondary cities using our airline.”(Country manager, IAL1)*

When the international airline IAL has few destinations to offer to the national airline NAL, we have seen that the large bargaining power of NAL yields excessive prices. In order to remain profitable, some international airlines have developed strategies to access these destinations while bypassing the national airline.

### ***Redefining market boundaries to reduce the dependence upon the national airline***

The development of the high speed train (HST) in the last thirty years in Europe has contributed to the convergence between the air and rail transports (Campos & De Rus, 2009). In a first time, this technological convergence has led to the development of a strong competition between the two transportation modes (Ivaldi & Vibes, 2008). Every time a new high-speed line was inaugurated, the air traffic plummeted (Dobruszkes, 2011). This strong competition clearly impacts the national airline on its domestic destinations:

*“NAL has been facing a central competitor over the last years: the high-speed train. We have a long experience of this competition such that we can assess with precision the impact (in terms of market share) of the introduction of a new high-speed line. The high-speed train is particularly relevant for travel times below three hours. It clearly reduces our market share and it is a non-sense for us to fight on these routes.”* (Strategy Vice-President, NAL)

This technological convergence is so strong that regulators now consider that air and rail transport belong to the same relevant market for distances below 800 km (Chiambaretto & Decker, 2012). This notion of convergence can be viewed from two sides: either substitution or complementarity (Greenstein & Khanna, 1997; Pennings & Puranam, 2001). Indeed, the convergence between two markets offers different opportunities to create an offer linking products from the previously separated markets (Dumez & Jeunemaître, 2004; Ghosh & Balachander, 2007).

It is precisely what happened when the air and rail transport markets merged. Instead of considering the convergence only in terms of competition, some firms from both markets decided to cooperate (Givoni & Banister, 2006, 2007). These new offers consist in combining two tickets in a single one: a rail ticket to go from the secondary city to the hub and an airline ticket for the long-haul trip. In order to develop such offers, airlines and rail operators needed an interface to link markets. This interface was composed of two levels of infrastructures: intermodal airports

and IT systems. In terms of building facilities, to make air and rail products as seamless as possible, intermodal airports have been developed with a train station inside the airport. However, the real convergence came from IT systems. In order to bring these intermodal offers to consumers, the rail offer was “translated” using the vocabulary of airlines. Train stations were given airport codes and trains offered in these combined tickets had a flight number. This converting task was necessary in order to make these products appear in the reservation systems of travel agencies.

*“As we put our own airline code on the trains, our offer appears on reservation systems as if we were doing the entire trip on our own airline. This allows us to be better displayed in the reservation systems.”* (Country Manager, IAL 4)

Virtually, these combined products appear in the reservation as if the entire trip was made on the airline. Consequently, the international airline increases significantly the number of destinations served within the country of the rail operator. The logic behind the agreement is exactly the same as the one used for airline alliances. This is confirmed in the following extract:

*“This partnership with NRO is coherent with our strategy that consists in creating alliances with local partners in markets with a strong potential in secondary cities. It is important for an airline to have access to the entire market and not only access to the airport we fly to. Several markets are accessed using airline alliances. However, when it is not possible to cooperate with an airline, we use intermodal solutions and create alliances with rail operators.”* (Alliance manager, IAL 5)

Redefining market boundaries is complex and firms prefer to remain within the same market. Some airlines have been able to remain on their traditional market by simply using the threat of cooperating with the national rail operator NRO to ask the national airline NAL for lower prices. Without having to actually redefine their market, the international airline IAL has just redefined its market to threaten NAL by extending the number of potential partners, An example of such a behavior has been explained by one of the commercial managers:

*“For NSC2, we clearly explained to NAL that we could get passengers with the high-speed train. It improved our position to negotiate with NAL and they accepted to lower their*

*prices. It's precisely why we still fly with NAL and haven't developed any intermodal agreement". (Commercial manager, IAL 6)*

However, sometimes, airlines don't have the choice and actually redefine their market. In this context, the main driver of market redefinition has been the excessive power of the national airline NAL. And they clearly use alliances with rail operators as second-best solutions. Most airline managers confirmed us that intermodal solutions appeared as an alternative to the monopoly of the national airline NAL. The high power of the national airline allowed it to charge very high prices to the IAL. Even if the national rail operator NRO is also in a monopoly situation, its public status implies charging all airlines with the same price without any preference in order to avoid any foreclosure issue. A manager of the rail operator confirms this obligation:

*"As a monopoly, we can't refuse to cooperate with an airline that would like to become a partner. The price charged is the same for all partners; they just have to reach some targets in terms of seats sold." (Alliance manager, NRO).*

As it does not exert its power as does the national airline NAL, the price charged by the rail operator NRO is lower than NAL's one. This clearly improves the competitiveness of the international airline IAL. A country manager details the effects:

*"In addition, since the price of train ticket is lower than the price charged by NAL, we charge only a small amount of this price on the total price of the ticket. It clearly improved our competitive position compared to NAL on the route between NCC and ICC. With this agreement, it is easier for us to offer a cheaper ticket than when we had to collaborate with NAL." (Country manager, IAL 4)*

In addition, it reduces the dependence upon the national airline NAL to access these destinations. These market redefinition strategies clearly minimize the possibility for NAL to exert its power over IAL. In fact, as they shift market boundaries, these international airlines have created substitutes to reduce the centrality of the national airline. Not only they have found other sources to access these destinations, but they have also reduced the share of their goals mediated by the national airline NAL. In fact, as the national rail operator NRO serves destinations that were not

even offered by NAL, these intermodal alliances created new markets for the international airline IAL.

*“Globally, this agreement has been fruitful for us. In fact, it even gave us the possibility to become leader on destinations that we had neglected so far.”* (Marketing director, IAL 2)

However, these market redefinition strategies have limits. In fact, if an effort has been made to change the rail product to fit with airline standards (flight number, airport code, etc.), the product is not as seamless as airline managers or passengers expect it to be. There are many operational issues that remain to be solved and these problems reduce the quality of the substitution. The quality of the substitute is very important in the partner selection process, and for now, the substitution is incomplete. Consequently, as it is explained by an alliance manager, the high-speed train remains a second choice for now.

*“As the prices charged by NAL were too high, we turned ourselves to the rail operator NRO. Of course, it was a second choice because transferring from a plane to a train is not very seamless. We even have to broadcast a video in the planes landing to NCC in which we explain how the transfer to the train must be done.”* (Alliance manager, IAL 5)

Now that we have described how and why some international airlines have implemented air-rail intermodal strategies, we develop a theoretical framework to explain how these market redefinitions strategies are linked to power imbalance in alliances.

## **Discussion**

### ***Improving resource sources through market redefinition strategies***

Traditionally, in the alliance or in the power literatures, the issue of resources has been investigated at the level of a single market. For instance, if we focus on the problem of partner selection, research articles have studied the characteristics of partners essentially within the same market (Shah & Swaminathan, 2008). This restrictive view of the close environment of the firm leads to an artificial reduction of the alternatives considered by the firm. In fact, there are very

different ways to consider the market in which a firm evolves (Curran & Goodfellow, 1990): geography, technology, customers' needs, etc. Depending on the criterion selected by the firm to define its market, the resources and consequently the strategies implemented will change. For instance, in our case, airlines implementing intermodal strategies have switched from a product vision (only firms using airplanes belong to the market) to a need vision (firms that carry passengers belong to the same market). By redefining their market (either in terms of criterion or by extending the boundaries), a firm can discover new opportunities and reduce the constraints it was facing previously. These opportunities encompass new resources or new accesses to existing resources. Following this approach, the market is no more exogenously given to the firm but becomes the result of its vision and of its strategic actions (Depeyre & Dumez, 2008). Studying how market redefinition strategies may impact resource dependence is then crucial.

### ***The evolution of resource dependence***

Emerson (1962) has been one of the first authors to link formally dependence and power. He details the drivers of dependence between two actors. According to him, the dependence  $D_{A/B}$  of actor A upon actor B depends (1) on A's motivational investment in goals mediated by B and (2) on the availability of these goals to A outside the A-B relation. To reduce this dependence, the resource dependence theory (Pfeffer & Salancik, 1978) poses that the firm will try to absorb this constraint using either a merger or an alliance. A recent article by Casciaro & Piskorski (2005) details the underlying mechanisms by stressing the importance of mutual dependence in alliance formation while stressing on the negative effects of power imbalance. The larger the power imbalance, the more unfair the alliance will be. Consequently, an alliance with significant power imbalance between the partners is going to be very unstable. This instability will be even

strengthened by the presence of substitutes as the weaker firm can find partners offering better sharing conditions (Greve et al, 2013; Xia, 2011).

According to these contributions and based on our multiple case study, we define the dependence of IAL upon NAL using the following notation  $D_{IAL/NAL}(\alpha, r, s)$ . We do not give an algebraic formula linking the different components  $\alpha, r, s$ , but we explain how the dependence evolves when the parameters change. In this notation,  $\alpha$  represents the share of IAL's goals mediated by NAL.  $r$  measures the number of resources that IAL wants to access using NAL.  $s$  symbolizes the substitutability of alternative sources. In fact,  $s$  is an index measuring the number of substitutes and their quality. We define it as  $s = \sum_{k=1}^n \beta_k s_k$ . In this formula,  $n$  counts the number of substitutes whereas  $\beta_k$  assesses the quality of the substitute  $s_k$  (ranging from 0 for a low substitutability to 1 for a high substitutability).

Based on the previous theoretical contributions and on our empirical observations, we can draw several assumptions concerning the evolution of the dependence of IAL. Concerning the impact of the share of IAL's goal mediated by NAL, the more central NAL is in the realization of the objectives set by IAL, the higher the dependence of IAL. The centrality of NAL can also be assessed through the number of resources that IAL wants to access through NAL. As NAL possesses a large number of resources that are central to IAL, IAL's dependence increases. However, a higher substitutability (in terms of resources or partners) reduces IAL's dependence upon NAL. It is important to note that this substitutability index combines the number and the quality of each substitute. Consequently, one should not limit its vision of substitutability to the number firms but should also take into account quality issues. Indeed, an improvement of the quality of a given substitute will also reduce IAL's dependence. We summarize the effects of these parameters in the Table 2.

*[Insert Table 2 around here]*

Symmetrically, we note the parameters  $\alpha'$ ,  $r'$ ,  $s'$  to define the dependence of NAL upon IAL with the following notation  $D_{\text{NAL/IAL}}(\alpha', r', s')$ .

### ***Resource dependence levels and alliance formation***

In this part, we focus on two components of alliance formation: the likelihood of creating an alliance and partner selection. We investigate the specific case in which IAL wants to access resources to which NAL has an exclusive access. We study several scenarios to analyze the conditions under which an alliance is formed. The variations between the different scenarios come from the characterization of our dependence (with the parameters detailed earlier) and from the different situations observed during our interviews.

***Scenario 1, IAL owns several resources to which NAL would also like to have access and vice versa.*** This scenario may happen when two firms own each a given set of resources and when the complementarities are high. Under these circumstances, each firm wants to gain access to the other firm's resources. The bargaining process is rather balanced since both firms have valuable resources to exchange with the other one. As IAL wants to access several resources through NAL, we can conclude that its dependence upon NAL is high. However, as we observe the same phenomenon for NAL, we are in a situation in which both  $D_{\text{IAL/NAL}}$  and  $D_{\text{NAL/IAL}}$  are large. In this case, IAL and NAL present a very high level of mutual dependence, while power imbalance between the two appears rather limited. Following the conclusion of Casciaro & Piskorski (2005), we can conclude that, under these circumstances, an alliance with a fair sharing scheme will be created by IAL and NAL.

*Scenario 2, NAL's resources are more crucial to IAL than the opposite.* This scenario can happen in various circumstances. The difference in terms of size can clearly affect the relative dependence between the two firms as the smaller firm will have fewer attractive resources to offer (Ahuja, 2000; Baum et al., 2000). The presence of alternative sources for NAL yields a lower degree of attractiveness for the resources owned by IAL. In this case, the share of the NAL's goals mediated by IAL is clearly lower to the IAL's share. The impact in terms of dependence is straightforward:  $D_{IAL/NAL}$  is higher than  $D_{NAL/IAL}$ . In fact, the low level of  $D_{NAL/IAL}$  reduces the mutual dependence of both firm while increasing power imbalance in favor of NAL. The profit sharing scheme is likely to be unfair (Bae & Gargiulo, 2004; Friedkin, 1986) reducing the probability of a creation of stable alliance between NAL and IAL.

*Scenario 3, NAL's resources are not easily substitutable for IAL's objectives.* The absence of alternative sources for NAL's resources to IAL makes of NAL a key actor. This central place in the realization of objectives allows us to characterize NAL as a broker (Burt, 1992) which benefits from an exclusive access to critical resources. In this case, IAL's dependence upon NAL is very high as it does not have any outside options. The situation is similar to the previous scenario:  $D_{IAL/NAL}$  is larger than  $D_{NAL/IAL}$ . In fact, the high level of  $D_{NAL/IAL}$  increases the mutual dependence of both firm but the increased power imbalance in favor of NAL reduces the likelihood of a stable alliance (Casciaro & Piskorski, 2005).

### ***Market boundaries redefinition and reduction of the bargaining power***

To deal with an unavoidable partner, the traditional reasoning was to reduce the importance of goals mediated by this firm (Emerson, 1962). It relied on the assumption that the number of substitutes was given exogenously. In other the words, the firm couldn't create new substitutes.

The only parameters that could be changed were the share of goals mediated by the other firm ( $\alpha$ ) and the number of resources accessed ( $r$ ). This restrictive set of strategic options was reducing the possibilities and could lock firms in unprofitable situations.

As explained earlier, in the 1990s, a new way of considering markets emerged (Hamel & Prahalad, 1994; Kim & Mauborgne, 2005). Firms can proactively design their market, shift their boundaries and create new business models according to their own vision (Depeyre & Dumez, 2008; Santos & Eisenhardt, 2009). As a firm redefines its market boundaries, it reconfigures the firms with which it is in competition. In parallel, shifting market boundaries contributes to an increased number of potential partners to cooperate with. With more outside options available in the newly designed market, the focal firm has access to more substitutes. Applied to the IAL/NAL relationship, when the firm IAL redefines its market by integrating more substitutes to NAL (such as the rail operator NRO), it gains access to more outside options and reduces its dependence upon NAL.

In fact, we noted before that substitutability has two components: the number of substitutes ( $n$ ) and their quality ( $\beta_k$ ). As a firm redefines its market boundaries, it gets access to potential partners whose substitutability is lower than previously. The redefinition of the market often comes from a new vision of the market: shifting from a technology view to a product one for instance. Consequently, the products existing on the newly integrated market present different characteristics that are not necessarily compatible with the focal firm's products. In terms of partners, the reasoning is the same. For a given potential partner  $s_k$ , its substitutability is assessed by  $\beta_k$  which captures the quality of the substitution (in terms of compatibility for instance). These compatibility issues have been central in the convergence of air and rail products. If firms made some efforts to contribute to the standardization of products (e.g. train

stations were given airport codes), the substitutability is not total as going on the neighboring market generally remains a second choice.

As the market boundaries are redesigned, IAL gets access to new substitutes. This firm can even contribute to the improvement of their substitutability with the implementation of standardization processes. The consequence of market redefinition is a strong reduction of IAL's dependence upon NAL. In fact, *ceteris paribus*, we reach a situation in which  $D_{IAL/NAL}$  is lower than  $D_{NAL/IAL}$ . Under this configuration, the power imbalance has been inverted in favor of IAL, such that it may prefer cooperating with a substitute (NRO) from the new market than cooperating with NAL.

## **Conclusion**

The main objective of this article was to link market redefinition strategies to resource dependence and balancing operations in alliances. When facing a powerful partner (because of its exclusive access to key resources for instance), a firm can implement different balancing operations to reduce its dependence. In previous contributions, the existence of alternative sources for these resources was given exogenously, such that the set of balancing operations was rather limited. In this article, we stress on the possibility for the firm to pro-actively design its market boundaries, allowing it to look for new substitutes. These market redefinition strategies reduce the dependence upon the powerful partner and offer new strategic options in terms of partnership for the focal firm.

From this research, we can draw theoretical and managerial implications. From a theoretical standpoint, we aimed to extend the classical view of resource dependence and power in alliances. Under this traditional view, the components of dependence were given exogenously.

As a consequence, this approach was essentially deterministic since the degrees of freedom for the weak firm were rather limited. By giving the opportunity for the focal firm to pro-actively shift its market boundaries, our new approach increases the number of options available. The focal firm can redesign its market in order to access new substitutes. As more outside options become accessible, the focal firm can reduce its dependence upon the strong partner and sign more profitable partnerships. With this contributions, we pose that firms can activate several parameters (share in goals, number and quality of substitutes, etc.) in order to reduce their dependence upon a powerful partner and escape from deterministic patterns in the alliances they sign. From a managerial point of view, this article pushes manager to adopt a broader view of their market when selecting a new partner. If they remain within the traditional boundaries of the market, options may be limited and the alliance signed could become quickly unprofitable. However, as it adopts a more global view, the resource dependent firm increases the likelihood to find a partner fitting well with its needs. In fact, the central idea of this contribution is that it is possible to escape from powerful partners if we get rid of this deterministic view of dependence in alliances.

This work present several limitations that are as many directions for future research. A first set of limitations comes from our empirical background. It is important to note that in our case, market convergence has been possible only because there was already a technological convergence (Hacklin et al., 2009). In other words, airlines have been able to find partners in the rail industry (market convergence) only because the high-speed train already existed and was offering reliable alternatives (technological convergence). The firms studied were not at the origin of this technological convergence. In fact, they seized the opportunity of the existence of new substitutes by turning competitors in partners. This limit is important and it should be interesting to study a case in which a partner has contributed from scratch to the technological

convergence (and to the market convergence in a second time). Still concerning the empirical background, we observe that the monopoly status of the national rail operator NRO has had a clear impact of its pricing policy and on its relative attractiveness. It is crucial for us to study whether these market redefinition strategies hold when new partners don't benefit from a specific status like the rail operator in our case. Finally, concerning our theoretical framework, we investigated the dependence between the two firms globally. Even if we mentioned the idea that the presence of several markets was creating some effects of cross-dependence, we did not detail the underlying mechanisms. Consequently, for further research, we advise detailing how multimarket contact can affect dependence and the validity of our results.

Based on these conclusions, we think that pushing further the study of market redefinition strategies in a resource dependence framework could be very promising.

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## Appendixes

**Table 1.** Sources of the data

Category of source	Type of data	Number
Primary sources	Semi-structured interviews	43
	Airports	4
	Intermodal airlines	17
	Non-intermodal airlines	7
	Industry experts	5
	Rail operators	7
	Rail infrastructure managers	3
Secondary sources	Press articles	50+
	Internal documents	12
	Official reports	16
	Empirical articles and books	11
	Legal cases	3
	Conferences	11

**Table 2.** Effects of the parameters on the dependence of IAL upon NAL

Parameters	Effect on $D_{IAL/NAL}(\alpha, r, s)$ .
Share of IAL's goals mediated by NAL ( $\alpha$ )	Positive
Number of resources that IAL wants to access using NAL ( $r$ )	Positive
Substitutability of alternative sources ( $s$ )	Negative
Total number of substitutes ( $n$ )	Negative
Quality of substitutes ( $\beta$ )	Negative

**Figure 1.** Configurations and actions of airlines and rail operators

