

Chapter 2

Management of Alliance Network at the Formation Stage

1 Alliance Network Structure as the Key Determinant of Its Management

Alliance networks, as agreements implemented for the execution of certain goals, require an adequate structure. The choice of the structure is regarded as the key determinant of management. The main problem is associated with the selection of a structure which meets the needs of its members.

1.1 Formal Structure Versus Informal Structure: Conditions, Advantages and Disadvantages

When building management structures, alliance networks act differently than single companies. As the company develops, its management structure tends to consolidate and stabilise, especially when it enters the stock exchange. The network structure is more smooth and flexible, with a frequent need to change its nature as the network growth. The evolution of a network management structure mostly comprises two approaches:

1. Adding further management structure. The universal principle is that any new relationship requires more attention from top management at the initial stage of functioning. In practice, it is often quite the opposite.
2. Involvement of the top managers. The participation of the highest level managers plays an important role in ensuring the proper functioning of the network. The illusion is an impression that structures are already established and lack of support from top management will not have a negative impact on the network operations.

However, if an alliance network is large, and the competition inside is intense, it is useful to create a formal structure in order to manage it. This is because the

partners are given the opportunity to establish common goals and principles. Basically, there are three types of structures which manage the network:

- General Meeting.
- Core and peripheral business.
- Network management by a leading company (Bamford et al. 2003: 241–243).

Management of a network by General Meeting is advisable in networks where there are a large number of companies with different skills, in which there is no dominant company, and one of them wants to clearly define its position as a leader. This method of network management was created by AT&T at the end of the 1990s. However, it did not function as was intended and AT&T left the network, joining the BT Concert, after MCI—the former partner of BT—was acquired by Worldcom.

A different management model is that in which inside the network centre there is a group of closely related companies which perform key roles, and around them is a group of loosely affiliated companies. Such an approach can be found in networks with a relatively small number of companies, although they may have a leading market position in a specific domain. For example, United Airlines and Lufthansa are the leading airlines in the Star Alliance group, and the remaining companies are more or less related to them in some way.

The most common network management structure is a variant that uses a model of management by the dominant company that manages the group as a classic, bilateral alliance. Such situation requires the company to be the real leader of the group. It is applied by Boeing, IBM or General Motors which offer the other members of the group a number of advantages, such as a high and guaranteed level of orders.

Equal-partner networks tend to create formal structures for the management of the group, and maintenance costs are divided into particular participants, usually in proportion to their volume of sales. An example of such an approach would be Colliers, established in 1985 as a global network operating in the real estate industry. As the result of a merger between two smaller real estate networks, a company including 45 member companies and operating in over 80 offices located throughout the world was formed, with annual revenues of EUR 450 million. In the mid-1990s the central office employed 11 people who were responsible for maintaining the member companies, and paying, depending on the size of the respective companies, from \$10,000 to \$40,000 annually (Bamford et al. 2003: 297).

A formal structure also means that this can either be a separate organization set up just for this purpose or a team consisting of employees from individual companies. The advantage of the first solution is that such an organisation is fully devoted to the network. In creating a team one should remember that its members work full time in the parent companies and are paid by them, which means that they devote only a small part of their working time to the team. Such an approach would therefore work only in small alliance networks. According to Doz and Hamel (2006: 311–312), an organization that manages an alliance network performs the following functions:

- It is a central point for communication and exchange of information, facilitating the access to expertise and experience possessed by particular companies.
- It protects the network against “stowaways” through its neutrality and by observations of the individual companies and their actions.
- It acts as an archive of information on results and best practices regarding the approach to the market, and innovation.
- It maintains defined standards of behaviour within the network, applying—if necessary, sanctions against those who violate them.

Dominated networks also use different approaches to the issue of creation of management structures. If they are managed by the leading global corporations, they usually have enough internal capacity to coordinate the activities of the whole group. Large companies, in which 20–30 % of total revenues come from activities within the alliance network (e.g. Corning) have developed structures which are involved in the supervision and monitoring of the network, which means that there is no need to create a separate organization for this purpose. Usually it is a separate organization that is responsible for managing the alliance portfolio in a given company, since the managers responsible for acquisitions and alliances must actively cooperate and communicate to distinguish between the challenges related to the acquisition of another company and the management of cooperation within an alliance (Mitchell 2004: 339).

The management of alliance networks is not limited to the formal structures. Some interactions and decisions are taken outside these structures and management channels, which means that there are alliance networks with structures comprising the representatives of member companies and there are also networks without common management. In the latter case member companies maintain contacts with the leading company in the network, which in turn manages these many alliances (Gomes-Casseres 1994). One should also remember that the cooperation among companies is never automatic and partnership structures must give some incentives for cooperation.

Alliances that exist within an alliance network may take different forms ranging from informal agreements to the exchange of shares between companies. It should be emphasized that the forms that integrate the partners to the greatest extent (e.g. the exchange of shares between parties), which are alternatives to mergers and acquisitions, are not always more favourable than informal agreements. In many networks, companies are able to achieve greater benefits and greater flexibility at lower costs through more informal relations. In service sectors such as medicine, law and banking, the relationships develop gradually over time and generate substantial profits (Bamford et al. 2003: 307–309). On the other hand, sometimes deeper cooperation requiring a more formal approach is preferred. The structure itself is not enough, and if the parties of the network are on the verge of success, it is essential to identify specific goals and explain the benefits of cooperation to each member of the network. Gulati (2007: 104) also notes that network resources play an important role in determining the alliance network management structure.

When the network is created, it rarely has an optimal management structure. With a change in business conditions, partners may come to the conclusion that the structure is inefficient and there is a need to move towards greater integration, or to loosen the ties. The network may also be restructured with a view to improve its effectiveness. Such an attitude was adopted by Airbus in 2000, after 29 years of successful operations in its first organizational form. Since its foundation, Airbus had been a company founded by four European companies from the airline industry. Its role as a consortium was limited to sales and marketing. The partners made decisions regarding aircraft projects and the particular components were produced in their parent companies. Then final assembly took place in a factory located in Toulouse, France. Although economically inefficient, this structure did not protect Airbus from competition with Boeing. This was due to the fact that the main source of values for the partners was the price and volume of sales to Airbus instead of the overall activity of the company and the partners were not revealing their actual financial and production data. To solve this problem, Airbus transformed its rather informal structure into a more conventional model of corporate governance, with a consolidated balance, centralized purchases and full transparency of production costs. For the first time, the group became the owner of its own productive resources and was able to work out the actual production costs in detail. According to managers, this new management structure allowed for more efficient operations, and also the raising of funds on capital markets (Bamford et al. 2003: 266–267).

In conclusion, it should be emphasized that, regardless of type, any network management requires a formulaic approach. It is mostly determined by the type of network, and the number as well as the nature of member companies. Otherwise, it is difficult to expect the network to realise a coherent strategy.

1.2 The Model of Internal Managerial Activities: Key Elements

Alliance networks may differ from each other in many ways. Any network may consist of a few or many companies. They also differ as to the size and composition, the level of internal competition and cooperation within the group, configuration and finally according to the method of partner selection. Decision-making in the context of these factors is regarded as the main challenge for network managers, since to a great extent it determines the way the company competes and its resultant effectiveness.

1.2.1 Network Size

One of the key issues to be considered at the stage of network creation is the number of members, since this affects the manner in which it competes (Gomes-Casseres 1996: 36).

There are some contradictions inherent here because some goals can be achieved much easier with a larger number of member companies, and, for others it is quite the opposite. In other cases, this factor is not as important as the type and size of the partner company. The more competitive the company, the greater the chances that the entire network will succeed. In all cases there is one common issue: the more participants in the network, the more interest and greater challenges for managers, making it difficult to coordinate activities and develop cooperation (Valdes-Llaneza and Garcia-Canal 2006). Sometimes two or three companies are enough to achieve a leading position in the sector, while other domains require more partners. Some experts argue that too large an alliance network is an obstacle to effective functioning. In other words, they believe the network has a natural size limit. However, the case of Visa, which has 30,000 members and manages them effectively, contradicts this thesis. This is due to the following factors: the considerable benefits of membership (although there are no benefits to the individual banks issuing their own cards), an appropriate strategy and effective management (Doz and Hamel 2006: 310).

The size of an alliance network and the number of its members is related to another issue, i.e. the power of companies creating a given network. In dominated networks, there is one strong company surrounded by a group of satellites. In turn, in the equal-partner networks, there is a group of companies with similar potential and capabilities. A more complex situation occurs when the network includes many companies and most of them have significant market power. Bae and Gargiulo (2004) indicate the negative aspects of such networks, in that the strong partners can use their potential to obtain greater benefits from participation in the group. Moreover, the degree of involvement of particular companies in the network can be very diverse since it involves partners such as “silent” financial investors, and companies that provide technology, production potential, and even allow the partner access to their markets.

Determination of the network size is often related to the objectives of the network. If the competition between networks is aimed at establishing a new standard in the sector, the number of member companies and their combined market share is a key success factor (Gomes-Casseres 1994). Therefore many companies managing networks try to attract as many new members as possible. The involvement of fewer, but larger, companies is another approach. The overall size of the network may be of minor importance in networks driven by the convergence of two or more sectors, because the theory behind such networks lies in a combination of complementary technologies or markets. Analysts recommend focusing on four basic network-size related issues:

- Perfect size and scope of the network depends on its purpose and on the context of competition because various business strategies require different participants.
- The network size should not be increased without a sound reason, since larger size is associated with higher management.
- The key success factors should be taken into consideration when determining the scope and size of the network. Sometimes the more players on the market, the better, but more often the success depends on the skills and capabilities of individual members.

- New companies should enter the network step by step (Bamford et al. 2003: 259–263).

It is not always possible to build up an optimal network size. The main reason is the method of creation. If it is built step by step, e.g. the dominant company creates a group of related companies, such a possibility does indeed exist. Another situation occurs when the entire group is formed offhand, e.g. by an administrative decision of the global corporation or a state company. In this case, it often occurs that the members are companies operating in different areas and there are no cooperation links among them. Therefore it is hard to expect that such a network will be effective in the marketplace in the long term. It does not, however, exclude short term competitiveness and profitability. The main challenge for managers is to define the target strategy of the network, perhaps with a need to cease some activities. The need for continuous monitoring of the situation within the network for possible selection of the new companies and/or abandonment from the participation of other members should also be highlighted.

An increase in the size of the network may indicate that the group succeeded, but this may also mean greater expense, particularly in the area of coordination and consultation with more companies (Prokopenko 2000). This problem is usually resolved by the managing company making key decisions. As a result not every network member will have a detailed knowledge of all issues within the group. On the other hand, in principle, there is no other way, and companies must accept this fact in return for the benefits of membership.

Regardless of the network size, the level of integration between companies affects mutual relationships within the group. If there is only a few companies in the network, the need for integration between them is relatively low, and the cooperation more closely resembles a series of loose agreements. In such cases, there is often no need to create a new organization to manage the group, since this is the role of the selected managers of the member companies. The need for mutual coordination between them, as well as the inherent risk, is relatively low, mainly because of the low level of integration. A negative aspect of this solution is a relatively low level of trust and commitment between the parties, and companies are not interested in the exchange of confidential information (Gilsing and Lemmens 2007). Furthermore, due to the constant need for new information, there may be a relatively high number of transfers of companies within the group.

Some other scholars point out that being a member of a large network is beneficial, especially for innovative activities, since it involves trust and spirit of cooperation between companies. The reason is that the close relationship between companies allows for the exchange of confidential information, since commonly shared norms protect against the individual opportunism of some parties. There are also some drawbacks, as it is characterized by a high degree of mutual dependence and a large number of relationships with various partners, often having different goals.

It should be noted that network size plays an important role in the acceptance of new technology by the group. Every fundamental change must be linked to some incentives, e.g. higher revenues, and profits. The larger the network, the larger the infrastructure but there are also more participants. The administrative and

technical costs associated with the adaptation of new technology can be then divided into more companies. This is particularly important at the beginning, as these costs are the highest at this time. It can therefore be concluded that the larger the network size, the lower the costs of the adaptation of new technologies (Majumdar and Venkataraman 1998).

1.2.2 Internal Competition and Cooperation in the Network

A characteristic feature of alliance networks is duality, which means simultaneous presence of internal competition and cooperation (Lei 1993). In the case of competing companies, this duality is called co-opetition. The complexity of cooperation and competition is based on simultaneous implementation of two contradictory logics of relationship between companies, i.e. trust, which is a symptom of common interests and conflict of interests, which is characterized by conflict, and confrontation (Cygler 2007). This raises a paradox: companies cooperating in the network have to trust each other, share information and experience, remembering at the same time that they are dealing with their competitors.

Internal competition in alliance networks is determined both by the number of companies performing similar functions in the market, as well as by the mutual relations between them. Some network members will prefer a limit of the number of members up to a given number, which reduces internal competition within the group. Others will accept full competition within the network, which in turn allows for complementary operations. Internal competition has two different effects:

- It increases the flexibility of the network, introduces innovations and ensures security of supplies. However, it may also break up a business so thoroughly that none of the companies can sufficiently achieve economies of scale or earn a reasonable profit.
- It determines the boundary between optimal and excessive competition. Partners can prefer a higher order (this applies to companies that are exposed to internal competition), or use the competition between suppliers or buyers within the network (Gomes-Casseres 1994).

Finding a balance between cooperation and competition between partners is therefore one of the key success factors in an alliance network. In addition, different companies within the network will have a completely different opinion regarding the choice of the most suitable level of competition. Companies which are open to internal competition will prefer a greater level of order, and others could benefit, at least in the short term, from competition between suppliers and customers in the network.

Network surveys carried out by Bengtsson and Kock (1999) in the construction industry indicate that apart from relationships consisting of competition and cooperation within the network, the company can remain in symbiosis through coexistence with other relationships, or through involvement in a relationship

including elements of both competition and cooperation. Therefore, four different types of horizontal relationships in the network can be identified:

- *Coexistence.* The relationship does not include any economic exchange, but merely information and social exchanges. Power is commonly derived from the members' dominating position or strength, meaning that dependence is present. Trust is regarded as high, but informal, as one company is dependent on the other. Norms are informal and quite strong, though the rules-of-play are not discussed. The competitors' goals are stipulated independently.
- *Cooperation.* This type involves frequent exchanges, comprising business, information and social exchange. Though the competitors cooperate, they also compete with each other. The relationships can have a formal or informal character. Informal agreements are built on social norms and trust. These norms, and sometimes formal agreements, adjust the distribution of power and dependence among the competitors, which means that conflicts are rare. Furthermore, competitors have common goals, and proximity between them is based on functional and psychological factors.
- *Competition.* An action-reaction pattern arises as competitors follow each other. For example, if one of them launches a new product line, the other will immediately follow. Interaction is therefore simple, and direct. Power and dependence are equally distributed among the competitors, based on their positions in the network. Proximity or distance is based on functional and psychological factors. Norms are based on informal rules as the acceptance of rules-of-play are widespread, and competitors set their goals independently. A common feature is that these goals are similar and they can only be reached by acquiring resources from the same buyer.
- *Coopetition.* It includes both economic and non-economic exchange between the parties. The relationship of cooperation is governed by formal contracts or is based on trust. Conflicts are rare in cooperation as the competitors live in harmony, but in competition they arise frequently. There are also clear norms when cooperating, partly based on formal agreement. When competing, invisible norms are a part of the competition climate. Goals are jointly stipulated when the competitors cooperate. This is not the case when they compete. The goals in competition are often object-oriented.

It is worth noting that in their other research, based on studies of Swedish and Finnish companies operating in different sectors, both authors argue that the fact of simultaneous occurrence of competition and cooperation between companies in the network is the most complex situation but at the same time is the most advantageous relationship between competitors. Parties may be separated by different degrees of proximity to the client, and access to competitive resources (Bengtsson and Kock 2000).

The key in determining the factors that describe how companies work together in the network is the degree to which they compete with each other. It is extremely hard to find companies with no conflicts of interest, especially if the network is growing. It means that most of the networks cannot avoid internal competition.

This can be minimized by careful selection of members, choice of an appropriate structure and the method of network governance. It should be noted, however, that some form of internal competition is useful and desirable as it stimulates innovation and increases flexibility. Therefore, sometimes leading companies in the network involve several partners in different areas, even if it leads to a certain level of internal tension. However, it should be done carefully, considering all cons and pros in advance.

An acceptable level of competition in the network generally depends on the company's strategy, its position in the network and the unique characteristics of each business. An effective network should promote cooperation rather than competition; although a limited level of internal rivalry may be useful, but should be clearly specified in advance. Internal competition is less destructive, if it does not include the leading companies in the network because it can cause weakness and even the rapid disintegration of the group.

Any rivalry within the network can and should be managed by defining the roles and responsibilities of its members, as alliances with a narrow range generally last longer. This means that when the network is created, too many rights (e.g. exclusiveness in a particular area) should not be given to a company that expresses such an interest in. Doing so, we risk conflict when new partners join the network. Alliance networks are linked to the complex structure of the market where it is difficult to distinguish between competition and cooperation, and through participation in many programs, a company can cooperate with certain partners in one network, while competing with them in another group (Gomes-Casseres 1994).

1.2.3 Selection of Partners in the Network

Alliance partner assessment and selection are important considerations for executives making alliance partner decisions and have received increased attention in the alliance literature. Strategic alliance partner selection is a critical aspect of successful alliance development; even superior alliance management may not be sufficient to overcome poor initial partner screening and selection efforts (Cummings and Holmberg 2012). This process is much more important in alliance networks as they consist of many alliances.

An effective alliance network should include companies that have diverse skills and resources. For example, Brouthers et al. (1995) stated that cooperation partners should have: complementary skills, cooperative cultures, compatible goals, and commensurate level of risk. Thorough knowledge of the key success factors in the industry is required. It especially relates to the extent to which individual partners are able to provide the advantage, and in which element of the value chain. First, the elements which are necessary to build an effective strategy in a particular market segment should be determined. Meetings at the stage of negotiations with potential members of the network allow for discovery of mutual interest, and create mechanisms to build mutual trust. This is essential for solving inevitable problems, which arise during negotiations.

A new network member may come from various “sources”, although it is not usually a company that is a complete stranger to the other participants. A set of potential partners is created through a network of personal relationships, which is maintained by the network executives (or its member companies) with the managers of other firms. Sometimes a good partner can be found among competitors, suppliers, customers or companies in related sectors. None of them should be excluded at this stage, because everyone can offer something useful.

The idea of membership in the network may come from two basic sources:

- Current members,
- Potential entrants to the network.

In most cases, new members are selected on the basis of previous positive experience in cooperation. Such information on possibilities and capabilities, as well as the reliability of the partner acquired through previous relationships, creates the target search area for potential partners (Rowley et al. 2004). Entering the network requires the new partner to consent to the loss of some independence and autonomy, combined with the acceptance of the rules prevalent in the group, mostly imposed by the leading company. The desire and intention to join the network is a company’s sovereign decision, and requires the approval of the managing company. However, the functioning of the company within the network means that it accepts the rules and principles applicable therein.

Network companies maintain relationships with many organizations outside the network. Through such activities they enter into cooperation with entities that may become new members in the future. This is encouraged by both experience and the positive effects of their activities. Network members develop strong, coherent ties through frequent interactions. Because trust is an essential element of knowledge sharing and mutual learning, companies are more efficient in innovation activities. Due to the fact that the participants spend a lot of time and energy establishing these relationships, the shift of partners in the short term is unlikely, as it is associated with high costs and the risk that the existing relationships will be weakened or even broken (Chung et al. 2000).

This approach is very popular as previous cooperation of the network members with a new firm can lead to a good recommendation for membership in the group. Such a solution has several advantages, most important of which includes a better knowledge of the company. It also happens that a firm newly incorporated into the group can better adapt to its structure than the entity that had recommended it. This is usually related to its assets (know-how, technology, patents) but also with the approach to cooperation and running the business (attitude to customers, credibility, reputation, etc.).

A second option, i.e. the idea of membership in the network proposed by potential entrants, is more complicated, as firstly the company has to convince the group that it can be a valuable member. In some cases such a possibility exists, e.g. if a company with a good reputation in the industry speaks on its behalf, or there is a member of the network that has previously cooperate with it. Companies with a valuable source of competitive advantage are in the best position. The situation is

much more complicated when a new member does not have many interesting advantages to offer. In practice, it can only count on change in the market or within the group, e.g. if some companies leave the network. Another option is to increase the attractiveness of its own offer.

Both the growth rate of the network, as well as the pattern by which new companies enter the group will affect its competitiveness in the market. No company will enter the network, if its participation is not combined with greater benefits than operating alone. Being a member of a network allows for greater security. On the other hand, firms outside the network have more independence. Therefore it is necessary to consider the advantages and disadvantages of both approaches very carefully.

Another important factor in attracting new members is the previous relationships between companies in the network and prospective new entrants. If they are good, it is very likely that the new company will be accepted into the network (Chwistecka-Dudek and Sroka 2008: 120).

The entrance of new companies to the alliance network gives rise to the issue of positioning towards other members. Another factor which plays an important role is the domain of their activity and real strength. This may also involve the need to change position within the network (re-positioning) by companies already existing within it. Because of changes in the business environment, this process can be permanent (Thorelli 1986).

If a company decides to join the network, it must be aware that this must be consistent with the expectations of the group. Large companies should also consider another scenario, i.e. the creation of their own network. It should be noted that companies prefer to join an existing network than to create their own group, because it reduces the risk associated with network growth.

1.2.4 Network Configuration

For better, long-term functioning of alliance networks, it is extremely important to unify the behaviour of their members as regards the other members and environment. Those unified conditions decide on the strength of its impact on the market. Goerzen (2007) claims that the configuration of alliance networks is often a product of effort to reduce uncertainty, and the use of the capabilities and power of the organization. Other authors emphasize that the company's technical environment can have a significant impact on the development of a network among companies and its composition (Madhavan et al. 1998), and compacted networks are not beneficial for companies operating in a turbulent technical environment (Rowley et al. 2000).

The company's position within a network may differ. Basically, its role and importance depend on assets possessed, know-how, patents and market position, etc. An interesting case in point would be the passenger transport industry. Theoretically, each airline in the network has the same rights and obligations. In practice, however, things are different, and the role and place of the individual airlines within the network are varied. Large, global airlines, which are mostly the

founding entities of the network, are the leaders. In the middle of the group, there are full members, which cooperate closely with each other and play a major role. Agreements between them are multilateral and exclusive, as in the case of Star Alliance. They are supported by the second level members, which usually have strict and close ties with one of the full members of the group. Any differentiation between them has a hierarchical structure, i.e., full members have more power than the second rank of members, but the latter benefit from a depth of network connections and global scope. The carriers that cooperate with the network on a “from connection to connection” basis are the third group. They can also cooperate with airlines belonging to other networks because the principle of exclusivity does not apply to them. They are usually long distance carriers from relatively distant locations which are seeking optimal connections between their major airports. Small regional carriers which are engaged to serve one or more specific routes can also belong to this group. In other words, a dominant position in the network is held by full members, and airlines that cooperate on the “from connection to connection” basis are the least important. The latter do not have the full rights of the other members, but the principle of exclusivity does not apply to them.

Although alliance networks are created to generate group-based advantage, they must show benefits at the individual company level in order to attract and retain new members. Therefore, the question arises: if the network generates profits, how much can an individual member receive? Authors taking a structural approach argue that the position of the company in the network shapes its power over partners (Nohria and Garcia Pont 1991; Lorenzoni and Baden-Fuller 1995). Others emphasize that scarce resources brought to the network by each company shapes its ability to extract profits from partners. In business practice, these approaches are equally important, and a company with unique and value-added assets can often bargain for a central position in the network. Table 1 presents the factors affecting the company’s position within the network.

Thorelli (1986) indicates five sources of the company’s position and role within the network:

Table 1 Factors affecting the company’s position within the network

Factors	Description
Value-added perspective:	The company controls rare, valued, and well-protected assets
What is the bargaining power of the company within the network?	Competition among the company’s suppliers of components
	Lack of competition between company and its partners
	Centrality of the company’s position
Structural perspective:	The company occupies structural holes
What is the position of the company within the network?	The company participates in multilateral alliance networks

Source Gomes-Casseres (2003)

- Economic base, determined by market share, revenues, and capacity for vertical integration.
- Technologies possessed, i.e. processes and/or product innovation, flexibility, logistics management, ability to meet customers' expectations, cost leadership.
- Knowledge, i.e. potential for R&D, patents held, human resources.
- Trust.
- Lawfulness, which is a consequence of long-term contracts, partial control over another members of the network, patent rights, agreements such as joint-venture with other entities, etc.

In other words, the better and more valuable the resources contributed by a partner which are protected by formal legal means, the greater the ability of that partner will be, to extract value from the network. This means that a company's success in the network depends on bringing the most exclusive resources, and having the greatest ability to compete, as it increases its bargaining position in relation to the other participants in the network. The position and place of the company in the network determine the use of profits, market opportunities as well as access to information (Madhavan et al. 1998). For example, a central position within the network plays a critical role as a creator of value. The main features of this role are:

- Strategic outsourcing—outsourcing and sharing with more partners than the normal broker and a traditional firm.
- Development of key competences and skills of partners to make them more effective and competitive. Influencing other network members to share their expertise with others in the network, and with the central company.
- Technology—borrowing ideas from others and their development into new technologies.
- Competition—explaining to partners that the network is as strong as its weakest link. Encouraging internal competition inside the network, in a positive manner (Lorenzoni and Baden-Fuller 1995).

Other authors also pay attention to the role of the central position in the network and its positive impact on value creation since this position is associated with a shorter route to all other companies in the network. Therefore a company has greater access to the resources and market opportunities, as well as detailed information on the capabilities, needs and reliability of network members (Rowley et al. 2004). By taking up a central position in the group, a company can also gain access to the useful knowledge of other companies, which influences the exchange of information and learning of the parties. The absorption potential of a company plays a crucial role as it determines the possibility of new knowledge application (Tsai 2001). In turn, according to Soda (2011), companies in the network may be simultaneously involved into a set of differentiated alliances characterized by different content, goals and geographical scope. In this way a firm may bridge firms in the broader network. Access to heterogeneous resources ensured by bridge ties increases the potential of the combination of these into new products and

processes. Following this reasoning, occupying bridging positions within a network also fuels innovation capability which will result in future stronger innovation outcome.

The approach presented here is most common in the literature. Other authors claim that a more peripheral position is advantageous, as it allows closer ties with companies outside the network, which in turn means that a company can potentially generate higher profits, be more innovative and have a greater chance of learning from the others. This theory is based on the assumption that companies on the network's periphery have less esteem for values such as loyalty or collectively shared norms. Peripheral companies may also have fewer economic, psychological and social obligations to the other network members. In turn, companies located in a more central position do not always have such an opportunity, because social pressure and loyalty towards the group may have a higher priority. They often face the prospect of choice: leave the network and gain access to the new technology that can enhance their innovation, and also lose their good name, or remain in the network, with all the negative consequences associated with this decision. This can be particularly difficult for companies located closer to the centre of the network, due to the fact that their relationships with the group are the strongest, and their sense of loyalty—greatest.

2 Main Limits of Alliance Network Growth in the Management Aspect

Despite a dynamic increase in alliance networks in the whole economy, one should underline the substantial limits of their growth. Those limits are mostly associated with management aspects and may result from:

- Availability of partners with required competences and assets,
- Formal and legal rules associated with protection against unfair competition,
- Number of partners in an alliance network.

The first factor can be explained through a close look at the air transport industry. Almost 50 % of the market is divided into a couple of global alliance networks (Table 2). Irrespective of those global networks, there are also single bilateral alliances among particular lines, e.g. in relation to the service of particular routes.

As a result, most airlines are engaged in some of the global networks. Lines that do not participate in one of them, are either not interested, or are not interesting as valuable partners due to lack of assets required (relatively weak brand, unattractive routes serviced etc.). Besides, the lower the availability of potential entrants to the network, the lower the pace of network growth.

This lack of partners with the required competences and skills is regarded as strategic gridlock and is external to the company, because it stems from crowding in the alliance field. Strategic gridlock can preclude new alliances and severely

Table 2 Main networks alliance in air transport and their market share in 2000

Lines	Number of passengers		Sales	
	Million	Market share (%)	Billion \$	Market share (%)
Star Alliance	293	18.8	69.6	20.9
Oneworld	199	12.8	50.0	15.0
Air France/Delta	151	9.7	26.1	7.8
Wings	72	4.6	16.8	5.0
Qualiflyer	52	3.3	16.1	4.8
Total	767	49.2	178.6	53.5

Source Hoon Oun (2001)

restrict the scope of the group's design (Gomes-Casseres 2005). As more partnerships are formed in a given business or country, there are likely to be fewer partners available for new deals. This constraint is particularly troublesome in oligopoly industries, in which only a few strong companies compete worldwide. This constraint of alliance network growth is not easy to manage, however many companies take preemptive actions in order to secure their first choices. As soon as alliances come to be seen as potentially useful in entering or dominating a field, leading companies may leap to create partnerships, sometimes with a minimum of planning (Gomes-Casseres 1994).

The second factor also has a growing importance. The existence of alliance networks in many countries comes under the governmental control to protect companies against unfair competition. The governments want to control as many alliances as possible on the one hand, whilst promoting cooperation to improve companies' competitiveness on the other hand.

Other limits of alliance network growth stem not from the external environment but rather from internal constraints. Organizational constraints weigh heaviest on the lead, or central, company in the network. Managers often cite scarcity of management capacity as a constraint on network formation. Negotiating every agreement requires great effort, and major alliances require the direct and continual involvement of the top management, especially in the early stages of planning, partner search, and negotiation. These demands on management increase with the size of the network and complexity of member interactions. The more members an alliance network has, the more difficulties to manage it. Every new alliance increases the difficulties of coordinating operations as more partners have to be consulted. More importantly, cooperation becomes increasingly difficult as the number of companies in the network increase. Conflicts may also arise when one of the partners has another alliances that influence the goals of the first alliance. Such conflicts of interest can increase the costs of coordination and management of the whole network. Whatever the root causes, these conflicts limit the degree to which it can be integrated to implement a common strategy (Gomes-Casseres 2003). In order to overcome this limitation, companies should avoid, when possible, taking on partners that might involve conflicts of interest with existing alliances. Another possibility is to limit the scope of cooperation in each

alliance, e.g. by limiting its geographic territory. This solution minimizes overlap, leaving each alliance to operate more or less independently of the others in the group, but it also excludes the benefits that can arise from integration among alliances. If the network expands, it can mean that the group has succeeded, but it is also associated with higher costs, especially those of coordination and consultations with partners (Prokopenko 2000). Therefore the key decisions are undertaken by the managing company.

Gomes-Casseres (1994) indicates one more internal constraint of alliance network growth, i.e. dependence. In all networks, the partner companies lose some control. The growth of an alliance network may gradually and inexorably link an individual company's destiny to that of the network. If that occurs, the company may have to subordinate its own decisions to those of the group. Even if the network is growing and capturing market share, the company may have to share a progressively greater portion of network profits to attract new partners or to retain the "old" network members.

The limits of alliance network expansion are not easy to manage, and most companies use different approaches to cope with this, e.g. preemption or avoidance. The most important thing is, however, to avoid routine actions, because—as Feldman and Klofsten (2000) stated—routines used to promote growth based on collaboration can sometimes create problems for companies as they ignore new challenges.

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