

MANAGING SPILLOVER OF CONTROL IN ALLIANCES BETWEEN COMPETING FIRMS

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ABSTRAKSI

Bagaikan buah simalakama, strategik aliansi sesama industri (aliansi horizontal) selalu mengalami dilema antara bekerja sama dan berkompetensi. Di samping itu, mereka menghadapi risiko bahwa core competence mereka nantinya dapat terserap oleh partner aliansi yang notabene kompetitor mereka juga. Untuk itu perusahaan perlu melakukan “black box protection”. Dengan melakukan kualitatif studi antara perusahaan Belanda dan Amerika, paper ini mengetengahkan sebuah framework yang akan sangat membantu para manajer aliansi dalam mengelola “black box protection” mereka. Penelitian ini menemukan bahwa ada tiga variabel penentu yang bisa dijadikan tolok ukur kapan kita harus membagi dan melindungi core competence kita: tipe pengetahuan; hubungan dengan kompetitor; dan kecepatan perubahan teknologi.

Kata kunci: spillover of control, Trojan Horse, black box protection, control, core competence

INTRODUCTION

A strategic alliance is where two or more firms pool together part of their activities in order to strengthen their market offering whilst still retaining their separate corporate identities. In the context of the sphere of their activities, the firms involved will become relatively dependent on each other. Skill substitution (often in the realms of distributor and supplier agreements) may be one reason for while the move for improved organizational learning may entail the formation of joint ventures, collaborations and consortiums (Segal-Horn & Faulkner, 1999). However, a lack of attention to issues like trust, chemistry and culture is likely to lead to the disbanding of most alliances. According to Faulkner (1995), trust means having sufficient confidence in a partner to commit valuable

know-how and other resources to the venture despite the risk of the partner taking advantage of such a commitment. Since such trust is extremely difficult to create and preserve, it is unlikely that the partners would be comfortable sharing information and making the investments and commitments that the alliance need. An atmosphere of suspicion is likely to prevail especially in alliances in which the partners are competitors or potential competitors (Kelly *et al.*, 2002).

In such a context, the very existence of alliances between rival firms is paradoxical: competitors are expected to compete with one another rather than to join forces. In fact, according to Morris & Hergert (1987), alliances between rivals account for approximately 70 percent of all cooperative agreements. In alliances between competitors,

each partner must be open enough to collaborate efficiently with its rival allies, while still concealing critical knowledge in order to protect its vital interest. In this situation, some scholars (e.g. Hamel *et al.*, 1989; Hamel, 1991; Lorange & Roos, 1992; Nooteboom, 1999) have proposed the importance of core competence protection measures. A partner must remember that a strategic alliance can break up for a variety of unforeseen reasons. In any event, the set-up itself combines rivalry and cooperation simultaneously in an ambiguous fashion and it is this ambiguity which is likely to raise specific management problems, especially in the issue of the firms' openness in the collaboration. In any case, in the short-run term, both parties are likely to gain although the question of how asymmetric those gains would be may be of a less conclusive nature.

Ultimately, it is the long term which appears to be more critical and subjected to potential pitfalls hence reinforcing the need for some sort of protection. In this sense, managers should be aware of the fact that their alliance partners are basically their competitors (or potential competitors). There are two paradoxical situations here; alliances may help a firm absorb or learn some critical information or capability from its partner but at the same time they can also increase the possibility of losing one's own core capability or skill to the partner. Thus, a firm faces the challenging task of managing the balance between "trying to learn and trying to protect". This dilemma arises because conditions that might facilitate the learning process are likely to expose firms to the danger of losing some of their own crown jewels to the partner. The threat of technological leakage and skill appropriation are likely to be amplified in alliance cases involving global competitors. This is when the need for protection is critical. A good illustration of such a dilemma can be seen in the case of most alliances set up by US and Japanese auto manufacturers. Through the alliances the Japanese partners were not only

able to sell more cars but also acquired precious knowledge about the North American market which incidentally, made it easier for them to eventually set up wholly-owned operations in the US.

Based on the possible implications pertaining to losing one's core competence to its partners in alliances, this paper aims to answer the questions of when and under what circumstances are the issues of protecting (and/or sharing of) core competences in a strategic alliance crucial? In addition, it also seeks to find and understand the many factors which are crucial for managers in companies that are engaged in strategic alliances especially when the allies are competitors (direct and indirect).

INSIGHT ON THE CORE COMPETENCE PROTECTION

Essentially, a firm in an alliance faces the challenging task of managing the balance between "trying to learn and trying to protect". Such a dilemma arises because the conditions which may stimulate the learning process are also likely to expose the firm to the possibility of losing some of their core competences to its partner. According to Dussauge & Garette (1999), the condition is akin to a "Trojan Horse" metaphor, in which one of the allies takes advantage of the alliance to capture its partner's most valuable skills and thus strengthens its own position at the other's expense. This is especially critical when the partner firms are also competitors as they both possess a strong incentive to reduce their mutual dependence by appropriating the capabilities they lack. In contrast, partners in a strategic alliance may also sometimes be tempted to increase the dependence of the other firm. The rationale for this is that the more dependent one partner is on the other, the more a firm (the controlling one) can influence the management of the alliance in order to serve its own interests.

It is reasonable, therefore, that a partner maintains some unique proprietary skills and know-how to be used as latent protection against the other partner in potentially adverse circumstances. Some researchers call this action as the creation of a “black box”¹ (see: Lorange, 1997; Hamel *et al.*, 1989) with the unique knowhow being kept away from the partner. Where inter-organizational theory is concerned, such a scenario is a particularly critical issue when alliances involve competing firms. However, in many situations strategic alliances are only temporary arrangements in which one of the partners is vying to strengthen its own position at the expense of the other. Essentially, one way to creating a “black box” would be to integrate the many knowhow aspects (eg. product, manufacturing, various types of software, management processes and financial know-how crucial to the operations of the strategic alliance) into a systemic totality and it is this single, co-ordinated concept which is likely to become a formidable source of protection for a partner (Lorange & Roos, 1991a).

The danger that is directly or indirectly causing one’s core competence to be leaked to its competitors is referred to as the risk of spillover (see Nooteboom, 1999). According to Nooteboom, there are three factors that determine the risk of spillover of control: *type of knowledge, linkage of competitor and speed of change*. When *knowledge* is more tacit, the risk is lower than when it is codified, and the risk is lower to the extent that knowledge is embodied in teams, procedures, organizational structure or culture. In this situation, one may be able to observe what a firm is doing, but

fail to grasp the underlying logic and causality.

Risk of spillover also depends on *the presence of a direct or indirect linkage of competitors*. The risk is higher, *ceteris paribus*, in horizontal rather than vertical relations. It depends on the number of partners, because then the chance is higher that there will be competitors among those partners. Spillover can be limited by “technologies of monitoring”. If one can trace what happens to the competence supplied to a partner, in any subsequent diffusion in the partner’s network, one can demand control of diffusion by the partner and monitor its compliance. Hence, having a technology of monitoring with a sharp focus that sorts out what really belongs to the core of one’s distinctive competence would be crucial in this context.

Spillover further depends on *the speed of change*. If the technological make-up of products changes more rapidly than it would take for the relevant information to spillover to competitors and be used for imitation, then the problem disappears. However, the fact that spillover can be accidental or otherwise raises the problem of identifying the source of it (Nooteboom, 1998).

Lorange & Roos (1992) suggest that the easiest way to prevent the risk of spillover is simply not to give away too much of the firm’s unique competence at the outset. A black box protection must, of course, be maintained and upgraded over time in order to remain unique. It may, for instance, be necessary to provide additional research on an ongoing basis to continue, to improve one’s technological lead and unique know-how regarding the marketplace. Moreover, having a strong black box position gives a partner a sense of strategic control over the direction of the strategic alliance. However, the black box position must be maintained over time to ensure its uniqueness even though the process of continually improving the technology (black box) is likely to be a delicate and

¹ In aeronautics, the flame black box is installed in the tail of passenger aircraft and constructed in such a way that it remains intact in case of crash, preserving vital flight data. The analogous black box of an alliance management is not physical, of course; it is rather a set of particular procedures by which strategic alliances are conducted that allows the alliances to succeed even as the firm’s core knowledge is protected and preserved (Lorange, 1997: 60)

stressful affair since co-operation is paramount for the success of any alliances. However, it is still necessary to maintain some discretionary strength so that we are not taken "hostage" by our partner (Lorange & Roos, 1991a).

In addition, Das & Teng (1998) propose the use of a patent system as a strong safeguard, since informal transfers of patents is not possible. More specifically, firms should allow their partner access only to those patented technologies, which the partner cannot freely copy or apply on its own. As long as the technology shared in the alliance is patented and owned by the firm, their key resources are not lost. Bleeke & Ernst (1995) describe an alliance between two pharmaceutical companies that lasted for ten years. During the alliance period, since one firm kept the patent, it retained its power over the other partner. For unpatented knowhow, a firm could attempt to reduce the transparency of technology, and to limit the scope of the agreement even where technology transfers are unavoidable.

In any event, the threat of spill-over is apparent in alliances, especially in those involving allies which hail from the same industries. Nooteboom's (1999) assessment of the three factors which determine the risk of spillover is used to support the proposed model in this paper. The type of knowledge (e.g. how easy is the knowledge transferable), the linkage of competitor (e.g. the presence of direct competitors) and the speed of change (e.g. rapid changes in the technological make-up of the product) are the crucial factors in learning and understanding when and under what circumstances protection should be enforced in alliances. Such a move is a crucial for managers as the implications could be devastating for firms which failed to recognize the warning.

RESEARCH METHODOLOGY

This study is based on a qualitative study between Dutch-American companies. There are three horizontal alliances as samples of the study: Akzo Nobel (Dutch) and Huntsman (U.S.A), Avebe (Dutch) and Noveon (U.S.A), and KLM (Dutch) and Northwest (U.S.A). While all three alliances in the sample were chosen from different industries, the allies that make up each of the respective alliances were, however from the same industries. We interviewed both delegations of the companies and the management team of the alliances. In total, we carried out 24 interviews. All interviews are tape recorded. Most of the interviews took more than one hour and many of them lasted more than two hours. A short description of these alliances is provided in Table 1.

RESULTS OF THE CASE STUDIES

The results of the case studies indicated that the most dominant factor in horizontal alliances is the presence of direct or indirect linkages with competitors. It is apparent that alliances between indirect competitors do not seriously encounter a problem of competition because both parties do not compete directly in the market. As demonstrated in our case studies, the three horizontal alliances in this study operated in different markets that eventually decreased the degree of competition among the alliance members. All partners in this study had relatively different core competences, which allowed them to retain their unique position in their alliance. However, it does not mean that they were free from competition. Evidence from the KLM-Northwest and Avebe-Noveon cases clearly illustrated the existence of competition. In the beginning of the KLM-Northwest partnership, intensive competition occurred between the sales people of both companies. As they still kept their sales representatives in North America and Europe until 1997, both carriers faced difficulties in managing competition at

Table 1. Characteristics of the alliances studied

	Akzo Nobel –Huntsman	Avebe - Noveon	KLM - Northwest
Industry	Chemical	Chemical	Airline
Formation	1972	1995	1991
Nature of cooperation	Supply of raw material	Joint know-how to produce a chemical product (for textile) that would be marketed separately	Joint strategy and service in trans-Atlantic market
Core competence shared in the alliance	Akzo: Chlorine Huntsman: HCl	Avebe: starch technology Noveon: synthetics technology	KLM & Northwest: All airline activates in trans-Atlantic market
Nature of horizontal relations	Indirect because they are part of supply chain production	Indirect because of different type of technology	Direct in South East Asia market BUT indirect in other markets
Alliance development	Continued after having severe dispute	Collapsed after four years of its cooperation	Continued after facing difficult time

the sales level because Northwest's sales people prefer to advise customers to travel with Northwest and the same attitude also prevails with the KLM staff. Finally, both airlines resolved this problem by integrating their sales force. Northwest closed their sales representative in Europe and was then totally responsible for the sales in North America while the KLM sales office in America was also closed and they in turn, committed further to the European market. This new settlement had not only resolved the competition problem but also proved to be a brilliant strategy to minimize the operation costs and optimize the alliance's profitability.

In the Avebe-Noveon case, we saw a very interesting change in competition. At the beginning of their partnership, both partners enjoyed a mutual cooperation without any sense of competition. The tension of competition started to shake the alliance after Noveon purchased Diamalt, a direct competitor of Avebe in Europe. Soon after that, both partners found their salesmen competing with each other in the same market (Europe and Asia). This competitive situation threatened the alliance's continuation. Their joint product

had poor commercial success and they started to compete with each other in the same market. The alliance collapsed shortly after the Diamalt acquisition. It is clear that the shift in position from indirect competitor to direct competitor changed the Avebe-Noveon relationship. This is congruent with the results of a quantitative study conducted by Mowery *et al.* (1996) which stated that firms are less likely to share their capabilities with partners when they are direct competitors in product markets but in the case of partners who do not compete in the same market, they are likely to have a low degree of competition. Thus, the risk of spillover of control seems to be higher between direct competitors than indirect ones.

It is also important to take into account that the risk of spillover is highly related to what partners share in the alliance. In this respect, we see that the main subject of the Akzo Nobel-Huntsman alliance is purely about the supply of raw materials. Both partners do not significantly share their core competence in know-how so in this case, the risk of spillover is relatively low in this partnership. However, the situation was completely different in the case of the Avebe-

Noveon alliance, which had shared knowledge as a core component within their alliance. Although both companies had dissimilar types of technology and different business interest, they were fully aware of the fact that their partner could also become a competitor in the near future. Therefore, they prevented a strong spillover of control by keeping their core product's specific ingredient away from their partner. It meant that both partners could not simply break the alliance and ask other companies to make starch/acrylate (the product involved in the alliance) for them. In order to prevent competition in the same market, Avebe and Noveon also signed a marketing agreement to divide the world market into two, with both parties agreeing not to enter into the markets that were under the responsibility of their other. In addition, in a move to keep their competitive advantages intact in the eyes of their competitors, Avebe and Noveon did not officially announce that they were working together to create their premium product.

Strong protection of core competencies was not significant in the case of the KLM-Northwest partnership. Their scope of cooperation was so extensive and closely linked to each other that both partners thought it was not useful to conceal anything from their partner. In addition, they also believed that the high speed of change in the environment and technology will diminish the value of their competence anyway. Whatever they keep secret today will not be a secret anymore in a year's time. The high speed of change in technology required the alliance partner to open up their key contributions. This evidence supports Nooteboom's (1999: 50) analysis that spillover also depends on the speed of technological change. If the technological make-up of products changes more rapidly than it would take for the relevant information to spill over to competitors and be used for imitation, then the fear of spillover disappears.

Based on the above analysis, we may draw a conclusion that the risk of spillover is strongly dependent on three variables:

1. the presence of direct or indirect linkages of competitors: Partners who do not compete in the same market face a lower degree of competition than partners who directly compete with each other
2. the type of knowledge: In order to remain unique, important know-how that belongs to the company's core competencies should be protected
3. the speed of change: Technology or know-how that changes rapidly should be shared with the partner and not be kept to oneself

PROPOSED MODEL FOR CORE COMPETENCE PROTECTION

Alliance managers should carefully consider the positive and negative impacts of keeping or sharing their company's core competence with their partner. However, from the perspective of the success of the alliance as a whole, it is often the "lack of trust" and the feeling of "uncertain and discomfort" which hinders the success of alliances. In this respect, we suggest firms to openly discuss how they are going to manage the spill-over of control with their partner(s). Each partner should recognize and acknowledge that a move to protect one's core competence should be a reasonable move and perhaps even quite legitimate and certainly not be deemed as a provocative or offensive move. Such acknowledgement is paramount especially in the context of today's decision maker which unfortunately, not only has to function in a competitive and hostile environment but also knows that it may be imperative to cooperate with others which is likely to be a competitor in many instances. Thus, the need to understand more about managing and sharing information in alliances is more apparent and crucial than ever before.

Based on the literature review and the case studies, we may draw a conclusion that the tension of competition is highly influenced by the condition whether they are direct or indirect competitors. Partners who do not compete in the same market apparently have a lower degree of competition than partners who directly compete with each other. To protect or develop their core competence, managers should realize that the risk of spillover of control is determined by the type of knowledge and the speed of technological change. This is explained in the proposed model presented in Figure 1.

The required level of protection is determined by *how critical the capability is to the firm and the speed of change of the related technology*. If the capability is a part of the firm's core competence and the speed of technological change is low, the capability should be protected. However, if the capability is critical but the technological change is rapid, it is better to share it with partners to maximize value. On the other hand, if the capability is not the core competence of the company but the speed of technological change is relatively low, perhaps it is better to share conditionally. Finally, if the capability is not critical and technological changes take

place rapidly, it can easily be shared.

The protection of a capability can be ensured either by legal means, e.g. licensing or restricted contracts, or by physical protection to prevent the partner's employees from coming into contact with and learning about the technology. This spillover effect has been described in many management literatures (see: Khanna *et al.*, 1998; King *et al.*, 2001). One outcome is that a partner can be 'dumped' and the partner company may proceed further on its own while another scenario could be the partner is forced to give up more (access to) knowledge or be satisfied with a less lucrative remuneration in order to continue benefiting from the alliance.

CONCLUSIONS

The "Trojan Horse" metaphor, in which one of the allies takes advantage of the alliance to capture its partner's most valuable skills and thus strengthens its own position (at the other partner's expense) clearly highlights a dilemma in which firms may be forced to rethink their strategies. In this context, protecting its own core competencies at the outset of the alliance may prove to be most significant. From the discussion above, it is obvious that there is a case for firms to be

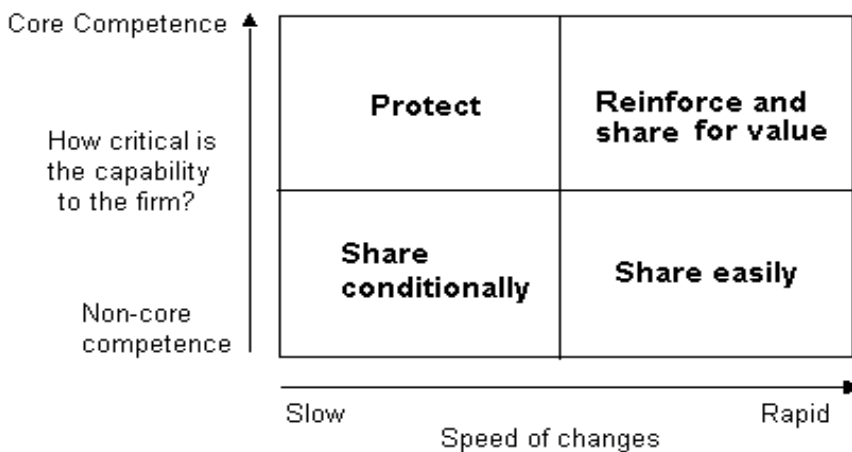


Figure 1. The model of spill-over of control

cautious and to undertake measures like the formation of a black box in order to protect itself from losing its crown jewels to its alliance partner(s). Such a situation, known as the risk of spillover of control, may be mitigated by having a technology of monitoring with a sharp focus that sorts out what really belongs to the core of one's distinctive competence. From the literature and the case studies, we conclude that the importance of spillover of control is determined by the type of knowledge (the uniqueness of technology involved) and the speed of technological change. Nevertheless, managers should also take into consideration the presence of direct or indirect linkages with competitors. It is apparent that alliances between indirect competitors do not seriously encounter a problem of competition because both parties do not compete directly in the market but the situation could be a lot more delicate in the case of direct ones.

Below are our recommendations on how spill over of control should be managed:

- It is important for company to assess the position of your partner(s) and the likely competition you may face from them. If your partner is a direct competitor, sincerely discuss with them what kind of strategy/action should be addressed to eliminate the degree of competition and increase the likelihood of a joint cooperation in the partnership.
- Evaluate how critical the capability is to your company and the speed of change in that capability in the future. Consider the following action (s):
 - If the capability is a part of your firm's core competence and its speed of exchange is low, then the capability should be protected.
 - If the capability is critical but the changes are rapid, it is better to share it with partners to maximize its value.

- If the capability is not the core competency of the company but the speed of change is relatively low, perhaps it is better to share conditionally.
- Finally, if the capability is not critical and changes take place rapidly, it can easily be shared.

To sum up, in a situation of co-operation and competition, each partner should recognize that a reasonable black box protection is quite legitimate, and that such a decision should not be interpreted as a provocative move. Managers representing these firms must fully understand the critical technologies to be developed and shared, and the core technologies of their own firm that will nonetheless, remain separate. It is essential that internal proprietary technologies be protected in order to preserve a firm's competitive edge.

Since this qualitative study only based on three alliances, it will be very much interesting to test the above framework in a much boarder population and off course in a different methodology research. The next agenda for future research is also seeing whether there is also a different urgency of black box protection across industry, e.g.: service and manufacturing industry.

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