Common and Private Goals in Learning Alliances

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Abstract
This paper proposes a model that gives deeper insights into the dynamics of interorganizational learning at the example of an alliance of two partnering firms. Current alliance research often tends to neglect a feedback-perspective which might be the reason why certain behavioral effects cannot be explained. However, we identify some major feedback-loops that influence interorganizational learning dynamics based on literature-based alliance research. Here, we focus on the concept of common and private benefits. According to literature findings the dilemma between the two kinds of benefits determines how many resources the parent companies invest in the alliance. We show how gatekeepers might lead a learning alliance to common success. We also show how short-term views of potential private benefits might not only lead to failed common goal attainment but also ruin a firm's collaborative reputation in the industry.

Keywords
Interorganizational Learning, Learning Alliances, Alliances, Learning, Knowledge, Private Benefits, Common Benefits, Trust, Reciprocity

1. Introduction

Over the last decade, alliances have become one of the most important organizational forms to gain competitive advantage. Worldwide, more than 20,000 reported alliances have been formed within a period of only two years (Anand and Khanna (2000)). Abstracting from some differences in the definitions, an alliance can be understood as an interorganizational co-operation of at least two companies that are legally and – under certain conditions with some constraints - economically independent. In order to implement common objectives within determined areas of mutual interest, the parent companies accept a certain restriction of their freedom of choice (Pausenberger (1989)). The motives for companies to form alliances are situated, e.g., in the development and conquest of new markets, in the concentration of core competencies, in the concentration of market power, or in the acquisition of knowledge (Lane, et al. (2001); Zahn (2001); Prange (1996)). The latter motive becomes increasingly important as these days, no single firm possesses all relevant resources to create breakthrough innovations. That is why firms recognize a need to cooperate with each other in so-called learning alliances (Lubatkin, et al. (2001); Reid, et al. (2001); Harrison, et al. (2001)).

Frequently, however, it seems like alliances are frequently terminated early due to management's short term views (Büchel (2003); Anand and Khanna (2000)). This perspective strongly contradicts the potential benefits of a learning alliance mostly in the long-term. Due to this deficiencies, management often makes sub-optimal decisions in respect to how many resources to allocate and even whether or not continuing a learning alliance.

Even though learning alliances have been subject to recent research, most studies focus on specific questions in the field of alliance learning (e.g., Doz (1996); Larsson, et al. (1998); Ring and van de Ven (1992)). Some imply a dynamic approach (like e.g., Lane, et al. (2001); Khanna, et al. (1998); Kumar and Nti (1998)), but the models being designed often concentrate on specific building blocks of the field of research on learning alliances and/or neglect a feedback-loop point of view. This might lead to a short-term perspective. In order to show long-term effects of decisions, it is valuable to close and create feedback-loops. Feedback loops take into account delays and therefore exhibit long-term effects of present decisions. This makes it possible to explain certain behavior, effects and dynamics (Sterman (2000)). Only recently holistic System Dynamics-based approaches of interorganizational learning were presented at System Dynamics Conferences (Kapmeier (2002); Kapmeier (2003), Otto and Richardson (2004)). Based on the System Dynamics methodology, a model representing the dynamics of learning alliances will be developed.

2. The Model for Learning Races in Learning Alliances

2. 1 Research Findings

Recent research on alliance learning (e.g., Inkpen (2000); Ariño and de la Torre (1998); Khanna, et al. (1998); Kumar and Nti (1998)) concentrate on a certain number of variables that influence interorganizational learning dynamics. These variables and the relationships between these variables stand in the focus of the model presented in this paper.

Khanna et al. identify the coexistence of private and common benefits as one of the main drivers for competitive behavior in cooperative settings. Common and private benefits can be traced back to the relative scope of the parent companies' areas of interest (Khanna, et al. (1998)). Private benefits can be understood as a hidden agenda and be defined as those kinds of benefits that a parent firm can earn unilaterally by picking up skills from its alliance partner and applying them to its own operations in fields unrelated to the alliance activities. Common benefits can be understood as those kinds of benefits that "accrue to the alliance parent from the collective application of the learning that both firms go through as a consequence of being part of the alliance; these are obtained from operations in areas of the firm that are related to the alliance" (Khanna, et al. (1998); Inkpen (2000)).

According to the authors, the relative scope provides the basis for understanding the parent companies' resource allocation patterns. Different relative scopes lead to different resource allocation behaviors as the parent companies are driven by different needs or interests. For the purpose of unveiling the dynamics of learning alliances the concept of private and common benefits is helpful. It covers the game-theoretic tension between competitive and cooperative behavior. So it can be stated that it features a dynamic perspective on alliance development (Inkpen (2000); Khanna, et al. (1998)).

The idea of common and private benefits leads to the reference modes depicted in Figure 1. We analyze the setting of a specific learning alliance founded by two partnering firms in a research-intensive industry. The wished-for behavior is that the common alliance knowledge

increases, most possibly s-shaped. This is because scientists of the two partnering firms first need to become acquainted with each other and need to exchange and understand their respective knowledge. At some point the common knowledge base would reach a maximum. The fear is that this maximum lies on a lower level that might not be enough for reaching the common goal. The goal might be measured in number of patents which are regarded as an appropriate R&D output variable (Shan, et al. (1994)). Furthermore, there is the fear that, i.e., the first partner seeks to outlearn the second partnering firm. From partner 1's perspective, this would look like the upper right graph in Figure 1. A more wanted situation is the one in which the partner does not learn privately.

The hoped-for dynamics go along with increasing scientists' openness towards each other as well as a relatively stable number of scientists in the alliance. Openness on the scientist level can be interpreted as a form of trust between them (Currall and Inkpen (2002)). In the fearful scenario the partner firm's scientists' openness first increases. Then, after having completed outlearning, they would close down and would not share their knowledge with their partner scientists anymore. According to Kale, et al. (2000), resource allocation depends on expected payoffs. Therefore, for reaching a certain common goal the partner firms need to invest a certain amount of resources, here scientists who work on specific project. The curve is s-shaped as it takes some time for companies to send people into a project. Oftentimes, scientists still work on other projects they need to finish before fully engaging in a new task. Also, a fear could be that scientists would be withdrawn from the alliance before finishing the common learning – due to maybe having finished private learning (Khanna, et al. (1998)).

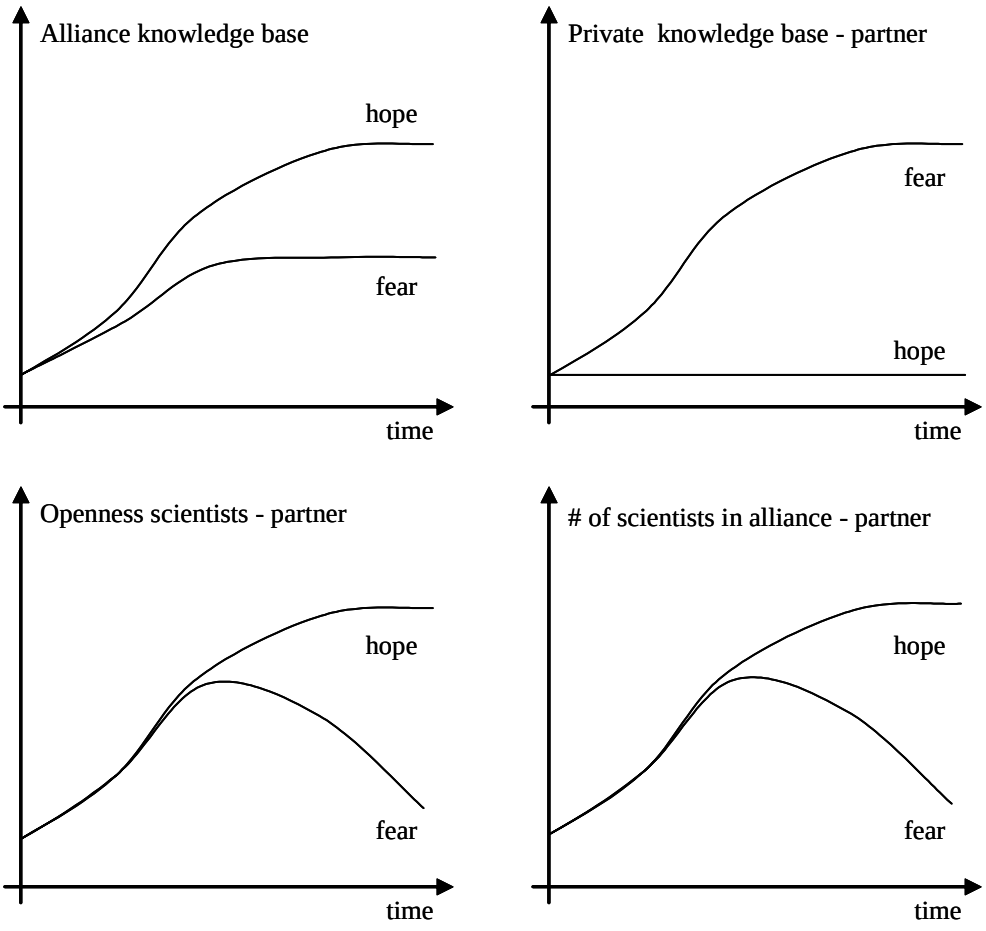

Figure 1: Reference modes: hope and fear in interorganizational learning.

In the following we present the model boundary and its structure on the base of the reference modes.

2.2 Model Boundary and Structure

The paper's general proposition is that companies in learning alliances that follow short-term-oriented point of views often quit their alliances early before generating the highest potential common outcome. In order to emphasize this proposition, a model is designed that captures the situation of two companies active in a research intensive area founding an alliance. The companies' common goal is to learn with each other for generating common patents. Consider the example of an alliance between Company 1 and Company 2. The alliance only receives resources from its two parent companies. Both companies are technically advanced – nevertheless they need each other's experiences and knowledge bases to create a successful new product which is operationalized as 'number of patents' in this model. Yet, besides their common goals, consider the possibility that a parent company might also have private interest when joining the alliance.

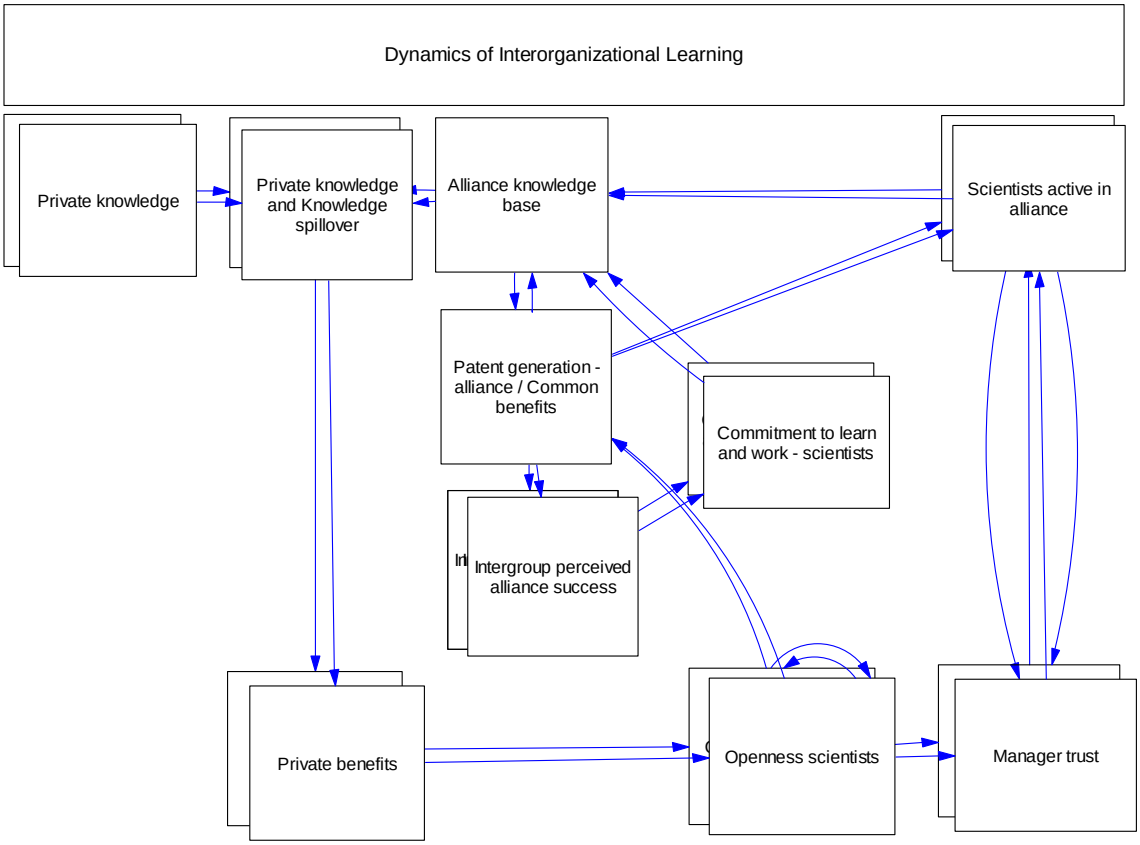

Figure 2: Scope and model structure identifying the model boundary. Boxes in the background indicate an identical underlying structure for the second parent company.

Figure 2 portrays the relevant factors we identified that influence the interrelationship of common and private goals in a learning alliance. Each sector contains an underlying stock-and-flow structure. Two boxes of which one is in the background indicate a similar structure for the second parent company. The arrows between the sectors imply relationships between them. Instead of introducing a detailed stock-and-flow structure, we present an aggregated causal-loop diagram in the following. We begin with the structure of common learning in the alliance. We continue with a structure that points out to the tendency of parent companies to

level out resource allocations in an interorganizational setting like a learning alliance. Furthermore we introduce the structure of potential private benefits by the partner companies. Finally, we discuss the importance of reciprocity of knowledge sharing between scientists active on the actual learning alliance task.

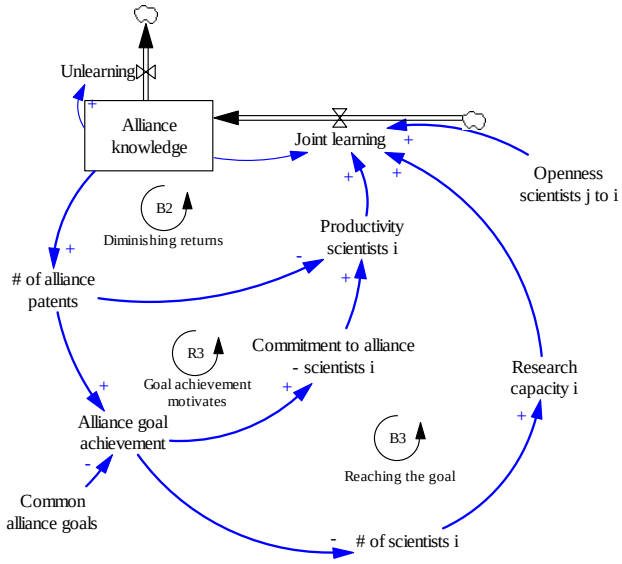

Figure 3: Common learning in the alliance with B2 “Getting to the limit”, R3 “Goal achievement motivates”, and B3 “Reaching the goal”.

Figure 3 portrays the structure of common learning in the learning alliance. The stock ‘alliance knowledge base’ is increased by the inflow ‘joint learning’ of the two groups of the respective parent companies. ‘Joint learning’ is also determined by the groups’ ‘openness’ towards each other as well as their ‘productivity’. With an increasing knowledge base, the ‘number of alliance patents’ increases which, over time, decreases the ‘scientists’ productivity’. This is because the research tasks possible in the alliance are limited – and while doing more and more research together, with a finite possibility of research, the scientists will slowly reach a goal. This goes along with the idea of diminishing returns (B2). Furthermore, with more patents being generated the alliance reaches its goal. Goal attainment has two effects. On the one hand, the scientists recognize that their effort pays. And the closer they get to their common goals, the more they realize the alliance’s benefits which increase their motivation and hence their ‘commitment to learn and work together in the alliance’ – increasing their productivity (R3). On the other hand, the balancing loop (B3) indicates that with a low level of ‘alliance goal achievement’ the parents spend more resources on the alliance compared to a high ‘alliance goal attainment’. Apart from the shown loops here, there exist various more like, i.e. an absorptive capacity loop (Cohen and Levinthal (1990), Lane and Lubatkin (1998), or Lane, et al. (2001)). It is active in the running model, however we do it without in the aggregated view.

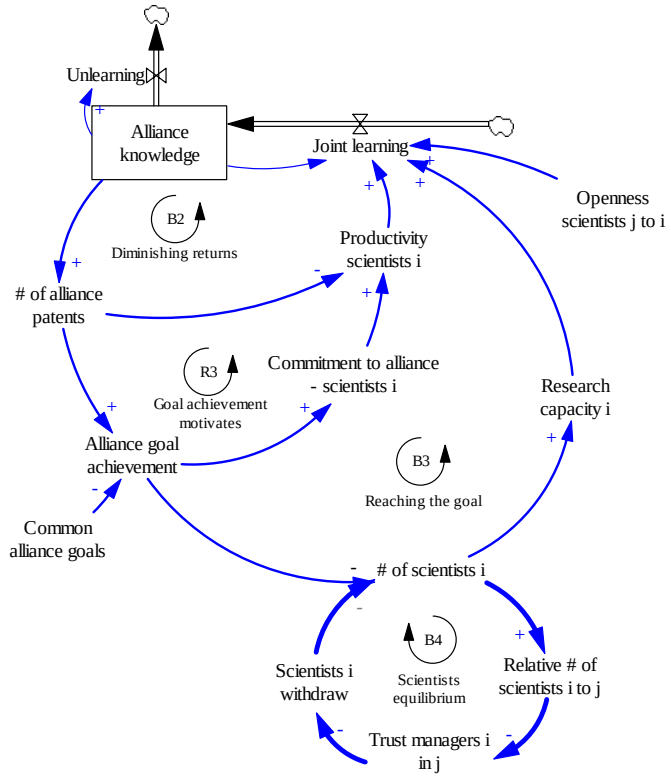

Figure 4: B4 “Scientists equilibrium”.

Figure 4 shows the addition of another balancing loop (B4). It represents the idea that the parent companies tend to invest equal amounts of resources in the alliance. Resource allocation is a sign of the firms’ commitment to the alliance and yet influences trust on the manager level and vice versa. Trust on the manager level influences the continuation of the alliance and thus effects the number of people the parent sends into the alliance. (Zaheer, et al. (2002); Currall and Inkpen (2002)). Gulati, et al. (1994) exemplify this by presenting an alliance between an American and an Indian firm. After the Indian firm had pulled out a considerable amount of their resources, the American partner followed and also withdrew a similar amount of resources. The alliance was terminated shortly after.

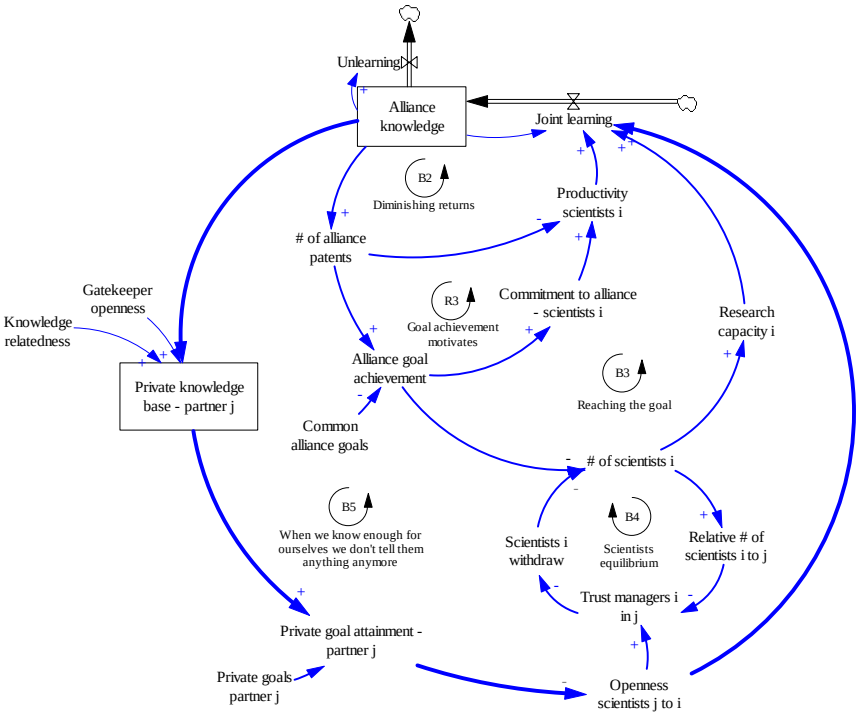

Figure 5: B5 “When we know enough for ourselves we don’t tell them anything anymore“.

Futhermore we introduce the stock of the two partners’ private knowledge bases (see Figure 5). Knowledge generated by the alliance may spillover to areas unrelated to the alliance (see, for instance, Hamel (1991); Khanna (1998); Khanna, et al. (2000); Inkpen (2000)). According to the authors, in the extreme case of one partner only being interested in generating private benefits, it would end the alliance as soon as this private learning is finished. This is indicated by a reduction of the respective partner’s ‘scientists’ openness’ towards the other partners’ scientists. Reserved scientists contribute less of their knowledge to ‘joint learning’. The partner’s managers would notice this restrictive sharing of knowledge. Consequently, they start to mistrust their counterpartner. They would not see any sense in staying in an alliance in which the partner does not respect the required openness for joint research. Hence, the managers would start to withdraw scientists from the alliance.

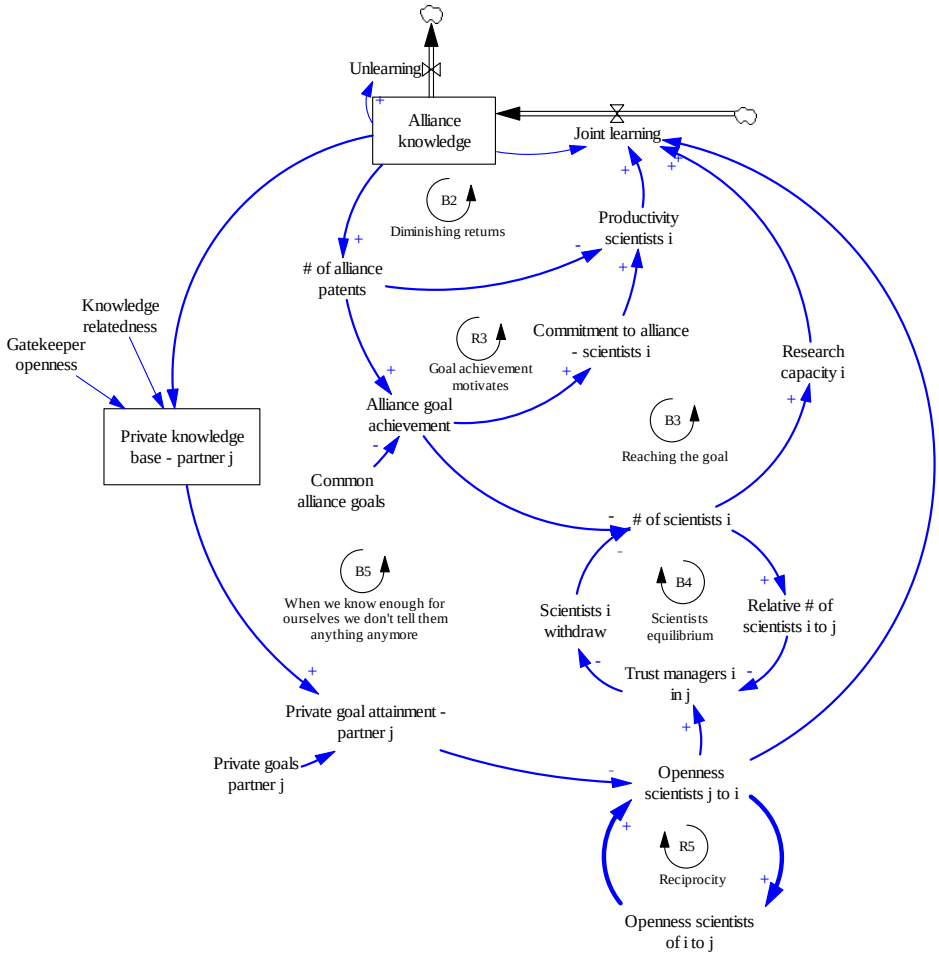

Figure 6: R5 “Reciprocity“.

Similarly, scientists notice fast that their colleagues from the partner firm are not as open as they used to be. Because of humans’ tendency to behave altruistically and fair and not necessarily like a homo economicus (see for instance, Margolis (1982), Camerer and Thaler (1995), Gintis, et al. (2003), or Camerer (2003)) the scientists reciprocate this behavior. This is depicted in the reinforcing loop R5.

Preliminary results of this fairly simple structure show the dynamics presented in the following.

2.3 Model Behavior

In the following we show a base run and two different scenarios. In all runs it is assumed that the alliance starts in week 5. In the base run the parent companies only have common goals and no private goals – or, to put it differently: if they had private goals, knowledge transfer would be limited due to gatekeeper restrictions towards open knowledge exchange. The gatekeepers limit the knowledge flow in areas other than the alliance (Tushman and Katz (1980), Das and Rahman (2002)). In the scenarios parent company 1 has private goals. Parent 1 needs its partner to develop joint knowledge that it cannot develop on its own. From this knowledge it needs parts in a different business area unrelated to the alliance business. In the scenarios, there are no gatekeepers active, and parent 1’s private goals are very small. In other words, it is only interested in generating little common knowledge that it may transfer to its private business.

As stated above, in the base run, the collaborating firms only seek to have common benefits. The firms agree to share 30 patents, thus getting 15 patents each. The maximum possible level of patents is assumed to be 45. It is further assumed that the firms allocate 0.8 scientists per patent to seek for. Both firms assign a similar number of scientists to the alliance as they also split the patents evenly between each other.

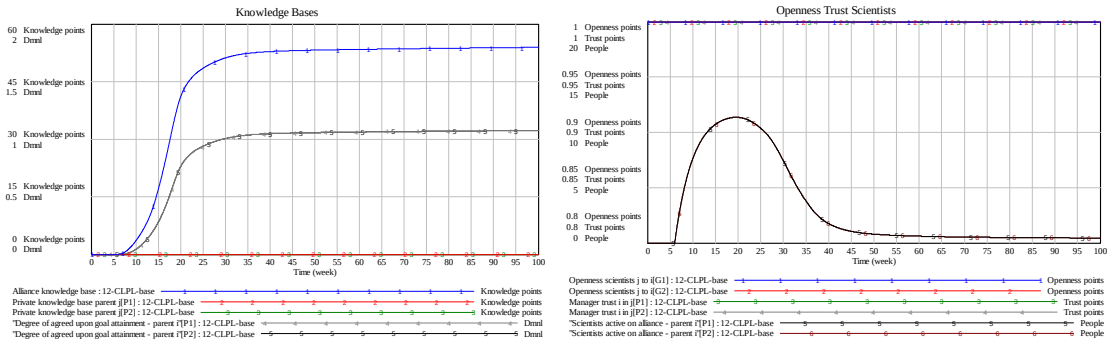

Figure 7: Base run: knowledge bases, goal attainment, openness between the scientists, manager trust, and the number of scientists active in the alliance.

From Figure 7 it can be seen that the common knowledge base builds up smoothly and has an inflection point at around week 17. Until this week more and more scientists are sent to the alliance by their parents. At this point in time, scientists have already completed 60% of their tasks. Yet, the closer the scientists reach their goal, the more scientists the parent firms already withdraw to appoint them to the next project. From then on, knowledge builds up slower, finally resulting in s-shaped growth. Around week 30 the goal of 15 patents per firm is achieved. The goal overshoots slightly as the scientists do not stop their research immediately but delayed. For example, sub-projects need to be finished that could still generate patents. Then, scientists are more and more withdrawn from the alliance. This does not happen instantaneously as they have to complete their schedules and alike. One or the other scientist is still kept busy with alliance dissolution. It should be noted that openness between the scientists and trust between the managers both stays constant at 1 (dmnl). This is due to the model structure in which both are only effected by the generation of private benefits.

In the second scenario, in addition to the common goals, firm 1 has private benefits whereas firm 2 does not. It is not of relevance whether firm 1 is really interested in the common goals or is only pretending to be interested in them. The latter would mean that it only invests in the alliance to outlearn the commonly generated knowledge.

It is assumed that the gatekeeper is not active (hence, the ‘openness of the gatekeeper’ equals 1). This means that all knowledge may be transferred to areas outside the alliance into private business areas. Also, the relevance of this knowledge for firm 1 is high (equals 1). Firm 1 seeks to have 10 patents. It needs the knowledge generated in the alliance on top of the knowledge generated on its own in the unrelated are. Therefore it is only waiting to receive the alliance knowledge to complete its tasks.

It can be seen in Figure 8 that building up the private knowledge base lags behind the alliance knowledge base. The relevance of the alliance knowledge is high for firm 1’s private needs and the overlap of the knowledge contents of private and common knowledge bases is high.

This results in a high relative absorptive capacity (Lane and Lubatkin (1998)). The scientists working on the private knowledge generation understand fast and easily the knowledge spilled-over from the alliance. This is why knowledge builds up that fast. As firm 1 is not truly interested in the common patents generated in the alliance, its alliance scientists close down their openness as soon as it reaches its private goals. This has two effects. On the one hand, firm 2's managers notice this change of behavior. Consequently, their trust in the partnering firm's managers declines. They decide to withdraw their scientists from the alliance. On the other hand, due to fairness intentions of irrational people and reciprocation, firm 2's scientists also do not share their knowledge with parent 1's alliance scientists anymore. A vicious cycle starts resulting in lower trust on parent 1's managers who also decide to withdraw their scientists.

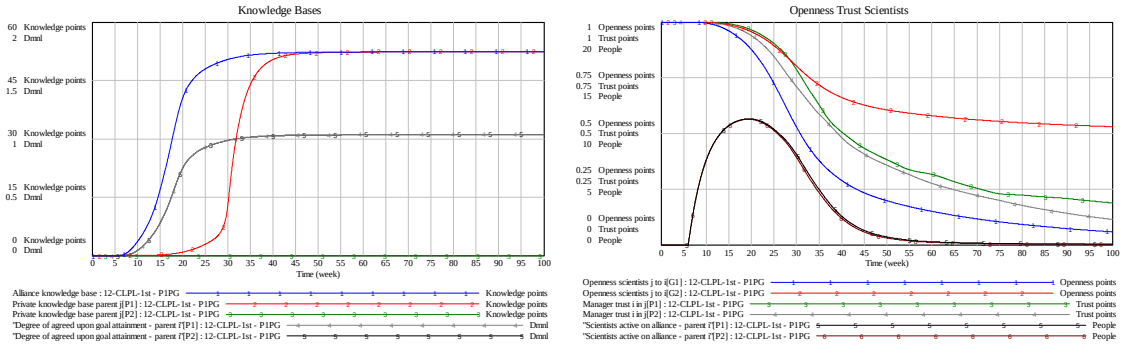

Figure 8: 1st scenario: parent 1 has private goals

Nevertheless, this happens considerably late; more precisely, after the alliance had already reached its goals. Even though scientists 1's openness starts to decline after week 10 and scientists 2 react on it, the effect on withdrawing the scientists is too late to have an effect on alliance results. The common goals had already been met before.

However, as seen from Figure 8, firm 2's managers have nearly no trust in firm 1's managers anymore at the end of the alliance. This goes along with lost reputation of firm 1. It will be difficult for firm 1 in the future to find a partner with whom it would cooperate (Granovetter (1985)). Concluding, firm 1 has reached both (whether or not intended) common and private goals. Firm 2 has reached its common goals – nevertheless would feel betrayed as it had been outlearned by firm 1.

In the 2nd scenario, it is assumed that firm 1 again has private goals. Nevertheless, they only pursue to get 2 patents, hence the number of private goals are smaller than in the 1st scenario. It only requires a small percentage of the agreed upon common goals to be transferred to areas unrelated to the alliance tasks.

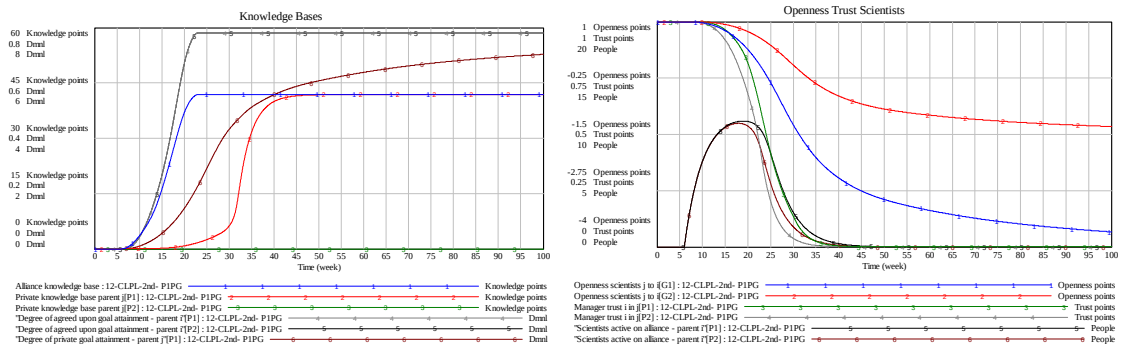

Figure 9: 2nd scenario: firm 1 has lower private goals

As can be seen from Figure 9 the dynamics of the second scenario resemble those of the first scenario depicted in Figure 8. However, due to the fact that firm 1 has so little private goals, it reaches these goals very soon after alliance start. Consequently, firm 1's scientists close down their openness. Firm 2's managers notice this change in behavior and they lose trust in firm 1's managers. Therefore, firm 2 immediately withdraws its scientists (about week 17) who themselves are also less open towards its colleagues from the partnering firm. This results in lower research productivity. Less scientists who are less open towards each other are less productive which is why further knowledge generation slows down and eventually comes to an end. Finally, the alliance only reaches about 55% of the goals the partners agreed upon. Firm 1's private patents overshoots the goal attainment because knowledge still spills over from the alliance to the private knowledge base. As it turns out that the knowledge is of value for firm 1, it overshoots the goals clearly.

Concluding, firm 1 overrealizes its private goals. Nevertheless, if it was interested in also reaching the common goals, then the alliance would be a disappointment for them. First, firm 1 only managed to realize 55% of the common goals. Second, their reputation of a valuable partner for doing joint research is ruined in the industry (Granovetter (1985); Das and Teng (2001); Das and Rahman (2002)). For firm 2, the alliance is not a success at all: in addition to being outlearned by its partner, it also has not reached its common goals.

3. Concluding Discussion

The paper identifies some deficiencies of current research on the dynamics of interorganizational learning in alliances. Feedback loops are essential to understanding the implications of alliance dynamics. Present research tends to neglect those feedback loops. In this paper, six major feedback loops are illustrated – 'decreasing returns', 'goal achievement motivates', 'reaching the goals', 'scientists equilibrium', 'when we know enough for ourselves we don't tell them anything anymore', and 'reciprocity' - that influence the dynamics of learning alliances. Even though findings are still preliminary we gain interesting insights from the model. First it can be stated that if no knowledge spillover in private business areas is not allowed and successfully controlled by gatekeepers, a learning alliance might work productively until it has reached its common goals. Trust between the managers keeps high until the end which might be a basis for future collaboration between the companies.

Furthermore, we identify two scenarios for situations in which private learning is occuring. First, if the private goals are high enough for the partner realizing being outlearned late, it has no particular effect on the alliance outcome anymore. Only the reputation of being a good collaborating partner of the outlearning firm may suffer. Second, if the outlearning partner has

little private goals, private goal attainment may overshoot – however, attaining the common goals may not be realized. Additionally, trust between the two beforehand partnering firms is at a low level.

Concluding, firms seeking to establish a learning alliance should carefully evaluate whether it is worthwhile to outlearn the partner and risk its collaboration quality in the industry. This is of significance as repeat alliances between companies do occur frequently on the basis of previous experience (Gulati (1995)). This is definitely an important factor for successfully managing strategic alliances (Dyer, et al. (2001)).

Research in this field is not completed yet and the development of the model is still in progress. The final model will give decision-makers a tool for a better understanding of long-term effects of their present decisions in respect to keeping a learning alliance alive.

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