THE EMERGENCE OF A CONFLICT IN AN INNOVATION NETWORK INITIATED BY A SME

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ABSTRACT

In order to develop an innovation project, SMEs often need to create a network of alliances with partners who possess complementary resources and competences (technology, customer-distributors, financial partner...). However, these co-operative structures carry a number of risks, in particular relational risks, as such networks are never static and controllable. Tensions between players can lead to conflicts, putting an end to the co-operation and therefore to the innovation project. This article focuses on the relational risks involved in an innovation network that is carried by a SME. It is based on a case study of a small company specialized in the multimedia industry. The originality of this research lies in the longitudinal approach adopted. The innovation process concerned was analysed dynamically, in the course of its development. This made it possible to observe a sudden modification in the environment which affected the evolution of key success factors for the industry, and led to a drastic selection of the players as well as to a change in the general atmosphere surrounding relational strategies.

INTRODUCTION

It is generally accepted that most companies seeking to innovate must create "innovation networks" with other actors in their environment (Ahuja, 2000). Innovation networking can be defined as establishing relationships with a number of partners of different types (competitors, suppliers, customers, research centres…) in order to develop and disseminate an innovation. These relationships may be more or less formal depending on the structures concerned and can be bilateral (members engaged with only one other firm) or multilateral (one member connected to the whole network). Some of these relationships can also be described as alliances, where the companies are potential competitors.

Although innovation and cooperation are viewed as "an inseparable pair", this is even more true when innovation is driven by a small business, with naturally more limited resources. Firstly, through alliances with competitors, SMEs can find the resources and expertise they need (Hennart 1988, Kogut, 1988) in order to accelerate the design process and reduce costs. The study of Deschoolmeester and Moenaert (1991) on European high technology SMEs showed that alliances offer an efficient response to deficiencies in resources, but also have other advantages such as information exchange, generation of effective services among partners, and the reduction of the risks associated with implementing new technologies. Secondly, SMEs need help from financiers, or need to open their capital to venture capital investors. Thirdly, it is essential that they establish partnerships with pilot customers or distribution networks in order to successfully distribute their innovation. Only SMEs that have successfully created a network involving multiple agreements with different types of partners (financial, customers, suppliers, competitors with complementary skills ...) will be in a position to develop an innovation project.
However, establishing partnerships is not without pitfalls, and SMEs are not always prepared to withstand some of the consequences. In particular, one major challenge lies in limiting the relational risks, as alliances are typically characterized by uncertainty concerning the partners' future behaviour (Parkhe, 1993). Legally independent players are brought together and may decide to cooperate, but competition will always lurk in the background of the relationship. Allies may display opportunistic behaviour (Williamson, 1993), for example by unilaterally appropriating the results of the partnership. Other issues may also arise within the relationship (disagreements about the goals of the alliance, lack of commitment ...) leading to conflicts and early termination of the agreement.

This paper aimed to better understand the relationship difficulties that SMEs may encounter within an innovation network. The study also sought to shed some light on the origins of the tensions and conflicts between the parties involved. A review of the literature made it possible to identify a number of potential sources of tension within a partnership (§ 1). Then an innovation process was followed, as a longitudinally case study, from its beginning to its end. This approach made it possible to witness a sudden change in the environment which affected the evolution of key success factors for the industry, and led to a drastic selection of the players as well as to a change in the general atmosphere surrounding relational strategies (§ 2). The empirical data collected as part of the study adds to the literature on cooperation and innovation and is also used to propose some recommendations (§ 3).

1 – R & D PARTNERSHIPS: TENSE RELATIONSHIPS

R & D partnerships often give rise to many tensions. We will first present the different risks associated with alliances before focusing on the relational risks and their origins.

1.1/ Risks Associated with R & D alliances

Alliances represent development strategies that are increasingly used by company managers. Yet, they have a relatively high rate of failure (between 30 and 50% depending on the studies; Kogut, 1988; Bleeke and Ernst, 1991; Barringer and Harrison, 2000; Steensma, 2000 ...). As Ouchi already reported in 1980, uncertainty is the fundamental issue in all forms of cooperation. Das and Teng (1996) noted that an alliance can be faced with two types of risks: performance related and relationship related.

The first type of risk, non-performance risk, can occur when an alliance does not reach the strategic objectives set by the partners (Ring and Van de Ven 1992) irrespective of their cooperative efforts. "Non-performance" can be commercial (the product is not met with the expected success), technological (innovation is not achieved) or financial (investments are not profitable or not recoverable because they are too specific; Parkhe, 1993). The risk it is mainly related to the market conditions and/or skills of the players. Thus, the quality and the complementary nature of the resources and expertise brought by each partner could help reduce this risk.

In addition to non-performance risks, which are inherent to all development projects, whether internal or directed by collaboration, other threats exist that are more specific to alliances and more important: relational risks. Alliances are characterized by instability that arises as a result of uncertainty concerning the future behaviour of the partners (Parkhe, 1993). Legally independent players are brought together and may decide to cooperate, but competition will always lurk in the background of the relationship. Allies may display opportunistic behaviour (Williamson, 1993) and decide to pursue their own interests, not working for the mutual benefit of the partnership. In the course of a "learning race" (Das and Teng, 2000), one partner may lose control over a certain skill or resource, and thus its specificity. Another issue may lie in the unilateral appropriation of the results of the partnership, which may be via a legal process (through the property rights) or through organizational learning (where one partner has a greater "absorption capacity "). Beyond these opportunistic behaviours, other relational issues may also occur. The continued existence of multiple decisional centres can lead to endless renegotiations, conflicts and premature breach of the agreement. It is also possible that the partners cannot fully commit to the alliance due to poorly drawn up contractual agreements or lack of motivation, causing an early termination of the project.

Das and Teng (op cit) suggest that these two types of risks (non-performance and relational) are independent from one another. However, they can coexist in alliances for R & D. For Teece (1992), there is no area where uncertainty is higher and the need for coordination greater than in the development and commercialization of new technologies. The risk of non-performance is important because innovation is very expensive, time consuming and characterized by a high degree of unpredictability (Pisano, 1990; Hagedoorn, 1993). But the relational risk is also exacerbated in collaborative R & D projects (Kultti and Takalo, 2000). Contracts are incomplete by nature, but even
more so where innovation process is concerned as it is impossible to consider all future contingencies. It is particularly difficult to anticipate (What could happen that may jeopardize the contract, and what is the probability that this kind of event could occur?). There is always room for opportunistic behaviour. Given the technological and market uncertainties, managing an alliance is a real challenge for managers (Osborn and Hagedoorn, 1997).

1.2/ Determining Factors in Relational Risks

The literature referring to alliances includes many studies that address the reasons that lead to non-planned dissolutions of alliances. Our objective is not to propose an exhaustive review, but to indicate which are the main determining factors that play a key role in R&D alliances involving SMEs. We have classified these into two categories: those related to the partners’ profile and those linked to the governance structure of the alliance.

Regarding the partners’ profiles, different characteristics may affect the quality of partnership relations. According to Das and Teng (2000), the most desirable alliance is where the partners are equal in terms of size, profitability and position within their industry. In the case of SMEs, it would be preferable to work with structures of identical size. However, due to their relatively small size and limited financial resources, SMEs are often involved in asymmetrical relationships with larger partners. This unfavourable balance of power may encourage opportunistic behaviour. A more powerful partner can control the cooperative process (choice of coordination mechanisms, performance systems measurement, and patterns of conflict resolution ... with possible breaches of promise) and define the sharing of profits that will result from the alliance. In an agreement between a SME and a large company, there is a risk that the latter will be tempted to appropriate the innovation. However, SMEs are not always at a disadvantage in an agreement, since this depends on their degree of dependence on their partner but also on their level of proactivity with in the partnership (strategic value of resources and expertise supplied, which confers the SME with more or less power in the alliance). In some cases, the SMEs possess specific technological know-how that evens the balance of power. Thus, two features need to be taken into account when assessing the relational risks. The reputation of the players in terms of performance (prestige of employees, technological excellence, members’ experience...) and relational competence (experience in alliances management, success in previous collaborations ...) can contribute toward reducing relational risks (Hagedoorn et al, 2006).

Secondly, the commitment to the relationship is dependent on "strategic fit" (Harrigan, 1988; Mora-Valentin et al., 2004): the goals of the partners must be compatible. Unrealistic expectations vis-à-vis the alliance or a lack of community of objectives of each partner can lead to high instability (Hatfield and Pearce, 1994). The allies can have highly different visions of the duration of the alliance (which is often ambiguous, as noted by Kogut, 1991), demonstrating impatience in achieving the objectives. The alliance can be considered as a temporary measure which requires quick and tangible results, whereas R & D projects require a long-term orientation. In addition, the flexible nature of alliances is an advantage that mainly benefits large enterprises that do not want to invest too much in an uncertain business, whereas SMEs seek more the resources they are lacking. This situation leads to potential conflicts in terms of objectives.

Finally, proximity may also play a role, in particular to facilitate coordination. This proximity can be of a cultural nature and concern common practices, histories, management styles and values. Several studies have noted that cultural differences are a cause of instability in technological alliances (Wildeman, 1998; Doz, 1988). But proximity can also be geographical or related to the existence of previous cooperation between partners (Saxton, 1997) that facilitates exchanges and interactions. Besides these factors related to the players’ profiles, the choice of governance structure also seems important in order to reduce relational risks. Firstly, although contracts are incomplete by nature, certain contractual specifications (clauses, existence of mutual hostages ... Pisano and Teece, 1989) can create incentives that enhance the partners’ commitment by aligning their interests and reducing the temptation to recourse to opportunistic behaviour. Secondly, the choice of a structure is a compromise between two objectives: to provide the partner with necessary resources without losing control over these latter (Das and Teng, 1996). In capitalistic alliances, where partners share ownership of an entity, joint decision-making and sharing in the benefits restricts the partners’ behaviour (Gulati, 1995), but also promotes the transfer of knowledge (Das and Teng, 1996). Conversely, in non-capitalistic alliances (Mowery et al 1996), which are closer to the market and are more flexible, it is more difficult to reach a community of interests, to monitor behaviour and to distribute the benefits, but the risk of transfer of know-how is limited. It is therefore necessary to choose the form of alliance that is appropriate to the risks involved.
Finally, R & D alliances are subject to stress that the partners attempt to deal with by carefully choosing their allies and the type of cooperation structure. However, it is necessary to maintain a dynamic vision of the alliance. The initial conditions determine the respective levels of contribution, the conditions governing the sharing in profits, and also a set of operational elements that will determine the modalities for implementing the alliance. But, throughout the course of the project, any condition affecting the perceived value of the partnership may lead to reconsider the nature of the relationship, the sharing of results (Arino and Torre, 1998), the coordination mode, and may even lead to terminating the agreement. As these factors necessarily change over time, the terms and conditions that govern the alliance must constantly be reviewed. A longitudinal qualitative study appeared as the best solution for defining the course of this process.

1.3 The Choice of a Longitudinal Case Study

To better understand the changing relationships in R & D alliances and the conditions that lead to tensions, we opted for a longitudinal case study of a French SME. This methodology seemed the most relevant and best suited in order to answer our questions, in particular given the need to analyze the process as a whole, in its context. This made it possible to monitor events over time and to take into account different circumstance and factors (economic, socio-cultural, psychological ...). It also allowed to obtain input from the various players involved (SMEs managers, employees and partners). The SMEs chosen for this case study was observed since the launch of the innovation project until its termination. It is not an ex post study of an innovation network, but a study that follows a project from its start, at a time when then parties concerned could not judge of its success or failure, through to its end.

To ensure data triangulation (Yin, 1994), this case study was based on three tools for collecting information: interviews, direct observation and document analysis. Regular meetings (every six months, from 1999 to 2003) were conducted with the three main protagonists of the SMEs, namely the company manager, the project manager and the artistic director. Interviews were designed so as to provide an update on the project progress, to study the evolution of the relational strategies, to identify difficulties and to understand the possible changes that were considered. Unfortunately it was not possible to collect similar information from external partners due to their geographical remoteness. These were only met once during a visit to the company studied. To overcome these deficiencies, we multiplied the analysis of secondary data (business plans submitted to various partners, external audit reports, emails exchanged between partners, notes on market developments, slides prepared by the SME concerning the project progress, press articles describing the specialized innovation project ...). Finally, this was complemented with a passive observation (regular presence on the SME premises) so as to capture the immediate environment in the company, the work atmosphere (tensions or periods of excitement) and better understand the innovation process and relationship difficulties.

2 –THE D-STUDIO CASE STUDY

In this section, we will present the SME studied, the innovation project and the network that was created. Finally, we will detail the project history, which helps bring out the relationship difficulties encountered.

2.1 D-STUDIO and its Innovation in the Video Games Industry

D-STUDIO is a company that designs and creates multimedia products (CDs, video-games ...). It possesses skills in three areas: writing of original scripts, graphics design and animation, and software development of multimedia products (with significant expertise in analysis and specification of complex software architectures), and the ability to manage large artistic projects (from 3,000 to 5,000 man-days), bringing together internal teams and subcontractors. D-STUDIO (17 persons) is structured around a leader who, given the size of the company, is inevitable the reference: he embodies the vision of the company and generates enthusiasm around him. This charismatic leader also works on the design and editorial aspects of the productions.

Aware of the increasing difficulties for a small design studio within a sector mainly dominated by the downstream industry, the manager imagines new development projects for his company. He wants to drop outsourcing, where turnover is directly indexed to the number of hours worked, and to explore new areas where competition is not present. He decided to design a new type of video game, an interactive fiction that would revolutionize the market. This new product is an innovation that entailed two types of changes. Upstream, the technology was entirely new, establishing links with new areas of
responsibility, and reducing the value of the expertise accumulated by competitors. Downstream, the goal was to create a new market segment, to expand it, drawing a new category of consumers to videogames who previously had little interest in traditional products. This innovation project entailed not only a change in the value chain of the company that promoted it, but also a transformation of the videogame industry (the technology could be "encapsulated" and become unavoidable). This videogame project, called "Interactor", also carried technological challenges and called for a marketing offer. The SME had to find partners.

2.2 Creating the Innovation Network

At the technological level, the project required the integration of three types of software. The SME planned to develop two of these but needed the third one, a behaviour engine (an engine capable of planning trajectories, a tool that can integrate 3D models, animation and artificial intelligence). D-STUDIO intended to use existing technology, called "Behaviour", by purchasing a license. "Impulse factory", the structure that had developed this technology, was founded by researchers from a prestigious Robotics Laboratory. This software is unique, as it handles the robotic aspects of characters, such as trajectory planning with obstacle avoidance and inverse kinematics (enabling objects to be taken regardless of their position). In the D-STUDIO manager's opinion, "this technology seems very impressive," he even admits having a "quasi-mystical opinion of these researchers". Acquiring a license would enable the SME to obtain technology among the best performing in the market, and also associated service advantages from Impulse Factory, which should help D-STUDIO in its project development. This technology partnership, based on a commercial contract, was to lead to time savings, allowing D-STUDIO to focus on the other technological aspects of the project and to accelerate the market launch of the final product.

In terms of marketing, as the product was to create a new market segment, it would require major marketing efforts (important launch costs). D-STUDIO found a publisher partner: the "M.P. Company", "publisher of outstanding products in the cultural field". M.P. appeared to be a trustworthy ally, as the company shared similar values ("They are people like us who are demanding and who deliver quality products"). The two charismatic managers seemed to have developed a friendly relationship, although employees admit that sometimes the manager of M.P. "displayed an attitude of a Cowboy." M.P. agreed to provide 325,000 euros and to adapt the game for the market leading console on the market, Sony's PlayStation 2, for an estimated cost of 535,000 euros. In addition, the company promised a minimum investment of 93,000 euros in marketing operations. In the signed agreement, D-STUDIO retained ownership of all technologies developed for "Interactor." In this complementary alliance, the balance of power seemed even: D-STUDIO, small structure but with a good reputation in the industry, was to develop a new technology, which was of interest for M.P., a competitor, that would extend its market share thanks to this new product will. The contract signed between the two partners seemed to reflect the balance of relations.

Finally, in addition to the financial contributions made by M.P., D-Studio had to find other sources of funding, as the SME was unable to commit to this R & D project whilst pursuing its traditional activity at the same time (no regular turnover). Adopting the behaviour of a start-up, D-STUDIO turned to venture capital from four investment funds (these were more interested in the technology than in the game itself, but confirmed the potential of the project and the value of the economic model). At the beginning of the project, the SME seemed to have circumvented the traditional dilemmas associated with size and met all the requirements to complete the project. The profile and the reputation of the firm manager (quality requirements, social network, strategic ambition ...), the project quality and the availability of specific competences (know-how, corporate culture focused on excellence) made it possible to involve various types of partners, whether financial, suppliers of complementary technological skills or competing distributors.

2.4 Evolution of the Partnership Relations throughout the Project

The technological development of the R&D project finally proved to be more complex and time consuming than initially anticipated, since D-STUDIO gradually discovered the limits of the "Behaviour" technology. The performance of this engine seemed to have been largely overstated and did not meet expectations. D-STUDIO had to improve on it, in collaboration with researchers from Impulse Factory. But this latter was forced to file for bankruptcy and was acquired by a firm that
showed little interest in this technology. For this American company, terminating collaboration with a French partner did not affect its reputation within its core market: the U.S. market for specialized software in robotics.

D-STUDIO found itself without its partner and was forced to develop another technology, which had a significant impact on work, including the sequencing of the project. This also meant the need for additional resources. The company managed to gradually solve all technological problems, thanks to the dedication of its employees (the team was strengthened by the recruitment of additional engineers, developers and cognitive engineers). The "Interactor" project was however inevitably delayed (the development period increased by twelve months), increasing time constraints for the company at a time when a sudden reversal affected the market trends.

Shortly after signing the contract between D-STUDIO and its publisher-partner (in mid-2000), M.P. was acquired by Pro-Internet, a subsidiary of a large multimedia telecommunications group, which, as an employee of D-STUDIO put it "had the whim of making video games, but could not afford it." In September 2000, the new technologies bubble burst and the Pro-Internet's value on the stock market plummeted at an alarming rate. It had to send out positive signals to the market in order to increase share value. Pro-Internet promised the launch of five new products by the end of 2000, a particularly important period for sales of video games (Christmas). But three of these products were delayed, including "Interactor". Under these circumstances the relationship between M.P.-Pro-Internet and D-STUDIO became quite tense. In addition, Pro-internet decided to depart from the original and differentiating positioning of the project, and to adopt a mainstream strategy which offered no room for an innovative product such as Interactor (as the director of D-STUDIO explained: "The video game industry does not innovate any more, it produces only what has already been a success ... and a successful game is either a licensed one or a sequel to an existing game"). In February 2001, D-STUDIO was approached by its publisher partner to replace the innovative game by a classic adventure game. The whole strategic project of D-STUDIO is questioned. The manager of D-STUDIO rejected this unilateral proposition. In his view, the publisher had to go through with its commitment (its investment in co-production and carrying over to the Play Station 2). D-STUDIO, entangled in a downward spiral was short of cash. In order to pursue the development of its new product, the company needed more capital. A final fundraising was attempted with the financial partners, under difficult conditions, while M.P.-Pro Internet attempted to destabilize the investors. Three fund managers decided to contribute 122,000 euros each, that is to say a period of about six months to resolve the situation. Despite pressures exerted by the downstream partner, the investment funds maintained their support for the project, recognizing the qualities of D-STUDIO leadership, its manager's honesty and prospective vision. For them, D-Studio's manager had always been forthcoming: preparation of consistent business plans, commissioning of two external audits to control the project progress...

However, the dispute with M.P./Pro-Internet escalated. Both partners stuck to their positions. The manager of D-STUDIO attempted to find a compromise and proposed that M.P. would not pay anything until the product was completed, but the Director of M.P. did not respond and played for time. The degradation of the climate between the two companies resulted in the blocking of project "Interactor". Consequently, all artistic and technological investments were progressively frozen. The bankruptcy of D-STUDIO was all the more inevitable that Pro-Internet decided to demand the refund of its €119,000 contribution and also a compensation of €610,000 (delays, unfulfilled commitments, image degradation ...). The bankruptcy of D-STUDIO was recorded in late 2001, in a context where all companies in the video game industry, in particular development studios, were experiencing difficulties (approximately 17 studios filed for bankruptcy or were bought out in France at that time).

CONFLICT: AN ATTEMPT AT UNDERSTANDING

The case of D-STUDIO offers a dynamic vision of the cooperation process. Although the literature does underscore the potential tensions that can occur within an alliance, it does not offer much in terms of understanding the origins of conflicts in partnerships. The longitudinal approach adopted here has made it possible to observe changes in relationships over time and also the factors that led to the emergence of a conflict.
3.1 - Changing Profiles Resulting from External Factors

Initially, thanks to the quality and originality of the project and its internal expertise, D-STUDIO had succeeded in convincing different types of partners: financial, complementary resource providers and distributors. The reputation of its manager, his interpersonal skills (communication, negotiation ...) represented an essential skill in building this innovation network. The key partners seemed trustworthy. Impulse Factory, a supplier of technological resource, had an excellent reputation («Mecca of Robotics») and was unlikely to develop opportunistic behaviour. Although there was no proximity between the two companies (neither geographical nor cultural), D-Studio believed that the relationship would run smoothly. As for M.P., this proximity existed, both between the managers who appeared to share the same values (reinforced by their reputation: design of high quality products) and between companies of similar size and culture. There were common goals with a true motivation to launch a revolutionary product on the market.

Our observation over time can therefore complement the literature on alliances which proposes that the quality of partnership relations is intimately related to initial conditions (Doz, 1996, Das and Teng, 2000 ...). This research shows that a partnership may fail, even when the initial conditions are good. Faced with a project of such ambition, the issue of time management is crucial, particularly the uncertainties related to the time required for technology development. By nature this is an unknown and uncontrollable factor that requires tenacity on behalf of the manager and developers ... and willingness on behalf of the external partners to cooperate on a long-term basis, especially in a context of major disruptions to the environment.

As a consequence of changes in ownership and business partners, both upstream (Impulse-Factory) and downstream (M.P.), D-STUDIO found itself engaged in partnerships that had been negotiated with different managers, with different objectives. Collaboration with D-STUDIO was no longer the focus of these new stakeholders. The balance of power was upset, as was the position of the SME in the agreements. On the one hand, Impulse Factory did not keep the promises made as part of the license agreement, and failed to support the development and application of the technology as required by D-STUDIO. Eventually, the new owner showed no interest in this product. On the other hand, the acquisition of M.P. by Pro-Internet deeply modified the balance of the system as Pro-Internet is a multimedia subsidiary of a large European telecom group. The difference in size, financial resources, distance and cultural development strategies upset the relations between the two companies. A reassessment of the agreement seemed unavoidable and although it would have been a major disruption, adjustments could have been considered. For example an intermediate version of the game could have been launched in order to satisfy M.P. and Pro-Internet thanks to a faster product to market time. This would have entailed changes in the contract, but would have allowed Pro-Internet to reach an intermediate objective, and given more time for D-STUDIO to complete the development of the required technology. However this compromise between the different managing teams, one focused on the short-term (M.P.) and the other on the long-term (D-STUDIO) was not reached. This stresses the importance of relational issues in alliances (cf. Das and Teng, 2000).

Reassessing the respective objectives proved to be impossible, although the people concerned were still the same. One can then question whether the emotional aspect did not take precedence over the economic logic, and whether the subsequent exchanges were affected in this sense. D-STUDIO manager's level of requirement ("mediocrity is at the heart of the video games industry"), his tenacity ("I'm demanding, resilient and I never give up"), but also his commitment not to part with some of his team ("We carried this project together, solidarity must be respected") prevented him from resuming negotiations ("Dead for dead, I'd rather die standing"). Meanwhile, M.P. 's manager sought to justify the sale price of his company to its acquiring firm. Caught between different issues (product delays, justification of an assessment, plummeting share price ...) he changed his attitude toward D-STUDIO. He became aggressive, as the creation of a coalition had been proposed to the venture capital investors, with the objective of recovering the assets of D-STUDIO. It appears clearly in this case that if the collaboration was interrupted, degenerating into conflict, it was also because it was no longer possible to reason "coldly". Paradoxically the pre-existing interpersonal relations did not prevent the conflict...

However, in order to understand this conflict, we must also place it in its industrial context. The changing environment no doubt had a significant impact on the quality of partnership relations. The alliance with the editor was disrupted by exogenous events in the competitive field that sent
shockwaves throughout the videogame market: the bursting of the dotcom bubble. This radically changed the attitude of competitors, as none of them would be ready to engage in significant innovation projects. Pro-Internet became more cautious, more concerned with the evolution of its share price and with short-term profitability than by the possibility of changing the market rules. Simultaneously, the shockwave caused a different reaction from the publishers in the video game industry, as these decided to lock the market by increasing significantly two of its key success factors: the use of licenses from the world of entertainment (sports, films), which entailed the need for significant financial resources. Highlighting these two success factors inevitably increased the entry fees for players such as D-Studio and made it less relevant and interesting for a small firm to break away from mainstream strategy.

The issue of external events and risks is little addressed in the literature on alliances. Most research has focused primarily on the intrinsic characteristics of the agreements (nature of contract, specific partners, governance structure). In line with Kogut (1988), our research suggests that more attention should be paid to events that could affect partnerships. The evolution of the industry (degree of concentration, downturn in demand...) can have a significant impact on the partners (affecting financial performance, economic health, and strategic choices during the life of the alliance). A disruption in the environment can diminish or even erase the skills of a company which relies on a cooperation agreement. Knowledge held by an ally may be devalued due to changes in technological conditions. This is what was observed in this case. The bursting of the dotcom bubble with its consequences combined with changes in success key factors in the video game industry closed the window of opportunity for D-Studio. As a result, the opportunistic behaviour displayed by M.P. stemmed more from the abrupt change in the environment than from factors related to the human nature. Therefore, vigilance in alliances must integrate two intertwined dimensions: keeping watch over the environmental conditions, and how any changes therein may affect the partner's motivation to cooperate.

It is under such conditions, and because the allies were unable to engage in constructive negotiations, that D-STUDIO decided to turn toward its financial partners rather than let itself be emptied of its substance by a powerful ally that locked access to the market. The company then faced a twofold challenge. The first was to complete the technology project expected to have many industrial applications (simulation, e-commerce, self-training ...) not only in the video game industry. The second was to convince M.P. to return to the project by demonstrating that it had more to gain by marketing the product than by pursuing a legal strategy. Opting out of a bilateral relationship with the more powerful player (M.P.) and relying on a network of relationships, a provisional solution was identified. Institutional partners approved this option and provided additional funding that ultimately was not sufficient to overcome the challenge, as the conflict shortly turned into legal proceedings that resulted in bankruptcy... This illustrates the potential role of third parties in an alliance networks (Gomes-Cassieres, 1996) and how different relationships can influence the evolution of the network. This research shows the limits of two-way alliances that ignore inter-relational factors. It also shows the advantages of adopting a longitudinal methodology, as only this type of approach can capture the developments than occur in the course of the alliance life-time.

At this stage, it appears that our study is of interest as a complement to knowledge gained from the literature addressing conflict in alliances. Three points were emphasized: tensions and potential conflicts are inherent to alliances, regardless of the initial conditions. Exogenous factors can play a fundamental role in the disruption of the equilibrium of a network and can cause a cycle of tension. Finally, even when the network consists of bilateral relations, a systemic representation must be adopted: the quality of one relationship can affect the others, and external partners in a dyad may play a regulatory role and mediation in the latter.

Finally, this research also provides some lessons on the structure of alliances.

3.2 The Alliance Structure

Contracts can rarely adequately protect partners in an alliance for several reasons. First, because it is impossible to specify in advance all possible behaviours of partners (contracts are inherently incomplete and leave room for adjustments and renegotiations) nor to assign probabilities of occurrence to certain events that may affect the relationship. Also, negotiating and drawing up
contracts is costly, which leads to a limitation of the specifications. This is even more difficult in the context of an R&D/sales alliance carried by a small company, as this latter rarely possesses the necessary legal expertise and must seek external advice. Finally, even if the SME is protected by contract, it may suffer from the consequences of its limited financial resources and its trade dependence. This is particularly the case in an industry dominated by downstream activities where the alliance partner locks access to the market. The proposed innovation was supposed to change the power relations and the business model in the video game industry. But the downstream partner finally abandoned the initial strategy based on a win-win strategy, and opted for an attempted hold-up (capturing technology developed by D-STUDIO). The manager of D-STUDIO somewhat disillusioned will even state that "to be in a strong position in a partnership, you must be Bill Gates! We were dependent on the goodwill of our client-partner and we did not have time and strength to await the outcome of the trial. Even if it does not meet the contract terms, the partner possessing the greatest financial resources can negatively affect the SME by taking advantage of the length and cost of legal proceedings.

Beyond these contractual and legal aspects, one may question the existence of means available to the SME to protect itself from this kind of opportunistic behaviour.

In an industry dominated by downstream companies and in a complementary alliance where the partner is also a potential competitor, vigilance is essential. It is probably through the steering mode chosen for the alliance that the SME could find a way to maintain its ability to influence the key partner and to withstand sudden changes in the environment. In the case studies here, D-STUDIO and M.P. opted for a non-capital alliance in the sense of Mowery et al. This type of alliance is relevant, as emphasized Das and Teng (2000), when the partners do not want to transfer know-how. However, it is not sufficient to align the allies' interests and behaviours. It might have been preferable for M.P. to take part in the capital of D-STUDIO, thus sealing the interests of both companies and involving the publisher more closely in the innovation project. The alliance would then have become a "capitalistic" partnership (Mowery et al. 1996).

With hindsight, given the stakes of the project, setting up an actual steering committee composed of representatives from all network partners (providers, institutions, investment funds and of course publisher), and not just separate bilateral relations with each of them, would have offered a better structure "so that everyone feels embarked in the same boat." This would have presented a number of advantages. It could offer a forum for information exchange and negotiation between all partners in order to define, for example, whether to maintain the ambition of the original project. This means of expressing disagreement (Burgelman and Grove, 1996) and harmonizing representations would have enabled the manager of D-Studio, isolated by nature, to better integrate in his decisions the abrupt changes in the environment and to monitor progress with respect to the objectives that each partner was aiming to achieve through the agreement. Ultimately, it would have decreased the opportunistic behaviour of the downstream partner, as under collective pressure the latter might have acted differently.

Ultimately, for innovation partnerships it is necessary to find a balance between two dimensions: the contractual aspects and the governance structure, in order to ensure the sustainability of the necessary cohesion between partners (Ring and Van de Ven, 1994).

**CONCLUSION**

This research posed the question of tensions arising within R&D alliances and also addressed the evolution of conflicts in an innovation network over time. With the D-Studio case study, it was possible to follow a negotiations process that led to the involvement of different players whose initial profiles seemed compatible enough to avoid conflicting relations, and then to observe the evolution of the relationships and the emergence of tensions. These first occurred when one of the partners failed to keep its side of the deal following a change of ownership, resulting in considerable delay in the development of technology. The case analysis also revealed a profound change in the nature of the alliance relationship with the downstream partner, following major disruptions (acquisition of the partner by a large group, external disruptions). The changes affecting the balance of power and the disruption of the market strongly reduced D-STUDIO's influence. This resulted in a deadlock with the company that controlled access to market. This article stresses the fact that the partners' profiles and
their interpersonal skills (negotiation skills, communication, past experience ...) are strongly dependent upon contextual factors.

Secondly, for projects requiring a high level of commitment, such as innovation development projects, the case study shows the importance of the choice of governance structure. This latter should not necessarily rely only on bilateral relations between actors, but should tend toward more collective structures. This would encourage greater commitment on behalf of the partners and would reduce the risk of opportunististic behaviour in the event of disruptive external events.

From a methodological point of view, this research highlights the importance of adopting a longitudinal approach, as this makes it possible to understand how a succession of events can add up and lead to tensions and conflict (the emotional context and feelings should also be taken into account).

The literature concerning risks in alliances lacks empirical cases, in particular to shed some light on the emergence of conflicts within inter-organizational relationships, this limits the possibility for comparing the observations made in this study. Further case studies appear necessary in order to better understand these issues. Continuing this research in the multimedia industry should enable us to acquire complementary knowledge pertaining to the dynamics of conflict within inter-organizational relationships. We believe that a context of profound questioning of the initial rules, as observed in the case of D-STUDIO, offers a particularly rich opportunity for understanding opportunistetic behaviour.

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