

Managing the Evolution of Coopetition Dynamics:

A Longitudinal Case Study on the French Grain Merchants Industry

Mourad Hannachi¹ & François-Christophe Coléno¹

¹ UMR SAD-APT, INRA, Paris, France

Correspondence: Mourad Hannachi, UMR SAD-APT, INRA, 16 rue Claude Bernard, 75005 Paris, France. Tel: 33-61-755-4991. E-mail: mhannachi@grignon.inra.fr

Received: October 2, 2015

Accepted: October 27, 2015

Online Published: November 9, 2015

doi:10.5430/bmr.v4n4p13

URL: <http://dx.doi.org/10.5430/bmr.v4n4p13>

Abstract

The coopetition literature argues that coopetition is a dynamic relation that evolves over time but there is a gap when it comes to the understanding of this evolution. The aim of this paper is to investigate, via longitudinal cases studies, the evolution of coopetition relationships and its management at the inter-organizational level. Through multiple cases studies in the same industry (the French grain merchants industry), we reveal the existence of two differing states of the processes of coopetition. The spontaneous coopetition and the deliberate coopetition. Each form of coopetition is related to particular tools that are used by managers in order to sustain a coopetition strategy. These states of coopetition seem to be an evolving phenomenon but this evolution is not systematic and each state of coopetition (deliberate or spontaneous coopetition) can be stable for a while. Using these findings, we propose in this paper some principles and tools to manage the evolution of coopetition.

Keywords: Coopetition, Dynamics, Evolution, Biotechnology, GMO, Longitudinal cases studies, Collective strategies, Inter-organizational relationships

1. Introduction and Theoretical Background

Over the past decades, many scholars and practitioners have underlined that the traditional dichotomy between competition and cooperation seems no longer appropriate for understanding inter-organizational relations (Bengtson & Kock, 2000; Gnyawali & Madhavan, 2001; Dagnino & Padula, 2002; Linnarsson & Werr, 2004; Yami et al., 2010). This finding gives rise to a new research field in management science which is appointed "coopetition", a neologism created by the hybridization of the words of competition and cooperation.

Coopetition is defined "as a simultaneous pursuit of collaboration and competition between firms" (Gnyawali & Park, 2011) and a growing number of researchers have noted that competition and cooperation often coexist and simultaneously influence the strategic operations of firms and other organizations (Gnyawali et al., 2008; Walley, 2007).

However, even if authors identified coopetition as a winning strategy (Yami et al., 2010; Hannachi & Coleno, 2015), a coopetition relationship appears to be difficult to sustain (Bengtson & Johansson, 2012). Some authors underlined that partnerships between competitors are more unstable than alliances between non-competitors (Das & Teng, 2000; Park & Russo, 1996). Coopetition involves the simultaneous existence of cooperation and competition, which by definition are opposites. Consequently, a coopetition can generate tensions (Fang et al., 2011; Wilhelm, 2011). Those tensions arise from the coexistence of two behaviors (cooperation and competition) usually considered as opposites.

In this context, whereas authors consider the firm's relational strategy and its ability to leverage inter-firm relationships as a crucial organizational capability (Dyer & Singh, 1998; Lorenzoni & Lipparini, 1999), the management of coopetition is a real challenge for practitioners and scholars. We believe that this difficulty to grasp the coopetition relationship is due to twofold reasons: the lack of dialectic approaches in the inter-organizational relationship studies and the gap of the process evolution of coopetition.

Van de Ven and Poole (1995) have defined a typology classifying existing research on cooperation relationships between competitors. Based on an extensive cross-disciplinary review, they arrived at four generic but distinct developmental theories: life cycle, teleology, evolution, and dialectics. The life cycle approach considers the inter-organizational practices as a process of organic growth in which organizations proceed through a unitary

sequence of stages. This sequence is irreversible, cumulative, linear and predictable (Forest & Martin, 1992). The teleological approaches consider it as a repetitive sequence of goal formulation, implementation, evaluation, and modification of goals based on what was intended or learned by the organization (Doz & Hamel, 1998). The evolutionary approach focuses on the environment, which is considered as the principal factor that molds the clay of the process (Reuer et al., 2002). The fourth theoretical approach is influenced by the social philosophies of Marx and Hegel, predicting the collision of coexisting but contradictory social forces so as to produce a new social order. Through this approach, dialectical forces (Note 1) compete for scarce resources and managerial attention, undermine organizational features which in turn produces organizational arrangements (Das & Teng, 2000). Using this typology De Rond & Bouchikhi (2004) review theoretical contributions in the existing literature on the relationships between rival firms. They maintain that life-cycle, teleological, and evolutionary approaches have been relatively well covered in the literature, but dialectical frameworks are uncommon and process studies informed by a dialectical theory appear to be markedly absent. Moreover, numerous academics (Ireland et al., 2002; Linnarsson and Werr, 2004; De Rond and Bouchikhi, 2004; Easterby-Smith et al., 2008) have asserted that we know relatively little about how managers can address these tensions in their everyday practices. They call for in-depth case studies on this topic.

Beside this, many authors (Dagnino & Padula, 2007; Le Roy, 2008; Dana et al., 2013) have demonstrated that cooptation is a dynamic phenomenon but the cooptation literature has long focused on the explanatory variables for competitors engaging in cooperative relationships. Yet, there is a gap in understanding the evolution and the stability of cooptation.

Consequently, in order to contribute to the understanding of the evolution of cooptation and to supplement existing research on cooptation phenomena through the dialectical approach, the purpose of this article is therefore to explore how managers actually handle this cooptation dilemma. In other words what are the levers that a manager can use to sustain or establish a simultaneous and dialectical cooptation relationship.

For this aim, we propose to use longitudinal case studies on clusters of grain merchants in France. Clusters were defined by Swann and Prevezer (1996) as "groups of firms within one industry based in one geographical area." A cluster engages a majority of firms in competition in a dynamic process that evolves overtime.

We chose the French grain merchant industry because they have been impacted by a market segmentation which turned to a sectoral crisis that called for a coordination between competitors.

After the presentation of this industry context (section 2), we will describe the methodology used in this research (section 3). Then in the fourth section we will address the results of our case studies. In section five we discuss those results and the theoretical and managerial implications for the management of cooptation relationships. Finally, in the conclusion we make some suggestions for a research agenda.

2. The Empirical Background: The Grain Merchant Industry under GM and Non-GM Coexistence

Grown and marketed in the world for about ten years, GMO (genetically modified organisms) are the subject of fierce controversy. In France, GMOs were introduced in 1999 but a decade later the government decided to prohibit the growing of GM in 2008. The main cause of this change in treatment is the existence of two divergent approaches. Some nations have implemented a "product" approach, basing the analysis of risk just on the principle of equivalence of substance: only differences of chemical characteristics can justify a degree of specific statutory constraint on products. Europe on the other hand implemented a "process" approach to licensing the sale of GMOs. By virtue of this approach, there is a need to evaluate the harmlessness of GMOs to human health and the environment before such authorization is granted. Hence, while in several countries GM crops are not considered as a category by themselves and do not require a specific market, in Europe the consideration of scientific observations and potential uncertainties has led to a market segmentation and required institutional guidelines modifications. Before the prohibition (so from 1999 to 2008), the regulation imposed at the European level and the French bill on GMOs established the principle of coexistence between the various types of products and the segregation of GMOs in the supply chains, by proposing legislation which does not forbid the sale of genetically modified plants but that enables those who so wish to avoid consuming them.

For agricultural lands, several problems are induced by this coexistence. It is necessary to consider the risks of admixture during the handling of a given material for sowing or collection (Jank et al. 2006) and above all, the risk of admixture by cross-pollination (Note 2) (EC, 2003 a and b). For this purpose, it is possible both to set up isolation distances between plots of land (Byrne & Fromherz, 2003) and also to stagger production over time (Messean et al., 2006; Scipioni et al., 2005).

So the questions that arise concern the implementation of coordination and governance mechanisms allowing the coexistence of GMOs and conventional crops in the field. At this level, whether it is for seed or food production, the grain merchants occupy a key position. Their position upstream of and downstream from the farmers puts them in a strong position to manage the farmland. Those companies are suppliers (distributors of seeds, inputs), advisers (they provide technical support), and clients (they harvest, aggregate, stabilize and transform the product, then commercialize it) of the farmers. Also, they are the only companies authorized to define the spatial and temporal distribution of crops (in order to establish a spatial specialization or a temporal isolation of a GM crop). All these considerations put those companies in a strong position to manage a coexistence. However in the farming regions there are a lot of grain merchants who are in competition with each other, and the success of coexistence involves a coordination between these competing companies (Hannachi & Coleno, 2015).

For these rival firms, coexistence gives rise to two kinds of constraints, those involving management of the risk of admixture and those involving the segregation of products. These constraints encourage rival grain merchants in a given region to cooperate and to coordinate their activities. The management of the risk of admixture requires a sharing of information, such as the location of GM crops, between rival firms. The management of segregation requires a sharing of resources (division of the landscape or sharing of the machinery used for each crop)

In this context, our research question is how did rival grain merchants coordinate themselves to manage coexistence when it was allowed? How their co-competition strategy evolved and therefore what are the tools used to sustain and balance competitive and cooperative actions? What are the levers to establish and manage a simultaneous and dialectical co-competition relationship?

3. Methodology

We aim to do the study of the evolution of co-competition and the process used by managers to collectively sustain and manage co-competition relationships. Many researchers argue that this aim requires a longitudinal approach. Therefore we opted for a longitudinal qualitative research covering a period of 11 years (since the introduction of GMOs in France to their prohibition in 2008) through a historical approach based on semi-structured interviews conducted in 2009 and data archives analyses.

The case study proves to be a relevant option since the studied phenomenon is dynamic and implies several dimensions (Eisenhardt, 1989). In order to analyze these relations and collective strategies, we use the “*embedded multiple-case designs*” (Yin, 2003). We start with an exploratory investigation at the national level, and then we focus on three in-depth investigations on three clusters of maize production affected by the coexistence problem (in France the only authorized GMO was the Bt maize), and contrasting in terms of market structure and relationships between grain merchants. So we have three case studies. In each case, the method consisted of increasing the sources of data (Eisenhardt, 1989) and in using a piece of information, according to the principle of research by triangulation, only from the moment it appears in at least two sources of different nature. The data analyzed in this case were obtained from public secondary sources (newspapers, professional reviews), from private secondary sources (documents of the studied network: title deeds, activity reports) and from a series of semi-directive interviews lasting between 1 and 3 hours with various people (leaders of grain merchant companies, executives of professional organizations, researchers, technical institute staff, etc.). This work is thus based on a series of 41 semi-structured interviews (total 72h06 records) and some non-participant observations (7 management committee meetings). We have accumulated data until reaching “data saturation” (when no new or relevant information emerges by sampling more data) (Strauss et Corbin, 1990). The size of this dataset has enabled data triangulation and the exploration of plausible rival hypotheses (Campbell, 1994). The interview format enabled rich, free-flowing data that cannot be captured in a directive survey. Interviews we transcribed and analyzed for re-occurring themes for data analysis (Miles and Huberman, 2003). These segments were subjected to thematic content analysis.

4. Results

4.1 The Alsace Cluster

Maize is the dominant crop in Alsace (75 % of the region’s land area is used for cereals) thanks to the continental climate, favorable to the growth of this crop. Outlets are mainly directed to human foodstuffs and benefit from the proximity of farm-produce processing industries (starch and corn meal in France and Germany).

In 1999, at the introduction of GM production in France, the main clients of the grain merchants of the region echoed the aversion of French and German consumers to GMO and began to offer contracts with bonuses for maize guaranteed free from GMO. In response the managers of the leading grain merchants of Alsace had an

informal meeting and decided collectively to refuse to market or harvest GM-production. They agreed a procedure to manage the absence of GMO from their region:

- First, they collectively decided to use lobbying and communication to convince all the operators of the agrofood production chain of Alsace.
- To influence the seed companies, every delivery to an Alsace grain merchant was sampled and checked using the Elisa (Note 3) test. If a trace of GMO was detected, the whole delivery was returned.
- To influence the farmers, all the farmers' deliveries are sampled and every day all the samples are mixed and an Elisa test is done. If there is a trace of GMO the grain merchant sends a mail to all the farmers. The mail contains the certificate of analysis and the list of names of the affected farmers. There is no tax or sanction for the farmers. They just use the social pressure (between farmers) to manage the free-riders.

As a result of this collective strategy, and over time, the Alsace maize industry has acquired a reputation on the market from which all its members benefit.

Faced with a changing demand for non-GMO products and having to manage such a proportion of maize in the region, the Alsace grain merchants took a regional collective decision only to produce non-GM maize, and they succeeded in convincing all their farmers. The process underlying the constitution of this collective strategy between grain merchants is informal: it arose from a direct dialog between grain merchants' executives.

If the Alsace grain merchants had not chosen to refuse collectively to produce GMO maize, each of them would have been subjected to a risk of admixture and thus loss of market. There would then have been much uncertainty about a key environmental variable, which an individual firm could do little to remedy. By means of several measures organized collectively, always via informal coordination, the results showed that the infringement of a 0.1 % threshold (of GM in non-GM) was always avoided (Note 4). This informal way of operating which characterizes the Alsatian industry is based on reliable relations and a very specific culture where dialog is the normal practice. So the way the Alsatian system works is partly due to social and cultural features of the region in which it exists. It is about a region with a very marked identity and its own way of working and the relationship between competitors in Alsace seems to be relied to social embeddedness (Granovetter, 1985).

So in this case the mechanism of coordination between rival firms is based on an informal direct dialog between the managers: a sort of gentleman's agreement. Our investigation in Alsace shows that this way of managing cooperation relationship enables a stability of the cooperation strategy in this cluster. This way of working seems to have been in use in the Alsace maize cluster before the GMO crisis and the same mechanisms were used to balance cooperation and competition to collectively manage a plant pest crisis affecting the maize production in 2003 and 2008. In these pest crisis, the grain merchants have competed to sell pesticide and technical support to farmers but they coordinated themselves to share information, solutions and knowledge about the pest disease.

4.2 The South-Western Cluster

The south-western region is the main French (and indeed European) region for grain maize production, with 600 000 ha of maize on average, which is a third of the French grain maize area. The maize market is very segmented there and characterized by the presence of a large number of grain merchants in strong competition against each other, severe problems with stalk borer (to which the GM maize is resistant) and a nearby demand for GM corn from the Spanish animal feed market.

At the introduction of GM production in France, the grain merchants of this region decided to hold a formal meeting. They agreed to negotiate and to establish a collective charter called the «big south-western maize quality charter» (BSWMQC). This charter establishes recommendations for practices and the organization of the space for the management of coexistence: definitions of acceptable distances between GM and non-GM crops, good neighborhood practices etc.

This agreement was made in 1999 on the initiative of several grain merchants in the south-west in response to some of their clients who wanted guarantees on non-GM purity. In 2000 an association (BSWMQC association), was formed of approximately 140 grain merchants in the south-west. Membership was voluntary and the association is administered by an assembly of grain merchant companies. The association has succeeded in federating all the grain merchants of the region and then other stakeholders (seed companies, farmers' unions, etc.) were invited to participate as associate members. To manage the other operators of their cluster, those grain merchants use contracts and market mechanisms.

In 2004, the association published a “Guide to Good Hygiene Practices”, a technical reference book written collectively. As well as the GM problem, the charter takes into account all the pest and disease problems of the maize grown. The association also created a standard making it possible to identify the goods produced under their specification. The use of this mark by the signatories of the agreement is authorized subject to strict conformity with the measures established in the charter. To this end, the association has built up a partnership with the National Interprofessional Cereals Office to verify conformity with the requirements of the Charter by grain merchants signatories. It has led to the “Class A standard quality corn”, which is used by the south-western grain merchants as a market benchmark.

Their standard is based on a “best efforts obligation” approach and no result is guaranteed. Through this standard and their union, these grain merchants have succeeded in rejecting all of their clients’ requirements that were considered to be too restrictive and costly. They also succeeded in imposing their standard on their suppliers (the farmers) and their clients. This enables them to preserve all of their outlets (GM and non-GM) and the competitiveness of their product on the global market.

The grain merchants of the south-west region went even further: they share their silos to reduce the transport costs for their farmers and they also share the strategic access points to the global market (port infrastructure, canal basin, cargo terminal, goods railway station, etc.). This coordination has enabled them to improve access to the international market and the visibility of their products, given that on the market they share the same identity and the same selling price because of the system of regional marketing of cereals (Free On Board systems).

So in this region the grain merchants have established a working platform grouping together the various stakeholders in the corn industry, whose objective is to set up, guide and promote their approach.

In their context, in the event of accidental admixture of GM and conventional grain, the system of traceability makes it possible to go back to the silo of the grain merchants, but it is impossible to go back any further (Luthy, 1999). Hence the grain merchants were in the position that if they did not take responsibility for organizing the crop and its segregation, they would have been held responsible for any mistakes, risking degrading the brand image of their products and losing market share. This situation of interdependence led to the emergence of this formalized system in order to attempt a collective management of coexistence. Moreover, in this region, some grain merchants share a geographic information system and collective database managed by a third party (a Certification firm) which allows them to zone crops before seeding and to evaluate and manage the risk of admixture during the harvest.

So in this case the rival firms formalize all their engagements and procedures. When coordination is needed, the rivals engage a third party (National Interprofessional Cereals Office, certification firm,) or create a distinct organization (BSWMC association). So the mechanism of coordination is formal and indirect. This way of working and the cooperation relationship appear to be stable in this cluster. Our investigation reveals that it was preexistent when the GMO coexistence problems emerged. Formalism and third parties were used in 1990 to solve an overproduction crisis. The grain merchants have created a holding company involving rival firms and a third party (a retail firm). The same mechanism was used in 2002 to create a corn biofuel industry owned by a collective holding company created by grain merchants and a biochemistry firm. It is important to emphasize that in these holding companies, it is the grain merchants that collectively choose and solicit the third party partner (retail and biochemistry firms). These third party were invited to hold 51% of the holding company. According to the south-west managers, no grain merchant wanted to adhere to a holding company where a competitor is the majority shareholder.

4.3 The Isère Cluster

Maize is the dominant crop in the Isère department. The outlets are very diversified (livestock feeding, starch, corn meal, etc.) but in this region demand fluctuates and there is no regular client for the Isère corn. On the northern European markets, the Isère cluster is overtaken by the Alsace production and on the Mediterranean and international markets they face the serious competition from the south-west region.

At the introduction of GMOs in France, no grain merchants in the Isère department marketed GM product. Their region is topmost in terms of number of farms certified for organic (Note 5) production (14% of the region’s land area is used for organic production). The organic market is very important for their region and the grain merchants have an interest in preserving this market (Note 6). There was neither coordination nor dialogue between grain merchants and it was a sort of collective herd behavior. But soon a “free rider” appeared: a small grain merchant sold GM seeds and prepared to harvest and to market GM productions. At that time, there was an obligation to notify

every GM crop to the town council. So the news of the presence of GMOs in the Isère department leaked out. In consequence the demand for Isère corn has decreased and the whole Isère cluster was in crisis. Because of the fragmented field pattern and cross pollination, no one could guarantee the purity of his production or the absence of GMOs. This situation led to significant market losses.

Faced with this crisis, those grain merchants were not able to coordinate themselves. The local context is characterized by a strained relationship between grain merchants and there is no market leader. So in this case there was a self-coordination failure.

At that moment, an independent third party (the Chamber of Agriculture (Note 7)), which seems legitimate to anyone in the Isère industry, intervened and created a sort of “mediation arena”: the Strategic Council of the Isère Cereals Industry (SCICI). This council was situated in the Chamber of Agriculture headquarters and all the grain merchants and the farmers’ unions were invited to join in. The first meetings were stormy and there were many absences. But with time a dialogue emerged and the grain merchants started cooperating. This year, for the first time, they have decided to share information on GM crop locations in order to manage the risk of admixture. Then, for the long term, they decided to set up a collective strategy based on a non-GM specialization. So they have collectively invested in the local starch industry (the starch market, like all human food products, is a non-GM market in France). They have developed a local non-GM demand and they display a collective brand image on the European market as a non-GM supplier.

After the GMO crisis, the grain merchants took over the strategic council and started cooperating without the need of an independent arbiter. Many collective actions have been launched without the Chamber of Agriculture. As an example they have decided to specialize in sunflower oil production and to drop non-oil sunflower (as for the GMOs, there are cross-pollination problems between oil and non-oil sunflower production). As another example, all the grain merchants have decided to launch coordinated actions to develop the local organic market (they have succeeded in increasing the market by 10 % in two years). In these examples the Chamber of Agriculture was bypassed and the grain merchants had direct interactions.

So in this case we have an absence of coordination between rival grain merchants which led them to a sectoral crisis. But with the intervention of a third party that had legitimacy in the eyes of all and the creation of a “mediation arena” the cooperation between rival firms emerged. This case shows that co-competition relationships can evolve as a dynamic phenomenon. Co-competition can emerge and can evolve. In the Isère cluster of grain merchants, the co-competition emerged in a context of strained relationships characterized by an absence of coordination and has evolved from an indirect and formal coordination to an informal and direct dialogue.

5. Discussion

5.1 Different States of Co-competition Relationships

In a same industry and in the same country we find different forms of co-competition. These forms differ in the way the co-competition relationship is managed at the inter-organizational level. Our longitudinal study on the grain merchants industry reveals that these ways of managing co-competition can enable to reach stability in a large cluster of firms. These differing forms are:

5.1.1 Spontaneous Co-competition

As shown in the Alsace cluster the tensions of co-competition can be managed through an informal mode, based on tacit agreements. These agreements become management tools of the collective good shared by operators. This co-competition is institutionalized by a set of socially accepted rules as a sort of social institution, i.e. a mechanism of social order and cooperation governing the behavior of a set of individuals within a given community. The firms are interacting together in a social system. Over time, actions or mental representations of each other's actions eventually become habituated into reciprocal roles played by the actors in relation to each other. When these roles are made available to other members of the community to enter into and play out, the reciprocal interactions are institutionalized. The rules which become a collective management tool are built and maintained by interactions. This form of co-competition rests on a strong embeddedness of the competitive relations (Granovetter, 1985). The social and historic embeddedness provides a decisive advantage to the firms who cooperate "spontaneously" without the need for contracts or market mechanisms (Uzzi, 1997). This embeddedness favours the emergence of collective strategies and natural parallelisms. The reactions of an operator to the actions of the others are no longer directly connected but entangled in a complex social fabric which is implicitly absorbed by firms (Emery and Trist, 1965). The main form of coordination is by personal contact. The survival of the collective strategy does not depend on economic

penalties but on social sanctions. The free-rider is excluded from the strong social links which connect the players. He pays for his divergent behavior by being mistrusted.

5.1.2 Deliberate Coopetition

As shown in the south-western cluster, sometimes the rivalry and trust issues between firms seem to prevent any direct coordination. Collective action has to rely on a third party and on formal agreements. The competitors do not wait for the intervention of this “trusted third party”; they call him up and establish his functions. This formality and the involvement of the third party allow them to establish trust between competitors. Then they formalize their cooperation through a formal structure and create a third shared organization. So this form of coopetition is less dependent on embedding. It rests on contractual relations and legal sanctions are used to control and preserve the collective strategy. The creation of the code of conduct is negotiated collectively in a formal framework with the presence of the third party. In this configuration firms create collective management tools and a common system of reference (standards, good neighborhood rules, etc.).

Therefore our study reveals the coexistence of two forms of coopetition founded on different management methods. The literature abounds with empirical evidence of the use of formalism and third party involvement or creation of a third shared organization for the management of coopetition relationships. (Browning et al, 1995 ; Bengtsson and Kock, 2000 ; Fjeldstad et Al, 2004 ; le Roy, 2008; Gueguen, 2009 ; Roy and Yami, 2009 ; Czakon, 2009; Gnyawali and Park , 2011). The use of tacit conventions and social pressure epitomize processes akin to "unlawful agreements" or cartels such as observed for example in the American cement industry (Dumez and Jeunemaître, 2000). These ways of working, based on tacit agreements and herd behavior, are generally less studied because of their intangible nature but also because they are considered illicit and thus should not exist. Nevertheless informal coordinations really do exist, and as shown in the case of the Alsace grain merchants, they do not always aim to collude or to abuse of a dominant position. They can emerge to protect a public interest (Note 8).

5.2 The Emergence and the Evolution of Coopetition

These differing ways of managing coopetition at the inter-organizational level seem to be linked to the cluster's history and context. But in our investigation data, the mechanisms we find in differing clusters seem to be present in a same cluster over time.

These differing ways of managing coopetition at the inter-organizational level seem to be linked to the cluster's history and context. But in our investigation data, the mechanisms we find in differing clusters seems to be present in a same cluster over time. This observation demonstrates that coopetition relationships can evolve. This evolution is not automatic: as shown in the south-western case, deliberate coopetition can be a stable relationship and go on. This evolution seems to be linked to the transformation of the firms' behaviors that socially construct a new environment through their interactions (Porac et al, 1989). Many scholars argue that the coopetition process could be animated by numerous behaviors and emotions that could change over time (Loch et al., 2006; Bengtsson and Johansson, 2012; Dana et al, 2013). These authors argued that studying the development of the coopetition process via longitudinal studies is essential (Bengtsson and Johansson, 2012). Our longitudinal study demonstrates the evolution of the coopetition relationships through different states. Moreover, our longitudinal study reveals that coopetition can be an emerging phenomenon. As shown in the Isère cluster, sometimes the operators are not able to generate collective actions or to coordinate themselves. However, through the intervention of a legitimized third party and the setting up of a “mediation arena” at the disposal of the firms, the rationalities of the affected actors evolve and dialogue and trust emerge. Afterwards, the firms seize this mediation arena which engenders coopetition strategies and management tools for the interrelationships of the community of interacting firms. In that emerging process, initially there is no shared culture nor "embeddedness" structuring the interactions and no shared asset. But later we see the relations between firms "artificially embedded" through the mediation arena. The organizations start sharing faith, recipes and jargon (Spender, 1989) and they collectively build and defend the shared asset.

In the coopetition literature, this process is particularly novel. It is not rare to find coopetition interactions institutionalized in the hands of public authorities (Le Roy, 2008; Depeyre and Dumez, 2010) or in the hands of the competitors (Bengtsson and Kock, 2000; Roy and Yami, 2009; Czakon, 2009). In those situations, the institutionalization and the setting up of the collective management tools (whether they are public or private) follow the emergence of the coopetition strategy. However in this form of emergence, as highlighted in the Isère grain merchants' cluster, the institutionalization of the cooperation between rivals precedes the cooperation itself. The setting up of the coopetition management tools allows the emergence of the coopetition.

5.3 The Maieutics Role of the Third Party

Many works show that the third-party is acting like a broker in a strategic network helping partners to manage coepetition (Doz and Hamel, 1998; Madhavan et al., 2004; Czakon, 2009). These findings are corroborated by our empirical observation in the grain merchant industry, as shown in the south-west cluster where rivals involve certification firms or national and joint-trade organization offices. Organizations can also create a third structure for the maintenance of the coepetitive relationship, such as the “BSWMQC association” in the south-west case, or the one described by Bengtsson and Kock (2000) (Note 9). But sometimes there no need for a third party as seen in the Alsace cluster.

The literature often considers coepetition as a preexisting phenomenon neglecting that coepetition can also be an emergent process (Mariani, 2007; Depeyre and Dumez, 2010, Pellegrin-Boucher et al., 2013). Some original researches show that the regulator can influence the market structures to favor the emergence of competition or cooperation (Mariani, 2007) and in the case of a monopsony the single customer can influence the firm’s behavior with inducements to competition or to cooperation ; indeed to a definite mix of both (Depeyre and Dumez, 2010). These visions of emerging coepetition seem to be opposed to the vision of coepetition as a deliberate strategy. Our work on the grain merchant industry enables to overpass this dichotomy: in the south west and Alsace cases we find that the institutionalization of coepetition and the setting up of management tools have followed the deliberate decisions (and thus the emergence) of coepetition strategies. But in the same industry, our empirical observation on Isère grain merchants cluster, the institutionalization of the cooperation between rivals can precede the deliberate decision to opt for cooperation. In our observation in the Isere case, there isn’t a dominant actor forcing the firms to coepetition but the setting up of the management tools by a third party (which is not a public authority) allows the emergence of the coepetition behavior.

Thus the role that third parties can take on can be considered in two ways:

- They can take on the role of a "facilitator", i.e. someone who intervenes in the mechanisms of coordination to manage critical tasks or tasks which are considered as too sensitive by coepetitors (e.g. the role of the third party in the south-west case).
- They can also be the one who induces the coepetition. That means that they participate in developing a shared rationality and persuading the competitors to consider cooperation (as in the role of the third party in the Isere department) but we can also consider that they may cause partners to compete.

So this research shows that an external party can induce the coepetition and bring rival firms to consider a coepetitive relationship despite unfavorable past and present circumstances. This point leads to the prospect of a managerial engineering of coepetition.

5.4 How to Set and Manage a Dynamic Coepetition Relationship

In the French grain merchants industry we observe that the same managers drive the competitive and cooperative strategies simultaneously. They internalize all coepetition dialectical forces and socially construct inter-firm organizations and processes and then manage it collectively.

This study shows that the resort to “partner” or “competitor” concepts may not suit managers and restricts their room for manoeuver. Contrariwise, this study shows that it is crucial to consider the interdependencies and particularly the intersubjective nature (Burrell and Morgan, 1979) of their interdependencies. The interdependence has an objective dimension related to the resources shared by the firms but it also has an intersubjective dimension defined by the actors’ behavior and perceptions (actors are interacting and trying to evaluate and anticipate each other’s potential actions.)

Managers can choose to be driven by external constraints due to the environmental structure by seeking information and room for manoeuver. They may also choose to modify their competitive environment: first they should identify the critical stakeholders (Freeman, 1984) for the survival and the prosperity of the firm. Then through an “appropriate interaction” (Astley and Fombrun, 1983; Pfeffer and Salancik, 1978) they can legitimize and launch a coepetition strategy to stabilize the industry environment and to enable synergies.

This option shows the relevance of the highest strategic decision-making level: the inter-organizational level. This level improves information access and enables synergies with the stakeholders. By identifying the actors on which he is dependent and by interacting with them adequately, a manager forces those actors to realize the interdependencies and to recognize his own organization. This process leads to the stabilization of the interdependence through the institutionalization of the coepetition relationship.

The intersubjective nature of the interdependencies is very important to the management and to the construction of the "negotiated environment". The stakeholders may have many objectives which can generate differing and conflicting interests. Firms which seek a cooperative relationship cannot ignore these potential divergences, so they must assess the rationalities of the other stakeholders to find how to proceed.

Porac et al (1989) have shown that competitive groups are "cognitive communities" i.e. they share faith, recipe and jargon (Spender, 1989) but also a mental model about competition. This supposes that in a given community of interacting firms, there are individual rationalities but also a shared rationality. When the shared rationality prevails, firms develop collective herd behavior. The competition dimension can express itself in a frame that is defined collectively. So the competitors socially construct tools, rules and social representations to preserve and maintain the cooperation relationship (such as tacit agreements and the territory brand image in the Alsace case). When strong individual rationalities coexist with a strong collective rationality, firms set up inter-organizational devices to manage the cooperation relationships, preserving the individual logic and enabling collective actions through the externalization of part of the cooperation paradox (appeal to trade association, holding companies, R&D consortia, other third parties or use of formalism, standards, charter, etc.). When the individual rationalities predominate, coordination and collective actions fail and the "free-riders" proliferate. In this context the intervention of a third party and the setting up of a mediation arena can change the rationalities and enable and reinforce collective action and reason. So those are efficient tools to induce cooperation.

In fact, this cognitive community doesn't go by itself: a manager who wants to establish or pursue a cooperative relationship must maintain it by formal institutions (e.g. a trade association or other formal structure where competitors start a dialogue) or by informal institutions (tacit agreement, social pressure for conformity, shared symbols and social representations etc.). We can also favor its emergence and construction by putting a mediation arena (or collective tools for the management of the group) at the disposal of the competitors.

Otherwise, cooperation is a dynamic phenomenon (Dagnino and Padula, 2002) and a cooperation strategy seems to have an evolutionary cycle (figure 1). For a manager who opts for a cooperation strategy, every stage of the cooperation relationship calls for specific management requirements.

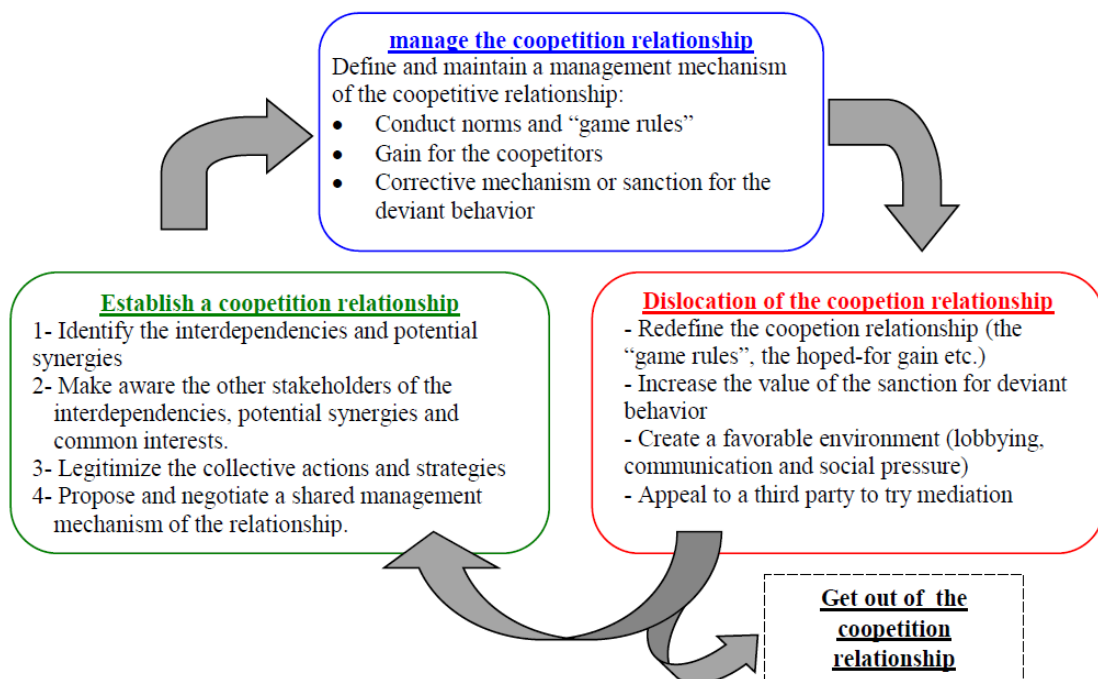


Figure 1. the setup and the management of the cooperation relationship

In order to establish a coopetition relationship, a manager should identify the firms which are interdependent of his own organization or those that offer synergy opportunities. Then he should make them aware of this interdependence and of the coopetition opportunities. For this purpose he can use communication (direct or indirect via a trade association for example). The awareness of the interdependence and of the converging interests legitimizes the collective actions. Sometimes the involvement (or the creation) of a third party may be needed to reinforce this legitimacy. This third party must be independent and trusted by all the coopetitioners. The managers can choose to delegate to this third party critical tasks or tasks which are considered sensitive by coopetitioners. Finally, managers should propose, negotiate and establish a management mechanism for the coopetition relationship.

In order to manage a coopetition relationship, it is necessary to establish a mechanism to manage the coopetition jointly, i.e. to agree i) conduct norms and “game rules”; ii) benefits for those who respect the rules and the common interests ; iii) a corrective mechanism or sanction for deviant behavior. The sharing of gains may or may not be agreed: firms can work together to obtain and maintain a collective gain and struggle with the sharing of this gain. This last point enables the coopetitioners to maintain a certain flexibility. Lastly, a corrective mechanism is necessary to maintain the coopetition relationship, given that if the free-riders proliferate, the coopetition is in jeopardy.

In case of dislocation of the coopetition relationship, firms that want to persevere in the coopetition relationship can use four levers:

- i) Propose a redefinition of the coopetition relationship by modifying the game rules, the collective gain sought or the corrective mechanism. For this purpose, firms can either rigidify the inter-organizational relation through formal structures, or relax it by choosing more informal structures and relying on tacit agreements or by an act of giving to encourage reciprocity (start with competitive altruism) as proposed by Axelrod (1984).
- ii) Increase the sanction on deviant behavior to discourage free-riders. As proposed by Axelrod (1984), there is no need for a great sanction value. All that is required is to put the emphasis on long-term cooperation and the potential gain over the short-term defection interests.
- iii) Encourage lobbying and communication to change the inter-organizational environment with the aim of influencing the attitude of the community of firms and favoring the emergence of social pressure to persuade competitors to consider cooperation (or a partner’s competition).
- iv) Finally it can be useful and efficient to appeal to an arbiter or intermediary in order to enable a “translation” (as defined by Callon, 2001), i.e. in order to change individual rationalities and engender or reinforce the collective rationally.

6. Conclusion

Coopetition is considered to be a paradoxical and unstable inter-firm relationship. Many authors argue that coopetition is a dynamic relation that evolves over time (Gnyawali and Madhavan, 2001; Loch et al., 2006; Dagnino and Padula, 2007; Bengtsson and Johansson, 2012) but there is a gap in the understanding of this evolution and it calls for in depth case studies (Bengtsson and Johansson, 2012 ; Dana et al, 2013).

Through longitudinal case studies on three grain merchant clusters, we demonstrate the existence of two differing states in the processes of coopetition. The spontaneous coopetition and the deliberate coopetition. Each form of coopetition is related to particular tools that are used by managers in order to sustain a coopetition strategy and manage the dialectical forces beside this paradoxical relationship.

These process states of coopetition seem to be sometimes a same scalable phenomenon. In one of our case studies we find that coopetition can emerge and evolve from a deliberate coopetition to spontaneous coopetition. This evolution seems to be linked to the transformation of firms' behaviors and to the social construction of the competitors' environment. Through interactions, the relationship shapes the environment and calls for modifications of the agreements and processes used by manager at the inter-organizational level. But, as observed in our cases studies, this evolution is not systematic and each state of coopetition (deliberate or spontaneous coopetition) can be stable for a while.

7. Limits of Research

Using these findings, we proposed in this paper some principles and tools to manage the evolution of coopetition but these findings and managerial implications rest on a qualitative methodology which calls for precaution and further researches. The methodology used enables "grounded understandings" of the coopetition evolution but these

understandings remain embryonic premises. The generalization of these findings must be cautious even if they convey a potential to generate theory.

8. Recommendations and Implications for Future Research

Further research could consider other industries or other countries in order to test the existence and the evolution of these differing managing ways and differing states of coopepetition. Our research confirms that longitudinal studies enable a better understanding of the dynamics of coopepetition. This allows to analyze the simultaneity of the competition and cooperation dimensions and thus to emphasize the dynamism of the phenomenon.

An intervention-research can be a fruitful method to test and understand the management and the evolution of coopepetition. Participative research, between academics aiming to understand coopepetition and managers aiming to establish sustainable coopepetition relationships can be a suitable research design in order to push the boundaries of the knowledge of coopepetition.

Acknowledgements

The author appreciates comments on earlier versions of this paper by Magalie Ayache, Hervé Dumez, Laure Amar and Nathalie Raulet-Croset, the members of the writing workshop of the CRG team. Thanks for their valuable comments and suggestions.

References

- Astley W.G., Fombrun C.J. (1983). Collective strategy: social ecology of organizational environments, *Academy of Management Review*, 576-587. <http://dx.doi.org/10.2307/258259>
- Axelrod R. (1984). *The Evolution of Cooperation*. Basic Books, New York.
- Bengtsson M., Kock S. (2000). Coopepetition in Business Networks – to Cooperate and Compete Simultaneously, *Industrial Marketing Management*, 29, 411-426. [http://dx.doi.org/10.1016/S0019-8501\(99\)00067-X](http://dx.doi.org/10.1016/S0019-8501(99)00067-X)
- Bengtsson, M., Johansson, M. (2012). Managing coopepetition to make opportunities for small firms, *International Small Business Journal*, 04/2012; 32(4), 401-427. <http://dx.doi.org/10.1177/0266242612461288>
- Browning LD, Beyer JM, Shetler JC. (1995). Building cooperation in a competitive industry: Sematech and the semiconductor industry, *Acad. Manage. J.* 38, 113-51. <http://dx.doi.org/10.2307/256730>
- Burrell G., Morgan G. (1979). *Sociological paradigms and organizational analysis*. London: Heinemann Educational Books.
- Byrne, P. F., Fromherz, S. (2003). Can GM and Non-GM Crops Coexist? Setting a Precedent in Boulder County, Colorado, USA, *Journal of Food, Agriculture & Environment*, 1(2), 258-261.
- Callon M. (2001). Actor Network Theory, in SMELSER N., BALTES P. (ed.), *International Encyclopedia of the Social and Behavioral Sciences*, Oxford, UK., Pergamon, 62-66. <http://dx.doi.org/10.1016/B0-08-043076-7/03168-5>
- Campbell D.T. (1994). Foreword in R.K. Yin (1994), *Case Study Research*. Design and Methods, Sage, 2nd edition, p 7-13.
- Czakov W. (2009). Power asymmetries, flexibility and the propensity to coopepete: an empirical investigation of SMEs' relationships with franchisors. *International Journal of Entrepreneurship and Small Business (IJESB)* 8(1), 2009 Special Issue on Coopepetition and Entrepreneurship. 44-60. <http://dx.doi.org/10.1504/IJESB.2009.024104>
- Dagnino G.B., Padula G. (2002). *Coopepetition strategy: a new kind of inter-firm dynamics for value creation*, EURAM, Stockholm.
- Dagnino, G.B. & G. Padula. (2007). Untangling the rise of coopepetition, *International Studies of Management and Organization*, 37(2), 32–52. <http://dx.doi.org/10.2753/IMO0020-8825370202>
- Dana L-P., Granata J., Lasch F., Carnaby A. (2013). The evolution of co-opepetition in the Waipara wine cluster of New Zealand, *Wine Economics and Policy*, 2(1), June 2013, 42-49. <http://dx.doi.org/10.1016/j.wep.2013.05.001>
- Das, T. K., B. Teng. (2000). Instabilities of strategic alliances: An internal tensions perspective. *Organ. Sci.* 11(1), 77–101. <http://dx.doi.org/10.1287/orsc.11.1.77.12570>

- De Rond M., Bouchikhi H. (2004). On the Dialectics of Strategic Alliances, *Organization Science*, 15(1), January-February 2004, pp. 56-69. <http://dx.doi.org/10.1287/orsc.1030.0037>
- Depeyre C., Dumez H. (2010). The Role Of the Buyer in Coopetition Strategies: The Case Of the US Defense Industry, in Yami S., Castaldo S., Dagnino G.B., Le Roy F., (ed) (2010), *Coopetition. Winning Strategies for the 21st Century*, Edward Elgar, 124- 140.
- Doz Y.L., Hamel G. (1998). *Alliance Advantage: The Art of Creating Value Through Partnering*. Harvard Business School Press, Boston, MA.
- Dumez H., Jeunemaître A. (2000). *Understanding and Regulating the Globalization of the Market: The Cement case*, Basingstoke, Macmillan,.
- Dyer J. H., Singh H. (1998). The relational view: cooperative strategy and sources of inter-organizational competitive advantage, *Academy of Management Review*, 23(4), 660-679. <http://dx.doi.org/10.5465/AMR.1998.1255632>
- Easterby-Smith, M., Lyles M.A., Tsang E.W.K. (2008). Inter-Organizational Knowledge Transfer: Current Themes and Future Prospects. *Journal of Management Studies*, 45, 677-90. <http://dx.doi.org/10.1111/j.1467-6486.2008.00773.x>
- Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of Management Review*, 14, 532-550. <http://dx.doi.org/10.2307/258557>
- Emery F.E., Trist E.L. (1965). The casual texture of organisational environments, *Human Relations*, 18, 21-31. <http://dx.doi.org/10.1177/001872676501800103>
- European Commission. (2003a). Regulation (EC) N° 1829 / 2003 of the European Parliament and of the Council of 22 September 03 concerning the traceability and labelling of genetically modified organisms and the traceability of food and feed products produced from genetically modified organisms and amending Directive 2001/18/EC. *Official Journal of the European Union*, 18/10/2003, 46, L268, 1-23.
- European Commission. (2003b). Regulation (EC) N° 1830 / 2003 of the European Parliament and of the Council of 22 September 03 concerning the traceability and labelling of genetically modified organisms and the traceability of food and feed products produced from genetically modified organisms and amending Directive 2001/18/EC. *Official Journal of the European Union*, 18/10/2003, 46, L268, 24-28.
- Fang, S. -R., Chang, Y. -S., Peng, Y. -C. (2011). Dark side of relationships: A tension-based view. *Industrial Marketing Management*, 40(5), 774-784. <http://dx.doi.org/10.1016/j.indmarman.2011.02.003>
- Fjeldstad Ø., Becerra, M., Narayanan S. (2004). Strategic action in network industries: An empirical analysis of the European mobile phone industry, *Scandinavian Journal of Management*, 20, 173-197. <http://dx.doi.org/10.1016/j.scaman.2004.05.007>
- Forrest J.E., Martin J.C. (1992). Strategic alliances between large and small research intensive organizations: Experiences in the biotechnology industry, *R&D Management*, 22(1), 41-54. <http://dx.doi.org/10.1111/j.1467-9310.1992.tb00787.x>
- Freeman, R. E. (1984). *Strategic Management: A Stakeholder Approach*, Pitman, Boston.
- Gnyawali D.R., Park B.J. (2011). coopetition between giants: collaboration with competitors for technological innovation. *Research Policy*, 40(5), June 2011, pp 650-663 <http://dx.doi.org/10.1016/j.respol.2011.01.009>
- Gnyawali, D.R., He J., Madhavan R. (2008). Coopetition. Promises and Challenges, Chapter 38 in C. Wankel (ed.), *The 21st Century Management: A Reference Handbook*, 1, Thousand Oaks, CA: Sage, pp. 386-398.
- Gnyawali, D.R., Madhavan R. (2001). Network Structure and Competitive Dynamics: A Structural Embeddedness Perspective, *Academy of Management Review*, 26(3), 431-445. <http://dx.doi.org/10.5465/AMR.2001.4845820>.
- Granovetter M. (1985). Economic Action and Social Structure: The Problem of Embeddedness, *The American Journal of Sociology*, 3, November 1985, 481-510. <http://dx.doi.org/10.1086/228311>
- Gueguen G. (2009). Coopetition and business ecosystems in the information technology sector: the example of Intelligent Mobile Terminals. *International Journal of Entrepreneurship and Small Business (IJESB)*, 8(1), 2009 Special Issue on Coopetition and Entrepreneurship, 135-153. <http://dx.doi.org/10.1504/IJESB.2009.024109>

- Hannachi M., Coleno F.C. (2015). The Virtues of the Vice of Cooperation between Rival Firms: A Simulation Model to Evaluate the Performance of Coopetition Strategy in the Grain Merchant Industry, *Journal of Management and Strategy*, 6(1), 2015. <http://dx.doi.org/10.5430/jms.v6n1p62>
- Hannachi M., Col éno. F.C., Assens. C. (2010). La collaboration entre concurrents pour g érer le bien commun : le cas des entreprises de collecte et de stockage de c é éales d'Alsace, *Revue G érer et Comprendre*, num éro 101, septembre 2010, 16-25. <http://dx.doi.org/10.3917/geco.101.0016>
- Ireland R.D., Hitt M.A., Vaidyanath D. (2002). Alliance management as a source of competitive advantage, *Journal of Management*, 28(3), 413–446. <http://dx.doi.org/10.1177/014920630202800308>
- Jank, B., Rath, J., Gaugitsch, H. (2006). Co-existence of agricultural production systems, *Trends in Biotechnology*, 24(5), 198-200. <http://dx.doi.org/10.1016/j.tibtech.2006.03.001>
- Le Roy F. (2008). The rise and fall of collective strategies, *International Journal of Entrepreneurship & Small Business*, 5(2). <http://dx.doi.org/10.1504/IJESB.2008.016588>
- Linnarsson, H., Werr A. (2004). Overcoming the Innovation-Alliance Paradox: A Case Study of an Explorative Alliance, *European Journal of Innovation Management*, 7, 45–55. <http://dx.doi.org/10.1108/14601060410515637>
- Loch C.H., Galunic D.C., Schneider S. (2006). Balancing cooperation and competition in human groups: the role of emotional algorithms and evolution. *Managerial and Decision Economics*, 27, 217–233. <http://dx.doi.org/10.1002/mde.1294>
- Lorenzoni, G. & A. Lipparini. (1999). The Leveraging of Interfirm Relationships as a Distinctive Organisational Capability: A Longitudinal Study, *Strategic Management Journal*, 20(4), 317–338. [http://dx.doi.org/10.1002/\(SICI\)1097-0266\(199904\)20:4](http://dx.doi.org/10.1002/(SICI)1097-0266(199904)20:4)
- L üthy J. (1999), Detection strategies for food authenticity and genetically modified foods, *Food control*, 10, 259-361. [http://dx.doi.org/10.1016/S0956-7135\(99\)00075-4](http://dx.doi.org/10.1016/S0956-7135(99)00075-4)
- Madhavan, R., Gnyawali, D. R., et J. He. (2004). Two's a company, three's is a crowd? Triads in cooperative-competitive networks, *Academy of Management Journal*, 47, 918-927. <http://dx.doi.org/10.2307/20159631>
- Mariani, M.M. (2007). Coopetition as an Emergent Strategy: Empirical Evidence from an Italian Consortium of Opera Houses, *International Studies of Management and Organization*, 37(2), 97–126. <http://dx.doi.org/10.2753/IMO0020-8825370205>
- Mess áan, A., Angevin, F., G ómez-Barbero, M., Menrad, K., Rodr íguez-Cerezo, E. (2006). New case studies on the coexistence of GM and non-GM crops in European agriculture, Technical Report Series of the Joint Research Center of the European Commission, EUR 22102 En, 112 p.
- Miles, M. B.; Huberman, M. A. (2003). *Analyse en recherche qualitative*, De Boeck, Bruxelles, 2 ème Edition.
- Park, S. H., Russo, M. V. (1996). When competition eclipses cooperation: An event history analysis of joint venture failure. *Management Science*, 42(6), 875–890. <http://dx.doi.org/10.1287/mnsc.42.6.875>
- Pellegrin-Boucher E., Le Roy F., Gurau C. (2013). Coopetitive strategies in the ICT sector: typology and stability, *Technology Analysis & Strategic Management*, 25, 1, 71-89. <http://dx.doi.org/10.1080/09537325.2012.751011>
- Pfeffer J., Salancik G. R. (1978). *The External Control of Organizations. A Resource Dependence Perspective*, Harper & Row Publishers, New York.
- Porac J.F., Thomas H., Baden-Fuller C. (1989). Competitive groups as cognitive communities: the case of the Scottish knitwear manufacturers. *Journal of Management Studies*, 26, 4, 397-416. <http://dx.doi.org/10.1111/j.1467-6486.1989.tb00736.x>
- Reuer J.J., Zollo M., Singh H. (2002). Post-formation dynamics in strategic alliances. *Strategic Management J.*, 23(2), 135–152. <http://dx.doi.org/10.1002/smj.214>
- Roy P., Yami S. (2009). Managing strategic innovation through coopetition, *International Journal of Entrepreneurship and Small Business (IJESB)*, 8(1), 2009 Special Issue on Coopetition and Entrepreneurship, pp:61-73. <http://dx.doi.org/10.1504/IJESB.2009.024105>

- Scipioni A., Saccarola G., Arena F., Alberto S. (2005). Strategies to assure the absence of GMO in food products application process in a confectionery firm, *Food control*, 16, 569-578. <http://dx.doi.org/10.1016/j.foodcont.2004.06.018>
- Spender, J.C. (1989). *Industry Recipes*. Oxford, England : Basil Blackwell.
- Strauss A., Corbin J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*, Sage Publications, 280 pages.
- Swann, P., Prevezer, M. (1996). A comparison of the dynamics of industrial clustering in computing and biotechnology, *Research Policy*, 25(7), 1139–1157. [http://dx.doi.org/10.1016/S0048-7333\(96\)00897-9](http://dx.doi.org/10.1016/S0048-7333(96)00897-9)
- Uzzi, B. (1997). Social Structure and Competition in Interfirm Networks: The Paradox of Embeddedness, *Administrative Science Quarterly*, 42(1), 35-67. <http://dx.doi.org/10.2307/2393808>
- Van de Ven A. H., Poole M. S. (1995). Explaining development and change in organizations. *Acad. Management Rev.* 20 510–540. <http://dx.doi.org/10.2307/258786>
- Walley, K. (2007). Coopetition: An Introduction to the Subject and an Agenda for Research, *International Studies of Management and Organization*, 37(2), 11-31. <http://dx.doi.org/10.2753/IMO0020-8825370201>
- Wilhelm, M. (2011). Managing coopetition through horizontal supply chain relations: Linking dyadic and network levels of analysis. *Journal of Operations Management*, 29(8), 663–676. <http://dx.doi.org/10.1016/j.jom.2011.03.003>
- Yami S., Castaldo S., Battista G.D., Le Roy F. (ed.) (2010). *Coopetition. Winning Strategies for the 21st Century*. Edward Elgar Pub, ISBN: 1848443218, 264 pages.
- Yin, R.K. (2003). *Case study research, design and methods*, 3rd ed. Newbury Park: Sage Publications.

Notes

Note 1. According to Das and Teng (2000) these forces are cooperation vs competition, rigidity vs flexibility, short-term vs long-term. De Rond et Bouchiki, (2004) propose to add design vs emergence, trust vs vigilance, expansion and contraction, and autonomy vs control.

Note 2. Cross-pollination, also called allogamy occurs when pollen is delivered to a flower from a different plant. In the case of GMOs, the result is that a farmer who sows non-GMO seeds may harvest a GM product.

Note 3. Enzyme-linked immunosorbent assay (ELISA), is a biochemical technique used mainly in immunology to detect the presence of an antibody or an antigen in a sample, so it can detect GMOs.

Note 4. All the grain merchants apply the same procedure : they refuse to distribute, to harvest and to market GM production, they set up Seeds control (ELISA Test), And they try to control of the farmers using communication and ELISA Test to control purity

Note 5. Organic foods are foods that are produced using methods that do not involve modern synthetic inputs such as synthetic pesticides and chemical fertilizers, and which do not contain genetically modified organisms.

Note 6. The local market benefit by a brand image as an organic supply. The presence of GMOs can damage this collective reputation.

Note 7. Body responsible for the agricultural interests of a department. A sort of consultative body created in France by a national act at 1924 and constituted by local members who are elected by universal suffrage at the department.

Note 8. Here the rival coordination does not aim to exclude competition, but to enable a better and profitable management of the coexistence and everyone of the Alsace maize industry seems to benefit from this collective strategy (each level of the supply chain get bonuses) (Hannachi et al, 2010).

Note 9. Bengtsson and Kock (2000) underline in a study of the Swedish and Finnish industries that in some cases where individuals may be involved in both cooperative and competitive activities, an intermediate actor (a collective association in their case) is needed.