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Collective strategies and coordination for the management of coexistence: the case studies of Alsace and western South of France

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Abstract

In France, organizing the coexistence of GM and non-GM crop production areas requires the setting up of a governance of the land involving all the parties concerned. The form of governance has to allow coordination between rival grain Merchants. In this paper we will present two differing case studies, one from Alsace and another from South-Western France. These studies show that various methods of organization were developed to set up coordination between rival grain merchants in order to attempt a collective management of the coexistence.

Introduction

Grown and marketed in the world for about ten years, GMO (genetically modified organisms) are the subject of fierce controversy. In France, after a moratorium of three months, the government decided to prohibit the growing of GM corn for 2008 and 2009.

The main cause of this different treatment is the existence of two opposing approaches. Certain countries have adopted a "product" approach, basing the analysis of risk solely on the principle of equivalence of substance: only differences identified in terms of their chemical characteristics can justify a degree of specific statutory constraint. Europe on the other hand adopted a "process" approach to licensing the sale of GMOs. By virtue of this approach, there is a need to evaluate the harmlessness of GMOs on human health and the environment before such authorization is granted.

Hence, while in several countries GM crops are not considered as a category in themselves and do not require a specific market, in Europe the consideration of scientific observations and potential uncertainties has led to the segmentation of the market and required a modification of the institutional guidelines.

The regulation imposed at the European level and the new French bill on GMOs establish the principle of coexistence between the various types of crop, and the segregation of GMOs in the supply chains, by proposing legislation which does not forbid the sale of genetically modified plants, but which enables those who so wish to avoid consuming them.

For agricultural lands, several problems are posed by 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) or by cross-pollination (EC, 2003 a and b). For this purpose, it is possible both to set up isolation distances between plots of land (Byrne and Fromherz, 2003) and also to stagger production over time (Messean et al, 2006 ; Scipioni et al, 2005).

So the questions which arise concern the implementation of the forms of governance allowing the coexistence in the field of GMO and conventional crops, as well as how to collect the two types of crop. 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, advisers, and clients of the farmers. In the case of cooperatives the farmers

are the only shareholder, and in France, the most of grain merchants are cooperatives. Also, they are the only companies authorized to define spatial and temporal distribution of crops (in order to establish a spatial specialisation or a temporal isolation of GM crop). all those consideration put those companies in strong position to manage coexistence. But in the farm lands there is lot of grain merchants which are in competition and the success of coexistence involves coordination between those rival companies (Coléno, 2008)

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

In this context, our research question is how do rival grain merchants coordinate themselves to manage coexistence when it was allowed[1] ? Therefore what forms take this coordination? What are the implications? And by the way what are the tools developed in order to manage collectively the coexistence

Theoretical framework : the relationships between competitors

Different terms have been used to describe the working relationships between organizations. For example, Fyall and Garrod (2004) used the term coordination and described it as a process whereby two or more organizations create and/or use existing decision rules that have been established to deal collectively with their shared task environment. Others use the term cooperation to refer to the links that bring organizations together, thereby enhancing their ability to compete in the market place (Lynch, 1990).

Beyond coordination, collaboration is a commonly used term to describe a more formal type of working relationship between businesses and organizations (Bhaskaran and Krishnan, 2009). Li et al (2009), defines it as a process when a group of autonomous stakeholders of a problem domain engage in an interactive process, using shared rules, norms, and structure, to act or decide on issues related to that domain. They argue that collaborative interaction is considered as a relatively more formal process involving regular, face-to-face dialogue.

Other researchers use the term strategic alliance to refer to a more formal and structured working relationships between organizations (Dussauge and Garette, 1999 ; Gulati, 1998). Strategic alliance is defined as organizational arrangements and operating policies through which separate organizations share administrative authority and form social links through more open-ended contractual arrangements as opposed to very specific, arm's length contracts.

As can be seen, the majority of the literature describing inter-organizational relationships tends to focus on the cooperative aspect of the relationship; the competitive aspect of the relationship is usually neglected. In addition, they focus on organizations which are not in direct competition and in interdependence situations.

[1] In French the only GMO authorized was the Bt maize and it is prohibited since 2008. By the way our studies is focused on the period where GMO was grown in France so from 1999 to 2008.

Existing theory and research on relationships among competitors focuses either on competitive (Uzzi, 1997 ; Moore, 1993) or on cooperative relationships between them (Bhaskaran and Krishnan, 2009; Dussauge and Garette,1999), and the one relationship is argued to harm or threaten the other. Little and relatively recent research has considered that two firms can be involved in and benefit from both cooperation and competition simultaneously, and hence that both types of relationships need to be emphasized at the same time.

In this stream of literature, the term "coopétition" is defined as simultaneous cooperation and competition (Brandenburger and Nalebuff, 1996). However, the two traditional research perspectives of competition and cooperation have evolved as different research streams. In competition, the focus is on value appropriation strategies (Chen and MacMillan, 1992) whereas in cooperation, the focus is on collective strategies for value generation (Gnyawali and Madhavan, 2001; Moore, 1993).

The literature on strategic alliances give important insight into the advantages that can be obtained by cooperation and the prerequisites needed for an alliance to work, but it is primarily the cooperative dimension of the relationship that is emphasized. Rivalry and conflict are seen as a threat because they can hamper the performance of a strategic alliance. In contrast cooperation in economic theory is argued to hamper competition and antitrust law is seen as necessary to guarantee healthy competition. Both in traditional theory about competition and in literature on strategic alliances, the assumption has been that cooperation in the first case and competition in the other case need to be minimized to get competition and cooperation to work. The possibility of combining cooperation and competition to receive advantages provided by coopetition between two parties can thereby be overlooked (Jorde and Teece, 1989).

The most original idea derived from the theoretical framework of coopétition is that competition and cooperation can be useful to obtain greater advantages for every firm involved in inter-organizational relationships (Bengtsson & Koch, 2000; Luo, 2005). The doctrine on coopétition has overcome the positions according to which competition has only negative externalities, while collaboration has exclusively positive effects in an inter-organizational network. Conversely, a different view of networks has been offered in which competition may produce positive externalities, while collaboration may generate negative externalities for firms and for the social system as a whole (Oliver, 2004 ; Assens, 2001). For this reason, coopétition is considered to be an effective way of handling cooperation and competition among firms, since both types of relationships can produce positive effects.

Coopetition, can exist at multiple levels, including firms, departments, and task groups (Brandenburger and Nalebuff 1996; Hamel, Doz, and Prahalad 1989; Tsai 2002). One theoretical foundation of coopétition can be drawn from research on social structure in the sociology literature. In particular, the social embeddedness framework purports that relations are always present and that the social structure of these relations influences subsequent behaviors (Granovetter 1985; Uzzi, 1997; 1999). In consideration of the types of social relations, weak ties (Granovetter 1973) are characterized by sporadic interactions, yet they can offer high returns by linking people or firms to diverse pools of information (Burt 1992). In contrast, embedded ties are characterized by frequent and stronger interactions such that information is perceived as more trustworthy (Granovetter 1985) and cooperation is high (Gulati 1998). In considering both types of relations, research shows that the greatest value is recognized when there is a complementary mix of both forms (Uzzi 1999).

So, Coopetition strategy is a multidimensional and multifaceted concept that assumes a number of different forms and requires multiple levels of analysis. Coopetition encompasses both economic and social issues related to inter-organizational interdependence. It implies that organizations can interact in rivalry due to conflicting interests and at the same time cooperate due to common interests (Bengtsson and Kock, 2000).

Some authors (Brandenburger and Nalebuff, 1996) (Gnyawali and Madhavan, 2001) (Lado et al., 1997) have recently emphasized the increasing importance of coopetition for today's inter-firm dynamics. However, Dagnino and Padula (2007) acknowledge the weaknesses of conventional approaches and underline that coopetition is an under-researched theme and there is need of more empirical studies. For this purpose, we will present, in this paper, the coopétition between grain merchants in France which where in an interdependence situation because of the coexistence between GM an conventional production.

Methodology

In order to analyze those relations and collective strategies, we chose to make two cases studies on two Maize production regions concerned by the coexistence problem, and contrasted in terms of market structure. According to case study principles, the method consisted of increasing the sources of data (Eisenhardt, 1989; Yin, 1989) and in using an item of information, according to the principle of research by triangulation, only from the moment it appears in at least in two sources of different nature. The data analyzed in this case were obtained from public secondary sources (newspaper, professional reviews), from private secondary sources (documents of the network studied: title deeds, activity reports) and from a series of semi-directive interviews.

Indeed, within the context of our method aiming at studying networks, we needed access to very varied, sensitive data, relatively inaccessible because of their strategic nature. So, in-depth interviews turned out to be the most suitable method to collect primary data. We had a series of semi-directive conversations lasting between 1 and 3 hours with various persons (leaders of grain merchants companies, executives of professional organizations, researchers, technical institute staff, etc.). After every interview, a summary was made and sent to the participants who were asked to add their comments, sometimes leading to additional conversations.From all the collected data, a case history was drafted, following the method proposed by Gersick, et al (2000), from which we pursued the analysis to establish "patterns" using the method proposed by Miles and Huberman (2003).

Results:

1) The case of the Alsace region: the informal coordination

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 the plant. Farm areas are small and vary from 10 to 200 ha. Outlets are mainly directed to human foodstuffs and benefit from the proximity of farm-produce processing industries (starch, corn meal). The members of the agrofood production chain of Alsace chose to join a regional collective strategy without GMO. This experiment began in 1998 when 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 for maize guaranteed free of GMO. Faced with a changing demand for non - GMO products and having to manage such a proportion of maize in the region, the grain merchants of Alsace took a regional collective decision only to produce non-GM maize. And they succeeded in convincing all their farmers. The process at the

base of the constitution of this collective strategy between grain merchants is informal: it would seem that it arose from a dialogue 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[2]. This informal way of operating which characterizes the Alsatian industry is based on reliable relations and a very specific culture where dialogue 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.

As a result of their collective strategy, and over time, the Alsace maize industry acquired a reputation on the market. So, due to their roots and their cohabitation in the same territory, these companies share a common strategic resource, which is bound to the territory and to its reputation. In this case it seems that the territory has become a specific asset shared by the companies present in it.

2) The case of the south-western France: formalized collective action

The south-western region is the main French (and indeed European) region for grain maize production, with an average maize area of about 600 000 ha, that 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, 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. GM crops and other shared problems (mycotoxins etc.) are managed according to coordination laid down in an agreement called the «big south-western maize quality charter» (BSWMQC) membership of which is voluntary, and which is administered by an assembly of grain merchants companies. This agreement was made in 1999 on the initiative of several grain merchants in the south-west in response to a request from food processors for traceability of non-GM maize. In 2000 an association was formed of approximately 140 grain merchants in the south-west. Later, other interested parties, including seedsmen, joined the association. 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 registered a trademark 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.

So in this region, those responsible for the problem 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. It now constitutes a privileged forum for all the players in the corn industry. The approach is based on guaranteeing means but not on firm commitments as to results. It has led to the Class A standard quality corn, which is borne by the south western grain merchants as a market benchmark.

Hence the grain merchants in a given region, and thus competitors, are often obliged to coordinate and to cooperate: to share their silos to reduce the transport costs of their farmers and also to share the points of access to transport systems to export their goods.

[2] 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.

The common objective underlying these cooperative ventures is 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.

At that time, 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 up any further (Luthy, 1999). Hence the grain merchants were in the position that if they do not take responsibility for organizing the crop and its segregation, they will be held responsible for any mistakes, risking degrading the brand image of their products and a loss of 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 chare a geographic information system and collective database managed by a third party which permit them to Zone crops before seeding and to evaluate and manage the risk of admixture during the harvest.

The case of the south-western corn industry illustrates well that the imperatives of regulation of the cohabitation of companies, long established within a given region, are sometimes the reason for regulation and recommendations for practices and the organization of the space: definitions of acceptable distances between GM and non-GM crops, good neighborhood customs, planning regulations and standards. As such the collective is a powerful vector of structuring of the homeland. However, although their joint presence may be favorable to the development of cooperation, it cannot itself create it. This depends largely on human willpower.

Discussion

In the two case we have an interdependence situation while it's no possible to drawing away, so a crisis situation which need a collective response. The forms of organization which appear are very different and the management tools developed also differs. The way they are implemented depends on the regions to which they belong and the choices of human decision-makers.

1) The "territory" as a powerful vector structuring interaction and cooperation

The analysis of these two cases allows to us to better understand the place that the territory[3] can occupy in collective strategies and the relationships between firms facing major changes in their sectors which make them mutually dependent. These companies, rooted within their territory, develop territorial forms of organization which allow them to collectively manage the situation by cooperation between rival companies.

In the case of south-western France the presence of numerous different-sized companies (big firm, SME) prevents any form of direct coordination and has to favor the development of a common organization which manages a charter of good practices and a quality mark which informs consumers about production practices but without any guarantee as to the quality or effectiveness of these practices. These practices consist of developing collaborative management arrangements to share information, machinery and infrastructure between rival grain merchants so as to manage the coexistence of GM crops at minimal cost. So, in this case, we see the emergence of formal indirect coordination.

[3] As soon as it is question of local embeddedness or a political and spatial definition of action, one uses the term "territory". It is a multidisciplinary concept and can be vague and ambiguous. For our purposes we will adopt the definition of Debarbieux (2003) which defines a territory as «a material and symbolic structure of resources capable of structuring the practical conditions of the existence of an individual or a social collective and of informing in return this individual and this collective about their own identity ». This definition treats space as a support for action, but also as an instrument of the action, while being a social reality with a value of its own (Clegg and Kornberger, 2006).

In the case of Alsace the small number of grain merchants and their fairly average size as well as the local culture, marked by a strong sense of identity, have favored the development of close informal relationships (informal direct coordination). These relationships have allowed these companies to manage the absence of GM products in their territory, rather than managing the coexistence of GM and conventional crops. In Alsace, the grain merchants informally coordinate the management of the farmers of the region. For the executives of these Alsatian companies, to manage the coexistence of GM and non-GM crops whilst retaining their market, it would be necessary either to unite as a single grain merchant to reduce the uncertainty and costs of crop separation, or to collectively reject the presence of GMO on their territory and develop the brand image of the best non-GM maize in France. Thereby the region and its reputation become a shared asset for the businesses based there.

In the case of Alsace, this uniqueness is a result of the grain merchants origin in social networks, and from cooperation between local stakeholders. The cumulative character of the production and the specific exploitation of these resources and assets leads the players to invest jointly in similar resources, thus contributing to a certain spatial or territorial specialization.

So in this case the territory is created by the actors in charge of the problems because they hope, through the "territorial" control lever, to persuade other players to make a commitment. Thus the territory becomes a generator of resources and of coordination.

2) The need of a "coordination system" to allow coopétition

Some researchers have nevertheless shown that competitors are involved in relationships with each other, that horizontal relationships can be formed in many different ways, and that they are different from vertical relationships which are more studied up to now. Horizontal relationships are more informal and invisible, in that information and social exchanges are more common than economic exchange. Those relationships between competitors differ depending upon the "territory" structure (material and symbolic structure), the embednesses of relationship and the degree of distance between competitors (Bengtsson and Kock, 2000). The degree of distance can be related to the degree of dependence between competitors.

So, When individuals (and/or subunits) must be involved in both inter-firm cooperation and competition, a ''coordinator system'' is needed in order to plan, manage and coordinate interorganizational relationships. The ''coordinator system'', made up of managers from different firms, can use formal mechanisms or informal mechanisms to adequately balance cooperation and competition.

Conclusion

In France, the coexistence of GM and non-GM crops in farmland requires the setting up of a governance of the land by all the parties involved. The form of governance must allow coordination between rival grain merchants so that collective strategies are implemented in a coordinated way and allow coexistence to operate. Today, we see various organizational arrangements developing around these situations, which manage to create differing forms of coordination and commitment by the stakeholders.

The analysis of the cases of Alsace and the southwest shows that the territory should not be regarded simply as a receptacle for economic activity. It should be thought of as a generative construct; a creator of productive resources. Spatial proximity is simply a context for the coordination of the players and of economic activity; in no way is it the essence of this coordination. The interplay of coordination, on the other hand, arises from other forms of proximity (Rallet and Torre, 2005), which allow the players to anticipate one another's behavior, either because they share the same project within which their individual roles have been defined, or because they agree to the same rules or standards

to which they are supposed to more or less conform. Thus the action space becomes a resource for management; a resource so important that several organizations and institutions are induced to cooperate. Making use of the territorial dimension when planning management situations therefore proves to be strategic because the sharing of the space results in the commitment of the actors and brings them closer together to manage problems which are not the concern of a single actor, nor of a predefined management routine.

The territory is thus seen as a form of organization for collective spatialised territory-based action. It is as such that the territory becomes a matter for strategy and suggests three strategic problems:

- What types of organization of this collective action are needed to obtain satisfactory performance?
- What are the most appropriate methods of coordination for the development of fruitful cooperation for all the actors concerned?
- Finally, what governance should be established to regulate the interactions which take place in these territorial organizations?

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REFERENCES

Assens C., (2001), "Stability and plasticity in self-organized networks", European Journal of Economic and Social Systems, EDP Sciences, vol.14, nf4, 311-332.

Bengtsson M., Kock S., (2000), "Coopetition in business networks – to cooperate and compete simultaneously", Industrial Marketing Management, Vol. 29 No. 5, pp. 411-26.

Bhaskaran S.R., Krishnan V. (2009), "Effort, Revenue, and Cost Sharing Mechanisms for Collaborative New Product Development", MANAGEMENT SCIENCE, Volume: 55, Issue: 7, Pages: 1152-1169.

Brandenburger A.M., Nalebuff B.J., (1996), "Co-opetition", Currency-Doubleday, New York, 287p.

Burt R.S., (1992), "Structural Holes: The Social Structure of Competition", Cambridge, MA: Harvard University Press.

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*, vol. 1, no. 2, pp. 258-261.

Chen M.J., MacMillan I.C., (1992), "Nonresponse and delayed-response to competitive moves - the roles of competitor dependence and action irreversibility", ACADEMY OF MANAGEMENT JOURNAL, Volume: 35, Issue: 3, pp 539-570.

Clegg S., Kornberger M., (2006), "Space, Organization and Management Theory", Liber & Copenhangen Business School.

Coléno F.C., (2008), "Simulation and evaluation of GM and non-GM segragation management strategies among European grain merchants". Journal of Food Engineering. Vol 88, p 306-314.

Dagnino G., Padula G., (2007),"Untangling the Rise of Coopetition: The Intrusion of Competition in a Cooperative Game Structure", International Studies of Management and Organization, Issue: Volume 37, Number 2 / Summer 2007, Pages: 32 - 52

Debarbieux B., (2003), "Territoire" in Dictionnaire *de la* géographie et de l'espace des sociétés, J. Lévy & M. Lussault (eds.), Paris : Belin, 910-912.

Dussauge P., Garette B., (1999), "Cooperative Strategy: Competing Successfully Through Strategic Alliances", Hardcover - Jun 1999, Publisher: John Wiley & Sons, 254p.

Easton G., Arajou L., (1992), "Non-Economic Exchange in Industrial Network, in Industrial Networks—A New View of Reality", Björn Axelsson and Geoffrey Easton, eds., Routledge, London, 1992.

Eisenhardt K.M., (1989), "Building Theories from Case Study Research", *Academy of Management Review*, Vol. 14, No. 4, p. 532-550.

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, vol. 46, L268, pp 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, vol. 46, L268, pp 24-28.

Fyall A., Garrod B., (2004), "Tourism Marketing: A Collaborative Approach", Channel View Publications, Clevedon.

Gersick C.J.G., Bartunek J.M., Dutton J.E., (2000), "Learning from Academia: The Importance of Relationships in Professional Life" , *The Academy of Management Journal*, Vol. 43, No. 6 (Dec., 2000), pp. 1026-1044.

Gnyawali, D.R., Madhavan R., (2001), "Cooperative networks and competitive dynamics: a structural embeddedness perspective", Academy of Management Review, Vol. 26, pp. 431-45.

Granovetter M., (1985), "Economic Action and Social Structure: The Problem of Embeddedness" , *The American Journal of Sociology*, n°3,november 1985, p481-510.

Granovetter M., (1973), "The Strength of Weak Ties," American Journal of Sociology, 78 (6), 1360–80.

Gulati R., (1998), "Alliances and Networks," Strategic Management Journal, 19 (4), 293–317.

Hamel G., Doz Y.L., Prahalad C.K., (1989), "Collaborate with Your Competitors and Win," Harvard Business Review, 67 (1), 133–39.

Jank B., Rath J., Gaugitsch H., (2006), "Co-existence of agricultural production systems", *Trends in Biotechnology*, vol. 24, no. 5, pp. 198-200.

Jorde T.M., Teece D.J., (1989) Competition and Cooperation: Striking the Right Balance. California Management Review 31, 25–37.

Lado A., Boyd N.G., Hanlon S.C.,(1997) "Competition, cooperation, and the search for economic rents: A syncretic model", Academy of Management Review, vol. 22, n° 1, 1997, p. 110-141.

Li J., Zhou C.H., Zajac E.J., (2009), Control, collaboration, and productivity in international joint ventures: theory and evidence, strategic management journal, Volume: 30, Issue: 8, pp.865-884.

Luo Y., (2005), "Toward coopetition within a multinational enterprise: a perspective from foreign subsidiaries", Journal of World Business, Vol. 40, pp. 71-90.

Lüthy J., (1999), “Detection strategies for food authenticity and genetically modified foods”, *Food control*, vol. 10, pp259-361.

Lynch R.P., (1990), “Building alliances to penetrate European markets”, Journal of Business Strategy, Vol. 11 No. 2, pp. 4-8.

Messéan A., Angevin F., Gómez-Barbero M., Menrad K., & Rodríguez-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, 2ème Edition.

Moore J.F., (1993), “Predators and prey: a new ecology of competition”, Harvard Business Review, Vol. 71, pp. 75-86.

Oliver A.L., (2004), “On the duality of competition and collaboration: Network-based knowledge relations in the biotechnology industry”, Scandinavian Journal of Management, 20(1-2), 151–171.

Parkhe A., (1993), “Strategic alliance structuring: a game theoretic examination of interfirm cooperation”, Academy of Management Journal, Vol. 36 No. 4, pp. 794-829.

Rallet A., Torre A., (2005): “Proximity and localization”, *Regional Studies*, vol. 39, n° 1, 47-60.

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*, vol. 16, pp. 569-578.

Tsai W., (2002), “Social Structure of ‘Coopetition’ Within a Multiunit Organization: Coordination, Competition, and Intraorganizational Knowledge Sharing,” Organization Science, 13 (2), 179–90.

Uzzi B., (1997), “Social Structure and Competition in Interfirm Networks: The Paradox of Embeddedness,” Administrative Science Quarterly, 42 (1), 35–67.

Uzzi B., (1999), “Embeddedness in the Making of Financial Capital: How Social Relations and Networks Benefit Firms Seeking Financing,” American Sociological Review, 64, 481–505.

Yin R.K., (1994), “Case Study Research, Design and Methods”, (2nd ed.), Newbury Park: Sage Publications.

Space and coordination in strategy: the case of the GMO in France

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Abstract

In France, organizing the coexistence of GM and non-GM crop production areas requires the setting up of a governance of the land involving all the parties concerned. The form of governance has to allow coordination between rival grain elevator companies so that coordinated collective strategies are set up which allow coexistence.

Today, we find various methods of organization developing around these situations, resulting in the creation of coordination and commitment by those involved.

We will present two differing case studies, one from Alsace and another from south-western France, to illustrate this, and show the importance of space in strategic management generally, and in the relations between firms in particular.

Key words: GMO, France, strategic management, grain elevator companies, Space, territory, collective strategies, coordination, case studies.

Background and introduction

When the science of economics began, space was rarely considered, except as a source of transport costs. But very quickly it was reconsidered and sites became not merely places for production or which conferred an advantage. The localization of activities transforms and organizes the environment. The local dimension of the economic phenomena appears and governs the economic dynamics.

Space appears in economic theory from the work of Marshall (1920) which introduces the notion of externality. The role of space as a generator of economic advantage can therefore be analyzed according to whether or not the geographical proximity can harmonize with other forms of proximity (Boschma, 2005; Schamp et al, 2005) between economic agents to facilitate their coordination. Indeed, standard economic theory responds to the problem of coordination between economic agents on the basis of the perfect market (Walras' model) in which rational perfectly informed agents act.

Conversely, an Interactionist approach to coordination considers diverse agents and consequently suggests rethinking individual and social peculiarities (Kirman, 1998). In reality the interactions are rarely widened to include all the agents, and take on a "local" character. The consideration of social orders (networks, group etc.) then becomes essential (Yeung, 1998).

Thus, Granovtter (1985) asserts that it is necessary to consider individuals as "embedded" agents in systems of social relationships (defining the framework of the interrelation) and institutions (defining rules of the game). From there results the notion of a situated agent in the sense of their location at the same moment in a geographic and economic space and in a bundle of interrelations.

Furthermore, as soon as it is question of local embeddedness or a political and spatial definition of action, one uses the term "territory". It is a multidisciplinary concept and can be vague and ambiguous. For our purposes we will adopt the definition of Debarbieux

(2003) which defines a territory as «a material and symbolic structure of resources capable of structuring the practical conditions of the existence of an individual or a social collective and of informing in return this individual and this collective about their own identity ». This definition treats space as a support for action, but also as an instrument of the action, while being a social reality with a value of its own (Clegg and Kornberger, 2006). According to this concept, space can become a resource for management, especially when several organizations and institutions occupy the same space and are thus encouraged to collaborate (Spicer, 2006).

Indeed, the existence of a "territory" refers to the specific relations which actors maintain with a given space (Gilly and Wallet 2001; Hite, 2003). These relations can be linked to the professional activity of the actors, or to the other usages of the public space. By building their relationship to the space, the actors build their territories. Their professional activity can also lead them to exercise a responsibility towards a given space. Therefore, embeddedness arises when the territorial organization turns out to be capable of generating effects based on interaction and cooperation between units within the same area. At the heart of this process there is the notion of a productive meeting (Coelitis and Pequeur, 1993), understood as the capacity to provide solutions to certain productive problems, and even to arouse, to formulate and to resolve one or several new productive problems, mainly in a territorial context, that is exploiting the effect of proximity. To illustrate it and show the importance that space can assume in general in strategic management, and in the relations between firms in particular, we propose to analyze the case of GM and non-GM coexistence in France and what it involves in terms of adaptation and coordination for the the grain elevator companies (GECs).

GMO in France

Grown and marketed in the world for about ten years, GMO (genetically modified organisms) are the subject of fierce controversy. In France, after a moratorium of three months, the government decided to prohibit the growing of GM corn for 2008 and 2009.

The main cause of this different treatment is the existence of two opposing approaches. Certain countries have adopted a "product" approach, basing the analysis of risk solely on the principle of equivalence of substance: only differences identified in terms of their chemical characteristics can justify a degree of specific statutory constraint. Europe on the other hand adopted a "process" approach to licensing the sale of GMOs. By virtue of this approach, there is a need to evaluate the harmlessness of GMOs on human health and the environment before such authorization is granted.

Hence, while in several countries GM crops are not considered as a category in themselves and do not require a specific market, in Europe the consideration of scientific observations and potential uncertainties has led to the segmentation of the market and required a modification of the institutional guidelines.

The regulation imposed at the European level and the new French bill on GMOs establish the principle of coexistence between the various types of crop, and the segregation of GMOs in the supply chains, by proposing legislation which does not forbid the sale of genetically modified plants, but which enables those who so wish to avoid consuming them.

For agricultural lands, several problems are posed by 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) or by cross-pollination (EC, 2003 a and b). For this purpose, it is possible both to set up isolation distances between plots of land (Byrne and Fromherz, 2003) and also to stagger production over time (Messean et al, 2006 ; Scipioni et al, 2005).

So the questions which arise concern the implementation of the forms of governance allowing the coexistence in the field of GMO and conventional crops, as well as how to collect the two types of crop. At this level, whether it is for seed or food production, the

grain elevator companies (GECs) (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.

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

These kinds of relations between GECs already exist for such matters; nevertheless, it seems that there are strong regional disparities in the methods of organization and in the form that these relations take between GECs. So we propose to use two case studies for illustration, one from Alsace and another from south-western France.

Methodology

According to case study principles, the method consisted of increasing the sources of data (Eisenhardt, 1989; Yin, 1989) and in using an item of information, according to the principle of research by triangulation, only from the moment it appears in at least in two sources of different nature. The data analyzed in this case were obtained from public secondary sources (newspaper, professional reviews), from private secondary sources (documents of the network studied: title deeds, activity reports) and from a series of semi-directive interviews.

Indeed, within the context of our method aiming at studying networks and their underlying collective strategies, we needed access to very varied, sensitive data, relatively inaccessible because of their strategic nature. In this context, in-depth interviews turned out to be the most suitable method to collect primary data. We had a series of semi-directive conversations lasting between 1 and 3 hours with various persons (leaders of GECs, executives of professional organizations, researchers, technical institute staff, etc.). After every interview, a summary was made and sent to the participants who were asked to add their comments, sometimes leading to additional conversations.

From all the collected data, a case history was drafted, following the method proposed by Gersick, et al (2000), from which we pursued the analysis to establish "patterns" using the method proposed by Miles and Huberman (2003)

Presentation of the cases:

1) The case of the Alsace region: the informal coordination

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 the plant. Farm areas are small and vary from 10 to 200 ha. Outlets are mainly directed to human foodstuffs and benefit from the proximity of farm-produce processing industries (starch, corn meal).

The members of the agrofood production chain of Alsace chose to join a regional collective strategy without GMO. This experiment began in 1998 when the main customers of the GEC of the region echoed the aversion of French and German consumers to GMO and began to offer contracts for maize guaranteed free of GMO. Faced with a changing demand for non - GMO products and having to manage such a proportion of maize in the region, the GEC of Alsace took a regional collective decision only to produce non-GM maize. And they succeeded in convincing all their farmers. The process at the base of the constitution of this collective strategy between GECs is informal: it would seem that it arose from a dialogue between GEC executives.

If the Alsace GECs 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. This informal way of operating which characterizes the Alsatian industry is based on reliable relations, and a very specific culture where dialogue 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.

As a result of their collective strategy, and over time, the Alsace maize industry acquired a reputation on the market. So, due to their roots and their cohabitation in the same territory, these companies share a common strategic resource, which is bound to the territory and to its reputation. In this case it seems that the territory has become a specific asset shared by the companies present in it.

2) The case of the south-western France: formalized collective action

The south-western region is the main French (and indeed European) region for grain maize production, with an average maize area of about 600 000 ha, that 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 GECs in strong competition, 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. GM crops and other shared problems (mycotoxins etc.) are managed according to coordination laid down in an agreement called the «big south-western maize quality charter» (BSWMQC) membership of which is voluntary, and which is administered by an assembly of GECs. This agreement was made in 1999 on the initiative of several GECs in the south-west in response to a request from food processors for traceability of non-GM maize. In 2000 an association was formed of approximately 140 GECs in the south-west. Later, other interested parties, including seedsmen, joined the association. 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 registered a trademark 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 GEC signatories.

So in this region, those responsible for the problem 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. It now constitutes a privileged forum for all the players in the corn industry. The approach is based on guaranteeing means but not on firm commitments as to results. It has led to the Class A standard quality corn, which is now a market benchmark.

Hence the GECs in a given region, and thus competitors, are often obliged to coordinate and to cooperate: to share their silos to reduce the transport costs of their farmers and also to share the points of access to transport systems to export their goods. The common objective underlying these cooperative ventures is 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.

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 GEC, but it is impossible to go back up any further (Luthy, 1999). Hence the GEC is in the position that if they do not take responsibility for organizing the crop and its segregation, they will be held responsible for any mistakes, risking degrading the brand image of their products and a loss of market

share. This situation of interdependence led to the emergence of this formalized system which allows coexistence to be managed.

The case of the south-western corn industry illustrates well that the imperatives of regulation of the cohabitation of companies, long established within a given region, are sometimes the reason for regulation and recommendations for practices and the organization of the space: definitions of acceptable distances between GM and non-GM crops, good neighborhood customs, planning regulations and standards. As such the collective is a powerful vector of structuring of the homeland. However, although their joint presence may be favorable to the development of cooperation, it cannot itself create it. This depends largely on human willpower.

Discussion

The analysis of these two cases allows to us to better understand the place that the territory can occupy in collective strategies and the relationships between firms facing major changes in their sectors which make them mutually dependent. These companies, rooted within their territory, develop territorial forms of organization which allow them to collectively manage the situation by cooperation between rival companies.

The forms of organization which appear are very different and the management tools developed also differ. The way they are implemented depends on the regions to which they belong and the choices of human decision-makers.

In the case of south-western France the presence of numerous different-sized companies (big firm, SME) prevents any form of direct coordination and has to favor the development of a common organization which manages a charter of good practices and a quality mark which informs consumers about production practices but without any guarantee as to the quality or effectiveness of these practices. These practices consist of developing collaborative management arrangements to share information, machinery and infrastructure between rival GECs so as to manage the coexistence of GM crops at minimal cost.

In the case of Alsace the small number of GECs and their fairly average size as well as the local culture, marked by a strong sense of identity, have favored the development of close informal relationships. These relationships have allowed these companies to manage the absence of GM products in their territory, rather than managing the coexistence of GM and conventional crops. In Alsace, the GEC informally coordinates the management of the farmers of the region. For the executives of these Alsatian companies, to manage the coexistence of GM and non-GM crops whilst retaining their market, it would be necessary either to unite as a single GEC to reduce the uncertainty and costs of crop separation, or to collectively reject the presence of GMO on their territory and develop the brand image of the best non-GM maize in France. Thereby the region and its reputation become a shared asset for the businesses based there.

In the case of Alsace, this uniqueness is a result of the GECs' origin in social networks, and from cooperation between local stakeholders. The cumulative character of the production and the specific exploitation of these resources and assets leads the players to invest jointly in similar resources, thus contributing to a certain spatial or territorial specialization.

So in this case the territory is created by the actors in charge of the problems because they hope, through the "territorial" control lever, to persuade other players to make a commitment. Thus the territory becomes a generator of resources and of coordination. Hence it becomes an essential element for understanding and analyzing objects and problems in the management sciences generally and for strategic management in particular

Conclusion

In France, the coexistence of GM and non-GM crops in farmland requires the setting up of a governance of the land by all the parties involved. The form of governance must allow coordination between rival grain elevator companies so that collective strategies are implemented in a coordinated way and allow coexistence to operate. Today, we see various organizational arrangements developing around these situations, which manage to create differing forms of coordination and commitment by the stakeholders.

The analysis of the cases of Alsace and the southwest shows that the territory should not be regarded simply as a receptacle for economic activity. It should be thought of as a generative construct; a creator of productive resources. Spatial proximity is simply a context for the coordination of the players and of economic activity; in no way is it the essence of this coordination. The interplay of coordination, on the other hand, arises from other forms of proximity (Rallet and Torre, 2005), which allow the players to anticipate one another's behavior, either because they share the same project within which their individual roles have been defined, or because they agree to the same rules or standards to which they are supposed to more or less conform. Thus the action space becomes a resource for management; a resource so important that several organizations and institutions are induced to cooperate. Making use of the territorial dimension when planning management situations therefore proves to be strategic because the sharing of the space results in the commitment of the actors and brings them closer together to manage problems which are not the concern of a single actor, nor of a predefined management routine.

The territory is thus seen as a form of organization for collective spatialised territory-based action. It is as such that the territory becomes a matter for strategy and suggests three strategic problems:

- What types of organization of this collective action are needed to obtain satisfactory performance?

- What are the most appropriate methods of coordination for the development of fruitful cooperation for all the actors concerned?

- Finally, what governance should be established to regulate the interactions which take place in these territorial organizations?

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REFERENCES

Boschma, R.A. (2005), Role of proximity in interaction and performance. Conceptual and empirical challenges, *Regional Studies*, vol. 39, no. 1, pp. 41-45.

Byrne, P. F. et Fromherz, S. (2003), Can GM and Non-GM Crops Coexist? Setting a Precedent in Boulder County, Colorado, USA, *Journal of Food, Agriculture & Environment*, vol. 1, no. 2, pp. 258-261.

Clegg S., Kornberger M. (éds), Space, Organization and Management Theory, Liber & Copenhangen Business School, 2006.

Colletis G., Pecqueur B., (1993), Intégration des espaces et quasi intégration des firmes : vers de nouvelles rencontres productives? , in *Revue d'Economie Régionale et Urbaine*, n°3, pp. 489-508.

Debarbieux B., (2003), "Territoire*"* in Dictionnaire *de la* géographie et de l'espace des sociétés, J. Lévy & M. Lussault (eds.), Paris : Belin, 910-912.

Eisenhardt, K.M., (1989), Building Theories from Case Study Research », *Academy of Management Review*, Vol. 14, No. 4, p. 532-550.

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, vol. 46, L268, pp 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, vol. 46, L268, pp 24-28.

Gersick C.J.G. ; Bartunek J.M. ; Dutton J.E. (2000), Learning from Academia: The Importance of Relationships in Professional Life , *The Academy of Management Journal*, Vol. 43, No. 6 (Dec., 2000), pp. 1026-1044.

Gilly J.P., Wallet F., (2001), Forms of proximity, local governance and the dynamics of local economic spaces. The case of industrial conversion, *International Journal of Urban and Regional Research*, vol. 25, n° 3, 553-570.

Granovetter M., (1985), Economic Action and Social Structure: The Problem of Embeddedness , *The American Journal of Sociology*, n°3,november 1985, p481-510.

Hite J., (2003), Patterns of mulitdimensionality in embedded network ties: A typology of relational embeddedness in emerging entrepreneurial firms, *Strategic Organizations*, Volume 1, Issue 1, Pages 11-52.

Jank, B., Rath, J., Gaugitsch, H., (2006), Co-existence of agricultural production systems, *Trends in Biotechnology*, vol. 24, no. 5, pp. 198-200.

Kirman A.P., (1998), Economies with Interacting Agents , the economics of networks, Cohendet P., Llerena P., Stahn H., Umbauer G. (Eds), Springer-verlag, Berlin, 1998, p.17-51.

Lüthy, J. (1999), Detection strategies for food authenticity and genetically modified foods, *Food control*, vol. 10, pp. 259-361.

Marshall A. (1920). Principles of Economics, London, Macmillan.

Messéan, A., Angevin, F., Gómez-Barbero, M., Menrad, K., & Rodríguez-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, 2ème Edition.

Rallet A., Torre A., (2005): Proximity and localization, *Regional Studies*, vol. 39, n° 1, 47-60.

Schamp E.W.*,* Rentmeister *B*., *Lo U*.,(2005), Dimensions of Proximity in Knowledge based Networks *:* The Cases of Investment Banking and Automobile Design, european planning studies, vol 12, n°5, p.607-624.

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*, vol. 16, pp. 569-578.

Spicer A., (2006), Beyond the Convergence – Divergence Debate : The Role of Spatial Scales in Transforming Organizational Logic, *Organization Studies*, vol. 27, n° 10, p. 1467-1483.

Yeung H., (1998), The Social-spatial Construction of Business Organizations : A Geographical Perspective », *Organization*, vol. 5, n° 1, p. 101-128.

Yin R.K. (1994), Case Study Research, Design and Methods, (2nd ed.), Newbury Park: Sage Publications.