Strategic interdependence in networks: a governance perspective

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Abstract

In the agricultural and food sectors, many networks are built through interorganizational strategies. To analyze the strategic interdependence in networks, the concept of 'governance' is proposed. This concept is a way to link the structural characteristics of networks with their strategic content. To do so, the suggestion is to consider network governance as an institutional combination of an authority structure and of interelationship mechanisms. The role of governance will be to maximize joint value and minimize organization costs. Such a perspective helps in the understanding of the very nature of networks, which can be seen as an optimization of a strategy/structure interplay. Here the relevance of this analysis is illustrated through an empirical comparison of two existing agrifood networks.

1- Introduction

The agricultural and food sectors provide a wide range of network examples. Most of these networks are created for strategic purpose, with the aim for instance to develop differentiation strategies or to enhance core competencies and capabilities. To understand the link between these strategies and the building of networks, we suggest to focus the analysis on the concept of 'governance'. Rooted in transaction-cost economics (hereafter TCE) and in organization theory, we show that a governance perspective enables to explore why and how strategic interdependence and networks are interwined. Firstly, we define our basic assumptions and concepts. Secondly, we explain the constitution principles of networks in such a perspective. Then, drawing on in-depth case studies from agricultural and food sectors, we illustrate the main features of governance within existing networks.

2- Networks and network governance

2-1 The concept of governance

The concept of governance is defined as "the institutional matrix in which the integrity of the transaction is decided" (Williamson, 1996:378). Considering the theoretical backgrounds of transaction-cost analysis, the choice of this governance structure will follow a basic idea: this choice is aligned with the contractual hazards found between actors. "Transactions, which differ in their attributes, are aligned with governance structures, which differ in their cost and competence, so as to affect a discriminating -- mainly a transaction-cost economizing -- result". (Williamson,1996:12). This alignment principle will serve a comparative institutional analysis of governance structures. Consequently, governance is "the means by which *order* is accomplished in a relation in which potential *conflict* threatens to undo or upset opportunities to realize *mutual* gains. (Williamson, 1996:12). For Williamson (1996:14), governance structure will help to mitigate five types of contractual hazards: (i) hazards of bilateral dependency; (ii) hazards that accrue to weak property rights; (iii) measurement hazards; (iv) intertemporal hazards; (v) hazards that accrue to weakness in the institutional environment.

For example, in case of joint actions, actors will face two types of hazards. Firstly, when a joint action (in marketing or R and D for instance) is a source of value, it is also a potential source of conflicts. Each actor has an incentive to take over a wide part of the created value to the detriment of others, through opportunist behavior. Each producer is incited to free ride with regard to the collective value by not following the rules which lead to the obtention of the expected strategy. Consequently the partners in the exchange are placed in a situation of interdependence. Secondly, the agents cannot forsee all the contingencies which may arise during the progress of the cooperation, in particular when uncertainty is heightened. Therefore a complete contract to govern all the relations is not a feasible alternative. These two problems emphasize the role of governance seen as an institutional set of *ex post* and *ex ante* devices, beyond the design of the contract or of the bilateral relationship in itself.

A clarification of this concept of governance, particularly relevant for the study of complex organizational forms, has been proposed by James (2000). It is the distinction between governance and contract (or contractual relationships). This distinction has not always been made, especially by transaction-cost economics and organization theory. For James (2000), "the key factors driving the differential effects on governance structures and contractual form are hypothesized to be the problems of verifiability and observability of worker efforts required under different contracting environments" (James, 2000:4). Indeed, from problems of verifiability will "result contractual incompleteness - since non-verifiable variables are non-contractible - and governance structures are designed to complete contracts" (James, 2000:5). While contract characteristics refer to agency problems, the concept of governance affects the boundaries and the organization of the network in itself. As suggested by Brousseau & Fares (2000) in a similar vein, the intrinsic nature of governance is to "complete the incompleteness of *ex ante* set contractual obligations", mainly because of radical uncertainty in the environment (Brousseau & Fares, 2000:412).

2-2 Governance in networks

Many researchers showed the usefulness of the concept of governance for the study of networks (see for example Achrol, 1997; Carson *et al*., 1999; Ghosh and John, 1999; Håkansson and Johanson, 1993; Powell, 1990). The starting point of their research is that networks can be seen as a combination of governance structures, with multilevel relationships between horizontally or vertically-related entities. Basically, the same working hypothesis applies: governance structures aim at mitigating all forms of contractual hazards found between the partners in a transaction-cost economizing way. But, at the same time, network are complex organizational forms not reducible to a simple single transaction unit. For Ghosh and John (1999) the rationale of network is to be found in an "extension to the core model by developing the interactions between the creation and claiming of value (...) on the choice of governance forms". (Gosh and John, 1999:142). Håkansson and Snehota (1989) also consider that the network model broadens the perspective on business strategy in including interactions with partners.

Anderson *et al*. (1994) define networks, or business networks, "as a set of two or more connected business relationships, in which each exchange relation is between business firms that are conceptualized as collective actors" (Anderson, Håkansson & Johanson, 1994:2). The essence of this definition is the concept of 'collective actor' and therefore the existence of collective actions. This point is also emphasized by authors such as Lorenzoni & Baden-Fuller (1995). For them "networks can be thought of as a higher stage of alliances, for in the strategic center there is a conscious desire to influence and shape the strategies of the partners, and to obtain from partners ideas and influences in return" (Lorenzoni and Baden-Fuller, 1995:157). Johanson and Mattsson (1992) also explain that strategic centers have a perception of governing a whole system. For Dubois and Håkansson (2000) "there are interdependencies between products, between facilities (…) and these interdependencies are due to the fact that resources are used in combinations and constellations (Dubois & Håkansson, 2000:26)."

Williamson (1999) suggests that transaction-cost economics could play its part in this perspective "in taking an inventory of a firm's assets (and those of its rivals) and in

assessing the hazards associated with alternative planning scenarios" (Williamson, 1999:1103). But it is probably Nickerson (1997) who offers a more complete view of TCE in a strategy perspective. For him, individual transactions and strategy can be linked together. To do so he considers that the firm is an "expanded institutional set-up", and offers a way for identifying feasible strategies. He shows that the ambivalence of networks is to be found in the design of governance. The network owes its existence, in the long term, to its capacity to unify its strategy in coherence with independant entities. Unlike fully integrated firms, networks, through cooperation, allow simultaneously joint actions and freedom, according to the decisions. Some decisions are individual, taken by parties independently, while other decisions are collective.

In total, the balance between centralized and decentralized decisions will be more efficient than full integration only if the multi-lateral governance structure is properly designed. In other words the network succeeds, in competitive markets, only when a cost minimization principle is fulfilled. As a consequence, the concept of governance appears to be a meeting point between network integrity, seen as its structure, and interorganizational strategy, seen as its *raison d'être*.

Finally, a network, in a governance perspective, is an institutional structure for which the role is

> (i) to define a process of adjusting durably a collective action (or strategy) between autonomous entities through the establishment of a 'private order' (Williamson, 1996) or an 'internal government' (Ménard, 1997)
>
> (ii) to design mechanisms (either contractual or non-contractual) enabling the assurance, at the lowest cost, that individual behavior of partners follow the rules for collective actions.

3- Strategic interdependence in networks

3-1 Authority within networks and strategic decisions

A collective decision necessitates some delegation of power. Authors like Ménard (1997, 2000) & Heide (1994) showed that, in networks, there exists inevitably a specific decision mechanism in charge of some collective decisions called *authority*. This concept of authority is defined as a "delegation by legally autonomous actors of decision power on a sub-class of their actions". (Ménard 1997:746). Then an authority structure, which can be a firm, a third party or a negotiation structure, will be tailored to deal with some decisions.

Authority can be achieved by other means than hierarchical governance but also by uni- or multilateral contractual provisions. For Stinchcombe, in some cases, "contractual provisions may be expected to produce the effects of hierarchy", that is authoritative behavior (Stinchcombe, 1990:231). The role of authority systems is to create " flows of information (…) certified as legitimate (…), so that the risk of being wrong is removed from the person who acts in accordance with the information and is laid instead on the legitimators of the communication" (Stinchcombe, 1990:224). For Ménard (1997), authority is a specific means to govern specific contractual

relationships, distinct from hierarchy as well as market relations. Authority is the "institution of a private order between autonomous entities" (Ménard, 1997:747). In networks (or hybrid forms in transaction-cost economics terminology) Ménard identifies four types of authority modes, from the most informal to the most formal: influence, trust, leadership and *ad hoc* institution.

The allocation of decision rights defines who takes decisions and the nature of these decisions. Such an allocation of decision rights determines the roles and mutual obligations of the parts. As long as the allocation of decision rights coincides with property rights (i.e an independent firm responsible for its decisions) this identification is trivial. But in complex networks, delegation (or even sub-delegation) of decision power will occur. This delegation of power will not systematically coincide with property rights. As showned by Raynaud (1999), one must clearly distinguish between the design of the institutional arrangement in itself (its internal structure) and the interorganizational architecture, defined as the way the set of multilateral arrangements is organized.

The strategic center (or network captain, as suggested by Campbell and Wilson, 1996:127), through authority seen as a means, has a pivotal role in structuring the network. From an analytical point of view, the study of authority within networks is crucial to understanding who is in charge of strategic decisions and identifying the means by which the strategy is implemented. Beyond the diverse forms that authority can endorse in networks, its objective will always be to back up the strategic center. The critical dimensions of a strategic center are, according to Lorenzoni and Baden-Fuller (1995:147): to create value for its partners, to act as a leader, rule setter and capability builder, and to simultaneously structure and set up the network strategy. These critical dimensions will help to identify the central party within the network.

3-2 The design of network relationships

As soon as an authority principle and an authority structure have been set up within a network, the question of interorganizational relationships between partners emerges. The objectives of these mechanisms is to promote desirable behavior and prevent undesirable behavior. The means to achieve these objectives are diverse and many scholars have suggested that several types of mechanisms are possible. All of these mechanisms may be seen as decision procedures to fill the gap of contract incompleteness and to enforce the contractual promises. Heide (1994) for example identifies the planning and adjustement processes, the monitoring procedures, the incentive systems, and the means of enforcement. For Stinchcombe (1990), these mechanisms can be summarized in: incentive system, dispute resolution, and standart operating procedures. Brousseau and Fares (2000) define an incentive and coercion scheme, a supervision device and an arbitration mechanism. Following these two authors, their findings are synthesized and a grid of three generic key mechanisms are suggested for insuring the continuity and efficiency of network cooperation: planning, incentive and control systems, dispute resolution.

Networks suppose, to various degrees, interfirm planning, which "refers to the processes by which future contingencies and consequential duties and responsibilities in a relationship have been made explicit *ex ante*" (Heide, 1994:76). In this context, "plans are viewed (...) as aids or frames of reference rather than strict specifications of duties. As such, plans represent frameworks within which subsequent adaptations can, and are expected to, take place" (Heide, 1994:77). In concrete terms, interfirm planning is a decision-making process more or less centralized, which role is to "verify whether parties enforce their commitments by implementing the contractually settled rules or the decision made by the decision-making device" (Brousseau and Fares, 2000:411).

The incentive and control mechanisms are designed to "incite the agents to follow the behavior required, or, on the contrary, to dissuade them from adopting behavior that is opposed to their commitments" (Brousseau & Fares 2000:411). For Stinchcombe (1990) an incentive system is a "way of measuring or otherwise observing levels of performance of a contractor or of a contractor sub-unit and allocating differential compensation based on the level of performance, without further recourse directly to the market" (Stinchcombe, 1990:226). Incentive and control mechanisms usually rely on performance or observable behavior. It has been widely recognized (e.g. Stump & Heide, 1996) that the level of costs for measuring performance explain, to a large extent, the choice of incentive and control schemes.

To fully understand these mechanisms, control and incentive must be considered as complementary mechanisms in networks. Control mechanisms are a necessary condition to protect the value. In order to limit the cost of control, there is a trade off between behavior-based and outcome-based mechanisms. This trade-off will depend upon the information characteristics of transactions. But this necessary condition is not sufficient to fully understand the design of interorganizational relationships. The creation and the distribution of a stream of quasi rents will create incentives, for the partners, to maintain the collective value of interfirm relationships. This may be done through the price system (for example a price premium for product quality) or by the threat of termination of the relationships. Here it is shown that a price system (thus combined with a price premium) within the network leads to self-motivated agents and is a way to limit the costs of monitoring and controlling the partners.

Lafontaine & Raynaud (2000) show for example that in franchise networks, mechanisms such as residual claimancy rights (like in a market relationship) and ongoing rents are complementary because they are used to resolve different types of incentive issues. They suggest that networks with a common property (a shared brand name or another type of co-investment) frequently combine several types of mechanisms, with the underlying hypothesis: an association between a high incentive intensity mechanism (the residual claimancy rights) and the control of opportunist behavior through the fear of the loss of quasi rents is optimal. Interestingly, Lorenzoni & Baden-Fuller (1995) share the same insight when they suggest that the success of strategic centers is due to their ability to "create a system that has the flexiblity and freedom of the market coupled with long-term holistic relationships, ensuring the requisite strategic capabilities accross the whole system." (Lorenzoni & Baden-Fuller, 1995:160-161).

In networks the behavior of firms may result in conflicts. These conflicts find their sources in voluntary or even involuntary opportunist behavior. In any case, it is necessary to design a mechanism to deal with such situations: exact extent of rights and duties of the parties, formal and informal arbitration processes, designation of arbitrators. Many other means, such as relational norms or corporate identity, may be used to limit conflicts. But the existence of litigation mechanisms is a way to indirectly limit opportunist behavior through a fear of exclusion from the network or at least through penalties. The procedure for dispute resolution serves as *ex ante* as well as *ex post* protection of collective interest against undesirable behavior. Different level of such behavior may occur: non-respect of internal rules, dispute between partners about performance or rent sharing, opportunist actions regarding common property or reputation. These procedures serve also to create a climate for active collaboration and cooperation, in signalling that private efforts will be safeguarded from internal threats. These procedures indirectly constitute a basis for the establishment of relational norms.

In spite of the wide variety and diversity of devices inside each type of situation, an ongoing research on networks in agrifood sectors shows that these three generic mechanisms are found in all situations. These mechanisms play the role of invariant schemes in the face of universal contractual hazards: adverse selection, moral hazards, free riding. In any case, the ability to protect the value within the network in the long run is determining for the success of the cooperation (Madhok & Tallman, 1998; Zaheer & Venkatraman, 1995).

4- Governance in agri-food networks: empirical evidence

4-1 Case study approach: Saveol® and Cassegrain®

A research project on agri-food networks (Mazé *et al.* 2001; Raynaud, 1999; Sauvée, 2000) gives empirical evidence on the way economic agents implement collective strategies through interorganizational relationships. This research will serve as a basis to conduct our analysis of network governance. Most of these collective strategies are 'quality strategies', which objective is to enhance the perception of the final product for the consumer. Generally, these strategies are twofold: first the participants try to create a signal (brand, common label, official quality sign etc..); second, to be credible, participants in the chain must be able to develop and safeguard specific quality attributes (origin, safety, animal welfare, pesticide-free or organic products..). Considering the influence of the participants in the chain on quality definition, the partners in the network will have technical and marketing interdependencies to be solved by specific institutional designs. According the suggested framework, governance features will be analyzed through two items: authority and relationship mechanisms.

Saveol®

Saveol is a collective brand name involving more than one hundred independent tomato growers in Brittany and the Pays de Loire regions in France. Created in 1981, the

Saveol brand is now the leader of the French fresh tomato market with a strong image of pesticide-free product. The market share of the brand is approximately 12% (70,000 tons in 1999). Under the brand name Saveol there is in fact a complex network organizational form. Producers are the basis of this organizational form. They are highly specialized in tomato production and have heavily invested in greenhouses. These producers are organized by four producer groups. The role of these producer groups is also to organize the production technically and the sorting of the products. These producer groups are also the four main shareholders of a private firm called SMO. This firm is the owner of the brand name Saveol and is in charge of the marketing strategy (promotion, sales…) of the whole organizational form (Philippe and Sauvée, 1999).

Consequently there are two transactional levels in Saveol: the first one between producers and producer groups, the second one between producer groups and SMO. The first level illustrates a classical producer/producer-controlled organization relationship. Its main feature is the existence of marketing agreements which specify tomato quality and supply conditions for each member. The second level shows the creation of a new multi-owned firm by four independent cooperatives. The eight members on the board of directors represent these cooperatives. The producers belong to the same organizational form: the decision process is unified through the leadership of producers and through their double delegation of power. Above all, this example depicts the main feature of a network: independent agents dealing with collective assets.

Cassegrain®

The Bonduelle group is the leading company in Europe for processed (canned and frozen) vegetables. In 1989, the group bought another company, Cassegrain, and, within a few years, created a brand name of canned vegetables clearly positioned as a top of range product, on a market with undifferentiated products. This brand name benefits from a strong awareness and has a constant and clearly superior organoleptic quality. The quality of Cassegrain products rests greatly on the intrinsic quality of the raw material. The cropping operations are precisely established, closely followed and registered. It supposes also the definition of specifications for growing and harvesting susceptible to influence this quality. The processing stage is very simple and well known; its influence on the final quality of the product is limited and no different from the other factory of the group.

The organization of the Cassegrain network is structured around the processing factory. This factory is totally dedicated to the brand name and is supplied by one producer organization (hereafter PO). This producer organization is a syndicate regrouping all the individual producers delivering to the factory. These producers numbered 330. On a given farm, the cropping area dedicated to the factory never exceeds one seventh of their total area. A formal institution, called the Joint Committee (hereafter JC), completes the network. This JC is composed of four representatives of the PO, and two factory representatives. They meet occasionally in winter but every week during the harvesting period.

4-2 Authority: decision rights for collective actions

How to formally identify a central party? In some cases, an assembly of co-owners will be in charge of strategic decisions. In a sense the franchisees create their own franchisor. In other cases, there is a negotiation structure which owns the brand, like in cooperatives. But even when the central party is a single private firm, an interaction process and structure may be observed.

In the Saveol case, the interorganizational architecture leads to a central party, SMO, which role is to monitor the network. This central party will possess a certain number of rights: for example the right to control, exclude or co-opt partners. Through a delegation of individual rights, this negotiation structure will decide the strategic orientations. The partners in the network co-invest in a specialized company, in charge of the monitoring. Doing so the partners create a type of marketing joint-venture. It is possible to put in evidence a pyramid-like authority structure within the network: each level in the pyramid has complementary roles. This case shows a dichotomy between strategic and operational decisions. Formally, this 'central party' may take different forms. But its role is always to create a private order within a group of legally autonomous firms or actors.

This authority scheme is a negotiation structure, where growers delegate their power to producer groups and to SMO. However there is a clear breakdown of tasks between these two levels: the first one deals with technical and operational aspects, while the other is in charge of the marketing strategy. So a clear understanding of how delegation works inside Saveol is a determining factor. The basic feature of Saveol’s decision device relies on the recognition, by the producers, of an authority and subordination principle. Firstly, this notion of authority, key concept in the study of networks (Ménard, 1997), is found between producers and their cooperatives: the producers delegate this decision right to the board. Secondly, the cooperatives themselves delegate the right to sell the products and to define the marketing strategy to SMO. As pointed out by Raynaud (1999), in networks, agents create their own franchisor.

In Cassegrain, the authority system is highly centralized by the Bonduelle group. Indeed, the main decisions concerning the brand as well as the list of specifications are in the hands of the marketing manager. Some decisions are internal but are made (only) after coordination between the marketing staff and the factory: this is the case, for instance, for volume planning. In spite of this strong centralization of decision rights, the Bonduelle group is dependent on its suppliers, the vegetable growers. Even if the final decision is made by the group, an important process of interaction and negotiation occurs through the formal structure called the Joint Committee (JC). The JC acts as a collective authority, where producers and processors negotiate and make decisions for the entire production basin, as the harvesting period moves along. It is in this JC that prices are negotiated. The producers do not act directly on the harvesting program but nothing is decided without their agreement at least implicit or *a fortiori* against their will. This authority structure will be qualified as an *interaction* structure.

The design of an authority structure can be explain by several factors. We suggest a few of them, based on empirical research:

- The history of the system: in many case of differentiation strategies, agents are already specialized. Consequently, it is not possible to reallocate the assets and the building of the network is, in a sense, contingent on individual history of its constitutive partners.
- The type of strategic assets to be created and managed in the network (brand name capital, technical or R&D assets…). Some assets can be easily shared, while others are intrinsically divided between several partners.
- The relative size and importance of partners in the network, or their situation in the chain, leading to a 'natural' leadership within the network. Achrol (1997), for instance, explains that the network is "organized around a focal organization best positioned to monitor and cope with the critical contingencies faced by the network participants in a particular market" (Achrol, 1997:60).
- The role of institutional environment: in some cases, the public bodies may decide to create a third party. Doing so, they place the network in an interdependency situation regarding the third party, which acts as a pilot or a strategic center.

4-3 Network relationships as governance mechanisms

The coordination mechanisms put in evidence in agri-food networks are a combination of what the study has called 'governance mechanisms'. The two case studies show a wide diversity of governance mechanisms, but with some invariants.

Planning and adjustement procedure. In a situation of relational governance, an entity (for example the franchisor in a franchise system) has the formal right to make decisions about internal functioning and the evolution of the cooperation. It could be a modification of a brand specification list, investments in product promotion, launch of a new product. These decisions will be made in many cases by the central party. In the Saveol case, these supervision decisions are highly centralized (Sauvée 2000). The SMO is in charge of the main marketing and quality control decisions. The board of managers defines the list of specifications. More importantly, this board is able to impose a plan for product segmentation (for example the percentage of vine tomatoes for the Saveol group). This plan is based on market predictions. Moreover, the board will define an annual area increase. SMO constitutes a central party which is responsible for the monitoring of the brand. On the one hand, the central party chooses the key decisions that enable the group to create a rent (quality and volume decisions). On the other hand, this central party controls the producers' application of the list of specifications.

In the Saveol group, it is paramount to recognize that boards act as an 'assembly of producers'. This is why this planning procedure, unlike integrated firms, is based on constant negotiation. This procedure is necessary to adapt areas because of market uncertainty: nobody can foresee the development of markets (both in qualitative and quantitative aspects) and contracts are therefore incomplete. But this procedure is also a means to protect the rent from internal and external threats.

In Cassegrain, two people are in charge of planning. The marketing manager is in charge of the main decisions concerning the brand: store promotion, advertisement, packaging. It is strongly emphasized that no decision that may affect the brand image can be made outside the marketing team. The sales manager is responsible for the decisions concerning retail prices, volumes and relationships with clients. Unlike the marketing manager, a process of interaction and negotiation is possible for these decisions, and especially for volumes. The total production of canned food is planned at the level of the marketing manager, according to the sales predictions and contracts already signed. These predictions are then passed to the factory under the form of a production program. But, considering the strong qualitative requirements for the product, the final program is frequently limited in volume.

Here a central hypothesis is suggested: in networks, the strategic planning decisions, i.e. the decisions for which the role and impact on the collective value generated by the network is significant or high (in the given examples the value of the brand names), are centralized in a formal structure. Without this alignment between strategic decisions and centralization of decision rights, the value cannot be sustained in the long run. But as soon as this principle is fulfilled, other types of complementary decision structures, more or less centralized, are possible.

Enforcement mechanisms and organization of control. Saveol relies mainly on self-enforced mechanisms. Self-enforcement is defined by Ménard as "contracts properly designed, with their implementation depending on built-in mechanisms" (Ménard, 1998:9). To be efficient, these contracts must be of relatively short term and easily reproduced. In fact, self-enforcement works for transactions close to market conditions. Examples of self-enforcement are similar to internal markets, where the price system is the main mechanism to insure behavior conformity.

Self-enforced mechanisms are never pure, but instead are combined with other forms of enforcement mechanisms. As soon as reputation is created and based simultaneously on individual and collective behaviors, the organization has to set up incentive and control mechanisms. Separability and programmability are the two key concepts helping to understand the building of these mechanisms (Sauvée, 1998:33). Separability is the ability to observe and identify who has done the work; programmability refers to the ability to observe what and how the work is done.This helps to understand why programmability and separability are important features of self-enforced mechanisms: individual benefit is directly linked to individual output, as in market relationships.

In Saveol, the adoption of a common technical scheme and a well-defined list of specifications are a way to limit programmability. Complementary sorting techniques and centralization of production at greenhouse and cooperative levels are the main mechanisms that are used to control and to give incentives to producers. It requires the setting up of an efficient information system, and the design of information systems has to be considered in this perspective, as well as the information control configuration.

It can be suggested that the creation and protection over time of the rent (i.e. brand reputation and premium price for branded tomatoes) explains the efficiency of the

system. As long as an individual producer finds an incentive to follow the rules, he will accept authority. This network operates through mutual consent and commitments among partners. The fact that in the Saveol group, producers are represented on all the boards (in cooperatives' and in SMO's boards) reinforces the incentives.

In Cassegrain, the main incentive mechanisms are found between the factory and the PO, through a global contract and adaptation clauses negotiated in the JC. This contract specifies the qualitative characteristics of the exchanged vegetables, the quantities of vegetables to be delivered, the areas to be sown, the payment system, regulations for indemnity in case of abandonment of the areas. But it will never indicate the dates of delivery, this being decided by the JC during the harvesting period.

The contract is for one year, with no tacit renewal. Content of the contract and of specifications are re-examined each year, during annual negotiations. The payment of producers is based on a global receipt by hectare. For each crop, the JC establishes a receipt by hectare, then calculates its output by a reference technique (average of the last three years + security for loss of anticipated surfaces). From that, they deduce the surface to be sown and the gross price of vegetables by kilo. The main control procedures are made *ex ante*, with the specifications for field procedures. The control of the quality of products is assured by technicians of the factory, during the entire growth process of the plants.

The search for the highest observability of task performance (in a broad sense) explains the choice for enforcement mechanisms. This highest observalility may be obtained by a mix of *ex ante* or *ex post* control techniques, or with incentive systems, according to the characteritics of production and transaction processes. Another interesting feature of incentive mechanisms is the role of quasi rents generated by the brands. The level of quasi rents and its redistribution is determined by the strategic decisions of the networks. This links between the stream of rents and financial rewards is a way to incite the partners in the network to follow the rule: then this is a substitute for control mechanisms. Possible in Saveol because of the multi-owned structure of the strategic center, it is more difficult in Cassegrain, which has to rely on extensive control schemes.

Dispute resolution mechanism. In the Saveol case, disputes may occur for different reasons. Dispute settlement mechanism has to solve conflicts between actors. One can guess that because of contract incompleteness and potential opportunistic behavior of producers, such as the free-rider problem, conflict situations are likely to occur (Raynaud, 1999). This is the case in networks, where autonomous actors share a common property. Consequently, foresighted actors will set up arbitration mechanisms. The use of courts is possible, but this solution is often either costly or difficult to implement. If the internal management of conflicts does not end in an agreement, it is always possible, in the last resort, to deal with courts.

In the Saveol group, arbitration mechanisms are found mainly at the cooperative level. Indeed, the possibility of exclusion from the cooperative, appreciated as an incentive mechanism, is fundamental. This may occur if internal rules concerning for example the total supply rule or the list of specification for tomatoes are not respected.

The major possibilities of conflicts arise, at the production level, from two types of situations: opportunistic behavior and disputes about internal rules (or the way they are implemented). Conflicts due to the well known free-rider problem are practically impossible in the Saveol group: an individual producer is not able to sell his tomatoes outside the cooperative because no alternative marketing channels are available. Disputes concerning internal rules are limited and the Saveol group appears to be relatively stable in the long run.

The importance of corporate identity for individual producers is probably the first reason for such stability. The fact that cooperatives are the basis of the system explains this situation. Indeed cooperatives are long lasting structures, well adapted to the agricultural context. Moreover internal rules are clear, without ambiguity in their applications and well accepted by producers.

In the Cassegrain case, disputes may arise when unforeseen events disrupt the campaign operations, that can be climatic phenomenon or diseases of the plant. Conflict management is foreseen in the contract. But disagreements are rare, thanks to mutual trust and a great custom of working together throughout the year. Two mechanisms allow for conflict resolution between the factory and producers. The first mechanism is the trust relationship between the field manager and the farmer. The second is the existence of the JC with an implementation of regulations done with time. In the case of, for instance, a new disease, a permanent interaction and the exchange of information assures quick adjustments and the adaptation of both sides. The following year, the JC arrives at a compromise and decides on the implementation of new regulations (changing price, new crop specifications…). In practice, these regulations are imposed on all and the individual farmer is at fault if he is not able to adapt.

Once a year, the general assembly of the producer organization enables the sharing of the possible differing views of each producer and to reach a compromise. The situation of collective actors of the PO is therefore strengthened.

5- Concluding comments

On the basis of the in-depth case studies, the suggestion is that the strategic interdependence in networks refers to two critical dimensions. Firstly the recognition of an authority principle and an authority structure: this structure is to be identified in the specific allocation and configuration of decision rights within the network. Secondly, the study of governance mechanisms between actors in the network, and more specifically three generic mechanisms. Doing so, it is possible to highlight some common features. This study shows that the concept of 'governance' helps to capture the intrinsic nature of networks. This nature, through the lens of governance, is the process of structuring competitive positions through interorganizational relationships and strategy. Further research on existing networks will help to deepen these insights.

Finally, it is thought that through the concept of governance, the nature of network itself is clarified, as a discrete organizational form not reducible to a mix of market and hierarchy. Instead, the consideration of all generic form of organizations

(market, hierarchy, network) as an articulation of two institutional sets is suggested: a decision structure and several complementary enforcement mechanisms. A network, for instance, will be defined by the existence of a specific decision mechanism called authority, and by enforcement mechanisms of which the main features are to balance *ex ante* and *ex post* devices. The design principle for this network form finds its logic in the choice of a specific interorganizational strategy.

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