Collaboration within the Supply Chain: Perception for the Automotive Industry in Morocco

Mohamed MAMAD¹
Fatima Ouazzani CHAHDI²

¹,²Faculty of Juridical, Economic and Social Sciences, University Mohammed V-Souissi, Rabat, Avenue Mohammed Ben Abdallah, Ragragui, Al Irfan BP 6430, Rabat Institutions, Morocco
¹E-mail: mohamedmamad@yahoo.fr, ²E-mail: ouazzaniben@yahoo.fr

Abstract Based on a periodical of literature on the collaboration stakes within supply chain, this article studies the Moroccan automotive sector. It allows to answer the following questions: Does the Moroccan automotive sector use collaborative practices between the actors? If this is the case, what stakes can we draw for these actors? These are the questions to which we will try to answer from an exploratory empirical research with the help of suppliers, customers and logistic service providers.

Key words Supply chain, collaboration, stakes, automotive

Introduction

The globalization of distribution, production and supply competition intensity, ongoing innovation and cycle shortening of life products and pressure on expensive are concerned oblige firms to looks for new means to acquire competitive advantage and satisfy the final customer (Chikán and Gelei, 2010).

Supply Chain (SC), as a network of firms which participate, upstream and downstream, in different processes and activities which create value in form of products and services brought to the final consumer (Christopher, 1992), respond to these pressures. This definition presents SC as a unique entity and not as a fragmented up entity, where we conceive the collaboration of all internal and external aiming to achieve a common objective (Chen et al., 2009): the final customer satisfaction and acquisition of competitive advantage (Ouazzani, 2009).

Collaboration, based on a shared visibility between the SC actors, finds all its relevance in revenue maximisation and the costs minimization of products availability for the consumer, within short delays. If collaboration is necessary for the SC success, it should not under eliminate the tensions which may arise between actors (Bonet and Boissinot, 2012).

To appreciate the collaboration, it is relevant to think of opportunities and might be offered to actors in strategic, tactical and operational field as well as to the pressures to which it might be exposed.

The perception witch made us carry out a survey about seeking collaboration advantages and limits within the SC in the automotive sector in Morocco. Eventually, the automotive sector, pioneer in the world Supply Chain Management (SCM) process in the world (Charan, 2012), mobilizes a multiplicity of actors: 1st rank equipment manufacturers, 2nd rank Constructors, distributors and logistics service providers (3PL). All these actors are called to collaborate in length to create mutual benefits which would be superior to individual actions (Ellram, 1995; Colin, 1997).

This article presents the first step of our investigations. Our objective is double and gives answer to the following questions:

Does the Moroccan automotive sector use collaborative practices between the actors? If that is the case, what are the opportunities and the constraints?
To answer these questions, we will first mobilize a review of literature of collaboration and the proposal of modelling. We will then specify the adopted methodology and we will finally discuss the results of the first phase of our empirical study.

1. Theoretical framework

We will mobilize a framework collaboration analysis which, through a review of literature, leads us to construct our research model and to formulate our proposals.

1.1. Conceptual precision

Having determined the different steps of collaboration, we will attain the approach which imposes key determiners for its success.

1.1.1. The different steps of the collaboration

The term collaboration began to be familiar in the field of SC in the middle of 1990s (Barratt, 2004). The researchers in logistics management (Yeung et al., 2004; Mentzer et al., 2001; Simatupang and Sridharan, 2002), became very much interest in the collaboration between the actors of SC. However, there is not a consensus on the definition of the collaboration notion of often commonly-used (Soosay et al., 2008). In this context we can notice the conceptual pluralism in which collaboration between actors of the SC is used Collaboration is progressive in the practices of SC, and can have several degrees of intensity Ronchi (2007; 2011). It begins with the collaboration of all functions of the enterprise and continues through the incorporation of the external actors). Cohen and Roussel (2005) provide typography of the collaboration to handle the opportunities it might offer to the SC actors.

- The transactional collaboration refers to an operational objective and seldom allows the actors to withdraw punctual optimizations.
- The cooperative collaboration focuses emphasis on a slight improvement of optimizations by allowing a higher level of a one direction information exchange.
  However these two types of collaboration are limited to slightly improve the implementation of daily transaction
- The coordinated collaboration handles the physical flow management and associated information as well as a synchronization of implementation and processes planning.
- The synchronized collaboration refers to an involvement of the actors in long-term common objectives sharing (Emmanuelle, 2004). It goes beyond coordination and declines to a more strategic step.

Although the concept of collaboration can include several typographies in SC, we will keep the definition of all collaboration as a means used by firms within SC to work together and achieve common goals by sharing ideas, information, know-how, risks and benefits (Cohen and Roussel, 2005).

From this point of view, collaboration results in actors’ interaction with an objective of identifying determiners for its success.

1.1. The determiners of collaboration between the supply chain actors

They revolve around the key elements of collaboration success between of the SC actors according to the typography. This typography is part of a strategic approach that is available in terms of trust and commitment (Morgan and Hunt, 1994; Moorman et al., 1993; Anderson and Narus, 1990; Ganesan, 1994; Dwyer et al., 1987) of common objectives (Doney et Canon, 1997; Anderson and Weitz, 1992), risks and benefits sharing (Lambert et al., 1996; Ronchi, 2007), of information exchanging (Anderson and Narus, 1990; Hally, 2006) and of tools implementing and information transfer processes such as the Electronic Data Interchange (EDI) and Efficient Consumer Response (ECR) (Lowson et al., 1998).

In this perspective, the collaboration assumes the interrelationship of the actors (Heide and John, 1990) as well as the sharing of their assets.

Finally, determiners discussed above encourage the SC actors to work together in a contractual framework so as to specify expectations and responsibilities of each (Frankel et al., 1996; Poppo and Zenger, 2002; Dekker, 2004; 2008).
Taking into account this framework does not work without raising problems of implementation and constitutes a challenge for collaboration of the actors within the SC. It is in this context that the fundamental dimension of logistical audit takes place to assess the collaborative practices (Nogatchewsky, 2003). For these reasons, the building of a vigilance policy, the mechanisms conflict management and the building of strategic make up necessary tools for the implementation of collaborative practices (Simatupang and Sridharan, 2008).

Consequently, the characterization of collaboration such as it was presented above allows improving the expected gains by the SC actors even if problems in terms of costs and power issues are not to be excluded.

1.2. Collaboration in the heart supply chain actors challenges

To give an account of it, we will get interested in opportunities and pressures which require collaboration between SC actors.

1.2.1. Expectations of the collaboration

Most surveys on collaboration (Zouaghi and Spalanzani, 2012, Min et al.; 2005) agree to show that strategies of collaboration significantly influence the competitiveness of enterprises (Ronchi, 2011; Rebolledo et al., 2009). And make obvious the benefits linked to collaborative practices between SC actors.

We note that the collaboration expectations are numerous and are felt at several levels of SC (Cohen and Roussel, 2005).

- **On the strategic level**: the actors have a better visibility to jointly determine when and which products are the most appropriate to satisfy the needs of the final customer’s requirements, penetration objectives, market share, the opening of new stores, and objectives management by category. This visibility creates customer loyalty and makes the actors proactive. It thus contributes to achieving and maintaining competitive advantage by all actors.

- **On the tactical level**: visibility shared between the actors can efficiently plan the life cycle products, as well as financial planning. This visibility can optimize a group of business objectives: sales on time and in volume, the satisfaction target levels, products allocation.

- **On the operational level**: the actors carry out plans by trying to take advantage of the availability of resources and capacities of each (levels of supplies, space of available stocking). In this regard, we can cite collaborative practices allowing reducing the additional stocking costs, the supplies security, the predictions reliability, the quality control and delays respect.

It seems appropriate to stress PSL obliged passage in the reduction of costs between the different SC actors (mutualisation of fluxes by the transport lines bulking or assets optimization, collaboration in storage, and dynamic management of the SC interfaces.

Consequently, the collaboration can serve different common objectives from the most strategic to the most operational. This collaboration process must also be advantageous to the actors so that they get involved in it and try to keep it.

If the collaboration seems inevitable in SC to offer such opportunities to the actors, it generates risks and remains difficult to manage.

1.2.2. Difficulties of an efficient management of collaboration

They mainly concern: The theory of transaction costs, and Stakes of power and dependency.

**The theory of transaction costs**

The theory transaction costs registers in line with the reflection proposed by Coase (1937) and Williamson (1975, 1979, 1993). It consists of studying the costs of transaction: costs of contractual exchanges of goods and services between business companies (Williamson, 1985). In this context, these exchanges start by « discreet transactions (short-term contracts and limited communications between actors) to end in relational exchange (long-term contract preceded by an intense communication process) (Zouaghi et al., 2012).

Moreover, the theory of transaction costs includes expenses ex-ante (search for a compromise between actors, a contract elaboration) and ex-post (control and monitoring of the signed contract, modification of the
contract in case of conflict). Based on this typography, this theory tries to minimize transaction costs thanks to a mode of efficient governance (the market, hybrid form or long-term contract, hierarchy, public or private office). Nevertheless, these costs may increase according to the behaviour of the economic agents (restricted rationality and opportunism) and to the nature of relation (frequency, uncertainty and peculiarity of assets) (Forbes et al., 2010).

- Restricted rationality refers to the inability of the actor to process information, to understand it and to understand the reactions of the suppliers, customers and the competitors (Simon, 1991). It thus generates ex-ante and ex-post transaction costs.

- Opportunism refers to the use of the individual of trickery and cheating to achieve one’s personal interest and take the most of every transaction. It leads to confidence abuse and an increase in ex-ante and ex-post transaction costs.

- Assets specificity constitutes a special place in the works of Williamson (1975, 1985). It is reflected in the importance of tangible and intangible investments available to an actor to support or reinforce the trading relations. It creates a risk of dependency and a spread of opportunistic behaviours.

As a result, the increase of transaction costs is likely to damage contractual practices in danger. It can generate costs of collaboration, notably operational, tactical and strategic losses within SC, despite the long-term contracts.

**Power and dependency stakes**

To explain the relations of dependency and power in SC, we will rely on the definition provided by Emerson (1962) and mentioned by Nogatchewsky (2004) «dependency is conversely correlated to power: If A has power over B, it is because B depends on A, because B needs to exchange with A to attain one’s purposes. Therefore, the power of an actor lies in controlling the resources the other is needs ».

This approach has also been developed in the works of Dahl, 1957; Blau, 1964; Pfeffer & Salancik.; 1978). These authors define the dependency of an actor "A" in relation to an actor "B" as being the extent according to which the actor "A" needs " B " to attain one’s own purposes. In the same vein, Pfeffer & Salanck (1978) add that the degree of dependency is characterized by the monopoly and the discretion of resources allocation.

To overcome this dependency, certain actors develop various adaptation maneuvers (restrictions of information access, modifications of their needs, research of alternative resources) to preserve as much possible their independence and exert pressure on their environment (Pfeffer & Salancik, 1978). In this context, the actors can manage their situation of dependency by structuring their exchange relations through establishment of formal ties (contracts) or semi-formal (joint ventures or mergers) with other business companies (Zouagh et al., 2012). Exchange relations can comparatively lead to an equitable relation between actors (Manzano, 1997; Lusch et Brown, 1996).

It is important to note that most of approaches outlined above are based on the works of French and Raven (1959) which differentiate between coercive power (sanction) and non-coercive power (reward, expertise, legitimacy and reference value).

It is in the context where Abbad et al., (2012) and (Zouaghi et al., 2012) Surveys based on power stake in an actors logic take place. In this respect, an unstable conditions of the collaborative practice success by putting emphasis on the potency of certain actors (the pilot) who, by using experience and legitimacy for creation and value sharing, will be tried to reap the benefits and to support other actors’ adaptation costs (Barbat, 2011).

Taking into account of power and dependency issues can limit the equitable distribution of gains between the SC actors.

All these developments on the collaboration within SC allow us to build our model and to issue research proposals.
1.3. The modelling proposal

The model is based on the literature review studies in the previous developments (1.1 (1.2). It summarizes the necessary determiners for successful collaboration and highlights their implications for the actors in terms of opportunities and constraints. Figure 2 illustrates our research model.

After building our model, we can identify three research proposals (P1; P2; and P3) announced the empirical part.

2. Methodology: The case of the motorized supply chain in Morocco

We will first introduce the empirical context of our research, and then we will specify the methodology adopted related to our problems.

2.1. Context

The automotive sector is one of the industries likely to play a leading role in economic growth. Strengthening its potentials manifested itself by an investment program envisaged by the National Pact of Emergence that will make of this sector a strategic industry from which Morocco intends to take its competitive advantages. At this level, it is necessary to decline the primary role of automotive industry in the Moroccan economy by its contribution in the training of the Gross domestic product (6 %) and by its importance in exports (14 %) and employment (300000 people). Besides its weight in the economy, automotive industry provides activities of supply (equipment manufacturers and suppliers), assembling (manufacturers), distribution (distributors, sales representatives, subsidiaries and affiliates of the distribution companies), transport, storage and preparation of orders (PSL). It resembles a SC whose actors are called upon to collaborate in length. In this respect, it is necessary to note that the manufacturer and the distributor constituting a unit, it is advisable to take an interest in the relation between equipment manufacturers, suppliers and PSL.

2.2. Methodology

The study of collaboration challenges between the SC actors requires a research methodology in relation to the questions raised in the introduction. We opted for an effective study of exploratory nature. It is a qualitative step founded on semi-structured interviews which we had with seven equipment manufacturers (of first rank and second rank), two constructors and six experts.
Table 2. Composition of the sample

<table>
<thead>
<tr>
<th>Manufacturers</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Responsible SC</td>
</tr>
<tr>
<td>- Responsible performance of Suppliers</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>OEM N°1 : General manager</td>
</tr>
<tr>
<td>OEM N°2 : Chef du département SC</td>
</tr>
<tr>
<td>OEM N°3 : General Manager</td>
</tr>
<tr>
<td>OEM N°4 : General Manager</td>
</tr>
<tr>
<td>OEM N°5 : SC Manager</td>
</tr>
<tr>
<td>OEM N°6 : Responsable SC</td>
</tr>
<tr>
<td>OEM N°7 : General manager</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Experts</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Experts of the Moroccan Association and Construction Automotive Industry</td>
</tr>
<tr>
<td>4 Transport and academic experts in SCM</td>
</tr>
</tbody>
</table>

It is important to point out that companies interviewed were selected to obtain a sample of profiles supposed to work according to an SCM. To limit our study, we chose to restrict our interviews to assembling light vehicles. The purpose of these interviews was to collect data on the conception these respondents made about challenges of collaboration within the SC car in Morocco. The data collected included the themes from our literature review, i.e. the determinants and challenges of collaboration. The combination of these data, although not complete led us to results we discuss in what follows.

3. Results and discussion

Based on the results of our interviews, we present the determinants of collaboration and related issues. In this context, we illustrate the content of our results by verbatim extracts from the various points listed in our interview guide.

3.1. The determinants

Before discussing the determinants, it is important to note that the same actor can sometimes be a customer or supplier depending on the role they play in the relationship.

Determinants revolve around the following points:

- **Trust**: Respondents confirmed that trust is not taken into account from the beginning of the customer-supplier relationship, customer-and supplier-PSL PSL. In contrast, collaborative practices emerge and evolve over time. According to interviewees they are based on knowledge of the players and their reputation, the long-term evaluation of their practices and their expertise at all levels of the SC: supply of materials and components, manufacturing and strategy formulation. Trust is perceived by the interviewees as a consequence, not a precondition for the improvement of trade. "Trust is based on competence, experience, reputation, size ... but it is not the determinant of collaboration, trust grows through exchanges. It is considered an asset produced and accumulated by individuals and can ultimately save transaction costs between the parties...." (Manufacturers, Vendors N° 4 and N° 6).

- **Information sharing**: according to respondents, the flow of information between customer and supplier, customer and supplier-PSL PSL, is not the result of a collaborating willingness, but must meet the specific needs of achieving the transaction. "The collaboration with strategic partners is central to the concerns of companies in developed countries such as Japan. However, the reality in Morocco shows that it is difficult for companies to share information and implement actions to help enterprises to work within a common framework so as to create value and share profits' ( OEM NO: 5).

In this regard, we can paraphrase Charan (2012) "Many efforts are needed in developing countries to adopt the philosophy of the SC."

- **The grouping of actors around a common goal**: the respondents pointed out that the common goal is masked and in the hands of some teams of the dyad, which in case of need, place at the disposal of other actors (performers in the dyad) suitable for operations improvement. In this situation, the improvement is
made in a timely manner regardless to the common goal. "This article ... I make it but I do not know either its use in the production of client ... or usefullness. Find partners who share the same goals, the same vision of the project and be able to sustain actions and coordinated decisions is a major impediment" (Manufacturer & OEM N° 3).

- Sharing of risks and benefits: respondents (OEMs) reported that profit sharing in the dyad relies on effectiveness, efficiency and profitability. However, the sharing of risks is separately borne by each actor. In addition, respondents (OEMs) allege the existence of a collaborative practice for profit. "The client has a profit, seeks to know more information on my suppliers on my production costs, to reduce my profit" (Original Equipment Manufacturer N° 4).

- Interface technologies: Respondents emphasize that there is no shared use of communication technologies among all stakeholders. They state, however, that the use is part of a dyadic customer-supplier. That said, technology sharing refers to different designs according to respondents. This is the Electronic Data Interchange (EDI) for powerful suppliers and customers, and the use of traditional means of communication fax, phone and especially meetings between small, medium suppliers and customers. "The implementation of these new technologies facilitate the exchange and processing of data and thus simplifies interactions but are not sufficient to manage a chain as a whole" (Manufacturer & OEM powerful).

"The implementation of EDI for SMEs and SMIs is not the solution and assumes the cultural and organizational change" (Manufacturers).

- The contractual framework: respondents suggest the existence of a contractual framework in managing the customer-supplier relationship and denounce the positive impact of regular monitoring of transactions between customers and suppliers. Respondents also stressed that the implementation of tools for monitoring and evaluation (audit) is an optimization factor and progress. All partners (suppliers, customers, PSL) are regularly evaluated in all key areas. "Every year, we are rated by customers on three criteria: product availability, quality and competitiveness" (equipment supplier N° 2).

The qualitative analysis above does not fully consolidate the determinants of collaboration from our literature review, but as we have already pointed out, collaboration is of dyadic type. It is not a logical extension based on trust and available to stakeholders to use resources and sharing the benefits and risks in order to achieve the common goal of obtaining competitive advantage (Mentzer et al., 2001). Instead it relies on improving the long-term exchanges between suppliers, customers to probably lead the possibility of coordinating complementary activities in order to reap the benefits expected by the dyad.

3.2. Collaboration opportunities and constraints

3.2.1. Opportunities

- Reduced costs associated with delivery contributes to the elimination of waste, non added value creative activities as supply and assembling are concerned contribute to the economic viability actors in the dyad.

- The reduction of raw materials stocks, components and finished products can bring about gains. In this regard, respondents point out that optimization of the flow of materials and information necessary to perform operations between supply and manufacturing customer-supplier helps reduce stocks. In addition, respondents indicated that production management in the right time reduces inventories.

- These gains must not lead us to underestimate the PSL role of in the pooling and mass flows in terms of achieving economies of scale. In this perspective, the respondents pointed out that the relationship takes the form of a sub-contracting, whereby the customer (customers or suppliers) delegates some of his activities to the subcontractor (PSL). For this reason the PSL provides transportation and storage and performs operations in terms of differentiation for the customer. "In order to be able to obtain gains in terms of innovation and technology for a product unknown to our business we appeal to PSL which executes or produces this commodity..."(Manufacturers & OEM N°2 and N°3)

- In addition, interviews with experts from the AMICA led another source of opportunities related to local integration of 50% of small and medium enterprises (OEMs 1st and 2nd row) developed by the public actor Morocco. It is a preferred strategy to impose major players to sponsor small and medium enterprises. This sponsorship, creator of advantages in terms of training and development, helps develop a Moroccan industrial competitive offer, able to develop partnership offers. "We, Moroccan equipment providers OEMS, are a family business. The intervention of the public actor is necessary to protect ourselves from dependence
on huge companies... I must confess that despite my position of General Director (DG) of my company and yet when I decided to meet a manager at the head high client company (manufacturer), I have a feeling of a difficult access to his office while he can easily get in the touch with me "(Equipment No.3).

The results of the qualitative analysis show that opportunities for collaboration are of dyadic nature. They relatively appear on the operational level through the execution of daily transactions within the meaning of Cohen & Roussel (2005) and are difficult to achieve on the tactical and strategic level.

3.2.2. Constraints

The interviews illustrate the relationship between customer and supplier characterized by a dyadic relation of domination and power customer (manufacturer/supplier) (OEM). Nevertheless, this relationship may be reversible if the supplier chain and this is due to asset specificity, in the sense of Williamson (1985). Indeed, the significant investments made by the supplier create a relationship of domination and dependence of the client. However, the change of supplier by the customer becomes difficult to share the importance of sunk costs (exclusive in the supply of certain components).

-This relationship is also reflected by the increase in transaction costs. Some vendors use collaborative arrangements in order to become powerful and they eventually become true competitors. This type of arrangement allows these suppliers to implicitly adopt an opportunistic behavior to the detriment of the customer (manufacturer) and abuse of power under this collaboration. "The relationship is never balanced, each seeking to satisfy a personal interest, which does shorten the business relationship between us. We must seize the opportunity when it possible to the detriment of the partner "(Original Equipment Manufacturer No. 5). This relationship is also characterized by power issues implicitly coercive.

"We do not have the right to make mistakes ... otherwise you risk being deregistered by the client: it is in this context where coercion can occur," (Vendors No. 3, No. 5, No. 7).

4. Conclusion

The mobilization of a literature review on collaboration within the SC has allowed us to highlight opportunities for collaboration expected by the actors at the strategic, tactical and operational levels as well as the constraints to which they are subject in terms of transaction costs and power issues.

Based on this approach, we have proposed a research model that has impact on our empirical study. This study which uses semi-structured interviews with car SC actors in Morocco has enabled us to attain the first result of this research. Thanks to our empirical analysis we have realized that collaboration between all actors of car SC is difficult to manage. In fact it refers to a customer-supplier dyadic approach marked by domination, opportunism, delayed awareness of defining conditions for collaboration at the beginning of the relationship and pervasiveness of making a profit. In this regard, we understand that opportunities drawn from this customer-supplier relationship are limited at the operational level of daily transactions. The contributions of this research are twofold both theoretical and managerial. From a theoretical point of view, our work has made it possible to participate in enriching our knowledge about collaboration within the SC and understanding its implications for the actors. This theoretical foundation has implications for the operationalization of the automotive sector.

From a managerial point of view, the results of this research provide a basis for reflection for professionals (big companies, multinationals, SMEs and the public actor) on issues that contain both now and in the following decades major strategic issues for the automotive industry in Morocco.

We can say that, our exploratory study highlights some important issues concerning the cooperation at the operational level, such as the reduction of costs and deadlines. However, these aspects should be further developed and complemented by a confirmatory study based on the administration of a questionnaire.

References


218