ECR Development in French Food Supply Chains:  
Factors of Fails and Success

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Abstract

Producers and retailers often limit their partnership to the simple implementation of a set of tools (advanced logistic techniques), our purpose was to understand the reasons that govern such choices, but neglecting the essence of the ECR, which is based on active cooperation between suppliers and retailers. A qualitative study among the professionals, completed by a theoretical literature study, has resulted in the proposition of an explanatory model of the level of cooperation, from both supply management and demand management perspectives.

1. The Emergence of the Efficient Consumer Response (ECR)

The economic context in which the distributors and the producers of food products carry on their activities evolved considerably during last years.

Concentration of distributors, globalisation of suppliers, importance of quick deliveries and quality, unpredictable behaviour of consumers represent only few of the factors that contribute to the growth of the uncertainty.

The requirements of safety of food products imposed to the market players to exercise better control over the storage, transportation and handling of raw materials, to avoid any interruption of the cold chain and to better respect the delivery time by means of better monitoring of materials and informations flows.

Uncertainties of the market and the requirement of standards of quality encourage the companies to implement new logistic techniques and new forms of coordination between suppliers and retailers.

One of this form of coordination is the global approach of the Efficient Consumer Response (ECR).

But academic studies of the ECR implementation and its impact on marketing relationships are relatively rare (Corsten & Kumar, 2005).

The ECR is defined, by Food Marketing Institute, as a “responsive, consumer-driven system in which distributors and suppliers work together as business allies to maximize consumer satisfaction and minimize cost” (Food Marketing Institute, 1992).
To achieve the objectives of the ECR, four areas of cooperation between the members of the supply chain were defined:

- Supply side that addresses rapid replenishment of products and related information through the entire supply chain;
- Assortments which aim at the improvement of the product assortment offered to consumers;
- Promotions - improve the effectiveness of product promotion;
- Introductions- improve the introduction of the new product;

In our research, we consider the ECR as formed of two parts: the management of supply chain and the management of the demand. The management of the demand aims to improve assortment, promotion and new product introduction.

The ECR, like the just-in-time, is not limited to a set of "recipes", but is a "philosophy", an integrated set of improvement concepts and an integrated approach to supply and demand. ECR recognises that excellence in serving consumers can only be realised by trading partners working together through an integrated approach. Thus, it is required to break down barriers that erode the efficiency or effectiveness of the trading partners in serving consumers.

2. Issues of research and methodology

In spite of the need for an integrated approach of ECR, we observe that producers and distributors often limit their partnership exclusively to the pooling of techniques, like the Cross Docking, Continuous Replenishment (CRP) and Electronic Data Interchange (EDI) without strategic cooperation and sharing of information.

The ECR approach is largely practised, but only partially, especially the supply side of the ECR and the new information technologies.

The professional literature shows that the companies are advanced enough in implementing these tools. This assessment is confirmed by the results of a survey on the use of the new information and communication technologies by the food processing companies carried out by AGRESTE in 2002. They indicate that 60% of these companies use EDI, which constitutes the privileged support of the relations with the customers for 52% of the companies. These informational exchanges are used mainly for managing sales and deliveries. Such practice made it possible to reduce sending traditional mail entirely or partially in nearly 30% of the companies. The transport and inventory control are also done via EDI, but to a lesser extent (19% of the companies).

In what concerns the CRP, an investigation carried out by ECR France in 2002 among its members, showed that the CRP was practised by nearly the ¾ of producers and by almost all the retailers.

Several food processing companies already reached the critical point of their deliveries within CRP which is more than 50% of their turnover.

However, nearly 90% of CRP projects operate today without real integration with other processes and internal systems of the company and with an problematic relation between suppliers and retailers.
The objectives of our research were: (1) to understand why certain suppliers and retailers limit their cooperation only to the simple implementation of a set of tools (advanced logistic techniques); (2) to identify the factors explaining the degrees of cooperation in managing the supply chain and the demand, the 2 areas of ECR; (3) to check if the cooperation at the logistic level has a positive impact on the development of the cooperation in the area of demand, considered as being a strategic cooperation.

To achieve these objectives first of all we carried on a qualitative study among professionals. We have tried to acquire a vision as complete as possible of relations between the retailers and suppliers of food products during the implementation of the ECR.

At this exploratory stage, we looked for the plurality of the profiles for better seizing the diversity of points of view. Thus, we questioned the suppliers as well as the distributors, but also the logistic service providers, two consultants, members of such organizations like Gencod EAN France and ASLOG. Finally, we carried out eighteen semi-directing interviews with ten producers, four retailers and four service providers.

Secondly, we completed this empirical exploration with a theoretical review of the literature. And finally, we proposed an explanatory model of the level of cooperation in the two fields of the ECR.

The advanced hypotheses were tested with a structural equations model. The model was supplied with the data collected by postal investigation among a representative sample of food processing companies.

3. The results of the empirical research

Almost all of the interviewed companies recognized that they don’t have an integrated approach the ECR. They cooperate with retailers only in neutral fields of common interest like logistics. The cooperation is more difficult on strategic actions where the interests are divergent, like the actions on the demand side of the ECR.

On the logistic side of ECR, the CRP remains the most widespread technique. The CRP appears to be the least controversial and the least politicized procedure according to a consultant of Pricewaterhouse Coopers. Unfortunately, our observations often showed that the market players reduce the ECR to the CRP.

The cooperation on the demand side of ECR is even less developed. There are some common projects of cooperation especially on promotion and assortment but there are less common efforts done to improve the introduction of new products. The distributors work with producers mostly on the introduction of new distributors’ brands. In other cases the producer announces the date of launching a new product and then the distributor decides whether to buy or not the new product.

3.1. Hurdles to the ECR Implementation

The analyses of the interviews and professional articles reveal French mentality and the resistance on change among the major obstacles. As one logistics representative of a producer affirms, among manufacturers «the mentalities have to evolve, especially the French mentality which is much too different from the Anglo-Saxon one» but, «the most difficult to evolve are
the mentalities themselves». The partners have to learn to truly cooperate. The collaboration is not a simple share of forecasts, but it also requires a joint work in order to settle the mutual interests.

The cost and income division is also considered by our interlocutors as an important reason of the actual confrontations (not quoted by the retailers!). They underline the existence of two asymmetries: “the problems of the ECR consisting in identifying how to distribute the income and how to distribute the costs”.

The persistence of the functional organization is regarded as an obstacle in the ECR implementation, first of all by the authors of the professional articles. As well, between the experts of the logistic management, the consensus is that the major difficulty in implementing the concept of integrated logistic chain is organisational one [Christopher, (1998), p.216].

Nowadays two thirds of the power being concentrated in the hands of the retailers, the majority of the respondents: manufacturers and distributors agree that there has to exist a balance that would prompt cooperation development, the balance being stated in terms of power, in terms of common objectives, financial investments, etc… In case there exists an important power unbalanced state, the player being in force will have the tendency to impose a cooperation which would be nothing else that “a make-up of the existing adverse relations”, according to a ECR responsible of a retailer. The latter finds the size of the supplier and his negotiation power as being a reason of the disputed relations adding that «with the small suppliers the relations are better because they are more reactive and they accept the imposed conditions with little negotiations ».

Some more actual commercial practices constitute further obstacles to the ECR development. The most frequently evoked are:

- The speculative stocks which have little chance to disappear rapidly, as long as the price competition will appear as a dominant feature of the sector. According to the manufacturers, this practice of speculative stocks impedes the cooperation in the logistics field and especially the CRP development.
- The “behind profit margins” are considered by the manufacturers to be obstacles of the category management implementation because when composing the assortment, the distributor will choose in most cases the reference which brings him more “behind profit margin”, even if at the qualitative level it is less appreciated by the consumer.

3.2 Success key factors in the ECR implementation

The empiric investigation showed that the investments in the human resources are estimated as an important factors for the implementation of the ECR approach. These investments mainly correspond to investments for formation, new competences recruitment and for maintaining the competent personnel because «when a key element leaves the enterprise, the project frequently goes bad and sometimes even is temporarily closed».

The internal cooperation between the services also appears to be indispensable to the development of the cooperation in the ECR field. Only, when the internal barriers are raised, the enterprise can engage itself in an external cooperation.
The interviewed professionals consider that the direction of their enterprise has to favour the implementation of multifunctional teams and the joint work of more departments.

Thanks to direction support the interdisciplinary teams will be able to follow together the same objective: to eliminate the unnecessary costs in the totality of the logistic chain.

The ECR involves important cultural changes which have to be realised progressively, without harming the daily course of operations. As any major project, the changes can not be decreed in a day and carried out the next day. Thus, the successive implementation is equally evoked as a success factor in the ECR implementation.

The supplier’s results measurement and the results level are also an important factor in the progress of the ECR implementation. The different members of the logistic chain have to determine jointly the performance criteria which would permit everyone to know if the chain management is effective and if the benefit of the ECR implementation is satisfactory.

As to the information and communication technologies (ICT) role in the cooperation development, the opinions are different. On the one hand, there are the interlocutors who defend the positive role of the ICT in the development of the cooperative relations. Their positive role mainly consists in the decrease of the coordination costs and in the increase of the transmitted information reliability. But, we have met persons who believe that the ICT makes no contribution to the development of the cooperative relations, and consider that there is only a data carrier change.

4. Proposal of an explicative model of cooperation in the fields of the ECR

On the basis of the discussions analysis and the speciality literature, we have found out that some conditions either determine or stop the cooperation in the ECR fields. This factors’ influence appears in the research hypotheses which constitute the explanation model of the cooperation within the framework of the ECR. Nine conditions appear as being determinant in the development of the cooperation in the two parts of the ECR: the supplier’s engagement in the relation, his dependence on the retailers, the investments realised for the relation, direction support, the level of the internal cooperation, the level of the supplier’s results, the implementation of the ECR tools and their integration in the internal information system, as well as the perception of the supplier-retailer conflict. The positive impact of the cooperation in the logistics field on the development of the cooperation in the demand management will be equally verified.

So, our explicative model reconciles the concepts of the behaviouristic approach (dependence, engagement, conflict), to the economic aspects (specific investments), logistics (ECR tools, tools integration) and to organisational aspects (internal cooperation, direction support). The illustration of the proposed model is done in figure 1.
Figure 1. Explanatory model of the level of cooperation within the framework of the ECR

The H1 hypothesis supposes a positive relation between the supplier’s engagement in the relation and the cooperation level in the ECR fields. The engagement is defined as «the belief of the partners of exchange that the current relation with the other partner is so important that it justifies the maximum of efforts for its maintaining» (Morgan & Hunt, 1994). This hypothesis is supported by many theoretical works which recognize the engagement’s importance in the development of the cooperative relations: Morgan & Hunt (1994), Dwyer (1987), Anderson & Weitz (1992), Moorman et al. (1992), and by the results of our qualitative study.

The engagement is not only a direct variable; it can also have an intermediary role in the influence of other variables on the cooperation. This intermediary role of the engagement has been especially showed by Morgan & Hunt’s works (1994). In our model, we consider the engagement to be an intermediary variable between the supplier’s dependence and the specific investments done for its relation with the retailer and the cooperation in the ECR fields.

The role of the dependence and specific investments in the establishment of the cooperative relations has already been treated in the previous theoretical works: Heide & John (1990), Lusch & Brown (1996), Skinner et al. (1992), Anderson & Weitz (1992), Joskow (1987), Frazier et al. (1988). As the dependence of the majority of suppliers on the retailers is an undeniable phenomenon in food supply chains, we wanted to verify up to what point the dependence of the producer is an antecedent in the cooperation with the retailer within the ECR. There are theoretical works which prove that this dependence influences the cooperation through the engagement in the relation, from where the following hypotheses arises:

**H1.1** The relative dependence of the supplier has a positive indirect influence on the development of the cooperation within the framework of the ECR. It is the engagement that has an intermediary role between these two variables.

The specific investment’s importance results mainly from the analyses of the contents of the discussions realized on the research field. As many researches have considered the specific investments to produce a positive effect on the engagement (Anderson & Weitz, 1992); for the relation continuity expectation (Heide & John, 1990); for the contracts duration (Joskow, 1987) and for the development of the just-in-time relations (Frazier et al., 1988), we consider that the specific investments influence the development of the cooperation through the engagement and we propose the following hypothesis:
H1.2 The specific investments realized by the supplier have a positive indirect influence on the development of the cooperation within the ECR. The engagement is the one which has the intermediary role between these two variables.

The hypothesis H2 supposes a positive influence of the direction committee support on the development of the cooperation in the ECR field. It is founded on the results of the empiric study on the terrain and on the preceding empiric research works: Frankel et al., (2002), Helies-Hassid (1996), Vandaele (1998), who support the idea that the ECR initiative is realizable only if there exists a strong engagement at the general direction level.

As stated above, after the explorative study, the ECR tools often constitute the first element implemented for the partnership. They represent an important support of the process of joint planning and of effectiveness and efficiency augmentation of the team work. We wanted to know up to what point the ECR tools are favourable for the cooperation development between the producer and the retailer. We remind that on the one side we have the interlocutors who defended the positive role of the informational technologies in the development of the cooperative relations due to the improvement of the communication and coordination systems, and on the other side those who consider that the TIC have no contribution to the development of the cooperative relations.

The consultation of the research works in the informational system showed that the TIC have a positive role on the development of the cooperative relations. We can remind the works of Henderson (1990), Reix (1998), Des Garets (1991), Guilbert (1996), who recognize the essential role of the TIC in the development and the preservation of the partnership relations.

Basing ourselves on these works, we have proposed the H3 hypothesis about positive interdependence between the implementation of ECR tools at the supplier and the cooperation with the retailer in the two ECR sides: management of the chain supply and the demand management.

The H4 hypothesis is a continuation of the H3 hypothesis and supposes that the integration of the ECR tools in the internal informational system is favourable to the development of the cooperation in the two ECR parts. The tools integration in the informational system is considered by the authors such as Christopher (1998), to be a “moving force” in the development of the inter-organizational relations.

The integrated informational systems stimulate the enterprises to revise their relations with the external partners and to recognize the importance of the interconnections with external partners.

The H5 hypothesis aims to test the negative impact of the supplier-retailer conflict perception on the cooperation level in the ECR domains.

Even if such authors as Stern&Reve (1980), Morgan&Hunt (1994), Pache (2002), Filser (1989) consider that the cooperation and conflict will always exist simultaneously, we suppose that the conflict situations impede the ECR establishment. Our hypothesis is supported by the empirical research of Skinner et al. (1992).

In the H6 hypothesis we consider that the cooperation between the manufacturer’s internal services has a positive influence on the cooperation with the retailer in the two fields of the ECR. The cooperation between the internal services is considered to be a preliminary condition to the cooperation with the external partners (Lambert et al., 1998).
According to Christopher (1998), the primordial integration of all internal functions represents one of the basic principles in the establishment of an integrated logistic chain.

Basing ourselves namely on the results of the empiric study, we put forward the H7 hypothesis about the positive interdependence between the supplier’s performance level and the cooperation with the retailer in the two ECR sides. The previous research works equally stress the positive role of the performance measurement and satisfaction with this performance on the cooperation: Robicheaux & El-Ansary (1975), Hunt & Nevin (1974). According to other authors, the supplier’s satisfactory performance develops the retailer’s trust (Ganesan, 1994), are favourable for its long term engagement in the relation (Guilbert, 1996) and thus for the cooperation development in the ECR fields.

With the H8 hypothesis we want to validate the affirmation proposed by Pache & Colin (2000) and Pache (2002) who consider that the successful coordination of the logistic activities will permit to establish more strategic cooperative relations. The analysis of the interviews has underlined the fact that the partners begin the cooperation in the physical distribution of the products and, only after having a successful experience, they can continue to cooperate in the promotion and assortment management. Thus, we consider that the cooperation in the logistic chain management has a positive impact on the management of the demand management considered as a strategic cooperation field.

5. Results

To validate the research hypothesis we choose the model of structural equations developed by Wold (1982). This approach allows us to test the model globally and not as a juxtaposition of isolated hypotheses. Reducing a model to juxtaposed assumptions does not make it possible to take into account the interactions, synergies, the mediations or moderations which intervene (Roussel et al., 2002).

Instead, the method of the structural equations makes it possible to measure directly the interactions between complex variables, known as latent, directly non-measurable, as it is the case of our variables, which are measured by scales of several items.

We took two steps to validate our model. First of all, we validated the measuring instrument, we checked that the selected scales of measurement are relevant. Only afterwards we passed to the validation of the relations between the explanatory variables and the level of cooperation in the two sides of the ECR. For that purpose, we analyzed the parameters of the causal model, path coefficients, and their level of importance.

According to Chin (1998b), there is a relation between two variables if the path coefficients are higher than 0.2, in absolute value. However, in many research works, the authors consider the value of 0.150 to be acceptable: Chatelin et al., (2002), Chin (1998a), Donada (1998). The values of the path coefficients obtained for each relation are presented in the fig. 2.
The hypothesis H1 which supposes a positive relation between the engagement of the supplier in the relation and the level of cooperation in the two sides of the ECR is validated only for the cooperation in the management of the logistic chain. The relation between the engagement of the supplier and the cooperation in the demand management is negative and non-significant. Contrary to researches in relational marketing, the engagement of the supplier in the relation does not have any explanatory and predictive influence on the level of cooperation in the demand management.

However, we cannot reappraise this relation because it is not tested on the whole of the population. Since we questioned only the suppliers, this result can also be the consequence of non-engagement of the distributor in the relation. To have an explanation of this negative and non-significant relation, we carried out a descriptive analysis of the items which enabled us to measure these two latent variables: the engagement and the cooperation on demand side of the ECR. This analysis indicates that even if very often the supplier is implied in the relation and that it attaches a great importance to his relation with the retailer, there does not exist joint strategic planning of promotions, of assortments or planning of new products introductions.

The second hypothesis H2 supposes a positive influence of the support of direction committee on the development of the cooperation in the fields of the ECR and is also validated only for the cooperation in the management of the supply chain. On our sample, the support of the direction is not a sufficient condition to cooperate with the distributor in the field of the demand management.

Realising a descriptive analysis of our sample, we observed that there are companies which have a committee responsible of the ECR implementation, but that do not have any joint project of strategic planning of promotions with the retailer. There are also companies which, even without a ECR committee, have joint strategic planning of promotions with the retailer. The number of these companies is twice higher than that of the companies with a ECR committee. We can conclude that the support of the direction committee is a necessary condition but certainly not sufficient to develop the ECR.

The positive influence of the implementation of ECR tools (H3) is validated for the two sides of the ECR: the management of supply chain and the management of the demand. That confirms the positive role of the tools in the development of the cooperation defended by the former research works. The ECR tools represent an essential support of the inter-organisational exchanges and the driving force in the development of the cooperation (Christopher, 1998).
The hypothesis H4 which supposes a positive impact of the integration of tools in internal IS on the development of the ECR is validated partially. The statistical coefficients obtained indicate that there is no positive relation between the integration of ECR tools and the level of cooperation on the demand management.

In the same way, the hypothesis H5 which presents the conflict as an impediment in the development of the ECR, is also validated only for the management of the supply chain.

We observe strong disagreements with the distributor that coexist with a high level of cooperation on the demand management. This phenomenon can be explained by the fact that the cooperation on the demand management is developed with the important suppliers, but as we mentioned during the analysis of interviews, it is especially with these suppliers that the distributors have more disagreements.

The positive impact of the cooperation between the internal services on the level of cooperation retailers-producers within the framework of the ECR is not validated on our sample. This “non validation” is to be considered with precaution. In fact, the scale used to measure the internal cooperation is not completely reliable and the reduced size of our sample probably constitutes a limit in the validation of this assumption.

The results obtained also show that there is not positive relation between the level of the performance of the supplier and the level of cooperation with the distributor.

The last hypothesis which supposes a positive relation between the degree of cooperation in the management of the supply chain and the degree of cooperation in the demand management is largely validated with a very high value of the path coefficient (0.612).

This result confirms the assertions of Paché&Colin (2000), Paché (2002), and Christopher (1998) according to whom the cooperation in the logistics field supports the cooperation on more controversial and strategic fields. The validation of this assumption also confirms the practices of the distributors, who do not cooperate on the demand management, as long as they did not cooperate on the management of the supply chain.

6. Conclusions

We remind that this research was founded on three interrogations. Fist of all we wanted to understand why the concept of ECR is not adopted globally. Secondly we aimed at identifying the explanatory factors of the level of cooperation in the two sides of the ECR. And finally we were interested in the impact of cooperation on the supply chain management to the cooperation on the demand management.

We think we managed to answer, at least partially, all these three questions. The barriers on the development of the ECR were identified primarily in the first stage of the empirical research. The advanced model used to explain the level of cooperation in the two parts of the ECR highlights that the selected variables have different explanatory capacities according to whether it is about the cooperation in the supply chain management or the cooperation in the demand management.
Thus, our study allows a better comprehension of the level of cooperation between producers and retailers in the management of supply chain, the majority of the hypothesis being validated for this side of the ECR.

The results obtained let us think that the selected variables which "are enough" to encourage the cooperation in the management of the supply chain, "are not enough" to stimulate the cooperation in the demand management. In fact, neither the cooperation between the internal services, nor the support of the direction committee, nor the level of the engagement of the supplier in the relation are sufficient to increase the level of cooperation in this field.

Our observations showed that to cooperate in this field, the partners must first of all have positive experiences of cooperation on the logistic part of the ECR.

We believe that to cooperate in the demand management, the producers have to develop their positions in terms of market shares and notoriety of their marks, as well as their expertise in the consumers behaviour so that they will be very important for retailers.

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