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Can we speak of a "wheel of retail logistics"? The contribution of the wheel of retailing model

Marc Filser, Gilles Paché
Cermab-LEG, Université de Bourgogne
ISEM-ERFI, Université de Montpellier I
Marc.Filser@u-bourgogne.fr
gpache@univ-montp1.fr

CERMAB – LEG
2 Boulevard Gabriel
BP26611
21066 DIJON Cedex (France)
http://www.u-bourgogne.fr/LATEC/cermab

CAN WE SPEAK OF A "WHEEL OF RETAIL LOGISTICS"? THE CONTRIBUTION OF THE WHEEL OF RETAILING MODEL

Professor Marc Filser
CERMAB-LEG
Université de Bourgogne, France

Professor Gilles Paché
ISEM-ERFI
Université Montpellier I, France

Abstract
Academic research in retail logistics frequently emphasizes the importance of the logistics customer service for large retailers wishing to develop a sustainable competitive advantage. This research paper questions the validity of this reasoning, implying an evolution toward an indispensable logistical excellence. It seems that the new retail formats favouring a strategy of cost leadership, require as a priority the lowest possible logistical costs, rather than high customer service. It is only when these new retail formats propose sophisticated marketing services that customer service becomes essential, even if this means sacrificing logistical costs. But another retail format will then appear in the retailing sector, again favouring a strategy of cost leadership (and of low logistical costs). Therefore, the evolution of retail logistics is iterative, with constant returns to the components of logistical performance thought to be critical by large retailers. The concept of a "wheel of retail logistics", in reference to McNair's (1957) wheel of retailing model, is suggested to explain this phenomenon, with an application to the French context.

Keywords: Cost leadership strategy, Customer service, France, Retail logistics, Wheel of retailing model.

Introduction

For the last twenty years, the large retailing industry has become aware of the importance of the potential contribution of logistics management to its success or failure. We cannot fail to notice how regularly this subject is now mentioned when the managers of the major companies of the large retailing industry list the variables likely to influence performance. But quite a number of large retailers can be counted who, after having made tremendous efforts to develop innovative logistical procedures, have abruptly questioned this orientation and often come back to simpler and less expensive practices. How to identify the "logistical best practice", adapted to a given firm in a given context, is now the issue (Stephens & Wright, 2002).

The assumption made in this research paper is that the choice of a logistical organization is influenced by the position of a retail format in the market. There would be a relation between the dynamics of retail formats and the dynamics of logistical practices of large retailers. We would like to explore the contribution of an old, but evergreen evolutionary theory of the retailing industry: the wheel of retailing (WoR). After recalling its principles and demonstrating how it can take part in structuring the dynamic analysis of retail formats, we will try to compare the characteristics of the evolutionary phases of a retail format and of the resulting logistical issues for large retailers. The focus will be on the French context, and two of its favoured retail formats: the hypermarket format and the hard discount format.

The WoR model

The WoR model, proposed by McNair (1957) at the end of the 1950s, then rapidly refined by Hollander (1960), represents the first attempt to explain the dynamics of retail formats. The model's simplicity, explaining the evolution of the retailing industry by selecting the influence of a single explanatory variable (the mark-up ratio applied by the retail format), often appealed to practitioners, while academic research criticized its mechanical and reductive nature. Can this model contribute to the new thinking about the current evolution of retail formats and of their supply systems?

A theoretical basis

The theoretical principle of the WoR is simple. McNair (1957) based his analysis on two strategic characteristics of the retailing industry. First, there are no barriers to entry in this market, excepting state regulations on the creation of outlets; consequently, a commercial innovation can be quickly imitated by competitors. Second, the possibilities for differentiation of a retail format are limited; they lie in the handling of the product assortment, of the relative price level, of location and of the outlet layout. The WoR model relies on these two characteristics of the sector to propose an analysis of the dynamics of retail formats.

McNair (1957) noted that a new retail format could successfully stand out in the market only if it applies a lower level of prices than the level of already established retail formats. Since a new retail format can only rely on volume effects to obtain lower purchase prices from its suppliers than those of its competitors, it can establish a profitable position in terms of prices on one condition only: support lower distribution costs, both in outlets and in the supply logistics. Even if a new retail format bases its position on a specific product assortment or service, it is forced to offer prices at or below the average market bracket. The launching difficulties met by online grocery and their excessive prices are a good illustration of this constraint (Raijas, 2002; Ahn, Ryu & Han, 2004).

If a new retail format is correctly positioned on a market segment gap, it starts developing by capturing customers to the detriment of already established retail formats (the introductory period, to recall the model of the retail life cycle). The success of the new retail format then catches the attention of competitors who undertake a marketing action of developing new outlets using the same retail format. The competitive context of the innovative firm is then modified. Whereas it was initially supposed to compete with older retail formats on the basis of its innovation (inter-type competition), the innovative firm finds itself confronted with competition from imitators implementing the same position (intra-type competition), which will get fiercer during the growth phase of the new retail format.

How can retailers differentiate themselves from one another when they occupy the same position in a retail format? McNair (1957) thought that the only option was to diversify the offer in outlets by extending product assortment, or else by offering a better shopping experience and/or new services. This extension of offers is impossible without increasing the outlets' fixed costs, and retailers will have to accept a decrease in their profit margin. As this development is occurring while sales in the retail format grow, retailers can take advantage of the development of their volume of activities to obtain better purchasing conditions from their suppliers. Strategic manœuvres specifically aimed at this objective can be undertaken: mergers & acquisitions, or contractual arrangements with competitors to consolidate purchases. But these operations cancel one another out in the long term, because all retailers survive at the end of the growth period of the retail format by ending up having similar purchasing conditions.

Profit margins are bound to increase ineluctably, forcing the involved retail formats to give less importance to prices in their competitive positioning, to the advantage of more qualitative development directions, thus abandoning their initial image of "discounters", and opening the market to new, more aggressive retail formats, such as more cost-saving. The formulation of the principle of the WoR by McNair (1957) and Hollander (1960) is mostly empirical. Main & Zaninotto (1989) showed how the WoR can be theoretically founded on the economic principle of vertical differentiation, thus consolidating the theoretical status of the WoR. But how can the WoR model analyze developments in the food retailing industry in France since 1950 and its current implications for retail logistics? The question may be posed in this way: is the WoR model finally able to prove its "universal" explanatory value in a particular context, as McNair (1957) himself suggested?

Application to the French context

We have shown that the formulation of the WoR model developed by McNair (1957) could be enriched by taking into account the retail life cycle theory in order to identify the strategic priorities that a retail format must follow during each step of the cycle. Table 1 describes the strategic dimensions associated with the dynamics of the WoR. The main contribution of the WoR model lies in detailing the competitive orientation of the retail format during each phase of the process and in identifying the contribution of logistics management to the construction of the retailer's competitive advantage. To operate this framework, we will apply it to two retail formats occupying an important place in the

European retailing industry: hypermarkets and hard discount stores (Seth & Randall, 2001), both studied in the French context.

Phase of the WoR process	Introduction of the new retail format	First imitations of the new retail format	Stabilization of the number of competitors operating the retail format	Decrease in the number of competitors operating the retail format
Phase of retail life cycle	Innovation	Growth	End of growth; Maturity	Maturity; Decline
Competitive orientation	Inter-type competition	Mostly inter-type competition Beginning of intra-type competition	Mostly intra-type competition	Decreasing intra-type competition; Increasing inter-type due to innovative retail formats
Source of competitive advantage of the retail format	Lower costs of outlet operations	Lower costs of outlet operations; Lower supply costs	Trading up: product assortment, services, etc.; Lower supply costs	Focus on the core market segment
Relations with suppliers	Limited autonomy of the retailer	Increasing power of retailer	Maximum power of retailer; Search for cooperation	Balanced relations
Objectives of logistics	Supplying the new outlets	Reduction of logistical costs	Supporting the trading-up process	Maintaining acceptable costs

Table 1: Phases of the WoR and strategic orientations of the retail format

- *The case of hypermarkets*

Hypermarkets appeared in France in 1963 and then presented all the characteristics of commercial innovation described in the WoR model. This was a retail format aiming at minimizing costs of outlet operations by reducing investment per square metre (situation far from town centres, Spartan decor, minimum reception personnel, etc.), by generalizing self service and concentrating product assortment on references with a low profit margin and high turnover. It is obvious that the main benefit to consumers was price reduction compared to already established retail formats. It was also a complete break from existing retail formats, which was mainly developed by entrepreneurs coming from outside the world of the food retailing industry.

In its innovation phase, logistics management was very rudimentary and almost exclusively resorted to direct delivery by suppliers themselves, from their factories or regional warehouses (Savy, Colin & Lazzeri, 1984; Lhermie, 2002). The growth phase began around 1970, when the number of large food retailers managing hypermarkets increased in parallel with the creation of outlets. Competition between large food retailers intensified and forced them to look for rigorous cost control, particularly logistical costs for the hypermarket format. But in this phase, the growth of sales volumes made it still possible to obtain profit margins almost mechanically, thanks to the improvement in the negotiation position with suppliers.

The stabilization phase suggested by the WoR occurred between 1980 and 1985. The number of large food retailers decreased, mainly because several of them could not maintain a minimum competitive advantage. The improvement in purchasing conditions was less appreciable, which led the surviving large food retailers to opportunistic alliances to try and consolidate their position, for example by attempting to create, without success, shared central purchasing offices ("*super-centrales*"). The contribution of logistics management to cost reduction was clearly referred to and logistical practices experienced a quick adaptation (Colin & Paché, 1988). Finally, the number of large food retailers stabilized around 2000, particularly after the merger between Carrefour and Promodès in 1998. The contribution of logistics management to performance improvement seemed to be over and large food retailers looked for new sources of differentiation, particularly through the extension of their product assortment and the generalized introduction of new services (e.g. financial services).

- *The case of hard discount stores*

The hard discount format appeared in France in 1988 with the opening in the Lille suburbs of the first French Aldi. The introductory period was short, since this retail format was already massively present in Germany and the Benelux; the format very quickly entered its growth phase in France, with an average of one outlet opening per day! As soon as 1990, the major German retailers specializing in the hard discount format were on the French market (Aldi, Lidl and Norma), and the large French food retailers soon tested their own outlets (Ed for Carrefour, CDM then Netto for Intermarché, etc.). Intra-type competition intensified rapidly. Logistics management was from the start inseparable from the retail format. As each outlet had no storage space and only one reference was offered for each product, stockout was impossible; logistics management was therefore entirely dedicated to the elimination of stockouts using simple procedures of flow massification.

The quick development of the hard discount format in France forced large food retailers to look for new sources of differentiation. They fit into the theoretical framework of the WoR to perfection: extension of the product assortment (particularly to fresh produce), introduction of marketing customer services (among others the quite symbolical acceptance of payments by credit cards), and even the increase of advertising expenses. But the logistical model remained the same. Large food retailers completely integrated the constraint of simplicity, an integral part of their positioning, into their strategic reasoning. But the density of retail networks increased rapidly, and required the creation of intermediate structures (regional warehouses) to preserve the reactivity of logistical procedures and optimize the control of the marketing channel.

Consolidation seems in sight today with the disappearance of some marginal large food retailers (Treff Marché, the German Edeka, sold to the French Ed for example). At the same time, the question of the introduction on the French market of new, more competitive retail formats, on the models on the German Kaufland and the Spaniard Mercadona, is openly discussed by managers. To sum up, if both the hypermarket and hard discount store retail formats followed in France evolutions corresponding to the theoretical pattern of the WoR, their logistical practices were quite contrasting. The existence of "wheel of retail logistics" whose movement would be linked with the movement of the WoR should be examined. Although the WoR model tends to correctly explain most evolutions in European food retailing, the question of the relation between retail evolution and channel dynamics remains mostly unexplored. This research paper suggests that reasoning in terms of the wheel of retail logistics, closely related to the evolution of retail formats under the pressure of competition, is relevant.

The wheel of retail logistics

The WoR model directly includes the logistical variable, by emphasizing that retail formats are gradually tempted to improve customer service to build consumer loyalty in outlets. The literature in logistics and supply chain management frequently presents an increasingly sophisticated logistics customer service as the only true strategy of value creation (Cohen & Roussel, 2005). In the light of recent developments in the large French food retailing industry, it is however possible to consider a wheel of retail logistics whose most spectacular effect would be the search for a deliberate deterioration of the logistics customer service in favour of low logistical costs, including in hypermarket format. If this development is confirmed, it will mean a return to the sources of the strategy of cost leadership developed in the 1970s.

The cost/customer service/reactivity trade-off

The control of the logistics channel by large French food retailers is now a reality. Until the mid 1990s, companies like Carrefour or Leclerc remained timid and kept a large system of direct delivery from their suppliers' factories or of indirect deliveries from wholesalers' warehouses. This is no longer the case, with the generalized implementation of more or less dense warehouse and/or platform networks, operated on their own account or managed by logistics service providers (LSPs). Large food retailers make significant profits from them, as McKinnon (1989) demonstrated by listing these main advantages: (1) strengthening of the large retailers' negotiating position with suppliers; (2) improvement in efficiency of retailing operations, in the marketing channel and in each outlet; (3) improvement in customer appeal, for instance with the extension of product assortment. For the last ten years, the implementation of new management tools (ECR, then CPFR) has kept progressing, with the top priority objective of increasing the level of customer service and of reducing the number of stockouts in outlets.

The function of these management tools is to obtain an improved synchronization of flows along the marketing channel, by closely involving large food retailers and their suppliers in a shared logistical (supply chain) strategy. At first, the implementation of centralized deliveries from warehouses or platforms tried to reach a triple level of performance: in terms of costs, in terms of customer service and in terms of reactivity. Step by step, under the pressure of increasingly demanding and volatile consumers, the large French food retailers ended up by favouring the last two dimensions (Connan-Ghesquière, 2004). This is particularly obvious when promotional operations are organized in outlets; the supplier's reactivity, i.e. its ability to bring enough resources into play to meet an increase in sales, has become a major criterion. This is what Lowson (2001) presents as the supremacy of an operations strategy, whose first objective is to create responsive supply chains.

Over time, the retail logistics of several food retail formats, particularly the hypermarket and supermarket retail formats, consequently experienced a phenomenon of enrichment as described by the WoR model. This resulted in an inflation in logistical costs throughout the 1990s, particularly with an improvement in delivery systems to reduce the number of stockouts in outlet. This also resulted in a greater product variety whose immediate effect was an increase in total inventory levels, as shown in the academic literature (Dubelaar, Chow & Larson, 2001; Stassen & Waller, 2002), even if the inventory level for each product was controlled. With the inflation in logistical costs, hypermarkets and supermarkets met with the greatest difficulties in maintaining a low price strategy, which is probably an explanation for the rapid ascension of the hard discount format in France. The reaction of the hypermarket and the supermarket retail formats is hesitant, but seems to correspond with an alignment on the low cost structure of the hard discount format, for example with the creation of a new generation hypermarket, giving up the extravagance of promotional operations, and adopting merchandising together with a product assortment close to the hard discount format: as if it was time to go back to the bases of low price strategy, including a very succinct logistics management, but finally less expensive.

Toward a deliberate deterioration of logistics customer service?

From the above reasoning, together with an analysis in terms of WoR, the authors suggest that the large food retailers' interest may lie in deliberately lowering logistics customer service, either to win back market shares (the case of the hypermarket and supermarket formats), or to maintain and then increase the current market shares (the case of the hard discount format). This is apparently a provocative proposition, but in fact, it revives an old logistics management idea. Any logistician must look for an optimal point of balance between cost level and customer service level depending on the company's strategic options and business conditions. The cost/revenue trade-off consists in minimizing logistical costs to reach objectives of customer service, or trying to reduce logistical costs if the deterioration of the customer service has no negative impact on the firm's revenue (Lambert & Stock, 2001).

In the last twenty years, a sort of orthodox logistical thought has emerged: the only possible competitive issue is to increase customer service. The main idea is that the greater the company rivalry in a mature market, the more customer service is an important strategic element (Emerson & Grimm, 1998; Stephens & Wright, 2002). It is true that in France, from several field studies, we were able to see that the maximum number of errors tolerated during order processing in warehouse has kept decreasing in the last ten years in logistical outsourcing contracts between large food retailers and LSPs. But nobody really mentions the likelihood of seeing logisticians sacrificing customer service to reduce costs, probably because it is believed that consumers will always be susceptible to logistics customer service, as they are susceptible to marketing customer service (Emerson & Grimm, 1998).

In our opinion, the success of hard discounters in France, but also in other European countries, clearly means that a large proportion of consumers now appreciate low prices for food products. For these consumers, increasingly better informed about retail strategies, low prices will necessarily mean low costs and low service. It is even possible, as Christopher (1986) suggested almost twenty years ago, that high customer service in outlets, for example a very low level of stockouts, paradoxically sends a negative signal to consumers. If customer service is high, consumers will think that this must obviously be passed on to price levels in outlets, and they will consequently be tempted to shop in another retail format offering low service, but signaling a true low price strategy. This in any case is the "game" that Wal-Mart seems to play in the USA by organizing a deliberate disorder in its outlets, including letting half-empty palettes clutter the aisles (Badot, 2004). Consumers have the pleasant feeling they are getting a bargain in an outlet whose complete disorganization may only be the result of a strict policy of cost reduction!

We think that a wheel of retail logistics aligned on McNair's (1957) WoR model is relevant. When introducing a new retail format, as was noted, logistics management is simplistic, without a real desire to be a tool of differentiation. As the number of competitors operating in a retail format increases, each firm will try to build consumer loyalty by improving its logistics customer service, but will then be threatened by a new retail format whose logistics management is again simplistic. If customers become increasingly reactive to low prices, the older retail format must react by returning to less costly logistical solutions. This has been obviously the case of Carrefour in France since 2005. The group decided to stop the implementation of new logistical partnerships with its main suppliers, the objective of which was to increase customer service with the adoption of management tools such as CPFR and VMI. The priority is to reduce logistical costs, for example by forcing suppliers to put their products in secondary packagings eliminating any useless handling in outlets. In doing so, Carrefour tries to reproduce in its hypermarkets the basic principles of the hard discount format, even if it means inventing the new generation hypermarket in the process.

The superposition of wheels of retail logistics

The main problem of large French food retailers is that they manage several retail formats, unlike German hard discounters, who manage a single retail format. Carrefour and Casino, for example, own a very large portfolio of retail formats, from hypermarkets to convenience stores, with supermarkets and hard discount stores in between. To make economies of scale and scope, they are tempted to apply to them more or less similar logistical choices. In this case, one retail format runs the risk of benefiting from too high a customer service, compared to competitors who are content with a minimization of logistical costs. Large French food retailers must therefore be able to segment their customer service according to the various retail formats in their portfolio. Here lies one of the major difficulties of retail logistics management.

Each retail format will naturally settle on different phases of the wheel of retail logistics, while to reduce costs, large food retailers will probably try to position all retail formats in a single phase of the wheel of retail logistics, corresponding to a well defined cost/revenue trade-off. Let us take the example of convenience stores in urban areas, which act as corner shops on the Canadian model. One of the reasons for their success is that they offer "promotional stacks" generating inventory costs in outlets, but resulting in major sales as psychic stock (Larson & DeMarais, 1999). Any stockout is unacceptable, as this results in immediate and above all future sales losses. But the same large food retailer will have to adopt in its hypermarkets a JIT delivery to reduce inventory costs, although this means enduring occasional stockouts, because a high customer service runs the risk of being negatively perceived (see above). In brief, the challenge is to know how to uncouple the various wheels of retail logistics from the various retail formats to avoid too high a customer service on one side and too low a customer service on the other.

In our opinion, LSPs are probably best positioned to simultaneously manage several retail formats positioned at the same step of the wheel of retail logistics. For example, an LSP can implement a dedicated warehouse for the hypermarket format of several large food retailers, thus offering them the same cost/revenue trade-off. This could question the conventional position, chosen in France since the works of Tixier, Mathe & Colin (1983), according to which the LSPs' should specialize according to "logistical categories of product", and opens research avenues for the next few years: how to identify retail formats in function of their positioning in the wheel of retail logistics? What logistical components must precisely be developed at each step of the wheel of retail logistics? etc. The strategic issue will be to organize an uncoupling of the wheel of retail logistics in order to maintain a minimum of synergies between supply chains whose cost/revenue trade-offs are still very different.

Conclusion

Academic literature on retail logistics is abundant today with a set of models trying to explain the most appropriate methods of organization and to anticipate their evolution. This interest is explained by the fast technological changes experienced by the logistics channel over the last ten years, particularly in convenience goods. It should not be concluded hastily that large food retailers are systematically looking for excellence in customer service. On the contrary, it may be possible to consider them deliberately downgrading customer service to rediscover the virtues of a low price strategy. This is a provocative assumption proposed in reference to the WoR model, and underlining the possible existence of a wheel of retail logistics. The interest of this approach lies in putting in perspective what a "logistical best practice" really is, but further field studies are required to assess their efficient operationalization.

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