Electronic commerce, marketing channels and logistics platforms—a wholesaler perspective

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Abstract

Electronic commerce may impose new demands which the supply chain has to react to, while at the same time being an enabler of effective marketing and logistics. This paper describes alternative strategies for wholesalers conducting electronic commerce and how logistics may support the development of marketing channels and improve flexibility. Related issues with logistics implications are the decisions whether or not to use multiple channels and if intermediaries should totally bypass dealers, or rather collaborate by letting them manage the marketing relations and bypass them logistically. The concept of “logistics platforms” is discussed, based on empirical findings. Empirically the base is a case study of an intermediary with extensive use of business-to-business electronic commerce in a supply chain with independent dealers. The paper compares theoretical aspects with findings from the case and gives some indications of the potential of electronic commerce and logistics platforms.

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Keywords: Supply chain management; Marketing channels; Logistics platform; Electronic commerce; Flexibility

1. Introduction

Electronic commerce has been proposed to have a major impact regarding threats and opportunities for intermediaries in many industries. Marketing channel intermediaries were in the early days of electronic commerce considered to add only cost and limited value, where upstream participants pursuing electronic commerce strategies threatened such intermediaries by attempting to bypass them (see e.g. Bakos, 1998; Vandemereve, 1999). The development now is rather that the intermediaries are adding electronic commerce to their existing businesses as a countermove to disintermediation, such an issue adding multiple marketing channels in supply chains (see e.g. Anderson et al., 1997; Bucklin, 1966). Multiple strategies will have implications for marketing channel strategy but also for logistics management concerning the demands and possibilities of electronic commerce.

A logistics viewpoint of electronic commerce is taken in the paper, where demands and possibilities for logistical structures and processes in electronic commerce are discussed in a supply chain setting. Related issues dealt with are disintermediation and collaboration in multiple marketing
channels, which have potential implications for electronic commerce and logistics. Specifically, we explore how the demands of electronic commerce bring forth possibilities for logistics between participants in the supply chain and how logistics may support the development of marketing channels and improve flexibility. Two dimensions of logistics are discussed, the horizontal and vertical dimension respectively. Horizontal logistics concern relations between parties within a group of firms at the same level in a supply chain, while vertical logistics concern relations between firms at different levels in the supply chain. By co-ordinating and offering multiple channels in the horizontal dimensions, possibilities for e.g. the vertical decomposition of logistical functions may arise (see e.g. Caputo and Mininno, 1996; Wouters et al., 1999).

Electronic commerce has been defined as “any form of business transaction in which the parties interact electronically rather than by physical exchanges or direct physical contact” (European Commission, 1998). This paper regards electronic commerce as one of several marketing channels, including the use of the Internet to support inter-organisational processes, such as marketing, ordering and related service activities. The magnitude of electronic commerce may however differ from the evolutionary usage, e.g. ordering, to the “revolutionary” usage of electronic commerce as an additional marketing channel, e.g. new markets or customer segments (see e.g. Venkatraman, 1994). We will use the term marketing to include marketing and sales activities with related information flows.

The perspective taken in the paper is the wholesaler in a supply chain with independent dealers as intermediaries. The paper is conceptual with empirical illustrations from a supply chain consisting of wholesalers (Bergman & Beving Tools, BBT), its independent dealers, and industrial end customers in the Swedish tools and machinery equipment industry. The assortments are material, repair and operating inputs. The empirical base is an extensive case study of BBT performed from the spring of 2000 to the autumn of 2001 as part of the research project ELOG—Electronic commerce and logistical consequences—at Logistics Management, Linköping Institute of Technology.

The paper is organised as follows. We will start by discussing different dimensions of the term, logistics platform, followed by a discussion of marketing and logistics disintermediation and collaboration. These subjects are then illustrated empirically, where logistics is emphasised and discussed. Finally, conclusions are drawn from BBT’s current electronic commerce state with reflections on logistics in a supply chain context.

2. Dimensions of logistics platforms

In supply chain management, the logistics system concerns the total material and information flow from supplier to end customer including the related activities, facilities, information systems and organisations involved (Lambert and Cooper, 2000; Cooper and Ellram, 1993). One of many possible interpretations is that logistics is referred to as a non-homogenous part of the supply chain that involves several participants at different levels. Such a non-homogenous part of the supply chain has a width within each tier and a length across the channel, i.e. a horizontal and vertical dimension (Lambert and Cooper, 2000, 1 Mallen, 1996; Caputo and Mininno, 1996).

In Swedish industry a development where logistics has become not only structurally centralised (Abrahamsson and Brege, 1995; Abrahamsson, 1992) but also an integrated part of market channel development, has started to gain attention. Supply chain management concerning the total logistics system has been discussed mainly as an abstract concept by the firms. Instead the focus has been on the power to design and control the logistics operations as a homogenous part of the logistics system within reach of the firm. The term, logistics platform, will be used further on to refer to this more homogenous part of the logistics

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1 Lambert and Cooper (2000) refer to horizontal as the number of tiers across the supply chain. In this paper, the term horizontal is used as the width within each tier, in a traditional way as Mallen (1996) and Caputo and Mininno (1996) do.
system in the supply chain. We see a development where logistics platforms are centrally controlled and designed by focal organisations as parts of the logistics system in a way that is a resource base for new marketing channel positions.

The term, centrally, will here both be concerned with concentration of power to make logistics decisions in the organisation, and proximity to the top, i.e. the distance in terms of closeness between logistics decision makers and senior executives (Chow et al., 1995). As a comparison, Cooper and Ellram (1993) refer to a channel leader, but in the term, logistics platform, we include only the focal company’s perspective. Thus, a logistics platform is a homogenous and controlled part of a logistics system by one actor in the supply chain. The development we see is that platform leaders need to exist for two kinds of co-ordination purposes. Firstly, there is a need for co-ordination within the platform where the physical logistics structure do not necessarily need to be centralised as long as the organisational logistics structure is centralised. Secondly, co-ordination or collaboration is needed between different actors in the supply chain.

As indicated, logistics platforms do not evolve independently but are rather strongly affected by marketing channel strategy and should as such support the strategy across and within business units (Anderson et al., 1997; Chow et al., 1995).

An important aspect of logistics in general, and therefore of the logistics platform, is the need for flexibility in order to support the marketing strategy in the long and short-term perspective. That means, logistics need to be flexible in the short term to offer operational opportunities, and flexible in the long term to apply to new marketing channel positions. Flexibility is here defined as “the ability to change or react with little penalty in time, effort, cost or performance” (Upton, 1994). Another dimension of flexibility that Gerwin (1993) describes is “banking” or strategic flexibility, where an enterprise has a ready and waiting reserve to use when needed—an investment, which creates future options for a company. By centralising logistics and increasing the proximity to marketing and market channel strategy, changes in assortment, geographical markets served etc. could be more easily supported when the logistics platform is a waiting reserve or has the ability to change or react with little transition penalty. Examples of logistics flexibility types needed in the short and long term are volume flexibility, time-based flexibility (e.g. order-lead time) and flexibility in products and services (Brehmer and Stahre, 1998).

To further exemplify a logistics platform we can use the framework proposed by Lambert and Cooper (2000) for supply chain management as consisting of the supply chain network structure, supply chain processes and supply chain integration components:

- the logistics structure,
- the logistics processes and related activities,
- systems for information and reporting.

The logistics structure consists of the participants involved, their stocking and cross-docking points in the physical distribution to final destination (Lambert and Cooper, 2000). Examples of logistics structures are centralised logistics structures such as direct distribution or multi-echelon structures with central, regional and local distribution centres (Abrahamsson and Brege, 1995). From an assortment perspective the logistics structure may however consist of several distribution centres that are decentralised in terms of assortments. A logistics structure encompasses several dimensions and need not be centralised in a logistics platform. It is rather a question of central control and design.

The logistics processes and their activities are primarily related to order fulfilment and parts of customer relations, customer service, demand management and procurement (Lambert and Cooper, 2000), where typical order fulfilment activities are to be found e.g. order handling, storing, packing and transportation (Abrahamsson and Aronsson, 1999). On a logistics platform, standardised processes, measured as the degree of similarity in the processes used (Chow et al., 1995), may be a prerequisite that enables central management and co-ordination of the logistics platform as a whole. The logistics platform then has the capacity to cope with environmental uncertainty in different marketing channel settings and create flexibility.
Systems for information and reporting concern management, methods and information systems for planning, control and co-ordination purposes (Lambert and Cooper, 2000) and reflect key success factors for sustained organisational compatibility (Norman, 2000). This situation is closely related to what Chow et al. (1995) relate to as integration, i.e. cross-organisational co-ordination, but it also includes the management methods used to make a fit between marketing and logistics decisions.

Each part in the Lambert and Cooper (2000) framework may have a horizontal and a vertical dimension, which depends on the company structure as a whole. By focusing on the horizontal dimension there may be synergies created through logistics (Juga, 1996), which in turn may bring forth possibilities for new vertical positions in the supply chain. The other way around might be equally important—by focusing on the vertical dimension new horizontal demands may arise. These two dimensions are the basis for the marketing channel discussion and have implications for the questions regarding centralisation and flexibility in logistics platforms.

In the next section, we will introduce logistics platforms in a marketing channel framework and discuss issues related to disintermediation and collaboration in the supply chain. We will also discuss how logistics is related to the marketing channel structure and elaborate on the possibilities and demands for the logistics platform in a supply chain context.

3. Disintermediation, multiple channels, separation and collaboration

In a supply chain there are several alternative strategies available for the participating actors. In this section we provide a brief presentation of alternative strategies such as separation of functions, multiple channels, and the question of where and by whom in the supply chain the activities should be performed. Basically the strategies concern disintermediation versus different kinds of collaboration.

The question of intermediaries and their function has been widely discussed during the last century from different perspectives including marketing channels, distribution channels and supply chains. Lately, supply chain management has emerged as a paradigm with emphasis on the management of multiple relationships in inter-organisational processes. The term, supply chain management, is often referred to as a holistic view of a value creation process from end customers to original suppliers where co-operation and trust are focused upon (Christopher and Ryals, 1999; Lambert and Cooper, 2000). Marketing and distribution channel theory have transferred input to supply chain management and logistics (Coughlan et al., 2001), e.g. Bucklin (1966) emphasised the number and types of function that occur in the channel, and the sequence in which they occur, as well as how these functions or activities are divided among the participants.

The aspect of multiple channels is referred to by Anderson et al. (1997) as a horizontal perspective in supply chains where multiple channels may be used to reach end customers with different kinds of intermediary. Electronic commerce, as defined here, is one of many possible channels to the market including catalogue sales, salesmen, dealers etc. Multiple channels also have a vertical perspective by considering the lengths of the different channels where electronic commerce may be a direct channel to the end customer and a dealer is an indirect channel, a channel with an intermediary. The alternative strategies for multiple channels are discussed below.

Elimination of intermediaries—vertical disintermediation—has been an appealing scenario for members of supply chains seeking the shortest way to end customers (Bakos, 1998; Vandemerwe, 1999). Examples of disintermediation are manufacturers bypassing wholesalers, and wholesalers bypassing dealers or retailers. Even if the advent of electronic commerce raised expectations of a coming era of disintermediation, several attempts to eliminate intermediaries have failed. Costly electronic commerce investments, expensive logistics and powerful intermediaries with a broad geographical scope and strong marketing relations with customers are some reasons for the failures. Elimination of intermediaries and all of their roles might therefore be a questionable course of action.
The alternative would be closer collaboration with existing intermediaries.

Several authors have dealt with separation of functions or flows in the marketing channel. Bowersox and Morash (1989) claimed that the most efficient channel for achieving profitable sales might not be the most efficient channel for physical distribution. Also, Abrahamsson and Brege (1995) argue that marketing and logistics need to develop in their own ways, proposing that separation of marketing and logistics is a prerequisite for effective and efficient integration of activities. They argue that separation of physical distribution and marketing/sales into separate units provide possibilities for centralisation and simplified integration of activities in logistical flows.

Separation of functions could be carried out in collaboration with intermediaries. Composite channels are discussed by Anderson et al. (1997) and Wouters et al. (1999) where the supplier and its channel partners share the execution of the channel functions (decomposition). An example is where the supplier performs some functions such as sales negotiation and invoicing, while its channel partners perform physical distribution and order fulfilment. Composite channels represent a vertical perspective, where decomposition deals with what participant will perform which activities or functions. Decomposition of flows is achieved under terms of collaboration in the supply chain.

Fig. 1 shows examples of changes in a supply chain concerning the marketing and logistical channels. The starting point is a supply chain with a supplier, an intermediary and customers with consecutive steps of marketing and logistics activities where members of the supply chain collaborate. The alternative changes discussed below are based on collaboration, separation of functions, multiple channels and disintermediation. In alternative (A) marketing and logistics are separated. There is still a marketing collaboration where the intermediary manages the marketing interface with the customer. In terms of logistics the intermediary is bypassed, and, although the separation of the logistics flow is approved by the intermediary, there is still collaboration between the members of the supply chain. In alternative (B) the supplier is collaborating with the intermediary in marketing and logistics but the supplier uses multiple channels to contact the customer. Alternative (C) shows a disintermediation where the intermediary is totally eliminated and the supplier manages the marketing and logistics interfaces with the customers. In this example the marketing and logistics functions are separated and carried out by different internal units of the supplier.

Logistics are to a great extent influenced by strategic marketing channel decisions and as such there is a need of collaboration between these areas—discussed as proximity to the top. To be
able to serve the multitude of strategies available, the logistics platform need not only perform in a short term, cost- and service-effective way. With increasing uncertainties in the market environment future logistics platforms need to a greater extent take strategic flexibility into consideration.

4. Vertical and horizontal dimensions of logistics

An example of a logistics platform in a supply chain setting, with support from an electronic commerce portal, is BBT, which markets, sells and distributes tools and machine equipment in the Nordic countries. The business concept is to offer related products and services to industrial end customers in co-operation with local dealers that are found in the hardware, building and machinery trade. One of BBT’s marketing channels is Toolstore (though only used as an ordering channel), an industry portal which ties seven fully owned wholesalers in southern Sweden together into one entity.

The historical background of the company is a wholesaler conducting sales solely to local dealers in southern Sweden. During the mid 1990s a change of the company’s market focus from dealer to end customer started. Electronic commerce was considered one way to reach out; also sales in other markets like Norway, Finland and Poland started to take off for increased end customer presence. One of the consequences was extended requirements in terms of lead times and deliveries on time but also requirements concerning one order and delivery, a widened assortment and nationwide fulfilment. Consequently, the requirements on logistics from different customers or markets have become staggering and are of different kinds.

Today, BBT’s operational logistics basically consists of the stock locations and an information system through the Internet portal Toolstore. With 120,000 products, BBT provides multiple ordering channels for some 800 independent dealers (not owned by BBT) and their end customers in the supply chain to search for product information and ordering online. The logistics operations are however centrally co-ordinated and managed in the overall business. Approximately 2500 orders, equivalent to 25,000 order lines, are handled each day, corresponding to 350 tons in total volume. The stock has 95% availability and deliveries are 99.6% on time. Orders are fulfilled within 12–48 hours. Of the total number of orders to BBT including electronic transfer, fax and telephone, 40% are transmitted through the portal Toolstore and another 40% by handheld terminals/traditional EDI. In the fiscal year 2000/2001 the BBT group had a turnover equivalent to 2835 MSEK and employed on average 800 people.

Searching for product information was formerly accomplished through BBT’s different assortment catalogues. Now, Toolstore makes it possible for dealers and customers to search for products simultaneously in all of the seven wholesalers’ assortments, enabling a rationalisation for both dealers and customers as well as for BBT, by not having to update traditional catalogues and prices at the same pace as previously. In a horizontal marketing perspective Toolstore thus works as one entity, tying together the assortments from seven wholesalers (see further Fig. 2). Assortment and information is co-ordinated between the companies in BBT, to enable simplified ordering for the customer. To be able to see the prices of products and to gain access to the ordering function of Toolstore, BBT provides the dealers with a password. The dealer also decides which assortments they want access to. BBT does not make the decision whether a dealer’s customer should have access or not—that decision is made by the dealers who provide their customers with passwords and access to Toolstore.

The logistics structure embodies three warehouses (stock locations) and one external consolidation point. The processes incorporate standardised ordering functions and physical flows to dealers as well as to end customers (see Fig. 2). For example, if a customer order arrives from assortments located at different warehouses, the delivery is co-ordinated at the external consolidation point. Before delivery a rigid system of time co-ordination is performed for order picking and deliveries to suit external delivery windows at the third party logistics provider. The Internet portal Toolstore is considered part of logistics by
providing dealers and customers with a variety of information including track and trace information and delivery notes/packaging lists. Toolstore is the heart, which ties ordering together with deliveries and information before as well as after the transaction. Toolstore also connects marketing through the different assortments, through customer penetration and new possibilities in the marketing channel to end customers. As mentioned, logistics consists of two logistics organisations, but is indeed co-ordinated and managed centrally in the overall business.

When the end customer places an order at Toolstore, the order is transmitted to the dealer through the Internet or as an EDI-file, which may update the dealer's and/or the end customer's system. In Fig. 3, the marketing dimension is depicted where the end customer may order from the dealer or from Toolstore, which redirects the order to the dealer, who in turn decides whether they should fulfil the order from their own storage or if the order should be directed to BBT and their respective warehouses. Thus, BBT uses Toolstore as an ordering channel, but has the possibility to use it as a marketing channel if required. BBT also provides a platform, which is easily integrated with their customers’ information systems by configuring interfaces between Toolstore, dealers and end customers. An example of this effort includes connecting the customers’ purchasing system to Toolstore in order to provide automatic transferring and thereby letting the purchaser order directly in their own systems.

Toolstore has made it possible for BBT to enlarge its traditional approach into a supply chain approach as Toolstore provides a platform for marketing and logistics with means for supply chain co-ordination and possibility to reduce costs for all participants. That is, Toolstore provides—vertically in the supply chain—a possibility to implement new and innovative logistics flows between different participants. In essence, there are at least four alternative ways of fulfilling the need when an end customer places an order:
Flow 1: Direct from BBT to end customer, by-passing the dealer.
Flow 2: Replenishment of the total order from dealer’s inventory to end customer.
Flow 3: Cross-docking—replenishment from the dealer where the customer order is partly fulfilled from the dealer’s inventory and partly from BBT.
Flow 4: Cross-docking—replenishment from the dealer where the customer’s order is fulfilled by BBT but passes the dealer before delivery to the customer. Possibly the BBT order is cross-docked with orders including products outside the BBT assortments, which are sold by the dealer.

Through the establishment of direct shipments to customers, BBT achieves better contact with these customers, a smoother flow and shortened delivery times. A negative aspect of direct shipments is the increasing number of small deliveries because of the great number of end customers, compared to the number of dealers. Direct shipments are, however, only possible in close cooperation with dealers, as it is the dealer’s choice to allow for direct shipments. Shipments to dealers still need to be performed as dealers will keep products in stock because of the end customer’s demand for short lead times—direct shopping at the dealers’ stores. Toolstore, though, is an important ingredient for sales, ordering and delivery information, but only as an addition to traditional selling and ordering—one of several ordering channels. Through the establishing of order possibilities and direct shipments to end customers, vertical de-composition of the supply chain has started, but is still quite small.

In the vertical dimension, BBTs logistics stretches either to the dealer or the end customer depending on flow structure. That part is operationally controlled by BBT but strategically the choice lies with the dealer, that is, BBT cannot perform direct shipments without the dealer’s collaboration. Also in the supply chain the dealer’s logistics play an important part, which is the part the dealer controls operationally, extending into the end customers’ production facilities (see further Fig. 4).

In a supply chain context, BBT offers multiple ordering channels to customers. The marketing channels differ between the different markets, but in the traditional dealer market all dealers are treated in the same marketing channel environment. The different participants are aware of their capabilities, but any functional decomposition has not occurred on a collaboration basis yet; functions are rather performed in parallel. However, standardised assortment and ordering co-ordination for the members in the supply chain allow for logistics co-ordination of split orders from the different warehouses. In the supply chain a logistical choice for dealers arises to get orders delivered directly to end customers. However, BBT has vertically mainly focused on information capabilities including ordering and assortment functions. Physical capabilities, such as collaborating or by-passing logistically, have mainly been implemented to a smaller extent; therefore elimination of intermediaries does not take place and is also in this context questionable.

Logistics have become centrally managed which has resulted in an increased holistic approach to customers where links to end customers are focused on rather than links to dealers. The introduction of electronic commerce has not yet resulted in a consolidation of BBTs internal logistics structure, but rather in multiple, standardised assortments and ordering management capabilities. This allows BBT to adapt to future uncertainties and become strategically flexible—a capability that is needed when multiple marketing channels with different customer requirements are penetrated. Electronic commerce has further helped to shape the logistics platform, but the
efforts taken are greatly affected by overall marketing strategy. The first step is however performed, consisting of direct deliveries to end customers.

5. Conclusions

This paper describes different lines of action for wholesalers conducting electronic commerce in multiple marketing channels. The focus is on marketing and logistics with an emphasis on the support from a logistics platform. The logistics platform is discussed as a part of the logistics system in the supply chain, a part which the focal company centrally controls, and has the power to design. Specifically, the term logistics platform is used to indicate connections to marketing channel strategy through the hypothesis that central control is more important than a central logistics structure, which may be achieved with co-ordination and standardisation of processes. A wholesaler, BBT, is used as an empirical base for conceptualising different dimensions of the logistics platform with regards to electronic commerce as a marketing channel. Furthermore, by comparing evolution patterns of the illustrated wholesaler’s and its supply chain with the theoretical alternatives some indications can be pointed out.

An electronic commerce portal can be used as a marketing channel in collaboration with existing intermediaries or through bypassing intermediaries—disintermediation. In the case of BBT the portal is used as a parallel ordering and sales channel in collaboration with existing intermediaries. The wholesaler gives its dealers the alternative to let their customers use BBTs marketing channel by ordering through the Internet portal, as well as by giving the dealers a promise not to bypass them without permission. In the case study there is no sign of disintermediation although the possibility is ready and waiting.

The case study shows that the wholesaler has focused on the horizontal dimensions of marketing and logistics. The marketing flows of seven different wholesalers/assortments have been tied together into one Internet portal, thus offering the participants in their supply chain not only “one-stop-shopping” concerning the ordering of products, but also consolidated physical deliveries. These efforts have demanded a tight co-ordination of the information flows including ordering flows from dealers through the portal to the warehouses.

The horizontal development of the logistics platform, in terms of the physical flows, has become co-ordinated through the cross-docking of deliveries from two of the warehouses, and in terms of the information flows, the logistics platform has become co-ordinated by aggregated ordering and delivery information distributed to the portal. Even if goods from one of the three warehouses are not consolidated with the other flows it is a logistics platform in the sense that the logistics is centrally controlled. In terms of ordering flow the logistics platform is well developed and 40% of the orders to the wholesaler are taken through the portal. The vertical dimensions of the logistics platform give the dealers a possibility to decide to send their end customers’ goods directly from the wholesaler. The number of dealers letting their customers bypass them by ordering at the wholesaler’s Internet portal is still a minority, but the opportunity exists and the reasons for the limited use is primarily marketing considerations rather than logistics issues.

Concerning the uncertainties in the business context that companies and their logistics management face today, a firm and its supply chain need to be flexible to compete. Thus, with logistics being an important ingredient in the business model, strategic flexibility involves the flexibility of logistics and especially the flexibility of the logistics platform. It could be argued that the possibility of adapting to changes in the environment concerns the possibility of choosing different lines of action in terms of disintermediation, multiple marketing channels, composite supply chain channels and/or multiple logistics channels, ordering channels or distribution flows. This requires a logistics platform that is centrally controlled and copes with strategic flexibility in new marketing channels and operational flexibility in current marketing channels. The wholesaler studied has built an electronic commerce portal and logistics platform that gives this strategic flexibility—a
ready and waiting reserve to use when needed for future changes in the industry and its supply chain. Gerwin (1993) calls this kind of flexibility “banking”, an investment that creates future options for a company. Furthermore, at the same time the flexibility of the wholesaler creates uncertainties for rivals and competing supply chains.

In conclusion, we see a need for future research in this area involving a more precise definition of logistics platforms, conducting additional case studies and to test hypotheses concerning logistics platforms and evaluate their scope and performance. We believe the interaction between marketing and logistics, horizontally and vertically in the supply chain, is an important area where much more is to be researched.

References


