

Globalization and transition of distribution - analyzing two intertwined processes

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Abstract

Companies are all the time changing. These changes sometimes originate from ambitions of firms to actively improve their operations, while sometimes they are reactions to changes undertaken by other firms. In recent decades a couple of major reorganization efforts can be identified. In this paper we are concerned with two examples of reorganizing. The first is the ongoing transition of distribution involving, for example, increasing use of customized solution. These changes have put 'Supply Chain Management' on the top of the management agenda. The other type of reorganizing is the enhanced interest in 'globalization', implying that an already highly internationalized firm increases the coordination of its operations over different geographical areas. The purpose of this work-in-progress paper is to conceptually investigate how the processes towards globalization and transition of distribution are related. Many companies are involved in both these reorganizations, which then become intertwined and interdependent.

Keywords: Globalization, Distribution, Supply chains, Reorganization, Channels.

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Introduction

Companies are all the time changing. These changes sometimes originate from ambitions of firms to actively improve their operations, while sometimes they are reactions to changes undertaken by other firms. Some of these changes are minor and noticeable only in combination with other changes over long time, while others appear more 'revolutionary' than evolutionary, mainly providing short-term challenges. Some changes, on the other hand, become so significant that they tend to become an ideal for most firms. Changes gaining such momentum may lead to reorganization not only of companies, but also in the larger constellations in which single companies are embedded, whether these constellations are called industries, markets, or networks.

In recent decades a couple of major reorganization efforts can be identified. The most significant example is the strong focus on outsourcing. This business recipe shifted the management attention from ownership and control to the benefits that may be attained from specializing and collaboration with other firms. In this paper we are concerned with two other examples of reorganizing. The first is the ongoing transition of distribution involving, for example, increasing use of customized solutions, in turn affecting the conditions for speculation and postponement. These changes have put 'Supply Chain Management' on the top of the management agenda. The other type of reorganizing is the enhanced interest in 'globalization', implying that an already highly internationalized firm (in terms of spatial extension and penetration on individual national markets) increases the coordination of its operations over different geographical areas.

Aim and scope of the paper

The purpose of this work-in-progress paper is to conceptually investigate how the processes towards globalization and transition of distribution are related. Many companies are involved in both types of reorganization, which then become intertwined and interdependent. To some extent the two processes may support each other. For example, reorganization of distribution has been found to be an important aspect of globalization (Mattsson 2003). However, as the paper illustrates, there are also obvious tensions in moving in the two directions at the same time. The paper is an initial part of a conceptual and empirical research project concerning the intra- and inter-organizational change processes that during the last couple of decades have characterized Swedish manufacturing industry featured by both distribution system changes and globalization. The subject matter is arguably important both for practice and academia. Even if there has been, and currently is, much ongoing research on globalization on the one hand and transition of distribution on the other we believe that more should be done, conceptually and empirically, to investigate how the two processes are interrelated.

We begin the paper by describing the two processes of concern: transition of distribution and globalization. We continue by analyzing the interplay between the two processes and conclude with the implications of this analysis.

Transition of distribution: Increasing sequential interdependence

Channels of distribution – or supply chains - in business markets changed significantly during the last decades of the 20th Century. These changes concerned both the distribution infrastructure and the strategies of firms. Supplier firms were challenged by simultaneously occurring requirements to lower distribution costs and enhance distribution services (Oswald and Boulton, 1995). The two seemingly contradictory objectives could be realized owing to opportunities made available through technical development. These new conditions made it possible for firms "to reconsider fundamental assumptions about how they reach their markets" (Anderson et al 1997:59) and in the new distribution reality "forward-

looking companies are experimenting with their channels to make them more flexible and responsive” (Narus and Anderson 1996:112).

The changes in the strategic approaches of firms relied on the opportunities provided in the physical infrastructure for production and distribution, where new solutions were developed that considerably improved conditions for distribution performance and productivity (e.g. Ross 2002, Gadde 2004). Information technology development enhanced speed, as well as accuracy, of the information flow, which in turn, improved the coordination of the flow of materials (Bello et al 2002) and reduced logistics costs (e.g. Christopher and Towill, 2001). Moreover, improvements of manufacturing techniques, for example in terms of set-up times and flexibility, made economies of production less dependent on large scale manufacturing (Hayes and Pisano 1994), which in turn impacted on distribution arrangements.

One of the most significant aspects of the transition in distribution is a shift from speculation to postponement (concepts from Bucklin 1965). Before the current transition long lead times in production and distribution forced manufacturers to base their operations on speculation in what volumes and assortments would be demanded. Applying the principle of speculation results on the one hand in huge inventories to ensure that products are available when customers demand them, and on the other hand problems in satisfying the particular requirements from individual end users. The activity structure of production and distribution at the time built on ‘the logic of aggregation’ and required “standardization of taste that allowed for standardized design, standardization of design that allowed for mechanical mass production, and a resulting standardization of products that allowed for mass distribution” (Lampel and Mintzberg 1996:21).

The new conditions made available through technical development shifted the firms’ strategic attention from the principle of speculation to the principle of postponement. According to the latter principle cost savings from reduced demand uncertainty may be obtained if the differentiation of the product is postponed until as close as possible to the time of the purchase (Bucklin 1965:68). In this sense, the ultimate form of postponement is making-to-order. Applying the principle of postponement makes it possible to handle the two problems with ‘speculative’ distribution channels identified above. Firstly, postponement approaches reduce the need for inventories considerably, because flexible and adaptive supply systems enhance the opportunities to secure availability without huge inventories. Just-in-time deliveries and ECR (Efficient Consumer Response) are techniques that take advantage of the new opportunities for information exchange and improvements in supply and logistics operations (e.g. White and Pearson 2000). Adopting these principles makes it possible to increase customer service at the same time as costs are reduced (e.g. Perry and Sohal 2000).

Secondly, postponement approaches allow for a shift from the logic of aggregation to the logic of individualization (Lampel and Mintzberg 1996). By relying on modularity in design, production, and distribution, it became possible for a supplier to deliver more or less fully tailored products to end-users (Feitzinger and Lee 1997). These opportunities for customization got widespread attention in, for example, the PC-industry (Curry and Kenney 1999; Hulthén 2002) and the automotive industry (Lampel and Mintzberg 1996:24).

Shifting from speculation to postponement provide companies with new opportunities for value generation (for example van Hoek et al 1999). However, this change also impacts considerably on the features of the activity structure for production and distribution. The principle of speculation associated with mass distribution relied on huge inventories. These inventories functioned as buffers in the system implying limited dependence between activities. The new solutions (such as Just-in-time deliveries) strive to minimize these inventories, which in turn leads to interdependence among the activities in the physical flows. The benefits related to postponement and customization are thus accompanied by increasing sequential activity interdependence. Successful handling of these interdependencies requires a change from managing single functions, such as production, transportation etc., to integrating and coordinating activities into key supply chain business processes (Kotzab and Otto 2000; Lambert and Cooper 2000).

The challenges associated with this shift are enhanced by the fact that the coordination required is both intra- and inter-organizational in nature. Owing to outsourcing and enhanced specialization among actors

in manufacturing and distribution, these supply chain processes and their interdependencies increasingly span the boundaries of several firms (Dubois et al 2004). Moreover, efficient coordination requires partner-specific adaptations among companies, in terms of materials flows design, logistics facilities and joint information systems. In turn this calls for "complete and open information exchange about current and future wants and needs, end customer demands, development and production needs, and so on"(Pine 1993:29). Attaining the potential benefits of distribution reorganization required changes in the nature of the business relationships among the firms involved (Gadde 2004).

The outcome of the changes related to distribution and supply chain management is thus calling for coordination along a supply chain involving lots of companies. The problems inherent in these efforts are nicely illustrated in the following quotation from Cox (1999:209): "the physical structures of supply chains are very different. Each case demonstrates relatively more or less degrees of complexity, with a variety of stages and with a wide diversity of participants at each supply chain stage. There are also varying degrees of contestation over the resources that must be provided at each stage of the physical supply chain, and significant differences in the ability of companies to appropriate value from their position in the chain".

Globalization of firms – increasing ‘parallel’ interdependence

By *globalization* of a firm we mean that an already highly internationalized firm (in terms of spatial extension and penetration on individual national markets) increases its integration and coordination of activities and resources in different geographical areas. Globalization of firms may involve further growth along extension and penetration dimensions and takes various forms. We apply a market as networks approach. The dominating micro-economic and process-oriented approaches to study internationalization of the individual firms are less suited to analyse globalisation processes in globalizing contexts. Johanson and Mattsson (1988) provide reasons for this statement, however without relating to distribution in general or more specifically to transition of distribution.

This view of globalization is in line with changes in practice observed by Ernst et al (2002:1418) identified as a shift underway "from 'multinational corporations' with their focus on stand-alone overseas investment projects to 'global network flagships' that integrate their dispersed supply, knowledge and customer bases into global production networks". The main emphasis then becomes to "integrate its activities on a worldwide scale, in order to exploit and coordinate linkages between these different locations" (ibid. p. 1420). This first dimension of globalization is represented by the efforts of a multinational company to increase the scale of the operations on the 'same level' of the various supply chains in which it is involved. Ernst et al (2002) mainly deal with manufacturing but the same principle holds for firms involved in transportation, retailing etc. At this level the coordination efforts of global companies focus on handling interdependencies in a 'horizontal' dimension, which we identify as 'parallel' interdependence, contrasting the sequential interdependence introduced through transitions in distribution.

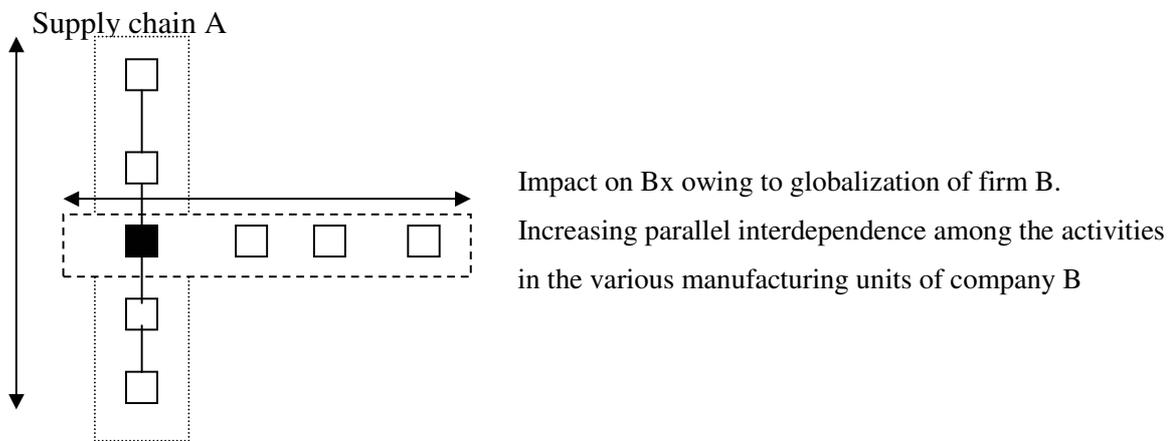
This aspect of globalization takes a static point of departure, mainly concerned with coordination of current activities within one and the same organization, assuming that nothing else is changed. But globalization takes various forms and is strongly affected by the context involved. For example, a firm might be acquired by an international firm, it might be linked as a sub-supplier to a globalizing customer, it might globalize through a strategic alliance, etc. Empirical observations indicate that during the last couple of decades, internationalization, including globalization, of the individual firm to a large extent has involved mergers, acquisitions and strategic alliances (Dunning 1997). In these cases the scope of coordination is extended to involve the integration of operations previously performed in different organizations.

A further dimension of dynamics relates to the fact that globalization of individual firms take place in a 'globalizing context' (Johanson and Mattsson, 1988). Firstly, as several firms concurrently make these efforts involving mergers and acquisitions, and strategic alliances, the opportunities to realize specific inter-firm linkages are changing all the time (Hertz 2001). Secondly, the opportunities for globalization of firms at one level in the supply chain are arguably dependent on the extent of globalization of firms at other levels (Andersson and Mattsson 2004).

There are two types of globalization that relates to distribution and thus provide hints of how globalization and distribution transition are intertwined. The first is concerned with the reorganization of multinational manufacturing firms into global production networks (e.g. Borrus et al 2000). This change needs to be combined with global coordination between manufacturing and distribution activities, involving both "upstream" and "downstream" activities. The second type relates to globalization of companies specializing in distribution such as transportation firms, agents, wholesalers or retailers, which globalize as a consequence of their own growth strategy. Transportation firms may become involved in coordinating activities involving several geographical areas, while retailers might aim to spatially extend particular retail concepts. In both these cases the increasing specialization of firms following current trends in outsourcing needs to be considered. This is to a large extent what the supply chain management literature deals with where it is suggested that the two types of globalization are related.

The interplay between globalization and transition of distribution

As argued in the introduction many firms are involved in both globalization and transition of distribution. We concluded above that the outcome of current distribution transition is an enhanced sequential interdependence among the various activities in a supply chain, while globalization deals with increasing the efficiency in one type of operation conducted by one and the same company in different geographical areas. To analyze the implications of the two types of reorganization we use Figure 1, involving one company (B) and one of the supply chains (A) in which the company is involved. Firm B is a global company running manufacturing operations in various countries. One of B's manufacturing facilities is Bx which is utilized in supply chain A (Bx is marked black in Figure 1). Bx is thus affected by both types of reorganization.



Impact on Bx owing to transition of distribution
Increasing sequential interdependence among the various activities in the supply chain

Figure 1: Illustration of the two basic types of interdependence

We begin the discussion with the case when B globalizes within a given set of fully owned facilities, and continue by considering the more complex situation when globalization of B involves structural changes through M&A or alliances.

Globalization within a given manufacturing structure

For the exploration of the consequences of the interplay between globalization and distribution transition we need some concepts useful for analyzing the features of activity structures. In this analysis we rely on two concepts from Richardson (1972): similarity and complementarity. The globalization efforts of B to streamline its operations in the facilities aim at enhancing the similarity of the activities. Activities are similar when they make use of the same resource. Increasing similarity thus increases the economies of scale in the operations of one facility. In our case, however, we are more concerned with the ambitions of the globalizing firm to increase the similarity among what is done in the various facilities by utilizing the same resources across facilities. For example, Buckley and Ghauri (2004) argue that multinational firms relying on 'global factories' rely on "a single factory design for its distributed global plants and attention to staff training so that replication and perfect substitutability between plants is achieved" (ibid, p, 89). These efforts increase what has been identified as the parallel interdependence in the activity structure (Dubois, Gadde and Mattsson 1999).

Facility Bx is related not only to company B – as illustrated in Figure 1 it is also part of supply chain A. In this chain the activities in the various facilities are 'complementary', because they have to be undertaken in a particular order (Richardson 1972). In this case the activities in Bx are sequentially interdependent with activities in the other facilities in chain A. In the particular case of customized solutions the activities become 'closely complementary', implying that activities are directed towards a specific user and the outcome of these activities cannot be used in relation to other users.

The two types of reorganizing that we are concerned with both increase the interdependence among activities in order to improve performance in the activity structure. One means of doing this is through increasing the similarity in the activities while the other type of reorganizing aims at increasing the complementarity. For a particular facility in this structure – like Bx – this causes major problems since the two reorganizing efforts call for changes in both directions. Full adherence to the requirements for increasing complementarity in the supply chain would make it difficult to reap the potential for economies of scale by enhanced similarity – and vice versa.

The magnitude of Bx's problems in this respect is dependent on the extent to which company B is involved in other parts of supply chain A, and to the extent facility Bx is involved in other supply chains. In the analysis below we make a distinction between three alternatives based on different conditions in these respects.

- 1) B is vertically integrated and controls the other facilities involved in supply chain A.
Bx is not involved in other supply chains than those controlled by B
- 2) B controls the facilities involved in supply chain A.
Bx is involved in other supply chains not controlled by B
- 3) B is highly specialized. It is involved only in the type of activity conducted in Bx and this activity is performed in a similar way in all its other facilities.

Reorganization in situation 1 is supposed to be the least problematic alternative. Even if the requirements for activity interdependence are contradictory the fact that (i) B is in control of supply chain A, and (ii) Bx is involved only in this chain, makes it possible to make the necessary compromises within one and the same company. The main problems here probably relate to the distances (spatial, technical, economic, and cultural) involved in globalization. These are of the same nature as discussed in the general international business literature. Uncertainties regarding duration of transportation across long distances, differences in business culture and technical standards etc. might hinder both globalization and transition of distribution more than the inherent tensions related to the contradictory requirements on the activity interdependencies.

Situation 2 is more complex. In this case it may still be possible for B to make the compromise entirely in the dimensions of its own globalizing requirements and those of supply chain A. However, in this case Bx is involved also in other supply chains than A. This means that streamlining Bx too much in relation to the particular conditions of B and supply chain A could make it difficult for Bx to relate appropriately to the partners in the other supply chains in which Bx is involved. Accordingly, the attractiveness of Bx in relation to other supply chains would be reduced. A potential scenario then is that Bx could lose business in these

other chains. This, in turn, would reduce the capacity utilization of Bx and impact on the costs in supply chain A because the efficiency in a particular supply chain is conditioned on how it relates to other supply chains (Gadde and Håkansson 2001) The consequences of these potential problems depend on how much of Bx's total activities that are devoted to supply chain A and how much is devoted to other chains.

Situation 3, finally, is the one where the problems of adhering to both types of reorganizing become most apparent. Company B is not involved in any of the other activities in the supply chain. The decisions of B concerning what extent of similarity to require in the operations of the different facilities within B depend on:

- (i) the number of, and the variation among, the own facilities (of which Bx is one)
- (ii) the number of and variation among the different supply chains in which each of these facilities are involved.

In both cases: the greater the number and the variation, the more problems with the complementarities within the supply chains can be expected owing to enhanced similarity within the operations of B. Handling these complex issues require extensive interaction with the other firms in the supply chains.

In this situation, however, the conditions for B are dependent on the globalization in the other parts of the supply chain. For example, one of the operations downstream Bx is physical distribution. Distribution specialists, such as transportation/logistics firms, agents, wholesalers and retailers globalize as well – typical examples include DHL, Avnet (an electronic component wholesaler), and Walmart. Also these firms strive to use resources efficiently and thus have the ambition to increase the similarity in the operations in different geographical areas. Therefore, if company B is able to locate a potential partner that is represented in the same geographical markets, B needs to take only this company's situation into consideration when deciding on the extent of similarity in its manufacturing facilities. On the other hand, if there is little overlap in the countries covered it is more likely that B must negotiate with a number of counterparts to come up with a decision concerning the extent of similarity in its own operations.

An additional concern is to what extent distribution transition affects the upward and downward issues in supply chain integration, for example regarding the scope of the chain in terms of which other actors to include. To understand this situation we need to reconsider the three situations above by modifying the assumptions about the reorganizing firm's control.

Globalization involving structural changes

Assume that B's globalization involves a merger with another international company D with a dominant supply chain C. In this case the number of relevant supply chains that needs to be considered increases. Also here we can distinguish between different alternatives.

- 1) Both B and D are vertically integrated and control the other facilities involved in supply chains A and C respectively
- 2) Both B and D control the facilities involved in their supply chains, but Bx and Dx are involved in other supply chains
- 3) Both B and D are specialized and involved only in the activities of Bx and Dx.

Reorganization in situation 1 is now more problematic since compromises must be made between A and C, involving possible restructuring to handle the more globally extended distribution activities. One possibility is to integrate A into C, or C into A, or more likely to develop a new structure, involving distribution specialists with global operations.

In situation 2 the complexity is augmented through the increasing number of supply chains for which differences in complementarity need to be considered. In this case it is even more unlikely that A or C would be the most appropriate basis for handling the transition of distribution.

Finally, situation 3 is quite problematic for the newly integrated BD firm because it has a very fragmented supply chain structure with marginal power to influence the compromises needed to handle the interdependencies due to globalization and those due to transition of distribution.

Our conceptual analysis has moved from the most simple case when a manufacturing firm controls its supply chain and concurrently reorganizes through globalization and transition of distribution - to a more complicated case when globalization involves M&As, upward and downward extension of supply chains and limited control of the other firms involved in these chains. Some, but not all, types of strategic alliances change the connectivity structure in the network in similar ways as M&As do. The limited space for this paper does not allow us to analyse how restructuring by alliances might differ from restructuring by mergers.

Conclusions and implications

We have shown that globalization and distribution transition, from an individual firm's point of view, imply changes not only within the firm and in the context of its present relationships with other firms, but also lead to, and require, other network changes. We have mostly pointed to the problematic nature of the intertwining of globalization and distribution transition and to how such problems vary depending on the location of control in the supply chain. A most relevant question then is whether globalization is positively or negatively affected by distribution transition and vice versa?

On the positive side we argue that when distribution specialists become international, globalization and distribution transitions tend to reinforce each other. Global distribution specialists facilitate postponement, for example, when transportation firms offer coordinated distribution activities by using resources located in many countries. In fact, this is the core aspect of their globalization strategy. Furthermore, globalization of manufacturing firms increases the demand for services offered by these distribution specialists which serves to positively affect distribution transition.

Globalization of manufacturing firms increases the opportunities and/or need for more integrated distribution and transition of distribution stimulates further globalization. In this way one type of reorganizing breeds the other type. Compared to the intertwined processes for the distribution specialists transition of distribution is an enabling aspect for their globalization strategy, but not the core aspect.

However, on the negative side, the inherent complexity in handling the changes in network structures and processes required in conjunction with the intertwined processes is quite problematic. As mentioned above, some of these problems relate to distances (spatial, technical, economic, and cultural) and uncertainties involved in globalization. Furthermore, the prevailing power distribution in the supply chain might hinder a firm to effectively change the network (e.g. Cox et al. 2004). This is a particular problem

- (i) if the various facilities in the supply chains of the two firms are featured by large variety,
- (ii) if globalization involves M&As, and/or strategic alliances
- (iii) if transition of distribution involves coordination of vertically extended supply chains
- (iv) if contextual changes requires frequent reorganizations by firms involved in a supply chain.

We argue that these four characteristics are typical rather than exceptions in contemporary business. The reorganizations discussed in this paper represent investments in the sense that they take time and resources, and provide the base for future operations. These efforts take place in a dynamic network context where also other firms concurrently globalize and transform distribution. This means that even in the most simple case, it is evident that conditions change all time and make all solutions that the individual firm implements to handle the intertwined processes temporary. We therefore conclude that research concerning the two processes would benefit from considering their intertwined nature stemming from their network contextual dependence. Such research might also contribute to international business theory because it addresses the role of distribution in general and specifically and reorganization in transition of

distribution for opportunities and, importantly, restrictions in globalization of business firms in a globalizing market context.

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