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# Competition and Co-operation in the Corrugated Paper Industry

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## Keywords

Competition, co-operation, hypercompetition, standardisation, Strategic Alliances, supply-chain, corrugated box, plastic crate.

## Abstract

This paper describes how the five Swedish corrugated box manufacturers, while still in fierce competition, got together in 1999 to fight a new logistic system, plastic crates, which threatened to overtake a substantial part of the Swedish market for transport packaging. It explains the background of SWIF 2000, the competitive response by the five Swedish corrugated box manufacturers, how the strategy was developed, and what made the competitors work together.

Many driving forces influence competition. A common tool for structuring competitive forces is Porter's (1980) five-forces which in this paper is applied to the corrugated industry.

Although Porter's analysis of competition is a good starting point for analysing the problems for the corrugated industry in Sweden, other tools and models are needed to fully comprehend the situation. Theories from two areas are used to understand the case: 1) Strategic Alliances, 2) Hypercompetition.

## Introduction

Starting with the five forces (Porter, 1980), the internal competition in the corrugated industry is a strong force. It is primarily propelled by cost reductions in production through high automation. High fixed costs are traded for low variable costs, which leads to a race for market shares with price dumping and a sharp reduction of returns for all competitors in the industry as a result. The corrugated industry is also influenced by changes in the structure of the retail industry and the globalisation of large food companies.

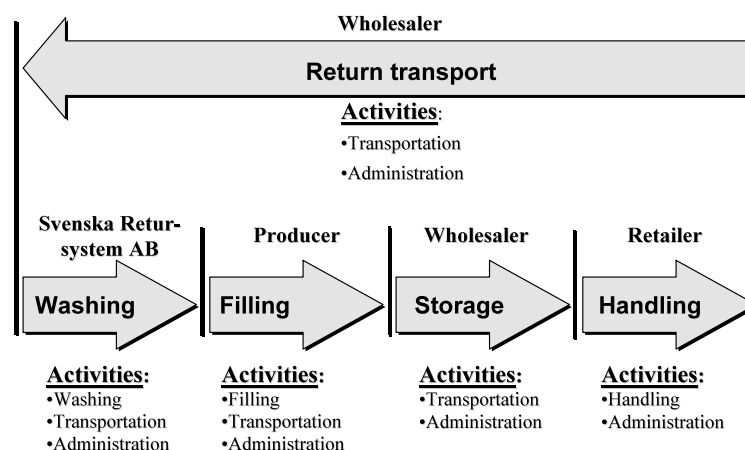
Currently the external forces, suppliers, customers, potential entrants and substitutes, manifest themselves via the potential introduction of plastic crates as transport packaging in the daily food industry in Sweden. In a traditional industry analysis plastic crates would be categorised as a substitute force for corrugated boxes. However, what makes plastic crates a strong competitive force in the corrugated industry is that the plastic crate system is partly owned by the customers of the corrugated industry, the grocery chains. Thus two forces, substitutes and customers are joined to form a powerful "double-force".

Being under the threat of loosing some 50 per cent of the home market the five Swedish corrugated box manufacturers decided to take action to jointly meet the threat from plastic crates. Over the last 10 years there has been an unanswered demand from the market for changes in and improvement of the corrugated boxes. All these demands have been evaluated

and a joint decision between the five Swedish corrugated box manufacturers was made to launch a new standard box, called SWIF 2000. SWIF 2000 will be produced in competition between the corrugated manufacturers, but incorporate one of the plastic crates main feature: producer independent standardised boxes.

The producers who pack their products in branded boxes primarily purchase corrugated boxes. Only occasionally do the wholesalers provide the producers with the boxes. The goods remain in the corrugated boxes all the way downstream in the supply chain, into the store. Most often the retailers do not repack the goods.

In the case of the newly introduced plastic crates, the crates are owned jointly by the three large wholesalers in Sweden; ICA, KF and Axfood. The crates are leased trip by trip to the producers, who are then charged approximately the same sum for a plastic crate as for a corrugated box. Figure 1 below shows how the crates are moved from the producer, to the retailer and onwards to the stores. From the store they are transported to a washing facility where they will be cleaned and thereafter put back into circulation. The life expectancy of a plastic crate is approximately five years and just over 100 trips. The same crates will be used for vegetables, meat, milk products and grocery. The hygienic consequences of using the same crates for all types of transportation have not been fully investigated. In Europe, where similar types of crates are used, the goods transported are packed in sealed consumer units such as one kilo of meat, five apples etcetera. In Sweden most products are not transported in consumer modules, but instead picked by the consumer in the shop and thereafter sold by weight.



**Figure 1.** Main processes and activities for each “process owner” in the recycling system.

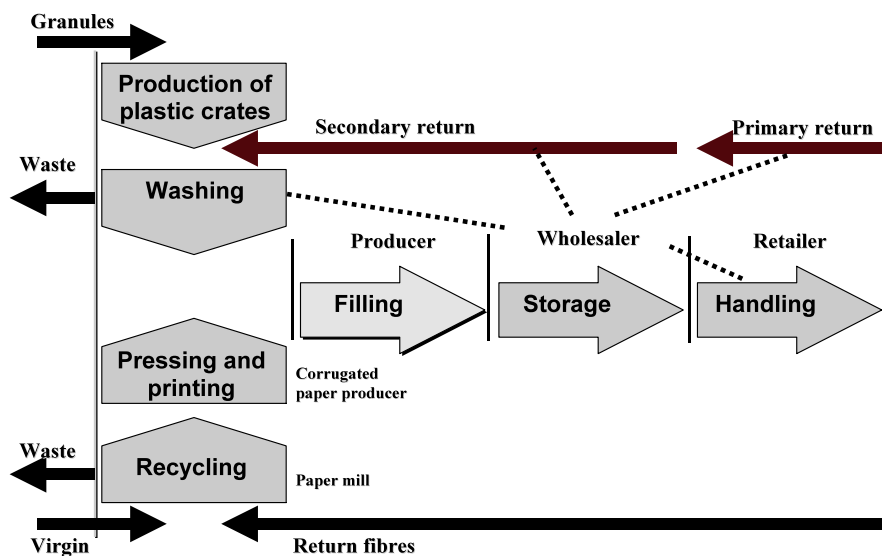
The purpose of the introduction of the plastic crates is not known. It is argued by the wholesalers to lower the total cost in the supply chain for all parties involved. However, independent analyses (Axelson, 2000) show that this is not the case. On the contrary, case studies have shown that the corrugated box is a less costly goods carrier than the plastic crate. The reason for this is primarily that a corrugated box is designed to be fully laden at all times. This is not possible for a plastic crate since only a limited number of standard sizes can be circulated. The lower utilisation level of a crate causes a higher total volume to be transported.

From an ergonomic point of view, the standard plastic crate has a weight of approximately one extra kilo as compared to the corresponding corrugated box. Since most crates have a fully laden weight of 6 – 10 kilos there will be a substantial increase in the total number of kilos that has to be handled in the value chain. It has been estimated that each crate is handled manually some ten times during one trip through the supply chain.

From an environmental point of view the lower loading capacity of plastic crates generate some 40% more haulage volume from the producers to the stores which means more trucks on the roads (Nilsson, 2000). After use, the plastic crates will thereafter need to be transported back in trucks for washing before they can be used again. The corrugated paper boxes are instead being compressed and sent back by train to the paper mills. A corrugated paper fibre can be used up to 6 – 8 times as a corrugated paper fibre.

The only remaining motive for introducing plastic crates would be a wish to strategically control the complete supply chain (see Figure 2). Plastic crates could serve as an entry barrier against all potential entrants. This means that the retailer chains and wholesalers will be able to control all new suppliers to the stores, as they will make the system mandatory for every producer that wants to deliver to a store. In addition, all plastic crates are identical, except for size, wherefore branding by the producers is not possible with plastic crates.

Normally most of the value in the brand name is carried by the print on the corrugated box. The plastic crates do not allow for any print, except for on a small label. This will open up the possibility for the wholesalers to make the origin of the products, like tomatoes, apples, and cucumbers et cetera anonymous. Swedish grown products are normally paid a premium as compared to imports since customers are willing to pay more for Swedish grown products. With plastic crates the wholesalers can import products in their own name and create a new price structure for products sold in the retailers own brand name.



**Figure 2.** Illustration of the wholesaler's strategic control in the value chain.

## Aim

The aim of this paper is to describe how a horizontal alliance can apply hypercompetition externally and successfully change the balance between forces at work in the industry.

## Methodological Notations

The research can be characterised as action research, since the researchers have been actively involved in, as well as observed, the SWIF 2000 project. In action research the researcher studies a phenomenon that he/she helped to generate. Obviously this creates a tension with other research traditions where the researchers try to stay detached and objective (Argyris and

Schön, 1991). However there are two distinct advantages of action research that in our opinion counterweight the limitations.

Firstly, the simultaneous strive to advance both science and practise, is inherent in action research. Action research starts with a practical problem and involves active participation, thus contributes to practise as well as science simultaneously, foregoing the conventional “time lag”. Secondly, the close “real-world experience”, allows for experience and empirical access that benefit research. Foote Whyte et al. (1991) puts it as: “The greatly enhanced ability to study major changes far outweigh the potential problems of trying to compensate for the distortions in our thinking that may arise from our personal involvement in the process.”

Empirical data has been collected from a wide range of actors within the value system as well as by means of several different techniques. Observation, active participation, interviews, and a thorough study of written material and documents provide the empirical grounding. Representatives for plastic crates as well as corrugated paper have contributed to the study, which balances the empirical data.

## **Theoretical Grounding**

In order to understand the situation for the five Swedish corrugated box manufacturers two theoretical areas are analysed; strategic alliances and hypercompetition.

### ***Strategic Alliances***

The most common method of arranging co-operations is to categorise by legal form, with acquisitions and mergers on the one extreme, and short-term agreements concerning specific parts of the company's activities, for instance marketing, on the other. Between the extremes, we find strategic alliances, joint ventures and similar intermediary forms. Irrespective of the legal arrangements, the nature of co-operations, or rather the purpose of co-operating, has shifted towards issues concerning the business concept of the enterprise (Porter and Fuller, 1986, p 315). These issues are strategic in nature and will intrinsically, through the strategic aspects, have substantial and long-term effects on the enterprise. This co-operative form is called strategic alliance and aims at utilising the advantages of sharing. Devlin and Bleackley (1988 p 18) conclude, ”Strategic alliances take place in the context of a company's long-term strategic plan and seek to improve or dramatically change a company's competitive position”.

Three generic types of co-operations are found in the literature. The categorisation is based on the type of expansion strategy used. *Horizontal co-operations* are collaborations between companies operating in the same industry, thus being rivals initially. *Vertical co-operations* can either go backwards in the value system to the suppliers or forwards to the customers of the company. Finally, *conglomerate co-operations* are based on the expansion into areas unrelated to the company's line of business in the pursuit of diversification (Schillaci, 1987).

Legal Form Type of Cooperation	Mergers and Aquisitions	Strategic Alliances	Short term agreements
Horizontal		Domain of the Research	
Vertical			
Diversified			

**Figure 3.** Scope of the study.

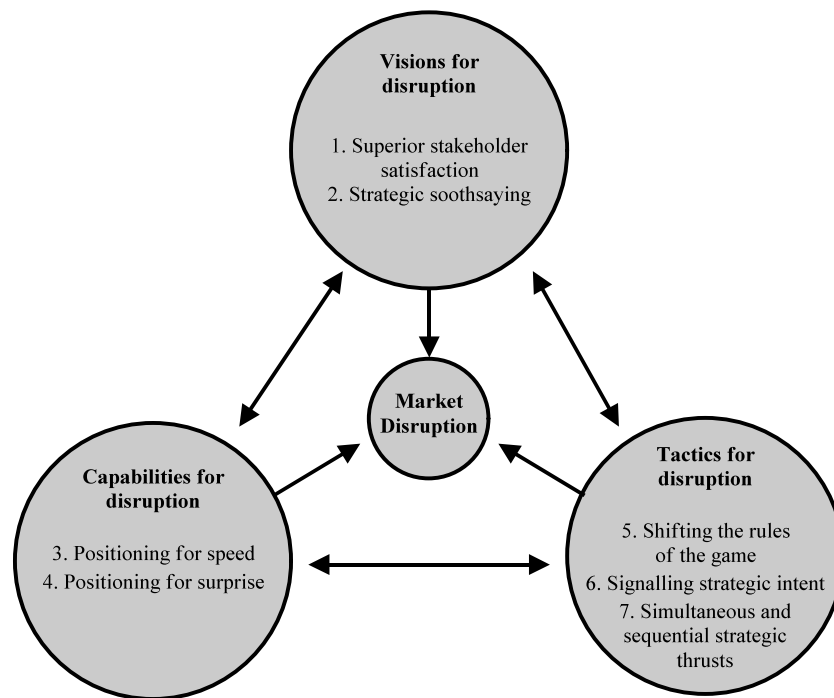
The prerequisites of these generic co-operative arrangements are quite different from each other as are their implications. Surprisingly few authors in the field allow this fact to affect their discussions and conclusions concerning alliances. In this paper, we will limit the discussion to horizontal co-operation - the co-operation between rivals in an industry.

The concept of Strategic Alliances allows us to understand the force and motive from which all five manufacturers of corrugated paper decided to join in the project SWIF 2000. To understand how SWIF 2000 developed their strategy we need some help from strategy theory.

### ***Hypercompetition***

The strategy frameworks of Porter (1980) provide a solid basis for understanding forces in action within the corrugated paper industry (see introduction). However it provides little guidance when it comes to how the participants within the industry should act to change the balance. Entry barriers and market positioning cannot outweigh the “double-force” described in the introduction, and the Industrial Organisation school of strategy fails to provide frameworks that handle the market dynamics of the current situation. The new situation demands a new logic of competition and a new set of tools to handle it. This study has primarily a focus on the frameworks of D’Aveni (1994).

D’Aveni (1995) introduces a set of approaches that can be used to work with strategy in dynamic markets. This framework, called the new 7S’s, is based on a strategy of finding and building temporary advantages through market disruption. This stands in contrast with the tradition that would be to sustain existing advantages and perpetuating the market equilibrium. Instead of aligning the inner structure of the company with the external environment, as if it would remain unchanged for a long time, D’Aveni argues that one should disrupt one’s own advantages as well as those of others in order to adapt the world to oneself. Aggressiveness ought to be the key element in any company’s strategy.



**Figure 4.** The new 7S's (D'Aveni, 1995)

The dilemma when introducing hypercompetition into a market is that all old loyalties and relationships are at stake. When hypercompetition is introduced it is likely to be a commercial war on all arenas where only the one that moves the fastest will have a chance to win. It is therefore not in the interest of all the actors in the market place that hypercompetition is introduced. However under the threat of loosing 50% of the total market for corrugated paper, it were likely that the manufacturers would start a hypercompetitive behaviour in order to save or gain as large a market share as possible before the other corrugated paper manufacturers started to react.

## Discussion

The association for the Swedish corrugated paper manufacturers, SWIF (SvenskaWellpapp Föreningen), decided to take a firm grip on the situation in order to avoid hypercompetitive behaviour among its members. Instead the objective became to co-ordinate the members against the external enemy; the wholesalers' plastic crates. Thus the horizontal co-operation allowed for two things to happen. First of all it provided a platform from which the joint forces could be directed towards an external enemy, and secondly SWIF hindered an all out hypercompetitive behaviour within the corrugated paper industry.

The strategy developed by SWIF in order to stop the plastic crates, was in many aspects inspired by hypercompetition. In order to generate *superior stakeholder satisfaction*, SWIF invented the new box SWIF 2000, in which they incorporated most of the features that the producers, the wholesalers and the retailers had been asking for during many years. Also the interests of some of the stakeholders of the retailers, i.e. the employees were included in the new design. The *strategic soothsaying* was that if the corrugated paper industry responded quickly enough to all demands from its customers, plastic crates would be obsolete as a logistical solution. Furthermore, if the reason for introducing plastic crates was based on political and strategic-control reasons, this would become transparent to the public.

SWIF moved very *fast* in order to find arguments and to make SWIF 2000 available to all. Furthermore SWIF communicated with all parties in the value system for corrugated paper, not only to the purchaser of the boxes. This *surprised* all parties involved, particularly as the corrugated industry is known to be rather slow and conservative. Basically SWIF *shifted the rules of the game* by acting not only towards its customers, but also towards interest organisations, retailers and their employees, politicians and other decision makers.

SWIF introduced and released consistently novelties that were of great importance in the choice between corrugated and plastic crates. *Signalling* their intentions by the means of press releases delayed and in some cases stopped the introduction of plastic crates. Messages such as; “in three months we are going to introduce a computer programme that will prove to you that corrugated from an ergonomic point of view is better for your employees”; or, “in a couple of months you will be able to have a programme that guides you to whether plastic or corrugated is the cheapest packaging for your products”, stopped decision makers from taking decisions now, but rather to wait and see what were to be launched later.

All disruptive activities were carefully *coordinated*. All levels within in the value system were *simultaneously* approached. One of the reasons was that SWIF was not sure exactly who the final decision makers were. At same time as it was important that the plastic crates did not again show up on the market introduced by another stakeholder in the value system. Even very determined decision makers would have a problem of introducing plastic crates when all parties are very well informed of the consequences of plastic crates in terms of financially higher cost, environmental and ergonomic impact etcetera.

## Conclusions

According to hypercompetitive theory only one company in an industry will maintain high returns when hypercompetition is introduced. Hypercompetition within the own industry is thus not compatible with horizontal strategic alliances since most of the alliance partners would face substantially reduced returns. In order to fence off a potential entrant into the corrugated box industry hypercompetition thus had to be infused in an arena other than the arena of the strategic alliance partners, an arena that will pinpoint the potential entrant. In this paper we have described how the five corrugated box manufacturers have together introduced hypercompetition in the industry of standardised boxes or crates. Thus diminishing the returns for the plastic crate system.

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