

The Impact of Market Dynamics in a Mature Industry New Activities in the Paper Supply Chain

Bo Rundh, Karlstad University, Karlstad¹

Keyword: Competitive Strategy, Relationships, Supply Chain Management

¹ **Bo Rundh, Karlstad University, Division of Business and Economics, S-651 88 Karlstad Sweden, fax+46/54 14 97, e-mail:Bo Rundh@kau.se**

Background

As a result of greater international competition changes are occurring more rapidly in most industries and companies are forced to react to the current competitive situation either change is taking place in the supplier or customer side. Many factors are also influencing management expectations about the effects on its business goals. Expectations reflect the decision-makers present knowledge as well as the perception of future events.

Due to the competitive situation in different market areas the paper industry is under the pressure for improving the profitability by considering its purchasing and marketing activities. This is done in order to reduce costs and improve efficiency and supply chain management has become an important issue for the industry. Both mills and suppliers have responded to this paradigm by forging integrated and long-term relationships built on communication, commitment and mutual gain.

Paper companies have traditionally chosen their suppliers to a great extent on competitive pricing and service. While pricing and service remain important, the relationships between paper companies and suppliers have changed. Similar to the competition in other industries e.g. the situation in the automobile industry during the late 1980s and the early 1990s, today's business climate in the paper industry brings pressure for improved profitability, cost reductions and efficiency improvements. The transfer of technology (Tushman & Anderson 1997) and industrial knowledge between different areas is also a dynamic factor, which make it difficult to sustain a differential advantage for any longer period.

At the same time paper companies have integrated forward by mergers and acquisitions in order to build up a market position on different markets and product areas in the local market structure. Due to structural changes and concentration within different industry's the paper companies have also come under the pressure from big buyers, especially from customers selling consumer products e.g. the food industry. New demands on the logistic function have also forced the paper industry to come up with new solutions for packaging purposes. The pressure from the EU legislation will also have an impact on the distribution system to the food industry and the paper industry need to develop solutions in order to meet the competition from e.g. plastic boxes and pallets.

The research aim in this paper can therefore be emphasised by – *How can a paper company adjust its marketing strategy for this new competitive situation?* The intention is to use a qualitative study by interviewing management in a specified number of companies. The data collection will also be completed by secondary data from the same companies.

A Changing Market Environment

Due to the increased globalisation (Chee & Harris 1998) there are many factors influencing the pulp and paper industry. The main emphasis in this paper is to discuss how external changes and different market dynamics (driving forces) will challenge the strategic management within the pulp and paper industry. For Nordic companies Western Europe is still the main market in competition with local producers but also from an intensive competition from companies in North America and Canada. New actors from South Africa and Asia are also adding to that competition. At the same time Nordic companies are interested to expand their business into evolving market areas in Asia and into Latin America.

The increased competition will focus the strategic issues in this business sector and require a higher market orientation.

Threats of substitute products

Some of the competition within the paper and especially the packaging industry is also coming from substitute products. Different solutions to packaging problems have been possible to solve by using plastic materials. In other areas plastic has been combined with paper or board to create new combinations, which also have given customers new products with other properties. However, competition from plastics within the distribution system to the food industry will challenge the carton board industry and require product development.

Bargaining powers of suppliers

One important driving force within the paper industry is coming from new technology. The pulp and paper industry has during several years been driven by technology and a high product orientation. Due to structural changes within the networks on the supplier side the bargaining power has increased from the supplying side of technology.

Bargaining powers of buyers

Due to concentration within many industries e.g. the food sector, but also on the retailing side the bargaining power has increased from different groups buying packaging material. This has also influenced the roles of the parties within the paper supply chain.

New entrants

The paper industry has also faced competition from new suppliers in other regions and parts of the world. These competitors have been able to base their production on lower costs for raw material and other manufacturing costs.

Other Market Factors

The consumption of paper and packaging materials (Mautssek. Ed., 2000) is varying between different countries around the world and there are several reasons for the wide spread in this consumption. A customer orientation within the company is about planning for customers' needs and researching markets continuously so that the company's products reflect what the customers want. Customer orientation is also about the ability to create value (Eggert & Ulaga 2002) for the target customers, which require a deep understanding of customer requirements. A market orientation also requires an understanding of the competitive situation within the particular industry where the products are sold. It is also necessary that a company is co-ordinating their resources to reach this level. Due to rapid changes in tastes and habits by end consumers but also depending on changes within sizes of households and other demographics it also necessary that the suppliers can track and analyse such important trends.

Other market factors will therefore have a great influence on the demand for different paper and packaging products. Despite the use of electronic media it has so far increased the consumption of paper in volume terms. However, the media habits for the coming generation might be different from now on. The development of e-commerce within the paper industry might also affect trade patterns in different industries as well as the consumption and

stockholding of different paper and packaging products. Despite the rapid development of information technology within different industries there has been some hesitation about e-commerce within the pulp and paper industry.

Research design

This paper is based on results from an ongoing research project about the strategic changes taking place in paper producing companies due to the rapidly changing business environment. In order to stay sustainable in the changing business environment a company must be able to not only manage the standard economic factors affecting the core business, but also environmental and social factors as well. In order to follow different changes in the market place as well as the different companies' strategic action a longitudinal approach has been applied, which will make it possible to follow the companies' actions over a longer period of time. At this stage of the research the interest has been concentrated on four market dynamics, which represent companies with different strategic direction.

The research method is a triangulation based on official documents from the companies involved in the study e.g. annual reports but also internal documents and official material published by the company's e.g. on internet. However, the main information comes from interviews with managers in the companies at Division level in the company. In these interviews an interview guide has been used, but the managers has also been allowed to describe their perception about what they recognise as important factors affecting the business environment for their core business. The managers have also been asked to describe how their company will meet those challenges. At this stage the producers have been interviewed but the intention is to follow the supply chain in order to study how different members in this chain can create value for the end customer. Due to the increased fragmentation by the end consumer e.g. single household, an ageing population and an increased demand for consumption in developing countries this study is also concentrated to products based on paper packaging materials.

The aim of the study

With the points discussed above as a point of departure the aim of the study may be said to be an attempt to describe and analyse aspects of competitive strategy in relation to the different driving forces in the international market environment. Since most of the Swedish paper industry's products are sold to markets within Europe, the study will primarily consider these markets. The research question can therefore be formulated in the following way – ***How can a paper company develop a competitive strategy within the changing environment of the paper industry?***

Market Dynamics – Factors that Shape Industry Evolution or Revolution

In a complex business environment it is of importance for management to be able to trace and assess the dynamics from different processes and actions that form the actual competitive situation within an industry or a particular market. In some situations it is not possible to trace these dynamics since after some time, where in others the information revolution make it possible to get hold of the information immediately.

Even if the pulp and paper industry can be described to be a mature industry it is affected by many influences, which have different effects on its actors within the industry. Instead of

attempting to describe industry evolution it is more fruitful according to Porter (1980) to look behind the process to see what really drives it.

Evolutionary Processes

Every industry begins with an initial structure but an evolutionary processes work to push the industry toward a potential structure, which is rarely known as an industry evolves. Imbedded in the prevailing technology (Porter, 1980) and product characteristics in relation to its potential buyers there is a range of structures that the industry possibly can achieve. However, this is to a great extent depending on the direction and success of research and development and innovations in different functional areas. In most circumstances industry evolution is depending on the investment decisions made by existing companies in the industry, but also by investments made by new entrants.

-
- Long-run changes in growth
 - Changes in buyer segments served
 - Buyers learning
 - Reduction of uncertainty
 - Diffusion of proprietary knowledge
 - Accumulation of experience
 - Expansion (or contradiction) in scale
 - Changes in input or currency costs
 - Innovation (product, marketing, process)
 - Structural changes in adjacent industries
 - Government policy change
 - Exit and entry barriers
-

Table 1: Evolutionary Processes (Porter, 1980)

In relation to pressure or incentive created by an evolutionary process a company can take advantage for new marketing approaches or manufacturing facilities to alter the power in the network to suppliers and buyers. Despite a potential for structural change a particular industry may not actually change since no company discover a market potential or possibilities for a new marketing approach. Integration or other potential for scale of economies can also be unrealised due to financial reasons. Due to possibilities for innovation and technology development evolutionary processes is difficult to forecast and industry evolution can also evolve in a variety of ways and speed depending on the different actors in the industry.

Revolutionary Processes

Radical changes can also shape the competitive situation within an industry and push the industry toward a potential structure. This can be in the form of new technology creating competitive advantages for some companies. Mergers and acquisitions can also affect the balance between different parties in a particular market within the industry. A major source for industry structural change is rapid or radical innovations of various types and origins. Innovation in product is one type e.g. smart packaging. Product innovations can also have

indirect effects due to associated needs for new marketing, distribution or manufacturing methods that change economies of scale or entry barriers to the industry. Significant product change can also affect buyer experience and hence have an impact on purchasing behaviour.

Innovations in marketing and distribution can also have effects on other factors in the industry structure and on the supply chain. A new marketing approach can be subject to other factors in the industry structure and shift the power in relation to different buyers and affect the balance of fixed costs and hence the rivalry in the particular market situation. Another important group of innovations concerns the processes or manufacturing methods.

Market Dynamics	Revolution	Innovation	Radical New Concept
	Evolution	Incremental Development	Innovation
		Existing	New
		Market	

Table 2: Market Dynamics in Relation to the Market

Innovations in this category can make the process more or less capital intensive and increase or decrease economies of scale. It can also affect the proportion of costs and the need for integration, which might have an affect on the industry structure. Radical technology development or innovations that change structure can come from inside or outside the industry. Developments in information technology is an example of a factor that will have a great influence both from a manufacturing point of view for process automation, but also for the information flow within the paper supply chain.

Innovations and the Creation of a Competitive Advantage

Innovations can contribute to a company’s performance in several ways and new products can help to capture and retain market shares. In a mature market with established products competitive sales growth can also be obtained by non-price factors by offering a variety of factors such as design, service, customisation and quality. In this case product differentiation is associated with higher than average profitability, but products with combined features achieve even higher return on investment. At the same time in a world with shortening

product life cycles e.g. for electronic products and automobiles, the possibility to replace products frequently with better versions is even better. Competing in time reflects a growing pressure for companies to introduce products at a faster rate than competitors. Product development is therefore an important issue since the environment is changing constantly. Sudden shifts in socio-economic factors may also cause opportunities and constraints for the company. Competitive activities in the form of introduction of new products may represent a major threat to existing markets. Due to all these changes a company need the capability to respond through product innovation in the particular market area where it is operating. Even if new products may be viewed as the most important part for an innovation in a market, innovations within a process can play the same strategic role in the market place. Being able to do something that no other company can, or to do it in a better way than anybody else is an important source for creation of a competitive advantage. From a strategic point of view a great deal of business success also depends on generating new knowledge and on having the capabilities to react to this new knowledge. One important issue for the management is therefore to understand *the market dynamics* and the *driving forces* affecting and shaping the competitive situation in a particular industry. Another issue is to develop a marketing strategy that will deliver products and services which the customers will value (Lapierre 2000) as important in relation to there prevailing problems and needs.

Driving Forces from Technology

Technology has been one of the most important driving forces within or in related companies to the pulp and paper industry. Cost disadvantages for raw materials have pressed companies within the pulp and paper industry to develop more sophisticated equipment, machinery and processes in close relation with different companies in related industries. Due to competition there has also been an interest to go into areas with higher added value products such as hygiene products suited for e.g. packaging purposes.

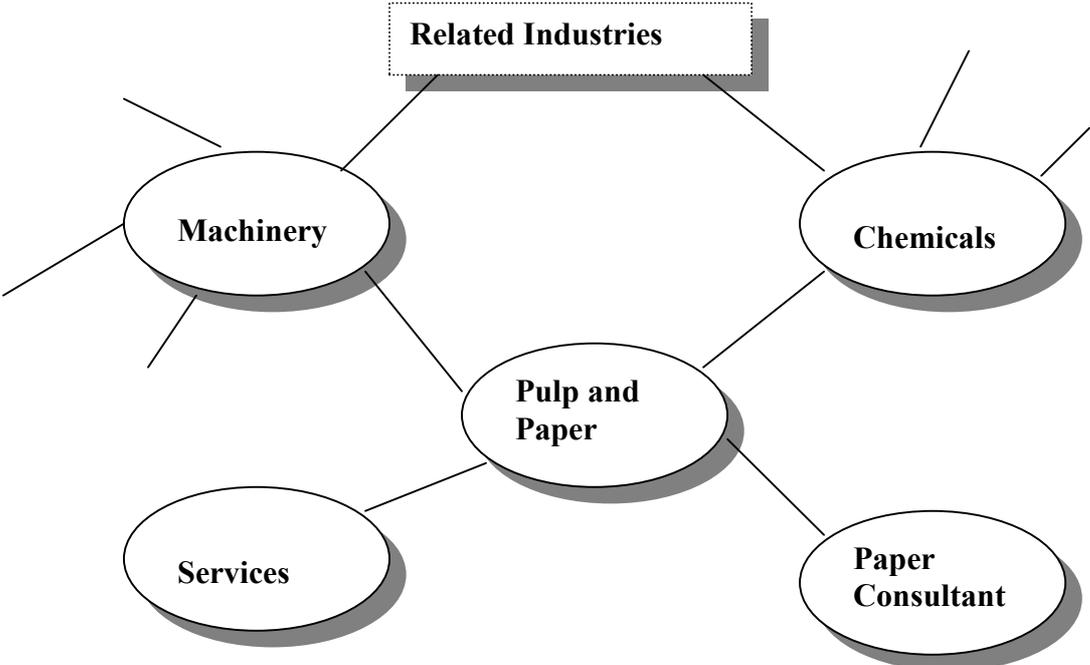


Figure 1: Impacts of Technology from Related Industries

The strategic interests from the paper industry to go into product areas with a higher value e.g. hygiene products, packaging materials and other products are supposed to give better possibilities for price differentiation and creation of value in the relationships with different customer groups. The emphasis has made it necessary to take different external changes into consideration before investing into new heavy capital-intensive equipment. Pressure from environment groups has also driven the research and development within the industry for better pollution control and the usage of recycled materials. The R & D has also resulted in different new products such as TMP, CTMP pulp, hygiene and packaging materials, but even new processes in the production and drying techniques. However, since transfer of technology is rather high within the pulp and paper industry it is necessary for the particular company to continue the search for market factors which will give it a better opportunity for creation of a competitive and market strategy creating a higher value in relation with its different customers.

Driving Forces in the Marketplace

In the beginning of the 2000s many business markets are or will be global markets. This change from national-regional markets to global markets is just one of many profound changes that have been occurring within the business environment. Within the past 10-15 years the language of business marketing has also changed irreversibly. Samsung of South Korea, electronic mail, computerised manufacturing, relationship marketing and internet management are some of the new vocabulary. This new vocabulary is symptomatic of the dramatic changes that are occurring within the business environment throughout the world.

Some of the changes (Rundh 2001) are due to driving forces from *customers* and the *products* and *services* they buy or require, while others are depending on the industrial infrastructure or new *logistics* e.g. electronic shopping. Structural changes e.g. within the food and beverage industry has also increased the buying power and put on pressure on the whole supply chain to be cost effective. The necessity to consider the importance of different *cost drivers* will continue to play an important role for the competition between different producers within Europe and other parts of the world. One important question for an actor is – what impact these changes in the business environment have upon the business firm. Specifically, how should a producer respond to these impacts from new technology and to an intensive domestic and foreign competition?

Other Driving Forces

There are many reasons for the different consumption of paper and packaging materials around the world due to standard of living, industrial structure, cultural differences and distribution of incomes. These differences also create the bases for different market dynamics and evolutionary processes within every country. Some of these factors might be of greater importance than others depending on the product area. One of them concerns the concentration within a particular industry such as the food industry and which creates an important buying power among companies active in that sector.

Other forces can be recognised as environmental due to *Directives on Packaging and Packaging Waste* (CEN TC 261). This will also lead to changed consumption depending on prevention by source reduction. Packaging has also been in the focus as the main symbol for environmental responsibility. At the same time some multinational brands are advertised on a global scale in combination with a packaging product, which is easy to recognise. This leads

to an increased demand for integrated development of packaging and products, which will affect the need for customised solutions. Another important issue is the change in demographics but also the demand from customers with smaller households.

The Strategic Challenge

The business environment (Sanderson & Luffman, 1988) of the company consists of all the external influences that have an impact of the company's decisions and performance. A main problem facing the management is tracking and analysing the vast numbers and range of external influences. The starting point is some kind of system or framework for organising and analysing different kinds of market information.

When sudden environmental changes (Dean & Meyer 1996) occur they can trigger major developments in the marketplace. Some of the driving forces affecting the pulp and paper industry evolution or revolution have been discussed above. The strategic challenge for the management is the creation of a competitive and marketing strategy coping with those forces in the actual marketplace. Success in business is achieved when management develops a strategy and an organisation, which fit the business environment where the company operates. To be able to obtain sustainable competitive position managers need to understand the nature of the dynamics of the industry, but also how to cope with them.

Irrespective of the basic marketing strategy the successful company needs to adopt a value orientation (Narver & Slater 1990) in its marketing activities. This means that the company must identify and understand the value desired by the customer in the particular market. The task of identifying customer values in international markets requires a thoroughly understanding of differentiated customer needs, which in most cases are influenced by requirements e.g. due cultural influences in the local market. The particular company must also be able to communicate the values provided and deliver it in the intended form in the relationship with customers. This is a complex task that requires a great deal of understanding of the actual market environment and its influences on the company. Especially since companies within the paper industry is working in relationship with suppliers and customers belonging to different international networks (Håkansson & Snehota 1995; Ford et.al. 2002).

In order to be successful in the different international markets a company need to create a competitive advantage that will differentiate it from its competitors and is valued of its customers. A competitive advantage (Slater 1996) can be developed from any of the company's strengths or distinctive competencies in relation to the competition. The essential factors in choosing how to create the advantage are that it must be on a basis of value to its customer's e.g. superior quality, better service or a lower price. The key issue is that it should be based on a skill or competence within the company that competitors will find hard to copy.

Strategy can be seen as the matching of activities of an organisation to the environment in which it operates. This is sometimes known as the search for strategic fit (Johnson & Scholes 1999, p.5)

The essence of developing a marketing strategy (Piercy 1990) for a company is therefore to ensure that the company's capabilities are developed in relation to the competitive market environment. In defining the marketing strategy it is necessary to understand the total product concept (including services) in relation to the customer and avoiding too much concentration on the physical product. In many markets the customer

is valuing the augmented product more than the core product. This means that a company must first identify the desired values by the customers and then provide and deliver a value that is required in the particular market.

Paper and Board – An Evolution in Relation to Different End-Uses

Despite that the paper was invented for writing and communication it came also into practise as a packaging material. In the beginning of its development paper was intended for writing purposes but soon it was also reused as a packaging material. In the 1700s before the paper machine was invented paper became to be an expensive scarce product. Paper was even stolen (Jerkeman 2000) from the archives in Stockholm and sold as a wrapping paper to the merchants in the city. Unsold books were also used for this purpose since it was the printed sheets and not ready books that were kept in stock. Even in our days newspaper is reused as a wrapping material in some markets for certain consumer products. This is also reflected in the world consumption of paper since more than fifty percent are used as packaging materials.

This evolution over more than two thousand years has also made it extreme difficult to replace paper products by other products and materials. Since paper and paper products have many different end-uses it has also gone through a continuous development in small steps in relation to the actual market segment and its end-use. The development of the information technology was supposed to create a paperless office, but instead it has led to an increase of copy paper and the demand for high quality printing papers have showed a steady growth.

The demand for paper and paper products is supposed to increase from 320 million tonnes in year 2000 up to 420 million tonnes in year 2010 or with 2.7 percent per year. Even if this is a slower increase than the previous ten year period the increase in volume is much bigger and the consumption is expected to be nine million tonnes a year. This is approximately the level of the total production in Sweden. The consumption is expected to increase with a higher level in South East Asia, China and Eastern Europe, than in Western Europe and North America. The middle consumption of paper is supposed to grow from 53 kilos to 59 kilos per person in year 2010. The highest growth is expected for high quality printing papers, corrugated board and board. A lower growth is expected for newsprint, lower qualities of newsprint and sack kraft paper.

Product Category	End-use Category
Newsprint	Newspapers, Magazines
Printing & Writing (coated and uncoated)	Copy paper, Writing Paper, Ads, Books, Magazines
Carton Board	Cereals, Soaps, Deep Frozen Food, Coffee
Hygiene Materials (absorbent hygiene products, tissue products)	Diapers, Napkins, Table Clothing, Tissue for households, incontinence products
Other Board e.g. for Corrugated Board	Transport packaging for consumer products
Miscellaneous Kraft paper	Bags, envelopes, wrapping, packaging

Table 2: Product categories for different end-uses

However, since packaging is becoming more important in the marketing of products partly due to the increasing emphasis on self-service in the retail sector there is a pressure for continuous product development and new packaging solutions. This can be in the form of customised packaging solutions with attractive graphic exposure of products, trademarks and other information, which have become a growing share of the market. In addition to protecting the particular product a package must fulfil various functions, such as enhancing the product's image. Innovative packaging solutions with a smart design and printing is therefore becoming important competitive tools in the marketing for a variety of products. This has led to that companies need to fulfil functions rather than delivering products, which also might require development of logistic systems in close partnership with its customers.

In order to fulfil such requirements for different customers a close cooperation has developed with different suppliers of equipment, consultants, suppliers of raw material and miscellaneous products in a cluster or network to the particular company. The development of competitive and related industries supporting the primary products has been a necessity for the evolution of the pulp and paper companies becoming a global industry. This includes pulp and paper manufacturing machinery, special products and equipment for the production process as well as special services for the industry including specialised training and research institutes.

Paper versus Plastics - Substitution or Completion of Materials

In some cultures paper is more important than in others and the consumption of paper can often be a measurement of, or a condition for the standard of living in a particular country. Paper and paper products are used for many purposes such as for printing and writing, in the hygiene sector, or as consumer and transport packaging and for many other issues. The paper is supposed to have been invented by the Chinese Ts'ai Lun 105 A.C. but some evidence has also been found that paper was used a couple of hundred years before that time. The origin purpose for paper was for information and communication, but one of the main areas in our society is now for packaging purposes e.g. for the distribution of food products. More than half of the paper consumption in the world is used for packaging purposes. In USA the consumption of paper is about 330-kg/per capita, which can be compared with 26-kg/per capita in China.

The production of paper is also increasing in other parts of the world e.g. in China through investments in new capacity together with partners from West in the form of larger machines, but also due to investments in machines that has been closed down in Europe. Even other countries in South East Asia such as Indonesia and Thailand are increasing the paper production based on cheap raw material. A big population with an increasing standard of living is requiring more products based on paper material. However, paper is not used in the same way depending on traditions, availability and industrial structure, which is creating a local network and affecting the use of paper products. In USA the consumption of corrugated board (105-kg/per capita) is two times bigger than the consumption per inhabitant than in Sweden (50-kg/per capita) and four times bigger than in Norway (23-kg/per capita). This is mainly depending on that the food and engineering industry is relatively bigger in USA than in Sweden and Norway. On the other hand is the consumption of newsprint slightly bigger in Sweden than in USA, even if a Sunday newspaper is much bigger in USA.

However, even if paper is something that we are used to in our daily life it is meeting a heavy competition in certain sectors from plastic materials especially for packaging purposes. Plastic film is for instance used as a cheap and convenient material within the food industry. Plastic film has also been developed for many packaging purposes within the industrial sector such as wrapping and stretch wrapping. In some areas the competition has also been to severe such as for bags and sacs. This means that there has been substitution from paper to plastics.

The possibility to combine paper and plastic coating has not only been a substitution between paper and plastic but also given the opportunity to develop new products. This development has given the possibility to create products with properties, which was not possible with the single material. One example is a combination with paper, plastic and different kinds of foils, which have given the possibility for development of new materials especially within the food industry. Another important issue (Karlsson 1997) is also the development of different systems for packaging and wrapping which has contributed to new solutions and productivity within whole supply chain.

A Radical New Concept

There is much more to innovation than just the development of new products. Innovation embraces everything from hatching an idea to reaching the marketplace with a new or improved product. Whichever way you define it, it is important. Innovation is one of the cornerstones of future survival and growth.
(<http://www2.tetrapak.com>)

Packaging has many different functions such as protection, preservation, communication and promotion but also for user convenience. One important issue in the distribution of products is that the supplier can make sure that the product can reach the end customer in the form that was intended. The requirement on the package and the packaging material will therefore vary as a function of transportation mode, transit conditions and length of time in transit. One of the most important developments within field of packaging was the possibility for combining different materials such as paper and different plastics. The new technology that was introduced by extrusion of e.g. polyethylene made it possible to develop many new packaging materials with new properties that could not be reached by a single material. Extrusion and laminating made it also possible to combine paper and plastic with other materials such as aluminium foil.

All these new developments of the technology lead to many innovations and new product concepts that affected the distribution of different products both for consumers but also for business-to-business purposes. One of the most important innovations that changed the distribution of liquid products was Tetra Pak. This was possible due to the new technology of extrusion, but also depending on the development of a system for filling and sealing the different packages. Tetra Pak began in the early 1950s (as one of the first packaging companies for liquid milk. Since then the company has developed to one of largest suppliers in the world of packaging systems for milk, fruit juices and drinks. Many other products have also been developed.

In 1991 Tetra Pak expanded into liquid food processing equipment, plant engineering and cheese manufacturing equipment. This has lead to that the company is the only one in the world that can provide processing, packaging, and distribution line and plant solutions for

liquid foods manufacturing. This means that their customers can get multi-product solutions from a single source, with suitable equipment at every stage.

One of the most outstanding innovations for the company has been the aseptic technology, which they invented in the 1960s and have continued to develop it since that time. An aseptic package is one which has been sterilised before filling with sterilised food which gives a product that can be shelf stable for over six months. An aseptic carton is made of three basic materials for a safe and lightweight package. Paper to provide strength and stiffness laminated together with polyethylene to make the package liquid tight and provide a barrier to microorganisms. The third material is aluminium foil to keep out air, light and off-flavours that can cause food to deteriorate.

The new technology made it possible to develop new products and innovations that radically changed the distribution of products, but also created possibilities for a whole new distribution system within the trade. This has been especially important for the distribution and consumption of liquid and different dairy products within the food and beverage industry. Cartons have radically changed the distribution system for liquid products and are closely connected to the emergence of the supermarkets in the 1950s. For many years it was considered technically impossible to produce a square carton package, but in 1962 the Tetra Brik was introduced. This package was adapted to the European pallet from the start and has contributed to the modern distribution system of today. Since the introduction of the carton package in the 1950s, new packages have been developed in different shapes, sizes and materials. Different openings have been added and modified. Multipacks have been introduced and designs in terms of print and colours are constantly developed to meet new requirements.

Intelligent Packaging or The Concept of Smart Packaging

Active packaging – Concepts that actively influence the condition of the food in order to extend shelf life and to improve quality of the packed food.

Intelligent packaging – Concepts that monitor and/or give information about the history and/or quality of the packed food, for example through time-temperature indicators. (Abbott 2000, p 31)

A fraction of the research within the paper industry is today devoted to an area of combining paper and packaging materials with e.g. information technology to find new product concepts, which can be innovations of tomorrow. According to Abbott (2000) the use of active packaging will become more popular and many new opportunities will open up for using this new technology. The development and testing of smart packaging concepts (package indicators) which can give information on e.g. the microbial quality and safety of packaged food products is one of the focuses of the packaging research at VTT Biotechnology based in Espoo Finland. Some intelligent packaging concepts are already commercially available and their use increases constantly. There are also other concepts such as leak indicators patented and more new products are supposed to be commercially available in the near future. Packaging materials that can keep e.g. meat fresh (Karlsson 1997) and avoiding different chemical treatments is of great interest for the food industry.

A more basic research is also devoted to make paper boxes stronger and better able to protect the freshness of their contents. Forest research scientists in New Zealand are working to lift

New Zealand industry ahead of the world by developing “smart” packaging systems. To keep down costs and retain recycling potential, they want the new paper based materials to do some of the work now done by plastics. Packaging is essential for protecting and marketing the exported goods. New Zealand’s food exports must be shipped in a cool, moist, refrigerated environment. Their initial storage and journey to supermarkets around the world may take up to four months.

We use paper because it is low cost, low bulk, lightweight and is high in strength and recyclability (www.hortnet.co.nz).

One type of research is concentrated on to use pigments in the material that can change colour depending on the temperature e.g. for liquid products such as milk. The same kind of technology has been used for coffee cups and thermometers for wine.

Another area of research concerns the possibilities to have thin plastic treads within the paper, which can lead electric power. When electricity is supplied to the paper the colour will change. The intention is that the material can be used for price labels in supermarkets or to produce tickets that cannot be copied. The paper product is supposed to be recyclable.

MIT is at the focal point of the smart-tag revolution (Valigra 2002) and future tags will be able to tell manufacturers when to restock store shelves and then entice consumers to buy the products. All that is possible by a network of smart tags or labels containing tiny microchips, wireless antennas and even batteries as flat and flexible as a business card. The new tags will carry an electronic product code able to identify more than 268 million manufacturers, each with more than 1 million unique products. This is much more than the bar codes available at the moment, which can identify 100 000 manufacturers and types of products. The technology that is used in the smart tags is based on a wireless radio frequency similar to that in automatic toll-collection systems and can read the information from any angle. This is contrast to bar codes, which must be scanned head-on.

Scanners to read the information will be put into hand-held computers, cellular phones, store shelves and doorways. The initial application for the tags was in supply chain management or tracking movement of goods from the factory floor through the distribution system. An Object Name Service will link the electronic product code and Product Markup Language telling computers where to locate information on the Internet about any object carrying and electronic product code. If the MIT centre’s vision comes true a consumer at work may be able to dial home via the Internet to see if his or her pantry contains all the ingredients to make a dinner. When shopping at the supermarket the consumer need only roll their carts out the door and pack their groceries. The intelligent shopping cart will already have tallied all the items and a swipe of the consumer’s own smart card will debit the bill automatically from a bank account. Once at home a smart tag can give further information how to cook or treat the particular product.

For the time being commercially available smart packaging concepts are labels reacting with a visible change in response to time and temperature indicators, or in the case of a leak as a freshness indicator by the presence of certain chemical compounds. Research is also working on the development that the smart package will contain more complex invisible information that can be read at a distance. The security tags and radio frequency identity tags are the first examples of electronic labelling. It is also considered possible that the advances in electronics

and biotechnology would be followed by the emergence of totally new concepts of smart packaging.

Discussion

Even if paper can be traced back since two thousand years ago and has gone through an evolution and a continuous development for different markets areas companies are facing many new challenges. These challenges are basically depending on a changing market environment, but also due to changes within the pulp and paper industry itself. Some of the different driving forces shaping the competitive environment can be found in technological, economic, social and market factors. The term environment (Sanderson & Luffman, 1988) when used in the context of marketing generally refers to a mix of external variables to a company, which might affect the outcome of the same company in relation to its markets.

The Impact of Change

In many industries the days of growth are gone. In those that growth still are possible competition is increasingly fierce and of an international character. Many industries are also going through structural changes due to overcapacity problems and a general recession e.g. like a service industry as the airline business. This is also affecting many other services and industries such as investments in new aeroplanes. It is no longer sufficient to be market oriented, the key to success is an effective implementation of the marketing strategy in relation to a defined position strategy in the local market.

A changing demography and particularly in relation to age and household size will have an effect on many products within different consumer segments. Changes in the income distribution are also playing an important role especially for the consumption in emerging market areas.

The speed of change is also increasing leading to greater complexity and added turbulence or discontinuity in many markets. The technology development e.g. in consumer electronic sectors is shortening product life cycles and is speeding up the time for commercialisation of different products. This makes it particularly difficult for the marketing management to assess and predict the demand for different product and services.

Changes within Buying Industries

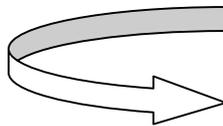
Some researchers (Yip 1992, Czinkota & Ronkainen 1995) have argued that many markets are becoming increasingly global in nature and no business is except from global competition. This is also affecting the industrial structure in many industries and leading to mergers and acquisitions creating bigger and stronger companies. The restructuring of different industries is also shifting the balance of power and creating buyer groups with an increased buying power.

The Impact of Different Driving Forces on the Business Network and the Marketing Strategy

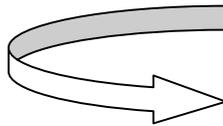
Since markets are dynamic and virtually all products have a limited life, which expires when a new or better way of satisfying the underlying want or need is found a company need to work continuously with its product and market development. One important issue is to understand

and assess the underlying driving forces within an industry, which are affecting the competition but also driving the evolution in the same industry. What has been successful at one time is no guarantee for the future since successful products and strategies may erode over time. However, change creates opportunities for innovative organisations and threats for others. One example is Iggesund Paperboard, which have developed a *security board* (Thorén 2002) that might be a new weapon in the struggle against counterfeiting. The marking on the board can be visible for the eye, or like a watermark visible for UV-light and other kind of special equipment. The market potential for this kind of innovation is enormous (CD- and DVD discs, computer programs, cigarettes) and WHO is estimating that ten percent of the world trade for pharmaceutical products is done with counterfeited products. Other trials with DNA, microchips and magnetic strips have been too expensive. The security board can never be a standard product since it requires a close cooperation with every customer.

Understand Business Situation and Market Dynamics Within the Industry



Understand Market Structure and Business Networks



Understand User Needs and Customer Value in Different Market Segments

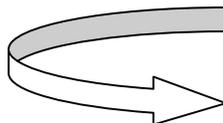


Figure 2: Understanding Different Market Dynamics

This also emphasize (Naumann 1995, Woodruff 1997) that the long-run objective for a company is best served by achieving a high degree of customer focus. The customer will judge the quality of the product and service offered to the market by how well their requirements and values are satisfied. Another basic marketing principle is that customers do not buy products, they buy what the product do for them and what problem it solves by giving them benefits in relation to competitive solutions. In order to cope with the changing marketing environment there is a need for the strategic management to become increasingly market-led.

In order to work out a marketing strategy management need to assess both an external analysis of its marketing environment and internal analysis of its structure and systems.

Winning strategies need to be based on originality, being different from competitors in a way that customers value. Porter (1996) argues that a company can outperform rivals only if it can establish a difference of value to customers that can be preserved over time. The idea of these differences has been defined as competencies and in strategy terms as distinctive competencies. A competitive advantage is the distinctive way a particular company is positioned in the market to obtain an advantage over its competitors and the process primarily associated with that is strategic planning. The marketing strategy must also be based on a generic or competitive strategy within the company considering the business situation and the market dynamics affecting the prevailing market structure.

Marketing management must also consider the different customer values associated with development in relation to a present market or if new customers have to be found in related or new markets. This might be the case even when a company is trying to work up new customers with the same packaging material in related or new markets. A special challenge is to form a marketing strategy relevant for new market areas. Irrespective of the market a marketing strategy (Greenley 1993) is considered to be a process involving three different levels of treatment. The starting point is the company mission, which provides the broad scope of the business in the form of business areas, products and customers. The next level is the established corporate or generic strategy, which is considered to be the framework for the marketing strategy. The third level is the actual marketing strategy composed of five parts; (1) *market positioning* in relation to the market segment, (2) *product positioning* referring to number of products per market segment, and (3) the *marketing mix* in relation to market segments. The two additional components are referring to (4) the *market entry* or how the company can re-enter itself in selected market segments and (5) the fifth component relates to the *timing* and implementation of the different components in the marketing strategy.

However, what is obviously important in formalizing the five components for any market situation is a full understanding of the total environment of the marketing operation (Greenley 1993, p.5).

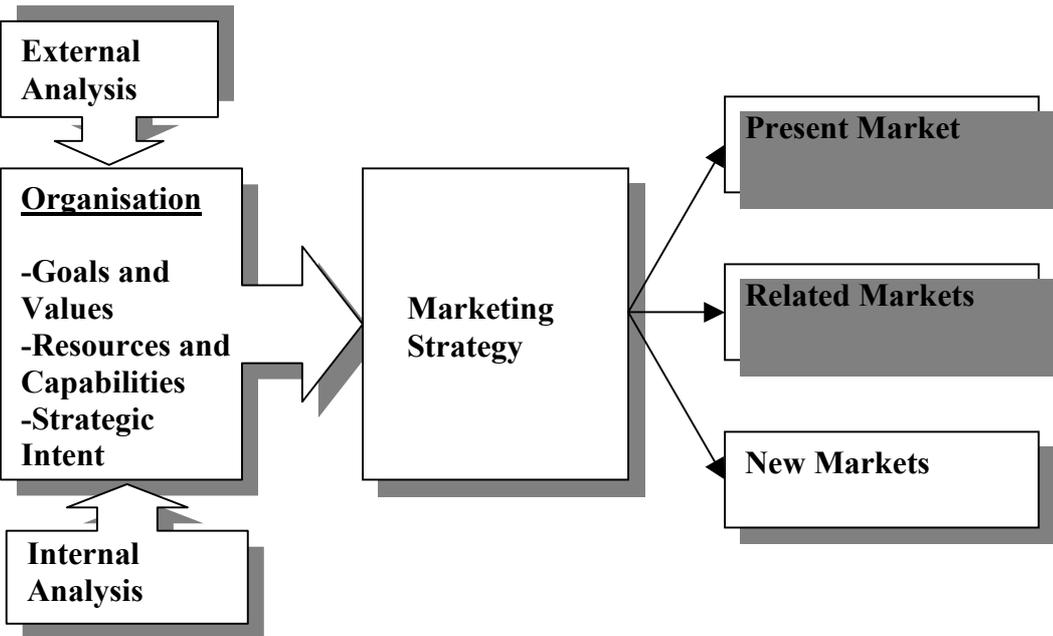


Figure 3: Marketing Strategy in Relation to Actual Market Served

Due to the different market dynamics affecting prevailing and new market areas companies within the paper and packaging industry, marketing strategies need to be adjusted or developed accordingly. Some of the basic issues to be considered for a paper company are discussed in table 4 below. In most cases a company need to develop and try to keep the close relationship with its customers depending on product development or other market considerations. The marketing efforts are even greater for a company trying to brake into new market structures, which can be tight due to the existing business network.

Product Category	Core Issue in Marketing Strategy
Paper and Board	<ul style="list-style-type: none"> • High standardisation/Market Segment • Price/Quality relation due to competition from recycled materials • Logistics to the market
Coated and Laminated Paper Qualities	<ul style="list-style-type: none"> • Close Relationship with customers • Product development in relation to market segment • Customisation
Coated Board for Liquid Packaging	<ul style="list-style-type: none"> • High standardisation/Market Segment • Logistics and Packaging Systems • Customisation and Customer Value
Smart and Intelligent Packaging	<ul style="list-style-type: none"> • Close cooperation with customers in product development • Customer value/Price for solution • Customisation in relation to new customer categories

Table 4: Core Issues in the Marketing Strategy

Conclusion

From the discussion above it is obvious that management are and will be meeting many challenges due to market dynamics affecting its different market segments. Even if paper is an old product, which can be traced back to the beginning of two thousand years ago, the commercial use for paper was much later and it became more common when paper could be produced in an industrial way. Paper and paper materials have therefore gone through an evolution until today, where new concepts in the form of smart and intelligent packaging materials might create new industries and new end-uses. This will also play an important part in the development of marketing strategies for different product categories.

The marketing strategy is a key issue in the strategic planning for a company and the marketing strategy need to be developed for its existing markets, but also for related and new markets. According to Greenley (1993) a company need to base its marketing strategy on the company mission and objectives, which create basis and strategic framework for the corporate strategy. The marketing strategy is then developed from the company's generic strategy in relation to the actual business area. The concept of smart packaging can also create possibilities for new industries forcing marketing management to re-thinking its prevailing marketing efforts, but also give possibilities for innovation within the area of marketing.

References

- Abbott, R. (2000), "Intelligent Paper Packaging Unwrapped", *Paper Packaging Analyst*, vol.1, no.2, pp.28-35.
- Curley, J. (2001) "Smart Packaging is a Likely Boon for Corrugated", *International Paper Board Industry*, vol. 44, no. 4, pp. 90.
- Chee, H & Harris, R. (1998), *Global Marketing Strategy*, London, Pitman Publishing.
- Czinkota, M, R & Ronkainen, I, A. (1995), *Readings in Global Marketing*, London, Dryden.
- Dean, T, J & Meyer, G, D. (1996), " Industry Environments and New Venture Formations in U.S. Manufacturing: A Conceptual and Empirical Analysis of Demand Determinants", *Journal of Business Venturing 11*, pp.107-132.
- Eggert, A & Ulaga, W. (2002), "Customer Perceived Value: A Substitute for Satisfaction in Business Markets", *Journal of Business & Industrial Marketing*, vol.17, no. 2/3, pp. 107-118.
- Ford, D, et.al. (2002), *The Business Marketing Course. Managing in a Complex Network*, Chichester, Wiley & Sons Ltd.
- Greenley , G, E. (1993), "An Understanding of Marketing Strategy", *European Journal of Marketing*, vol. 23, no. 8, pp. 45-58.
- <http://www.hortnet.co.nz> – April 17th
- <http://www2.tetrapak.com> – April 16th
- Håkansson, H & Snehota, I (1995), *Developing Relationships in Business Networks*, London, Routledge.
- Jerkeman, P. (2000), *Papper en Mänsklig Historia*, Stockholm, Carlsson Bokförlag.
- Johnson, G & Scholes, K. (1999), *Exploring Corporate Strategy*, London, Prentice Hall.
- Karlsson, M. (1997), " Brave New Outlook. Corrugated Board Threatens Plastic". *Packmarknaden*, no. 2, pp. 10-14.
- Karlsson, M. (1997), "Smart Packages for the Future", *Packmarknaden*, no.3, pp. 16-17.
- Lapierre, J. (2000), "Customer-Perceived Value in Industrial Contexts", *Journal of Business & Industrial Marketing*, vol. 15, no. 2/3, pp. 122-140.
- Mautssek, H, ed. (2000), *PPI International Fact & Price Book*, Brusells, Miller Freeman.
- Narver, J, C & Slater, S,F. (1990), "The Effect of a Market Orientation on Business Profitability", *Journal of Marketing*, vol. 54, no. 4, pp. 20-35.

- Nauman, E. (1995), *Creating Customer Value: The Path to Competitive Value*, Cincinnati, Thompson Executive Press.
- Piercy, N. (1990), "Marketing Concepts and Actions: Implementing Marketing-Led Strategic Change", *European Journal of Marketing*, vol. 24, no. 2, pp.24-42.
- Porter, M. (1980), *Competitive Strategy. Techniques for Analyzing Industries and Competitors*, London, The Free Press.
- Porter, M. (1996), "What is Strategy ?" *Harvard Business Review*, November-December. Vol. 96, no.6, pp. 61-78.
- Rundh, B. (2001), *The Strategic Challenge. New Activities in the Paper Supply Chain*, Oslo, 17th IMP Conference in Oslo.
- Sanderson, S, M & Luffman G, A. (1988), " Strategic Planning and Environmental Analysis", *European Journal of Marketing*, vol. 22, no. 2, pp.14-27.
- Slater, S, F. (1996), "The Challenge of Sustaining Competitive Advantage", *Industrial Marketing Management*", (25), pp. 79-86.
- Thorén, A, (2002), "Kartong i Kampen mot Förfalskningar", *Holmen Business Report*, May, pp. 6.
- Tushman, M, L & Anderson, P. (1997), *Managing Strategic Innovation and Change. A Collection of Readings*,
- Valigra, L. (2002), *Smart Tags: Shopping will never be the same*, <http://www.csmonitor.com/duarble/>
- Woodruff, R, B. (1997), "Customer Value: The Next Source of Competitive Advantage", *Journal of the Academy of Marketing Science*, vol. 25, no. 2, pp 139-153.
- Yip, G, S. (1992), *Global Strategy. Managing for Worldwide Competitive Advantage*, Englewood Cliffs, Prentice Hall.