

Customised Information on Packaging – Business Opportunities and Consumer Value

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ABSTRACT

Customised information on packaging could give the consumer a higher product value. Individualised instructions or customised marketing messages based on a customer profile can be an efficient way of increasing the value of a product. Using digital printing it is possible to produce tailored editions of packaging for different regions or separate versions for each supermarket. Theoretically, it is possible to individualise every single packaging. Hence, the use of digital printing makes it possible to offer products in new ways. However, it is necessary to consider carefully the pros and cons. Legal, ethical and economical issues may counterbalance the possible benefits. This paper presents a study, based on qualitative research and interviews with several Swedish companies within the food and the pharmaceutical industries in Sweden. The study highlights many potential benefits of customised information, but at the same time the results indicate that legal, ethical and economical issues are critical factors. The study provides a basis for further research, including end-user usability tests and workflow analysis for producing packaging with customised information.

1. INTRODUCTION

Technological developments within the graphic arts industry provide new opportunities to customise packaging. According to Loutfy (2002), the new business imperative is a move from make-then-sell to sell-then-make. Sarelin (2001) claims that there is a considerable need for personalised packaging for small-scale campaigns in different countries and in different markets. As packaging will be available to an increasing extent in larger markets with different languages and different cultures, Nilsson and Hermansson (2000) claim that the demand for high quality information on packaging will increase.

In order get knowledge about driving forces for using customised information, an investigation of Swedish enterprises are made. In order to give a wide

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perspective on the issue, two lines of business working under fundamentally different conditions are studied. The food industry is competing in stores on a mass market while the pharmaceutical industry is representing another category, where formal demands, security and legal issues are important. High usage of packaging and strong competition between companies, with many of marketing activities, makes packaging and the opportunities for the customisation of information very interesting for the food industry. Each year the Swedish people consumes food (beverages included) at a cost of about 2400 USD per person with food packaging making up 50 % of the cost (1,5 billion USD) of packaging material in Sweden (Dominic, 2000).

Within the pharmaceutical industry, it is very important that the printed information on packaging is 100% correct as wrong information could lead to serious consequences for a patient. The cost of under-dosing, over-dosing and mis-dosing pharmaceutical products in US is estimated to more than 100 billion dollars per year and is a leading cause of death (Valdes, 1998). It is estimated that 106,000 Americans died during 1998 because of adverse drug reactions (Brady, 2001). As people respond individually to different substances and need different dosages, individualised instructions are of crucial importance. Progress in medical research is also making it possible to get individual drug reaction profiles of patients.

The consumer should also be instructed in a convenient way about the use of the pharmaceutical product for different symptoms. According to Rosenblad and Pousette, (1997) pharmaceutical packaging is handled by different users in different environments, which means that there is a diversified need for different designs of packaging. As the number of elderly people in the Western World increases, health care at distance, with a growing need for customised information, is predicted to be a prerequisite for coping with the increased cost of nursing care (Olsmats, 2001).

Digital printing provides new possibilities and new markets for printed matter. The technology implies that a piece of printed matter can be produced at a desired point of time and in the desired quantity (print on demand). As digital printing makes it possible to individualise every single piece of printed matter the theories for one to one marketing and segmentation can be useful for developing interesting business opportunities.

As a product cannot appeal to every buyer it is advantageous to identify market segments and develop products and marketing mixes in order to focus on customers that more likely will buy the products. Hence, segmentation is a compromise between mass marketing and one to one marketing (Kotler, 2001).

According to Kotler (2000), one-to-one marketing can lead to the capturing of market shares, customer retention and improvements to customer satisfaction,

together with an increased return of investment. Using one-to-one marketing, the focus is on each individual customer whereby companies can differentiate not only the products, but the customers as well (Peppers and Rogers, 1993). As stores get information about their customers through affinity cards it would be possible to identify customers who visit the store frequently and differentiate them according to Peppers & Rogers' (1999) segments: *most valuable*-, *most growable*- and *below zero customers*, and according to their purchasing profiles. Theoretically this means that the store could provide valuable information about how the packaging could be designed in order to give the customer added value or to improve campaigns or marketing opportunities. This information can be addressed both to the companies representing the A-brand segment and to their own suppliers of packaging (private brand segment).

An A-brand product is a product that is produced by a company and sold to different stores and companies. Private brand products are products that are produced and sold by the multiple chain stores themselves

Hence, there are many interesting possibilities for customisation and the use of digital printing within the food and pharmaceutical industry. However, it is of crucial importance to understand the driving forces for using customisation for those lines of business, which brings us to the purpose of this paper:

To contribute to the knowledge about driving forces in the customisation of information on packaging

This study is focused mainly on the outer consumer packaging that is used for food products in supermarkets and shops in Sweden. Within the pharmaceutical industry the focus is on the outer packaging that is sold at pharmacies, but the "product packet insert" (text information on a sheet of paper) is also included in the study as it contains most of the instructions. In order to fulfil the purpose the following research question has to be answered:

What are the driving forces for using customised information on packaging within the food and pharmaceutical industry?

2. LINES OF BUSINESS

Food industry

References: PBx = Private brand company x, Ax = A-brand company x, Mx = market company x DPx = producer of dairy product x

The production of agricultural and foodstuff in Sweden was during 2000 worth more than 11 billion USD and the number of everyday commodity shops 2001 was 6268 (Livsmedelssverige, 2003).

Suppliers of food for consumers sell their products to multiple store chains in Sweden and to companies abroad. Many of the products are sold to wholesalers, who in turn sell the products to the stores. In addition, food corresponding to 49 % of food consumed is sold to the food service segment (Wallteg, 2002). Apart from a basic line, each store can choose its own stock and in that way customise their selection of products to local needs (PB1).

Pharmaceutical industry

References: P1 = pharmaceutical company x. PMx = (pharmaceutical) market company x

In 2001, the value of prescribed pharmaceutical products was 2.5 billions USD, the value of medicine sold directly to the hospitals was 410 millions USD and the value of products sold over the counter was 235 millions USD, (Swedish Association of the Pharmaceutical Industry, 2002). In 2002 the number of consumer pharmaceutical products in Sweden was 4443. A further 1150 were imported. After the pharmaceuticals are produced at a production site, they are packed and shipped to different market companies. In Sweden and many other countries the regulations for pharmaceuticals are very strict and all pharmaceuticals have to go through the pharmacy before they can be sold to hospitals or consumers. At any one of the 865 (Apoteket AB, 2002) pharmacies in Sweden, customers can buy their prescribed pharmaceuticals or buy products over the counter, OTC. Apoteket AB (the union of all pharmacies in Sweden) is trying to identify the customers' needs at pharmacies (AP, 2002). For the prescribed pharmaceuticals the physician informs the patient about the product. The pharmacist has a control function and checks that the dosage is realistic (P5). In addition to the information printed on the packaging, each packet must contain a "product packet insert". This gives basic information about the pharmaceutical product, user instructions, different kinds of indications, side effects and active substances. The pharmacies cannot alter this printed material but they can supplement this information with more general brochures (AP, 2002).

3. METHODOLOGY

A qualitative cross-section study based on unstructured interviews was made during 2002 and 2003.

Choice of companies & respondents

Food industry

Among the largest food manufacturers of A-brand products in Sweden (turnover > 55 million USD) four companies have been chosen at random from the database (Affärsdata, www.ad.se). In addition the three largest private brand companies in Sweden (>90% coverage of the Swedish market, Kindvall, 2002), two of the three largest manufacturers of dairy products and one marketing

company without any production units were selected. The division into these different segments was made in order to cover a broader population and to see if additional information would be found. All companies have a turnover of 55 million USD or more. The respondents were marketing managers, product managers or those responsible for packaging, and a common factor for them has been responsibility for, or strong involvement in, marketing and packaging issues.

Company	A1	A2	A3	A4	M1
Position of respondent (s)	Responsible R & D (Formerly marketing manager)	Publicity manager	Marketing manager, Purchasing manager	Marketing manager	Responsible packaging department

Company	DP1	DP2	PB1	PB2	PB3
Position of respondent (s)	Marketing manager	Responsible for packaging, (formerly at the marketing department)	Private brand manger, Responsible packaging	Product manager	Manager for 2 trademarks

Pharmaceutical industry

Five companies with manufacturing sites in Sweden (turnover > 5 million USD) were selected at random from the pharmaceutical industries in Sweden (from the Affärsdata database). The largest pharmaceutical company in Sweden, one small company producing one expensive product, and two marketing companies chosen at random complemented this selection. This additional selection was made in order to cover a larger group of different respondent, in order to get additional information. Two persons (MPA1, MPA2) at the Medical product agency and one person (AP) at Apoteket AB (the union of all pharmacies in Sweden) are also included in the list of respondents.

Company	P1 (largest)	P2	P3	P4	P5
Position of respondent (s)	Resp. Labelling regular affairs, Manager for product development, Employee at packaging department	Marketing manager	Responsible for Packaging Department	Marketing manager	Product manager, Responsible for material

Company	P6	P7 (1 prod.)	PM1	PM2
Position of respondent (s)	Marketing manager, Supply chain manager	Marketing & sales manager	Coordinator regulatory affairs	Packaging & design

Data collection

The study is mainly based on primary sources (respondents at the selected companies and respondent at other important bodies such as the Medical Product Agency). In addition, secondary sources (books, articles, Internet) are used to get information about related research and to collect interesting theories for use in the analysis. For the first five interviews, I visited the respondents at their companies. Unstructured interviews were used in order to find interesting themes to base the subsequent interviews on. The identified themes were information on packaging related to the consumers' needs and retailers requirements, marketing aspects, and limitations. Based on the identified themes supplementary telephone interviews were made. Within the framework of the specified themes, the respondents were free to express their feelings. When necessary, respondents supplemented their information by questioning people in the company. After the interviews follow up phone calls were made whenever something had to be clarified.

4. COLLECTED DATA

The presentation of the data is structured according to the identified themes.

Consumers demands and needs - food industry

Most companies (private + A-brands) do not experience any direct demand from consumers for customised information on packaging. However there could be a need for additional information on packaging in some countries or local markets (A1,A3). In some countries, reading comprehension is poor even in the local language, which means that more symbols (A3) could be used. It would also be useful to highlight important parts of the text, as they can easily be overshadowed by other information (A3). Consumers have a general interest in knowing the origin of food products, which means that it is useful to add the name of the local producer on the packaging for local products (A3). Another example is to offer washing powder, with the local conditions for pH value and hardness being indicated on the packaging (PB3).

Consumer demands and needs - pharmaceutical industry

It is useful to offer products that make it possible for elderly people to stay at home rather than in hospital (P7). Within the pharmaceutical industry, there is a need to educate and inform consumers better (P6). There is usually not enough space to include all information on the "product packet insert" since there are so many instructions (about what you can eat together with the medicine, different side effect etc.) (P5). American pharmaceutical products are often supplied with a great deal of information about all kinds of side effects, in order to be on the safe side with respect to legislation (AP, 2002.) The requirement for information is different for each individual (MP1 (2002). If a person is about to

take a medicine for the first time, he has a different need for information than a person who is familiar with the product (P5, AP, 2002). It might be useful to provide different information depending on the age of the consumer, as the need of information can differ between different age groups (P7). Pictures are seldom needed to inform the customer (P5).

Customers also find the “product packet inserts” boring and hard to read (P1, P5). According to AP 2002 they contain a lot of information that is not always well structured. Some people are also afraid of all the side effects mentioned (PM1). It would be desirable for the texts to be updated as soon as new knowledge about side effects is found.

Patients can find that the “product packet insert” contains too much text to read and that the text is not relevant. This means that the “product packet insert” can be confusing to the patient (MP1, 2002). According to MP1 (2002) the physician’s verbal information can be hard to digest for the patient, especially in a stressful situation at the hospital. Therefore customised information on the packaging or on the “product packet insert” could be valuable for the patients. However physicians have more responsibility than companies to customise information for patients (PM2). If a patient is using a special medicine, it could be valuable to equip him with customised instructions, whereby a carer or nursing staff could read instructions about special conditions for treatment, if he/she should fall ill (P7). P5 think that it would be useful to customise different dosages and consumption times. P2 can see value in making specific packaging for specific companies that like to create a distinctive image. Sometimes packaging needs to be associated with a medicine while at other times it is desirable that the packaging looks neutral. A person might not want to reveal that he is taking a pharmaceutical product (P7).

Apoteket AB has four production sites where pharmaceuticals are customised for individuals or groups of individuals. This business stands for 2-3 % of the sold volume and there is an increasing interest in those products as it is possible to relate certain diseases to a person’s genetic structure. Those products are linked to prescriptions and the physician is responsible to inform the patient about side effects. No ordinary product packet insert, ppi is used for those products. Earlier each pharmacy used their own laboratory to mix pharmaceuticals for different needs but as that is expensive the solution with productions sites anticipated for small series is very interesting (AP, 2003).

Demands from the retailers - food Industry

Earlier, customers of A-brand companies consisted of 4000 stores in Sweden (A4). Now, because of a structural transformation, the customers consist only of the three multiple chain stores, and these large players are putting pressure on the market with the intention of increasing their share of private brands (A3, A4). The multiple chain stores decide what brands to include in their stock (A3).

The A-brand companies see no radical countermoves toward increasing their share of private brand products, besides being ahead and offering better products. One way is to create a new value by releasing products containing new primary products or ingredients, together with new information on the packaging (A1).

For A-brand companies, the possibility of using special stands and signs for marketing in the stores have almost disappeared, as the stores want to use their space more effectively (A2, PB3). This makes it very interesting to design the packaging for the store shelves in order to take over the function of those signs and special stands (A2). Several retailers in other countries are demanding that the names of the products shall be saleable internationally and it can be a problem to find a suitable name, if the same language is used in several countries (A1). With a more flexible solution for printing it would be possible to customise packaging for different stores (A4). There has been no direct demand from the stores but company A4 says that they would most likely be interested in having versions of products designed for their specific shop, and thereby get a unique profile in order to take a position on the market. Company A4 is presently investigating the possibilities with fold out labels designed for local needs.

Demands from the retailers - Pharmaceutical industry

Some countries are demanding very specific solutions, which makes it difficult to meet their requests (P1). P1 has tried to supply unified packaging to certain countries, but now those countries are demanding separate versions (P1). According to P7, in the near future retailers might want their names on the labels. A new demand from Italy is to have serial numbers on a label, which is used by the consumer to get money back from the government (P3). Formerly there were more products with universal English text. Today most countries are introducing packaging with the printed text in their own language (P3). Up to five different languages can be printed on the packaging for prescribed pharmaceuticals.

Marketing - food industry

There is strong and increasing competition between companies in the food industry (A3, M1, A4) especially as competitive products from other countries are also being introduced into Sweden. Strong brands and quality products that the customers will recognise are necessary in order to compete against other companies (A3, DP2, A4). However, the products for different brands often have a comparable quality, which means that the design of the packaging becomes more important in order to differentiate the product (DP2). In addition, new designs often have a major effect on sales (PB1). To make the packaging more appealing to the consumer it would be useful to add target-specific information by a digital printing (A1, A3) and this customisation could be done

at a later phase in the value chain, as you can then be sure that the information is up-to-date (A1,A3).

Packaging should be lively and packaging with a monthly theme and different messages could be useful (A3). Some of the cardboard packaging for perishable products has panel spaces (space on the packaging where text can be replaced frequently) that are changed regularly (DP2, DP1, PB3). To a certain extent, messages are designed for different regional areas, but most messages are the same for the whole country (DP1).

It can be useful to customise packaging for advertising campaigns (A1) and to run the campaigns more often (A3). According to PB1, only the A-brand companies are currently running advertising campaigns, but in the long term, campaigns will also be run for the private brand sector (PB1). It could be useful to provide advertising on the packaging (PB2) or to highlight a special ingredient (A3). It is common to have marketing of other products (cross selling) on the packaging (A1, A2, PB2) and promotion packs and competitions are sometimes made in order to increase the sales (A1). The trend is that companies are demanding smaller and smaller quantities of packaging, as the assortment will change more often in the future (A4). This implies a greater need for faster updating (A4).

The respondents didn't have a lot of examples about customisation, but they said that it is normally very interesting to design information for different groups of consumers (A1, A3, A4). For marketing reasons, it can be useful to emphasise the use of some specific ingredients for special needs (A3). PB2 are working with different private brands for different groups of customers. In that way the selection of products will be designed for a few different target groups.

Marketing - pharmaceutical industry

Today, the cost of developing a new pharmaceutical product is high. There is a lot of research, clinical testing and adaptation to regulations. Formerly, pharmaceutical companies made large profit and they could therefore cope with high costs. Today as competition among companies is increasing there is a great interest in rationalization within the pharmaceutical industry (P7). Formerly, companies were competing with different pharmaceuticals; today companies are increasingly competing with the same type of pharmaceuticals (P1), which means that the importance of brands is getting stronger. When patents expire, new competitors enter the market, and prices are forced downwards (P3). In order to compete against other companies there is a need for attractive packaging and to add more value to products (P2, P5). One trend is that companies are increasingly focusing on colour (P5). Information and education is also a way of competing against other companies (P6). It is difficult for companies to influence the layout of products on the shelves in the pharmacies (P5), which means it is important to have the products clearly marked so that

customers can find them easily (P1). Adding symbols to the packaging could be a good way of making the customers recognise the products better (P1).

The characteristics of the data made it convenient to present the data about limitations under the following headings: economical, logistical, ethical /consumer and legal.

Economical limitations - food industry

All studied companies say that packaging is very price sensitive and in order to introduce new features on packaging, the customer has to be given added value (A1). As the market in Sweden is small, customisation of products could end up increasing the price for the customer (PB1). If there is only a slight improvement in the product, the cost of the packaging should not be too high (A3, DP1). Perishable foodstuffs are particularly price sensitive (especially milk) (DP2). With respect to marketing there are other media (direct mail, advertisement) that are faster and perhaps more economical than information on the packaging (PB3) itself.

New designs for packaging are expensive (PB1, PB2, PB3). It is also costly to create panel spaces for some products, as this involves the work of copywriters and designers (DP1). Panel spaces on packaging are generally difficult to work with, as they are so small (DP1). When changing a design, it is easy to make small mistakes or fail to achieve the desired result, which means that even more changes are needed (A3).

Economical limitations - pharmaceutical industry

It is expensive to make packaging for a niche market, as smaller volumes of packaging (P1) are needed. The production of documentation is also expensive and whenever a product is changed in some way, updating of consumer and production documentation is required (P3).

The price of packaging is sensitive and sometimes 1 cent can mean the difference between making a profit or loss (P2). However, some of the pharmaceutical products are very expensive, which means that the cost of packaging is less important (P3).

Logistical limitations - food industry

More products and more frequent advertising campaigns mean more complex logistics and a higher risk of incorrect shipments (A1, A2, A3). If you don't have the right packaging at the packing stage you will have a stop in the production (A1). For many products it can also be logistically difficult to reach the right customers with the right versions of products, especially as all products are delivered through a central warehouse (DP2, A3). It is easier with perishable foodstuff as these products are often produced locally and sent directly to the stores (DP2).

Distribution and production factors have to be considered before a new product is designed and introduced onto the market (A1,A2). Conflicts between marketing and production departments can easily arise as the marketing department sees the value in having a short, differentiated series, while the production department wants standardised series adapted to production units (A2, A3, P1). Different suppliers of packaging have different ways of optimising the production and quantity required, as well as the choice of colours (DP2).

The market in Sweden is considered too small to have regional versions of products. Nowadays a local approach is uneconomical (DP1). Company A1 feels that the printed quantities would be too small and the cost per unit would be too high. This implies that packaging is often similar for different countries (A2). The broader the variety, the more opportunities there are for in-line printing (printing of information in the production line) (DP1).

Logistical limitations - pharmaceutical industry

An increasing demand for more versions and small volumes can be critical for logistics, production and stock keeping (P2). Texts from marketing companies in other countries are often sent in very late (P6) and it is common to have a last minute panic at the production site (P5, PM1). Problems with supplying the market fast with products could mean that new market shares in a country are not taken up fast enough, which is desirable to some extent since in the early stages small markets return a small profit (P2). There is also a big difference between texts from different companies, as many companies do not have an office in Sweden. In many cases the companies do not have the necessary competence to produce good texts, which makes it difficult for consumers to understand the information (MP1, 2002). The capacity to add information to packaging is limited because of the small amount of space available, with the packaging being used primarily to identify the pharmaceutical product (MP1, 2002).

For production purposes, it would be ideal to have a limited number of standardised packaging options that all countries could use (P1). P3 thinks that it would be a nightmare if products were customised, as they would get 100,000 pharmaceutical products instead of 500. The set-up time for production facilities is seldom less than 7.5 hours and according to the regulations everything has to be cleaned, even if exactly the same product is produced afterwards, but is used for a different unit number and packaging (P3).

Almost all respondents think that the volume of packaging required is very variable. Generally, companies are trying to avoid holding large stocks of packaging, but in order to gain large-scale advantages, large volumes have to be ordered (P2). Up to 200,000 units can be ordered at one time (P3). For

economical reasons the minimum packaging order is around 5000 units (P1, P3, P6, PM1). The trend is to order shorter and shorter runs (P5).

When making an in-line print you must keep an eye on printed packaging. Computer systems have been criticised for making it too easy for someone to change the content of a database. It is then not possible to check all the packaging subsequently (P7).

Consumer / ethical limitations - food industry

Companies could not provide much information about ethical issues, apart from the importance of an environmental friendly profile and having 100% correct information on the packaging (A4, PB1, PB2, PB3). Companies that try to mislead consumers will only get a bad reputation (A4). It is important not to re-design too often, as customers must be able recognise products on the shelves (A3, PB1). Important information may be missing since ethical issues will probably arise if packaging is aimed at specific customers.

Consumer / ethical - pharmaceutical industry

The respondents had few comments to make on ethical issues. After the legal considerations there is not much left concerning additional ethical aspects (P1). However, if some consumers do not want to reveal their need for medicine it is important to respect this (P7). AP (2002) claims that it is important to protect personal integrity. In some other countries the use of pictures and symbols is less restricted, which can be good from the marketing department's point of view. However, there is a risk that important information will be less visible if pictures for marketing purposes are printed on the packaging (P1). It is important to consider the customer's need to recognise the product, which means that the packaging design should not be updated too often (P2).

Legal limitations - food industry

Food legislation is common for all countries within the European Union (EU). The marking must not mislead the consumer, especially regarding the characteristics of the product, and the quality, quantity, origin, and production method. The product cannot be ascribed characteristics that it does not have. In general the marking must not contain any statements that the product will treat or cure illness. The information must be printed on the packaging or on a label attached to the packaging. The information must be easy to understand, clearly visible, readable, and permanent. Information about the product designation, net quantity, use-by date or expiry date and alcoholic content must be displayed in the same field (National Food Administration, 1993).

Legal limitations - pharmaceutical industry

Within the EU, Council directive 92/27/ECC forms the basis of the legal issues concerning the design of packaging. Instructions about the storage and declaration of additives are the most important guidelines derived from this

directive (P1). Pharmaceutical products that are approved by the EU may not be approved in other countries because of national regulations (P1). All marking on the packaging has to be approved by the Medical Products Agency (P1). Every time the packaging is changed it has to be re-approved (MP1, 2002). The design is strictly controlled and pictures are normally not allowed (P1, P2, P5). This is to ensure that the packaging for pharmaceutical products is simple and plain. The packaging must not be used for marketing (MP1, 2002).

The following information is required on the packaging: name of the pharmaceutical product, strength, batch number and expiry date, preparation of drug, address of the company selling the product, full dosage instructions (for OTC products) (P1). Pictures are permitted (both on the “product packet insert” and on the packaging) for explanations, as long as they are not there just to improve the appearance. (MP1, 2002). The “product packet insert” is based on a product summary and it would not therefore be possible to provide separate versions for each instruction (MP2 2002).

Updating takes time because of bureaucracy (P7). The fact that it can take six to twelve months to have a change approved, limits the possibility of making rapid changes to information on packaging (P2, P7). It is common for companies to make different pharmaceutical products with different strengths, but for each strength to be counted as a product in its own right (MP1, 2002).

As the producer of a pharmaceutical product is responsible for the product and the printed information, packaging information cannot be added later at the pharmacy (P5). According to AP (2002) pharmacies cannot take responsibilities for this. What happens if they forget to inform the patient about a side effect? The staff at the pharmacy do not always know what symptom the pharmaceutical is designed to treat, which may be due to the patient’s unwillingness to reveal his illness or the fact that the doctor has failed to make a proper record in writing. The “product packet insert” must be added to the packaging by the producer. There could be a safety risk if this information is provided by pharmacies (MP2, 2002).

5. ANALYSIS

There is a strong competition between companies within the food industry, and the importance of a strong brand and a high quality product is great. However, in order to compete, the design and the information on the packaging are also critical factors, especially as the quality of the products for different brands are comparable today. In general the companies are showing a large interest in the possibilities with tailored information and the findings indicate that customised information could be a way to get a position on the market.

The multiple chain stores are controlling how products are exposed in the stores and the possibility to use signs and special stands is decreasing. The multiple chain stores are also demanding more product releases and activities from the A-brand companies in order to accept a brand in the assortment. This means that A-brand companies in a larger extent have to use the packaging as their communication channel and find ways to fulfil the demands from the multiple chain stores. Adding a customised print can be a way to provide an attractive product.

The characteristics of the collected data made it convenient to introduce three levels of customisation: *Customisation for an individual*, *customisation for a group of individuals with the same characteristics* and *Customisation for a geographical area*.

For the first level, the theory of one-to-one marketing can be applied. However when it's not possible or useful to customise information for each individual it could be advantageous to customise information for different consumer segments and, according to Kotler (2001), focus on customers that more likely will buy the products. Due to differences in logistics it was suitable to introduce two categories of segments: groups of people with the same characteristics and geographical areas (country, region, store or pharmacy).

Customisation for an individual

According to this investigation, customisation of information for individuals or one-to-one marketing, with packaging as information channel, is a rather unfamiliar concept for the food industry where products are sold in stores. However as the stores today are collecting information about the customers' buying patterns through affinity cards the customers could be divided into different segment and thereafter offered customised information. However, as the customer has to be identified before an offer can be individualised, customised information on food packaging would be more suitable for products delivered to the customer's home then for products sold in stores. Theoretically, one possibility to customise information in a store would be to attach a label on the packaging or to use some kind of "intelligent packaging", with possibilities to change the information on an integrated display. This would most likely be very expensive, but as the technology is developing and prices are decreasing, research within this area becomes very interesting.

According to my findings, 2-3 % of the pharmaceuticals sold in Sweden are customised for small segments or individuals and those pharmaceuticals are packed in standard packaging, without any "product packet insert". This together with the bad statistics concerning the number of deaths due to over- and under- and mis-dosings makes it very interesting to complement the physician's prescription with easily digested instructions, customised and printed for the consumer or for an assisting person. Generally more instructions are needed if

the consumer is a first time user. Hence potential benefits for the consumer can be achieved through customisation of user instructions. From a marketing department's point of view this opportunity can also be a unique way of establishing a position on the market. It would however be interesting to clearly verify those statements by end-user usability tests and by detail investigate how this could be done.

Customisation for a group of individuals with the same characteristics

The respondents did not have a lot of concrete cases or ideas about customisation for different segments but in general they meant that it would be very interesting to anticipate information for different groups of consumers. Since the stores possess data that could be used to segment buyers, valuable information can be addressed both to the companies representing the A-brand segment and to their own suppliers of packaging (private brand segment).

In order to customise a product for different groups of customers, relevant information about news or a special ingredient can be added. Customised pictures for different customer segments could be very interesting since the customer in a shop is spending more than half of his time looking at pictures (Clement, Sørensen, 2002). Hence this indicates that customisation of appealing pictures for different customer segments would give a market value.

Within the pharmaceutical industry it is of interest to customise the design of the packaging depending on the patient's demand for a neutral packaging (that is not revealing his/her illness) or for a packaging that is recognizable and associated with the medicine. This indicates that customisation would give the consumer an added value.

Customisation for a geographical area

Among the investigated companies within the food industry it is not very common to make regional versions of packaging, but they are showing an interest for the possibilities. The results indicate that the stores have not had any direct demand for customised products, but they would likely be interested to have versions of products anticipated for their specific shop if the possibility would be offered.

My findings also indicate that customers generally have an interest in knowing the origin of food products. Since a lot of people have confidence in local producers, the name or picture of the local producer on the packaging could give an increased consumer and market value.

The product's impact on the consumer is depending on the positioning in the store and the use of displays and signs (Clement, Sørensen, 2002). A customer only spots 33% of the packaging on the shelves, according to an American study (Clement, Sørensen, 2002). This together with the increasing competition

between companies and the demand from the multiple chain stores implies that there is a need for making the packaging more visible to the consumers. Customisation of the packaging according to the conditions for exposure would therefore be interesting. The print on the packaging could theoretically be adapted to specific light conditions and to the general design in the store. As the perception of a colour is dependent on the light source (Johansson, Lundberg, Ryberg, 1998) a daring scenario could be to adapt the print on a packaging to the light source used in a frozen-food display. Customisation of the packaging design, according to the conditions in the store, could accordingly provide a market value but more research is needed to verify this statement.

Within both lines of business my finding indicates that there is a need for information customised for different languages and the ability to read, especially as important text can drown in other information. Within the food industry customisation of the product names for different countries can be necessary as the retailers are demanding saleable names on the products.

Limitations - food industry

According to Feurst (1999) the most important driving force, regarding the possibility to apply a one to one marketing system is the development and distribution of information technology. Hence one to one marketing is mainly focused on the use of Internet or other addressed channels and is therefore not very convenient for customising packaging in a store, especially as the customer has to be identified before the customisation.

Design is important for effective visual communication (Clement, Sørensen, 2001) whereby copywriters and designers often are involved in the design phase of a packaging. If the volume of packaging is small the cost per piece for this design phase would be high. Since packaging for the food industry is very price sensitive this is limiting the possibilities to customise information (since smaller volumes is a consequence of customisation).

When the number of different versions of packaging increases, the printed volumes of each version will normally get smaller. This implies that the cost per piece increases, especially when conventional printing technology is used and new printing forms have to be created for each version. My findings also show that more versions of a packaging can increase the risk for stops in the production and make the logistics more complex. Since the products generally (perishable food stuff is one exception) are sent to a central warehouse it could be difficult to reach the correct receiver if the packaging is customised for different stores or customer segments. These consequences of having more versions indicate that customisation of information targeted to segments of customers could be expensive and accordingly extremely expensive if one to one marketing would be applied. Most of the respondents concur that the Swedish market is too small for making regional versions of products.

Within the food industry, no special ethical aspects can be highlighted from the collected data besides that it is important to provide true information on the packaging. Regulations are setting rules for how information on a packaging can be designed, which could make the designer's task more difficult or time consuming. Otherwise the legal aspects are not that critical within the food industry.

Limitations - pharmaceutical industry

According to my findings it is difficult for the pharmaceutical companies to produce small volumes because of logistics and production related issues. As consumer documents and production documents need to be updated every time a new product is to be produced, small volumes would be expensive. To get large-scale advantages, most of the companies are ordering lots of no less than 5000 pieces of packaging, which can be seen as an economical factor setting a limit for the minimum size of different segments of customers.

The same logistical problems (as in the food industry) about reaching the right customers will also arise for the pharmaceutical companies if packaging would be customised. However this seems to be valid only for large companies with large production sites, since there exist production sites where individualised pharmaceuticals are produced. Further research on workflow analysis of these "small scale" production units would be very interesting as the benefits of customising information for the consumers within this line of business is very high. However there is a need for further investigations of how the end-users understand the information given by the physicians and how complementary written information is understood. As the available space on packaging for pharmaceuticals is small, most of the information has to be attached in some other way. Hence both logistical and economical issues are critical factors for customisation.

As the companies, due to logistics and economical reasons, find it hard to customise products, it would be interesting to customise the information later in the value chain at the pharmacies. However, according to the law, the producers are responsible for their products and the attached information, which means that the pharmacies are not allowed to insert any additional information customised for a special need. This implies that the end user can get a "product packet insert" with a long list of indigestible information, but only a few relevant sentences. Another limiting factor for customising information is the time-consuming approval process at the Medical Product Agency, especially as every single change of the written information has to be approved. Hence legal issues are limiting the possibilities to customise information at the pharmacies, which means that it is only up to the physician to customise the prescriptions.

Personal integrity has to be considered carefully before a product is customised and it is important to consider that significant information can become less visible if pictures are used for marketing (which is allowed in some countries). Hence ethical issues can also be a critical factor that has to be considered before information is customised.

My findings show that the price on packaging is very sensitive but within the pharmaceutical industry the products are rather expensive. This implies that it is generally easier to motivate a higher cost due to customisation within the pharmaceutical industry than within the food industry.

6. DISCUSSION

As shown by the analysis this study highlights potential benefits and limitations using customised information on packaging. However more research is needed in order to weigh the potential benefit against the limitations and costs in order to find realistic business cases. It is important to emphasise that the printed information on the packaging is only one media for affecting a customer. The smell, the sound and the touch of the product as well as other channels of information are also stimulating the customer (Clement, Sorensen, 2002).

In digital printing the trend is toward better print quality and lower cost per printed copy. This together with the possibilities to individualise every printed product makes it very interesting to investigate how the production and logistics system should be designed in order to create relevant business opportunities. Dante, Karles and Basak (2000) mean that it is important to realise that some of the information is fixed among all packages whereby only some parts are interesting to customise. If hybrid printing (conventional printing technology combined with digital printing) is used, large-scale advantages can be combined with the possibility to individualise the additional parts that are not fixed. The potential value of a printed packaging is in a high degree dependent on the print quality, which also highlights, especially if a more complex system for hybrid printing is used, the importance to focus on activities such as test printing.

For both lines of business the results concerning logistics and production related issues are most likely not depending on the location of the production site, whereby those results should be representative for other countries as well. In countries where regulations and sales channels are comparable with the Swedish conditions the general results regarding the pharmaceutical industry should be representative. Regarding other lines of business the health food industry have similarities with the pharmaceutical industry, even if the regulations for the latter are stricter.

The analysis shows that the driving forces for using customised information on packaging (including the “product packet insert”) in general are the increasing

competition between companies, the higher demands from the retailers and the possibilities to give the customer an added value. Hence the driving forces can be summarised as the *potential possibilities for an increase in market value and consumer value*. The use of customised information on packaging can be an interesting way to get a position on the market. Figure 1 is showing in more detail how consumer and market value could be achieved. As shown in the figure a consumer value also corresponds to a market value while a market value not necessarily corresponds to a consumer value.

<p><i>Customisation for individuals</i> Pharmaceutical: instructions aimed at patients and assistants → consumer & market value</p> <p><i>Customisation for groups of individual with the same characteristics:</i> Food: differentiation of information / pictures on packaging → market value Pharmaceutical: differentiation according to the patient's sensitivity to reveal his/her need for pharmaceuticals → consumer value, market value</p> <p><i>Customisation for a geographical area:</i> Food: anticipation of languages, tailoring according to the ability to read and according to the origin of local products → consumer value, market value Saleable product names → market value Conditions in the store → market value Pharmaceutical: language → consumer value, market value Name of retailer → market value</p>
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Figure 1. Driving forces for using customised information on packaging

However, according to the analysis, economical, logistical, ethical, and legal factors are limiting the potential possibilities (see figure 2 and 3).

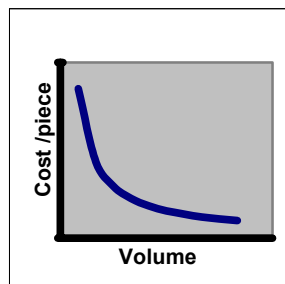


Figure 2 Costs/piece

When the printed volumes are getting smaller, due to customisation, the production costs/piece, the design costs/piece and the costs for logistics/piece are increasing. The use of digital printing could however lower the production costs since there is no start up costs for a print form. It could also be possible to change the costs for the logistics if the customisation task is performed by a digital print at the local market. The cost for design is however not affected by the use of digital printing, whereby that limitation remains even if digital printing is used.

- The logistics gets more complex
 - when the number of versions increases
 - as products are passing through a central warehouse (Difficulties to reach the right customer)
 - especially for the large production sites of pharmaceuticals (production documentation)
- In order to gain large-scale advantages lots > 5000 pieces are ordered (pharmaceutical industry)
- Packaging for food is very price sensitive
- One to one marketing is still a challenge for packaging in stores
- The processing at the authorities for approval of pharmaceuticals is long (every single change has to be approved).
- The producer's responsibility for his product is limiting the possibilities for customisation of information later in the value chain, at the pharmacies.
- Personal integrity has to be considered carefully (pharmaceutical industry)

Figure 3. Limiting factors for using customised information on packaging

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