Openability of Tamperproof Packaging

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ABSTRACT

Communication, product protection and presentation are three key aspects in the world of packaging nowadays. Due to a retail landscape consisting of large stores, displaying packed products on the shelves in self-service environments, these aspects become increasingly important, not only for Fast Moving Consumer Goods, but for consumer durables as well. In the communication aspect, the package delivers a promise to the customer contained in the package, but the package itself is part of this promise, creating expectation to be fulfilled when reaching for the product, the importance opportunity of this brief moment is shown throughout this paper.

However, selling expensive consumer durables in self-service retail environments also brings with it the need for tamperproof packaging. The objective of tamperproof packaging is to prevent opening of the packaging by shoppers while in the store, in order to prevent theft or damage. However, tamperproof packaging makes it also difficult for the legitimate buyer to get to his new purchase. This conflict with the positive message the packaging tries to communicate.
The purpose of this paper is to present a description of the process aimed to reach a real solution in this design dilemma, based on literature research, consumer research (Unpacking experiments), identifying general concerns and needs of consumers. These serve as a base for the development of a proposal that leads to a proven, better user-experience in packaging openability and product perception, while maintaining tamperproofness in the store. Throughout this paper the iconic 3-Headed electrical shavers of Royal Philips Electronics, which is nowadays packed in tamperproof blisters, will serve for the analysis and development process.

Keywords: Unpacking Experience, blister packaging, clamshell, consumer perception, packaging

1. Introduction.

Consumers’ packaging choice is generally assumed to be a purely economic decision, made by balancing expected costs and benefits (convenience, aesthetics and price) (Thøgersen, 1999). As Marzano (2006) also comments: “Packaging plays a crucial role in persuading consumer to buy; this is particularly true in American hypermarkets, where consumers make a choice purely based on the packaging and unaided by sales personnel. Approximately 80% of all consumer electronics products in the US are sold this way - which is why packaging is also referred to as the ‘silent salesman’”. After they have made their decision, consumers buy and unpack their products (usually in their home environment or right after making the purchase), and it is in this brief moment when they take the products out of the package and embrace them as a part of their lives. Studies show that, positive impressions of a brand will not last if the package is not user friendly and functional when the user brings it home (Lofgren & Witell, 2005).

In the world of consumer electronics, and especially in the area of men’s shavers, which faces fierce competition, companies try to get as much possible attention from the customer. However, consumers relate emotionally not to actual, factual (realities) of the product packages, but to their “perceived” reality (Stern 1981), making the packaging where the product is contained to deliver a “promise” to the one who buys or receives the product contained in it. Meaning that consumers use products to express their (ideal) self image to themselves and to others (Belk, 1988; Landon 1974). This Promise is represented in the package, since it is the first image the potential buyer perceives, but the actual start-up of the
promise may be first found through other stimuli such as the use of publicity and commercial advertisement. The idea of a Promise means that the person who buys or receives a product will experience and improvement is his living standard. It is even more noticeable with a product as men’s shavers, because it is related to beauty and the external image the man projects to the world. The promise in this case can be seen not in the result of the quality of the shave or the tenderness of the skin after shave; but in the improvement of the person’s life, by making him more attractive to females, admired in his work, respected.

As a first step, it is important to understand what is the customer’s relationship between the perception of quality and the packaging itself; this theory is based from the studies of Noriaki Kano (1984), who formulates a correlation between the two aspects of quality, objective and subjective. This study is further applied to the consumer’s perception of quality regarding packaging design, a study conducted by (Lofgren and Witell 2005).

Secondly, it is important to define what is meant by Unpacking Experience (UE). This will help us to make a definition which can be applied to packaging in general. Having established the base of a definition, the idea of the Unpacking Experience theory is presented, this will be the Hypothesis to be demonstrated in following experiments, in which a number of participants (N=25) opened a series of shaver packaging’s. The results and further analysis will demonstrate that a positive Unpacking Experience can improve the consumers overall perception of the product, as it has been realized that the Unpacking Experience is but a single act in the total brand experience. And it is concluded that it is the first step to draw the consumer closer to the actual product (Wever, Del Castillo; 2006).

Taking the results into consideration, a new alternative to unpack blisters that still complies with store regulations is proposed and further evaluated by a group of participants (N=6, new and old participants panel).

Finally, this paper ends with a series of conclusions and recommendations not only to the shaver industry, but to products that are packed using blister packaging in general to be this, the start of a discussion and what the usefulness of the UE theory is and its future applications that can be useful for both management teams, marketing and packaging designers.
2. Theory of attractive Quality and Packaging

It is important to take the idea of quality from a consumer’s point of view, because he/she will be the one that makes the buying decision and will be the one that judges the quality of the product/service. Quality is defined in different categories, based on the relationship between the physical fulfillment of a quality attribute on a product and the perceived satisfaction of that product (Lofgren Witell; 2005). This perception of quality is stated to be dynamic, in time, moving from being a satisfier into a desatisfier. Kano has classified the perceived quality into 5 categories:

1. Attractive quality: Gives satisfaction when fulfilled and even when it’s not fulfilled.
2. Must-be quality: Results in satisfaction when fulfilled and dissatisfaction when not fulfilled.
3. Reverse Quality: Results in dissatisfaction when fulfilled and in satisfaction when not fulfilled.
4. One dimensional quality: Results in satisfaction when fulfilled and dissatisfies when not.
5. Indifferent quality: Element which neither ends in satisfaction nor dissatisfaction regardless if fulfilled or not fulfilled.

Graph 1 show the representation of the 5 categories, where they are measured in customer satisfaction towards the product and the degree of achievement or satisfaction.
In a later study Lofgren and Witell (2005), use Kano’s approach to determine the consumers perception of quality related to packaging. They followed Kano’s method and proposed that, a product (or an offer) can be divided into 3 entities:

- **Ergonomic**: Adaptations to human physique and behavior when using the product.
- **Technical**: The product (package) technical function and construction
- **Communicative**: The products ability to communicate with humans (transmitting a message and the products adaptation to human perception and intellect)

Their study, demonstrated that quality does not work in a one-dimensional construct, but works in different levels. This can help companies that develop packaging, in order to understand how customers perceive products. Afterwards, results are clustered and then a better understanding of consumer needs and expectations is realized. It is important to remember that the packagings used for the study were Fast Moving Consumer Goods, which differ from the durables, in this case, an electric shaver.

The usefulness of this combination of methods in regards to the Unpacking Experience research lies in the fact that, the 3 types of quality can be similarly used to understand the consumers’ point of view of the actual shavers’ blisters. Graph 1 helps to understand different perceptions of quality, and finally, a simpler interview structure is useful to obtain faster and more precise results in the problem area the blister packaging represents.

### 3. Defining the Unpacking Experience

After understanding some of the previous work being done in the field, in this point it is essential to define what actually Unpacking Experience is. There is no definition for the whole phrase, then, the two words have to be defined individually (Vroom & Muller, 2005).

**Unpacking**: to take the contents out of something or to reveal what is hidden, buried, or encoded within something

**Experience**: knowledge acquired through the senses rather than through abstract reasoning or something that happens to somebody, or an event that somebody is involved in

From this set of definitions, it helps to get an idea of what Unpacking Experience is, but still, it was noticed that a definition that unites both terms and is focused specifically for packaging
was needed. After elaborating mindmaps and correcting the content terms, a final definition was made:

**Unpacking Experience** can be defined as the ritual, or series of physical and mental actions that are aimed to bring an object or a product into a useful life.

This ritual or process involves the knowledge gained from an observed or experienced reality in every individual past, or by learning from other person’s experiences. It also includes a series of mental (intangible) associations and physical (tangible) actions that develop in every individual in a unique way. The end result of this ritual (outcome) is a connection to the object, which depending on the process and the mental associations and physical actions can bring the person that performs the act closer and more attached to the product or on the contrary more distant and disconnected from it.

4. **The Unpacking Experience theory.**

Having a definition of what Unpacking Experience is, graph 2 shows the main idea in the theoretical area that easily explains the Unpacking Experience theory. On the left hand side, the graph begins in the time line (X-axis) showing how the consumer is informed by the means of publicity and advertisement. As time passes by, the expectation level towards the product (Y-axis) increases, creating an idea of life improvement when purchasing this product, nevertheless, male consumers are not the only target group that buys this type of products. Women, in the other hand give electrical shavers to their spouses (Husbands, boyfriends and sons). The exact percentage is proprietary information, but it is substantial.

When the person either buys or receives the package, the expectation level is at its highest, right after this moment is when they have to figure out the best way to open the blister package; as stated in the package, when consumers are not able to open the package, and they are struggling to get the contents out from the blister, they start a destructive process against the package “Destructive Process” or also called “Wrap Rage”. This is an American term, which explains the feeling consumers have when they are unable to open a package, regardless if it’s packed in blister or in any other packaging style.

At last, when the consumer reaches for the product (in this case the Shaver), their expectation arises because of the product itself, but not because of the package, and in the end the use will define the satisfaction in the product.
The aim of the project (explained in the green line) is that by making a more pleasant and easy-to-understand Unpacking Experience, their expectation towards the product will remain, or at least kept constant or even be increased by the package itself, and the packaging will not turn into an obstacle to reach for the product, but as an experience where they will value the protection given to their purchased object thus enhancing the overall product perception.

5. The Unpacking research

In order to prove the theory of the Unpacking Experience, a panel of (N=25) participants were asked to open 3 different models of real Philips Shaver products. (See Table 1 to see details of the participants). Looking in the table, we can observe that women are also part of the research; the reason for this, as stated before is because women buy shavers as gifts for their spouses or companions. Allowing the panel to experience a real Unpacking session, or as real as possible, is a valid concept. Kanis (1988) states that: “Trialing can be seen as an obvious way to enable designers to accommodate prospective user activities in everyday product design, rather than descriptive or experimental research producing isolated data in terms of human characteristics” The interviews were held either in the participant’s homes or in a lab where a house environment was created. Consumers usually open their products as soon as they exit the shops or in their homes, where they have the tools (knife, scissors,
hands, teeth, etc.) To open such products, which in this case were either available in the participants' homes or provided during the interview. The participants allowed to be filmed using a small video-camera not to bias their thoughts or attention. According to Freudenthal and Mook (2003), data from the user trials on videotape can be linked to the relevant parts in a way which gives designers clues about how to improve the design. The interviews were divided in two sections. In the first one, the participants were asked to open low-price Consumer products packed in clamshell packaging (For more details refer to Wever, Del Castillo 2006). In the second section, they were asked to open a new and unpacked a Philips shaver by think out loud (describing with spoken words their actions and feelings, either positive or negative) during all the given tasks (Wever, Del Castillo 2006). After opening the blister, the participants had to take out the contents inside the blister and turn ON and OFF the shaver, which marked the end of the experiment. Finally, a series of questions related to the three perceptions of quality stated in the study of Lofgren & Witell (2006). Ergonomic, Technical and Communication issues were asked in order to recall their thoughts on the Unpacking process.

By closely observing the videos of each interview it was possible define a series of general requirements regarding quality, openability and additional issues (smell, appearance, recyclability, etc) the consumer has towards this type of packaging. Graph 3, shows from top to bottom the most important matters related to blister packaging from the consumer's point of view.

There are 3 categories (Y-axis) in which

<table>
<thead>
<tr>
<th>Number of participants</th>
<th>25</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>18</td>
</tr>
<tr>
<td>Female</td>
<td>7</td>
</tr>
<tr>
<td>Nationalities</td>
<td>9</td>
</tr>
<tr>
<td>Design related</td>
<td>15</td>
</tr>
<tr>
<td>Non-Design Related</td>
<td>10</td>
</tr>
</tbody>
</table>

Table 1. Participants information

Graph 3. Levels of Unpacking importance
the answers of the interviews were classified, they range from the aspects that the possible
customers could see as attractive in creating a better Unpacking Experience until the things
the customer demands and expect as minimum requirements in a package. The classification
was based in the amount of times events happened, and the emphasis that the participants
had when they made their comments. In the X-axis, the level of achievement is measured, By
level of achievement it is meant how well or not the performance of each item should be, it is
graded from -10 until +10 because of the subjective value people give to every single
category. This is the reason why some items differ in scoring from others. As an example,
people do not expect to get cut while opening the blister, (no self cuts) so this is a minimum
openability requirement and that’s why it scores on 0 if it doesn’t occur and -7 if it does
happen.
The scoring for the 3 shaver models studied also depended on the close observation of the
videos, and the amount of times participants commented on some key aspects (easy
opening, instructions, etc).

6. Findings

Some of the most important conclusions drawn from this series of Unpacking interviews and
by repeatedly observing the recordings were:
- Participants were concerned in taking out the product, once they have it; the package goes
to a second place.
- The participant’s perception of the price of the product compared to the package is
opposite. The product was perceived as a high quality object, and the package is seen
generally as a cheap way to pack such product.
- Participants felt irritated at some point by the fact that no clues were offered on how to open
the clamshell, this provoked in them “wrap rage”.
- 2 participants sustained minor cuts when trying to reach for the product and others (12)
expressed in some way the discomforting feeling that they were afraid of scratching or cutting
themselves on the blister material. This reduces people’s experience by giving them a
negative feeling even before holding the product. (Wever, Del Castillo, 2006)
- In general, participants did not want to make any profound analysis on how to get to the
shaver, in this point they’d rather be guided
- Environmental awareness is growing among consumers (recyclability, reuse and a smaller
packaging size, disposal among other issues) and it can be a very good advantage for
companies or designers to build upon this consumer needs. Other studies have found similar results. Other authors (Ackerman, 1997; Bech-Larsen, 1996) have concluded equally that in recent decade's environmental consequences of packaging consumption, and particularly the amount of household waste it leads to, has become the focus of political and public attention.

The most important conclusion from this series of experiments is that the participants and customers in general have the basic need to be guided or assisted by the package itself to be able on how to open it, they want to reach for the product at first, and then they are interested in the other contents.

7. Design Proposition

Having a clear idea of what is that customers look for when Unpacking products in blister containers, it is more feasible to make designs that correspond with the results from the interviews, thus changing the traditional scope from designs where the user has to adapt to the design into one where it is user-based designed.

The problem of openability in blister packaging was divided in two parts so it would be even better to solve the requirements from the customers. Openability alternatives and Presentation alternatives, the first deals with how the consumers are able to open a package using a single tool (Scissors) and in a single action. The decision of using scissors and not permitting the customer open it with bare hands was because of the nature and main function of blisters themselves, to prevent occasional stealing in department stores and to ensure the hygiene of the product to be sold.

In regards to the Presentation alternatives, the solutions were focused on how to create an experience for the customer to be even more excited to get to open the package and continue the expectation level created prior to the purchase. Creating “experiences” has been a topic widely studied in the past. Pine and Gilmore (1999), name the term experientializing,
Which is to design a good in order to enhance the users’ experience, and in the specific case for packaging, experientializing means creating Unpacking Experience for the product. (Wever, Del Castillo, 2006) A good example of the different roads that the Unpacking Experience can take place is explained in detail by Wever, Del Castillo (2006), where the Packaging experience tree is explained. In there, it is possible to see and plan different alternatives when an Unpacking Experience is to be created, and this is important for companies or designers to take into account when designing packaging.

To solve the openability issues of the blister package, it was important to be constantly aware of the customer, retailer and company requirements, forgetting or omitting one of them would create a case where for instance packaging maybe was too complex or too costly to manufacture but would create a unique user experience. The most important requirement for this study was that the package must be tamperproof at all times, forcing the user to have a pair of scissors to cut through the clamshell when opening. 3 Different opening styles were developed, and after testing the best angles for opening the blister (See image 2), the concept of Cut and Pull was the most favorable one.

The design marked with a red line and two scissors where to cut. Once the first cut was made, the user pulled the non-sealed area, starting to pull the rest of the blister. Some previous made perforations in the top blister allowed the opening process to be consistent enough to make the whole Unpacking session a series of continuous acts and not interrupted ones as with the actual package. The package remained sealed at all times, and even though only demonstration prototypes were made, the company members agreed on the effectiveness of the design.
Details of the final solution are not to be described in this paper, due to confidentiality requirements from the company, however. Some external appearance of the cardboard packaging is seen in image 1 and a brief overview of the internal appearance of the blister in image 3. The new design alternative took in considerations the most relevant requirements from the three stakeholders (Users, Company and retail stores), and the final design was tested using the same model as in the first round of interviews.

8. Final Results and Implications

To test the new design, a new Unpacking session took place. A smaller group of participants were used (N=6). From this group, half of them had already participated in the first Unpacking session and the others were introduced as this being the actual package. Based on the results of the sessions the most important remarks are:

- The presentation alternative allowed them to focus their attention on the most important features of the shaver, in this case, the 3 head design.
- The graphic style also permitted a clearer reading and understanding of the benefits the product offered. In this case the participants understood the message that follows the company slogan of Sense and Simplicity.
- The indications for opening the blister were clear for all the participants and by means of the graphic symbols; they did not hesitated when making the decision of which tool to use and the right place to cut.
- The participants from the first session did notice the improvements and felt “guided” through the experience because of the indications. The new participants felt that a better prototype was required; however they recognized the intention of the Unpacking Experience.
- The shaver, which is the most important element that is in the package, came out always at first or it was stated that it would be the first object to be taken out.
- Some ergonomic problems were presented due to the handling of the package. Several participants had to manipulate the blister in different manners in order to get the right grip and the right cutting position.
- Most importantly, the participants did not feel or expressed the idea of hurting or cutting themselves while opening the package, which is already the biggest achievement of the design.

- The use of such few participants could generate a deviation in the results, as a recommendation, it is suggested to build in first place a better quality prototype, so the users have the idea they are interacting with a real package and second, using more participants to make sure that the results are reliable.

To create an Unpacking Experience is important to balance the needs of all the involved parts. Companies that manufacture this type of packaging should invite to customers through the design process for creating better user experiences in the products or packages that reach the market. It is clear that packages are one of the most annoying experiences for customers; this is because the companies think in how to protect themselves and forget that the product will be used, experienced and enjoyed by a person which will hopefully be loyal to the brand.

At the moment other companies are already developing solutions for better openability in packaging, realizing that this is a big opportunity to create experiences in users and to enhance the overall product experience and perception. Two examples that are available in the market are Natralock, which creates a paper-sealed area and in the middle they encapsulate products in a blister bubble. And finally, Stora-Enso, Sandberg, (2006), a company which developed a system to open packaging’s by means of electricity; a small electrical current is passed in the cash register through the “blister” and then the user is able to open smoothly the product.

Based on the results of this study we show that by considering the needs of the consumers we can create better products. In the same line, we recommend that companies, designers, marketers understand better the needs of the people for whom they are designing for.

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