The Influence of Neuromarketing on Product Development

Using the Example of Packaging Design

By: **Dr. Hedda Martina Šola**

Today's business and market conditions impose the need for new marketing techniques to ensure companies' survival and development within the global framework. Businesses are increasingly exposed to global competitive conditions, and therefore will benefit from knowing about the advantages of neuromarketing. Although neuromarketing is still an insufficiently researched field, its use has increased in Europe and attracts a great deal of attention from scientists, academic communities and marketing experts. During the development of products in strategic marketing, attention is paid to the creation of the packaging of the product, as it is the first and most basic element the consumer encounters.

Since, apart from good quality design, it is necessary to activate all the consumers' five senses, creating the product packaging is one of the most important parts of product development. A good product packaging leads to an increase in sales and helps strengthen the products' positioning within the segment.

A brief explanation of the methods used:

- **HEAT MAP** – the most salient (striking) areas of the picture or video are indicated by means of heat map color coding, from blue (least striking), to yellow, orange and finally red as the most salient. The more salient items are those that are immediately noticed. This process is determined by elements of contrast, brightness, density, angles, movement, color composition and others in the design.
- **FOG MAP** – the most salient areas of the design are shown, but the least salient are "fogged out".
- **VISUAL COMPLEXITY** – the quantity of information an image contains comprises its complexity. A design in a single plain color has zero complexity, but a brightly colored, busy design will have maximum complexity.
- **SALIENCY COMPLEXITY** – this indicates the number of hot spots in a design and the busyness of the heat map.
- **NEUTRAL – STATIC – LOW – HIGH** – this shows the amount of area of the heat map that is neutral (no saliency), static (blue areas on the heat map), low saliency (yellow and orange) or high saliency (red).
- **COLOR LOAD AND BRIGHTNESS** – shows the levels of red, green and blue and brightness in the image. [1

About the author
Dr. Hedda Martina Šola is Professor at the University of Herzegovina and author of: "Neuromarketing Armory".

Methods

By applying the NeuroVision™ method [2], the influence is examined of neuromarketing on product development, using the example of the book "Neuromarketing Armory" (Šola, 2017). To this end, the following were tested individually: three different design ideas for the front and back covers of the product. In marketing it is vital to predict the future response of consumers, and marketing relies on the subjective results of research, such as surveys, market analysis etc. In neuromarketing, on the other hand, it is possible to predict the consumers' response in advance, and we will demonstrate this here using the visual design of a book. We decided to use the NeuroVision™ method because this method enables us to predict, with scientific precision of more than 85% [3], actual eye movements for complex images, and also which parts of the visual design will engage the consumer's attention most, and which parts will remain unnoticed.

When testing the so-called "hot spots" which a consumer notices first, we concluded that the first and middle designs are most noticed, whilst the third design is least noticed. By in-depth observation we established that on the back of the cover the lower left and right corners of the cover are noticed first (the first and middle design ideas), whilst the perceptive threshold of the first design proposal observed is the entire side of the visual (<40%). On the middle option, only individual parts of the back cover have perceptive threshold (<20%) whilst the last option of the back cover has no perceptive threshold at all.

From this analysis we established the least noticeable elements of the packaging in question. As may be seen from the results, the third package design proposal is almost entirely unnoticed (perceptive threshold (<10%), the middle design proposal is poorly noticed (>85% of the visual is not noticed, and there is no perceptive threshold), whilst the first one considered is the most noticed (perceptive threshold (>65%).
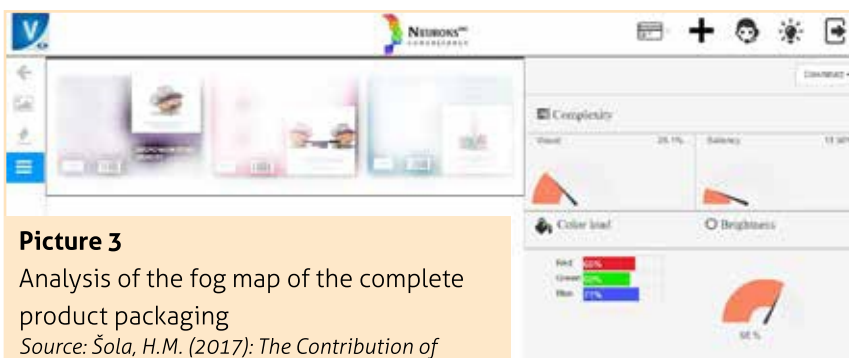

Picture 1

Design suggestion for the front and back covers of the product
Source: Šola, H.M. (2017): The Contribution of Neuromarketing to the Sales and Development of Products in the Market, Doctoral Dissertation, p.116.
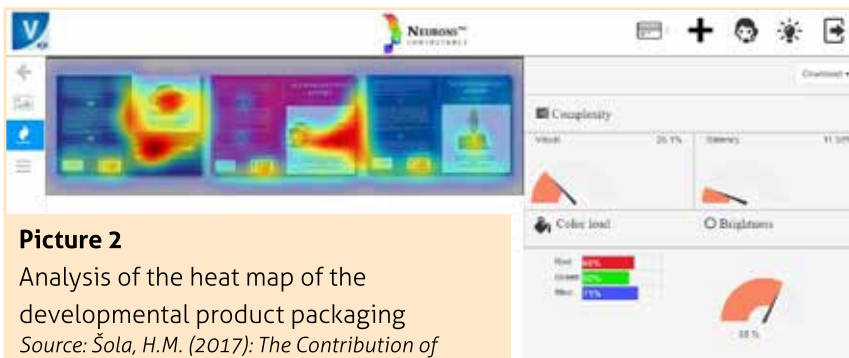
Picture 2

Analysis of the heat map of the developmental product packaging
Source: Šola, H.M. (2017): The Contribution of Neuromarketing to the Sales and Development of Products in the Market, Doctoral Dissertation, p 124.

Picture 3

Analysis of the fog map of the complete product packaging
Source: Šola, H.M. (2017): The Contribution of Neuromarketing to the Sales and Development of Products in the Market, Doctoral Dissertation, p 125.

Conclusion

As a result of the neuromarketing analysis on three proposals of the "Neuromarketing Armory" book cover, we can state with precise probability (>85%) that the first book cover design proposal (from left to right) is the best version, having the highest perceptive threshold and best title placement and product branding as a whole. This result could not have been predicted using traditional marketing techniques during the product development phase (in this case, the book cover design), but only after the product had been placed on the market. By using neuromarketing in this way there is significant saving of resources in marketing, and diversification of the risk of possible failure and withdrawal of the product from the market. By in-depth analysis of each product package separately, we also succeeded in proving the possibility of classifying packaging during the process of product development. We are therefore able to classify the best choice of packaging of the product.

References are available on request via office@nmbsa.com