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NEUROMARKETING - AN OPPORTUNITY OR A THREAT?

The reason of neuromarketing use lies in an attempt to understand consumer behaviour and motivation to make a purchase of certain product. This method is based on the assumption that the purchase decisions is largely influenced by emotions. The paper explains the essence of neuromarketing and selected neuromarketing technologies, such as Functional magnetic resonance imaging (fMRI), Electroencephalography (EEG) and Eye tracking. In this way, as a literature review, it provides a comparison of the views of several experts on the issue. An important part of the paper is to analyse the perception of neuromarketing by the professional and general public, which points to the advantages and disadvantages of its application. Accordingly, it is possible to summarize the benefits of using the results of neuromarketing research for companies that includes better understanding of customers, their loyalty, in order to strengthen their image and brand value.

Keywords: neuromarketing, neuromarketing technologies, neuromarketing research, consumer behaviour, purchase decisions

1. Introduction

An appropriately chosen and targeted marketing communication is an important source of competitive advantage. Traditional approaches to marketing communications are based on the rational consumer behaviour, but this does not always lead to the desired results. The findings of recent years indicate that a significant proportion of consumer purchase decisions is made on the basis of emotions evoked by a particular communication means. This gives the scope for use of the new tool to better understand consumer behaviour - neuromarketing.

The use of neuromarketing technologies uncovers real attitudes and opinions of consumers that failed to be detected by the traditional marketing research, respectively they were hidden for any reason, modified etc. Ultimately, the results of neuromarketing research should have positive impact not only on the company but even on customers.

The article as a literature review provides an overview and comparison of the views of several experts on the issue of neuromarketing and its usage in practice.

One of the most important part of marketing research is the measuring of the response to advertising stimuli [1]. Older researches have been focused on traditional qualitative and quantitative methods for identifying the impact of advertising on sales, awareness, consumer preferences and the like. However, people are routinely exposed to a large number of advertising messages and, of course, they are able to respond

only to a negligible percentage of this number. So the response to advertising message is reduced significantly. Therefore marketing professionals are looking for new and unconventional ways that would lead to understanding the functioning principles of advertising and increase the efficiency of their operations [2].

According to Lindstrom [3], marketing professionals should not be focused on what respondents say about themselves in quantitative or qualitative research, because in fact they may think otherwise. The difference between what people think and what they say about themselves, is formed by the action of the algorithm functioning of their neural network that proved them during the life as the most expedient. Especially the female brain (although unconsciously) always unconsciously calculates what is for it the best at a given moment.

Scheier [4] argues that a consumer behaves consciously only in 5 % of cases. Thanks to this new approach, which links knowledge of neuropsychology, cognitive psychology and neuroscience to marketing decision - making environment, scientists can determine why consumers make certain decisions and which part of the brain "tells" them to do so, respectively what motivators are activated.

Follows from the above, in most cases a consumer remembers only what fits into his mental patterns and he selects especially those data that support his views. Psychological findings say that consumer, in general, attaches the greatest importance to information relating to his own person. The aim of marketers is therefore to place the advertising message into consumer's

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long - term memory. In fact, this could be the way for gradually changing consumer's views and attitudes leading to the desired kind of behaviour, change of a lifestyle, preference of promoted brand and so on [5, 6].

2. The essence of neuromarketing

Neuromarketing is based on neuroscience, which can be defined as the branch of science that deals with exploration of the nervous system.

Its aim is to understand the functioning of human behaviour, even by interdisciplinary fields, which are [7]:

- Neuroanatomy - explains the anatomical structure of the nervous system;
- Neuropsychology - deals with the relationship between brain function and human behaviour, analyses impact of the brain disorders to psychological processes and examines the activities and impact of the neurons on performed tasks;
- Neuroendocrinology - explores links between nervous and hormonal system;
- Neurology - deals with the study of the nervous system and treatment of its disease;
- Cognitive neuroscience - deals with the research of the relationship between brain processes and human mind;
- Neuroeconomics and neurofinance - deals with the decision-making processes of economic subjects with regard to impact of emotional, cognitive and social factors on economic behaviour of an individual.

The term neuromarketing was coined by Professor Ale Smidts from Rotterdam School of Management, Erasmus University Rotterdam (the winner of the Nobel Prize for Economy in 2002) and it describes a new field of marketing research that aims to study consumer's cognitive and emotional responses to marketing stimuli [7].

Currently, the neuromarketing is seen as commercial exploitation of neuroscience knowledge and tools that enable companies to better understand consumer reaction to the communication efforts of companies, related to different types of brands, products and services [8].

The consumer neuroscience combines scientific studies on the psychology and the consumer behaviour that are more focused on the ways in which customers respond to the activities of companies. The consumer neuroscience is as such closely linked to the decision neuroscience and neuroeconomics in which researchers try to understand how decisions were performed and what may cause consumer decisions and choices [8].

According to Ariely and Berns [9], companies have two important reasons for using neuromarketing technologies:

1. Marketers hope that neuroimaging will provide a more efficient trade-off between costs and benefits. This hope is based on the assumptions that people cannot fully articulate

their preferences when asked to express them explicitly, and that consumers' brains contain hidden information about their true preferences. Such hidden information could, in theory, be used to influence their buying behaviour, so that the cost of performing neuroimaging studies would be outweighed by the benefit of improved product design and increased sales. In theory, at least, brain imaging could illuminate not only what people like, but also what they will buy. Thus far, this approach to neuromarketing has focused on this post-design application, in particular on measuring the effectiveness of advertising campaigns. The general approach has been to show participants a product advertisement, either in the form of a print advertisement or a commercial, and measure the brain's response in the form of a blood oxygenation level-dependent (BOLD) measurement, which is taken as a proxy for neural activation.

2. Marketers hope that it will provide an accurate marketing research method that can be implemented even before a product exists. The assumption is that neuroimaging data would give a more accurate indication of the underlying preferences than data from standard market research studies and would remain insensitive to the types of biases that are often a hallmark of subjective approaches to valuations. If this is indeed the case, product concepts could be tested rapidly, and those that are not promising eliminated early in the process. This would allow more efficient allocation of resources to develop only the promising products.

Neuromarketing can enter into product cycle in two places:

- As a part in the proposal of a product - based on the detected reactions it can be used to improve the product before its launch,
- As a feedback to the proposed product - it can be used for measuring the consumer responses to marketing campaigns.

3. Neuromarketing technologies

Methods of neuromarketing research allow to penetrate into the unsuspected layers of the human psyche. This opens up new, previously unknown horizons in marketing research. Experiences of agencies show that neuromarketing technologies of research are especially suitable for those projects in which it is necessary to analyse in more detail the emotions associated with the subject of the research. Neuromarketing research provides useful information especially about which emotional areas of the brain were affected by tested product or brand. However, these need to be supplemented about the interpretation and diagnosis of the causes, which is not easy [10].

There are three neuromarketing technologies:

1. Functional magnetic resonance imaging (fMRI),
2. Electroencephalography (EEG),
3. Eye tracking.

Functional magnetic resonance imaging (fMRI) is an advanced technique that is used in research of brain functions using the three-dimensional image of the brain. The most important advantage of the device fMRI is exactly that it is non-invasive, because it does not operate on the basis of radiation. It also includes the ability to accumulate large amounts of information and the ability to create image of deep brain structures, especially when it comes to the emotional reactions. The disadvantages include the financial and space requirements, the need of professional service and deliverables with a few second delay [11].

Electroencephalography (EEG) is an examination method which records bioelectrical changes (rhythms) in the brain tissue. The EEG method can be used for monitoring the brain responses to marketing stimuli. The result of these observations are answers to questions about the consumer's attention, his ability to remember products (advertising) or emotional aspects of their purchasing behaviour. The advantage of electroencephalography is that the EEG devices are relatively easily portable and the realization of research is thus easier than by the MRI. However, some experts criticize this method because it cannot show the activity of neurons in deeper brain areas very well, such as the limbic region, which is the key object of neuromarketing research. However, it is possible to infer the activity in the limbic part from the activity of the frontal lobe, because these two areas are interrelated [12].

Eye tracking is a device that allows scientists to track the movement of the human eye. The result of such research is an image of the object with color-coded areas that represent where, how long and with what intensity is looking at the observed subject. It is very suitable to combine this research method with the EEG method. The monitoring of human visual attention becomes indispensable aid in detailed analysis of the websites or promotional material used in marketing communications, because people perceive visually about 83 % of information [13].

4. Neuromarketing and its perception by the public

Since its inception, the neuromarketing has induced turbulent discussion both in neuroscience and marketing circles. Many times not only research methods are called into question (starting from criticisms on their financial demands, the need for professional service, to the difficulty of interpreting the results), but also the reliability and accuracy of the data thus obtained. Supporters of this new phenomenon in marketing, on the contrary emphasize the uniqueness of this research, because it allows an insight into the mind of the customer and thus provide reliable and unique results about customer purchasing behaviour, his preference for a particular product or brand, as well as views on marketing campaigns [12].

Lay and professional public begins to more and more deal with ethical aspects of neuromarketing. Especially in the USA

we may see fears of civil associations such as Consumer Alert. It draws attention to the ability of marketers to get into the people's heads, reveal how their purchasing behaviour works and thus create the irresistible marketing strategies and campaigns.

They also appeal on the invasion of respondent's privacy, subliminal influencing and handling, which may occur as a result of such a research. They also highlight the problems whether it is correct to use clinical instruments in research for multinational corporations.

Ariely and Berns [9] explain the additional concerns about the ethics in neuromarketing, namely:

- Reading the mind of consumers - fears about privacy of consumer's ideas and arousing preferences without his knowledge. These concerns can be minimized by transparency of research; people need to know what they support by participating in such research and data must be used only for the purposes for which they were acquired;
- Misuse of information obtained by neuromarketing research, search for the "biological" weaknesses of consumer;
- Generalization of the results obtained from a small research sample;
- Results of neuromarketing research carried out for commercial companies often remain hidden;
- Publication of the results in unprofessional prints can lead to distortion and panic among consumers;
- Fear of insufficient regulation of the industry by the government, consumer associations and the like;
- The use of the neuromarketing research, which is not in the interests of consumers.

5. Discussion

Proponents of neuromarketing say that companies using neuromarketing technologies do not seek to control and manipulate customers. People will always have full control over their decisions. They also express the positive opinion of efforts to create the effective communication towards the customers. This means that results of neuromarketing research can help to better understand consumer behaviour, and thus create marketing communication which the public would enjoy. It includes identification of the aspects, which should be avoided during the communication.

The large number of researchers also reject the idea about searching the „buy button“, which may force the customer to purchase a product. They argue that neuromarketing technologies only help to monitor brain activity and they do not affect it directly. Current researches concerning the existence of a “buy button“, suggest that cognitive processes associated with the purchase decision are multifactorial, and therefore it is not possible to limit them to one particular area.

According to Petr Milacek (former director of strategic planning Media Agency PHD, which began to use MRI to create optimal media plans in the Czech Republic), *“neuromarketing in its own way represents a really great insight into the consumer - the researcher can see what the consumer does not realize. On the other hand, it is true that no marketing research has not established a successful advertising campaign yet. While researchers did not find the “buy button” in the brain forcing people to buy something, in my opinion this would not be an ethical issue”* [14].

The question of ethics in neuromarketing is not closed and raises endless discussions between enthusiastic promoters of revolutionary research methods of the human mind and outraged opponents. However, generally it is believed that if the neuromarketing as a tool for learning and discovery is in the right hands, we will have no reason to worry at current levels of human knowledge of this issue.

So how do we, consumers, and also companies perceive neuromarketing? Is it an opportunity for us to better communicate with each other, or rather a threat?

As mentioned, many people believe that neuromarketing is an area aimed at influencing people to buy products they do not need at all, what is a big mistake. Neuromarketing is just a new way of measuring whether and how the marketing works. Marketers are aware that a consumer has “his own brain” and free will and in any case it is not possible to force him to buy any product [15].

Based on the above, we can conclude that neuromarketing is a science that reveals the secrets of the human mind and answers the question of why consumers prefer one product over another. Among other things, neuromarketing is a step ahead over other research methods and due to this fact it can analyse the requests from the consumer and provides a much more accurate results.

It is difficult to prevent the misuse of this science, especially in the area of ethics. Neuromarketing can be a way of understanding or manipulating human thinking [16]. There is only a very thin line between the two.

Neuromarketing is as mysterious science as the human thinking alone. It has a great future in research and thanks to it we can reach many interesting discoveries. It depends on how we treat this fragile method.

6. Conclusion

If the company wants to be successful and exceed its competition, it will have to know its customers and their preferences, purchasing habits, and at last also customer emotions

during purchasing process or reaction of the brain to the means of communication. This information can be obtained thanks to a new approach to examining and measuring the effectiveness of marketing communications - neuromarketing. The exploitation of the neuromarketing research results is therefore advantageous for the company, as well as for its customers.

Fears of possible manipulation or misuse of the information obtained are resulted mainly from a lack of awareness on this issue and the fear of the unknown is then reflected in the unwillingness to participate in neuromarketing research.

Although the neuromarketing in the Slovak Republic is in its beginning, the main cause is not the lack of experts in the field and indifference on the part of business, but especially significant financial difficulty of technologies necessary for the implementation of quality research.

It is not necessary to strictly regulate the use of neuromarketing in Slovakia by legislative, but there are some identified areas where it is appropriate to uncompromisingly prohibit the neuromarketing research that is aimed to enhance the effectiveness of the campaign, such as promotion of alcoholic beverages, tobacco and tobacco products, unhealthy food and beverages and the promotion of political, religious or other ideologies, leading to the acquisition and consolidation of power and so on.

Results of conducted neuromarketing research have definitely many benefits to companies. Whether it is an increase in sales volume and revenues thanks to precisely targeted advertising or qualitative effects, such as increasing the loyalty of existing customers and attracting new customers, a proposal of the most suitable marketing strategy, strengthening the market position of the company, improving the quality of products and services based on identified customer reactions, raising public awareness about the company or brand and building a positive corporate image.

List of Abbreviations

BOLD - Blood Oxygenation Level-Dependent
FMRI - Functional Magnetic Resonance Imaging
EEG - Electroencephalography
MRI - Magnetic Resonance Imaging

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