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## Neuromarketing Benefits for Business and Society

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**Annotation.** Neuromarketing questions are especially actual today, taking into account the ambiguousness of positions in relation to possibility of the use of this method of stimulation of sales and increase of competitiveness of products at the market. Summarized and described approaches to substance neuromarketing. Outlined the basic principles neuromarketing and its basic types, defined by their content and outlines prospects for use in the domestic market. The row of advantages of neuromarketing is reflected, in particular method electroencephalography (EEG), functional magnetic-resonance imaging (fMRI), the analysis of facial micro-expressions and biometric indicators, method of Eye-tracking.

**Keywords:** neuromarketing, neuromarketing methods, social-psychological instruments of neuromarketing, marketing researches, behavior of consumers, electroencephalography (EEG), functional magnetic-resonance imaging (fMRI), the analysis of facial micro-expressions and biometric indicators, method of Eye-tracking.

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## Нейромаркетинг для бізнесу і суспільства

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**Анотація.** Питання нейромаркетингу особливо актуальні сьогодні, з огляду на неоднозначність позицій щодо можливості використання цього методу стимулювання продажів і підвищення конкурентоспроможності продукції на ринку. Охарактеризовано підходи до сутності нейромаркетингу. Окреслено основні принципи нейромаркетингу та його базові різновиди, їх зміст і визначено перспективи використання в умовах вітчизняного ринку. Висвітлено низку переваг нейромаркетингових досліджень, зокрема метод електроенцефалографія (ЕЕГ), функціональна магнітно-резонансна томографія (фМРТ), аналіз мімічних мікровиразів і зняття біометричних показників, метод Айтрекінгу.

**Ключові слова:** нейромаркетинг, нейромаркетингові методи, соціально-психологічні інструменти нейромаркетингу, маркетингові дослідження, поведінка споживачів, метод Айтрекінгу, електроенцефалографія (ЕЕГ), функціональна магнітно-резонансна томографія (фМРТ), аналіз мімічних мікровиразів і зняття біометричних показників.

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## Нейромаркетинг для бизнеса и общества

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**Аннотация.** Вопросы нейромаркетинга особенно актуальны сегодня, учитывая неоднозначность позиций относительно возможности использования данного метода стимулирования продаж и повышения конкурентоспособности продукции на рынке. Охарактеризованы подходы к сущности нейромаркетинга. Очерчены основные принципы нейромаркетинга и его базовые разновидности, их содержание и определены перспективы использования в условиях отечественного рынка. Отражен ряд преимуществ нейромаркетинговых исследований, в частности метод электроэнцефалография (ЭЭГ), функциональная магнитно-резонансная томография (фМРТ), анализ мимических микровыражений и снятие биометрических показателей, метод Айттрекинга. **Ключевые слова:** нейромаркетинг, нейромаркетинговые методы, социально-психологические инструменты нейромаркетинга, маркетинговые исследования, поведение потребителей, метод Айттрекинга, электроэнцефалография (ЭЭГ), функциональная магнитно-резонансная томография (фМРТ), анализ мимических микровыражений и снятие биоматематических показателей.  
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**Introduction.** The application of neuroimaging methods to product marketing – neuromarketing – has recently gained considerable popularity. We propose that there are two main reasons for this trend. First, the possibility that neuroimaging will become cheaper and faster than other marketing methods; and second, the hope that neuroimaging will provide marketers with information that is not obtainable through conventional marketing methods. Although neuroimaging is unlikely to be cheaper than other tools in the near future, there is growing evidence that it may provide hidden information about the consumer experience. The most promising application of neuroimaging methods to marketing may come before a product is even released – when it is just an idea being developed [2].

**The research analysis and the problems statement.** Neuromarketing combines neurology, neurolinguistics and modern technology sales. Within a few years, this technique has covered many sectors of industry. Manipulations of consciousness are used for a long time – big headlines, obvious benefits, guarantees and calls to action – it all works. But companies that want to make enormous profits, are constantly in search of new ways. Today they learned how to make a profit from the depths of human consciousness and the subconscious. We do not understand how we do irrational purchases. But the fact remains, and can be observed practically every day [4].

Opportunities of psychology and neuroscience go far beyond the scope of academic and becoming more applied. The fact that people's minds can be actively and on scientific grounds influenced has learned not yesterday, but it has recently observed the full inculcation of neuropsychological research in business.

It follows the relevance of research on such an issue as neuromarketing, because its value at the moment can't be underestimated. It represents a powerful tool that could be used both in business and in social projects. Currently in Ukraine, almost no companies that have engaged in this kind of marketing, respectively, for the field work in this direction we are extremely broad, and it is necessary to use than trying to implement more ideas using these methods [3].

Today, it is important to discover the basics, methods and tools in the area, identify trends, problems and its development prospects in modern society.

**The research result.** Neuromarketers use modern technologies of brain research to find hidden in human's subconscious settings and on this basis properly build advertising campaigns. It turned out, we often make a choice in favor of a product unconsciously. We think that we are guided by considerations of cost or objective advantages of the product. However, the selection process – is a more complex phenomenon. Among the major neuromarketing techniques used by both the West, and we [9].

Yes, that such «complex» words operate modern advertisers. If the first two techniques «scan» and analyze processes in the brain, the body biometrics captures indicators - the heart, muscles, skin, and also assesses gaze direction (method Eye tracking). Common method is EEG: using electrodes attached to the head, the electrical activity of the brain is recorded at the time of a particular task (for example, when watching the advertisement). Then the obtained data is processed, and it becomes clear what area of the brain has been the most engaged. As the EEG records electrical activity of the brain directly, the delay between the stimulus (eg, frame in the advertisement)



and the response of the brain is measured in milliseconds. But it must be said about the shortcomings. The main disadvantage of the method of EEG – low spatial resolution: it is difficult to identify the source, particular area of brain activity. But this can be compensated by a combination of EEG and functional MRI [1].

EEG results were confirmed very quickly as per month of advertising, which was launched at halftime, Suzuki sales increased by 150% and Kia only 8%. In general, Kia has better situation with sales in the U.S. market, but in this case, Suzuki was able to beat the competition through proper advertising, because consumer reaction was highest in those moments that are decisive. Afterwards this factor was reinforced with psychological component and happy coincidence that allowed to present their goods to whom it is necessary and when it is necessary. A Kia's miss was seen after the EEG, as on the most important moment of advertising video, namely the logo and name of the product the consumers reaction was too low, his attention was not focused on it. Impossible to say that Kia did not receive the customer, but such data can't be called successful, especially because the advertising also was shown up during football matches [5].

Eye-tracking technology allows you to track human gaze direction. Technology allows you to record using special precision cameras where at any given time a person looks at the screen. Eye-tracker illuminates the face of the testee by infrared light and takes video of it on multiple cameras simultaneously. A special program in real time correlates mutual arrangement of pupils and glare from the infrared light and determines respondents gaze direction. All this process is recorded and stored in the database. During testing such parameters as coordinates of a point of view, the duration of view, the sequence of views are recorded. Also carried out video filming of the respondent that allows you to track his emotional reaction, comments etc [6].

Studies using eye-tracker helps us learn what people see, looking at the customer's materials, and what stays out of sight, how does the customer's products look at the background of competitor's products. According to international practice, to identify key issues in qualitative research using the technology of eye – tracking you need from 5 respondents (because tested unconscious reactions, so a small number of respondents provides a quite adequate results). Quantitative studies are conducted on groups from 30 respondents. The result of this study is a report that describes all of the identified positive and negative aspects of design.

The most popular formats of presenting the results of the test are card views, heat maps. Records of testing session and analytical summary tables are used, usually in quantitative studies [5].

Today, several companies combine eye-tracking with EEG measurements of brain activity to monitor feelings of the respondent, as well as their conscious attention while watching advertisements, posters, product packaging or product on the supermarket shelf.

The figure shows the actual brain waves generated while being revised package design. The main attention was directed toward the logo on the front of the package,

that can be seen in changes in the amplitude and frequency of brain.

In 2011, Hyundai has tested a new model of its sports car. For research were involved 15 men and 15 women who reviewed car and its separate parts – the bumper, windshield, tires for an hour. The brains of these people were scanned using electroencephalography during this hour. Such a way Hyundai collected information about what parts of auto were especially liked and caused a reaction in the brain to pay attention to them in their advertising later [10].

Frito-Lay, owned by PepsiCo, due to neuromarketing found out what kind of design for packaging potato crisps is the most advantageous. It turned out that the matte beige bag of crisps with the image of fresh potatoes and other «healthy» ingredients, in contrast to the bright shiny packages depicting themselves crisps, it does not provoke active anterior cingulate cerebral cortex – an area which produces a sense of shame. Accordingly, consumers buying the product in the package with this pseudo-healthy message, feel no remorse [5].

Client companies pay a significant price for neuromarketing. In 2010 in the United States to conduct EEG research for 30 subjects was worth about \$50,000, 20 tomography tests – about \$40,000. But the price can't stop advertisers: according to analysts more than 30% of the advertising which is shown on television in prime time was pre-tested and developed using neuromarketing techniques [7].

Of course, there are skeptics who do not trust the results of a brain scan and reasonableness of this method, mainly because of the closeness of research and data processing techniques, a small amount of material published in scientific journals and the very high cost of research.

**Conclusion.** Finally, we return to the opening question: hope or hype? It is too early to tell but, optimists as we are, we think that there is much that neuromarketing can contribute to the interface between people and businesses and in doing so foster a more human-compatible design of the products around us. At the same time, neuromarketing as an enterprise runs the risk of quickly becoming yesterday's fad.

Considering the effectiveness of this type marketing, it would be expedient to implement basic principles of neuromarketing in the practice of each company, which would contribute to their development, and economic development in general, as would be increased sales, trade, monetary circulation, etc. Consequently functioning of the entire economic system would be improved.

In view of the relatively high cost of such research, I believe that it's possible to offer to companies engaged in such research, and a separate major corporations to make a one-time investment in the purchase of MRI equipment, but not exclusively for its operations but for hospitals that also require such equipment. The idea is that such an investment will benefit both a business investor and society. Thus companies will show a very clear example of corporate social responsibility.

The problem is that the cost of the equipment is measured in millions of dollars, and sometimes tens of millions. Equipment itself is reliable, but is not durable. Far not each



hospital can afford such expenses, so the number of devices is limited, but there are many people who need this survey.

Allow quite rapid payback for such a purchase, because it will make a profit due to increased product sales.

However, I repeat that it is the most suitable investment for corporations with a powerful manufacture, for example, the same Kia and Suzuki would return to itself the invested money quite quickly, since the prices of their goods are high enough. Besides it is possible to transfer a part of the cost of MRI equipment to the cost of goods that will also accelerate a refund.

Focusing on the possible socially responsible component of neuromarketing and its resources would be beneficial direction of all known techniques of research and impact on the consumer's subconscious, to solve social problems. In particular on the development of posters, billboards, videos, etc, after conducting research before

this on special devices to increase the impact of these promotional tools. Necessarily to develop advertising concepts of social projects, activities, actions using neuromarketing techniques and research.

To a certain degree an effective use of eye tracker could be determining of the most interesting, for the attention of the buyer places on cigarette packs, and placing there anti-tobacco advertisements. By the way, it would be appropriate to explore this advertisement, rather a reaction to it, because at the moment the so-called «deterrent pictures» on cigarette packs does not scare smokers and do not make them to think etc. Their contents should be carefully considered and then confirmed by a research that would be done with the help of EEG and eye tracker.

Summing up, I would like to say that this idea can be regarded as an opportunity for growth sales of corporation's goods and the desire to do something good for this society by which one or another company receives its profits.

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