NEW RESEARCH AREAS IN MANAGEMENT AND MARKETING

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Abstract:
The development of technology and research methods in the contemporary world led to elicitation of new opportunities and areas of research. Works of scientists from the following fields as: behavioral economics, behavioral psychology, neurology, more often have a significant impact on the theory of management and marketing, with special regard to the purchasing behavior of consumers. An important issue is also the desire to exploit the effects of scientific work from the world of business. The aim of the article is to approximate changes in the way scientists think about the rationality of purchasing behavior, to demonstrate that neuromarketing outlines new opportunities of research the unconscious brain areas participating in making purchasing decisions. Within the framework of this study, the impact of research techniques (using neuroimaging to the potential increase in the quality of marketing knowledge about the needs and ways of making purchasing decisions) was shown here. What is more, the new opportunities for development of management science were also indicated.

Key words: management, marketing, knowledge, business, mental activity.

Introduction

Formerly, marketing communication was considered more as an art than a science. Most actions were usually based on luck rather than well thought action strategies. New developments in the field of neuromarketing made that marketing communication became a challenge that researchers and practitioners are trying to cope with all the time.

Neuromarketing is nothing like the science about how the human brain responds to marketing stimuli. For marketing experts, it is the perfect tool to help you understand the reasons why consumers make purchasing decisions.

A consumer, however, is a unit that can (or at least should) define precisely what he wants, how much he is going to pay for this, and maybe even, which promotional activities would be able to convince him to buy. All this information is useful to marketers just like an important was the answer to the questions:

- what happens deep in the consumer's brain during the evaluation of a product or a promotion?
- where do these values come from?
- what packaging plays a key role in making purchasing decisions?

Behavioral economics uses scientific research about human, social, cognitive and emotional factors to understand better economic decisions made by consumers, borrowers and investors, and how they impact on market prices, turnovers and allocation of resources. This area mainly deals with the limits of rationality (selfishness, self-control) of economic factors. Behavioral models usually combine, as whole, intuition from psychology with neoclassical economic theory (Fisher, China & Klitzman, 2010, pp. 230-237).

Utilization of neurobiological knowledge, in the context of marketing, contributes to better understanding the course of such processes as emotions, attention, memory and decision-making. Scientists, who conducted the research over the process of decision-making purchase by consumers, proved that even if consumers want to be honest in predicting their behavior, they often interpret or provide it incorrectly. Particular attention should be paid to consumers' cognitive limitations. Even if marketing specialists try to reach out to consumers by affecting their emotions, their cognitive limitations can make that even the best strategy will not be effective. The above information is not

without importance for the effectiveness of consumer research, which in essence is focused on describing the complexity of decision-making process.

The study of mental activity in the context of consumer purchasing behavior

Neuro-economics evaluates the role of brain during taking decision, classifying risks and benefits resulting from business transactions. According to the researchers, such as Scott Rick and George Loewenstein (Carnegie Mellon University), the results of research conducted in the field of neuro-economics may have a significant impact on the development of economic and psychological theory as well as on neurological knowledge. Purchasing decisions, undertaken by consumers, are considered to be the most fundamental and pervasive economic behavior (what happens in the brain of the consumer, http://www.psychologia-spoleczna.pl/aktualnosci-czytelnia-58/160-neuroekonomia-czyli-co-dzieje-sie-w-mozgu-konsumenta.html.).

The results obtained until now, from tests implemented, demonstrated that certain parts of their brains are activated in the case of participants making a choice between financial gains and losses. The researchers found that when the products were presented to a participant, the nucleus accumbens in his brain was activated. For many neuropsychologists that was associated with the ability to anticipate the pleasure. However, when the objects were presented along with their prices inflated, two phenomena began to happen simultaneously: the brain center, called “the island", was activated whereas its part responsible for estimating the profit and loss (the medial prefrontal cortex) was deactivated.

Thanks to the research on the activation of the particular part of a brain, researchers can effectively predict whether a person decides to buy a particular product. The activation of centers associated with preferences for products and estimation of profit and loss was then related to the decision to buy a particular product. In contrast, when the part related to the assessment of the price was activated, the participants decided not to use the offered item/object.

Neuro-economists also suggest that the amount of money spent and saved by consumers can be partly explained by the degree of their aversive feeling associated with the money disposal. The specialists from behavioral economics also drew attention to the following important phenomena in the area of purchasing behavior:

- decision-making by consumers is largely irrational,
- consumers are not able to predict their behavior and their purchasing reactions,

- emotions play an important role in decision-making processes (*Neuromarketing – Add it to the marketing toolbox*, http://www.visibilitymagazine.com/discinc/jennifer-williams/neuromarketing-add-it-to-the-marketing-toolbox).

The neuro-marketing studies began in academic circles when, in 2003, the Clinton Kilts' team, from Emory University in Atlanta, Georgia, conducted a series of experiments on volunteers about the role of brain in consumers' preferences (*How the Brain Reveals why the buy,*http://www.scientificamerican.com/article.cfm?idneuromarketing-brain).

In the first phase of experiment, the volunteers saw on the table a variety of consumer goods, that were evaluated by them using the 'rang' method. Then the researchers presented to volunteers the same products, but their reactions were examined by Magnetic Resonance Imaging (MRI) scanner, which recorded the brain's activity by individual products. During analyzing the reaction of studied entitles, it turned out that a common characteristic appeared: each time when each person saw a product that had an impression on him or her, the blood hit towards the front part of the brain - the medial prefrontal cortex (Dinu, Tanase & Dinu, 2010, pp. 1115-1116).

This result was a groundbreaking discovery for the Clinton Kilts' research team because previously thought that these areas of the brain were only responsible for the construction of the human personality and his self-identification. Indicated areas of the brain are usually activated when applied to identify the nature of the individual (who we are). The MR Iscanning experiment indicated that, if the brain areas, previously reserved for other functions, are activated when thinking about a product, it means that the person identifies himself with this product.

New neuromarketing dimensions

Neuromarketing shows that the brain develops its preferences on the basis of intuitive connection with the brand name of the product, and not on the basis of the advertising message. Each experience with the brand becomes a part of perception and ultimately decides about the consumer's attitude toward the brand.

Neuromarketing tries to determine what processes happen in the brain during fractions of a second, when a consumer decides to buy a particular product (Wilson, RM, Gaines & Hill 2008, pp. 390-391). The ultimate goal and task of neuromarketing is to understand the way the brain determines the consumer behaviors and to identify the factors that determine a given choice. So, neuromarketing can

be defined as the application of neurological methods to analyze and understand of human behaviors in relation to markets and exchange marketing.

The specialists from psychology of purchasing behavior often draw attention to the special importance of automation of thinking, which manifests itself through the implications of thought. The modern science, within the purchasing behavior, often subjected to doubt such an issue as the rationality of action. Instead of this, it introduces concepts associated with unconscious thinking, and pays special attention to consumers' cognitive limitations and their impact on the decision-making process (Czarniewski, 2015, pp. 1-11).

Thanks to the neuroimaging technique, a graphical representation – what is happening in the brain processing incoming information – became possible. Neuroimaging is therefore an attempt to map the thoughts in a topographical way. Until now, there was a belief that man – thinking about values, lifestyles, and belief – has an aware influence on it. Meanwhile, neuroimaging indicates that it is a process of an autonomous nature (Ohme, 2008, pp. 12-13).

Thanks to research on the operation of the human brain, we are able to predict, how we will proceed before we consciously make a decision. Most of the thought process takes place in the subconscious, and therefore much more information about our reactions can be achieved by analyzing them at the source, and so by observing the activated areas of the brain (Murphy, Illes & Reiner, 2008, pp. 293-302).

Brand building in contemporary marketing often refers to the realm of emotional feelings. It is associated with a more unconscious mind activities of the consumer, if brand building means a building of positive feelings, experiences, emotions, as well as the memory of past or suggested pleasure. Here you can suppose that neuromarketing methods in this area can be useful (Walvis, 2008, pp. 178-179). Neuromarketing also highlights the position of the consumer, who more identify with brand than the characteristics of the product itself.

Neuromarketing, through neuroimaging techniques, is able to show how consumers react on tested product and communication of marketing. It will identify significant fluctuations that may weigh on consumer's decision beyond his consciousness. In the above terms, the neurophysiological measures are becoming the complement of subjective and declarative data (Butler, 2008, pp. 415-419).

The use of neuromarketing in the processes of design and implementation of new products on the market seems to be highly justified. All the more, as the statistics show, a lot of unsuccessful implementations are recorded recently in the global market.

The studies conducted on innovative products are becoming more and more important. In this particular case, researchers seek not only answers to questions about the needs of potential buyers, but they also have to confront their ideas with the lack of knowledge and awareness of consumers who have not yet had the opportunity to familiarize with the solution (Slater & Mohr, 2006, pp. 26-27). That is why the stages of the concept and the formulation of product's prototype is burdened with significant risk of failure. As researches indicate, most errors are related to the way the research process and the quality of data collected is carried out (Eser, Isin &Tolon, 2011, pp. 854-886). Information is excessively generalized or, in the case of product testing, frequent oversights of important information by researchers appear. Simplifications of thought that often accompany the consumers during decision-making process or product evaluation often make the situation difficult. They thereby block the factual reactions and ideas disclosed outside the conscious mind (Schneider & Woolgar, 2012, pp. 169-189).

The studies may include different areas of management and marketing. Thanks to the information gathered, you can choose about the key components of advertising message, knowing how there cipients process collected information and on which elements of transfer they pay special attention (Page, 2012, pp. 287-290). Currently, thanks to the analysis of the brain waves, it is able to indicate precisely the scenes generating the strongest emotions, the deepest commitment and the greatest energizing. Researchers can also describe the reaction to the soundtrack as well as spoken word and special effects.

Such brands as Campbell (legendary American brand of soups) and Frito-Lay have used neuromarketing to change the design of their packaging. Consumers were subjected to the action of the product and their reaction was recorded at the level of three types of feelings: positive, neutral or negative. The test results were used in combination with in-depth analysis of specific points, which ultimately led to complete changes in packaging designs, such as color, size, text, or photos.

Frito-Lay Company discovered that matte packaging of chips cause more positive feelings than shiny ones used so far. Within a few months, a new package of chips was designed and launched into the market.

However, PayPal discovered that advertisements focused on speed and convenience cause more positive reaction than advertisements relating to the security and protection (that in the case of the financial sector is crucial). On the basis of these studies this brand formulated a completely new advertisement strategy for its products.

The study of sensory responses is also examined. Even Hyundai studied the scent that will best fit into their cars. This, in turn, introduces a totally new dimension to services such as, for example,

aroma-marketing, composing of sound identification and proper taste for fruit juices. The Institute of Sensory Analysis leads research of this type in Poland.

In recent years, the study of the brain and the cost of this research have increased several times. For example, government investments (US) increased in this field from $ 4.8 billion (in 1995) to $ 14.8 billion (in 2005). It means that this area of research will strongly grow in the near future.

The consumer collects all the knowledge and all requests through the senses. He also uses the senses to express emotions and feelings. Customer's senses give meaning to everything he or she touches and experiences, also in the field of business.

The ability to observe the environment, location of the object in three-dimensional space of prediction its future location is an immanent feature of the human brain. What is the conclusion then? At the stage of organization of sales space and creation of plans for business space, the businessman should remember how well his brain copes with the observation of environment and the location of objects (Czarniewski, 2014, pp. 9-15). In particular, it is worth to make sure that nothing overrides the view of an object or objects that the clients to spot. Excessively high shelves which impede observation of space situated behind them, inscriptions that are difficult to read, narrow alleys shop that look like a mountain gorge – all this makes it difficult to use the human's senses and frustrates the customer during shopping.

Some studies suggest that a delicate lemon flavor boosts sales of seafood in the restaurants. A subtle scent of grass among shelves with dairy can elicit in buyers associations with experience of carefree, reminding them – on the subconscious level – of fields from which these products originate. In the salons offering exclusive cars or suitcases we feel often intense smell of leather, which we associate with luxury and relaxation. The clothing stores are dominated by the smell of sea or a romantic mix of roses and violets. Fragrances stimuli are to persuade customers to buy products that are part of a certain positive memories.

Neuromarketing research allows, in a precise manner, to refer to the definition of the needs and preferences of different target groups. For example, the difference in gender strongly influences on perception of a hotel room (women prefer a particular piece of equipment which bring peace to the house, however men appreciate the functionality). It is similar in terms of age differences (through the research we already know that computer games contribute very well to a mental ability of older people; the elderly need a quieter environment to think efficiently that has to do with the ability to filter out disturbances). Neuromarketing is one of those areas that has a great future. Who first learns to use it effectively, will build a competitive advantage.

Conclusions

1. Behavioral economics plays more and more important role nowadays. Use of neurobiological knowledge in management science contributes to a better understanding of the course of processes such as: emotions, reactions, memory, attention, decision-making. It became possible to study, under laboratory conditions, the human brain response to various marketing stimuli and thereby to understand deeply the factors influencing on behavior and purchasing decisions.
2. Through the study of the action of mind, scientists are able to predict how consumers behave before they consciously make a decision. A significant part of thought process takes place in the subconscious, that is why much more information about the reactions of consumers can be achieved by analyzing them at the source, and so by observing the activated brain areas.
3. The primary task of neuromarketing is to understand the way the brain determines consumers' behavior in the market and to identify the factors that determine a given choice. Thus, an important issue in the field of management studies is currently to apply neuroscience methods to analyze and understand human behavior in relation to specific markets.
4. Neuromarketing analyzes the decision-making in the process of communication with the market. Traditional studies of consumers, concerning products or advertising, are associated with the necessity of undertaking an additional margin of error: tested people do not always correspond as they see in reality. Additionally, during the purchasing decision the subconscious often works, so that consumers may not be aware that their choice is not always a conscious decision.
5. Technologies that are able to read the state of brain can help customers to choose what they are mostly interested in or to help companies to manipulate their customers. Neuromarketing specialists want to predict the client decision in response to the advertising material presented. However, the decision-making process by brain is complicated and the only aspects that can be studied are the emotional reactions and an attempt to predict whether the information will be stored efficiently.

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