

NEUROMARKETING – BETWEEN INFLUENCE AND MANIPULATION

Dragolea L., Cotîrlea D.*

Abstract: This subject was chosen because neuromarketing allows the marketing experts to improve their popularisation options regarding a brand, while having the potential to revolutionize the general understanding of the existent relationships between organisations and consumers.

The paper was written to bring to the attention of researchers in this field – and beyond – the opportunities to reduce the gaps between the consumers' subconscious and their behaviour, in order to fulfil their desires. Therefore, it was shown how studying the sensory, cognitive and emotional reactions of consumers to stimuli related to a product or an advertisement allows the researchers to find out why consumers make the decisions they make when choosing a brand or another, without the subjectivity specific to traditional research methods. The paper includes the description of the main techniques used in neuromarketing, aspects regarding the domestic market and Romania's situation in this field, the areas of its use and the limitations imposed by the current economic context.

This article may also be the starting point in developing a code of ethics on the use of neuromarketing, as well as the legal factors that can help ease the arising conflicts regarding neuromarketing – between influence and manipulation.

Keywords: neuromarketing, consumer, imagery, advertising, marketing

Introduction

“The business man must understand the workings of the minds of his customers, and must know how to influence them effectively, he must know how to apply psychology to advertising.” Walter Dill Scott (Psychologist at Northwestern University, one of the first researchers of advertising psychology; lived between 1869-1955)

“What neuromarketing can really do is to improve how companies create products and advertise them, in order to become more interesting, appealing and valuable for consumers.” Daniel Bichiş (Manager at *Competent Consulting* (a consulting and training company), member of *International Association of Coaches*, USA)

Adopting an integrative vision on how to address the economic and social phenomena and processes is a factor with great influence regarding the performance of enterprises confronting today the demands of an economy characterized by dynamism and competition.

Thus, the consumer becomes the key-link in the development of the functioning mechanism's flexibility of the economic entities. In this regard it's necessary to

* **Dragolea Larisa PhD., Cotîrlea Denisa PhD.**, Faculty of Science, “1 Decembrie 1918” University of Alba Iulia, Romania

✉ corresponding author: larisadragolea@yahoo.com

understand the functioning of the human spirit in order to discover the desires, aspirations and hidden springs of the consumers' options in order to give them what they want.

Market research is a key component of most current businesses [3]. The accurate assessment of the consumer demand and preferences is vital for the success of new products and the re-launching of existent ones, as well as for a wide range of activities related to sales, promotion, design and advertising strategies. As most decisions we make originate in the subconscious, the traditional methods used in consumer behaviour research don't always bring to light the best practices to identify their aspirations and desires, being often subjective. Reducing the "gaps" between the consumers' subconscious and their behaviour is one of the major challenges facing sellers today. Neuromarketing provides the opportunity to *overcome* these shortcomings; objectivity takes the place of the subjectivism imposed by the traditional research methods.

Considered by some the technique of the future – which helps in understanding the consumer behaviour – by some an evolution in the field of marketing, and by others an alternative for this science's future, neuromarketing turns to the technology of transmitting images through magnetic resonance – MRI – Magnetic Resonance Imaging (technology used to detect brain tumours), which also allows reading the way the human brain receives, processes and interprets the stimuli transmitted by the advertising message. Thus, we can say that neuromarketing "says" what smell, colour, packaging and sound must be used for the product in question to be chosen by the consumer in the end.

The conceptual approach of neuromarketing

The neuromarketing concept comes from neuro-sciences, which are used to study the causes of the main abnormal diseases and behaviours. The neuronal tests provide *maps* for brain functioning from the time people make a decision or are exposed to an advertising message.

Neuromarketing is a new marketing field that uses medical technologies like *Nuclear Magnetic Resonance (NRM)* to study the brain response to marketing stimuli.

Reseachers use NRM technology [6] to:

- Measure the activity changes in certain parts of the brain;
- Understand why consumers make the decisions they make;
- Find out what part of the brain leads them to that particular decision.

Marketing analysts use neuromarketing to better measure by comparison the consumer's preferences, because the answer given to the question "*Do you like this product?*" might not always be true. This information can help sellers create more effective products and services, and the marketing campaigns will have the chance to focus more on the brain's answer to the advertising message.

The definitions given to neuromarketing [4] over time should help us understand that it is:

- An emerging field and it combines the most recent discoveries in neuro-science – proven with the help of marketing techniques;
 - It represents the brain research process in order to reveal the consumers' responses towards commercials and the development of new products before launching new advertising campaigns and branding techniques (Collins).
- Thus, neuromarketing also includes the emotional impact of branding and a complete range of marketing and advertising services, its basic objective is to decipher the processes that take place inside the mind of consumers in order to discover the wishes, aspirations and hidden springs of their options and be able to provide them what they want.

Areas of use. Areas where neuromarketing leaves its print

Finding out the brand preferences was the first area of interest for neuromarketing researchers. One of the questions that didn't receive a satisfying answer is: to what extent the quality of a product, even acknowledged by the consumers, is a source of competitive advantage? Therefore, one of the main development areas of neuromarketing is branding operationalization, namely increasing the preference for a brand.

In 1976, Pepsi launched a bold and well-thought campaign called *The Pepsi Challenge*. In a series of tests the buyers were asked to decide which is the most tasty of two drinks (Pepsi and Coca-Cola). Without knowing what are the two drinks, most participants (57%) chose Pepsi, while 43% chose Coca-Cola (Figure 1). Although these results have been intensely used in order to boost up sales, the result was insignificant regarding the increase of the company's market share.

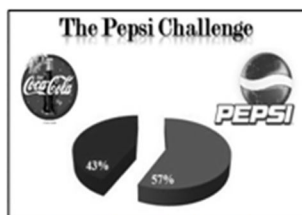


Figure 1. The Pepsi Challenge

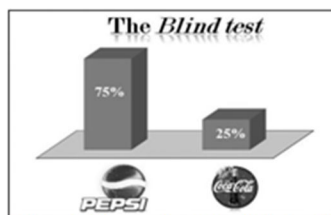


Figure 2. The results of the "Blind test"

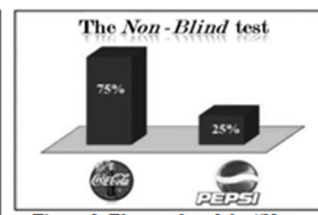


Figure 3. The results of the "Non-Blind test"

Read Montague (Neurologist at Baylor Faculty of Medicine, Houston University) conducted one of the first researches that draw attention towards neuromarketing; he resumed this test, but he measured the activity in different parts of the brain with the help of functional magnetic resonance imagery. The results were surprising:

- When the participants didn't know what they are drinking, 75% said they liked Pepsi (an active drink much more powerful than Coca-Cola, the area of the brain that responds to the feeling of satisfaction/sensorial pleasure) – Figure 2;
- When they knew what they were drinking, the ratio was inverted, 75% of the subjects preferred Coca-Cola – Figure 3 (during the Coca-Cola consumption, the

areas of the brain that responded were the ones of reasoning and judgement of value, as well as the area associated to emotional memory).

Thus, with the help of magnetic resonance imagery, it was proven that while drinking Coca-Cola, the participant who knew what he was drinking has an additional area of the brain activated (in comparison to the moment when drinking Pepsi): the prefrontal area, which is associated to *self-esteem*; as a result, these reactions take precedence over taste and in the end, influence the purchasing decision. This way, “*the brand image can awaken emotions that can become more powerful than the direct effect of the product*” [1] or, in other words, the strong image of the brand alters the perception of the product.

Meanwhile, the researches were extended towards optimising the learning of the advertising message and the maximization of its impact. Regarding the ***maximization of the advertising message’s impact***, we should mention the research direction followed by Patrick Pennoise and Christophe Morin (The founders of the consultancy company *SalesBrain* and authors of the book *Selling to the old brain*), who intended to determine the mechanisms that increase the commercial impact of an advertising message, because – as they mention – “*it’s relatively easy to measure if an advertising message is liked or remembered, but it’s much more difficult to determine if it led to purchase*” [7]. In order to understand the studies conducted by these two researchers, it’s necessary to know a few elements of neuro-anatomy and neuro-physiology; therefore, we are going to talk about a few aspects regarding the human brain.

Paul McLean, a neurologist, suggested a model of the human brain (Figure 4) composed of three imbricate structures [6], each specialized for certain functions:

- *The R complex (reptilian) or the primitive brain* – controls the body and decides very quickly the strategy that must be used (act, withdraw or wait) in order to ensure the satisfaction of the basic needs (physiological, sexual, security and defence of territory, etc.);
- *The limbic system or the emotional brain* – associated with emotions, feelings, attention, general attitude, wonted memory (remembering events), immunity and hormonal balance, relationships with others; its decisions refer to the pleasure or annoyance that we associate with that particular situation;
- *Neo-cortex or rational brain* – analyses and solves problems, uses language and logic, builds rational memories (like the information learned for an exam) and drives creative thinking; its decisions regard complice to rules and previous experiences, to beliefs and personal values, to self-image.

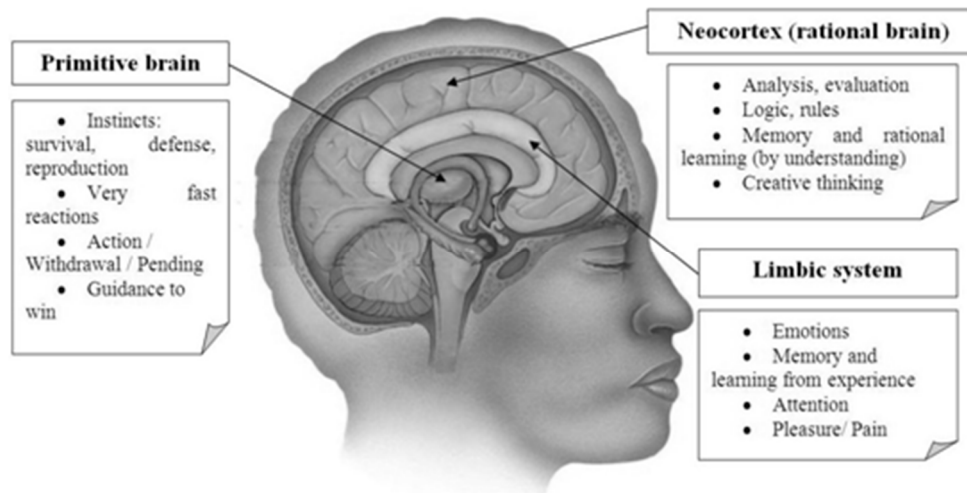


Figure 4. Model of human brain suggested by Paul McLean

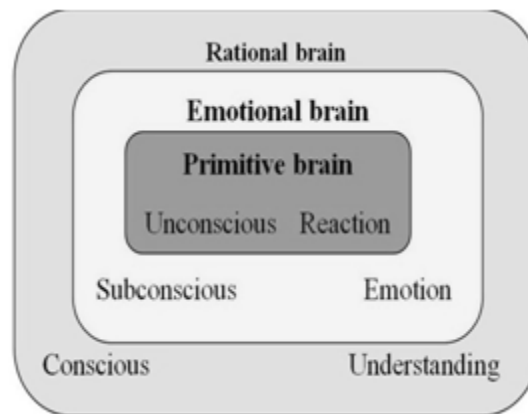


Figure 5. Roles played by the parts of the brain

Based on studies of neurophysiology and cognitive neurosciences, Renvoise and Morin assess that each of these three parts plays a particular role: the neo-cortex (rational brain) *thinks*, the limbic system (emotional brain) *feels*, and the reptilian brain *makes decisions* (Figure 5)

Therefore, the decision on whether to act or not is not taken inside the reptilian brain. It's important to mention that this brain is so primitive that it only reacts to six fundamental stimuli. Thus, in order to maximize the efficiency of an advertising message, it's necessary that it be based on the needs of the client rather than the features of the product. To be effective, advertising needs to target first the emotional brain and the primitive one, which lead them to open the channel of attention – which transmits the information to the rational brain.

In order to maximize the efficiency of the advertising message, it must be [7]:

- Simple;
- The arguments must be enunciated as objective as possible and they must be expressed in terms the consumer understand;
- The key elements of the message must be placed at its beginning and end;
- The visual must take precedence in comparison to the editorial component;
- The message must count of the deep emotions of the receiver.

Although relatively simple, these hypotheses were *validated through neuro-scientific research* (Renvoise).

Regarding the ***optimisation of memorizing the advertising message and the efficiency of commercials***, it's necessary to quote Donald Caine (Neurologist, quoted by Daniel Bichiş in the article *The Key to the Consumer's Brain - Cheia spre mintea consumatorului*), who said: "*the essential difference between emotion and reason is the fact that emotions make us act, while reason only to assess*".

It's well known the efficiency of an advertising message largely depends on the way in which it is perceived and remembered by the brain of the recipient. The traditional assessment methods regarding the efficiency of commercials (recognition tests, measuring the attitude towards the product/brain, etc.) rely exclusively on what the subjects relate and, thus, they are limited to the conscious part of the memory (rational brain).

In order to have an adequate impact on the consumer, the advertising message and commercial must lead to the propagation of the impulses to the *rational brain* (Neo-cortex) and especially to the level of the *limbic system*, which is responsible for the emotional relationships, pleasure and pain, and it must lead to the *reptilian brain*, which is responsible for the aim to win, for controlling fast reactions and the withdrawal/waiting actions.

Thus, the conducted studies indicate the fact that the advertising message of the commercials with an intense emotional content activate the imagination; people tend to verify how that particular product can satisfy them, this is owed to the fact the information is memorized just like if the experience happened in reality and activates the decisional elements of the primitive brain.

The tests prove the existence of obvious differences between the response of the brain regarding rational commercials and emotional ones. The latter strongly activate the regions of the brain involved in establishing social connections and making decisions (actually, the type of response that any company that invests in an advertising campaign in hoping for). As an example (Figure 6), we can mention the big Hollywood studios, which used neuromarketing to optimise trailers for the films produced since 2005 or 2006.

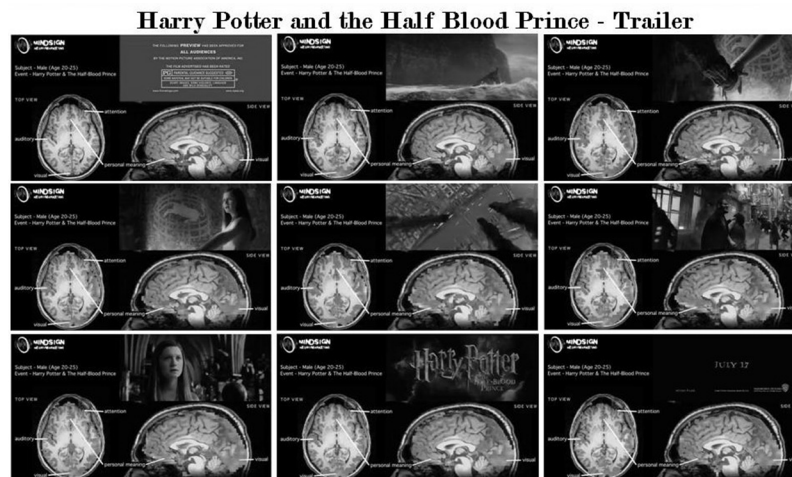


Figure 6. Brain activity while watching “Harry Potter and the Half Blood Prince” movie trailer

In this manner it was possible to get data regarding the general first impressions about the movie and the interest level manifested by the consumer regarding it, namely the relative impact, the interest and attractiveness of the specific elements included in the trailer, the importance of the sensory elements, as well as the level of keeping it in the long-term memory and recommendations regarding the possible optimisations.

Controversies regarding neuromarketing

As with any new phenomenon, neuromarketing has many people that contest it - divided in two sides. Thus, regardless of the fast development of this new field of study, the controversies didn't wait to emerge. The first who were attacked were the scientists involved in such projects, who were accused of betraying their profession.

The opinions of great experts in this field are at the junction between preference and purchase, they are divided in two camps: the professionals – despite the successes mentioned by scientists – say the new technology issues only *truisms* like “*Cola is sweet*”, on the other side are the consumer protection organisations, which are afraid the big corporations will come to seize the brand preferences of the public with the help of these technologies.

Therefore, the NGOs involved in consumer protection – such as “Commercial Alert” – complained to the Office of Human Research Protection in the United States about the Emory center on grounds neuromarketing could “help companies sell products that may cause obesity, addiction and other disorders”, such as tobacco or alcohol addiction. All this happened because it's believed that in the future there will be a tendency of advertising messages to stop targeting the

rational or emotional side of the consumer – which leaves room to “escape” – and will directly target the brain processes, over which most times a man has no control. Regarding neuromarketing and ethical issues, more questions surface, among which: how can the methods and techniques used in neuromarketing be tested from a moral point of view, in case it becomes possible to detect through technical means how a person thinks or feels? How can people be protected from abuses, especially since the data supplied by these methods are not 100% accurate and may be changed by the susceptibility of the subjects?

In the current conditions, neuromarketing experts have started to use magnetic resonance to observe how neurons respond to different types of products and advertising. It was studied how neural circuits are activated or deactivated during purchasing, namely the moment when it is ignored. Using neuro-scientific methods to provide answers to questions in marketing theories has the potential to revolutionize our understanding regarding relationships between organisations and consumers [17].

Approached from another angle, using medical equipments and technology for the benefit of marketers – to accurately shape the market – can be dangerous and, of course, these questions emerges: When can we say the line between influence and manipulation has been crossed?

The ability to use the responses of the human brain and to connect them with behaviour has been greatly developed lately and it provides large quantities of information. Hence another problem: the fact these methods can be marketed in order to detect traits of personality and preferences of people who work in this industry or hold management positions. Due to the opportunity to record unconsciously information, there already is a tendency to use these methods in advertising. This type of problems is for now empirical, without immediate normative consequences. Establishing conclusive relations between the descriptive documentation of the neuronal activity and the behavioural norms would be a methodological mistake, a fact acknowledged by most researchers.

Considering the evolution of new technologies and the knowledge economy that is in a continuous dynamic development, one thing is certain: *the balance of power between buyer and seller tends to tilt only in one part in the future* [12].

The limits of neuromarketing

Although some researchers of this relatively new field say that “*using neuro-sciences is the most important progress made in market research in the last 25 years*” (Dr. David Lewis), it’s necessary to mention that neuromarketing has limitations.

Thus, it must be regarded not as “an alternative for the marketing’s future, but as an evolution” says Iuliana Pădurariu; neuromarketing can be perceived as “an adjuvant, as a supplement of traditional techniques, not as their replacement” - Daniel Bichiş.

Another limit is imposed by the high costs and the needed technology. Currently, the most relevant techniques – fMRI and PET – can be used only in labs, and the renting price of the equipment is significant.

At the same time, we mustn't overlook the reaction of consumer associations, which fight to limit the freedom of advertising agencies and the freedom of companies to study the market in order to obtain information regarding the way in which consumers make their decisions. This can be interpreted as a reaction based on the fear of possible subsequent manipulation, because of identifying the "purchasing button" that will transform consumers in sure victims of advertising.

Also, one of the neuromarketing's limits can be the fact that individuals are different, and each choice can largely depend on emotions, state of mind, memory, etc. Thus, saying that a certain context implies a certain model, together with enunciating the paradigm promoted by modern marketing (*identifying and satisfying the needs and desires of clients is the key to success*), was necessary to deeply know the connections that can be made between activating different areas of the brain and interpreting advertising messages, targeting to influence the consumer behaviour.

Steve Quartz, who optimised movie trailers, stated in 2006: "*neuro-sciences are complementary to other studies regarding behaviour, which have been used for a long time. It's just another way to evaluate and measure factors that, until now, were inaccessible. And it is more a method of measuring the preferences, rather than manipulating the choice*".

Regardless of the limitations, what neuromarketing can really do is "*to improve the way companies create and promote products, so they are more interesting, attractive and valuable for consumers*"[1], its objective being to change company behaviour, and not consumer behaviour.

Summary

In recent decades, the fragmentation of mass-communication has determined similarly strong fragmentations of the way consumers react. Implicitly, large corporations seek accurate means to establish targets for the advertising message. Although contested by many, maybe the most precise *tool* comes from scientists and it is: neuromarketing.

The concept emerged at the end of the 1980's – beginning of 1990's, in the United States. The first products researched by neuromarketing were premium products with a large sales volume, such as luxury cars. Regarding the neuromarketing techniques, they provide the opportunity to identify at least 30% of the advertising messages, packaging and shelf displays that don't bring results. The price of a neuromarketing study can vary between 3.000 euros (*for shelf display*) and 5.000 euros (*for checking a print or a commercial*).

Although advertising agencies use specific techniques to communicate with the emotional part of our brain, very few advertising agencies openly discuss about the science behind them. Neuromarketing can be used for any type of advertising

message, from commercial to packaging to shelf display. Furthermore, it can be used for developing new products, for rebranding, for repositioning a product or for explaining consumer segmentation.

In conclusion, considering that neuromarketing complements and sometimes replaces traditional market research tests that investigate consumer behaviour, we can say neuromarketing has the potential to revolutionize general understanding about relationships between organizations and consumers.

References

- [1]. Bichiş D., *Cheia spre mintea consumatorului*, Chief executive, No. 9, 38-43, 2006, retrieved July 14, 2010, from www.daniel-bichis.ro/articole-pdf/neuromarketing-cheia-spre-mintea-consumatorului.pdf
- [2]. Datculescu P., *Cercetarea de marketing: Cum pătrunzi în mintea consumatorului, cum măsoari și cum analizezi informația*, Brandbuilders Publishing, București, 2006.
- [3]. Ferencová, M., *Modern Marketing and Value as One of Its Key Terms*. In: Ministrare. Tom I. Warszawa : Katedra Filozofii Wyższej Finansów i Zarządzania w Warszawie, 2010. p. 231-235
- [4]. Lindstrom M., *Buyology – A rush of blood to the head*, 2008, retrieved July 17, 2010, from www.martinlindstrom.com/#
- [5]. Oullier O., *Neuromarketing – Les bases d’une discipline nouvelle*, in Le Journal du Net, 2007, retrieved August 1, 2010, from www.journaldunet.com/management/dossiers/0702175neuromarketing/guide.shtml
- [6]. Pătrușcă A., *Trepte spre marketingul experiențial: neuromarketingul și marketingul senzorial*, in Revista de Comerț, 4/2009, p. 47-55.
- [7]. Pătrușcă A., *Neuromarketingul*, in Tribuna Economică, 15/2009, p. 56-58.
- [8]. Stoica V., *Neuromarketingul și neuroindividualismul metodologic. Mai multă raționalitate*, retrieved August 2, 2010, from www.spiruharet.ro/sesiuni-comunicari/word/4.11.pdf
- [9]. [www.startups.ro/analize/neuromarketingul-te-duce-in-mintea-consumatorilor - information](http://www.startups.ro/analize/neuromarketingul-te-duce-in-mintea-consumatorilor-information) retrieved on July 16, 2010.
- [10]. www.hotnews.ro/stiri-arhiva-1217551-neuromarketingul-science-fiction-realitate.htm - information retrieved on July 17, 2010.
- [11]. www.studentsonmarketing.wordpress.com/2009/01/12/neuromarketingul-sau-razboiul-sinap-selor/ - information retrieved on July 16, 2010.
- [12]. www.neuromarketing.ning.com/ - information retrieved on July 15, 2010.
- [13]. www.wisegeek.com/what-is-neuromarketing.htm - information retrieved on July 17, 2010.
- [14]. www.btoone.com/ - information retrieved on July 16, 2010.
- [15]. www.neurosense.co.uk/ - information retrieved on July 16, 2010.
- [16]. www.neurosciencemarketing.com - information retrieved on July 18, 2010.
- [17]. www.neuromarketing.blogs.com - information retrieved on July 22, 2010.

NEUROMARKETING - MIĘDZY WPLYWANIEM A MANIPULACJĄ

Streszczenie: Ten temat został wybrany, ponieważ neuromarketing pozwala specjalistom od marketingu na poprawę ich możliwości w zakresie popularyzacji marki, mając jednocześnie potencjał aby zrewolucjonizować ogólne zrozumienie istniejącej relacji organizacji i konsumentów. Praca została napisana, aby zwrócić uwagę naukowców w tej dziedzinie – oraz poza nią – na możliwości zmniejszenia luki między podświadomością konsumentów i ich zachowaniami, w celu realizacji ich pragnień. W związku z tym wykazano, jak badania sensoryczne, poznawcze i emocjonalne reakcje na bodźce konsumentów związane z produktem lub reklamą pozwalają naukowcom dowiedzieć się, dlaczego podejmowanie decyzji przez konsumenta przy wyborze marki lub innej osoby, bez charakterystycznych dla podmiotowości tradycyjnych metod badawczych. Praca zawiera opis podstawowych technik stosowanych w neuromarketing, kwestii związanych z sytuacją na rynku krajowym i Rumunii w tej dziedzinie, obszary jego stosowania i ograniczenia nałożone przez aktualnej sytuacji gospodarczej. Ten artykuł może być także punktem wyjścia do stworzenia kodeksu etyki w sprawie wykorzystania neuromarketingu, jak również czynników prawnych, które mogą pomóc złagodzić powstałe konflikty dotyczących neuromarketingu - między wpływem i manipulacją.

神经营销之影响和操纵

摘要: 选择本主题是因为神经营销是营销专家改善品牌的普及性而且可能彻底改变各组织之间存在的关系和消费者的普遍理解。本文目的在于提高在此领域的关注度，同时提供机会为满足他们的需求来消除消费者的潜意识和他们的行为。因此，它阐述如何研究消费者的感官，认知和情绪反应的刺激相关产品或者广告使研究人找出消费者选择一个品牌或其他不特定的因素的原因的传统调查方法。本文阐述了神经营销中的主要技术，面向此领域国内市场以及罗马尼亚情况，和目前经济状况。本文同时是开发神经营销学代码的起点，并且从法律角度解决其中冲突。