



Effect of Neuroscience in Business

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Abstract

The study of the nervous system is mainly known as neuroscience. Historically, the lack of available information about brain technology and human psychology has a limited scope of application for Neuroscience in business management. In this article, we describe, the advantages and disadvantages of neuroscience in business strategies. Therefore, this paper provides an overview of marketing research to understand the subconscious mind of the customer and discusses the ethical issues and professional challenges in neuromarketing and recommendations.

Keywords: Neuroscience; Neuromarketing; Business

Introduction

Neuroscience is not only studying the human nervous system, it also studies how the nervous systems works, how it is developed and structured. Furthermore, it helps to seek how the system functions from individual neurological and psychiatric disorders. The following terms are related with the study of Neuroscience: Neuro-Marketing: Neuro-Marketing is a combination of Neuroscience and marketing for understanding the process how a human brain takes decision in a social-economical context. Neuro-Marketing is a new marketing technique developed by Zaltman and Kosslyn (2000). The main aim of Neuro-Marketing is to know the consumer's subconscious mind for improving the marketing research.

Neuro-imaging

Neuro-imaging is a process for investigating customer's response in odd or even situations. This is a suitable method to capture the emotions for preferring a special brand. Neuro-imaging builds a strong relationship with Neuro-Marketing to demonstrate the emotional attachment of customers.

Literature Review

The word Neuroscience is connected tightly to the words Medicine and Consciousness. Growth of Neuroscience mainly related with brain and behavior has been started since 1968. According to several researchers like Zurawicki [17], more than 90% of the information of the human brain processed subconsciously which needs to be studied and explained properly for analyzing human decision-making processes. Scholars like Lee., *et al.* [6] stated that this development of neuroscience generated a new field called as Neuro-marketing. Park., *et al.* [7] proved that customers are always ready to fulfill their experiential needs, functional needs and emotional needs. According to Pradeep [8], every parts of brain maintain several functions, and for that reason, a particular part is responsible for a specific stimulus. Ratnayake., *et al.* [9] represented three ways to support the brand manager by Consumer Neuroscience. According to Reimann., *et al.* [10] there are advantages of neuroscience for psychological process in brain. In 2010, Swaab [11] in his book, "Wij zijn ons brein. Van baarmoeder tot Alzheimer" claimed that it is possible to train the human brain according to human mind. According to Vlachos., *et al.* [13], there

lies a personal history (e.g., I like Khadim (a brand shoe company) because my grandfather used to go there) for every emotional attachment of a customer to a brand, but the satisfaction comes from few experiences, and companies fail to prove their loyalty due to lack of affection to their customers. According to Whalen., *et al.* [16], this process influences the whole mood of an organization. Researchers like Fugate [5], Ariely and Berns [2] suggested to use Neuro-Marketing for considering human behavior and marketing. Venkatraman., *et al.* [12] announced that Neuroscience can specify brand traits according as customer's preference. It can study the emotional and subconscious processes of mind and can generate out-of-sample applications. Waldman., *et al.* [15] described the effect of the added value of Neuroscience methods in organizational research. Agarwal and Dutta [1] presented an article about Neuro-Marketing and consumer neuroscience. Neuroscience, also addressing the sides of business, management, cognitive sciences and medicine.

Advantages of neuroscience in business

Neuroscientific tools are widely used to understand and to investigate the consumers' behavior. It empowers the industry managers to develop and to innovate their products according to consumers' satisfaction level and to ensure the loyalty of the products.

There are several limitations and biases of the traditional marketing method like surveys or focusgroup methodology. Researchers like Jamieson and Bass (1989) discovered that there is a substantial variation between the stated intention of the customers and their actual behaviors at the time of marketing.

Role of Neuroscience in business

Suppose that you are a manager of a company and you are in a meeting with your employee about the increasing of earnings of your company. Without your concern, your heart is beating regularly and you are breathing properly, your limbic system is taking information about people, light, heat, weather, sound, properly which permits you to react emotionally with the outside world. With the help of your cortex system, you are speaking fluently and planning what you are going to say next. This allows you to focus on your topics, to control your nervous system and to respond your employees' questions properly. But, suddenly you heard a terrific sound within your company. Now, your brain will automatically access the source of the sound, will try to understand the nature of

the sound whether it is bomb or gun or burst of the tyre of a car or failure of any part of a machine. This might increase your heart rate, you may stop breathing for a millisecond and you will look forward to the sound. When you understand that it is a fault of one of your employees, then it is a big responsibility to you how to respond to the employee in tone, in words, in posture or in emotions. All these sudden processes happen parallelly in less than a second. So, this is a huge impact of your brain on you and your behaviors. This is how your brain works for being a good leader and for creating a better workplace by communicating smoothly with others.

Future of neuro-marketing

Though the fundamental of Neuro-Marketing tools are focused to analyze the human behavior and to gain deeper insights of the consumer behavior, several smart research avenues are required. It is important to know how our senses work to create decisions for the best product choice, e.g., what will be the best scent to spray in a retailer shop to cooperate with senior customers, or, what is a customer satisfaction/dissatisfaction level for a particular air brand. Advancement in Consumer Neuroscience will help us to find an answer of these questions. Esch., *et al.* (2012) quoted that one-day technology will be more advance and that will allow more investigations about which will give more smart result at the time of experimental studies.

Conclusions

In this article, we have concentrated on some key issues to incorporate the effect of Neuroscience in business management. Most of the businessmen have skillful qualities and good marketing strategy, but over the last few years, sometimes has been running slowly because of economic insecurity. Therefore, it becomes very valuable to understand the Neuroscience behind the decisions of a customer and a manager.

Neuro-Marketing facilitates is to understand the subconscious mind of a consumer and supports to identify consumer behaviors and attitudes at the time of marketing. Therefore, it is important to have a better understanding of the consumer's intention and to help an organization in branding their services. It can help to demonstrate consumer decision making, helps service provider and policy maker to imply more intelligent business policies and legislation. In the last few decades, researchers studied intensively on emotion or human cognition, but still much more waits to be ex-

plored. However, like in other applied sciences, the effects of Neuroscience in business are waiting to be presented in mathematical formulation.

Future Research

Future research on Neuroscience will focus on customers' satisfaction and loyalty of consumers, and it will try to measure behavior and reactions of consumer related with brand and marginal utility. It will be a great task if in future more methods be developed to find the consumer behavior instead of the current method like EEG or fMRI. Future research will consist a mathematical and OR-based method to demonstrate a model properly. According to Waldman (2013), there is a lack of experienced Neuroscientist or Neuroscience expertise in any organizational research, and a lack of publication about Neuroscience related articles. We hope the references about Neuroscience-related articles will increase in future and, we will enhance this trend.

Bibliography

1. Agarwal S and Dutta T. "Neuromarketing and consumer neuroscience: current understanding and the way forward". *Decision* 42.4 (2015): 457-462.
2. Ariely D and Berns GS. "Neuromarketing: The hope and hype of neuroimaging in business". *Nature Reviews Neuroscience* 11.4 (2010): 284-292.
3. Esch FR., et al. "Brands on the brain: do consumers use declarative information or experienced emotions to evaluate brands?" *Journal of Consumer Psychology* 22.1 (2012): 75-85.
4. Fisher CE., et al. "Defining neuromarketing: practices and professional challenges". *Harvard Review of Psychiatry* 18.4 (2010): 230-237.
5. Fugate D. "Marketing services more effectively with neuromarketing research: A look into the future". *Journal of Services Marketing* 22.2 (2008): 170-173.
6. Lee N., et al. "What is 'neuromarketing'? A discussion and agenda for future research". *International Journal of Psychophysiology* 63.2 (2007): 199-204.
7. Park CW., et al. "Beyond attitudes: attachment and consumer behavior". *Seoul National Journal* 12 (2006): 3-36.
8. Postma P. "Anatomie van de verleiding". Nederlands (2017).
9. Ratnayake N., et al. "A Neurocognitive approach to brand memory". *Journal of Marketing Management* 26.13-14 (2010): 1295-1318.
10. Reimann M., et al. "Aesthetic package design: A behavioral, neural, and psychological investigation". *Society for Consumer Psychology* (2010).
11. Swaab D. "Wij zijn ons brein". Van baarmoeder tot Alzheimer (2010).
12. Venkatraman V., et al. "New scanner data for brand marketers: How neuroscience can help better understand differences in brand preferences". *Journal of Consumer Psychology* 22 (2012): 143-153.
13. Vlachos PA., et al. "Consumer-retailer emotional attachment". *European Journal of Marketing* 44 (2010): 1478-1499.
14. Waldman DA. "Interdisciplinary research is the key". *Frontiers in Human Neuroscience* 7 (2013): 562.
15. Waldman DA., et al. "The added value of neuroscience methods in organizational research". *Organizational Research Methods* (2016): 1-27.
16. Whalen PJ., et al. "Neuroscience and facial expressions of emotion: The role of amygdala-prefrontal interactions". *Emotion Review* 5 (2013): 78-83.
17. Zurawicki, L. "Neuromarketing, exploring the brain of the consumer". Berlin: Springer (2010).