

TRANSFORMING MARKETING USING NEUROSCIENCE AND NEUROTECHNOLOGY

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ABSTRACT

The paper tries to briefly discuss the role of neuroscience and neurotechnology in transforming marketing and making marketing much more productive using various emerging tools and techniques. Technology in the shape of Biometrics and neurological studies strategies within the likes of MRI, Facial Coding, useful magnetic resonance imaging (fMRI), electroencephalography (EEG), SST (Steady State Topography), Magneto Encephalography (MEG), and MYND and utilized in advertising to sure quantity to make the commercial enterprise a lot greater effective. These

I. INTRODUCTION

The traditional marketing methodologies such as the television commercials and newspaper advertisements are unsuccessful at selling products because they do not stimulate the consumers to purchase a particular product. Usually, this kind of traditional marketing methods attempt to determine the attitude of the consumers toward a product, which may not represent the real behavior at the point of purchase. It is probably that the entrepreneurs misunderstand the client conduct due to the fact the anticipated mindset does now no longer continually replicate the actual shopping behaviors of the consumers. These studies have a look at explains the want of neuroscience in advertising aimed toward bridging the distance among conventional marketplace studies, which is predicated on express client responses, and new neuromarketing studies techniques, which displays the implicit client responses. The EEG-primarily based totally choice popularity in neuromarketing changed into notably reviewed.

II. METHODOLOGY

This research paper uses descriptive analysis to document contemporary practices in Neuroscience with marketing and technology. It focuses on practices by exploring the same based on two perspectives'- first, it explores the relationship between neuroscience and its applications in

tools help marketers understand changes taking place inside the brain and that will further help in better decisions. It will also embellish marketers in the changing technology driven time and its connection with the flourishing field of neuromarketing. The study will help to make clear in simple, understandable terms, list out findings and suggest future application of neuromarketing in advertising and brand building.

Keywords: digital transformation, neuromarketing, technology, neurotechnology, disruption

marketing. Further, it integrates technology applications in neuroscience to the business practices of marketing. This is based on an inclusive and thorough assessment and review of existing research from various professional sources. It consists of principal thoughts of forte books, studies papers and professional critiques from quite a number scholars, studies corporations and expert associations. With the goal of drawing an incorporated photograph of the modern-day studies landscape, many guides have been analyzed.

III. ANALYSIS

The revolution of neurotechnology and neuroscience

The limitations of the cranium were commonly taken into consideration the separation line among the observable and unobservable size of the residing human being. In fact, even though primitive varieties of neurosurgery utilized in historic societies, consisting of pseudo-clinical tactics together with trepanation, may want to permit for the commentary or even manipulation (e.g. selective removal) of mind tissue, but the neural and intellectual methods run within the mind and underlying emotions, reasoning and behavior remained at duration unobservable. In contrast, current improvements in neuroscience and neurotechnology have regularly allowed for the unlocking of the human mind and furnished

insights into mind methods in addition to their hyperlink to, respectively, intellectual states and observable behavior. In 1878 Richard Canton observed the transmission of electrical indicators via an animal's mind. Forty-six years later, the primary human electroencephalography (EEG) changed into recorded. Since then, a neurotechnological revolution has taken area outside and inside the clinics. In the 1990s, every now and then called the 'decade of the mind', using imaging strategies for neurobehavioral research improved dramatically (Illes 2003). Today, as a extensive and unexpectedly increasing spectrum of neuroimaging technology has end up clinically and commercially available, the non-invasive recording and show of styles of mind hobby (regularly related to the final touch of bodily or cognitive tasks) has end up fashionable practice. For example, EEG recordings are being extensively used to non-invasively degree electric hobby of the mind and come across voltage fluctuations. In addition, derivatives of the EEG method together with evoked potentials (EPs) and event-associated potentials (ERP) permit to common EEG responses to the presentation and processing of stimuli, subsequently to document mind indicators all through the overall performance of unique sensory, cognitive or motor methods. Another method, practical magnetic resonance imaging (fMRI), permits to degree mind's electric hobby indirectly, i.e. with the aid of using the use of hemodynamic responses (cerebral blood flow) as oblique markers. Current fMRI strategies can localize mind hobby, graphically show styles of mind activation, and decide their depth with the aid of using color-coding the electricity of activation. fMRI strategies are carried out for loads of functions consisting of pre-surgical operation threat assessment, and practical mapping of mind regions to come across abnormalities (e.g. left-proper hemispherical asymmetry in language and reminiscence regions) or to take a look at post-stroke or post-surgical operation recovery, in addition to the results of pharmacological and behavioural therapies. In addition, some of neurological situations consisting of despair and Alzheimer's ailment can now be identified with using fMRI (Koch et al. 2012).

With the globalization & liberalization taking place everywhere in the international the realization of marketing and marketing has a shift from mere product oriented to market-oriented method. Marketers are keen now now not fine in making the

product superior but doing it in a extra holistic method wherein withinside the normal satisfaction of customers are taken into consideration. The have a examine of customer behavior (CB) emanated with many new theories in this vicinity and models have been superior to apprehend the behavior of customers. There were a drastic shift withinside the way of thinking with the arrival of era in facts customer behavior.

The use of technology has been widely accepted due to the increasing power of processing capacity as storage capacity increased. This helped in improvement in analytical capacity from data interpreters and it has further developed into a tool for marketers, and they started using internet as a medium of communication. The power of technology helps improve business by leaps and bounds and consumer behaviorist and psychologists started using it more frequently. The initial studies of CB using of technology interface was focused on facial recognition software, eye tracking, business intelligence software's to map consumer behavior while designing, promoting, pricing, and packaging our products. The data analytical tool and business analytical software came to limelight to analyze the existing ocean of research data.

With facial recognition software attaining remarkable success in business and therefore now researchers recognize the importance to use not just the physical aspects of consumers but further getting in middle of all the activities happening in human being - 'The Brain' where the information processed is 110% guaranteed. This study tries to integrate technology applications in neuroscience to the business practices of marketing.

Ohme, Kowalski &Reykowska*(2007) in a study on exploring consumers mind using neuromarketing tool the study tries to illustrate the benefits of neuro-physiological findings on marketing. Here the authors use two advertisements with sight difference in gestures of just 1.5 second. The reaction in the brain was tracked using EEG and EMG technique. It reveals that out of the total sample size, 98 percent did not consciously observe the difference in the scene but amazingly one of the ads succeeded.

Advancement in neuroscience happened over two decades and it has spread its wings so much so that neuroscientists started working with the consumers to measure what is going on with the media and optimize its effectiveness. It measures the brain and sees how it works. Statistics shows that 70 to 80% of all new products fail because of wrong product launch, wrong targeting or fails to understand people's thinking. Neurology helps in better forecast based on the expected behavior as it displays which area within the responsibility of the brain for what actions. This definitely will reduce failure rate to a larger effect.

Neuromarketing is making use of the techniques of the neurology lab to the questions of the marketing and marketing world" (Thompson 2003, 53). It is combining neuro-technology with advertising. It is an examination on neuroscience and feelings the usage of the maximum superior technology. Kenning et al. (2007) Neuroimaging in patron conduct is extensively utilized by advertising researchers. fMRI is a capacity device for marketplace researchers because it connects and suggests feelings in emblem positioning, marketing and marketing and pricing strategies.

The various parts within the brain play a momentous role while using neuromarketing tools. Each part within the brain is connected to various visuals which are responsible for our different emotions. The neuroscientists have mapped various areas in the brain, using methods in the likes of MRI, Facial Coding, functional magnetic resonance imaging (fMRI), electroencephalography (EEG), SST (Steady State Topography), Magneto Encephalography (MEG), which shows reward and pain through signals in certain area within the brain, change in facial expression again due to certain changes of the brain and so on. It is the prefrontal cortex area which is related to human beings executive function. It can distinguish conflicting thoughts, decide on what is good, bad or best. It also helps in prediction of certain outcomes, more of cognitive ability. The right ventral striatum shows the emotional, motivational characteristic of human behavior whereas Amygdala must do more with the anxiety and stress.

Fugate, Douglas (2007) the authors talk on traditional approaches to consumer behavior which is less powerful and not very convincing in understanding consumer's needs and wants. However coalescing neural activity images with conformist tools has been more effective in the study of marketing. More than 70% of all thoughts happen at subconscious level and not easy to track through traditional research methods. Today a lot of multinational companies in the likes of Coke, Pepsi, Intel, McDonald's, Unilever, GlaxoSmithKline, PayPal, Google, Hyundai have all used this budding tool of Neuromarketing effectively.

IV. RESULTS AND DISCUSSION

Traditional research along with neuromarketing tools helps in better understanding of human brain and thus helps marketers focus their marketing effort in a better way. Combining brain images with tools like questionnaire method and focus group may produce better results. The use of consumer behavior concepts and theory did not have high impact in the past but today with technology as a base, marketers can track consumer emotions and thereby create effective communication program and brand building.

V. CONCLUSION

We have seen how advancement in marketing is taking place with the advent of some specific tools which can unravel the mystery behind why we buy a particular product, brand or service. Any organization who would know the reality of why a particular product is bought or why one ad is preferred over other, or to get an accurate feedback on a product or service, they must get into the brain of a consumer by using the most advanced technology tools like fMRI, EEG rather than going for a focus group study which has its own limitations. Knowing customers and their needs are primitive to any organization's goal and which could well be addressed with the combining of neuroscience with marketing. As such neuroscience is not a new field but combining it with marketing makes it new and innovative ways in knowing what we think, feel and do. Future research is wanted to investigate the consequences of neurotechnology and new neurotechnology on top of things and in marketing and marketing and advertising, the benefits, and downsides of bringing in neurotechnology and neurotechnology into marketing and marketing and advertising. We

want to have an easy examination of those components to make those programs a wonderful deal extra fruitful. Ideally, this debate needs to experience the active and cross-disciplinary participation of management experts, marketing and marketing and advertising experts, neuroscientists, technology builders, and regulatory bodies.

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