Neuro-Gaming Technology Market - Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)

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Report description:

The Neuro-gaming Technology Market is expected to register a CAGR of 5.3% over the forecast period (2022-2027). Neuro-gaming technology, an advanced technology in gaming, involves the utilization of brain-computer interfaces such as electroencephalography technology, which allows users to interact with the game without using any traditional controller. In addition to entertainment, neuro-gaming technology also solves the purpose of healthcare and people's well-being by assisting in treating brain disorders such as ADHD and PTSD.

Key Highlights
Neuro-gaming technology is being used to create advanced gaming hardware and software. Assisting in the process, many developers have been designing advanced games to help people improve physiological factors such as brainpower, health, and skills. Factors such as the increasing development of BCIs, increasing usage of computers, laptops, and smartphones, and the rise in the adoption of smart devices act as some of the major drivers of the market. Besides, the surge in demand for more advanced technologies capable of adding multiple functionalities and features to the games is expected to drive further the demand for neuro-gaming technology.
The culture of neuro-gaming technology is still at an evolutionary stage. Hence, only a limited number of neuro games and a limited number of actions that are included in the game are available in the market. However, the rapid developments happening in the software and technologies could ensure that the neurogames become more challenging with multiple actions.
Vendors in the market are also building custom games that are primarily constructed to increase multiple cognitive factors, such as the user's multitasking ability, attention span, and memory. For instance, 'NeuroRacer,' one of the earliest neuro-games developed by Qneuro, is a racing game designed to improve the cognitive functioning of aging adults and to engage the multitasking portion of the user's brain. 'Throw Trucks with Your Mind' is another such game.
Recent studies have shown that transcranial direct current stimulation (tDCS) aids in improving the ability to concentrate, learn,

and be creative by directing a mild electrical current to the player's brain. For example, The US Air Force has confirmed that headsets with tDCS capability significantly reduced the amount of training time for their pilots while using video simulators. The US army also uses them to improve the performance of snipers.
Moreover, UTSA researchers launched the first worldwide Accessibility VR Game Jam, accessible to gamers with disabilities. But due to COVID-19, they worked to migrate the game jam to an online-only environment quickly. Further, according to a recent study conducted by Verizon, gaming usage increased by 115% in the United States compared to the pre-pandemic period. The online gaming platforms and live streaming services also witnessed a record number of users throughout March and April. An increase in gaming traffic was witnessed during peak hours by 75% over the post-pandemic period.
Neurogaming technology is typically restricted to adding low-level rewards and basic graphic skins to established cognitive task paradigms when used to achieve cognitive training objectives. The fact that this gamification strategy frequently consists of adding game aspects to uninteresting cognitive exercises to make them a little less dull may contribute to the field's preponderance of bad results.

Neuro-gaming Technology Market Trends

Education Segment to Witness Significant Growth

Mind reading or brain-computer interface technologies help improve learning and concentration skills. Additionally, there have been studies showing how neurogaming technologies can help people with Alzheimer's, ADHD, and other related conditions. Companies such as Neuroelectrics have developed an EEG headset designed to stimulate the brain while playing games to treat problems such as chronic pain and depression. The company claims that its product can also be used for stroke rehabilitation.
Further, according to the cyber metrics lab, Most universities are located in India. Data from July 2021 indicated that there were approximately 5,288 universities in India. With 3,216 universities, the United States was second only to Indonesia, which had 2,595 universities.
Further, in July 2022, Georgia State University researchers used fMRI to discover that gaming could be useful for training perceptual decision-making. Frequent players of video games showed superior sensorimotor decision-making skills and enhanced activity in key regions of the brain when compared to non-players. The research project involved 47 college-age participants, with 28 as regular video game players and 19 as non-players.
Similarly, researchers and scientists from Aalto University in Finland are developing a computer game to treat depression. The game requires players to solve challenges in a fantasy city designed to afford a therapeutic benefit, which eases symptoms of depression and improves cognitive performance. The game is currently unsuitable for the elderly, people with severe psychotic depression, or the only treatment form.
In January 2021, the gaming technology firm, Valve, urged its developers to undertake brain-computer interface (BCI) studies, predicting to change the gaming industry drastically. According to the company, gamers might soon be able to control their in-game movements via brain wave transmission. Also, Valve recently announced an open-source project in partnership between Valve and the OpenBCI developer community, allowing creators to study and improve brain-signal processing in conjunction with VR headsets to enhance the gaming experience.
Game-based learning (GBL) "fits" with the nervous system's sensing-thinking-doing functionality as long as it is incorporated into the flow of educational stimuli. Additionally, GBL satisfies the normal "needs" of the brain. The brain's primary need is to stay alive and maintain control. The brain's second requirement is to feel good, which includes having fun, playing, and receiving rewards. The brain's third need is to conserve energy by making things logical and consistent. Learning through games gives the brain a sense of control, delivers enjoyment, play, and rewards, and satisfies the desire to conserve energy by having a logical plot.

North America Expected to Hold Significant Market Share

The North American region has seen a surge in neuro-gaming technology due to the early acceptance of technologies and many creative developers working in the sector. The gaming industry in North America has benefited from the rising use of mobile devices and television video streaming apps to view movies, TV shows, and live events on demand.
During the forecast period, new growth possibilities for participants in the region's neuro-gaming technology market are anticipated, thanks to rising user awareness and increased adoption of advanced gaming technologies. Games that can improve brain function and offer therapeutic advantages to persons suffering from depression and other mental health illnesses are the main focus of psychologists and game developers. For instance, Akili Interactive has created a typical iPad game that can detect differences between the brain activity of a typical child and a youngster with ADHD or autism. The game captures obvious signatures from the gameplay that can precisely identify the player by measuring 65 distinct bits of data every second.
Further, the market is expected to be spurred by the ability of the technology to integrate real-time brain monitoring to engage and entertain users while maximizing learning efficiency, particularly in children with disorders. The number of children suffering from disorders in the U.S. is rising. Neuro-gaming technology can solve these issues and limit any further transition to more significant problems later in life. For instance, one in seven children (ages two to eight), according to estimates from the U.S. Center for Disease Control and Prevention (CDC), has a mental, behavioral, or developmental issue. In addition, they predicted that one in five kids (aged 13 to 18) could go through a severe mental illness at some point in their lives.
Also, recently, university professors from New York and California developed three games aimed at helping users to boost their memory, inhibition, and cognitive flexibility. The development of these games was funded by the US Department of Education's Institute of Education Sciences (4-year research project).
In addition, there is a growing demand for Canadian gaming businesses, technologies, and goods. Numerous important elements, including technical advancements, customer preferences for novel products, changes in the general public's view, and inventions, have contributed to the growth of the Canadian gaming business. Additionally, this has piqued the interest of foreign businesses looking to establish a solid presence in Canada. Additionally, the expansion of haptic sensation, virtual reality, and augmented reality technologies that support neuro-gaming technology ensures the market development of the region. For instance, in recent years, Red Six Aerospace Inc. developed an AR platform to train US military aviators in air-to-air combat. Such developments are expected to aid the market's growth in the region.

Neuro-gaming Technology Market Competitor Analysis

The global neuro-gaming technology market is moderately competitive due to the presence of multiple players. The players in the market are adopting strategies like product innovation, mergers, and acquisitions to expand their product portfolio, expand their geographic reach, and primarily stay competitive in the market. Some of the vendors in the market are Emotiv Inc., iMotions A/S, and Qneuro Inc., among others.

July 2022: The new game from Mindpeers is a ground-breaking development in health technology. It claims to give its users mental clarity, the ability to express their worries, and a sense of empowerment. As the name implies, the game's intriguing two-step journaling and self-exploration portion aid in clearing the skies or thoughts. According to research, when users express their feelings or thoughts, they can articulate, activating neocortical functioning.
February 2022: MindMaze secured USD 105 million in financing to accelerate its global commercial growth plans, bolster ongoing Research and Development, and consolidate the clinical development pipeline of its digital therapeutic solutions for various neurological diseases.

Additional Benefits:

The market estimate (ME) sheet in Excel format
3 months of analyst support

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