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# NUERALINK: WHAT IS IT AND WHY IT MATTERS?

## INTRODUCTION

With the advancement of technology day by day, scientists are about to achieve something no one has thought about or something which sounds almost impossible to be true. Elon Musk is a billionaire who has provided the world with a lot of innovations. Nueralink is also one of the innovations and inventions of Elon Musk which will completely change the world. Nueralink is a device that will be placed into the brain of human beings and with the help of this device, humans will be able to control and communicate with the machines around them using their brain only. Nueralink will deal with anything related to the brain and as the brain is the control unit of the whole body so your whole body will be controlled by Nueralink. The company which is working for the development of the Nueralink was founded in 2016 and has been working on it since then. Elon Musk said that the team working on it is hopeful that Nueralink will be launched by the end of 2020 however human trials have yet not started which means that we should be expecting a delay in its delivery date. The official team described Nueralink as an **“**ultra-high bandwidth brain-machine interface to connect humans and computers**”.**

## HOW WILL IT BE IMPLANTED INTO HUMAN BRAIN?

As Nueralink will be controlling the brain of the human body so it will be necessary to implant it into the human brain as well. Its wires will be surgically inserted into the brain with the help of a robot. According to the company’s resources, the wires of Nueralink are as much thicker as the thickness of the neurons in the brain and we can imagine its size by comparing it with the strand of hair at 100 micrometers and dividing its diameter by ten as well. The president of Nueralink, Max Hodak, thinks that the human brain is capable of getting targeted by more than one device. However, for implantation of Nueralink, holes will be drilled in to brain so in order to ensure safety, Elon Musk has informed that everyone is aware of the fact that procedure is complex and very difficult for a highly-skilled person as well so specially designed robots will be used for this procedure, which will carry out this procedure with more accuracy and efficiency. The Nueralink robot will embed the module into your cerebrum using a magnifying instrument and needles the dimensions of 24 microns (a micron is one-millionth of a meter). These needles are little to the point that you can only with significant effort spot them with the unaided eye Company also informed that in order to ensure safety, everything will be carried out by keeping the rules and regulations given by the health ministry in mind. Elon Musk also told that the process will take up to 2 hours to complete and the person might be kept under partial anesthesia.

## HOW WILL IT WORK

As mentioned earlier, Neuralink will be in control of your brain. So instead of teaching you how to dance, it can be programmed with dance steps and it can then send those instructions to your brain and you will be dancing without any prior knowledge. Currently, the company believes that the invention will be able to control daily-usage devices such as smartphones, computers or televisions, etc. To understand how it will work, one should know the basic that our brains work by sending and receiving information from different organs of the body using neurons. These neurons in your brain connect to form a large network and communicate using chemical signals called neurotransmitters. This reaction generates an electric field and you can record these reactions by placing electrodes nearby. These neurons in your thoughts associate with one another to border a huge arrange and impart making use of artificial symptoms called neurotransmitters. This response creates an electric-powered field and you may file those responses by putting electrodes close by. Those electrodes might then be able to recognize the electric sign in your cerebrum and make an interpretation of them into a calculation that a machine can look at. This way Nueralink could be able to examine what you're questioning and find a way for you to talk to machines without even analyzing your mouth’s movement. So in place of saying out "Ok Google" or "Alexa". The objective of the N1 chip is to file and animate electrical spikes inside your cerebrum. You may likewise have the choice to collect diverse capabilities making use of a committed application. Right now it is not evident whether Bluetooth or some different sort of innovation will be utilized for transferring data however it's far sure that interaction can be wireless.

## How will it be used?

The more you read about it, the more you get impressed by its applications and its features. Nueralink is believed to be helping the medical department vastly. It is believed to help paralyzed people as those people will be able to control mobile phones or television using their brain only. It is also expected to treat diseases such as epilepsy as well. In a conference, Musk also hinted that this device might also be able to redevelop someone’s lost vision as well which is quite remarkable. He said that this innovation, on a basic level, will want to fix anything amiss with the cerebrum. Musk added that Nueralink can also be used to restore the memory, speech, and movement of a paralyzed person. Post a complete symbiosis of the tech and the human brain it will also be able to help humans interact with each other without the need to talk, Musk said. He didn't determine if we would have to gain proficiency with a particular language for this however he said it will be conceivable. Imagine, the ability to read someone’s mind! The recent update on its development is that people will be able to hear music in their heads directly. How this will work is that Nueralink will be connected to the ear as well so when you are in the mood of listening to music, you can easily do that by enabling it in your mind. Imagine traveling to a different location and talking to a foreigner with a language that is not familiar to you yet. With the help of this device, you will be able to auto-translate it in your mind, and moreover who knows this device will also enable you to speak other languages simultaneously as well.

You're entering the domains of AI, the prospects are unending! Envision, you will not need a specialized gadget like a telephone or a cell phone to interface with individuals. The possibility of telepathy isn't outlandish with tech like this. The speed of correspondence will likewise increment by folds as we will not sit around composing sentences. Although, the way toward catching ideas and translating them into sentences will require some serious energy. The organization will investigate more client situations when the innovation is sent however at first, the center will be to ensure the innovation cooperates flawlessly with gadgets.

## Disadvantages of Nueralink

I am confident that till now you must have believed that Nueralink is something which was never expected and now it is so close to becoming a reality. However, it is never going to be just as simple as it is currently. With every new development, there have been downsides and some downsides might even lead to the destruction of this planet as well. Most of us are aware of the fact that people who are administrating us are not very much concerned about our privacy and our confidentiality. They have been spying on us through different means and Nueralink is something which will give them access to everything we do, watch or plan in our mind. Suppose you realize that your phone is being hacked or used to spy on you, then you can destroy it or even throw it into the water and never use it again. However, with a chip planted into your brain, you cannot do that. You do not have any choice other than to allow its developers to watch everything you do without any legal recognition. War is something that has been with us for quite a long time. It is something that we will likewise be accomplishing for quite a long time to come. Consistently individuals are attempting to sort out better, more proficient approaches to execute. We used to utilize a bow and arrow that went to a crossbow, to firearms. We used to utilize guns and now we use heat-chasing rockets that accomplish more harm than we could dream of back when Cannons were used. The Nueralinks’ original purpose is to save people’s lives or give them back control of their lives. This will eventually be used to end lives. It is something that is associated with your cerebrum and has a signal. It isn’t too farfetched to say that people will try to exploit that. There are numerous theoretical ways they could do this. The brain is in control of pain. Imagine being able to manipulate the Nueralink to make the user feel immense amounts of pain, potentially turning fatal and shutting down the body. We know that the Nueralink will be able to give you back your Motor Function. Presumably, then, it will be able to take it away again. Let’s say you’re driving a car down a motorway, imagine then you suddenly do not have control of your body. Another possible way is the overload the brain. **“**An Idiot with a smartphone is simply a more efficient idiot**”.** This is something that is going to be accurate with the Nueralink too.

## Can Nueralink be hacked?

Despite the fact, Elon Musk stated that Nueralink can never be hacked no matter whatever the situation is however computer experts think otherwise. Experts believe that it is very difficult for us to stay safe from hackers. And considering the fact, if Nueralink can be hacked then there are going to be different disastrous outcomes of it. Suppose enemy country hacks the Nueralink of army general then will be able to see whatever he does in his daily routine and how to use it against him in difficult times. Moreover, hacking Neuralink means that you will be hacking a complete living body of a person as well. the company experts state that Bluetooth might be used for connecting electric devices with Nueralink and Bluetooth is difficult to hack because of its limited range. However, there are certain Trojan viruses as well which can spread via Bluetooth and infect android devices as well. This particular fact reveals that there is still a potential thread for Nueralink being susceptible to malware that can spread through Bluetooth.

Although Nueralink is a thoughts-blowing technology, in reality, one or two decade’s lower back, nobody ought to have a concept about this turning into reality someday. However, Elon Musk made it viable and is ready to reap this huge target. This technology is going to be a turning point for medical assistance or maybe help in each subject. But alongside its benefits, there are various hazards as well. You actually cannot count on it to operate flawlessly with no mistakes and that is the human mind we are talking about. A mild mistakes inside the tool and also you might be useless. Not anything in this universe is ideal or awful however its utilization makes it good or bad. Nueralink control in the wrong hands could mess things up on a huge scale.

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