➤ Name of Project : Neuralink chip



Breakthrough Technology for the Brain.

- > Project sponsor : Neurlink Company
- Project manager : Eng / Mohammed Salah
- > Purpose of the project :

Aimed at providing opposite communication means that certain ideas can be delivered to the human brain from another device.

Business casel:

The Newralink chip is a coin-sized computer chip grown in a human brain, indicating an early step.

Towards achieving the goal of treating diseases that affect humans by implanting the same type of segments, according to Reuters.

Newralink, co-founded in 2016 by San
Francisco-based Newralink, aims to implant
wireless connections between the brain and
computers with thousands of electrodes in the most
complex human organ to help treatneuropathic
conditions.

The newralink sensor is about eight millimeters in diameter or smaller than the tip of the finger, implanted in the skull, and connected to smallwires. With the help of a sophisticated robot, flexible filaments or wires more accurate than human hair are implanted in areas responsible for movement and sensation functions in the brain while the recipient is only under local anesthesia. Neuroscience experts said that although Neurolink's mission to read and stimulate brain activity in humans is possible, the company's schedule seems overlyambitious. Graeme Moffat, a neuroscientist at the University of Toronto, noted that "everyone in this field will be very impressed

• Features:

- Treatment of diseases such as Alzheimer's and dementia
- 2. Treatment of spinal cord injuries and paralysis
- Treatment of memory and hearing loss, depression and insomnia
- Control small things such as a computer keyboard or a mousse indicator

Project scope :

- a) the Chip Would help Control hormone levels
 For example the user can Calmly remove
 the anxiety or Concentrate on thinking
- b) the brain chip can cure memory loss, depression, hearing loss and insomnia, and it Will Work as a Fitbit in the human brains
- c) the Primary purpose for the brain Chip is to help People Who are injured

- d) it help to Cure neurological Conditions and disorders and it also help in the treatment of dementia, Al Zheimer and Verious spinal Cord injuries
- e) the brain chip allow People to Control
 Phones and other devices with their minds
- f) it help People with neurological Conditions
 Control their paralyzed Limbs by Certain
 Neuro connections
- g) it Works wirelessly sending signals to a machine interface

• Key deliverobles:

This Chip Considered a revolutionary brain-machine interface that could blur the lines between humanity and technology, this device will "sew" up to 1024 thin electrodes 5

microns wide extremely tightly into a person's brain and ...

When the chip is attached to someone's head, it is not visible, which means that no one can tell if someone else installed it or not and This chip can read all your brain activity, What makes it able to plan and anticipate a person's jobs? In the future, scientists seek to develop it to make it able to cancel the feeling of pain and sadness, and it will also control and store memories and dreams.

project resources :

- 1) Neuralink Company
- 2) Tesla Motors Company
- 3) A team of artificial intelligence programmers price, but this price may decrease in the future and become available to all users

Staff:

A team of artificial intelligence programmers

• Timeline:

- i. Neuralink project was launched in 2016.
- ii. In the period from 2016 to 2019, the Elon chip was tested on many animals, some of which failed, and some of them succeeded.
- iii. Elon Musk stated in 2019 that it will be tested in humans by the end of 2020.

Constraints:

- 1. Some experiments on animals such as monkeys and pigs failed and posed a threat to their lives .
- 2. The chip may be infected with some viruses, which affects the person carrying the chip.
- The slow pace of science and research just can't keep up with Musk's timelines.
- 4. A small robot attaches thread-like electrodes to specific areas of the brain. The sewing robot is

said to cost between \$10 and \$20 million in start-up cash, but can now be made for about \$500,000.

Budget :

No specific price has been set yet but It is expected that it will be available initially at a high

• Assumption :

Some scientists assume that Elon Musk's chip will achieve great success and will be the greatest achievement in human history, but it has not been tested on people and prove the validity of their conversations. On the monkeys, and the words of the scientists proved correct, but when trying it on some pigs, it failed and the lives of some of these pigs were destroyed. In the end, we are all waiting to try this slice on people and achieve what the scientists say, and we hope that there are no risks or the opposite of their words.

We all assumed that there was no technology that would help man and protect him from all diseases, but this assumption has been proven. Time has proven wrong. Elon Musk produced the advanced Mask chip in an unprecedented attempt in human history to provide the human brain with additional technological capabilities to enable it to perform computer operations.

High level risks :

This chip, according to Elon Musk, will connect brain signals with smart devices to control them through thoughts, and will contribute to the treatment of neurological conditions such as Alzheimer's disease, dementia and spinal cord injuries, as well as diseases such as memory loss, hearing, depression and insomnia and Perhaps the most dangerous part is the ability to control memories and create your own happiness by focusing on the good moments and banishing the disturbing for you. You may download it into a new body or into the body of a robot

Finally, this chip may be exposed to hacked, causing the leakage of a large number of users of this chip, and this is the biggest risk of the project.

Team members

- 1. Hossam Hassan saad Edin
- 2. Hossam Walid Mahmoud
- 3. Hassan Reda Hassan
- 4. Hamdy Soliman Sabet
- 5. Hamdy Salah Kamil Esmail
- 6. Khaled Mohsen Hashem

The project scope

Product scope Description:

In an unprecedented attempt in human history to provide the human brain with additional technological capabilities to enable it to perform computer operations, Elon Musk launched for the first time a chip implanted in the brain that connects it to a computer, which he says will allow in the future to grant additional supernatural abilities to see, hear, and even control feelings and store dreams.

This chip is considered one of the best inventions of mankind if it is done in the required manner and the basic and specific function of it, as this chip will benefit a large number of people, especially those with chronic diseases. And as we mentioned, the most important benefit of this segment is the treatment of diseases such as Alzheimer's diseases, spinal cord problems, poor concentration, tension, and the abolition of the sense of pain.

The most important components of the chip is that it contains thousands of electrodes connected to imitation wires thinner than a human hair, monitoring the activity of 1000 neurons in the brain, as they are connected in areas of movement and sensory functions in the brain.

Project scope Constraints:

- 1. Some experiments on animals such as monkeys and pigs failed and posed a threat to their lives .
- 2. The chip may be infected with some viruses, which affects the person carrying the chip.

3-A small robot attaches thread-like electrodes to

specific areas of the brain. The sewing robot is said to cost between \$10 and \$20 million in start-up cash, but can now be made for about \$500,000.

4-The slow pace of science and research just can't keep up with Musk's timelines.

project assumption:

Not long ago, the whole world expected that there would not, and would not, be technological means that would help man and protect him from diseases and give him some other advantages, but Elon Musk succeeded in putting an end to these dreams and turned them into a living reality, as he presented the world with a neuralink chip, which he assumed several assumptions and among these Assumptions that it will help the human and make his life easier and protect him from all diseases and also assumed that it will make the human mind like computers and these assumptions turned into reality when it was started to implant the chip in pigs and the results were very promising and it is only a matter of time until it is started to be implanted in human minds. **Product Acceptance Criteria:**

One of the criteria for accepting the product is that it does not affect human health and human capabilities in dealing with nature and making decisions, so the slice enables us to control memories, and the most important question remains whether this feature will be in the interest of humanity or not. There are many advantages in this segment that make a person interested in buying this segment, and it is very special.

Project Exclusions:

This project is considered one of the largest projects of its time, as this project includes the most important problems of this generation and contains solutions to many problems. The Neurlink company has allocated huge amounts of money to budget and start this project, but in the

beginning the cost of one slide will range between 10 to 20 Million dollars, and this price for many people is very, very expensive. After a while, it will be available at lower prices. We hope that this project will achieve its main objective.

Project Deliverables:

And certainly if you see it soon, it is necessary that it be usable by the human brain, as we know that it has so far been tested on the animal brain only.

The technology will initially have a medical focus, such as helping people deal with brain and spinal cord injuries or birth defects. The technology could, for example, help paraplegics who have lost the ability to move or feel because of spinal cord injuries, and early human uses of the technology will aim to help conditions such as paraplegia or quadriplegia.

In addition to the ambitions of Elon Musk, who stated that the device could help solve any number of neurological problems, from memory loss to strokes to addiction, or monitor the health of users and warn them if they suffer a heart attack, for example.

The first clinical trials are supposed to be on a small number of patients with severe spinal cord injuries, to make sure the technique works and is safe. In the long term, Musk said they will be able to restore full mobility to people with these types of injuries by implanting a second segment on the spine. But Musk's most important ambition is for the technology to achieve what he calls "artificial intelligence coexistence," which allows the human brain to integrate with artificial intelligence in the future. But all of these ambitions remain elusive so far.

There is a huge technical gap between what is currently possible in research labs and the concept envisioned by Musk, which requires devices that can process a large amount of information entering and exiting through the brain.



WPS

Neuralink

1.1 Starting 1.2 Hardwar e and Software

1.3 coding

1.4 Finishing

- 1.1.1 define project goals.
- 1.1.2 doing study about the project.
- 1.1.3 requirements.

1.2.1 The Microchip is a tiny sensor.

- 1.2.2 containing thousands of electrodes.
- 1.2.3 activity of 1,000 neurons in the brain.
- 1.2.4 Wireless internet connection.
- 1.2.5 the software of the chip.

1.3.1 dividing tasks

1.3.2 Test Chip

1.4.1 Elon musk chip test.

1.4.2 fixed errors.

1.4.3 Finish the chap.

Team members

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Dicitionary of WBS

1.1 starting

Work PackageID:	1.1.1
Work Package Name :	define project goals.
Description:	meeting with team leader and team members to define Project goals.
Person:	team manager, team members.
Start Date :	1 April 2022
End Date:	5 April 2022
Work PackageID:	1.1.2
Work PackageName:	doing study about the project.
Description:	collecting all information about it.
Person:	team members.
Start Date :	6 April 2022
End Date:	10 April 2022
Work PackageID:	1.1.3
Work PackageName:	requirements.
Description:	meeting with team, sponsors and stakeholders
Person:	manager,sponser, team members
Start Date :	11 April 2022
End Date:	16 April 2022

1.2 Hardware and software

Work PackageID:	1.2.1
Work PackageName:	The Microchip is a tiny sensor
Description:	it's about 8 millimeters in diameter or smaller than the tip of a finger

Person:	Experts in the technology industry
Start Date :	16 April 2022
End Date:	20 April 2022
Work PackageID:	1.2.2
Work PackageName:	containing thousands of electrodes
Description:	containing thousands of electrodes connected to flexible wires thinner
	than a human hair
Person:	programming team
Start Date :	25 April 2022
End Date:	30 April 2022

Work PackageID:	1.2.3
Work PackageName:	activity of 1,000 neurons in the brain
Description:	it can monitor the activity of 1,000 neurons in the brain, as they are connected to areas responsible for motor and sensory functions in the brain.
Person:	A team of engineers in artificial intelligence
Start Date :	1 Mai2022
End Date:	5 Mai 2022

Work PackageID:	1.2.4
Work	Wireless internet connection
PackageName:	
Description:	The chip depends on the wireless connection to the Internet, where it is implanted in the brain with complete control of the computers in it and it is like any electronic device where every period the programmers make updates to it
Person:	programming team
Start Date :	6 Mai2022
End Date:	11 Mai 2022

Work PackageID:	1.2.5
Work	the software of the chip
PackageName:	
Description:	The chip depends on a software developed and updated by the best programming engineers in the world, as they manufacture a software specifically for it to be able to provide all the technological advantages in it.
Person:	a team of programming engineers
Start Date :	12 Mai2022
End Date:	17 Mai 2022

1.3 coding

Work PackageID:	1.3.1
Work PackageName:	dividing tasks
Description:	the chip will inside person , it have many tasks
Person:	Neuralink Company
Start Date :	18 Mai2022
End Date:	25 Mai 2022

Work PackageID:	1.3.2
Work PackageName:	Name: Test Chip
Description:	This slide has been tested on many animals, such as monkeys and pigs, and achieved great success on monkeys, but failed on pigs, and scientists expect it to achieve great success when tested on humans.
Person:	Neuralink Company
Start Date :	26 Mai2022

Work PackageID:	1.4.2
Work PackageName:	Elon musk chip errors .
Description:	fixing errors
Person:	developers, manager and team members.
Start Date :	6 Aug2022

End Date:	31 Mai 2022
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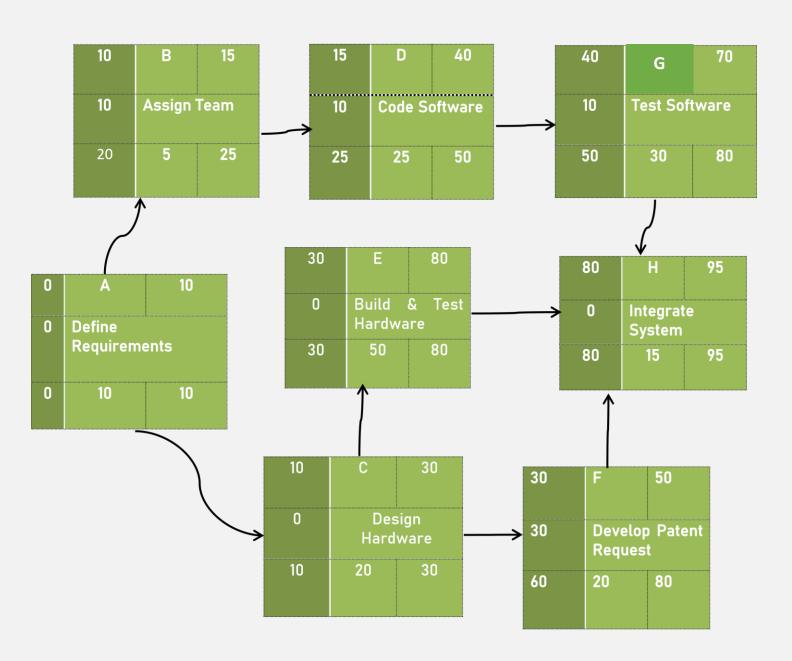
1.4 finish

Work PackageID:	1.4.1
Work PackageName:	Elon musk chip test .
Description:	meeting with team members, tester, manager.
Person:	Tester, team members, manager.
Start Date :	1 Aug2022
End Date:	5 Aug 2022

End Date:

Work PackageID:	1.4.3
Work PackageName:	Finish the Application.
Description:	After correcting the errors, it is completed immediately.
Person:	Manager & Team Members.
Start Date :	12 Aug2022
End Date:	17 Aug 2022

Activity	Pescription	Preceding Activity	Time
А	Define Requirements	None	10 workdays
В	Assign team	A	5
С	Design Hardware	A	20
D	Code Software	В	25
Е	Build & Test Hardware	С	50
F	Develop Patent Request	С	20
G	Test Software	D	30
Н	Integrate System	E,F,G	15



id	dur	Task	Budget	5	1	1	2	2	3	3	40	45	50	55	65	80	95
					0	5	0	5	0	5							
1	10	Define Requirements	10	5	5												
2	5	Assign team	5		1	1	1	2									
3	20	Design Hardware	20			5	5	5	5								
4	25	Code Software	25						5	5	5	5	5				
5	50	Build &Test Hardware	50						5	5	5	5	5	5	10	10	
6	20	Develop patent Request	20												10	10	
7	30	Test Software	30											10	10	10	
8	15	Integrate system	15													5	10
total		175	5	1 0	6	6	7	1 5	1	10	10	10	15	30	35	10	
	Cumulative		\\\\\\	5	1	2	2	3	3	4	59	69	79	90	10	13	175
				0	0	6	2	9	9					5	5		

A roles and responsibilities matrix

	Project	Application	Network	Designer	ZenWorks
	Manger	Developer	Engineer		Expert
Create the project	Α	С	Р		
Test the project	Α	Р	Р		
Package the project	R		R	Р	Р
Design the project		Р		С	С
Test the project release	R	R			С
Push the project to workstations	А		Р		

ID	RES	DUR	ES	LF	SL	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95
Α	Define Requirements 2p	10	0	10	0	2	2																		
В	Assign team 2p	5	10	25	10			2																	
С	Design Hardware 2p	20	10	30	0			2	2	2	2														
D	Code Software 2p	25	15	50	10				2	2	2	2	2												
E	Build &Test Hardware 1p	50	30	80	0							1	1	1	1	1	1	1	1	1	1				
F	Develop patent Request 1p	20	30	80	30							1	1	1	1										
G	Test Software 1p	30	40	80	10									1	1	1	1	1	1						
Н	Integrate system 1p	15	80	95	0																	1	1	1	
Total Resource Load					2р	2p	4р	4p	4p	4р	4р	4p	3р	3р	2р	2p	2р	2p	1р	1р	1p	1р	1р		
Resource Available					3р	3р	4р	4p	4p	4p	4р	4р	4р	4р	3р										

Risk Management

λ High level risks: This chip, according to Elon Musk, will connect brain signals with smart devices to control them through thoughts, and will contribute to the treatment of neurological conditions such as Alzheimer's disease, dementia and spinal cord injuries, as well as diseases such as memory loss, hearing, depression and insomnia and Perhaps the most dangerous part is the ability to control memories and create your own happiness by focusing on the good moments and banishing the disturbing for you. You may download it into a new body or into the body of a robot

- 1. Manipulating memories will be in the interest of humanity or against it?
- It was not in the interest of humanity because it controls painful memories and problems that have occurred from Zamalen
- 3. Can it penetrate and interfere with a person's thoughts?

- 4. The development of automated neural interfaces is also entering an uncharted ethical and legal territory, where the technology can raise new concerns such as large-scale information and data piracy.
- 5. A cell phone transplant from the human brain will make him stronger or stronger?
- 6. Most notably the fears of penetration and human control. Thus, the human being turns into a "robot" that is managed, subject to supervision, and whose thoughts and organs are controlled, and programmed electronically.
- 7. The crimes that appear in the way of their activity appear?
- 8. The development of automated neural interfaces also enters an unknown ethical and legal area, most notably the concerns of hacking and human control