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Analysis of today
Assessment of tomorrow

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Neuralink on the verge of mass production – automated brain implant production in 2026

On 31 December 2025, Elon Musk announced that his company Neuralink would start high-volume production of brain-computer interface devices in 2026.

In the same message, he emphasised that the surgical procedure would become almost entirely automated, with threads passing through the dura – the outer membrane of the brain – without the need to remove it.

The announcement comes as neurotechnology moves from the laboratory stage to potential wider application, with implications extending far beyond medical benefits.

Neuralink was founded in 2016 with the aim of developing implantable devices that enable direct communication between the human brain and digital systems.

The current device, known as the N1 implant, consists of thin threads inserted in the brain to read and stimulate neuron activity.

Patients with severe neurological diseases, such as quadriplegia or amyotrophic lateral sclerosis, have already demonstrated that they can control computers, computer mouse or robotic arms using only their thoughts.

By the end of 2025, approximately 20 devices had been implanted in patients worldwide, with significant improvements in the speed and accuracy of control.

The key advance lies in the surgical robot the company uses for implantation. As stated, the latest version achieves a single thread insertion time of only 1.5 seconds, with insertion depths exceeding 50 millimetres.

This allows the device to adapt to 99 per cent of the different anatomical variations of the human brain. At the same time, the cost of producing needle cartridges has decreased by 95 per cent.

Thanks to complete automation, the entire procedure is significantly faster and less invasive – comparable to a brief outpatient procedure – which will allow it to be offered to a larger number of patients.

The company raised $650 million in Series E funding in June 2025, with investors such as ARK Invest, Sequoia Capital, and Founders Fund. This round valued Neuralink at around $9 billion, enabling faster development and expansion of clinical trials.

Neuralink has received Breakthrough Device Designation status from the US Food and Drug Administration (FDA) for its speech restoration technology in patients with severe speech disorders, which accelerates the regulatory procedure.

Beyond medical benefits

Expansion outside the United States is an important step. Neuralink launched its first international clinical trials, called CAN-PRIME, in Canada in cooperation with the University Health Network in Toronto, where the first implants outside the USA were performed in two patients with spinal cord injuries.

Cleveland Clinic Abu Dhabi and local health authorities partnered to launch the UAE-PRIME trial in the United Arab Emirates.

In Great Britain, trials began with University College London Hospitals and Newcastle Hospitals, where the first British patient, Paul, successfully controlled a computer with his thoughts just a few hours after the procedure.

> Neuralink is not merely a medical project – it is America's response to the rapid development of neurotechnology in China

While most media commentary highlights the medical benefits or potential risks, such as infections and ethical dilemmas regarding the privacy of thoughts, the true significance of this announcement lies in the strategic shift in global technological power.

Neuralink is not merely a medical project – it

is America's response to the rapid development of neurotechnology in China, where state programmes like the China Brain Project are investing billions in similar technologies with fewer regulatory restrictions.

Mass production in 2026 could establish the US as the leader in this field, creating a technology gap similar to that seen in semiconductors or artificial intelligence.

From treating severe disabilities to enhancing cognitive functions

Contrary to common narratives portraying Neuralink as Musk's eccentric venture, the reality is that this technology is redefining human autonomy in an era of digital dominance.

Patients with severe disabilities won't be the only ones using the technology as it becomes more accessible and routine. Its application will also extend to healthy individuals, enhancing cognitive functions such as faster learning, instant access to vast amounts of information, or direct communication of thoughts between users.

Such developments would create new social and economic divisions between those who can afford enhancements and those who cannot.

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Countries that quickly adopt and use this technology will have a clear edge in productivity and innovation. On the other hand, countries that are slow to adopt it or fall behind risk losing ground in the global market.

This will result in significant regulatory differences between countries. While the United States enforces strict ethical and safety controls through the FDA, authoritarian regimes could use similar technologies for citizen surveillance or military purposes, without individual consent.

Automating the process enables faster dissemination of the technology, but it also increases the risk of unequal distribution—wealthy countries and their elites will be the first to gain access, further deepening the divide between rich and poor regions of the world.

The first concrete steps towards broader application

By 2026, a significantly faster adoption of the technology is expected. Full automation of the procedure will allow Neuralink to implant hundreds of devices annually.

As stated, clinical trials will expand into new areas, such as attempts to restore sight to blind patients through the Blindsight project or to improve the control of robotic prostheses.

However, the real challenge will be the response of regulatory bodies outside the United States. The European Union and other countries are already preparing stricter rules for neurotechnology, which could significantly slow its global spread.

> Control over neurotechnology is becoming one of the key elements of global power

In the long term, mass production of Neuralink devices is leading us towards a time when humans and machines will be increasingly interconnected, and the distinction between the biological and the digital will become ever less clear.

This is not merely a medical advance – it is a strategic move that cements America's technological advantage as China and other countries invest billions in similar programmes.

Control over neurotechnology is becoming one of the key elements of global power, similar to nuclear weapons in the last century.

Neuralink's December 2025 announcement is more than corporate news. It marks an important step that compels leaders worldwide to reconsider their priorities in technological competition.

In 2026, the first concrete steps towards a broader application of this technology are expected, with consequences that will be felt for years to come.