



EXPLAINER: What is the ‘deep’ analogy behind deep technology

Market studies have shown that deep tech is an important driver of financial expansion along with innovations

Scientific advancements seem to have gone beyond the traditional boundaries, based on how digital has progressed. With artificial intelligence (AI), biotechnology, robotics, and quantum computing, among others, coming into the picture, startups are believed to have found a sustainable way to deliver business goals. In today’s world, these organisations are classified as deep technology (deep tech). From what it’s understood, deep tech refers to scientifically advanced startups which offer technologically cutting-edge market products. “For me, deep tech is about solving problems with solutions based on deep scientific breakthroughs, such as using AI to make self-driving cars a reality, identifying suspicious financial transactions through AI algorithms, protecting individuals and businesses or employing engineered microbes to clean up polluted environments. AI, blockchain, and quantum computing are considered some of the deep tech areas within the IT sector,” Vinod K Singh, co-founder, Concirrus UK, a software development company, told FE TransformX.

It’s believed that the term was conceived in 2014 by Swati Chaturvedi, CEO, Propel(x), an investing firm, who classified it as an advanced [startups](#)’ section capable of bringing scientific breakthroughs to different markets. [Market](#) studies have shown that deep tech is an important driver of financial expansion along with innovations, on account of high research and development-based investments by companies. Seemingly, an important advantage of investing in deep tech is its ability to develop new employment opportunities and revenue avenues, which can benefit both national and international economies. Other benefits associated with deep tech include the development of new entrepreneurial prospects, sustainable solutions for healthcare, environmental conservation, and energy, among others, expansion of scientific breakthroughs, and providing solutions for complicated global concerns. As per market-based research, the main kinds of deep tech are quantum computing, which companies use to create algorithms for handling complex issues, biotechnology, which related platforms utilise for developing high-level genomics, genetic and synthetic biology to enable innovations, power manufacturing, which companies utilise to sustain mankind for different purposes, robotics, which platforms utilise to ensure automation of operations, advanced components, which companies utilise to create products with enhanced capabilities, and machine learning (ML) and [artificial intelligence](#) (AI), which companies utilise for artificial general intelligence’s creation.

I believe that deep tech has the potential to transform the global digital landscape and enhance efficiency in areas such as healthcare, finance, among others. It has the potential to change the way people interact with data, solve problems, and build a future. The benefit of investing in deep tech can increase the potential for disruptive innovation, provide a long-term competitive advantage, and address complex global challenges. It can also enable efficiency, productivity, and sustainability advancements, attracting talent and driving economic growth. In [India](#), deep tech can address challenges such as healthcare accessibility, agricultural efficiency, and infrastructure development,” Amit Relan, co-founder and CEO, mFilterIt, a fraud detection and prevention company, highlighted.

According to Future Market Insights, a market researcher, the global deep tech market is anticipated to clock \$3,733.8 million by 2032, at a 21.8% compound annual growth rate (CAGR) between 2022-32. When it comes to India, the deep tech landscape has made significant developments. A report published by the National Association of Software and Service Companies (NASSCOM), a non-profit [industry](#) platform, has shown that India comprises more than 1,600 deep tech startups, having a \$14 billion worth market magnitude. The platform also mentioned that in 2021, Indian deep tech startups secured \$2.7 billion worth of venture funding in 2021, and previously constituted more than 12% of the country's general startup landscape. NASSCOM also mentioned that Indian deep tech startups grew at a 53% CAGR in the previous 10 years. In recent developments, Finance Minister (FM) Nirmala Sitharaman presented the Interim Budget 2024, in which she introduced a new plan for bettering defence-oriented deep tech needs and expediting '*atmanirbharta*'. Market experts have underlined how deep tech is a necessity for sustaining India's cybersecurity future. "I think this budget, assigning a one lakh crore rupee fund along with a fifty-year interest-free loan, goes beyond a capital injection; it aims to stand as a move for the private sector, altering the landscape heralding a golden era for our tech-savvy youth. As a platform in the cybersecurity sector, we are looking forward to the Indian cybersecurity ecosystem and its abilities to adapt and evolve in response to threats. Our deep understanding of the Indian threat landscape, supported by research and intelligence from India, can empower the nation in its growth ahead," Vishal Salvi, chief executive officer, [Quick Heal Technologies](#) Limited, a cybersecurity software company, concluded.