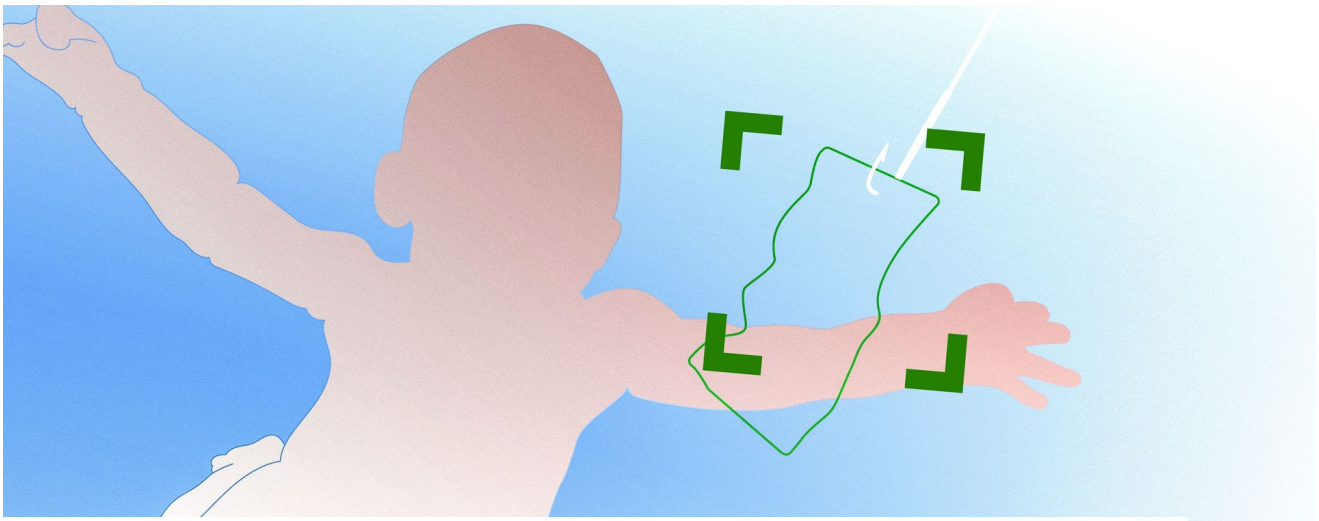


ATHANASSIOS KALIUDIS

3D printing herals new production age

3D printing may still be young, but it has already prompted a revolution on the shop floor. We look back in the Nineties, when Nirvana conquered the music business.

F minor power chords ring out from his electric guitar, initially without distortion. But now the drummer joins in, and he repeats the same chords, heavily distorting each one. As he reaches the chorus he seems to be carried away by an infectious sense of excitement, the sense of a new beginning. The magic of youth infuses the performance, and anything seems possible.

In January 1992, grunge band Nirvana and their lead singer Kurt Cobain knocked Michael Jackson's Dangerous off the top spot in the US charts with their album Nevermind. This shift in power was almost emblematic of the transformation that hit the music industry in the 1990s.

3D printing is undergoing a similar process today. The transformation is well underway, and there is a palpable mood of optimism. The technology may still be young, but it has already prompted a revolution on the shop floor. And you could argue that 3D printing has given today's engineers a similar sense of excitement! Everything seems possible: metal parts with cavities and bionic structures, one-of-a-kind pieces of jewelry, implants, and lightweight construction – the sky's the limit.



Unique jewels, bionic structures or metallic components - with 3D printing many things are possible.

– Gernot Walter

This is a happy development for people like me who are notorious for buying gifts at the last minute. Soon I will be able to pop a 3D printer in my basement and take life a lot easier. Whether I want a toy car for a child's birthday or earrings for someone special, my 3D printer will sort it out. Simply add the material, press start and the printer will build my gift layer by layer, reducing my stress levels at approximately the same rate.

In science fiction, of course, things have moved even faster. They are already printing entire living beings, for example in the box office hit "The Fifth Element" – another throwback to the 1990s, albeit slightly later than Nirvana. In the movie, a 3D printer reconstructs the protagonist Leeloo from a trace of her DNA, creating such a perfect copy that the hero – played by Bruce Willis – falls in love with her.
Leeloo's revival is certainly science with a capital S, but it is no longer purely the realm of fiction. Fraunhofer ILT in Aachen, for example, is busy working on the development of an organ printer. One day this could print meat to eat, new skin for burns victims, and even entire limbs to replace those lost in accidents, though I admit some of these applications may still be some way off!

But people are already tentatively trying out the first riffs on the shop floor. If the 3D printers leading the wave could make music, they would also start playing power chords and bellowing the refrain from Nirvana's hit tune "Smells like teen spirit": "Here we are now – entertain us!"



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