

# Global Bioprinting Market: Focus on Product, Application, Technology, Country Analysis, Patent Analysis, Market Share, and Competitive Landscape – Analysis and Forecast (2018-2025)

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# **Abstracts**

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3D printing has emerged significantly with broader applications areas especially in the healthcare sector. 3D printed customized medical devices, such as hearing aids, dental implants and prosthetics, have become quite successful. Bioprinting which is a subset of 3D printing works on the same principal of 3D printing except the procedure is performed using living cells, tissues, and organs, where the complexities of tissues and cells, such as cell types, functionalities, growth, and differentiation patterns, are addressed. It is the artificial construction of living tissues through placing layer upon layer of living cells. It is a variant of biomedical application of rapid prototyping technology or layer by layer additive bio-fabrication of 3D tissue and organ constructs for the replacement, repair, and regeneration of damaged and diseased human organs and tissues. Although, bioprinters come in various configurations, the basic process is the same. All machines extract an adequate number of cells, which comes from a bio print head in order to build up a three-dimensional organic object. Most of the bioprinters extract a dissolvable gel (as a scaffold) to protect and support cells during printing.

The advent of 3D bioprinting technologies has led to significant progress in the manufacturing of large bioartificial organs, such as bones, livers, hearts, cartilages, and skins. It can produce living tissues, blood vessels, and potentially whole organs for its usage in medical procedures, drug discovery & testing, tissue engineering research & study, and others. The advantages of 3D bioprinting over other fabrication techniques



are: it enables fabrication of anatomically correct shapes, allows fabrication of porous structures, can co –culture multiple cell types locally, and control the delivery of growth factors and genes, as well as can generate tissue models in high-throughput manner and integrate vascularization.

The widening gap between the demand and the supply of organ transplants represent a huge unmet need amongst the patients and doctors. The emerging bioprinting technologies has a strong potential in filling this gap. The eventual goal of researchers is to be able to produce bio printed organs for organ implants. The market is expected to progress gradually over the coming years with the focus of shifting from research to commercialization. The early success of the bio-printed organ transplants is likely to provide additional boost in the subsequent years.

This research study includes an extensive analysis of the global bioprinting market by product, application, technology and geographical region, allowing the researcher to develop a comprehensive outlook of the market. Each of these segments has been analyzed based on their current and future market size, considering the macro and micro environmental factors.

The market report presents a detailed and investigative study of the entire market and provides a comprehensive insight into various forms of development, trends, and the key market participants. While highlighting the key driving and restraining forces for this dynamic market, the report also provides a comprehensive section on competitive landscape, market share analysis, competitive benchmarking, and the position of the competitors within the global bioprinting market.

The following key questions have been addressed in the report:

What are the major market drivers, challenges, and opportunities of the global bioprinting market?

How did the advanced bioprinting technologies evolve and what is its scope in the future?

What were the market shares of the leading segments and sub-segments of the global bioprinting market in 2016 and what will be its shares in 2025?

How will each of the segments of the global bioprinting market grow during the forecast period and what will be the revenue generated by each of the segments



by the end of 2025?

How did the market share of the leading companies change in 2016, and which country will lead the market in 2017?

How will the bioprinting industry evolve during the forecast period 2018-2025?

What are the key developments and strategies implemented by the key players to stand out in this market?

Which product, application and technology will dominate the global bioprinting market by the end of the forecast period, and which one is growing at the highest CAGR during the forecast period 2018-2025?

What will be the growth rate of different segments during the forecast period? Which is the leading segment by product, application, technology and region?

Who are the key players in the global bioprinting market?

Which region will lead the global bioprinting market in revenue generation through the forecast period?

Which country will be growing at the highest CAGR during the forecast period?

The key players who have significant contributions to the bioprinting market are Organovo Holdings Inc., Aspect Biosystems, Advanced Solutions Inc. (Life Sciences), Allevi (BioBots), 3Dynamics Systems, Cellink, Cyfuse Biomedical K.K., RegenHU, Regenovo Biotechnology Co. Ltd., and Poietis, among others.



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