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3D Printing Market by Offering (Printer, Material, Software, Services), Technology (Fused Deposition Modelling, Stereolithography), Process (Powder Bed Fusion, Material Extrusion, Binder Jetting), Application, Vertical & Region - Global Forecast to 2029

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Abstracts

The 3D Printing market is projected to grow from USD 17.5 billion in 2024 and is projected to reach USD 37.4 billion by 2029; it is expected to grow at a CAGR of 16.4% from 2024 to 2029. Facilitate towards the development of customized products, reduce manufacturing cost and process downtime, and increase government investment in 3D printing projects.

“Market for printer segment to hold the largest share during the forecast period.”

Printers stand as the foundational element, varying from desktop models for prototyping to industrial-scale machines catering to large-scale production needs. Materials play a pivotal role, spanning plastics, metals, ceramics, composites, resins, and biomaterials, each tailored to specific industry requirements and driving innovation across aerospace, healthcare, and automotive sectors. Services form another vital aspect, offering printing, design customization, consulting, maintenance, and post-processing solutions, facilitating access to 3D printing capabilities without direct ownership. Lastly, the software serves as the digital backbone, empowering design, simulation, optimization, and workflow management, supporting intricate geometries, multi-material printing, and seamless integration with existing manufacturing systems. Together, these components fuel innovation, expand applications, and streamline operations, propelling the 3D printing market forward into new realms of possibility and adoption.

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“Market for Fuse deposition modelling (FDM) segment is projected to hold the largest share during the forecast timeline.”

Fused Deposition Modeling (FDM), an additive manufacturing process in 3D printing, contrasts subtractive manufacturing methods like machining by adding material layer by layer to create objects. One key advantage of FDM is its soluble support material, simplifying the fabrication of complex geometries and internal cavities. This technology is suitable for office environments due to its cleanliness and use of production-grade materials that ensure mechanical and environmental stability. FDM thermoplastics offer properties necessary for applications requiring precise tolerances, durability, and strength across various environments, often using the same materials as traditional manufacturing processes like injection molding. Stratasys FDM technology, known for its precision, reliability, and repeatability, provides efficiencies over conventional methods, reducing production costs and lead times for quicker market entry. Its broad material portfolio caters to diverse applications, from functional prototyping to end-use parts, bridging engineering-grade plastics to high-performance polymers. This versatility, ease of use, and significant material selection positions FDM as a go-to resource across major industries seeking time and cost-efficient alternatives to traditional manufacturing, including aerospace, automotive, and railway sectors.

“Market for Material Extrusion segment is projected to hold the second largest share during the forecast timeline.”

Material Extrusion is a widely utilized 3D printing process that feeds a continuous thermoplastic filament through a heated extruder head, which melts the material and deposits it in layers to construct a 3D object. This process is guided by computer-controlled movements of the extruder nozzle, ensuring precise placement of the molten material onto a heated platform for improved adhesion. The popularity of FFF/FDM has surged due to its accessibility, particularly with the emergence of open-source communities like RepRap following the expiration of Stratasys' FDM patent.

“The healthcare segment holds the second-largest market share during the forecast period.”

Rapid advancements in 3D printing technology are reshaping the landscape of medical products, ushering in a new era of personalized medicine and enhanced patient care. One key area of progress is in personalized implants and prosthetics, where 3D printing allows for the creating patient-specific devices based on CT scans and MRIs, ensuring

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precise fits and improved functionality. Biocompatible materials like titanium alloys and polymers further enhance these implants, reducing rejection risks and improving integration with the body. In surgical planning and training, 3D printed models enable surgeons to pre-plan procedures and practice techniques, while customizable surgical instruments tailored to patient anatomy enhance precision in the operating room.

“North America is expected to have the largest market share CAGR during the forecast period.”

Government initiatives in 3D printing technology are crucial in accelerating market growth in North America. Through strategic investments, funding programs, and partnerships with industry stakeholders, federal and state governments are fostering innovation and adoption of 3D printing across various sectors such as aerospace, healthcare, automotive, and manufacturing. Initiatives include research grants for advanced materials and technologies, establishing additive manufacturing centers of excellence, developing regulatory frameworks to support safe and efficient 3D printing practices, and collaborating with educational institutions to train a skilled workforce. These efforts drive technological advancements, stimulate market demand, encourage entrepreneurship, and position the US as a global leader in the 3D printing industry.

Extensive primary interviews were conducted with key industry experts in the 3D Printing market space to determine and verify the market size for various segments and subsegments gathered through secondary research. The break-up of primary participants for the report has been shown below:

The break-up of the profile of primary participants in the 3D Printing market:

By Company Type: Tier 1 – 35%, Tier 2 – 40%, and Tier 3 – 25%

By Designation: C Level – 30%, Director Level – 40%, Others-30%

By Region: North America – 40%, Europe – 25%, Asia Pacific – 30%, ROW- 5%

The report profiles key players in the 3D Printing market with their respective market ranking analysis. Prominent players profiled in this report are Stratasys (US), 3D Systems, Inc. (US), HP Development Company, L.P. (US), EOS GmbH (Germany), General Electric (US), Materialise NV (Belgium), Desktop Metal, Inc. (US), voxeljet AG (Germany), SLM Solutions (Germany), Renishaw plc. (UK) among others.

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Apart from this, Protolabs (US), Optomec, Inc. (Mexico), Prodways Group (France), Ultimaker (Netherlands), Tiertime (China), XYZprinting (Taiwan), H?gan?s AB (Sweden), UnionTech (China), Nexa3D (US), Trumpf (Germany), Formlabs (US), Markforged (US), Carbon (US), Nano Dimension (Israel), Rapid Shape GmbH (Germany) are among a few emerging companies in the 3D Printing market.

Research Coverage: This research report categorizes the 3D printing market based on offering, technology, process, application, vertical and region. The report describes the major drivers, restraints, challenges, and opportunities pertaining to the 3D Printing market and forecasts the same till 2029. Apart from these, the report also consists of leadership mapping and analysis of all the companies included in the 3D Printing ecosystem.

Key Benefits of Buying the Report The report will help the market leaders/new entrants in this market with information on the closest approximations of the revenue numbers for the overall 3D Printing market and the subsegments. This report will help stakeholders understand the competitive landscape and gain more insights to position their businesses better and plan suitable go-to-market strategies. The report also helps stakeholders understand the pulse of the market and provides them with information on key market drivers, restraints, challenges, and opportunities.

The report provides insights on the following pointers:

Analysis of key drivers (Ease in development of customized products, Reduction in manufacturing cost and process downtime, Global government investment in 3D printing projects, Availability of wide variety of industrial-grade 3D printing materials, and Complex part manufacturing in the aerospace & defense sector) influencing the growth of the 3D Printing market.

Product Development/Innovation: Detailed insights on upcoming technologies, research & development activities, and new product & service launches in the 3D Printing market.

Market Development: Comprehensive information about lucrative markets – the report analysis the 3D Printing market across varied regions

Market Diversification: Exhaustive information about new products & services, untapped geographies, recent developments, and investments in the 3D Printing

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Competitive Assessment: In-depth assessment of market shares, growth strategies, and service offerings of leading players Stratasys (US), 3D Systems, Inc. (US), HP Development Company, L.P. (US), EOS GmbH (Germany), General Electric (US) among others in the 3D Printing market.

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*Details on Business Overview, Products/Solutions/Services Offered, Recent Developments, and MnM View (Key strengths/Right to Win, Strategic Choices Made, and Weaknesses and Competitive Threats) might not be captured in case of unlisted companies.

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