

Global Additive Manufacturing Market: Analysis By Printer Type, By Material, By Application, By Component, By Region Size and Trends with Impact of COVID-19 and Forecast up to 2027

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Abstracts

The global additive manufacturing market in 2021 was valued at US\$13.92 billion. The market is expected to reach US\$44.03 billion by 2027. Additive manufacturing (AM), also known as 3D printing, is a transformational approach to industrial production that uses a computer-controlled process to generate three-dimensional objects through the process of adding materials layer-by-layer. It works by using a computer-aided design (CAD) or 3D object scanner that directs hardware to place material, layer-by-layer to create precise geometric shapes.

The future of additive manufacturing technologies looks promising, as the industrial and medical world is showing widening adoption. Therefore, expanding applications of additive manufacturing in various industry verticals is one of the main factors that would drive the demand for additive manufacturing in the forthcoming years. The market is expected to grow at a CAGR of approx. 21.2% during the forecasted period of 2022-2027.

Market Segmentation Analysis:

By Printer Type: The report provides the bifurcation of the market into four segments based on the printer types: Industrial 3D Printer and Desktop 3D Printer. In 2021, industrial 3D printer held a major share in the market. On the other hand, the desktop 3D printer segment is expected to grow at the highest CAGR in the forthcoming years as these are rapidly being used for home and household uses. These are also being employed in educational institutes, schools, and universities for technical instruction and

research. As a result, demand for desktop printers is predicted to increase during the forecast period.

By Material: The report further provides the segmentation based on the material: Metals, Polymers, Ceramics, and Others. The metals segment held the highest share in the market. The market's expansion is aided by the increasing demand for metal additive manufacturing in various industries such as automotive, aerospace, healthcare and dental industry, and academic institutions.

By Application: The report provides the categoriation of the market into three key segments based on the application: Prototyping, Tooling & Functional Parts. Prototyping was the market leader in 2021 and is anticipated to remain dominant throughout the forecasted period. Prototyping is used extensively in the automotive and aerospace and military industries to precisely design and build components, parts, and complex systems. Manufacturers can experience improved accuracy and manufacture more reliable end-products by prototyping. As a result, the growth of this segment is estimated to surge in the forecast period.

By Component: The report further provides the segmentation based on the component: Hardware, Software, and Services. The hardware segment held the highest share in the market. The strong emphasis manufacturing entities continued to put on pursuing advanced manufacturing practices and rapid prototyping allowed the hardware segment to dominate the market. The hardware segment is poised for significant growth over the forecast period owing to various factors, such as rapid industrialization, the growing demand for consumer electronics products, and many other factors.

By Region: The report provides insight into the additive manufacturing market based on the regions North America, Europe, Asia Pacific, and Latin America, Middle East & Africa. North America held the major share in the market owing to increasing R&D investment in this sector coupled with an infrastructure that supports the same, advancements in technological to sustain the consumer demand and the early adoption of 3D printing technology in the region. The US market dominated the region due to advanced development in technologies.

In Europe, Italy is expected to be the fastest growing region in the forecasted period. Whereas, in the Asia Pacific region, China dominated the market owing to the various imposition by the Chinese government for quality standards, strengthening monitoring, and encouraging firms to improve products, growth in spending on additive manufacturing technology development and rising efforts to improve consumer product

quality and promote the Made in China mark in order to meet rising demand.

Market Dynamics:

Growth Drivers: The global additive manufacturing market has been growing over the past few years, due to factors such as upsurge in demand for personalized medicine, rising demand for lightweight components from automotive industry, growing utilization in aerospace industry, expanding consumer electronics industry, and many other factors. Additive manufacturing is a trending business that has high demand from various industries like aerospace, automotive, medical sector, electronics, fashion etc. Seeing the potential possibility of this sector's contribution to the nation's economy, governments of different countries are coming up with a different strategy to support and promote this industry. Thus, increasing government funding to promote additive manufacturing has positively contributed to the market growth.

Challenges: However, the market has been confronted with some challenges specifically, high initial capital requirements, lack of standardized equipment, etc.

Trends: The market is projected to grow at a fast pace during the forecast period, due to various latest trends such as surging applications in dentistry, enhanced productivity benefits offered by additive manufacturing and technological advancements. Additionally, the trend of miniaturization is one of the most significant drivers for additive manufacturing technology, as it helps in the development of small and complex products with a high degree of accuracy. Moreover, with the increasing demand for customization and personalization, additive manufacturing provides an opportunity to produce customized products as per the requirement of the customer. Therefore, rising trend of miniaturization is another significant factor that would drive the demand for additive manufacturing in the forthcoming years.

Impact Analysis of COVID-19 and Way Forward:

The COVID-19 outbreak resulted in hampering the demand for additive manufacturing in various applications. Governments of various countries across the globe have enforced lockdown measures to curb the spread of the disease. This has resulted in the slowdown and halt in manufacturing operations, restrictions on supply and transport, and infrastructure slowdown. A few companies, such as SLM Solutions, ExOne and Protolabs, witnessed marginal growth.

Competitive Landscape:

The global additive manufacturing market is highly fragmented, with a large number of small- and medium-sized manufacturers operating in the market.

The key players in the global additive manufacturing market are:

Stratasys Ltd.

Materialise NV

3D Systems Corporation

Canon Inc.

HP, Inc.

Proto Labs, Inc.

General Electric (GE Additive)

voxeljet AG

Renishaw Plc

Desktop Metal, Inc. (EnvisionTec, Inc.)

Autodesk Inc.

Optomec Inc.

Electro Optic Systems (EOS) GmbH

Some of the strategies among key players in the market for additive manufacturing are product launches, mergers, acquisitions, and collaborations. For instance, in November 2021, Optomec Inc., announced the launch of two new additive manufacturing machines specifically designed for high volume production and incorporate automated part-handling options. On the other hand, Stratasys Ltd., announced that Danish shoe manufacturer ECCO is using Stratasys Origin one 3D printing technology to accelerate

product development, by allowing conceptual footwear samples to be reviewed early in the development cycle using 3D printed mold and lasts with resin materials from Henkel Loctite.

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