

Additive Manufacturing (AM) Market

Market Overview

The global **Additive Manufacturing (AM) Market** was valued at USD 20.51 billion in 2023 and is projected to reach **USD 83.13 billion by 2030**, growing at a **CAGR of 20.6% from 2024–2030**. In terms of volume, the market accounted for 1,017.82 thousand units in 2023 and is expected to reach 4,868.68 thousand units by 2030, with a CAGR of 22.9% during the forecast period.

Additive manufacturing—also known as Additive Layer Manufacturing (ALM) or 3D printing—is a computer-controlled process that fabricates three-dimensional objects by depositing materials layer by layer. It utilizes computer-aided design (CAD) or 3D scanning data to direct hardware in constructing precise geometrical structures, enabling the creation of complex and customized components with minimal waste.

This technology allows for rapid prototyping, product customization, and efficient small-batch manufacturing, making it a transformative process across industries such as automotive, aerospace, healthcare, construction, and energy. The process duration may range from a few hours to several days depending on the object's design complexity and material type.

Market Drivers and Trends

1. Rising Adoption in Healthcare

The healthcare sector is witnessing increasing utilization of 3D printing for creating prosthetics, implants, surgical tools, and organ models. Additive manufacturing enhances precision and customization, allowing surgeons to simulate complex procedures. For instance, Henkel's 2021 launch of Loctite 3D printing resins for medical use demonstrates growing integration of AM in medical device manufacturing.

2. Expansion in the Automotive Industry

Automotive manufacturers are leveraging 3D printing for rapid prototyping, tooling, and custom part production. Companies like Porsche and Stratasys are using 3D printing to reduce design-to-production time and personalize vehicle interiors. Such applications lower production costs and accelerate innovation in automotive engineering.

3. Technological Advancements and R&D Initiatives

Ongoing R&D in 3D printing materials and systems—including metals, ceramics, and biocompatible materials—is creating new opportunities. The development of 3D-printed electronic components such as circuit boards and sensors offers cost reduction and efficiency, broadening AM's industrial applications.

4. Regional Growth Opportunities

- North America dominates the global AM market, supported by a strong industrial base, technological advancements, and high healthcare investment. Key players like Protolabs, Velo3D, and Stratasys continue to innovate through new product launches and partnerships.
- Europe shows robust growth with government initiatives, especially in the defense and manufacturing sectors. The UK Ministry of Defence's TAMPA project aims to boost military-grade 3D printing adoption.
- Asia-Pacific is emerging as a high-growth region due to expanding industrialization, the rise of start-ups, and increasing adoption in automotive and healthcare sectors.

5. Restraints

The lack of standardization in AM equipment and processes remains a challenge, affecting quality control and increasing production costs. Additionally, traditional manufacturing mindsets hinder widespread adoption despite the advantages of AM technologies.

Competitive Landscape

The AM industry is highly competitive with several prominent players such as: HP Inc., Renishaw plc, EOS GmbH, Stratasys Ltd., UltiMaker B.V., Formlabs, Desktop Metal, Inc., Markforged, Inc., BCN3D Technologies, S.L., and Tumaaker (INDART 3D ownership).

These companies are actively pursuing strategic partnerships, product launches, and technological innovation to strengthen their market presence.

- In **September 2022**, *Stratasys* partnered with *Evonik* to integrate advanced photopolymer materials for the P3 platform.
- In **June 2022**, *Velo3D* introduced its industrial 3D printer *Sapphire XC 1MZ*, which enhances part quality and minimizes downtime.

Market Segmentation

By Offering:

- Printers (Desktop, Industrial)
- Materials (Plastics, Metals, Ceramics, Others)
- Software (Design, Inspection, Printing, Scanning)
- Services

By Technology:

- FDM, SLA, SLS, MJP, EBM, DLP, DMLS, Others

By Process:

- Powder Bed Fusion, Vat Photopolymerization, Binder Jetting, Material Extrusion, Material Jetting

By Application:

- Prototyping, Tooling, Functional Part Manufacturing

By Vertical:

- Automotive, Aerospace & Defense, Healthcare, Construction, Education, Industrial, Energy, Jewelry, Food, Others

By Geography:

- **North America:** U.S., Canada, Mexico
- **Europe:** UK, Germany, France, Italy, Spain, Rest of Europe
- **Asia-Pacific:** China, Japan, India, South Korea, Australia, Rest of APAC
- **Rest of World:** Latin America, Middle East, Africa

Key Insights

- **Market Size (2023):** USD 20.51 Billion
- **Forecast (2030):** USD 83.13 Billion
- **CAGR (2024–2030):** 20.6%
- **Volume CAGR (2024–2030):** 22.9%
- **Growth Drivers:** Healthcare and Automotive adoption
- **Regions Covered:** 26
- **Companies Profiled:** 10 major market players