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3D Printing in Automotive Market Research Report - Global Forecast to 2030

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Description:

3D Printing in Automotive Market Overview:

The 3D Printing in the Automotive market industry is projected to grow from USD 2.97 Billion in 2022 to USD 9.7 Billion by 2030, exhibiting a compound annual growth rate (CAGR) of 15.94% during the forecast period (2022 - 2030). The 3D Printing in Automotive Market Size was valued at USD 2.13 Billion in 2021. Increasing research and development activities and innovations are strengthening the automotive industry worldwide. With a huge capital investment in automotive technology, several manufacturers are focusing on lightweight vehicles to decrease fuel consumption and low emission. Among all the R&D activities, 3D printing in automotive has come up at a rapid pace and gaining attention in the automotive industry.

3D Printing in Automotive Market

3D Printing in Automotive Market Trends

- **Lightweight body material and Increasing investment across the globe are expected to drive market growth**

Increasing research and development activities and innovations are strengthening the automotive industry worldwide. With a huge capital investment in automotive technology, several manufacturers are focusing on lightweight vehicles to decrease fuel consumption and low emission. Among all the R&D activities, 3D printing in automotive has come up at a rapid pace and gaining attention in the automotive industry.

Additionally, the precedence of 3D printing in automotive has gained a positive impression among the manufacturers due to its several driving factors such as lightweight body material, increasing investment, huge spending on research and development, and technological innovations. Due to these driving factors, the market is increasing at a rapid pace with a surge in demand. Moreover, the manufacturers such as Local Motors, Honda, and others have released several 3D-printed cars and those cars had gained much attention in the market. These types of moves in the automotive industry boost the value of the market.

3D Printing in Automotive Market Segment Insights:

Automotive 3D Printing Technology Insights

The 3D Printing in Automotive market segmentation, based on Technology, includes Stereolithography (SLA), Laser Sintering, Electron Beam Melting, Laminated Object Manufacturing, and Others. Stereolithography held a major market in the 3D printing market and it is expected to dominate in the forecast period. Stereolithography, also known as SLA 3D printing, is one of the most popular and widely used additive manufacturing techniques. Laser energy is used to harden liquid resin stored in a reservoir, allowing for the creation of the desired 3D shape.

Photopolymerization and a low-power laser work together to create solid plastic layers within photosensitive liquid layers. This type of 3D printing, also known as resin 3D printing, has grown in popularity due to its ability to create high-precision, watertight, and precise prototypes, parts, and components from a wide range of advanced materials with smooth surfaces. Companies such as Gillette, for example, use SLA 3D printing to develop consumer products such as 3D-printed razor handles as part of their Razor Maker platform.

Automotive 3D Printing Application Insights

Based on application, the 3D Printing in Automotive market segmentation includes Prototyping and Tooling, Manufacturing, R&D Activities, and Others. The prototyping and tooling segment is to register the largest share of the market. The segment has grown steadily over the years and will continue to grow in the future. The main reasons for this are the prototype's quick production, relatively simple process, cost reduction, filament options, adaptability to design changes, and reduced waste. In comparison to traditional practices, prototypes now require the shortest possible lead times as well as the least amount of expense and waste. Because only the final CAD design is sent for printing, design changes are possible at any time. Because there are more filament materials to choose from, prototypes can now be made using different materials and tested on different criteria and environments.

Figure 2: 3D Printing in Automotive Market, by Application, 2021 & 2030 (USD Billion)

Source: Secondary Research, Primary Research, MRFR Database, and Analyst Review

3D Printing in Automotive Market Regional Insights

By region, the study provides market insights into North America, Europe, Asia-Pacific, and the Rest of the World. North America now occupies the largest market share, followed by Europe and Asia-Pacific. North America and Europe dominate the industry due to the large number of OEM manufacturers who invest a considerable portion of their revenue in research & development. Many automobile manufacturers are investing in 3D printing to manufacture customized automotive parts to achieve shortened turnaround time, reduce material waste, lower manufacturing costs, enhance production rate, and shorter overall times for quick prototyping of automotive parts. For instance,

In December 2021, BMW I Ventures, BMW Group's investment arm, provided seed capital to elastomer 3D printing start-up Rapid Liquid Print (RLP). Rapid Liquid Print (RLP) licensed its gel dispensing technology from MIT's Self Assembly Lab, which can produce soft, pliable products by using industry-standard materials like foams, rubbers, and silicones.

Figure 3: 3D Printing In Automotive Market Share By Region 2021 (%)

Source: Secondary Research, Primary Research, MRFR Database, and Analyst Review

However, due to the falling price of 3D printers, the critical automotive manufacturing regions of Europe and Asia Pacific, which are still in the early stages of automotive 3D printing adoption, are likely to develop faster than in North America throughout the forecast period.

Due to many factors, such as many start-ups entrance into the market, a developed chemical industry, government efforts, skilled labor availability, and low-cost raw materials, Asia-Pacific is also predicted to exhibit a healthy rise in the Automotive 3D printing market over the forecast period.

3D Printing in Automotive Market Key Players & Competitive Insights

Major market players are spending a lot of money on R&D to increase their product lines, which will help 3D Printing in the Automotive market grow even more. Market participants are also taking a range of strategic initiatives to grow their worldwide footprint, with key market developments such as new product launches, contractual agreements, mergers and acquisitions, increased investments, and collaboration with other organizations. Competitors in 3D Printing in the Automotive industry must offer cost-effective items to expand and survive in an increasingly competitive and rising market environment.

The major market players are investing a lot of money in R&D to expand their product lines, which will spur further market growth for 3D Printing in Automotive. With significant market development like new product releases, contractual agreements, mergers and acquisitions, increased investments, and collaboration with other organizations, market participants are also undertaking various strategic activities to expand their presence. To grow and thrive in a market climate that is becoming more competitive and growing, competitors in 3D Printing in the Automotive industry must offer affordable products.

Manufacturing locally to cut operating costs is one of the main business tactics manufacturers use in the 3D Printing in the Automotive industry to benefit customers and expand the market sector. 3D Printing in the Automotive market has recently given medicine some of the most important advantages. Major hair care product market players, including Mohawk Industries, Inc., Tarkett, S.A., AFI Licensing, Shaw Industries, Inc., and others, are attempting to increase market demand by funding R&D initiatives.

Stratasys is a company that provides applied additive technology solutions for the aerospace, automotive, healthcare, consumer products, and education industries. Its ecosystem comprises 3D printers for prototyping and production, various 3D printing materials, parts on-demand, strategic consulting, and professional services. The company offers designers, engineers, and manufacturers systems, consumables, and services.

Also, The automotive industry was an early adopter of additive manufacturing, integrating ExOne® 3D printing systems into production floors across the globe. Manufacturers have leveraged 3D printing for the rapid prototyping of engines and engine components, transmission housings and more - within days a designer can run full tests on an actual casting. With 3D printing capabilities, automotive manufacturers can supplement their standard processes to gain efficiencies in lead time, manufacturing time, and overhead. Design modifications are easier and more affordable with the ability to print a new prototype directly from an updated design file.

Key Companies in 3D Printing in Automotive market include

- Autodesk
- 3D Systems, Inc,
- Stratasys Ltd
- Arcam AB
- EnvisionTEC, Inc
- Exone
- Voxeljet AG
- Local Motors
- Ponoko Ltd,

Automotive 3D Printing Industry Developments

In June 2022 *Stratasys was named the official 3D printing partner for Toyota Racing Development. Stratasys' Fortus 450mc, F370, and new composite F370CR 3D printers will be used for production vehicles in the upcoming Toyota GR Cup Series.*

In September 2020 *Materialise N.V. invested in Ditto, a 3D printing startup, to advance additive manufacturing technologies for various industries.*

As of 2018, *Volvo: As we only need to produce low volumes of parts for prototyping, it's a good way to see what works," says Fredrick Andersson, Development Engineer for Wheel Loaders Powertrain Installation at Volvo CE [construction equipment]. "We have a lot of knowledge and we can make changes quickly and easily with 3D printing. And because of this, it means that the time to market for a new product is quicker, so it's of great benefit to our company.*

3D Printing in Automotive Market Segmentation

Automotive 3D Printing Market by Technology Outlook

- Stereolithography (SLA)
- Laser Sintering
- Electron Beam Melting
- Laminated Object Manufacturing
- Others

Automotive 3D Printing Market by Application Outlook

- Prototyping and Tooling
- Manufacturing
- R&D Activities
- Others

Automotive 3D Printing Market by Regional Outlook

- North America
    - US

- Canada

- Europe
  - Germany
  - France
  - UK
  - Italy
  - Spain
  - Rest of Europe

- Asia-Pacific
  - China
  - Japan
  - India
  - Australia
  - South Korea
  - Australia
  - Rest of Asia-Pacific

- Rest of the World
  - Middle East
  - Africa
  - Latin America

Table of Content:

Contents
1 Executive Summary
2 Research Methodology
2.1 Scope of the Study
2.1.1 Definition
2.1.2 Research Objective
2.1.3 Assumptions
2.1.4 Limitations
2.2 Research Process
2.2.1 Primary Research
2.2.2 Secondary Research
2.3 Market size Estimation
2.4 Forecast Model
3 Market Dynamics
3.1 Market Drivers
3.2 Market Inhibitors
3.3 Supply/Value Chain Analysis
3.4 Porter's Five Forces Analysis
4 Global 3D Printing in Automotive Market, By Technology
4.1 Introduction
4.2 Stereolithography (SLA)
4.3 Laser Sintering
4.4 Electron Beam Melting
4.5 Laminated Object Manufacturing
4.6 Others
5 Global 3D Printing in Automotive Market, By Material
5.1 Introduction
5.2 Metal
5.3 Alloys
5.4 Others
6 Global 3D Printing in Automotive Market, By Application
6.1 Introduction
6.2 Prototyping and Tooling
6.3 Manufacturing
6.4 R&D Activities
6.5 Others
7 Regional Market Analysis
7.1 Introduction
7.2 North America
7.2.1 U.S.

7.2.2 Canada
7.3 Europe
7.3.1 U.K
7.3.2 France
7.3.3 Germany
7.3.4 Spain
7.3.5 Rest of Europe
7.4 Asia-Pacific
7.4.1 China
7.4.2 Japan
7.4.3 India
7.4.4 Rest of Asia-Pacific
7.5 Rest of the World
8 Competitive Analysis
8.1 Introduction
8.2 Competitive Scenario
8.2.1 Market Share Analysis
8.2.2 Market Development Analysis
8.2.3 Material/Service Benchmarking
8.3 Autodesk
8.3.1 Overview
8.3.2 Material/Service Offering
8.3.3 Strategy
8.4 3D Systems
8.4.1 Overview
8.4.2 Material/Service Offering
8.4.3 Strategy
8.5 Stratasys Ltd
8.5.1 Overview
8.5.2 Material/Service Offering
8.5.3 Strategy
8.6 Arcam AB
8.6.1 Overview
8.6.2 Material/Service Offering
8.6.3 Strategy
8.8 EnvisionTEC, Inc
8.8.1 Overview
8.8.2 Material/Service Offering
8.8.3 Strategy
8.8 Exone
8.8.1 Overview
8.8.2 Material/Service Offering
8.8.3 Strategy
8.9 Voxeljet AG
8.9.1 Overview
8.9.2 Material/Service Offering
8.9.3 Strategy
8.10 Local Motors
8.10.1 Overview
8.10.2 Material/Service Offering
8.10.3 Strategy
8.11 Ponoko Ltd
8.11.1 Overview
8.11.2 Material/Service Offering
8.11.3 Strategy
8.12 Optomec, Inc
8.12.1 Overview
8.12.2 Material/Service Offering
8.12.3 Strategy
LIST OF TABLES
TABLE 1 GLOBAL 3D PRINTING IN AUTOMOTIVE MARKET, BY TECHNOLOGY
TABLE 2 GLOBAL 3D PRINTING IN AUTOMOTIVE MARKET, BY APPLICATION
TABLE 3 GLOBAL 3D PRINTING IN AUTOMOTIVE MARKET, BY REGIONS
TABLE 4 NORTH AMERICA 3D PRINTING IN AUTOMOTIVE MARKET, BY TECHNOLOGY
TABLE 5 NORTH AMERICA 3D PRINTING IN AUTOMOTIVE MARKET, BY APPLICATION
TABLE 6 U.S. 3D PRINTING IN AUTOMOTIVE MARKET, BY TECHNOLOGY
TABLE 7 U.S. 3D PRINTING IN AUTOMOTIVE MARKET, BY APPLICATION
TABLE 8 CANADA 3D PRINTING IN AUTOMOTIVE MARKET, BY TECHNOLOGY
TABLE 9 CANADA 3D PRINTING IN AUTOMOTIVE MARKET, BY APPLICATION
TABLE 10 EUROPE 3D PRINTING IN AUTOMOTIVE MARKET, BY TECHNOLOGY
TABLE 11 EUROPE 3D PRINTING IN AUTOMOTIVE MARKET, BY APPLICATION
TABLE 12 GERMANY 3D PRINTING IN AUTOMOTIVE MARKET, BY TECHNOLOGY
TABLE 13 GERMANY 3D PRINTING IN AUTOMOTIVE MARKET, BY APPLICATION
TABLE 14 FRANCE 3D PRINTING IN AUTOMOTIVE MARKET, BY TECHNOLOGY
TABLE 15 FRANCE 3D PRINTING IN AUTOMOTIVE MARKET, BY APPLICATION
TABLE 16 U.K. 3D PRINTING IN AUTOMOTIVE MARKET, BY TECHNOLOGY
TABLE 17 U.K. 3D PRINTING IN AUTOMOTIVE MARKET, BY APPLICATION
TABLE 18 REST OF EUROPE 3D PRINTING IN AUTOMOTIVE MARKET, BY TECHNOLOGY
TABLE 19 REST OF EUROPE 3D PRINTING IN AUTOMOTIVE MARKET, BY APPLICATION
TABLE 20 ASIA-PACIFIC 3D PRINTING IN AUTOMOTIVE MARKET, BY TECHNOLOGY
TABLE 21 ASIA-PACIFIC 3D PRINTING IN AUTOMOTIVE MARKET, BY APPLICATION
TABLE 22 ROW 3D PRINTING IN AUTOMOTIVE MARKET, BY TECHNOLOGY
TABLE 23 ROW 3D PRINTING IN AUTOMOTIVE MARKET, BY APPLICATION
LIST OF FIGURES
FIGURE 1 RESEARCH METHODOLOGY
FIGURE 2 GLOBAL 3D PRINTING IN AUTOMOTIVE MARKET: BY TECHNOLOGY (%)
FIGURE 3 GLOBAL 3D PRINTING IN AUTOMOTIVE MARKET: BY APPLICATION (%)
FIGURE 4 GLOBAL 3D PRINTING IN AUTOMOTIVE MARKET: BY REGION
FIGURE 5 NORTH AMERICA 3D PRINTING IN AUTOMOTIVE MARKET, BY TECHNOLOGY (%)
FIGURE 6 NORTH AMERICA 3D PRINTING IN AUTOMOTIVE MARKET, BY APPLICATION (%)
FIGURE 7 EUROPE 3D PRINTING IN AUTOMOTIVE MARKET, BY TECHNOLOGY (%)
FIGURE 8 EUROPE 3D PRINTING IN AUTOMOTIVE MARKET, BY APPLICATION (%)
FIGURE 9 ASIA-PACIFIC 3D PRINTING IN AUTOMOTIVE MARKET, BY TECHNOLOGY (%)

FIGURE 10 ASIA-PACIFIC 3D PRINTING IN AUTOMOTIVE MARKET, BY APPLICATION (%)
FIGURE 11 ROW 3D PRINTING IN AUTOMOTIVE MARKET, BY TECHNOLOGY (%)
FIGURE 12 ROW 3D PRINTING IN AUTOMOTIVE MARKET, BY APPLICATION (%)