

# **India 3D Printing Market By Component (Hardware, Software and Services), By Printer Type (Desktop 3D Printer, Industrial Printer), By Technology (Stereolithography, Fuse Deposition Modeling, Selective Laser Sintering, Electron Beam Melting, Laminated Object Manufacturing, Others), By Process (Powder Bed Fusion, Vat Polymerization/ Liquid Based, Material Extrusion, Binder Jetting, Material Jetting, Others), By Vertical (Automobile, Consumer Electronics, Medical, Aerospace & Defense, Education, Others), By Region, Competition Forecast & Opportunities, 2018-2028**

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## **Abstracts**

India 3D Printing Market is anticipated to grow at a steady pace in the forecast period.

Building a three-dimensional product from a CAD model or digital 3D model is known as 3D printing or additive manufacturing. It can be accomplished via a number of techniques in which material is combined together (such as fusing liquids, powder grains, or polymers) and then placed, connected, or solidified under computer supervision. Rapid prototyping was a better phrase to use at the time to describe 3D printing processes, which were thought to be only adequate for the manufacturing of functional or aesthetically pleasing prototypes. In 2019, the terms additive manufacturing and 3D printing can be used interchangeably since the accuracy, repeatability, and material variety of 3D printing have improved to the point that some

3D printing techniques are viewed as feasible as industrial production technologies. The capacity to create extremely complex forms or geometries that would otherwise be difficult to manufacture by hand, including hollow pieces or items with internal truss systems to minimize weight, is one of the main benefits of 3D printing. As of 2020, the most popular 3D printing technique is fused deposition modeling (FDM), which makes use of a continuous filament made of a thermoplastic substance.

In India is presently seeing a boom in it. Due to its many advantages, this technology is transforming India's traditional manufacturing sector. The method enables faster printing with an appropriate selection of materials. Models, prototypes, and direct parts are often developed using traditional procedures, which are typically more expensive and time-consuming. Heavy components, which are typically produced using traditional techniques, may now be 3D printed using lighter materials.

The Indian market, while still in its infancy, is setting the path for ongoing expansion. The development of a solid market base for manufacturers and the current driving forces behind market growth are declining costs of 3D printers and other related equipment and thus 3D printing services. The advancement of new technologies, readily accessible materials, an increase in new start-ups and governmental support. By removing some of the limitations that previously prevented its use for commercial reasons, the technology is also becoming more widely accepted.

### Present scenario of 3D Printing

Some of the leading Indian 3D printing companies have proven their mettle in their respective industries. They are utilizing a variety of techniques to develop the 3D printing industry, for instance:

#### Government Organizations

The Agnikul Cosmos and Skyroot Aerospace have signed official Memorandums of Understanding (MOUs) with the Indian Space Research Organization (ISRO) in recent months. They were given access to the ISRO's resources and knowledge about the creation and testing of space launch vehicles. ISRO is also experimenting with fibre printing for its components suitable for space. A crucial component of an aeroengine made by Wipro 3D and Hindustan Aeronautics Ltd. has received certification from the Defense Research and Development Organization. Along with DRDO and ISRO, the Indian Army, Indian Navy, and Indian Air Force are attempting to set up their own 3D

printing facilities so they can make the necessary parts and do more research on this technology.

### Private Organization

The first business in Asia to establish internal fiber 3D printing capabilities was Fabheads, another firm with a focus on the composites manufacturing sector. Numerous awards have been received by it, including the esteemed iDEX prize for the development of carbon fiber helicopter blades for the Indian Air Force. A first for a 3D printing business, Fabheads was also named National Startup of the Year 2020. Divide By Zero became the first Indian business to offer a 3D printer that it had built in-house for Americans. Early in 2021, L&T Construction succeeded in 3D printing the first two-story building in history. This construction was made utilizing a special concrete mixture.

### Recent Developments:

**Intech Additive Solutions launches its Large Format range of Metal 3D Printers – the ‘iFusion LF series’ –**

The launch of the iFusion LF series, a large format range of Metal 3D Printers with a high build rate for cost-effective manufacturing, marked the beginning of a successful year for the Indian 3D Printing Industry in 2021. Intech Additive Solutions Pvt. Ltd. (Intech), India's first Metal 3D printer manufacturer and a leading 3D printing company in India, made the announcement. This signalled a growth in the company's selection of metal 3D printers.

**Wipro3D and HAL collaborate to develop a Metal 3D Printed Aircraft Engine Component –**

The Engine Division of Hindustan Aeronautics Ltd. (HAL) and Wipro 3D, the metal additive manufacturing (AM) division of Wipro Infrastructure Engineering (WIN), announced that their agreement led to the production of a metal 3D-printed aviation engine component.

**Divide By Zero secures US Patent for its ‘Advanced Fusion Plastic Modeling’ 3D Printing Technology –**

In February 2021, Divide By Zero, India's one of the largest domestic 3D printer manufacturer and a well-known 3D printing company in India, secured a US patent for its new Advanced Fusion Plastic Modeling TM (AFPM) 3D printing technology. This was a significant accomplishment for the Indian 3D Printing Industry. Comparatively speaking, Fused Filament Fabrication (FFF), another widely used and available 3D printing process, is inferior to and less dependable than AFPM.

### Andhra Pradesh MedTech Zone (AMTZ) to Develop Artificial Organs through 3D Bioprinting –

The Andhra Pradesh MedTech Zone (AMTZ), the first medical device park in India, opened a 3D bioprinting facility to create artificial organs using 3D bioprinting as part of the Bio Harmonized Aids for Rehabilitation and Treatment (BHARAT) initiative to advance diagnosis and treatment. This is a fantastic development for the Indian 3D printing market.

The Andhra Pradesh government's main initiative, the AMTZ, aims to increase public access to healthcare by producing domestic medical technology goods in the nation. One of the notable businesses in the MedTech zone is Think3D, one of India's major providers of 3D printing services. Through its 17,500-square-foot facility, AMTZ primarily caters to the medical devices sector. Think3D also provides services to a wide range of other markets, including aerospace, marine, automotive, architecture, prototyping, and so on.

### India's Finance Minister Virtually Inaugurates India's First 3D Printed House –

The first 3D-printed house in India was virtually inaugurated in Chennai by Smt. Nirmala Sitharaman, the Hon'ble Minister of Finance and Corporate Affairs of the Government of India. The house was planned, built, and 3D printed by Tvasta Manufacturing Solutions, an IIT Madras alumni startup. The 3D-printed home serves as a proof-of-concept building to showcase and highlight the technology for usage in the building sector. The 3D-printed home was built on the IIT Madras campus.

## Market Segmentation

The India 3D Printing Market is divided into Component, Printer Type, Technology, Process, Vertical, regional distribution and competitive landscape. Based on Component, the market is divided into Hardware, Software and Services. Further, the Software sub-Segment is fragmented into Design Software, Inspection Software, Printer Software, and Scanning Software. Based on Printer Type, the market is segmented into Desktop 3D Printer and Industrial Printer. Based on Technology, the market is divided into Stereolithography, Fuse Deposition Modeling, Selective Laser Sintering, Electron Beam Melting, Laminated Object Manufacturing, and Others. Based on Process, the market is divided into Powder Bed Fusion, Vat Polymerization/ Liquid Based, Material Extrusion, Binder Jetting, Material Jetting, and Others. Based on Vertical, the market is divided into Automobile, Consumer Electronics, Medical, Aerospace & Defense, Education, and Others.

## Market Players

Major market players in the India 3D Printing Market are Aha 3D innovations Pvt Ltd, 3D Print India, Imaginarium India Pvt. Ltd, J Group Robotics, Dev Engineering, Altem Technologies Ltd, Wipro Enterprises Pvt Ltd, Sahajanand Technologies Private Limited, Aurum 3D, and 3D Spectra Technologies LLP.

## Report Scope:

In this report, the India 3D Printing Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

### India 3D Printing Market, By Component:

Hardware

Software

Design Software

Inspection Software

Printer Software

Scanning Software

## Services

### India 3D Printing Market, By Printer Type:

Desktop 3D Printer

Industrial Printer

### India 3D Printing Market, By Technology:

Stereolithography

Fuse Deposition Modeling

Selective Laser Sintering

Electron Beam Melting

Laminated Object Manufacturing

Others

### India 3D Printing Market, Process:

Powder Bed Fusion

Vat Polymerization/ Liquid Based

Material Extrusion

Binder Jetting

Material Jetting

Others

### India 3D Printing Market, Vertical:

Automobile

Consumer Electronics

Medical

Aerospace & Defense

Education

Others

India 3D Printing Market, By Region:

North India

South India

West India

East India

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the India 3D Printing Market.

Available Customizations:

Tech Sci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

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The data given for any year represents the market during the period, i.e., 1st April of the former year to 31st March of latter year. Eg: For FY2023E, the data represents the period, 1st April 2022 to 31st March 2023.

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