

Generative Design Market Report by Component (Software, Services), Deployment Model (On-premises, Cloud-based), Application (Product Design and Development, Cost Optimization, and Others), Industry Vertical (Automotive, Aerospace and Defense, Industrial Manufacturing, Architecture and Construction, and Others), and Region 2024-2032

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Abstracts

The global generative design market size reached US\$ 258.8 Million in 2023. Looking forward, IMARC Group expects the market to reach US\$ 948.7 Million by 2032, exhibiting a growth rate (CAGR) of 15.06% during 2024-2032.

Generative design is an engineering software that autonomously creates high-performance design iterations based on performance or spatial requirements, manufacturing methods, materials, and costs. It relies on artificial intelligence (AI) algorithms to generate and evaluate a wide range of product designs and make highly customized complex shapes and internal lattices that cannot be produced using conventional manufacturing methods. In addition, it supports topology optimization for performing structural simulation and removing load-weight from empty areas in three-dimensional (3D) models. At present, generative design is adopted around the world as it helps in reducing component weight and simplifying the design.

Generative Design Market Trends:

The growth in the market can be attributed to the extensive usage of generative design software in various end use industries around the world. For instance, it is employed in the automotive industry for manufacturing lightweight components and consolidating parts. This, in confluence with the boosting sales of passenger and commercial vehicles

on account of rapid urbanization and improving income levels, is contributing to the market growth. Moreover, regulatory authorities in various countries are implementing stringent policies to reduce the ecological footprint of commercial aircraft. As a result, several manufacturers operating in the aerospace industry are relying on generative design software to reduce aircraft weight, minimize environmental impact, and improve passenger safety. Apart from this, the growing popularity of drones is driving the use of generative design software to improve their aerodynamic efficiency and durability and increase lifespan and flight performance. Other factors, such as the escalating demand for consumer goods and the thriving construction industry, are positively influencing the demand for generative design software to generate multiple computer-aided designs (CADs) and drive innovation and productivity.

Key Market Segmentation:

IMARC Group provides an analysis of the key trends in each sub-segment of the global generative design market report, along with forecasts at the global, regional and country level from 2024-2032. Our report has categorized the market based on component, deployment model, application and industry vertical.

Breakup by Component:

- Software
- Services

Breakup by Deployment Model:

- On-premises
- Cloud-based

Breakup by Application:

- Product Design and Development
- Cost Optimization
- Others

Breakup by Industry Vertical:

- Automotive
- Aerospace and Defense
- Industrial Manufacturing

Architecture and Construction
Others

Breakup by Region:

North America

United States

Canada

Asia-Pacific

China

Japan

India

South Korea

Australia

Indonesia

Others

Europe

Germany

France

United Kingdom

Italy

Spain

Russia

Others

Latin America

Brazil

Mexico

Others

Middle East and Africa

Competitive Landscape:

The competitive landscape of the industry has also been examined along with the profiles of the key players being 3Dnatives, Altair Engineering Inc., Ansys Inc., Autodesk Inc., Bentley Systems Incorporated, Dassault Syst?mes SE, Desktop Metal Inc., Diabatix, MSC Software Corporation (Hexagon AB), Ntopology Inc., Proto3000 Inc. and Ptc Inc.

Key Questions Answered in This Report

1. What was the size of the global generative design market in 2023?
2. What is the expected growth rate of the global generative design market during 2024-2032?
3. What are the key factors driving the global generative design market?
4. What has been the impact of COVID-19 on the global generative design market?
5. What is the breakup of the global generative design market based on the component?
6. What is the breakup of the global generative design market based on the deployment model?
7. What is the breakup of the global generative design market based on the application?
8. What is the breakup of the global generative design market based on the industry vertical?
9. What are the key regions in the global generative design market?
10. Who are the key players/companies in the global generative design market?

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