Generative Design - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

Market Report | 2025-04-28 | 134 pages | Mordor Intelligence

AVAILABLE LICENSES:

- Single User License $4750.00
- Team License (1-7 Users) $5250.00
- Site License $6500.00
- Corporate License $8750.00

Report description:

The Generative Design Market size is estimated at USD 4.40 billion in 2025, and is expected to reach USD 9.00 billion by 2030, at a CAGR of 15.41% during the forecast period (2025-2030).

The upcoming trend of designing toolsets with machine learning capabilities contributes to the growth of the market studied. Significant investments made during last year aimed at empowering designers to reduce the number of errors, thereby saving considerable time, are expected to produce results in the future.

Key Highlights
- The growing demand for advanced manufacturing with complex designs and the need to reduce the size while improving the performance of automotive compels automotive manufacturers to increase their R&D investments and adopt generative designing.
- Companies such as Airbus, Black & Decker, Under Armour, and other massive corporations embrace generative design as a trend molding the future of the engineering industry. It enables engineers to hand the reins off to their CAD software to naturally find the best solutions to a given set of constraints. It augments the engineer's imagination.
- Generative design is in the initial development stage, meaning that early users may come across specific challenges. For instance, defining a design problem in computable terms, which generative design software has to solve, will include a steep learning curve. Engineers need to be more experienced with revealing the design problem as a set of parameters may end up with loosely defined structural restraints or loads, ultimately resulting in a failed design.
- There are over 30,000 parts in an average car, and creating all these pieces and then putting them together requires an incredibly complex supply chain and manufacturing capabilities. However, General Motors and the San Francisco-based software company Autodesk plan to upend how cars are designed, reducing the number of car parts that go into each vehicle while making

cars both lighter and more robust.
- Another point to consider with the generative design is that efficient methods can only sometimes be manufactured. For instance, in a Renishaw case study, engineers topologically optimized a suspension bell crank. They should have considered the optimized part's manufacturability. It resulted in a design that demanded a lot of supports to be printed, whereas a good practice is to design pieces with fewer supports as needed as possible. Such instances are anticipated to lay a negative impact on the market.
- However, generative design is used to help address the risks related to COVID-19. For instance, Digital Blue Foam is developing a tool to help address the risks associated with the use and occupancy of interior spaces due to COVID-19. Covid Space Planner analyses factors such as total occupancy and proximity, airflow and ventilation, and the duration of activity in the space. Based on these factors, the tool applies Digital Blue Foam's generative design capabilities to recommend spatial planning strategies, such as the location of entry points, work areas, furniture placement, and retrofits, to mitigate the risk.

Generative Design Market Trends

Automotive To Hold Significant Share

- The growing trend of lightweight vehicle products has generated demand for generative design technology. Volkswagen Group unveiled a vintage VW Microbus, retrofitted with several reconceptualized components produced by productive design technology. VW is promoting this vehicle to highlight technologies they believe would be significant to the future of automotive design and manufacturing, particularly concerning electric vehicle production. Autodesk partnered with VW's Innovation and Engineering Center, California (IECC), on this project to maximize its strength while minimizing its weight. The generative design was deployed to produce lighter-weight parts by reducing mass and material use while maintaining high-performance standards and engineering constraints.
- Also, in January last year, Electric vehicle company Arcimoto Inc announced that it is working with XponentialWorks and ParaMatters to design and additively manufacture lightweight components for its Fun Utility Vehicle (FUV). For deploying ParaMatters' AI-powered generative design software, several elements are being redesigned to generate alternative parts with much of the same performance characteristics but at a lighter weight.
- Weight reduction has become a critical concern for electric vehicle efficiency as the less an automobile weighs, the less energy is required to propel down the road. More efficient energy consumption equates to a more excellent range per charge, which is one of the most important considerations for consumers when evaluating electric vehicles.
- According to Autodesk, General Motors used generative design earlier in the previous year in a proof-of-concept project to develop a lightweight seat bracket prototype for its future electric cars. With such demand for light parts in automobiles, the demand for generative design is anticipated to increase significantly.

Europe to Witness Significant Growth Rate

- The European automotive sector has risen significantly in the global industry. It has achieved record sales, and as a significant employer and a source of considerable grantmaking, it is an integral part of European society.
- With the presence of several global automotive OEMs, Europe has the broad-scale implementation of 3D printing technology for design formulation and R&D applications in the automotive industry. Top automotive leaders, such as Mercedes, Audi, BMW, Jaguar, Land Rover, Volkswagen, and many others, have produced a potential space for 3D technology and printers in the European market.
- AUDI AG, a German automaker, has implemented polymer-based 3D printing technology for its production line at the Bollinger

Hofe plant in Germany. Such instances of adoption are high, owing to the enhanced capabilities of manufacturers and lessened dependency on the supply chain for critical components that may result in a breakdown. According to Sculpteo, a 3D printing company, the highest priorities for Europeans using 3D printing are stimulating product development and offering customized products and limited series.
- Moreover, the region is witnessing growth in the sales of electric vehicles. Electric vehicle sales are rising in Europe as diesel vehicle sales continue downward. The increase in BEV registrations was most noticeable in Scandinavian countries such as Denmark, which saw a quadrupling of BEV sales, and Sweden and Finland, which saw a tripling, followed by Poland, Belgium, and Greece. Further modifications in electric vehicles, such as increasing the battery time, and reducing the vehicle's weight, would demand generative design software.
- Apart from the automotive sector, the region is witnessing demand from the manufacturing industry. The increasing demand for additive manufacturing and 3D printing in the region is anticipated to augment the generative design market.
- To help industrial manufacturers improve the skills of their workforce, the French government has entrusted AIF with establishing a reference system of additive manufacturing and training skills across the nation. Within this context, Cetim, in partnership with Cetim-Certec, its associated center, has already begun to develop a full training program dedicated to additive manufacturing, which covers the entire value chain.
- Further, the significant outbreak of COVID-19 in the region, affecting more than 120,000 people in the region, according to Worldometers during the pandemic, has significantly driven the market for 3D printing in the region. With the increased in demand for 3D printing, especially in the healthcare sector for manufacturing ventilators, the need for generative design has been witnessing growth.

Generative Design Industry Overview

The market for Generative Design is moderately fragmented. The presence of several companies, including Altair Engineering Inc. and ANSYS Inc., makes the competitive environment quite intense. Factors such as the growing demand from the automotive industry and the availability of trial or free versions of the generative design will provide considerable growth opportunities for generative design manufacturers. The major companies covered in this report are Autodesk Inc., Dassault Systemes SE, and Desktop Metal Inc.

In June 2022 - The global computational science and artificial intelligence (AI) company Altair recently purchased the Gen3D startup from the University of Bath in the United Kingdom. When it comes to using the implicit geometry method to describe highly complex geometries, like lattice structures, Gen3D is a pioneer in additive manufacturing.

In October 2022 - To accelerate the adoption of additive manufacturing (AM) for production applications with a focus on the biggest manufacturers in the world, Siemens and Desktop Metal, Inc., market leaders in digitalization and additive manufacturing technologies, have announced a multifaceted partnership.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

Table of Contents:

Generative Design - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

Market Report | 2025-04-28 | 134 pages | Mordor Intelligence

To place an Order with Scotts International:

- - Print this form
- - Complete the relevant blank fields and sign
- - Send as a scanned email to support@scotts-international.com

ORDER FORM:

Select license	License	Price
	Single User License	$4750.00
	Team License (1-7 Users)	$5250.00
	Site License	$6500.00
	Corporate License	$8750.00
	VAT	
	Total	

*Please circle the relevant license option. For any questions please contact support@scotts-international.com or 0048 603 394 346.

** VAT will be added at 23% for Polish based companies, individuals and EU based companies who are unable to provide a valid EU Vat Numbers.

Email*		Phone*	
First Name*		Last Name*	
Job title*			
Company Name*		EU Vat / Tax ID / NIP number*	
Address*		City*	
Zip Code*		Country*	
		Date	2026-03-05
		Signature