

Computer Aided Manufacturing - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

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Report description:

The Computer Aided Manufacturing Market size is estimated at USD 3.94 billion in 2024, and is expected to reach USD 5.82 billion by 2029, growing at a CAGR of 8.13% during the forecast period (2024-2029).

Computer-aided manufacturing (CAM) helps reduce energy and waste for enhanced manufacturing and efficiency in production via increased production speed, consistency of raw material, and tooling accuracy. Rapid industrialization and the trend of industrial automation are propelling the computer-aided manufacturing market growth.

Key Highlights

- Technological advancements across various manufacturing units have aided computer-aided manufacturing (CAM) adoption. Furthermore, Industry 4.0 and the Industrial Internet of Things (IIoT) have made the market accessible, as it has become easier to convert machines into intelligent and connected devices in the manufacturing industry. Manufacturing processes have become accessible via a single control center and wearables, improving operational processes and usability.
- The number of IoT-connected devices in the manufacturing sector will increase during the forecast period. Cisco's annual Visual Networking Index states that machine-to-machine (M2M) connections accounted for over half of the world's 28.5 billion connected devices in the previous year.
- CAM technology significantly reduces the time required to design and prototype quickly without reconfiguring the manufacturing line. This is increasing the deployment of CAM solutions across various industry verticals. CAM solutions further ensure that mission-critical machines are maintained, which helps to increase efficiency, resulting in high-quality products.
- CAM is also used in the medical field with technological advancement. Subtractive milling is the most widely used CAM protocol in dentistry, as it offers an alternative method of fabricating oral and facial prostheses. The United Nations Development Programme (UNDP) in Rwanda recently collaborated with Swiss Limbs and the Home de la Vierge des Pauvres (HVP) Gatagara to launch a 3D

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computer-aided design and the manufacturing of orthotics and prosthetics.

-COVID-19 also discouraged market growth. Because of the high associated costs, small manufacturers could not adopt it, lowering the market adoption rate significantly. Vendors operating in the aerospace, and automotive verticals have suffered significantly due to reduced spending during the pandemic. However, the shift from proprietary software to cloud-based subscriptions is anticipated to provide profitable opportunities for market growth in the post-pandemic era.

Computer Aided Manufacturing Market Trends

Automotive is Expected to Hold a Major Market Share

- Automobile production includes the globalization of engineering, design, manufacturing, and third-party suppliers. This increased the need for information systems to assist automobiles production using computer-aided manufacturing (CAM).
- Automotive CAM is gaining widespread adoption as it addresses mechanical design issues such as clearances, strain, stress, heat, and vibration. CAM systems are increasingly being deployed in handling the large part files standard in automotive designing.
- CAM systems in the automotive sector simplify fault detection on the production line and enable it to be eliminated immediately. CAM simulations assist computers in simulating real-life scenarios on 3D models, which includes testing for a violent impact, harsh weather, high-speed scenarios, wear and tear issues, and crashes.
- Technological advancements, such as quantum computing, combine GPUs and CPUs into a single element to eliminate the need for additional interfaces. Therefore, operations can be completed faster, significantly impacting the speed of the design process in the automobile sector.
- Furthermore, vendors operating in the market are leveraging 3D printing and other technologies, such as CAM to disrupt product modeling processes and play an essential role in the automotive industry in the future.

North America is Expected to have Highest Market Share

- North America is expected to hold the highest market share in the studied market owing to the increased adoption rate of industrial robotics and CAM in the United States region. With industrial robots, CAM has helped improve the robotics' functioning, propelling market growth.
- Due to unprecedented competition from automakers, the region invests heavily in its efforts to compete. End-users are investing in CAM solutions due to pending emission control and safety regulations. For instance, as per OICA, around 13.43 million motor vehicles were produced in North America in the previous year due to increased production costs and changes in the supply chain.
- Industry 4.0 and smart factories have compelled manufacturers to automate the process to improve efficiencies. For instance, Deloitte opened a new smart factory in Wichita, Kansas, United States, in the previous year, bringing together an ecosystem of innovators to make Industry 4.0 a reality.
- The growth of smart factories is bringing together an ecosystem of world-renowned solution providers and technology innovators to help solve the most complex manufacturing challenges. A fully operational manufacturing line utilizes machine learning, artificial intelligence, big data, robotics, vision solutions, and others.
- Furthermore, the high labor cost in the United States has compelled manufacturers to adopt automation to reduce expenditures. For instance, unit labor costs in the United States increased by 3.2 percent annually in the fourth quarter last year, according to FXTM Academy. Thus, CAM deployments have reduced the risks associated with human labor, further propelling market growth.

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There are several players in the computer-aided manufacturing market. The market is fragmented in nature, with a large number of competitors operating in the market. The providers are constantly innovating their product portfolio to meet the current demand while catering to recent industry requirements.

- September 2023 - Hexagon's Safety, Infrastructure & Geospatial division launched its Power Portfolio 2023. Hexagon's Manufacturing Intelligence division released HxGN Production Machining, a software developed to empower machine shops to achieve operational excellence in manufacturing discrete parts, tools, and components with machine tools across industries ranging from medical to aerospace. Capabilities of the suite include CAD (computer-aided design) for manufacturing and design review, CAM (computer-aided manufacturing) for CNC (computer numerical control), and other automation and innovative technologies that help manufacturers achieve highly efficient utilization of material, cutting tools and CNC equipment.
- June 2023 - Dassault Systemes and ISAE Group partnered to develop the latest digital practices the aerospace industry uses. Through its partnership with Dassault Systemes, ISAE Group will integrate the 3DEXPERIENCE platform with Dassault Systemes' applications. The 3DEXPERIENCE platform and its applications create virtual twins of products and manage their life cycle. It includes computer-aided manufacturing, systems engineering, the simulation of fluids, complex systems, multi-physics systems, manufacturing processes, and the planning of assembly lines and industry 4.0 factories.

Additional Benefits:

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

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