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Cyber-Physical Systems (CPS) Market Forecasts to 2030 – Global Analysis By Component (Hardware, Software and Services), Deployment Mode (On-Premises, Cloud-Based and Hybrid), Technology, Application, End User and By Geography

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Abstracts

According to Stratistics MRC, the Global Cyber-Physical Systems (CPS) Market is accounted for $118.7 billion in 2024 and is expected to reach $287.9 billion by 2030 growing at a CAGR of 15.9% during the forecast period. Cyber-Physical Systems (CPS) are systems that are closely linked to the internet and its users and are managed and observed by computer algorithms. Software and hardware are intricately entwined in these systems, which function on various temporal and spatial scales and display a variety of behavioral modalities. They enhance the overall performance, safety, and dependability of physical systems by combining sensing, actuation, computation, and communication capabilities.

According to the National Institute of Standards and Technology (NIST), the deployment of next-generation Cyber-Physical Systems (CPS) and the Internet of Things (IoT) across sectors such as transportation, energy, and health could boost U.S. productivity growth by as much as 1.5%.

Market Dynamics:

Driver:

Growing adoption of IoT

The integration of the Internet of Things (IoT) is a key driver for market growth. IoT

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enhances CPS capabilities by enabling real-time data collection, analysis, and decision-making. This connectivity improves operational efficiency across industries like manufacturing, healthcare, and transportation. The rise of smart factories and Industry 4.0 initiatives further amplifies the demand for IoT-enabled CPS, as they enable predictive maintenance, resource optimization, and automation. This symbiotic relationship between IoT and CPS significantly accelerates innovation and adoption.

Restraint:

High implementation costs

The high initial costs of deploying CPS solutions hinder their widespread adoption, especially among small and medium-sized enterprises (SMEs). These systems require advanced infrastructure, cutting-edge technologies, and skilled personnel, which can be financially burdensome. Additionally, the complexity of integrating CPS with existing systems increases installation expenses and delays return on investment. For many organizations, these financial barriers outweigh the long-term benefits, slowing down market penetration and limiting growth opportunities.

Opportunity:

Rising demand for smart manufacturing

The global shift towards smart manufacturing presents significant opportunities for CPS. These systems enable real-time monitoring, predictive maintenance, and adaptive production processes, enhancing efficiency and reducing downtime. Industry 4.0 initiatives prioritize CPS integration to create smart factories that leverage IoT, AI, and robotics for optimized operations. As manufacturers seek to improve productivity and sustainability, the demand for CPS in sectors like automotive, electronics, and energy is expected to rise substantially.

Threat:

Security concerns

CPS are vulnerable to cyber threats due to their interconnected nature. Security breaches can disrupt operations, compromise sensitive data, and result in financial losses or safety risks. The lack of robust cybersecurity measures in many CPS deployments exacerbates this threat. As cyberattacks become more sophisticated,

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organizations must invest heavily in security solutions to protect their systems, which can increase operational costs and deter adoption.

Covid-19 Impact:

The COVID-19 pandemic accelerated the adoption of CPS as industries sought automation to maintain operations amidst restrictions. Sectors like healthcare relied on CPS for remote monitoring and diagnostics, while manufacturing adopted these systems to ensure efficiency with minimal human intervention. However, supply chain disruptions delayed component availability and installations. The pandemic also exposed cybersecurity vulnerabilities in hastily deployed systems. Despite these challenges, the crisis underscored the importance of resilient technologies like CPS in ensuring operational continuity.

The industrial automation segment is expected to be the largest during the forecast period

The industrial automation segment is expected to account for the largest market share during the forecast period due to its critical role in optimizing production processes across sectors like manufacturing and energy. CPS enhances automation by enabling real-time monitoring, predictive maintenance, and adaptive control mechanisms. These capabilities reduce downtime, improve resource utilization, and ensure consistent product quality. Additionally, the growing adoption of Industry 4.0 practices further solidifies industrial automation as a key driver for CPS adoption.

The cloud-based segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the cloud-based segment is predicted to witness the highest growth rate due to its scalability, cost-effectiveness, and ease of access. Cloud platforms enable seamless integration of CPS with IoT devices for real-time data processing and analytics. This model supports remote monitoring and management while reducing infrastructure costs compared to on-premises solutions. As industries increasingly adopt digital transformation strategies, cloud-based CPS solutions are set to witness significant growth.

Region with largest share:

During the forecast period, the Asia Pacific region is expected to hold the largest market

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share due to rapid industrialization and extensive investments in smart infrastructure projects across countries like China, Japan, and India. The region's focus on Industry 4.0 initiatives drives demand for CPS in manufacturing, energy management, and transportation sectors. Government programs supporting digital transformation further bolster market growth in this region.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR due to its robust adoption of advanced technologies like IoT and AI in key sectors such as automotive and energy. Smart city projects and renewable energy initiatives create additional opportunities for CPS deployment in this region. The increasing emphasis on automation ensures sustained growth throughout the forecast period.

Key players in the market

Some of the key players in Cyber-Physical Systems (CPS) Market include ABB, Honeywell International Inc., Hitachi Ltd., Schneider Electric, Siemens, Rockwell Automation, Continental AG, General Electric Company, Toshiba Corporation, Robert Bosch GmbH, Cisco Systems Inc., Emerson Electric Co., Intel Corporation, IBM Corporation, Dassault Systemes, Microsoft, SAP SE and Mitsubishi Electric Corporation.

Key Developments:

In January 2025, Siemens has installed and commissioned the world’s first 8DAB 24, the groundbreaking blue GIS medium-voltage system, in the Alpine town of Davos, Switzerland for its customer EWD Elektrizitatswerk Davos AG. The switchgear system, which uses Clean Air as insulating gas instead of sulfur hexafluoride (SF6), is deployed in the Dorf substation in Davos, securing reliable power supply for up to 40,000 people. The installation of this 24kV circuit-breaker switchgear is an important step towards a climate-friendly and smart power distribution in Davos.

In September 2022, ABB has launched ABB Ability Cyber Security Workplace (CSWP) which enhances the protection of critical industrial infrastructure by consolidating both ABB and third-party security solutions into one simple, all-encompassing digital platform. By making cyber security information more accessible and easier to manage, engineers and operators can quickly identify and remediate issues, reducing exposure

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to risk.

Components Covered:

- Hardware
- Software
- Services

Deployment Modes Covered:

- On-Premises
- Cloud-Based
- Hybrid

Technologies Covered:

- Edge Computing
- Industrial Control Systems (ICS)/SCADA
- Digital Twin
- Blockchain
- Artificial Intelligence (AI)/Machine Learning (ML)

Applications Covered:

- Industrial Automation
- Smart Infrastructure

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- Connected Healthcare
- Defense and Security
- Smart Agriculture
- Smart Home/Consumer Applications
- Other Applications

End Users Covered:

- Manufacturing
- Automotive
- Energy and Utilities
- Government and Public Sector
- Transportation and Logistics
- Healthcare
- IT and Telecommunications
- Aerospace and Defense
- Agriculture
- Retail

Regions Covered:

- North America
  - US

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- Canada
- Mexico

Europe

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

Asia Pacific

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

South America

- Argentina

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Brazil

Chile

Rest of South America

Middle East & Africa

Saudi Arabia

UAE

Qatar

South Africa

Rest of Middle East & Africa

What our report offers:
- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2022, 2023, 2024, 2026, and 2030
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

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SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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Note: Tables for North America, Europe, APAC, South America, and Middle East & Africa Regions are also represented in the same manner as above.

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