AI Infrastructure - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

Market Report | 2025-04-28 | 200 pages | Mordor Intelligence

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Report description:

The AI Infrastructure Market size is estimated at USD 82.23 billion in 2025, and is expected to reach USD 205.65 billion by 2030, at a CAGR of 20.12% during the forecast period (2025-2030).

AI Infrastructure Market: Driving Innovation and Efficiency

Key Highlights
- Demand Surge in High-Performance Computing Data Centers: The AI Infrastructure market is experiencing exponential growth, driven by increasing demand for AI hardware in high-performance computing (HPC) data centers. Businesses are realizing the transformative potential of artificial intelligence, fueling investments across various industries.
- Nvidia's BlueField-3 DPU: This technology, the world's first 400GbE data processing unit (DPU), is ten times faster than its predecessor, underscoring significant advancements in AI hardware.
- Google Cloud and Intel Collaboration: These tech giants jointly developed a chip designed to enhance AI capabilities, security, and productivity in data centers, marking a trend of strategic partnerships.
- AMD's MI300X Series: Advanced Micro Devices Inc. introduced the MI300X chip series, enabling the execution of generative AI models with up to 80 billion parameters, demonstrating the escalating complexity of AI models.
- IIoT and Automation Technologies Propelling Growth: The integration of Industrial Internet of Things (IIoT) and automation technologies is significantly boosting the AI Infrastructure market. These innovations are enhancing efficiency, optimizing processes, and generating valuable data.
- AFCOM 2021 Study Results: Over 40% of participants plan to deploy robotics and automation in data center monitoring and maintenance by 2024, signaling a sharp rise in automation.
- Advantech and Actility Integration: These companies launched an AI-based solution for machine prognostics and health

management, enabling real-time machine status monitoring.
- TD SYNNEX's Data-IoTSolv: This solution suite equips partners with tools for leveraging data analytics and IoT, illustrating the growing demand for AI-powered IoT solutions.
- Machine Learning and Deep Learning Driving Innovation: Machine learning and deep learning technologies are critical drivers of AI infrastructure growth, empowering companies to extract valuable insights from massive datasets.
- TAZI.AI's Funding Success: The startup secured $4.6 million to roll out machine learning solutions in healthcare, insurance, and pharmaceuticals, highlighting sector-specific AI adoption.
- Government Sector Utilization: Machine learning is increasingly used in government sectors to automate operations and analyze data, freeing human resources for core functions.
- Pandemic-Era Acceleration: The pandemic sped up AI and ML adoption for network automation, with network providers recognizing the essential role of AI in operational streamlining.
- Data Explosion in Automotive and Healthcare Sectors: The growing volume of data in industries like automotive and healthcare is propelling the need for advanced AI technologies to manage and analyze data efficiently.
- Alpine Health Systems' AI-Powered Platform: This platform simplifies hospital discharge processes for patients with complex medical conditions, demonstrating AI's potential in healthcare management.
- Intangles Lab's Ambient Cognitive AI for EVs: This innovation addresses range anxiety in electric vehicles, particularly in the commercial EV sector.
- AI in Healthcare Applications: AI is increasingly used for clinical decision-making, disease diagnosis, and patient data management, showcasing its versatility in healthcare.
- Market Landscape and Future Outlook: The AI Infrastructure market is poised for sustained growth, led by a mix of tech giants, startups, and cloud providers delivering cutting-edge solutions.
- Cloud Segment Growth: The AI Infrastructure cloud market, valued at $16.12 billion in 2022, is forecasted to reach $49.29 billion by 2028, reflecting a CAGR of 20.22%.
- North American Market Leadership: North America led the AI infrastructure market in 2022 with $19.57 billion in value, projected to hit $56.59 billion by 2028, growing at a 19.10% CAGR.
- Emerging Technologies: Innovations like quantum computing, 6G connectivity, and advanced robotics are expected to push the boundaries of AI infrastructure capabilities, enabling new applications and use cases.

AI Infrastructure Market Trends

Hardware Segment Cornerstone of AI Infrastructure

- Market Size and Growth: The hardware segment is the backbone of the AI Infrastructure market. In 2022, it accounted for 73.70% of the market share, valued at $34.52 billion. It is expected to grow at a CAGR of 19.19%, reaching $100.29 billion by 2028.
- Processor Subsegment Leads: Processors were valued at $20.73 billion in 2022 and are forecasted to reach $57.56 billion by 2028, driven by the increasing complexity of AI algorithms requiring more powerful processing.
- Customization Trend: Companies are shifting towards custom AI chips, like Huawei's Ascend 910 AI processor, which demonstrated twice the training speed of common cards using TensorFlow.
- Edge Computing Influence: The rise of edge computing is shaping AI processor development. Manufacturers are focusing on processors that enable real-time data processing at the point of use, particularly in IoT applications.
- Hybrid Processors: Companies are developing hybrid AI processors that combine CPUs with GPUs or Neural Processing Units (NPUs), enhancing versatility and efficiency for diverse AI applications.

North America to Hold Major Market Share

Cloud Segment: Catalyst for AI Democratization

- Rapid Growth Trajectory: The cloud segment, valued at $16.12 billion in 2022, is projected to grow at a 20.22% CAGR, reaching $49.29 billion by 2028. This growth is outpacing the overall market CAGR, signaling the critical role of cloud solutions in AI infrastructure.
- Democratization of AI: Cloud-based AI infrastructure lowers adoption barriers, making AI technologies accessible to businesses of all sizes. This democratization accelerates digital transformation and fosters innovation.
- Scalability and Flexibility: Cloud platforms offer unmatched scalability, enabling enterprises to easily manage AI workloads, such as model training and inference, which are data-intensive.
- AI-as-a-Service Proliferation: The rise of AI-as-a-Service (AIaaS) allows companies to access pre-trained models and toolsets. For example, Nvidia's DGX Cloud offers supercomputing services for AI model training, while Salesforce's AI Cloud delivers enterprise-ready AI tools.
- Strategic Collaborations: Collaborations between AI hardware providers and cloud platforms, such as Google Cloud's partnership with Singapore's Smart Nation initiative, are creating sector-specific AI cloud solutions.
- Market Outlook: The AI Infrastructure market will continue to evolve with the hardware and cloud segments developing synergistically. As AI applications proliferate, the demand for scalable, robust infrastructure will grow, spurring further specialization in AI hardware and cloud-native solutions.

AI Infrastructure Industry Overview

Tech Giants Lead the Market: The AI Infrastructure market is dominated by tech giants like Intel, Nvidia, IBM, Microsoft, and Samsung. These companies hold significant market share due to their extensive resources, comprehensive AI solutions, and global reach.

Nvidia's DGX Cloud Service: This AI supercomputing service enables businesses to train sophisticated generative AI models, showcasing the company's leadership in providing end-to-end AI infrastructure solutions.

IBM and Microsoft Hybrid Solutions: Both companies have developed hybrid cloud solutions that integrate AI capabilities, empowering enterprises to deploy AI across various environments efficiently.

Substantial R&D Investments: Leading players invest heavily in research and development to maintain their competitive edge, ensuring they stay at the forefront of AI technology advancements.

Innovation and Specialization Drive Market Success: Success in the AI Infrastructure market hinges on continuous innovation and industry-specific specialization.

Cisco's Generative AI Solutions: Cisco introduced new network, security, and observability offerings powered by generative AI, highlighting the importance of innovation in gaining a competitive edge.

Mphasis.ai's Industry Focus: Mphasis focuses on integrating AI capabilities into existing technological environments, optimizing operational efficiency in specific sectors.

Strategic Partnerships: Google Cloud's expansion of AI consulting services exemplifies how companies can leverage strategic

collaborations to broaden their offerings and tap into new markets.

Additional Benefits:

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

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