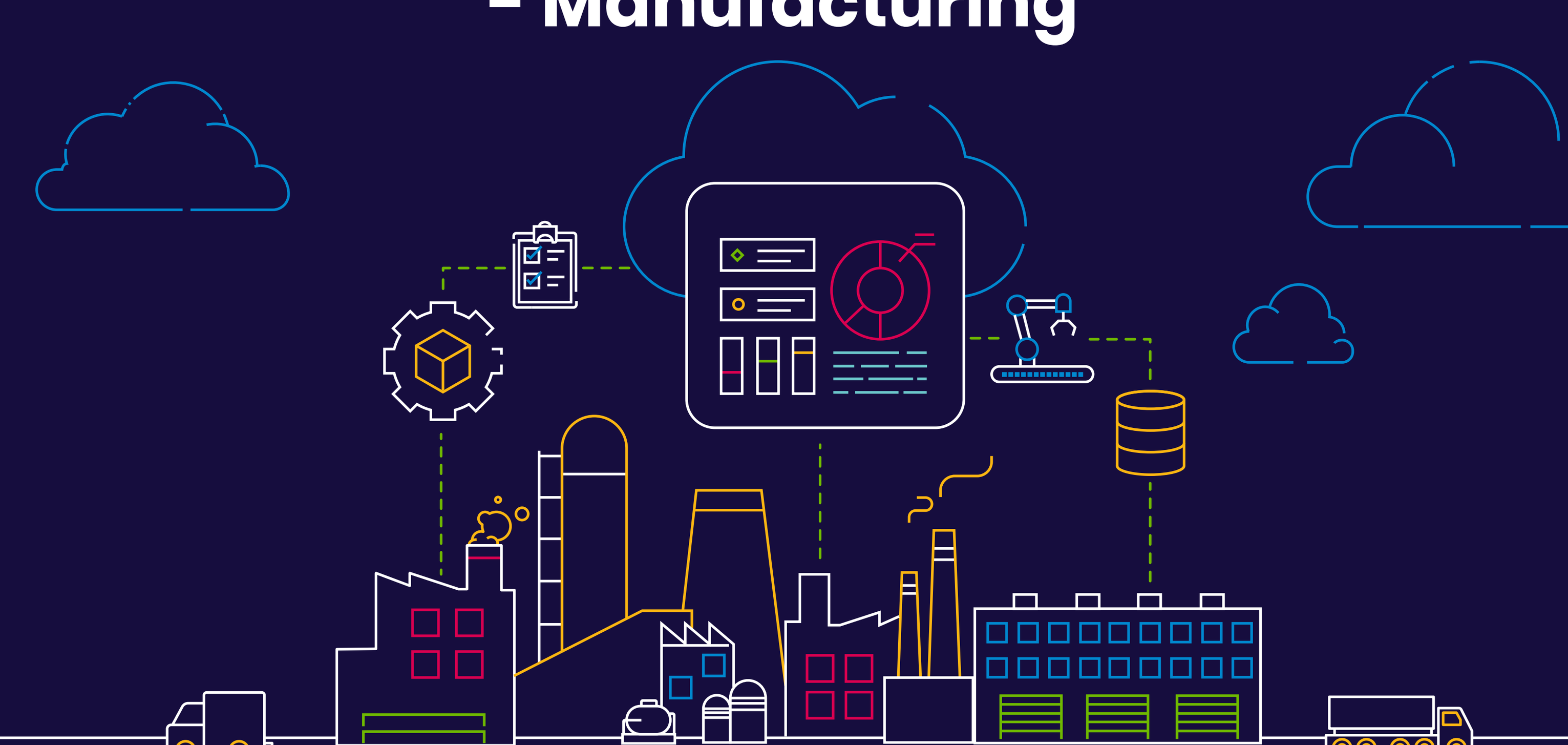
aws PARTNER Advanced Tier Services

MACTORES

AWS Industry Specific Offering - Manufacturing



INDUSTRY IN REVIEW

79% of manufacturing companies believe that data analytics will be a key enabler of their operations within the next three years.
accenture

Data analytics can :

reduce maintenance costs by **5–10%** and increase asset utilization by **10–20%** in manufacturing.
McKinsey & Company

67% of manufacturers have implemented predictive maintenance, which uses data analytics to predict equipment failures before they occur.
pwc

Global spending on data analytics in the manufacturing industry will reach **$22.8 billion** by 2021
IDC Analyze the Future

68% of manufacturing executives believe that data analytics will improve their supply chain visibility and 62% believe it will reduce supply chain risk.
Deloitte.

87% of manufacturers believe that data analytics will play a crucial role in their future success.
Forbes | INSIGHTS

63% of manufacturers believe that data analytics is essential for improving quality control and reducing defects.
LNS Research

BUSINESS USE CASES

Predictive maintenance
Predict when equipment is likely to fail, enabling them to perform maintenance before a breakdown occurs. This approach can help reduce downtime and maintenance costs.

Supply chain optimization
Analyze their supply chain data, including inventory levels, lead times, and demand forecasts. This can help them optimize their supply chain and ensure that they have the right materials and components on hand when they are needed.maintenance costs.

Quality control
Analyze production data and identify patterns that are indicative of quality issues. This can help identify quality problems early, before they result in a batch of defective products.

Energy management
Monitor their energy usage and identify areas where they can reduce energy consumption. This can help reduce energy costs and improve sustainability.

Process optimization
Analyze their production processes and identify areas where they can improve efficiency (OEE) and reduce waste. This can help improve productivity and reduce costs.

Price Optimization / Analytics
Price optimization analytics for manufacturing involves using data analysis techniques to identify the most effective pricing strategies for maximizing profits while meeting customer demand and market competition.

Decentralized Manufacturing
Ability to manufacture goods near the place of consumption can be cost effective, can reduce lead time, flexible to reconfigured to produce different products and can be energy efficient

Net zero, ESG, and Sustainability in manufacturing
Business are building mechanism for energy efficiency, analyzing carbon footprint, analyzing and reducing waste and identifying the recyclability of material.

Automated quality control
Usage of sensors, cameras and technologies to detect defects and anomalies in products, components, raw materials that can help companies take corrective actions. Using sensors to measure strength, durability, and reliability of the raw materials or the produced products help in improving the quality of products significantly.

Digital Twinning
Create a virtual replica of a physical product, process, or system, allowing for real-time monitoring, analysis, and optimization. The concept of digital twinning is based on the idea that by creating a digital representation of a physical object or system, it is possible to monitor and analyze its behavior in real-time, and use that data to optimize its performance.

AEDEON DATA FABRIC FOR FACTORY OPERATIONS

Predictive maintenance
Harness advanced machine learning algorithms to analyze sensor data and identify patterns, enabling you to anticipate equipment failures before they happen. Minimize downtime and optimize asset performance by implementing proactive maintenance strategies.

Quality control
Achieve the highest standards of product quality by leveraging real-time monitoring and analysis of manufacturing processes. Detect anomalies, identify root causes, and take corrective actions automatically, ensuring a consistently superior output.

Energy management
Streamline your energy consumption using smart sensors, IoT devices, and advanced analytics. Monitor and regulate energy usage, identify inefficiencies, and reduce waste to create a more cost-effective and environmentally friendly manufacturing operation.

Net zero, ESG, and Sustainability in manufacturing
Drive sustainable manufacturing practices by tracking and reporting on environmental, social, and governance (ESG) metrics. Our platform promotes a circular economy by optimizing resource usage, minimizing waste, and lowering carbon emissions, helping you achieve your net-zero objectives.

Decentralized Manufacturing
Benefit from the agility and resilience of a distributed manufacturing model, empowered by cloud-based services and data-driven insights. Reduce shipping costs, improve response times, and strengthen your supply chain against disruptions.

AEDEON DATA FABRIC FOR DIGITAL TWINING

Introducing the Aedeon Data Fabric Data Lake Platform for Digital Twinning in Manufacturing, an advanced solution powered by AWS serverless analytics services. Our innovative platform combines real-time data, advanced analytics, and simulation to create digital replicas of your manufacturing processes and assets, enabling you to optimize efficiency, improve product quality, and reduce costs.

Real-Time Analytics
Leverage the power of AWS serverless analytics services to process and analyze large volumes of data in real time. Gain instant insights into your manufacturing processes and make informed decisions based on accurate, up-to-date information.

Digital Twin Simulation
Create accurate digital replicas of your manufacturing assets and processes, simulating their behavior under various conditions. Test new strategies, optimize production planning, and identify potential issues before they impact your operations.

Comprehensive Data Integration
Seamlessly aggregate and consolidate data from diverse sources, including IoT devices, sensors, and enterprise systems, to create a unified and coherent view of your manufacturing operations.

Scalable and Flexible Architecture
Easily scale your data lake platform as your business grows and evolves, thanks to the agility and flexibility of AWS serverless architecture.

Predictive maintenance
Use machine learning algorithms to analyze sensor data and detect patterns, enabling you to predict equipment failures and perform maintenance proactively. Minimize downtime and extend the life of your assets with timely, data-driven interventions.

Quality control and Optimization
Monitor and analyze manufacturing processes in real time to detect anomalies and ensure consistent product quality. Implement automated adjustments and corrective actions to maintain the highest quality standards.

MACTORES REAL TIME STREAMING FOR MANUFACTURERS

Introducing Mactores Data Platform Modernization Automation, a comprehensive solution designed to revolutionize your manufacturing operations by migrating from Telegraf to AWS IoT Core, InfluxDB to AWS TimeStream, and adopting Amazon Kinesis Flink and Managed Kafka for a real-time streaming solution. Seamlessly extract data from MES systems and other factory OT data sources to build a serverless data lake on AWS, enabling enhanced performance, scalability, and innovation.

Streamlined Migration
Experience a seamless, end-to-end migration from Telegraf to AWS IoT Core and InfluxDB to AWS Time-Stream, ensuring a smooth and secure transition without disruption to your manufacturing operations.

AWS IoT Core Integration
Migrate from Telegraf to AWS IoT Core, a fully managed service that enables seamless connectivity, communication, and management of your IoT devices. Improve operational efficiency and gain valuable insights from your connected devices.

Real-Time Streaming
Harness the power of Amazon Kinesis Flink and Managed Kafka to implement a robust, real-time streaming solution for your manufacturing data. Capture, process, and analyze streaming data with minimal latency, enabling data-driven decisions in real time.

Serverless Data Lake
Extract data from MES systems and other factory OT data sources to build a serverless data lake on AWS. Benefit from a highly scalable, cost-effective, and easily accessible data storage solution, empowering your team to drive innovation and make data-driven decisions.

Scalable Time Series Database
Benefit from the scalability, flexibility, and cost-efficiency of AWS TimeStream, a purpose-built time series database for IoT, operational metrics, and telemetry data. Easily scale your data platform as your manufacturing operations grow and evolve.

Streamlined Data Integration
Simplify data ingestion and integration with our easy-to-use connectors and APIs. Seamlessly integrate AWS TimeStream, Amazon Kinesis Flink, and Managed Kafka with your existing manufacturing systems and processes.

Advance Analytics
Leverage the powerful analytical capabilities of Amazon Kinesis Flink to gain deep insights into your manufacturing data. Apply advanced analytics, including machine learning and predictive modeling, to optimize processes and enhance product quality.

High Availability and Reliability
Ensure the consistent performance and availability of your data platform with the reliability of AWS infrastructure and managed services, backed by a comprehensive suite of security and compliance certifications.

TECHNOLOGY USE CASES

Retiring technical debt
Many manufacturing companies still rely on legacy systems that are outdated and expensive to maintain. For example: Many manufacturing companies use Oracle databases for their analytical and operational applications. The applications that they have are legacy systems hence they are monolithic and non scalable

Integration of Systems
Manufacturing companies often have multiple systems that do not communicate with each other, leading to data silos and inefficiencies. Integrating these systems can be a significant IT challenge.

Security
Manufacturing companies are increasingly being targeted by cybercriminals, who seek to steal intellectual property or disrupt production processes. Ensuring the security of manufacturing operations is therefore essential.

Cloud Adoption
Many manufacturing companies are now open to adopt cloud technologies while overcoming their concerns about data security and regulatory compliance. However, cloud adoption can offer significant benefits in terms of scalability, flexibility, and cost savings.

Data Governance
Manufacturing generates large amounts of data from various sources such as sensors, machines, and supply chain partners. Managing this data effectively, including data security and privacy, is a significant IT challenge.

Streaming Data/ Analytics
Real-time monitoring and analysis of production processes, predictive maintenance, early detection of equipment failures, improved quality control, and increased efficiency and productivity. It also enables manufacturers to make data-driven decisions and quickly respond to changing market demands, leading to better customer satisfaction and profitability.

CASE STUDIES

SEAGATE

60% operation efficiency

55% TCO for Factory operations

5x improved query times

hp

40% improvement in operational efficiency

30% yield improvement with less anomalies

30% improved TCO

Synaptics

75% improvement in design efficiency

30% improved throughput

12x improvement in project execution

https://mactores.com