DATA DYNAMICS

Modernizing and Optimizing Manufacturing through Advanced Data Strategies

The era of the smart factory is here!

Before the fourth industrial revolution, often referred to as Industry 4.0, manufacturers relied on clipboards and manual techniques to collect machine data, perform root cause analysis or understand their operations. The industrial sector has now reached a point where manual methods are no longer effective due to changes in the competitive landscape and technological breakthroughs such as the Internet of Things (IoT) and Big Data. The manufacturing sector is in a transition phase where digital connectivity is being integrated into all activities, from supply chain management to manufacturing, packaging, distribution and logistics.

The challenge is determining how much of the massive data generated at each stage of modern manufacturing processes is valorized for decision making and operations. Every day, a typical manufacturing company generates 1 TB of production data, but only 1% of that data is analysed and used in real time. Using this production data and existing AI to identify and prevent defects early in manufacturing process to reduce downtime, increase throughput, and improve quality. Additionally, the blend of AI, cloud and data can be used to gain insights from data for visual inspection, worker safety, and production monitoring in near real-time. These insights can be used by manufacturers to identify quality issues, reduce waste, improve other aspects of production and improve quality by 35% and increase production throughput by 20%.

Knowledge of the data will also assist manufacturing enterprises in identifying and protecting sensitive data by implementing appropriate remediation measures. Cyberattacks on industrial facilities have increased by 2000% since 2018. If not adequately protected, sensitive data relating to manufacturing device IP addresses, credentials and API keys may fall victim to malicious software and rogue agents, potentially causing device disablement, misalignment, financial loss and reputational damage.

It is critical to recognise that effective and efficient use of data is the foundation of a smart factory. However, extracting granular insights from massive amounts of data can be difficult.

What and where is the data? Who has access? Is it secure and compliant?

Why Focus on Data

Data trends in the manufacturing industry	Impact	Solution
80 to 90% of all new enterprise data is unstructured, growing 3X faster than structured data. (Unstructured data is data that does not exist in a relational database). Source: Gartner	Sprawls of data across an enterprise lead to ineffective use of data, governance and security of the data. Storing the data becomes a process that gains no value.	Insight into what data exist, who owns it, and how it can be leveraged presents a huge opportunity with three principal areas: improving technology adoption, cost reduction, and operational efficiency. A 10% increase in data usability could increase the average Fortune 1000 company's revenue by over $2 billion, or $55,900 in annual sales per employee. Source: Data Science Association
A typical manufacturing enterprise produces 1 TB of production data daily, yet only 1% of that data is evaluated and used in real time. Source: IBM	The cost of storing data continues to decrease but is outpaced by data growth. This leads to an ever-increasing financial burden in managing ongoing storage operational costs	Analyzing data and providing appropriate insights will lead to an effective solution for data lifecycle management. With this approach, it will be possible to store the right data within a hybrid cloud environment at the right location.

	Since 2018, cyberattacks against manufacturing facilities have increased by 2000%. Source: IBM	Manufacturing data truly is the most critical asset. The risk of mishandling or rogue data access can lead to massive reputational and financial impacts. Production could be disrupted and even harmed by an unforeseen impact on IT or OT equipment.	Understanding the context and content of the data enables appropriate lineage and access management, assuring manufacturing enterprises that their data is managed with the same attention to detail as their supply chain.
	61% of businesses say that difficulties with data management, such as finding new clients, streamlining processes, and increasing productivity, have hampered or will slow the automation of their company processes. Source: UKISUG	The gap between data gathering and data utilization continues to hurt the industrial sector and prevents or eliminates key use cases.	Manufacturing companies can increase revenues and cut costs by structuring unstructured data using content and context analysis, thereby extracting value from the data.
	The main source of aggravation for more than a third of manufacturing decision-makers (36%), is a lack of available data and insights. Source: The Manufacturer	With renewed interest in IoT and a greater emphasis on predictive maintenance, big data will be a bigger trend than ever before; we can expect practically every surface to be transformed into a sensor for data gathering to create real-time insights for manufacturers.	The manufacturing industries have previously approved using precise data in industrial management. Consolidating data lakes into a single data ocean in a hyper-scaler environment enables enterprises to leverage the scale of computing power to analyse data as needed within a centralised repository.
	Only 1 in 4 companies have achieved a data-driven culture. Source:Harvard Business Review	Organizations traditionally looked at data as a technology parameter. This leads to the cultural mindset that data is only for technologists, resulting in manufacturing services departments failing to leverage the data created as a competitive advantage.	Changing an organization's DNA requires showcasing the value garnered from data when understood and managed appropriately. When business units are aligned to leveraging data, with the right focus and a cultural shift, they can clearly distinguish themselves from competitors

Here is a brief video by Piyush Mehta, CEO of Data Dynamics, outlining how manufacturing companies may adopt a contemporary data management strategy to improve data visibility, analytics, and control.

Data is a Liability When Unmanaged; Data Dynamics Makes it an Asset!

70% of organizations will rigorously track data quality levels via metrics, improving it by 60% to significantly reduce operational risks and costs by the end of this year.
Source: Gartner

Data Dynamics Capabilities:
The analysis of unstructured data through improved automation, operational efficiency, and next-level risk management improve productivity by 10X.

Applying greater management discipline to what can often be sprawling data architecture, sourcing, and use practices can unlock significant savings. A company can recover and redeploy 35 percent of its current data spending by improving visibility, standardization, and oversight in just five areas.
Source: McKinsey

Data Dynamics Capabilities:
Reduction in data sprawls and consolidation of multiple data lakes using data analytics can help reduce TCO by up to 60% and reduce the risk of data exposure through efficient identification of sensitive/PII data.

55 percent* of C-level respondents see data modernization as a key component for cloud migration. Additionally, by 2025, 85%** of enterprises will have a cloud-first principle.
Source: *Deloitte and **Gartner

Data Dynamics Capabilities:
By migrating the right data to the cloud in an optimized and governed manner, financial services companies can accelerate their cloud adoption by 200% and develop new technology innovations to meet consumer and market demands.

The average cost of a breach was $1.76 million, less at organizations with a mature zero-trust approach compared to organizations without zero trust.
Source: IBM

Data Dynamics Capabilities:
Data Dynamics Capabilities: Potential fines and reputational risk can be reduced with integrated data management and fortified compliance & security ecosystem.

Manufacturing enterprises are inundated with massive volumes of data. Untangling this tangle of data and extracting maximum value from it is critical for businesses to stay ahead of the competition and understand changing customer & market needs. Data Dynamics assists the manufacturing industry in leveraging the extraordinary knowledge and expertise found in data already within their organisationsto achieve maximum efficiency and achieve both short- and long-term business value.

Data Dynamics is a leading provider of enterprise data management solutions, helping organizations structure their unstructured data with their Unified Unstructured Data Management Software. The Software encompasses four modules - Data Analytics, Mobility, Security, and Compliance. Proven in over 300+ organizations, including 28 Fortune 100 and 5 Fortune 500 manufacturing enterprises, the Software is a one-stop solution that enables manufacturing organizations to fully capitalize on the capabilities of unstructured and high-vol ume data and realize competitive advantages.

Smart Factory: New technologies like AI, machine learning, IoT, and predictive analysis must be implemented to transform traditional factories into smart ones. This can be accomplished by structuring the unstructured through context and content analysis and intelligent data-driven cloud migrations. Through data alignment and refinement, manufacturing enterprises can transform data from stored assets into business assets.

Secure: Deploy secure content analytics technologies powered by AI that offer a unique duality of addressing critical business challenges around the cost of operations and security of PII/sensitive data while bolstering business velocity and revenues. By melding existing workflows and data infrastructure with analytics, we help enterprises achieve the benefits of more contextual decision-making, better customer experience, and risk reduction.

Optimize: Enable enterprises to decide what types of data will be useful for them, where to get it and how to store it. Categorizing, tagging, indexing, analyzing, and migrating data across heterogeneous sources using context analytics and automated mobility. As a result, they can tier and archive data based on hot, cold, ROT, and dark data, reducing data sprawl, consolidating data lakes and centers, and optimizing storage.

Save: Offering enterprises AI-driven analytics to gain critical and accurate insights into unstructured file metadata for accurate PII/PHI/sensitive data discovery, storage visibility, and infrastructure optimization. Optimize costs of data-related technology through analysis, TCO model, and ongoing data management processes.

Transform: Provide support for the modernization of existing infrastructure, such as the cloud, with end-to-end data analysis, migration, and augmentation to attain the transformation goal.

With Data Dynamics, manufacturing enterprises can eliminate the use of individual point solutions with siloed data views. Inste ad, they can utilize a single software to structure their data, unlock data-driven insights, secure data, ensure compliance and gov ernance and drive cloud data management.

Data Empowerment with a Dynamic Software

Run the Business ← Data Dynamics UDM → Innovation Software

Data Security Posture

- Privacy and Sensitive Data Risk Identification
- Data Access Management
- Data Minimization
- Risk Remediation

Data Governance & Compliance

- Data Classification, Visualization, & Control
- Secure Data Sharing (for AI)
- Data Workflows
- Data Owner Empowerment

Sustainable Data Management

- Data-driven Cloud Migration
- Intelligent Workload Placement
- Data Minimization
- Data Lifecycle Management

Data Augmentation & Democratization

- Enriched Data for Curation
- Decentralized
- Data Ownership & Control
- Empowered Data Citizens

The Software Encompasses Four Modules:

Module	Mobility	Analytics	Security	Compliance
Capability	Migration Data Pipeline Copy and Archive	Data Discovery Classification Index and Search	Data Sharing Risk Discovery Risk Management	Privacy Governance Audit Log

Data Dynamics' Data Management Software Vs. Conventional Data Management platform: A comparative study Click to view

Business Value Delivered:

Providing enterprises with a wholistic Data Management Software to extract the greatest value from data stored in a governed, secured, and optimized manner

80% Risk Mitigation & 50% Data Sprawl Reduction: Intelligent data lifecycle management for dark data marks as a pivotal advancement in data sprawl reduction, driving substantial data optimization and fortifying governance against cyber threats and unauthorized access. It enhances organizational resilience and positions enterprises at the forefront of data-driven security, ensuring continued growth and innovation.

60% Lower Total Cost of Ownership: Consolidating multiple data lakes through advanced data analytics significantly reduces the total cost of ownership (TCO) and strengthens the overall security posture. This process empowers data owners and positions enterprises at the forefront of cost-effective, secure, and agile data management practices.

10X Higher Productivity: Unstructured data analysis through data classification, visualization, risk identification, and downstream automation results in higher overall productivity. It elevates operational efficiency and positions enterprises at the pinnacle of innovation, driving sustained success and a competitive advantage in a dynamic business landscape.

In-year ROI on Software Investment: Aligning storage optimization and risk mitigation initiatives culminates in a sub-12-month ROI, maximizing resource efficiency & financial prudence. By enabling data owner empowerment, enterprises are poised to accelerate the realization of tangible returns and foster a culture of control, innovation, and trust.

200% Faster Cloud Migrations: Sustainable data modernization needs data-driven cloud adoption, blending data analytics, optimization, policy-based automation, & data lifecycle management. This enhances overall efficiency & accelerates net-zero goals. Enterprises, by transcending traditional boundaries, position themselves as transformation leaders in the dynamic era of AI advancements.

Data Democratization: Empowering enterprises with a strategic approach to achieve data democratization. This enables data owners to swiftly access, comprehend, and extract optimal insights from expansive unstructured data landscapes in a governed, secure, and optimized manner.

From Traditional Factories to Smart Factories - How Cloud Computing Is Revolutionizing the Manufacturing Industry

The manufacturing sector is outpacing all other sectors in cloud adoption, with 32% of manufacturers achieving "cloud leader" status. Every process in the manufacturing industry is becoming digital, and this digital transformation is a requirement rather than a choice. Cloud computing boasts an average increase in profitability of 22% and a typical cost reduction of 23% with optimized manufacturing operations and planning procedures. Those unable or unwilling to adopt the cloud will be quickly surpassed by competitors with lower manufacturing costs and margins.

However, managing the massive amounts of unstructured data that manufacturing companies generate at every stage remains a challenge.

Dealing with unstructured data is like a black hole of unknown possibilities and risks. Manufacturing enterprises are unaware of what's in there and what they must prepare for.

Furthermore, they are entirely oblivious to sensitive information in the sprawl and have no way of securing it while moving to the cloud. IT organizations are oblivious to sensitive information, data sprawl, and data security.Customer feedback consistently indicates that migrating file data between disparate storage platforms is time-consuming, labor-intensive, and complex. They resort to the traditional lift-and-shift approach without data analysis and are prone to incurring more cost, time, and risk. The key is to adopt a data-driven approach and build a strong Cloud foundation to benefit from IT cost savings, productivity gains, business agility, and operational resilience.

Data Dynamics collaborates with leading Cloud service providers to build strong cloud foundations, facilitate efficient and effective cloud adoption, reduce risk, ensure compliance, and enable unparalleled scale and compute power. Our goal is to empower enterprise customers to become Data Custodians of the future by structuring unstructured data and maximizing value through data-driven cloud adoption.

Reducing Enterprise Carbon Emissions with Intelligent Cloud Adoption with Data Dynamics

A new era of co-innovation is rising, and cloud providers and manufacturing companies are working together to lower their carbo n footprint. By consolidating on-premises data centers and data lakes to the cloud in a single data ocean, greenhouse gas emissions can be redu ced, power and cooling capacity can be restored, resilience can be restored, operational costs can be cut down, and total ownership costs can be reduced. With technology-driven cloud adoption capabilities that are intelligent, secure, scalable, and compliant, Data Dynamics helps companies realize their net zero goal.

Data Dynamics' four practices to ensure effective and efficient cloud adoption

Structure unstructured data with a unified approach	Unlock data-driven insights, secure data, ensure compliance and governance & drive hybrid cloud data management
Reimagine cloud migration	Transition from traditional Lift and shift to intelligent data-driven migrations
Enable unparalleled scale and compute power	Build compatibility with scalable cloud applications and APIs ensuring flexibility, zero-latency & downtime, and cost savings
In-year ROI on software investment	Storage optimization and risk mitigation creates sub-12-month ROI

Business impact delivered:

- **35%** reduction in operational emissions
- **60%** savings through improved TCO
- **3X** faster migrations and **10X** increase in productivity

Customer Success Stories

250 Terabytes of Data Moved to Azure File Share in 16 Days for FREE for a Fortune 500 Multinational Mining Company

Read the Case Study

3+ Petabytes of Unstructured Data Analyzed, Cleansed, Tiered, and Archived Using a Lightweight Single Data Management Software for Fortune 50 Multinational Automotive Company

Read the Case Study

Customer Speak

"Data Dynamics has helped improve our efficiency and effectiveness for data migration and management. By quickly analyzing and filtering data sets, they gave us the perfect control over our data and saved us significant time."

- CTO in the Services Industry

Awards

- Data4Good for Category- Affordable and Clean Energy - Winner - 2022
- Cloud Project of the Year – Winner DCS 2022
- Data Centre ICT Storage Innovation of the Year – Winner DCS 2022
- Migration as a Service - Gold Stevie Winner 2022
- Big Data Solution - Silver Stevie Winner 2022
- Milestone of the Year | Customer Growth - Gold Globee Winner - Globee 2022
- Disruptor Company Award for Information Technology Software - Globee 2022
- Most Innovative Tech Company of the Year - Globee 2022

The Data Dynamics Difference

- Unified unstructured data management software
- Versatile solutions for organization-wide application
- Industry-leading training and 24*7 customer support
- Enterprise-class scalability and flexibility
- In-year ROI on software investment

Trusted by Global Companies

- **300+** Customers
- **28** of the Fortune **100**
- Over **400PB** of Data Analyzed & Migrated
- Net Customer Retention Rate of **160%**
- **4.9 out of 5** Customer Support Rating
- **350+ PB** Storage Optimized
- **170+ Years** Project Time Saved
- **$250+ MM** Total Cost of Storage Saved

Contact us

© Data Dynamics 2024 | www.datadynamicsinc.com | solutions@datdyn.com | (713)-491-4298