

Data Mesh + Patient360

 Modern White Paper

A Modern Revolution
for Healthcare Data

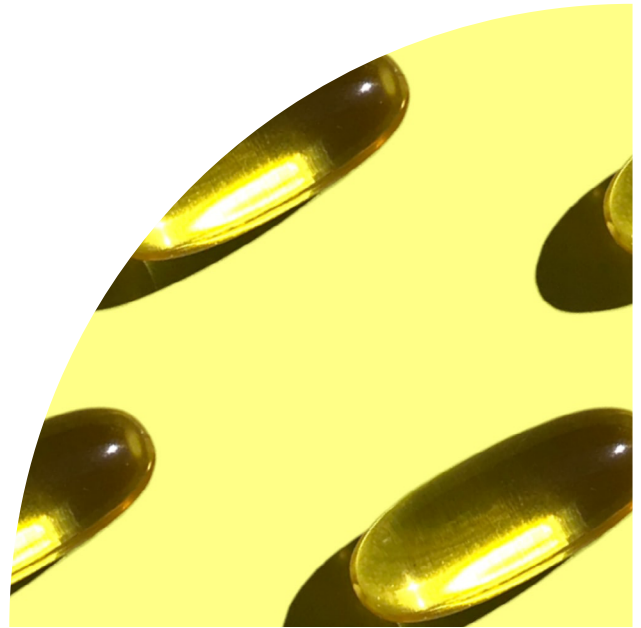


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Introduction

The healthcare industry generates vast amounts of heterogeneous data on a daily basis. From patient medical records to clinical trial data, managing this information can be a daunting task. The traditional approach of centralized data management systems is insufficient in handling the sheer volume and complexity of data. Healthcare needs a modern approach.

Key Benefits of DataOS for healthcare data:

- **Speed:** Realize a healthcare data mesh in weeks instead of years
- **Insights:** Treat data as a product to create an accurate and comprehensive patient 360° view that can be analyzed and actioned on with existing tools
- **Security:** Native ABAC-based governance allows for data to be freer and safer than ever before
- **Ease:** Achieve all of this without disrupting your current infrastructure — DataOS acts as a layer on top of your existing legacy and modern data systems.



Healthcare Obstacles to Operationalization

Operationalizing healthcare data refers to the process of making data actionable and usable within the healthcare system. While there are significant potential benefits of operationalizing healthcare data, the process is often hindered by a number of hurdles. Below are some common obstacles that healthcare organizations face when attempting to operationalize their data.

Data Silos

Data silos occur when data is stored in isolated systems, making it difficult to access, integrate, and analyze. This results in data that is not accessible for use across the organization. To overcome this, organizations must prioritize breaking down these silos and implementing a more integrated approach to data management.

Data Quality Issues

Inaccurate, incomplete, or inconsistent data can lead to erroneous conclusions and hinder decision-making. Healthcare organizations must prioritize data quality by implementing processes and technologies that validate, clean, and standardize data before it is used.

Lack of Data Governance

Data governance is the set of policies, standards, and processes that organizations use to manage their data. Without a clear and well-defined data governance framework, it can be difficult to establish accountability, consistency, and security in data operations. Healthcare organizations must establish a data governance framework that provides a clear understanding of who has access to data and how it should be used.

Resistance to Change

Healthcare organizations are often slow to adopt new technologies and processes. This resistance to change can be due to a variety of reasons including a lack of resources, a lack of understanding of the benefits, and a general tendency to stick with the status quo. Organizations must educate stakeholders about the benefits of modernizing their approach to data to prioritize operationalization and provide resources to support the transition.

Security Concerns

Data security is a major concern in healthcare, where sensitive patient information is involved. Ensuring that data is protected from cyber-attacks and unauthorized access are a critical component of creating an ecosystem that promotes data operationalization. Organizations must implement strong security measures such as encryption, access controls, and network security to protect sensitive data.

Operationalizing healthcare data is a complex process that requires careful planning and execution. Organizations must overcome these obstacles to realize the full potential of their data and improve the delivery of healthcare. By breaking down data silos, prioritizing data quality, establishing data governance, overcoming resistance to change, and addressing security concerns, organizations will be able to successfully operationalize their data and drive better outcomes for patients.



Benefits and Barriers to a 360-Degree View of Patients

The patient 360 view is a comprehensive view of a patient's health information capable of providing healthcare organizations with a holistic understanding of the patient's health history, current conditions, and treatment plans. This information is critical for healthcare providers to make more informed decisions and provide the best possible care to their patients. Below, we'll explore some of the key benefits of a patient 360 view for healthcare organizations.

Improve Patient Outcomes

When healthcare providers have access to a complete and accurate view of a patient's health information, they can make informed decisions and develop effective treatment plans, which can lead to better patient outcomes.

Enhance Collaboration Between Healthcare Providers

Collaboration and care coordination is possible when all healthcare providers have access to a comprehensive view of a patient's health information. This ability to collaborate can improve patient care and help hospitals effectively realize a value-based care model. The benefits extend to internal teams as well, including marketing and data science, which can collaborate to optimize scheduling integration or execute a digital transformation strategy.

Improve Efficiency and Reduce Costs

With access to a complete view of a patient's health information, providers can avoid duplicating tests, procedures, and treatments, which can save time and resources and reduce healthcare costs.

Advance Population Health Management

Leveraging a comprehensive view of a patient's health information, healthcare organizations can identify and manage public health trends and provide targeted, evidence-based interventions to improve health outcomes.

A patient 360° view has the potential to vastly improve patient outcomes, enhance collaboration, improve efficiency and reduce costs, increase patient satisfaction, and improve population health management. Implementing a comprehensive, accurate, and secure patient 360° view is a critical step for healthcare organizations to provide the best possible care to their patients.



However, many healthcare organizations face challenges when trying to achieve a 360-degree view of patients. Below are some of the most common challenges.

Data Integration

Integrating data from various sources, such as electronic health records (EHRs), imaging systems, and laboratory results is a complex and time-consuming process. In addition, data may be stored in different formats and structures, which makes it difficult to combine and create a comprehensive view of a patient's health information.

Interoperability

Interoperability refers to the ability of different systems to communicate and exchange data. In healthcare, interoperability is often lacking, making it difficult for healthcare organizations to access a patient's complete health information, especially when patients receive care from multiple providers.

Privacy and Security

Patient privacy and security are major concerns for healthcare organizations, and protecting this information is crucial when implementing a patient 360 view. This requires implementing strong security measures, such as encryption, to ensure that patient data is protected from unauthorized access and breaches.

Data Quality

Data quality is a critical issue. Inaccurate or outdated data can lead to incorrect diagnoses, treatments, and outcomes. Ensuring that data is accurate, consistent, and up-to-date is essential for a complete and accurate patient 360 view.

While a patient 360° view has the potential to greatly improve patient care, outcomes, and efficiency, it requires overcoming several challenges, such as data integration, interoperability, data quality, and privacy and security. Addressing these challenges is critical for healthcare organizations wanting to implement a comprehensive, accurate, and secure patient 360 in order to provide the best possible care to their patients.



DataOS — The Modern Answer to Healthcare Data

#native-governance

#configurable

#API-first architecture

#intelligent-data-movement

DataOS sets organizations on the fastest path from data to decisions in a truly risk-free manner. It allows for flexibility in how architecture is designed today while also enabling easy adoption of new requirements in the future. DataOS does this by delivering a composable and agile data operating system that democratizes access to high quality, governed, and secure data in real time. It connects all structured, semi-structured, and unstructured data assets across the enterprise and builds an intelligent semantic layer that enables business and technical users to discover, explore, and collaborate to deliver data products for every core data set of the patient lifecycle.

The unmatched composability of DataOS lets customers adapt to any data architecture, including a healthcare data mesh, with full support for a wide range of toolsets. There is no need to take the unpopular route of telling users that they need to decommission their preferred tools. In fact, low-code access to data combined with native ABAC-based governance makes data freer and more secure than ever before. DataOS enables healthcare organizations to reap the benefits mentioned above — improving outcomes, enhancing collaboration, reducing costs, and implementing advanced population health management — in a matter of weeks, not years.

Speed and agility are instrumental to DataOS because it integrates the entire data engineering layer, eliminating much of the point solution patchwork required today along with the integrations necessary to maintain it. This ultimately frees data teams to spend their time operationalizing data to drive value.

DataOS is secure, scalable, and adaptable. There are four overarching benefits that differentiate DataOS from anything else on the market today.

Composable, extensible, open, and interoperable

- DataOS is completely composable and can be adapted to any architecture or use case.
- Agility in the infrastructure helps healthcare organizations react and adapt to new workloads and requirements, without requiring major IT work.

Enhancing — not replacing — existing infrastructure

- Augment the functionality and ROI of current investments.
- There is no pressure to replace architectural components already in use.

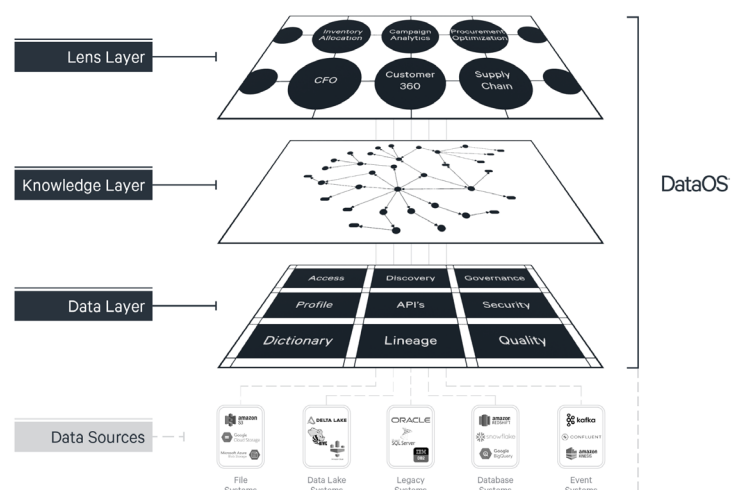
All things data under one roof

- Building patient-focused data products has never been faster or easier.
- Integrated architecture drives cost optimizations — lower OpEx.

Model-driven data management

- Streamline data pipelines.
- Prioritize business-driven use and management of data.
- Increase IT capacity and security.

FIGURE 1
DataOS Layers

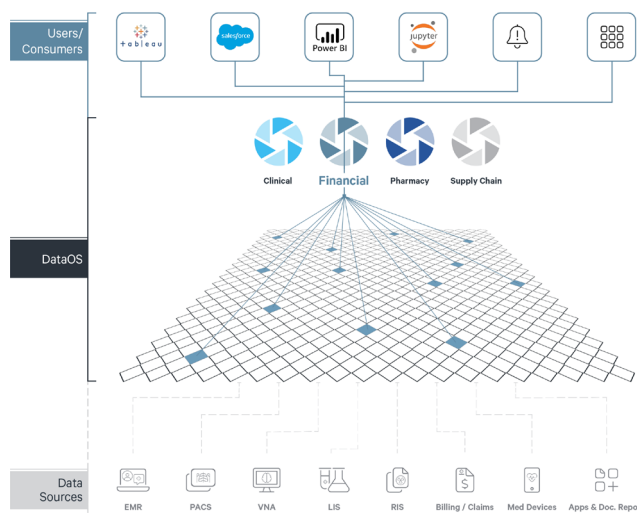


DataOS Enables a Decentralized Data Architecture for Healthcare

A data mesh is a modern, decentralized data architecture that allows organizations to manage data as a product, with clear ownership and defined interfaces. It is a combination of people, processes, and technology. A data mesh provides a centralized control plane and clear ownership of data, making it easier for different teams and departments to work together and share information. This relatively new approach helps break down data silos and enables data to be accessed and activated more easily across the organization.

The advantages of a data mesh address the weaknesses of traditional data structures. However, for this approach to work effectively, several elements — that are today overly complex, siloed, and disparate — must work and work together seamlessly, including data infrastructures, sources of data, and pipelines that are domain-oriented. For many healthcare organizations, this means restructuring their data platform or entire overhauls that require significant time and resources.

The Modern Data Company built DataOS® to instantly modernize existing data systems, creating a composable architecture that helps healthcare organizations realize a data mesh in weeks instead of years. Since DataOS layers on top of both legacy and modern data architecture, all of this is possible without disrupting business.



DataOS helps enable an effective healthcare data mesh in the following ways.

Breaking down siloes

A data mesh approach helps to break down silos and enable data to be shared and accessed more easily across different departments and teams. In a healthcare setting, this can have significant benefits, such as improving collaboration between healthcare providers, reducing duplicated efforts, and increasing the speed at which data can be analyzed and used to drive better patient outcomes.

A composable architecture

DataOS helps healthcare organizations implement a data mesh architecture quickly and effectively. The platform provides a centralized control plane that enables organizations to manage their data as a product with clear ownership and defined interfaces. Providers get a single unified view of data, simplifying access to the data they need when they need it, and it ensures that everyone has access to the same, up-to-date information.

Native security and compliance

DataOS helps healthcare organizations remain in compliance with regulatory standards such as HIPAA, which sets strict guidelines for the storage and handling of sensitive health information. The platform provides robust security and privacy controls, ensuring that sensitive data is protected at all times.

With a DataOS-enabled healthcare data mesh, healthcare organizations can streamline their data management processes, improve collaboration and information sharing, and drive better patient outcomes. With a single, unified view of their data, healthcare organizations can make more informed decisions faster and ensure that sensitive health information is protected and secure.

FIGURE 2
DataOS Data Mesh



DataOS Provides the Tools for 360-Degree View of Patients

A patient 360 is a secure, trusted, integrated data set that contains all the information needed to visualize and action the full patient healthcare journey. With DataOS Patient360, data products can be built on top of the healthcare data mesh to create a comprehensive view of each patient. It brings together data from a variety of sources, including electronic medical records (EMRs), claims data, and patient-generated data to create a 360-degree view of each patient. This enables healthcare providers to make informed decisions based on the most complete and up-to-date information available, without worrying about the complexity of the underlying data.

Together, a healthcare data mesh built on DataOS with Patient360 can help healthcare organizations transform their data ecosystem for the digital era. This powerful combination empowers healthcare organizations to improve patient outcomes, enhance collaboration and information sharing, improve operational efficiency, and maintain compliance with regulatory standards.

Benefits of DataOS Patient360:

Improved patient care

With DataOS Patient360, healthcare providers can have a complete view of a patient's health history, allowing them to make more informed treatment decisions. This leads to improved patient care, as healthcare providers are better equipped to identify and manage chronic conditions, predict potential health problems, and provide more personalized care.

Enhanced collaboration

DataOS Patient360 facilitates communication between healthcare providers, enabling them to share patient data and collaborate on treatment plans securely. This improves patient outcomes, as healthcare providers can work together to provide a more comprehensive approach to patient care.

Streamlined workflow

By integrating data from various sources, DataOS Patient360 streamlines the healthcare workflow. This reduces the time healthcare providers spend on manual data entry and searching for patient information, freeing up time to focus on providing care.

Improved data analytics

DataOS Patient360 provides healthcare organizations with a wealth of patient data that can be used for data analytics. This enables organizations to identify trends, potential health problems, and ways to patient outcomes.

Increased patient engagement

DataOS Patient360 provides patients with access to their health data, empowering them to take an active role in their care. This leads to increased patient engagement, as patients are better informed about their health and can make informed decisions about their care.

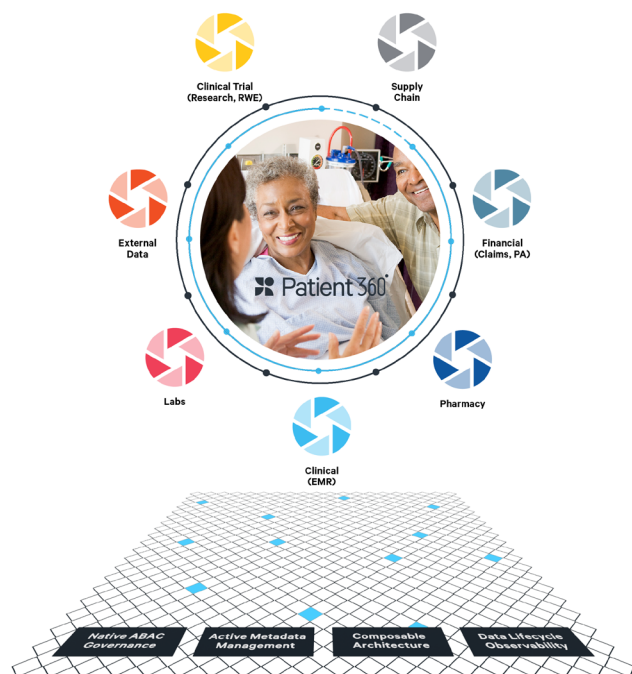


FIGURE 3
DataOS Patient360



Combining Data Mesh and Patient360

DataOS Patient360 provides a comprehensive view of patient data for healthcare organizations. Using the DataOS taxonomy, teams can identify the core data sets that are relevant to a 360-degree view for providers, payers, pharma, and life sciences. These core data sets can be transformed into data products. A data product is a transformed version of raw data which adds value to the end user by bringing together all the data attributes, such as metadata, lineage, quality, provenance, and governance. The essential qualities of data products include being easily discoverable, addressable, understandable, natively accessible, trustworthy, interoperable-and-composable, valuable on their own, and secure. Data products make it easy to discover, access, democratize, and govern data.

With DataOS and Patient360, organizations can build data products around each of the core patient lifecycle data sets. This allows teams to individually or collaboratively iterate over these data sets, leveraging agile methodologies to create a comprehensive view of the patient from the most productive data products. Low-code access to these data products plus native ABAC-based governance makes it possible to analyze and activate patient data across whole organization — without compromising security or compliance.

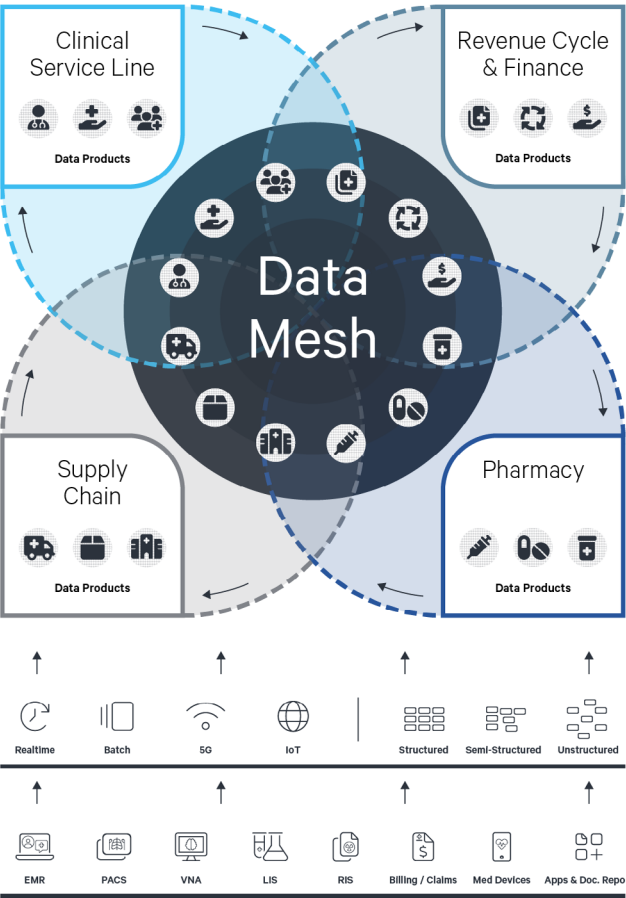


FIGURE 4
Healthcare Provider Data Mesh

USE CASE

Accelerate Data Science

Data scientists and engineers can use DataOS to build data products around core patient lifecycle data sets. They can then leverage built-in integrations with popular data science and analytics tools to quickly and iteratively experiment, gain insights, and build intelligent AI/ML for healthcare

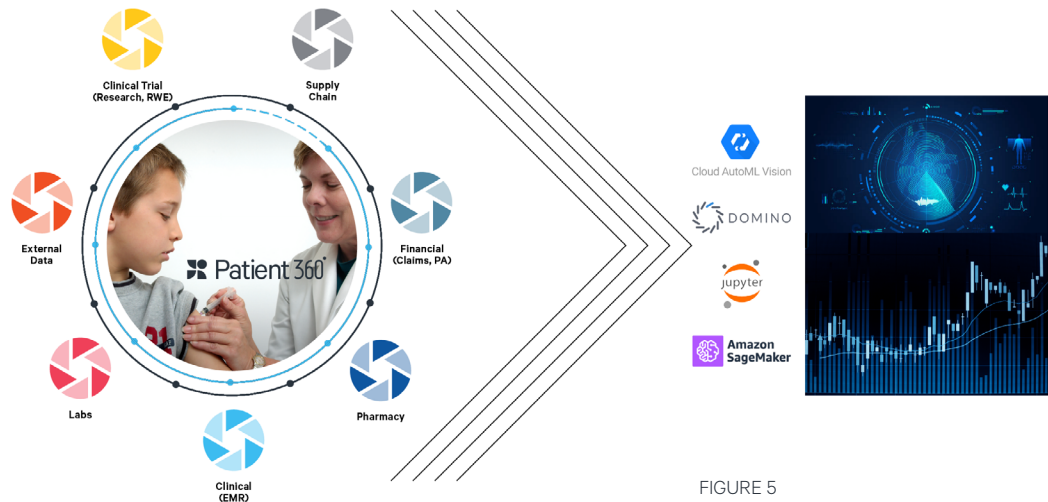


FIGURE 5
Patient360 Use Case:
Accelerate Data Science

USE CASE

Improve Proactive Patient Care

DataOS data products built around a 360 view of patients can help to expose insights via API to third-party and internal tools, such as Salesforce or other CRM + workflow systems. These data products can then drive campaigns such as proactive patient outreach.

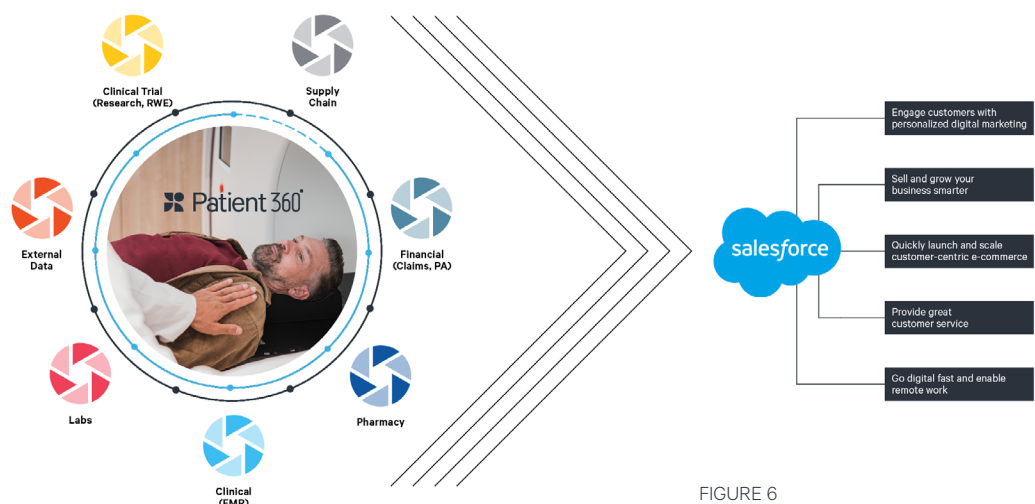


FIGURE 6
Patient360 Use Case:
Improve Proactive Patient Care



Conclusion

DataOS and Patient360 provide an out-of-the-box modern data ecosystem for payer, provider, pharma, life sciences, and health sciences data. Organizations can realize a healthcare data mesh to create a dynamic, agile, and collaborative insight ecosystem. With DataOS, data is treated as a product to create shareable, unified data products around each of the core data sets that are relevant to a 360-degree view of patients.

Unlock these benefits today:

- Streamline data engineering and management
- Get true data democratization with low-code access to data
- Native ABAC-based governance
- Treat data as a product for dynamic, accurate, and secure 360-degree views of patients
- Iterate, analyze, and experiment with data with various analytic tools and frameworks
- Unlock company culture change by reducing skill requirements for data operationalization and increasing security with native governance

Ready to take a modern approach to healthcare data? Let's get started.

Contact us at info@TMDC.io →

For more resources like this, visit our [Resources page](#) →



About DataOS®

DataOS® is an operating system that consists of a set of primitives, services, and modules that are interoperable and composable. These building blocks enable organizations to compose various data architectures and dramatically reduce integrations. Enterprises can have the same data-driven decision-making experience akin to data-first tech companies in days and weeks instead of months and years.

DataOS® for Healthcare

DataOS® by The Modern Data Company provides a fully integrated data operating system for healthcare organizations. It can streamline the process of collecting, storing, and analyzing large amounts of heterogeneous, health-related data. With DataOS, healthcare organizations can better understand and manage their data, improve operational efficiency, and drive better outcomes for patients — without risking security and compliance. Native governance and security features in DataOS support compliance with regulatory standards such as HIPAA and ensure the security and privacy of sensitive health information.

The same capabilities within DataOS that enable seamless data mesh adoption also empower healthcare organizations to easily maximize its value. DataOS users can leverage built-in tools that provide low-code access to data, making it easy for them to treat data as a product and compose a 360-degree view of a patient's healthcare journey. With DataOS, healthcare organizations are equipped to meet tomorrow's health challenges and opportunities.

About The Modern Data Company

Founded in 2018, The Modern Data Company began with the realization that enterprise-wide data access has been siloed. Data engineers and database administrators have been the longstanding data gatekeepers who funneled data to analysts and data scientists. We aim to change that by freeing enterprises to make better data-driven decisions by democratizing access to data. When all employees, irrespective of their technical skills or background, can easily explore and analyze enterprise data, then both productivity and market expansion are realized at a faster pace.



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