

EBOOK

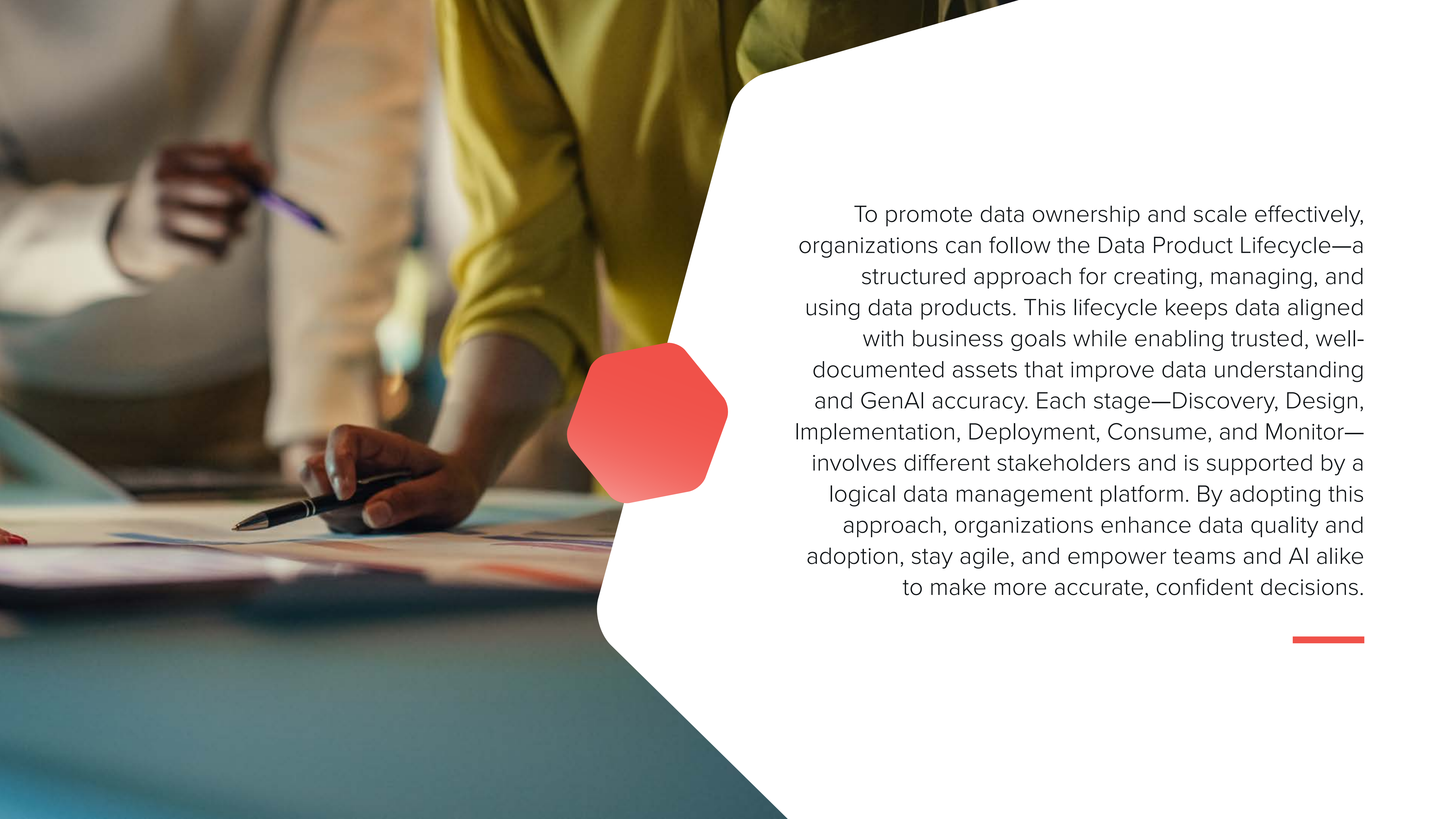
SCALING DATA PRODUCTS

How Distributed Teams
Drive Efficiency



Scaling data and analytics is key to maintaining a competitive edge—but it's not just about infrastructure or tools. As GenAI becomes a new driver of innovation, empowering the right people with the right responsibilities is more critical than ever. By decentralizing data management and involving data engineers, analysts, and business users, organizations can improve the reliability and efficiency of their entire data lifecycle. In this eBook, we'll explore how distributing data ownership helps teams scale effectively and achieve better outcomes by tapping into the expertise of those closest to the data.

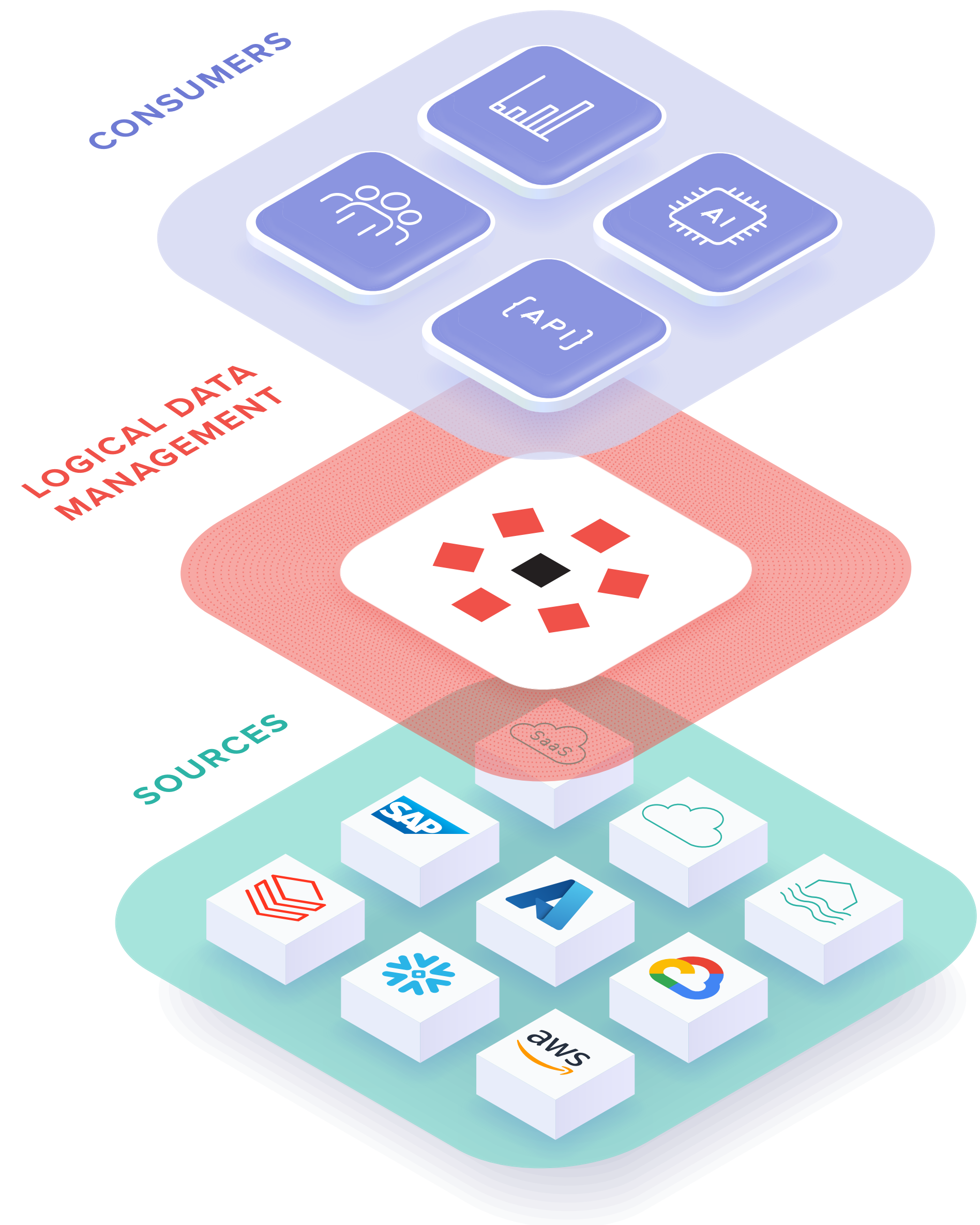


The background of the slide features a blurred photograph of people in a meeting or collaborative workspace. In the foreground, a person's hand is visible, holding a black pen and writing on a document. Another person in the background is holding a purple pen. A large, semi-transparent white shape with a red hexagonal cutout is positioned on the right side of the image, serving as a backdrop for the text. A small red horizontal line is located at the bottom right of the white shape.

To promote data ownership and scale effectively, organizations can follow the Data Product Lifecycle—a structured approach for creating, managing, and using data products. This lifecycle keeps data aligned with business goals while enabling trusted, well-documented assets that improve data understanding and GenAI accuracy. Each stage—Discovery, Design, Implementation, Deployment, Consume, and Monitor—involves different stakeholders and is supported by a logical data management platform. By adopting this approach, organizations enhance data quality and adoption, stay agile, and empower teams and AI alike to make more accurate, confident decisions.

WHAT IS LOGICAL DATA MANAGEMENT?

Logical data management provides flexible, scalable access to distributed data—without replication or complex migrations. It creates a unified access layer across all sources, whether on-premises, in the cloud, or hybrid. With a shared semantic layer, metadata catalog, and built-in governance, it ensures consistency, simplifies discovery, and enforces security. This approach empowers a wider range of users—not just technical teams—to create, share, and manage data products with confidence. It also gives GenAI applications the real-time, trusted, and context-rich data needed to generate accurate, actionable insights. By virtualizing access and streamlining control, logical data management enables faster, more responsible data use across teams, tools, and intelligent systems.



THE STAGES OF THE DATA PRODUCT LIFECYCLE

Now we'll explore the stages of the Data Product Lifecycle, outlining a structure that organizations can adapt based on their unique needs and skillsets. While each stage is essential for ensuring the successful creation and management of data products, how organizations approach them will depend on who is best suited to participate and contribute at each point in the process. Here, we provide a flexible framework to help navigate each phase, from planning to decommissioning, so responsibilities are aligned with the right expertise.

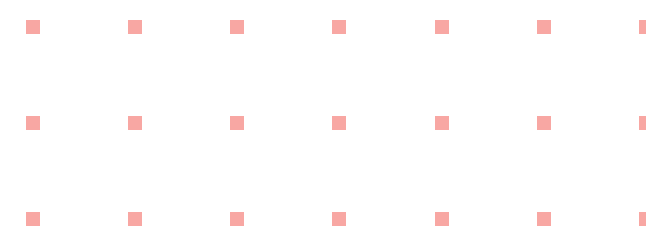
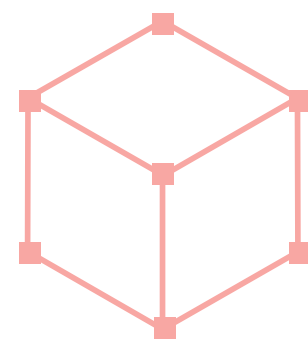




DISCOVERY: UNCOVERING THE POTENTIAL OF YOUR DATA

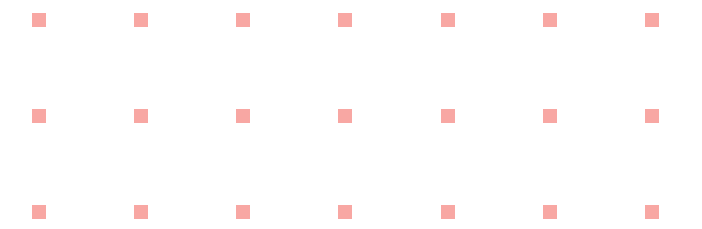
The Discovery stage is where the foundation is established. In this stage, the Data Product Owner defines the problem to be solved, so that it can align with business objectives and be based on a thorough understanding of relevant data sources. The data management team plays a crucial role in evaluating the quality and relevance of these sources.

A logical data management platform is instrumental in this stage as it can provide a wide range of data connectors that bring together data from different formats and present it in a common format. It offers data discovery and exploration tools, enabling users to quickly identify, sample, and prototype datasets. These capabilities provide a clear, data-driven foundation, paving the way for successful data product development.





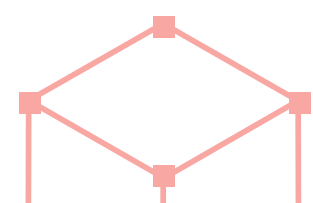
DESIGN: CRAFTING A BLUEPRINT FOR SUCCESS



In the Design stage, close collaboration between the Data Product Owner and Data Engineers is essential as they define the architecture, technical specifications, and data integration to solve the problem identified during Discovery. The data management team ensures that data governance, access, and protection policies are integrated into the design.

A logical data management platform supports this stage with tools for semantic modeling, metadata management, and business semantics definition. It embeds data governance by managing access controls, including masking, encryption, and data restrictions, ensuring a compliant design that meets technical and business needs.

A logical data management platform also empowers Data Owners to prototype new data products independently. By accessing and updating views in the data catalog, they can apply data preparation, save changes, and create a new data product that serves as a foundation for Data Engineers. This streamlined approach fosters collaboration, accelerates development, and enhances agility within the data ecosystem.

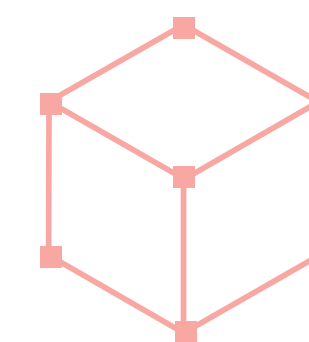
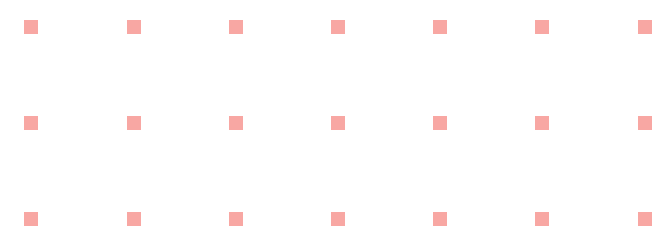


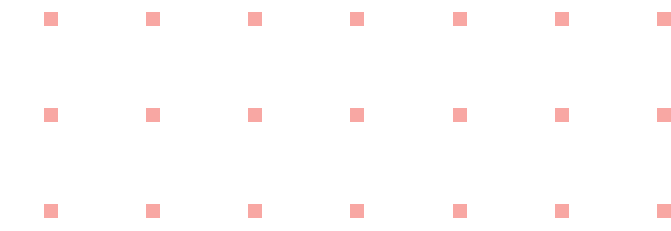


IMPLEMENTATION: BRINGING DATA PRODUCTS TO LIFE

During the Implementation stage, Data Engineers can integrate the data product, turning the design into a functional reality. Platform Engineers begin preparations for a seamless deployment.

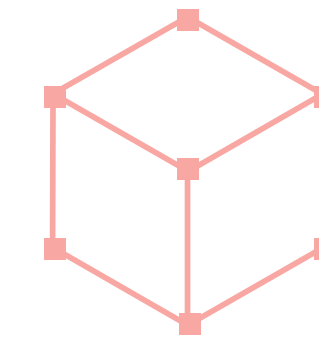
A logical data management platform can enhance this stage by providing a clear dataset model for data engineers and domain teams. It automates data access, protection rules, and quality checks while simplifying the creation of business views from technical views via a point-and-click web interface. Descriptions and documentation can be defined and leveraged by a data catalog for easier exploration. These views make the data product secure, reliable, and aligned with governance and quality standards.





DEPLOYMENT:

DELIVERING VALUE AT SCALE



In the Deployment stage, Platform Engineers take the lead in releasing the data product.

A logical data management platform enables scalable deployment by supporting SQL, REST, and GraphQL, enabling data consumption in preferred formats. It boosts performance with a wide range of optimization techniques depending on the data sources and queries, including smart query acceleration such as optimizing multi-source queries through intelligent caching. Platform Engineers can also leverage embedded massively parallel processing (MPP) data lake engines for scalable, high-performance SQL access to data lakes. These features provide flexible, efficient options for deploying data products and making them available.



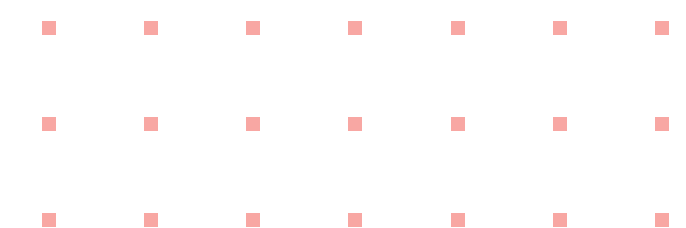
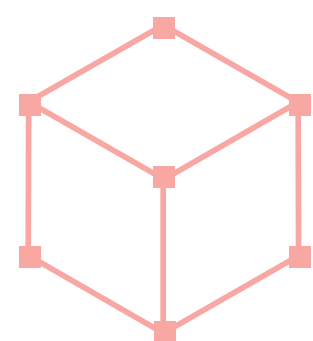


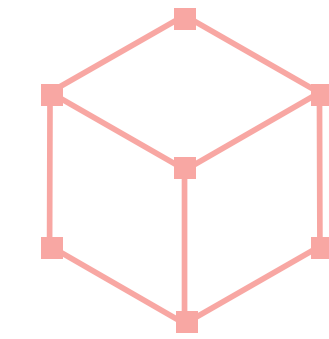
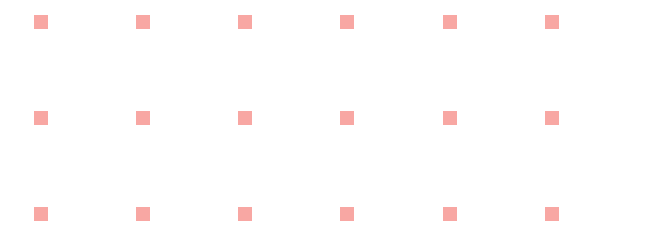
CONSUME:

EMPOWERING INSIGHTS AND DECISIONS

Once deployed, the data product enters the Consume stage, where it is consumed by people in a variety of roles, such as business analysts and data scientists, as well as applications via APIs, to derive insights, inform decisions, and enhance application functionality.

A logical data management platform enhances the user experience by streamlining data access with an Integrated data catalog that offers automatic recommendations, AI-powered natural language query, and advanced collaboration features. Users are empowered with tools like data preparation wizards, making it easy to customize data products. Additionally, monitoring and FinOps dashboards can provide visibility into operating costs and track adoption, so data products deliver maximum value and align with business needs.





MONITOR: ENSURING CONTINUOUS VALUE AND COMPLIANCE

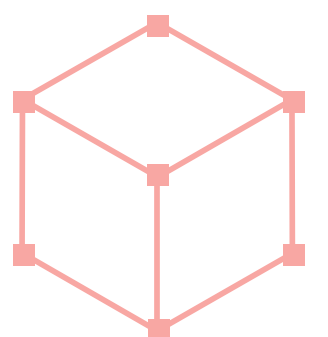
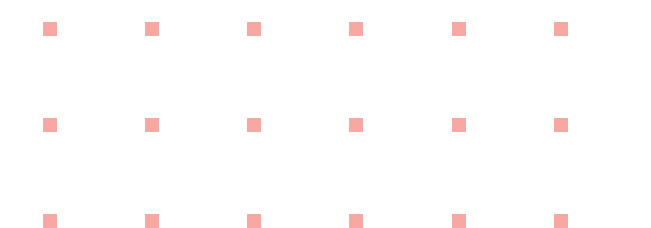
In the Monitor stage, the Data Product Owner oversees the ongoing performance of the data product, with support from the data management team and security and compliance analysts.

Logical data management platforms provide robust monitoring capabilities, enabling teams to track performance, data quality, and security in real time. It offers features like query performance analysis, data access logs, and full data lineage tracking, enabling data products to meet compliance and governance standards. With the ability to monitor resource utilization, enforce data quality rules, and deliver proactive maintenance alerts, logical data management platforms help maintain the integrity and reliability of data products, allowing for continuous optimization so they deliver maximum value.



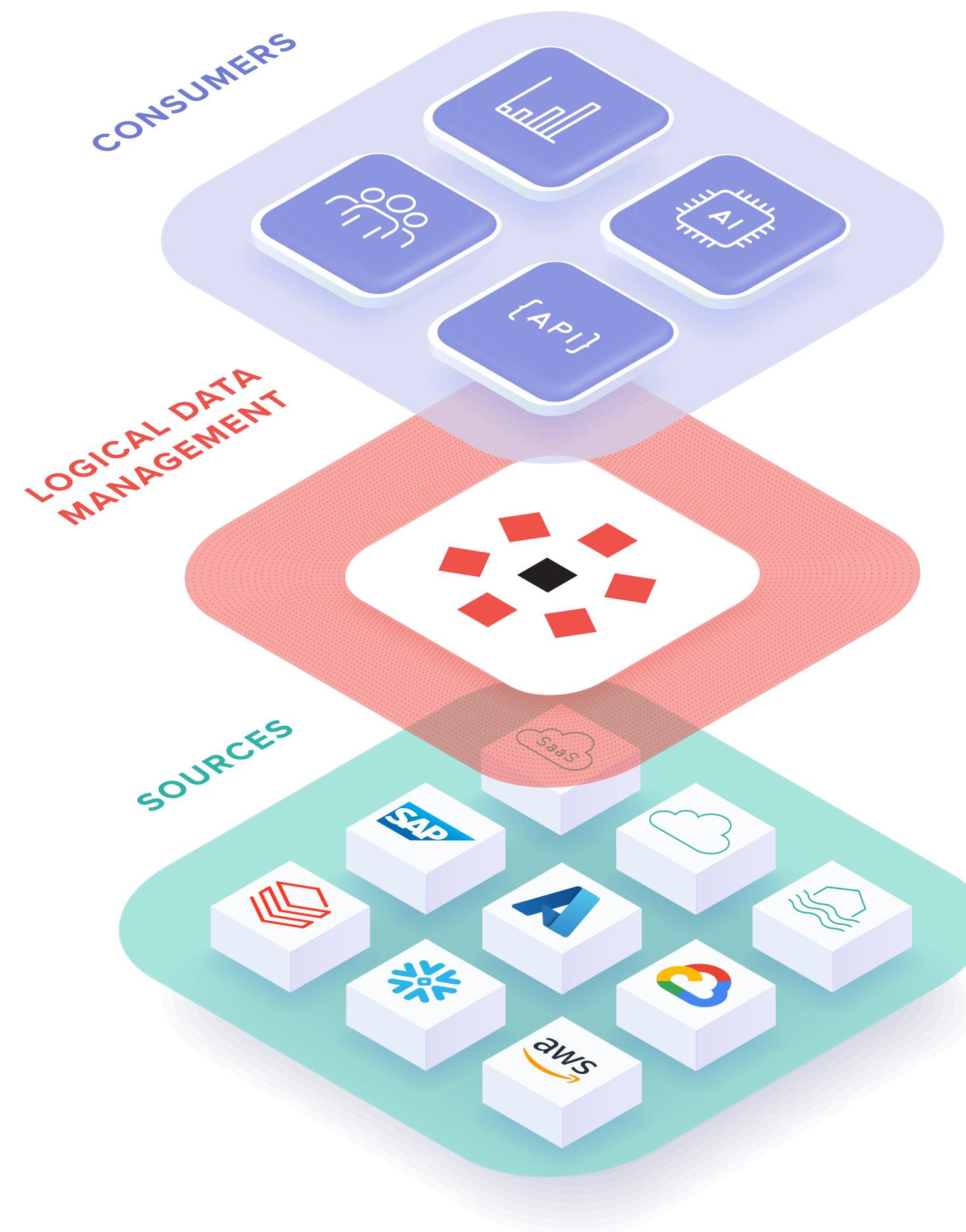
RETIREMENT OR DECOMMISSIONING: ENSURING A SMOOTH TRANSITION

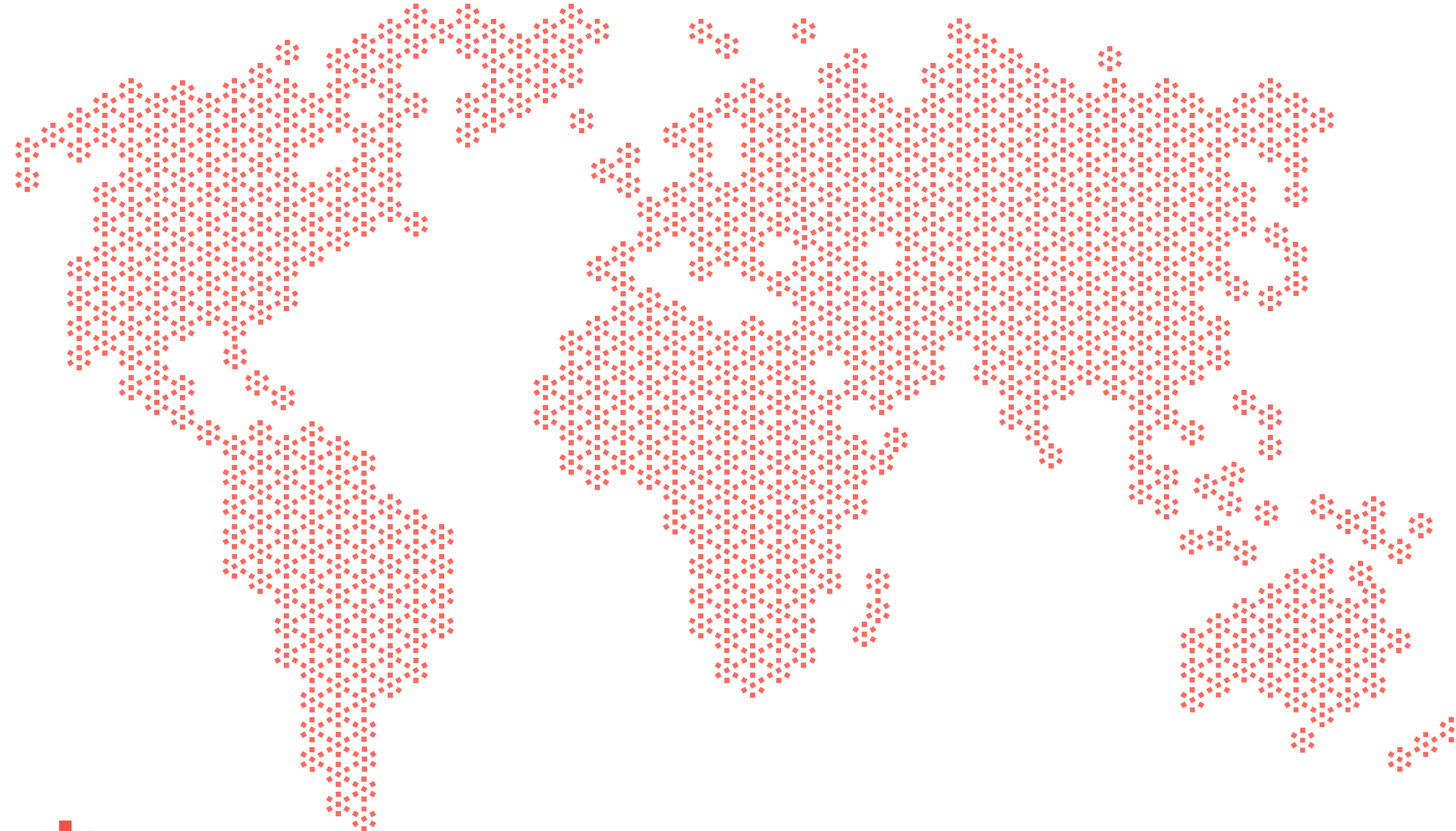
The Retirement or Decommissioning stage marks the end of a traditional data product's lifecycle, where stakeholders confirm compliance with governance standards. However, with logical data management platform, data products built within its semantic layer do not require retirement when data is migrated or changed. Instead, the data source for the product can simply be updated, seamlessly refreshing the existing data product without disruption. This abstraction enables data landscapes to evolve and adapt without impacting data consumers, setting logical data management platforms apart by enabling continuous data access and reducing the need for product decommissioning. Depreciation notices are minimized, for uninterrupted use and adaptability across the data ecosystem.



ENABLING AN AGILE DATA STRATEGY AND DRIVING BETTER OUTCOMES

The journey through the Data Product Lifecycle highlights the power of a structured, yet flexible approach to managing data. By empowering the right people and leveraging a logical data management platform, organizations can scale with greater agility and impact. Backed by decades of experience, Denodo not only provides the platform but also the proven best practices to help you modernize—whether you're building data products, implementing a data fabric or mesh, or enabling GenAI. No matter your approach, Denodo helps accelerate your success. To learn more, visit [Denodo.com](https://denodo.com) or connect with our experts to explore what's possible.





Denodo is a leader in data management. The award-winning Denodo Platform is the leading logical data management platform for transforming data into trustworthy insights and outcomes for all data-related initiatives across the enterprise, including AI and self-service. Denodo's customers in all industries all over the world have delivered trusted AI-ready and business-ready data in a third of the time and with 10x better performance than with lakehouses and other mainstream data platforms alone.

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