



Your Intelligent Data Strategy for AI

Transform your data into
your competitive edge



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Introduction to intelligent data for AI

In times of constant change, data offers businesses clarity and guidance.

By using AI to analyze and identify patterns in historical and real-time data, decision makers have been able to spot areas for improvement, find growth opportunities, and avoid potential disruptions. Now, generative AI is expanding the potential value an organization's data can deliver.

Today's businesses want to dig deeper into their mountains of data and extract the information that will help get the best results from their generative AI apps.

Whether they're looking to enhance their predictive power or create new products and digital experiences, many organizations know that the intelligence to drive AI innovation is buried somewhere in their data—they just need the ability to find it and use it efficiently and effectively.

Essentially, your data can illuminate paths to success—and the more data you have, the brighter that light can be.

However, more data means more complexity. Organizations with a lot of data may struggle to use it effectively, slowing innovation and driving down the value of their analytics initiatives. To avoid obstacles in your path to innovation, you need a strong data strategy that addresses the most common data complexities.

Whether you're looking to use AI and analytics to drive customer insights, improve product performance, or fuel more impactful marketing campaigns, this e-book will help you identify the most common data challenges and the strategies to overcome them.



What is intelligent data?

Intelligent data involves capturing all of the intelligence inside an organization's data, which is key to driving innovation and differentiation in today's competitive landscape.

Overcoming common data challenges

Business leaders today realize that data and AI are fundamental to creating digital experiences and products and allowing them to connect with customers, employees, and partners in ways never before possible. However, IT teams using fragmented platforms and solutions commonly encounter data challenges that can drive down the potential value of their AI projects.

Given today's constant stream of data from internal operations, customer interactions, social media, and IoT devices, an intelligent data strategy for AI must start with overcoming the following challenges:

1. Low visibility

The complexity of managing data across multiple platforms can reduce data visibility, and even cause organizations to miss critical information. As organizations embrace a multitude of technologies to support various business functions, data becomes distributed across a complex ecosystem, spanning on-premises infrastructure, cloud services, third-party applications, and partner networks. Each platform operates within its silo, housing valuable datasets that remain isolated from one another. This fragmentation complicates data access and integration and hampers the organization's ability to consolidate information and derive holistic insights.



2. Lack of agility

The pace at which data becomes available is crucial for timely decision-making. As businesses accumulate vast volumes of data from diverse sources, including internal systems, external partners, and customer interactions, ingesting, processing, and delivering data in real time becomes increasingly intricate.

Legacy data infrastructures aren't typically suited to handle the velocity and variety of modern data streams and often struggle to keep pace with the demand for rapid data access and analysis. As a result, data may languish in silos, undergo lengthy processing pipelines, or remain trapped in outdated systems, delaying its availability for decision-making purposes.

3. Data security and compliance

Managing data threats and ensuring compliance with regional and international laws is increasingly complex and time-consuming. As data traverses through various stages of collection, storage, processing, and analysis, it can become susceptible to security threats, ranging from unauthorized access and data breaches to malicious attacks and insider threats. The dynamic nature of AI and analytics workflows exacerbates these risks, as data continuously flows through complex pipelines and algorithms, increasing the attack surface and potential points of vulnerability.

4. AI readiness

Professionals anticipate that AI will transform global business, yet data management issues pose significant barriers to using AI technologies. AI algorithms thrive on clean, accurate, and relevant data. However, data silos, inconsistencies in data formats, and data entry errors can introduce noise and bias, undermining the reliability and efficacy of AI models. Without robust data management practices in place to ensure data integrity and quality assurance, organizations risk deploying AI solutions built on shaky foundations, leading to unreliable outcomes and suboptimal decision-making.

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Organizations with AI-ready data and analytics foundations see a 20% improvement in AI-related business outcomes compared to organizations that don't.¹

Crafting a data strategy for innovation

Siloed data causes a ripple effect that has the potential to impact every aspect of your organization—including your plans for innovating with AI.

By adopting a unified data strategy, you can ensure an open environment where data is accessible, secure, and ready for AI innovation.

A strong data strategy combines analytics, cloud technology, AI, security, and operational data workloads in a unified, intelligent construct—a comprehensive, integrated, and flexible platform. This kind of platform supports your organization's data needs across the entire lifecycle, including collection, analysis, and visualization, while also providing a robust foundation of governance and security.

An effective data platform considers many different components, including transactional databases, real-time and historical data, unstructured data, IoT sensors, AI and machine learning, and high-performance analytical data stores. Meanwhile, an orchestration layer helps connect disparate tools and data stores, and the governance layer helps ensure consistent data management across your organization.

Four key features that make a successful data strategy

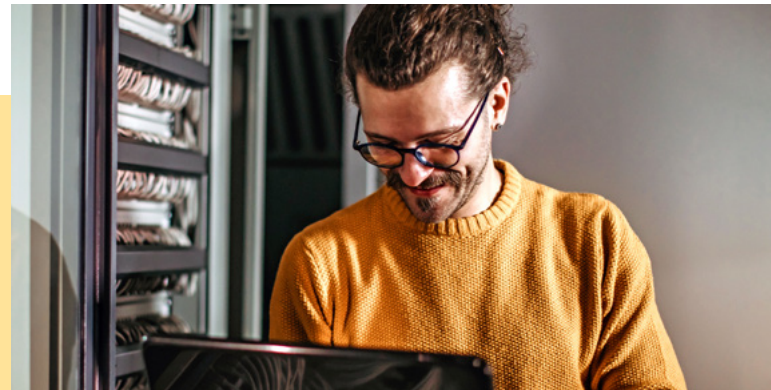
A unified data platform encompasses four features to help organizations derive more value from their data:

→ Databases

Transactional databases help operations. They're typically optimized for fast and efficient data retrieval and updates. With many organizations using dozens or even hundreds of databases, a unified data platform helps connect them so teams can easily copy data from databases to analytic data stores and keep those stores synchronized as data changes. In this way, a unified data platform helps you easily use your data for analysis and visualization while also ensuring governance and regulatory compliance.

→ Analytics

The three primary areas of analytics within a unified data platform include data ingestion, analytical data storage, and data visualization. With these three components working together seamlessly on a unified platform, you can more easily turn raw data into insights and uncover trends that point to opportunities for growth.



→ AI and machine learning

Innovating with AI requires operational databases, analytics, and governance solutions designed to work together so you can spend less time on data integration and more time on value creation. A unified data platform helps minimize integration bottlenecks and administrative overheads so that IT teams are free to focus on developing AI-driven products and services.

→ Data security

Building a successful data strategy requires data that can be trusted. A unified data platform allows organizations to identify new threats and respond quickly by enabling a layered defense-in-depth security approach. This layered approach involves cloud security, access management, threat protection, and encryption for data in transit and at rest.

Benefits of a unified data platform

Bring order to complex data estates

Many organizations have difficulty organizing their data and using it effectively, resulting in wasted resources while delivering poorer results. Adopting a unified data platform provides an organized construct that brings solutions together from across their data estate, breaking down siloes so teams can feel empowered by their data—instead of hindered by it.

Empower leadership to make informed, real-time decisions

The longer data remains hidden or inaccessible, the less value it holds for making intelligent business decisions. If the data at hand can't accurately reveal the current reality of operations, markets, and the ever-changing business terrain, leadership can only rely on hindsight to make decisions for the future. A comprehensive suite of data services helps deliver data where it needs to be for leaders to have a complete picture of the business at any given time, allowing them to pivot faster and make informed decisions for the best possible impact.

Unify your data with integrated database and analytics solutions

Microsoft solutions



Microsoft Fabric



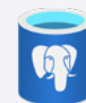
Azure Cosmos DB



Azure SQL



Azure Databricks



Azure Database for PostgreSQL



Azure Database for MySQL

Minimize security concerns and governance complexities

Data can create liabilities if businesses don't have reliable security because it can expose them to different risks, including breaches, cyberattacks, and non-compliance penalties. The complexity of managing data makes it difficult to identify and classify sensitive information, implement adequate encryption and masking techniques, and effectively monitor data access and usage. Unifying your data, AI, and analytics solutions on a single platform helps IT teams navigate today's threat landscape by providing more visibility in potential threats, helping them detect and respond to threats quickly while also adhering to privacy and compliance standards.



Security solutions for hybrid, multicloud, edge, and IoT protection:



Microsoft
Defender XDR



Microsoft
Defender
for Cloud



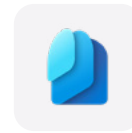
Microsoft
Sentinel



Microsoft
Purview



Microsoft
Priva



Microsoft
Entra



Microsoft
Intune

Belfius took a unified data platform approach to give its teams greater agility when building models with [Azure Machine Learning](#).



We want our data scientists to focus on creating transformative features rather than waiting for data engineering. We're excited to provide them best practices and standardized processes across the company on our new corporate data platform.

– Thibaut Roelandt, Lead Engineer for the Central AI Team, Belfius

[Read the story >](#)

Lay a solid foundation for innovating with AI

Adopting a data strategy that prioritizes breaking down silos and integrating solutions is essential for high-quality, scalable, and durable AI innovation. By taking an integrated approach to data management, organizations can streamline data workflows, eliminate redundancy, and create a cohesive data ecosystem

that facilitates seamless data access, analysis, and use for AI-driven insights generation. This fosters an environment where ingenuity thrives, as businesses can quickly develop and deploy intelligent solutions that respond to market demands, enhance customer engagement, and streamline operations.

Kickstart your intelligent data strategy with Azure Data

The ability to mine your data for intelligence is the key to powering successful AI initiatives. Azure Data empowers organizations to remove common barriers to using their intelligent data so they can effectively innovate and gain a competitive edge.

Offering a comprehensive suite of secure, integrated data services—AI, analytics, databases, and security—Azure helps organizations apply cutting-edge AI technologies and differentiate their offerings in a crowded market. Using Azure Data, Microsoft Fabric, Azure Databricks, the Azure SQL family, and other solutions, your teams can dig deeper into their data and use it to drive impactful change across your organization.

Fuel your intelligent data strategy with trusted cloud technology

- ✓ **Database and analytics:** Gain fuller visibility into your data and enable faster decision-making.
- ✓ **Security:** Help ensure compliance and safeguard data with built-in, multilayered security.
- ✓ **Innovation and AI:** Create products, services, and digital experiences that differentiate your offerings, improve customer experiences, and help employees achieve more.



Get started

Explore these whitepapers and executive-level learning resources to learn more about how to transform your data into your competitive edge.

Dive deeper into the importance of data for AI innovation.

[Explore Azure innovation insights >](#)

Discover how Azure Data helps organizations use data to accelerate AI innovation.

[Learn more >](#)

Learn more about unifying your data for AI.

[Watch the webinar >](#)

¹Gartner®, 3 Defining 2025 Trends for Chief Data and Analytics Officers, By Rita Sallam, April 1, 2025. GARTNER is a registered trademark and service mark of Gartner, Inc. and/or its affiliates in the U.S. and internationally and is used herein with permission. All rights reserved.