



eBook

Why You Need Cloud Modernization to Unlock the Potential of AI

Where data
& AI come to **LIFE**™



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The AI Boom: How Data and AI Are Changing the Way We Do Everything

You've undoubtedly noticed that the world is changing fast, driven by the powerful duo of data and artificial intelligence (AI). Looking around, you can see data's impact on reshaping research, policy, innovation and more. It can help you improve everything from supply chain logistics to the proper stocking of retail shelves to the development timeline for a new medicine. It even powers sophisticated technologies that can enable your cybersecurity team to respond at faster-than-human speeds to threats.

Organizations like yours use AI to gain a competitive advantage by automating processes, gaining new insights and making recommendations through data. AI and machine learning (ML) are also crucial in driving innovation and transformation across industries. For example, they can help identify new therapies in life sciences, deliver personalized digital healthcare experiences or mitigate fraud and risk in financial services.

It's also impossible to ignore the pervasive nature of generative AI (GenAI). According to Gartner®, by 2026, more than 80% of enterprises will have used GenAI application programming interfaces (APIs) or models and/or deployed GenAI-enabled applications in production environments, up from less than 5% in 2023.¹

According to a 2023 survey from KPMG, 77% of executives see GenAI as the most impactful emerging technology they will use.²

However, the new world of large language models (LLMs) powering GenAI demands that your data is holistic, high-quality and governed at scale. **GenAI will prompt you to rethink core workflows and processes, no matter your industry, catalyzing a fundamental shift.**

The question is not whether you can benefit from AI. You should ask: is your legacy infrastructure slowing down your AI initiatives? **You may want to adopt AI – but is your data platform ready?**

¹ Gartner Press Release, [Gartner Says More Than 80% of Enterprises Will Have Used Generative AI APIs or Deployed Generative AI-Enabled Applications by 2026](#), October 11, 2023. 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.

² KPMG, Generative AI: From Buzz to Business Value, 2023.

The Link Between Cloud Modernization and AI Success

As a business leader, you likely understand that to reap the benefits of AI, you either need to get rid of your legacy systems or modernize them. As such, AI has quickly become the critical technology driving businesses like yours to modernize key applications.

While you may want to adopt and scale AI and ML initiatives immediately, failure to modernize to the cloud first may leave you with adverse results. These could include higher operational costs, reduced agility, increased security risks, fewer opportunities for innovation, missed cost savings, limited scalability and other competitive disadvantages.

However, the decision to move to the cloud should be based on your specific needs, objectives and constraints, as cloud adoption is not a one-size-fits-all solution. You must evaluate the potential benefits and risks to make an informed decision aligning with your organization's strategic objectives.

Here are some of the potential consequences of not modernizing to the cloud that can impede the progress of your AI projects:

- **System incompatibility:** Your legacy systems may make it challenging to integrate AI solutions with your existing infrastructure, leading to data silos and inefficiencies.
- **Data access and integration challenges:** AI heavily relies on data, but **extracting, transforming and loading** (ETL) data from your legacy systems may be time-consuming and error-prone. And integrating AI

solutions with your legacy systems may require custom development work that is not scalable.

- **Data quality issues:** If you have older data storage systems, they may suffer from **data quality** issues, such as duplication, inconsistencies or outdated information. Low data quality can render your AI models inaccurate.
- **Performance bottlenecks:** Your legacy hardware may not have the processing power and memory capacity to run computationally intensive AI algorithms, leading to slow performance and longer processing times.
- **Reduced agility and innovation:** You need the ability to quickly adapt to changing business needs and market dynamics. However, legacy infrastructure makes it difficult to deploy new services/applications, innovate and keep up with the competition.
- **Increased maintenance and operational costs:** Maintaining on-premises data centers can be expensive, as you need to cover resources like hardware, software, energy and personnel, whereas the cloud offers potential cost savings through **consumption-based pricing** and economies of scale.
- **Inefficient processes and expensive system downtime:** Legacy systems require you to run manual, time-consuming processes that hinder your ability to implement automation and optimize business processes.

The Link Between Cloud Modernization and AI Success (continued)

- **Reduced productivity:** Outdated infrastructure can result in slow performance and frequent downtime, impeding employee productivity and customer satisfaction.
- **Limited scalability:** Your legacy infrastructure may inhibit you from quickly scaling to accommodate the growing demands of your AI workloads, creating bottlenecks as your AI initiatives expand.
- **Lack of on-premises support:** As technology vendors phase out support for older products, you may be left with no official channels for support, maintenance or updates, further complicating the management of your legacy infrastructure. You may also have difficulty finding IT experts to work on your aging technologies.
- **Difficulty managing and updating software:** Keeping your software and systems up to date might be challenging without the automatic updates and maintenance available in the cloud, potentially exposing you to vulnerabilities and performance issues.
- **Security and compliance risks:** While cloud providers invest heavily in security and compliance measures, legacy systems can leave you with weaker security protections that could leave you more vulnerable to cyber threats. Your legacy system may also lack the robust data security features required to protect sensitive data used in AI applications.
- **Data redundancy and backup challenges:** Your legacy systems might use manual backups, which can be less reliable and time-consuming than the robust data redundancy and backup options in the cloud. This can put you at a higher risk of data loss due to hardware failures, natural disasters or human errors.
- **Compliance and regulatory challenges:** Staying on traditional infrastructure may require you to put more manual effort into complying with industry or region regulations, whereas cloud providers often offer tools and services to assist in this area.
- **Increased complexity:** Traditional IT infrastructure can be complex to manage and maintain. The cloud can simplify your infrastructure management and reduce administrative overhead.
- **Data migration challenges:** Transferring your data and processes from legacy systems to modern AI solutions can be complex and risky, with the potential for data loss, corruption or compatibility issues.
- **Business continuity risks:** As legacy systems age, the risk of unexpected system failures or outages increases, potentially disrupting your critical business operations.

Why You Need to Modernize to the Cloud to Thrive in the Age of AI

According to a recent Informatica survey, 41% of data leaders struggle with 1,000+ sources, and 79% expect that number to increase in 2024.³ This ever-growing surge in data velocity, volume and variety creates an urgent demand for efficient cloud data management. In fact, according to the same survey, 84% of data leaders strongly believe modernizing legacy data infrastructure to the cloud is essential to maximize AI benefits.⁴

Traditional approaches — reliant on legacy systems, architectures and storage methods — strain resources, carry high costs and lack support for scaling AI in your organization. An AI-powered, cloud-native **data management** solution can help you unlock the potential of your internal, external and third-party data to gain new insights.

Data can be a true differentiator for your business, opening the door to AI and ML initiatives that help you accelerate innovation and nurture deeper relationships with your customers. However, with data silos and low data quality, you may find getting trusted data to the right users within your organization challenging.



³ Informatica, CDO Insights 2024: Charting a Course to AI Readiness.

⁴ Ibid.

The Inflection Point of Data, AI and Cloud

GenAI puts you at a critical crossroads in your modernization journey: fundamentally change how your business approaches IT infrastructure or fall behind.

A Salesforce survey found that 87% of analytics and IT leaders say advances in AI make data management a high priority, and they agree that AI's outputs are only as good as its data inputs.⁵ And all of the data leaders surveyed by Informatica who are adopting or planning to adopt generative AI (more than 99%) have encountered challenges, including quality of data (42%, led by 49% of those in the U.S.) and data privacy & protection (40%).⁶

To overcome these challenges, you need to modernize your data management infrastructure to create a more conducive environment for AI initiatives. This could involve upgrading hardware, adopting cloud technology, integrating cloud data or implementing AI-friendly data storage and processing solutions. The sooner you modernize these legacy data infrastructures, the better positioned you will be to leverage AI.

To unlock the potential of AI, organizations need the right data foundation.

To address these challenges, you need to develop a well-defined cloud modernization strategy and allocate resources to modernize your on-premises workloads to a cloud-native modern data management platform. This might involve adopting a phased modernization approach or hybrid solutions to minimize risks and ensure a smoother transition.

⁵ Salesforce, State of Data and Analytics, 2023.

⁶ Informatica, CDO Insights 2024: Charting a Course to AI Readiness.

How AI and Cloud Modernization Go Hand in Hand

The convergence of AI and cloud modernization is becoming a strategic priority for IT and data leaders like you. A recent Informatica survey found that 90% of data leaders prioritize modernization to the cloud to improve efficiency, achieve greater scalability and drive innovation.⁷

The combination of cloud modernization and AI can reveal latent patterns, unseen trends and intricate correlations, giving you a remarkable competitive advantage. However, the effectiveness of AI is contingent on the integrity and accessibility of your data, which is why cloud modernization is so critical to enabling AI use cases. By moving on-premises workloads to modern data platforms, you can ensure your data is structured, accessible and ready for AI applications. More than just data relocation, cloud modernization allows you to refine data quality and integrity to prepare for more advanced use cases.

To remain competitive and agile in the AI age, you need to address cloud modernization now to make your data an asset rather than a bottleneck in AI initiatives. Cloud modernization will give you high-quality, real-time data to train and deploy your AI models.

⁷ Informatica, Insights from Informatica PowerCenter Customers: The State of Cloud Modernization Report 2024.



How a Strong Cloud Data Foundation Fuels AI for the Modern Enterprise

Cloud modernization is critical to AI initiatives for several interconnected reasons, which are crucial in developing and deploying effective AI solutions. These include:

- **Scaling your infrastructure:** AI and ML models, especially deep learning models, require you to meet the needs of fluctuating computational resources. Cloud infrastructure can scale up or down as needed, offering elasticity and controlling your costs and use of resources.
- **Handling exploding data volume:** You also need large volumes of data to train AI, especially deep learning models, which require you to aggregate and store your data in a scalable and accessible manner.
- **Integrating your data:** You likely store data in various formats and locations, making utilizing this data with your AI applications challenging. Cloud modernization involves integrating and consolidating data from your different sources, making it more accessible for AI systems.
- **Ensuring data quality:** Your AI models will only be as accurate as your feed data. Cloud modernization ensures that the data you use to train your AI models is high quality, relevant and current.
- **Processing real-time data:** Many AI applications benefit from real-time or near-real-time data. Cloud modernization efforts can help you establish data pipelines that collect and analyze your data as it's generated. This is essential for predictive maintenance, fraud detection, dynamic pricing and recommendation systems.
- **Storing and managing data:** The cloud gives you extensive options for data storage, including data lakes and warehouses that can handle vast amounts of structured, semi-structured and unstructured data critical for training and running your AI models.
- **Accessing advanced AI and analytics tools:** Cloud providers offer a suite of AI services and platforms, enabling you to build, train and deploy AI models quickly. These tools often come with pre-built models and are designed to be user-friendly for data scientists and developers.
- **Ensuring cost efficiency:** Investing in on-premises hardware for AI can be costly and often inefficient, as you must predict and purchase capacity ahead of time. Cloud services operate on a pay-as-you-go basis or offer subscription models, turning capital expenditure into operational expenditure and minimizing wasted resources.
- **Accelerating deployment:** The cloud accelerates your AI model deployment and iteration, making it easier for you to respond to market changes and embrace AI capabilities quickly.

How a Strong Cloud Data Foundation Fuels AI for the Modern Enterprise (continued)

- **Accelerating decision-making and insight:** Modernizing your data allows for faster data retrieval and use with AI, which can quickly process vast amounts of data and provide you with actionable insights. This helps with accelerating decision-making, understanding customer behavior and identifying trends that would be difficult to uncover manually.
- **Enhancing collaboration:** Modern cloud environments improve collaboration among teams, allowing your data scientists, engineers and analysts to work together seamlessly.
- **Personalizing at scale:** AI-powered algorithms can tailor products, services and content to your customers' preferences, enhancing the customer experience and increasing engagement.
- **Increasing global reach:** Cloud platforms have a global footprint, enabling you to deploy AI solutions that serve users worldwide with lower latency and better performance.
- **Integrating with ecosystems:** The cloud offers a rich ecosystem of services and APIs, which allows you to easily integrate AI with other systems and data sources to streamline the development of advanced solutions.
- **Ensuring security and compliance:** Cloud providers invest heavily in security and compliance measures, giving you strong data protection and the ability to meet regulatory requirements without significant additional investments.
- **Providing high availability and reliability:** Cloud platforms are designed to offer high availability and reliability, with data replicated across multiple locations, to ensure that your AI applications have near-constant uptime and minimal disruption.

All these factors make cloud modernization critical to enable you to harness the full potential of AI. By leveraging cloud capabilities, you can focus on innovation and problem-solving with AI rather than being constrained by the limitations of your IT infrastructure.

The Pervasive Impact of AI Across Industries

AI is leaving a noticeable impact across industries as automation, deeper insights and process optimization take hold. Here are some of the primary motivators and business outcomes driving AI adoption in various industries:

- **Mitigate risks:** AI can help you identify and mitigate risks, such as fraud detection in financial services or predictive maintenance in manufacturing.
- **Enhance customer service:** Chatbots, virtual assistants and AI-driven customer support systems can provide 24/7 assistance, answer common queries and route issues to your human agents when necessary.
- **Predictive analytics:** AI can predict future events and outcomes, helping you anticipate market changes, demand fluctuations and other trends.
- **Innovate in healthcare and life sciences:** AI can assist you in diagnosing diseases, analyzing medical images, discovering potential treatments, improving patient outcomes and reducing healthcare costs.

- **Optimize supply chain operations:** AI can optimize supply chain logistics, helping you reduce inventory costs, improve delivery times and minimize transportation expenses.
- **Ensure compliance and security:** AI can enhance security by identifying threats and vulnerabilities. It can also help you comply with industry-specific regulations and standards.
- **Reinvent human resources and talent management:** AI can assist you in talent acquisition, employee retention and performance management by providing data-driven insights to inform human resources-related decisions.
- **Reduce sustainability and environmental impact:** AI can help you reduce your environmental footprint by optimizing energy consumption, waste management and resource allocation.

As you can see, regardless of your industry, AI can make a real difference in simplifying operations, improving the customer experience and accelerating innovation.

Is Your Data Platform Ready for AI?

Key Data Management Capabilities Needed to Enable AI

To optimally support your AI use cases, you should look for several critical capabilities in a modern data management platform to ensure your data is accessible, reliable and well-suited for AI applications. These capabilities include:

- **Data integration:** Your data management platform should be able to integrate data from your various sources, including databases, data lakes, external APIs and streaming data. You should be able to run seamless data ETL processes.
- **Data quality and governance:** Robust data quality features are essential to ensure your data is accurate, consistent and error-free. Data governance tools can help you maintain data integrity and comply with applicable regulations.
- **Data cataloging and metadata management:** A data catalog allows your users to discover, understand and access data assets within your organization. Metadata management capabilities can help you track data lineage and provide context for data usage.
- **Scalability:** Your data management platform should be able to handle growing data volumes and workloads as your AI initiatives expand. Scalability can help performance remain consistent as your data requirements increase.
- **Real-time data processing:** You need your platform to support real-time data ingestion, processing and analysis for AI use cases that require up-to-the-minute insights and actions.
- **Data security and compliance:** Robust security features — including encryption, access control and auditing — are essential to protect your sensitive data in AI applications. Your platform should also assist with compliance with industry-specific regulations (e.g., GDPR, HIPAA, etc.).
- **Data access and APIs:** Your platform should provide APIs and tools to access data programmatically, enabling seamless integration with your AI algorithms and applications.
- **Data transformation and feature engineering:** Tools for data cleansing, transformation and feature engineering will help prepare your data for AI model training. These capabilities are critical to ensure your data is machine-readable and relevant to AI tasks.
- **Collaboration and data sharing:** Your platform should support collaboration among your teams and stakeholders by facilitating data sharing and access control, making it easier to work together on AI projects.
- **Data versioning and lineage:** To ensure transparency and reproducibility in your AI model development, data versioning and **lineage** tracking can help you trace data changes and their impact on AI outcomes.

Is Your Data Platform Ready for AI? (continued)

Key Data Management Capabilities Needed to Support AI

- **Data storage options:** Your platform should support a variety of data storage options, including data lakes, relational databases and NoSQL databases, allowing you to choose the best storage for your specific needs.
- **Data portability:** Moving data between on-premises and cloud environments or between different cloud providers is vital to give you flexibility in your data infrastructure.
- **Automated data pipeline orchestration:** Automated workflows and data pipeline orchestration features help you streamline data processing and transformation tasks, reducing manual effort and errors.
- **Machine learning integration:** Integration with machine learning platforms and libraries (e.g., TensorFlow, PyTorch) can simplify your AI model development and deployment.
- **Monitoring and alerting:** Your platform should monitor data quality, performance and security and alert you to any issues.
- **Analytics and reporting:** Built-in analytics and reporting tools allow your users to gain insights from your data and track the performance of your AI models.
- **Cost management:** Cost optimization features can help you manage your data-related expenses efficiently, especially in cloud-based environments.
- **API management:** API management capabilities are essential if you expose data for AI consumption because they allow you to control access and monitor usage.

Selecting a modern cloud-native data management platform that offers these critical capabilities is essential for organizations looking to support AI use cases effectively.

Why You Need to Modernize from PowerCenter to the Cloud Now

For years, PowerCenter has been a trusted foundation for your on-premises data integration and management initiatives. But now is the time to reevaluate your data integration and management strategy to align with your organization's cloud-first strategy.

If your organization wants to deploy and scale AI/ML initiatives, but most of your workloads are on-premises, we can help. Embracing the potential of AI for your organization starts with PowerCenter modernization.

Modern data management platforms make your data more accessible and enable you to process the large and diverse datasets required for AI and ML algorithms. Modernizing PowerCenter involves moving to the cloud-native **Informatica Intelligent Data Management Cloud™** (IDMC), adopting next-generation data management solutions and ensuring your systems are scalable, flexible and capable of handling real-time processing.

Modernizing PowerCenter to the cloud can improve your integration with cloud services, offering advantages such as elasticity, innovation in AI services and pay-as-you-go pricing models. After all, when planning your cloud modernization, you want to maximize value.

Modernizing PowerCenter can create a solid cloud-native data foundation for your data quality, integration, accessibility, governance, scalability, real-time processing and exploration. Beyond that, it can also prepare your data platform to support the advanced analytics needed for AI so that you can unlock the full potential of AI and derive meaningful insights from your data.

Prepare Your Data Platform for AI with Informatica Intelligent Data Management Cloud

Enabling AI as a data management copilot and leveraging GenAI to simplify data management revolutionizes the traditional approach through recommendations and intelligent automation for data engineering, quality, observability, cataloging, governance and master data management (MDM).

Delivering AI-powered data management requires a strong foundation of unified metadata to drive connected intelligence across the data management value chain, from data discovery to delivery and usage. IDMC, powered by the metadata-driven AI engine **CLAIRE®**, delivers what you need to scale and accelerate efficiencies with a unified, end-to-end data management solution.

Based on multiple petabytes of unified active metadata, CLAIRE® is an AI copilot that brings AI-powered insights to data management and dramatically accelerates data discovery, integration, quality, governance and MDM.

CLAIRE GPT, the new generative AI version of CLAIRE, further transforms and redefines the data management experience with a natural language interface. By dramatically simplifying how you access and manage data, CLAIRE GPT can help turbocharge data democratization and exponentially increase the productivity of your data teams.

Why You Need to Modernize from PowerCenter to the Cloud Now (continued)

IDMC enables AI by providing a comprehensive cloud-native data management solution to help you manage, govern, integrate and analyze your data across multiple systems, applications and environments. IDMC uses AI and ML through CLAIRE to enhance various data management tasks. Here's how IDMC enables AI:

- **Automated data discovery and cataloging:** Utilizing AI, IDMC can automatically scan and catalog data assets across your organization, classifying and organizing them for easier access and management.
- **Data quality and governance:** The AI and ML capabilities in IDMC can help improve data quality by automatically detecting anomalies, outliers and patterns that may indicate data quality issues. It also suggests potential fixes and ensures governance policies are consistently applied.
- **Data integration and orchestration:** IDMC leverages AI to automate and optimize your data integration tasks, allowing for data pipelines that are more efficient and require less manual intervention. It can also orchestrate data flows across your different systems and cloud environments.
- **Predictive analytics and insights:** IDMC can provide predictive insights and recommendations that help you make proactive decisions about data management and governance by analyzing metadata, usage patterns and data lineage.
- **360-degree view of data:** By harnessing AI, IDMC can help create a comprehensive view of your customer data, product data or other types, enabling better analytics and decision-making.
- **Privacy and security compliance:** AI-driven classification and risk assessments within IDMC help you better understand where sensitive data resides and how it is used, ensuring compliance with privacy regulations.
- **Anomaly detection:** AI algorithms can monitor data for unusual behavior, signaling potential issues with data quality, security breaches or fraudulent activity.
- **Data enrichment:** The AI capabilities in IDMC can enhance your data by inferring additional attributes and relationships, potentially unlocking more value for analytical models and AI applications.
- **Process automation:** AI-powered automated processes within IDMC can streamline repetitive data management tasks, reducing manual work and improving efficiency.
- **Self-tuning and optimization:** IDMC AI and ML algorithms can continuously monitor and adjust your data processes, ensuring they run optimally based on changing data patterns and business requirements.

By embedding AI into IDMC, Informatica provides tools to learn, adapt and make intelligent recommendations, helping you become more efficient in your data management. It also liberates you to focus on strategic initiatives, including developing new AI and analytics applications that can drive business value.

Get Started With Your PowerCenter Modernization

Effective cloud modernization plays a fundamental role in enabling data-driven decision-making. Far more than just data relocation, it allows you to refine data quality and integrity in preparation for more advanced analytical and AI use cases.

Modern cloud-based data management platforms offer several advantages over legacy data management technology. They provide improved data quality, enhanced data security and greater scalability. Moreover, they support real-time data processing, which is crucial for AI applications. By modernizing your on-premises data platform, you can ensure your data platform is AI-ready and primed for real-time advanced analytics.

Learn more [about IDMC here](#), or visit our [PowerCenter modernization page](#) for more details on how to get started.



About Us

Informatica (NYSE: INFA), a leader in enterprise AI-powered cloud data management, brings data and AI to life by empowering businesses to realize the transformative power of their most critical assets. We have created a new category of software, the Informatica Intelligent Data Management Cloud™ (IDMC), powered by AI and an end-to-end data management platform that connects, manages and unifies data across virtually any multi-cloud, hybrid system, democratizing data and enabling enterprises to modernize their business strategies. Customers in approximately 100 countries and more than 80 of the Fortune 100 rely on Informatica to drive data-led digital transformation.

Informatica. Where data and AI come to life.™

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