LUMO INSIGHTS

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Data: The make-or-break factor in Enterprise AI

Executive Summary

A flurry of reports and announcements in the past week all point to one conclusion: the limiting factor for AI in business isn't the sophistication of models - it's the quality, readiness, and governance of data. New survey results are exposing widespread “AI readiness” gaps (www.cio.com [1]), and companies are responding by reshaping their data architectures. The message for leaders is clear: those who prioritise robust data foundations are pulling ahead in the AI race, while others risk being left behind.

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[1] www.cio.com — https://www.cio.com/article/4170978/nearly-every-enterprise-is-investing-in-ai-but-only-5-say-their-data-is-ready.html#:~:text=a%20new%20AI%20Momentum%20Survey,%E2%80%9D%20Early%20gains%20seen

AI ambition vs Data reality

In 2026, nearly every enterprise is experimenting with AI, yet only a small fraction have truly scaled it across the organisation. A Dun & Bradstreet survey of 10,000 businesses found that 97% of organisations have deployed or piloted AI initiatives, but just 5% feel their data is fully AI-ready (www.cio.com [1]). Likewise, a study released this week reports that only 7% of global enterprises have reached the highest level of AI maturity - where AI is embedded across core workflows with measurable impact - while 68% remain stuck in the early 'Experimenting' or 'Developing' stages (www.teradata.com [2]). This ambition-to-reality gap shows that data - not algorithms - is the chief roadblock to scaling AI.

Despite these hurdles, AI remains a top strategic priority. About 90% of senior technology leaders plan to increase AI investments in the next year, even though nearly two-thirds have seen little more than pilot-level gains so far (www.teradata.com [3]). Analysts note that this mismatch between investment and returns arises largely because many companies are attempting to build AI on data foundations designed for a pre-AI world - architectures rife with silos, incomplete and inconsistent information, and legacy processes ill-suited for AI’s speed and complexity (www.teradata.com [4]). In short, without fixing underlying data readiness issues, pouring more money into AI will yield only limited value.

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The cost of poor Data quality

Data quality and governance problems are emerging as a primary cause of AI project failure. Many organisations only discover critical data issues when attempting to scale AI pilots into production. Nearly half of organisations in a recent industry report said their AI initiatives had already exposed gaps in data quality or governance - and tellingly, the further along an organisation's AI journey, the more serious data flaws it found (www.unite.ai [1]).

The consequences of neglecting data fundamentals can be severe. For example, a financial services firm that achieved 94% accuracy in a fraud detection pilot saw its model's performance plunge to 67% when exposed to live, unprepared data, triggering 3,200 false-positive alerts per day - and the project was cancelled after four months (www.beri.net [2]). Gartner likewise forecasts that 60% of AI projects lacking proper data foundations will be abandoned by the end of 2026, and notes that 42% of U.S. enterprises have already scrapped at least one AI initiative due to data issues (www.beri.net [3]).

These failures are cautionary tales: without clean, integrated, well-governed data, even the most advanced algorithms will underperform or misfire. As one industry CEO put it this week, "AI success depends on how well you manage and prepare your data... Too many organisations are still relying on outdated approaches to unstructured data management, limiting their ability to unlock its full value" (www.nasuni.com [4]). In other words, getting the data house in order - through rigorous data cleansing, consolidation, and oversight - is increasingly seen as a prerequisite for turning AI pilots into sustainable business value.

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Proprietary Data as a competitive moat

With baseline AI models becoming widely accessible, companies are turning to their own data as the key source of competitive advantage. Industry experts are calling proprietary datasets the new "moat" that can protect a business from rivals in the AI era (aiireland.ie [1]). Unique customer records, domain-specific datasets, and years of historical transactions are being recognised as strategic assets - resources that competitors cannot easily acquire or replicate.

Chief Data Officers (CDOs) are aligning their agendas accordingly. In one mid-2026 survey, 60% of enterprises said they plan to increase investment in managing and leveraging proprietary data (especially unstructured and operational data) over the next 18 months, reflecting a growing recognition of the role these assets play in AI-driven outcomes (www.prnewswire.com [2]).

Technology providers are even making moves to help companies capitalise on their data. This week, HCLSoftware's data platform division, Actian, announced it has acquired analytics firm Jaspersoft to embed reporting and business intelligence directly into its data management platform (www.actian.com [3]). According to Actian's CEO, the integration will give customers a "seamless path from data to reporting, analytics, and AI-driven insight" by uniting trusted data foundations with built-in analytics in one environment (www.actian.com [4]). By enabling a smoother flow from raw data to AI-driven decisions, such unified architectures aim to help enterprises turn their proprietary data into a

self-reinforcing competitive moat.

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Architectures for AI at Scale

The push to overcome data bottlenecks is driving innovation in data architecture. A key theme at Databricks' recent Data + AI Summit was the unification of data storage, processing, and governance into a single "AI-native" platform designed to run AI agents safely at enterprise scale (datapao.com [1]). Databricks and others are converging data lakehouse repositories, real-time streaming pipelines, semantic knowledge layers, and fine-grained access controls in an effort to solve the “context problem” - ensuring AI systems have immediate, trustworthy access to all relevant business information when making decisions (datapao.com [2]).

Enterprises are also adopting new kinds of databases optimised for AI. One rapidly growing technology is the vector database, which stores information as high-dimensional mathematical embeddings and enables similarity search to retrieve data by semantic meaning. This is crucial for generative AI and recommendation engines that need to find contextually relevant text or images across vast corporate knowledge bases (aciinfotech.com [3]). Analysts predict that by 2026, more than 30% of new enterprise applications using generative AI will rely on vector databases for these capabilities - a jump from under 5% just a few years ago (www.devx.com [4]).

In practice, modern data architecture is shifting from traditional batch data warehouses towards more flexible “lakehouse” and data mesh designs that can handle both analytics and operational workloads. These often incorporate real-time data pipelines and unified data catalogues so that AI models are always drawing from up-to-date, well-governed information. Organisations leading in AI are those already investing in these scalable, integrated data ecosystems, enabling faster experimentation and more reliable AI performance.

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Governance and compliance: no time to wait

As AI projects multiply, data governance and regulation have become top-of-mind. Gartner warns that by 2027, 40% of enterprises may have to pull back or shut down their AI systems due to governance failures that surface only after deployment issues occur (www.gartner.com [1]). As one industry expert put it, the problem "is not just model capability. It’s governance, data access, ownership and ROI" that will determine an AI initiative’s fate (www.forbes.com [2]). In other words, weak control over data quality, usage, and responsibility can turn even a high-potential AI solution into a liability.

Regulators are already raising the bar for data management in AI. In Europe, lawmakers have agreed on updates to the EU's forthcoming AI Act (via a Digital Omnibus package) that will extend the timeline for some "high-risk AI" compliance requirements by roughly 16 months - setting new deadlines in late 2027 and 2028 (www.consilium.europa.eu [3]). However, even as certain obligations are postponed to give organisations more preparation time, the EU is introducing new guidelines to enforce transparency and privacy sooner. A voluntary Code of Practice on AI-generated content was published to guide companies in embedding disclosures (like metadata labels or watermarks) for AI-produced content by August 2026 (www.dentons.com [4]). European lawmakers also moved to ban AI that generates illicit deepfakes (non-consensual sexual or violent imagery), highlighting the ethical stakes of misusing data.

Meanwhile, data privacy and sovereignty remain critical to AI readiness. European regulators recently endorsed privacy-preserving techniques such as federated learning - which allows AI models to be trained on decentralised data sources without sharing sensitive information - as a means to reconcile innovation with GDPR compliance (www.dentons.com [5]). This trend is influencing corporate strategies: companies are investing in local data infrastructure and certifications to meet stringent regional requirements. For example, Snowflake's new French data centre and recent health data hosting certification (HDS) demonstrate a commitment to data residency and security, helping clients trust that AI applications can be deployed in a compliant manner (www.snowflake.com [6]). The bottom line is that whether driven by competitive ambition or tightening regulations, C-level leaders must strengthen data governance and architecture now - long before formal AI rules come into full effect.

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Key Statistics

- 97% of organisations have active AI initiatives, but only 5% say their data is fully AI-ready ([www.cio.com](https://www.cio.com/article/4170978/nearly-every-enterprise-is-investing-in-ai-but-only-5-say-their-data-is-ready.html#:~:text=a%20new%20AI%20Momentum%20Survey,%E2%80%9D%20Early%20gains%20seen)).
- Only 7% of enterprises have AI at full production scale, while 68% remain in pilot or developing stages ([www.teradata.com](https://www.teradata.com/press-releases/2026/why-enterprise-ai-stalls-before-it-scales#:~:text=organizations%20stand%3A%20Experimenting%2C%20Developing%2C%20Building%2C,data%20exists%20but%20carries%20no)).
- 40% of tech leaders report that >40% of their AI pilot projects fail to reach production due to data and infrastructure shortcomings ([www.teradata.com](https://www.teradata.com/press-releases/2026/why-enterprise-ai-stalls-before-it-scales#:~:text=The%20challenge%20isn%E2%80%99t%20how%20much,The%20goal%20of)).

- 94% of companies struggle to manage unstructured data effectively, even though it makes up the majority of enterprise data ([www.prnewswire.com](https://www.prnewswire.com/news-releases/nasuni-research-finds-97-of-enterprises-are-adopting-ai-agents-yet-most-projects-fail-to-meet-objectives-302772896.html#:~:text=are%20not%20reported%20to%20be,the%20next%2018%20months%2C%20reflecting)).
- 60% of surveyed enterprises plan to increase investment in proprietary data management to bolster AI outcomes ([www.prnewswire.com](https://www.prnewswire.com/news-releases/nasuni-research-finds-97-of-enterprises-are-adopting-ai-agents-yet-most-projects-fail-to-meet-objectives-302772896.html#:~:text=to%20manage%20unstructured%20data%2C%20which,are%20moving%20fast%20on%20AI)).

KEY TAKEAWAY

AI initiatives will only scale as far as your data allows. With just 5% of companies saying their data is fully AI-ready ([www.cio.com](https://www.cio.com/article/4170978/nearly-every-enterprise-is-investing-in-ai-but-only-5-say-their-data-is-ready.html#:~:text=a%20new%20AI%20Momentum%20Survey,%E2%80%9D%20Early%20gains%20seen)), investing in data quality, integration, and governance is a no-regrets move to turn AI pilots into enterprise value ([www.nasuni.com](https://www.nasuni.com/press-release/nasuni-research-finds-97-of-enterprises-are-adopting-ai-agents-yet-most-projects-fail-to-meet-objectives/#:~:text=if%20it%E2%80%99s%20accessible%20and%20ready,%E2%80%9D)).

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