Article

Preparing Your Data for AI at Global Scale

Insights from TechIQ 2025

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At TechIQ 2025, I shared my perspective on one of the most urgent challenges facing life sciences organizations: preparing data for enterprise-scale Artificial Intelligence (AI). While the promise of AI is everywhere, most organizations still struggle to move beyond pilot projects. The reason is simple: data readiness.

There is enormous enthusiasm for AI, but 95% of proofs of concept fail to scale. This is not because the technology isn't powerful, but because the data foundation isn't ready. Drawing on real-world examples and lessons learned from global deployments; I offered a roadmap for bridging the gap between ambition and execution.

Whether you attended TechIQ in person or are catching up on the highlights, I want to share the essential insights from my session, covering the evolution of data architectures, the rise of agent-ready data, and the cultural shifts required to unlock the full potential of AI in healthcare and life sciences.

The AI opportunity and the data readiness gap

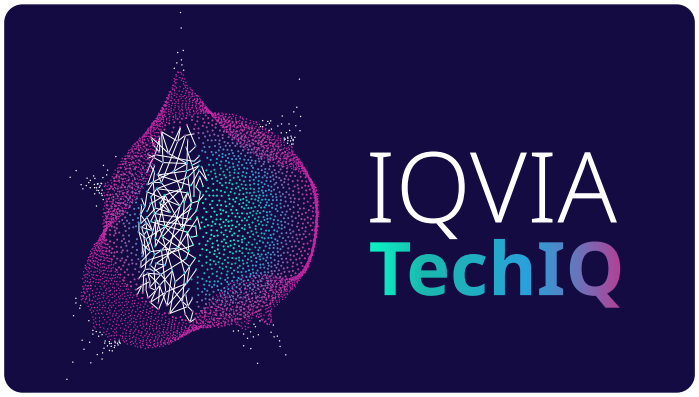
AI is reshaping healthcare and life sciences, from clinical trial acceleration to personalized patient engagement. Yet, our industry's enthusiasm for AI often collides with a sobering reality: most initiatives stall before they deliver meaningful impact. The culprit is not the technology itself — it is the data.

Fragmented data sources, inconsistent standards, and legacy systems create barriers that even the most advanced algorithms cannot overcome. If your data isn't discoverable, interoperable, and anchored around real user needs, your AI ambitions will remain just that, ambitions. Preparing data for AI is not a technical afterthought but a strategic imperative for organizations seeking to lead in a rapidly evolving landscape.

Building customer-centric data architectures

When I think about preparing data for AI, I always start with the human experience. Too often, when data systems are designed, they are technically impressive, but disconnected from the daily realities of clinicians, investigators and field teams. Our customers are already using technology in sophisticated ways. Whether it's searching for clinical information on LinkedIn, watching tutorials on YouTube, or leveraging generative AI tools in their workflow.

If we want our data architecture to deliver real value, we need to meet users where they are. That means building systems that are intuitive, accessible, and relevant to their needs. By anchoring our data strategies around the human experience, we can close the gap between what technology delivers and what users expect. This is how we drive engagement, adoption, and better outcomes for our customers and patients.



Modern data ecosystems: Fabric, mesh, and agents

As organizations look to scale their AI ambitions, the way we think about data ecosystems is evolving rapidly. Two models have gained traction: data fabric and data mesh. Data fabric creates a centralized, integrated layer that automates data management and reduces silos, ensuring data is accessible across the enterprise. Data mesh pushes data ownership into the domains that use it, making each domain responsible for curating and maintaining its own data products.

We are also seeing the rise of agent-ready data and the use of AI agents to accelerate data access and insights. Agents can automate complex tasks, connect disparate data sources, and deliver answers to nuanced questions at speed. The key is to choose the approach or combination that best fits your organization's needs and readiness. What matters most is that your data ecosystem supports rapid innovation, scalability, and flexibility.

Metadata, discoverability, and semantic layers

One of the most important shifts in preparing data for AI is the elevation of metadata from a technical detail to a strategic priority. Metadata is now essential for making data discoverable, interoperable, and usable by both humans and AI agents.

Organizations must invest in robust taxonomies, ontologies, and semantic layers that allow data to be easily found, understood, and connected across systems. This enriched metadata enables agents and analytics tools to extract meaningful insights quickly. Deploying knowledge graphs and semantic layers can dramatically accelerate the integration of internal, external, and third-party data sources, bridging the gap between structured and unstructured data.

Master data management: The backbone of AI

A robust Master Data Management (MDM) strategy is essential for any organization aiming to scale AI across the enterprise. MDM is not just a technical solution but a foundational business capability. By establishing a single source of truth for key data assets, organizations can ensure consistency, reliability, and compliance across all analytics and AI initiatives.

MDM enables faster data integration, reduces manual intervention, and supports complex use cases such as omnichannel engagement and regulatory reporting. When data is clean, linked, and accessible, teams can focus on generating insights and driving innovation rather than troubleshooting data quality issues.

Balancing technology, operations, and culture

Successfully preparing data for AI is not just about choosing the right technology. Organizations must balance their investments in tools with operational readiness and cultural transformation. Many companies have adopted generic solutions that lack the specificity needed for life sciences, resulting in limited impact and wasted resources.

Operational readiness means ensuring that teams are trained to use new tools and that data architectures are designed to support real business needs. It also requires a shift in mindset, moving away from siloed control of data toward democratization and collaboration. Change management is essential, as legacy systems and established processes can create resistance to new ways of working.

The most successful organizations invest in both technology and people. By fostering a culture of continuous learning and openness to change, companies can unlock the full potential of their data and AI initiatives.

Final thoughts: Turning data readiness into a competitive advantage

Preparing data for AI at global scale is not just a technical challenge; it is a strategic priority for organizations that want to lead in healthcare and life sciences. Success depends on building strong data foundations, prioritizing metadata and master data management, and fostering a culture of collaboration and continuous improvement.

With the right data strategy in place, organizations can accelerate innovation, scale AI initiatives with confidence, and deliver measurable impact across the enterprise.

KEY TAKEAWAYS

- Metadata, taxonomies, and semantic layers are essential for making data discoverable and usable by both humans and AI agents
- Master Data Management provides a single source of truth, enabling consistency, reliability, and compliance across analytics and AI initiatives
- Successful organizations balance technology investments with operational readiness and cultural transformation
- Preparing data for AI requires a shift in mindset, moving from siloed control to democratization and collaboration

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