

The Enterprise Guide to Agentic AI Readiness

See a three-step AI data readiness maturity model
and practical agentic AI use cases.

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Executive Summary

As a senior data or technology leader, you face the dual mandate of driving innovation with AI while safeguarding your firm from its inherent risks. Generic, one-size-fits-all AI strategies fail at the enterprise scale, where data complexity, regulatory pressures like BCBS 239, and the consequences of error are magnified.

The fundamental truth is that the success of any AI initiative is determined not by the model, but by the readiness of its underlying data. According to **Gartner**, “over 40% of Agentic AI projects will be canceled by the end of 2027,” with many organizations finding that these initiatives fail to meet business outcomes.

Simply connecting an LLM to this complex data environment poses a liability, as traditional data catalogs are no longer helpful in this new world. The key to unlocking scalable, secure AI lies in data intelligence. Traditional catalogs treat metadata as static, passive documentation, failing to provide the dynamic context, lineage, and trust that autonomous AI agents need to make reliable decisions. This necessitates a shift to data intelligence, where metadata becomes an active, operational fabric that continuously enriches data with crucial context about its quality, usage, and business meaning.

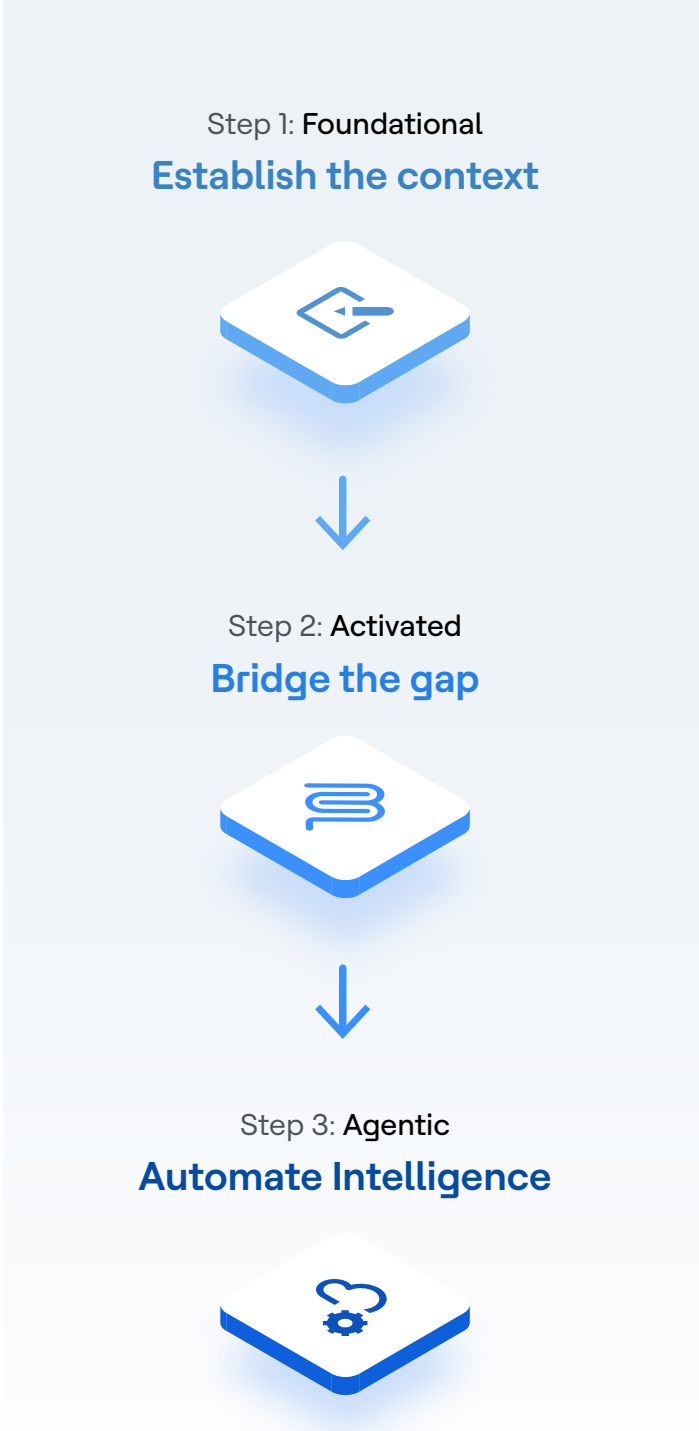
The strategic imperative is to first make your data ready for AI. This guide provides a clear roadmap for this journey.

The AI Data Readiness Maturity Model

We propose a three-stage maturity model for building a resilient Agentic AI strategy. Agentic AI refers to systems that can autonomously reason and act on your data to perform complex tasks, representing the true paradigm shift for the enterprise. This framework provides a structured path from foundational governance to intelligent automation.

Stage 1: Foundational Establish the Context	Consolidate metadata into a centralized data intelligence platform. This is the “single source of truth” for what data you have, where it lives, who owns it, and how it’s governed.
Stage 2: Activated Bridge the Gap	Deploy a Model Context Protocol (MCP) Server as a secure, governed gateway between your AI tools and your data intelligence platform. The MCP server ensures the AI can access the context about your data without exposing the data itself, respecting all existing permissions and security protocols.
Stage 3: Agentic Automate Intelligence	With the activated foundation in place, you can begin deploying AI agents that can reliably reason over your enterprise data to automate reporting, streamline compliance, and drive business processes.

This guide is your comprehensive playbook for navigating all three stages of this journey.



Stage 1: Foundational

Establish the Contextual Foundation

Before AI can be intelligent, its data foundation must be coherent and consistent. This foundational stage is the most critical, as it involves establishing the governance, quality, and architectural pillars upon which all future AI capabilities will be built. Attempting to deploy AI on a fragmented, ungoverned data estate is the leading cause of failed pilots and unscalable projects. According to **McKinsey**, organizations with mature data governance practices see cost reductions of up to 15% and improvements in operational efficiency, creating tangible business value even before advanced analytics are deployed.

Develop a Robust Data Governance Framework

Governance is not about restriction; it is about enabling secure, compliant access at scale. This requires a **centralized framework** that is understood and enforced across all business units.

Key Checklist Items

- ☒ **Define Clear Data Policies:** Establish and automate policies for data classification (e.g., Public, Confidential), data retention, and acceptable use.
- ☒ **Assign Ownership and Stewardship:** Every critical data asset must have a designated business owner and technical steward. This accountability is non-negotiable for regulatory compliance and quality control.
- ☒ **Implement Access Controls:** Ensure that access to data is granted based on the principle of least privilege, with policies managed centrally but enforced at the point of consumption.

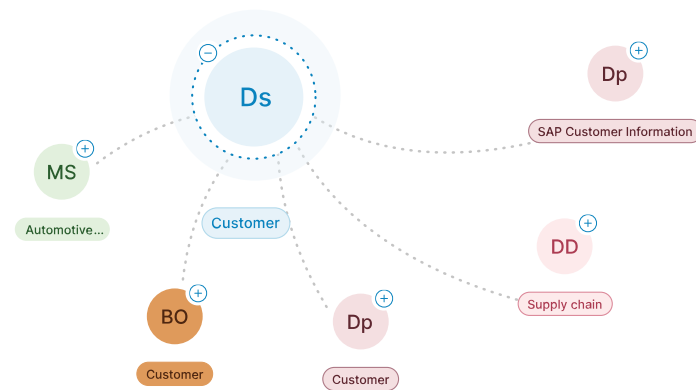
Ensure Enterprise-Grade Data Quality

AI models amplify the impact of the data they are trained on. High-quality data leads to reliable insights; poor-quality data leads to flawed, and potentially catastrophic, business decisions. According to **MIT's State of AI in 2025**, poor data quality is one of the primary reasons for the failure of AI initiatives.

Key Checklist Items

- ☒ **Automate Data Profiling:** Continuously profile data sources to understand their structure, completeness, and conformity to standards.
- ☒ **Implement Data Cleansing and Validation Rules:** Consistently define and enforce business rules on domain-specific data assets to fix inaccuracies and ensure data entering key systems meets quality standards.
- ☒ **Monitor Data Quality in Real-Time:** Establish data observability systems to monitor the health of key data assets, moving from reactive cleanup to proactive quality assurance.

Semantic search is a method that goes beyond simple keyword matching to interpret the intent and contextual meaning of a user's query. By understanding the relationships between words and concepts, it provides more relevant and precise results that match what the user is truly seeking.



Centralize Intelligence with a Knowledge Graph-powered Data Catalog

In a hybrid, multi-cloud environment, a traditional data catalog acts as a simple inventory. A knowledge graph-powered data catalog, however, elevates this function to become the central nervous system of your data ecosystem. It doesn't just list assets; it models the complex, multi-dimensional relationships between data, business processes, policies, and people, creating a true digital twin of your organization's data landscape. This rich, semantic context is what makes data not just discoverable, but deeply understandable and trustworthy.

Key Checklist Items



- ☒ **Construct a Semantic Business Glossary:** Enhance your business glossary with a knowledge graph that links terms like "Customer" to related assets, patterns, and policies, creating a comprehensive 360-degree view.
- ☒ **Enable Multi-Dimensional Data Lineage:** Connect the technical data flow, business lineage (KPIs), and operational lineage (data transformations) to provide deep, auditable traceability necessary for regulations such as BCBS 239.
- ☒ **Infer and Automate Data Classification:** Leverage the relational understanding of the knowledge graph to enhance data classification. For example, if a table is connected via lineage to a known PII source, it can be automatically flagged for review, dramatically improving the accuracy and efficiency of compliance efforts.

Stage 2: Activated Bridging the Gap with MCP

With a solid foundation, the next stage is to activate it. This involves making the rich context within your data catalog programmatically accessible to your AI tools in a secure and governed manner. The Model Context Protocol (MCP) Server is the critical infrastructure that enables this activation. It acts as a secure gateway that allows an LLM to query the metadata about your data without directly accessing the data itself. This section provides three practical use cases that demonstrate the immediate ROI of activating your data catalog.

Use Case 1: Drive Consistency with On-Demand Business Term Definitions



Business Challenge

The VP of Finance for a recently acquired division is preparing their first consolidated report. They encounter the term "**Adjusted Net Capital Ratio**," a core corporate KPI with a highly specific calculation method. In their previous organization, a similar term meant something different. Using the incorrect definition could lead to material misstatements in financial reporting and result in weeks of rework.



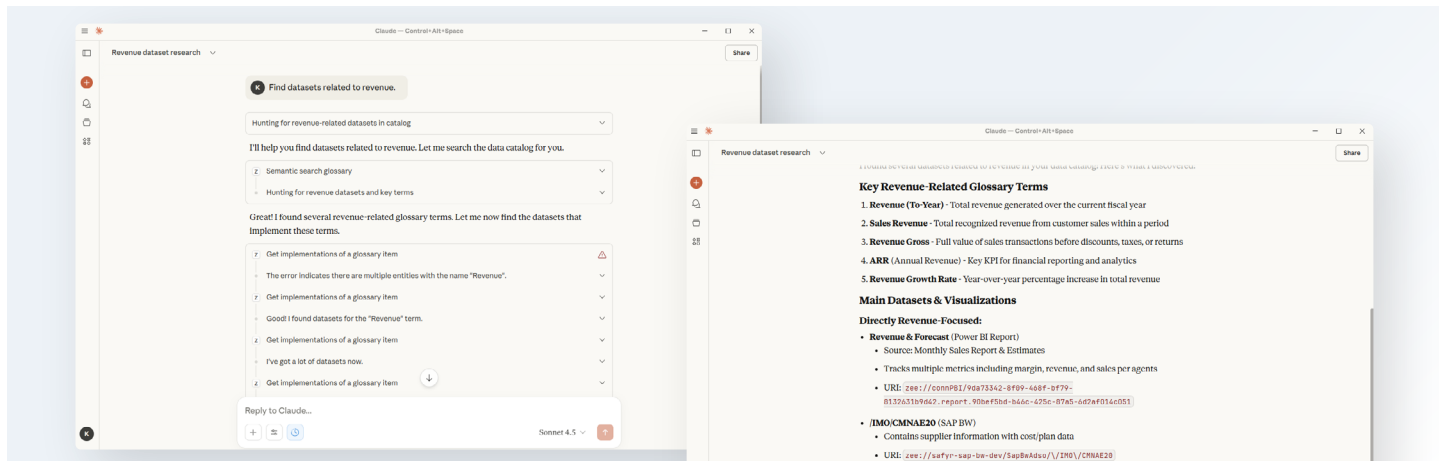
Solution

Instead of scheduling multiple meetings to track down the definition, the VP asks their AI assistant, "*What is the corporate-approved definition and calculation for 'Adjusted Net Capital Ratio'?*" Instantly, the AI retrieves the authoritative definition from the central business glossary, including the precise formula, the data steward responsible for the metric, and a link to the official policy document.



Strategic Implications

This capability is crucial for post-merger integration, ensuring that acquired entities can rapidly align with corporate standards. At a global scale, it enforces a single, unambiguous business vocabulary, which is foundational for accurate regulatory reporting (e.g., CCAR, BCBS 239), consistent global analytics, and the elimination of costly errors caused by misinterpretation.



Use Case 2: Streamline Compliance and Audit Responses



Business Challenge

An internal audit team is preparing for an upcoming examination by a federal regulator, such as the Office of the Comptroller of the Currency (OCC). To prepare, it must proactively validate that all data used in the bank's BCBS 239 risk reporting frameworks are from certified sources and have complete, end-to-end lineage. This process has historically required a team of multiple resources to complete manually over several months.



Solution

The lead auditor asks the AI a complex, multi-faceted question: "List all data assets used by the BCBS 239 models. For each, confirm its certification status, show its business lineage, and list its data steward." The AI queries the knowledge graph and generates a comprehensive, audit-ready report in minutes, identifying two datasets that have expired certifications.



Strategic Implications

This capability transforms audit preparation from a reactive, labor-intensive fire drill into a proactive, continuous compliance process. It dramatically reduces the cost and time associated with audits. Still, more importantly, it reduces the risk of receiving negative regulatory findings, which can result in severe financial penalties and reputational damage. This demonstrates a state-of-the-art, proactive compliance posture.

Use Case 3: Reduce Clutter and Cost by Identifying Redundant Data



Business Challenge

As part of an enterprise-wide efficiency initiative, a CDO is tasked with reducing a sprawling multi-cloud spend by \$10 million annually. They hypothesize that decades of decentralized operations have resulted in massive data redundancy across AWS, Azure, and GCP; however, they lack the tools to systematically identify and prove this redundancy across these environments.



Solution

An enterprise architect uses the AI to execute strategic queries, such as: "Show me all datasets across all cloud providers with more than 1TB of storage that have not been accessed in the last 180 days and have a greater than 90% schema similarity to a certified enterprise asset." The AI returns a prioritized list of high-confidence candidates for decommissioning, complete with storage costs and the contact information of the relevant data owners.



Strategic Implications

This capability has a direct and measurable impact on the bottom line. It delivers the evidence-based analysis required to execute strategic data decommissioning and consolidation projects, leading to significant reductions in cloud storage and compute costs. Beyond cost savings, it mitigates security risks by reducing the enterprise's data footprint and simplifying compliance burdens by streamlining the governance of sensitive data.

Stage 3: Agentic
Automating Intelligence at Scale

This is the final stage of the maturity model, where the enterprise moves from using AI as a tool for assistance to deploying it as an autonomous agent for action. An Agentic AI system can understand complex requests, formulate multi-step plans, query for necessary context via the MCP server, and execute tasks across enterprise systems. This is only possible because of the trust and reliability built in the Foundational and Activated stages.

Characteristics of an Enterprise-Ready AI Agent

Goal-Oriented and Autonomous	Can take a high-level objective (e.g., "Generate the preliminary compliance report for GDPR audit") and independently execute the necessary sub-tasks.
Context-Aware and Governed	Uses the MCP server to understand the latest data policies, ownership, and lineage before taking any action, ensuring its operations are always compliant.
Integrated and Action-Oriented	Can interact with other enterprise systems via APIs to not only analyze data but also trigger workflows, such as filing an access request, provisioning a resource, or alerting a data steward to an anomaly.

The Business Case for Agentic AI: Quantifying the ROI

The journey through the Foundational and Activated stages delivers immediate value through increased efficiency and reduced risk. The Agentic stage, however, is where significant, transformational returns are realized. **McKinsey estimates** that generative AI could add the equivalent of \$2.6 trillion to \$4.4 trillion annually across business functions, with a significant portion of that value unlocked by autonomous, agent-like systems that can execute complex workflows.

For large enterprises, the business case for investing in an Agentic AI-ready foundation is built on three core pillars:

Proactive Cost Optimization

Agentic AI moves beyond assisting human tasks to fully automating entire business processes.

Intelligent Process Automation	Think about complex, multi-day tasks like a quarterly financial close or a supply chain demand forecast. An AI agent can handle these workflows from start to finish—gathering data, checking quality, running calculations, creating reports, and sharing them with stakeholders—in much less time. This enables highly skilled employees to focus on strategic analysis instead of manual tasks.
Resource Reallocation	By automating thousands of hours of repetitive, knowledge-based tasks in areas such as compliance, audit, and operations, the enterprise can redirect valuable human resources toward higher-value activities that promote growth and competitive advantage.

Systemic Risk Reduction

AI agents can operate as 24/7 digital stewards, enabling proactive risk management and mitigation.

Continuous Compliance Monitoring	Instead of periodic, sample-based audits, an AI agent can continuously monitor 100% of relevant transactions and data assets to ensure compliance with regulations like BCBS 239 or GDPR. It can detect potential violations in real-time, well before they become material findings for a regulator.
Proactive Anomaly Detection	An agent can monitor critical data pipelines to identify quality issues or operational problems, enabling proactive resolution. When it detects an anomaly, it can automatically carry out impact analysis using lineage, inform all downstream stakeholders, and even propose a remediation plan, dramatically reducing the mean time to resolution (MTTR) for data incidents.

Accelerated Innovation and Growth

With AI Agents, enterprises remove foundational friction, boosting growth and innovation.

Goal-Oriented and Autonomous	Can take a high-level objective (e.g., <i>"Generate the preliminary compliance report for GDPR audit"</i>) and independently execute the necessary sub-tasks.
Context-Aware and Governed	Uses the MCP Server to understand the latest data policies, ownership, and lineage before taking any action, ensuring its operations are always compliant.

Your Roadmap to Enterprise-Ready Agentic AI

The journey from a complex data landscape to an automated enterprise is a gradual evolution, not a single technological leap. This guide offers a clear three-stage roadmap for this transformation.

First, you build the foundation, establishing the non-negotiable pillars of governance, quality, and centralized metadata management. This is the bedrock of trust and reliability.

Next, you activate that foundation using an MCP Server, bridging the gap between your data’s context and your AI application. The use cases in this guide provide immediate, high-impact ways to generate value and build momentum.

Finally, you operate as an agentic enterprise by deploying autonomous AI systems that can securely reason and act upon your governed data to solve your most complex business challenges.

The strategic imperative is clear: Connecting your data’s context with your AI is essential for competitive advantage.

Don’t let your metadata sit idle. Activate it to transform your data catalog into a modern data intelligence platform, where metadata is constantly adding crucial context about your data’s quality, usage, and business meaning. This trusted foundation allows AI applications to work with reliable, governed data and deliver business value.



Download our checklist to ensure your organization is ready for AI.

Assess Your AI Data Readiness >



Learn what trusted, governed data can do for your most ambitious AI projects with MCP Server.

Learn More >



Discover how to establish a governed data foundation for Agentic AI.

Contact Us >

About Actian

Actian empowers enterprises to confidently manage and govern data at scale. Organizations trust Actian data management and data intelligence solutions to streamline complex data environments and accelerate the delivery of AI-ready data. Designed to be flexible, Actian solutions integrate seamlessly and perform reliably across on-premises, cloud and hybrid environments. Learn more about Actian, The data and AI division of HCLSoftware, at actian.com.