Omdia by informa techtarget

APRIL 2026

Workflow Data Fabric: Orchestrating Real-Time Enterprise Intelligence with Cloudera and ServiceNow

Stephen Catanzano, Principal Analyst

Abstract: Organizations have successfully deployed AI models that detect anomalies, predict failures, and identify risks. Yet a critical gap persists between generating insights and taking action. The root cause is architectural. AI insights in secure data platforms cannot easily trigger automated responses in workflow systems without costly data replication. Cloudera provides the only hybrid enterprise-wide data foundation that bridges this "AI activation gap," enabling seamless integration with workflow systems like ServiceNow. ServiceNow Workflow Data Fabric, via its Zero Copy Connector, enables these workflows to access data in Cloudera, while Cloudera allows ServiceNow to act as the "nervous system" of the business by querying data directly where it resides in Cloudera. This approach eliminates the need for data replication, maintains data sovereignty, reduces latency, and avoids the operational and compliance costs of data movement.

The AI activation gap: When insights do not translate to action

Organizations are looking to maximize their investments in AI but struggle with the speed and cost of accessing their data across environments and systems.

Manufacturing plants, for example, experience downtime because alerts are not seen in time. Fraudulent transactions in finance complete because analysts are reviewing other cases. Grid anomalies cascade into failures because response teams follow manual procedures. In healthcare and life sciences, staying up to date is critical to outcomes.

33% of organizations cited difficulty integrating AI with existing IT systems and workflows as a barrier to fully adopting AI solutions.[1]

This is the strategic decision-to-action deficit, the disconnect between AI systems that generate insights and workflow systems that could automate responses to drive ROI and operational efficiency. While enterprises have deployed powerful AI capabilities and sophisticated platforms such as ServiceNow to orchestrate complex multi-step processes, they remain constrained by manual handoffs that undermine the value of both. The challenge lies in connecting AI insights to workflow systems across several environments and systems, where multiple factors must contribute to the right immediate action. Achieving this requires overcoming the risks, costs, and latency associated with moving data across architectural boundaries.

[1] Source: Enterprise Strategy Group (now Omdia) Complete Survey Results, *Transforming Observability and Monitoring Through AI*, April 2025.

Cloudera's platform addresses this deficit by enabling "AI anywhere," allowing businesses to innovate quickly and seamlessly in any environment (cloud, on-prem, edge) without the complications of data movement or application refactoring.

The data movement tax: Why replication undermines AI ROI

The obvious solution appears straightforward: Just replicate the data. Many organizations attempt this, only to discover that data replication introduces costs and risks that often exceed the benefits.

The operational cost is substantial. Organizations dedicate entire teams to maintaining extract, transform, load (ETL) pipelines; monitoring data freshness; and troubleshooting synchronization failures. Infrastructure costs also compound with storage for duplicated data, compute for continuous replication, and network bandwidth for moving large datasets.

67% of organizations agreed that moving datasets during AI development presents challenges and delays that introduce risk.[2]

Latency is another challenge. Even optimized replication introduces delay. For use cases where AI value depends on immediate action, any delay undermines the solution. A fraud detection system that takes minutes to replicate information to the case management workflow has lost the window to prevent fraud from occurring.

Governance and compliance are the most prohibitive costs. Regulated industries face data sovereignty requirements, restricting where sensitive information can be stored. Financial services firms cannot freely copy customers' personally identifiable information (PII). Energy companies managing critical infrastructure must maintain strict access controls. Every data copy creates a new attack surface requiring duplicated governance controls and audit trails.

This is the data movement tax: the operational overhead, technical complexity, compliance risk, and opportunity cost imposed by architectures requiring data replication to connect AI insights with automated actions.

Zero-copy architecture: Bringing workflow automation to data

Cloudera's zero-copy integration represents more than a technical innovation; it is a strategic enabler of real-time data intelligence. By eliminating the data movement tax, organizations can accelerate time to value and empower agentic workflows that drive operational efficiency and ROI. ServiceNow Workflow Data Fabric, using Zero Copy Connector, removes the need to replicate data to trigger workflows. Cloudera's "AI anywhere" architecture ensures AI workloads run wherever data resides.

Cloudera provides sovereign intelligence data, ensuring that AI agents in ServiceNow operate with the precision and authority required to make informed decisions. This secure data foundation is critical for

[2] Source: Enterprise Strategy Group (now Omdia) Complete Survey Results, *Navigating Build-versus-buy Dynamics for Enterprise-ready AI*, January 2025.

powering the modern agent, enabling seamless workflows across hybrid environments without compromising data sovereignty.

The closed-loop advantage

Cloudera's unique hybrid capability creates a closed-loop system that unifies data and agents within a single, protected ecosystem. This strategic approach delivers three key advantages:

88% of organizations agreed that large datasets make it advantageous to maintain on-premises infrastructure.[3]

- **De-risking operations:** Sensitive data remains within Cloudera's secure perimeter, eliminating the risks associated with data replication and movement.
- **Optimizing capital:** By avoiding the massive egress costs typically incurred when moving data across cloud environments, organizations can significantly reduce operational expenses.
- **Ensuring unity:** Cloudera bridges the gap between where data lives and where action is taken, enabling seamless integration between AI insights and workflow automation.

This flexibility is essential for organizations with hybrid infrastructure or regulatory requirements mandating specific data residency. Cloudera's real-time data intelligence framework ensures that AI workloads can run wherever data resides—on-premises, on the edge, or in the public cloud—while connecting workflow automation across environments. By unifying data and workflows, Cloudera empowers enterprises to achieve faster, more impactful business outcomes.

Use case: Fraud detection and risk management in financial services

Financial institutions face increasing pressure to detect and respond to fraud and compliance risks in real time while maintaining strict adherence to data privacy regulations such as GDPR and PCI. The challenge lies in orchestrating workflows that bridge the gap between fraud detection and response without exposing sensitive transaction data or customer PII to unnecessary risk.

42% of financial services organizations cited enhancing fraud detection and risk mitigation as a top business priority for leveraging AI-powered analytics or AI agents.[4]

Cloudera enables financial institutions to transform their governance, risk, and compliance (GRC) workflows into seamless, auditable processes that satisfy regulatory requirements while protecting data privacy. By leveraging Cloudera's secure, governed data lakehouse, institutions can ensure that sensitive transaction history and PII remain within a protected environment, virtually eliminating the compliance risks and costs associated with data duplication.

When Cloudera's AI models flag suspicious activity, ServiceNow leverages this secure foundation to orchestrate automated workflows. For example, ServiceNow can create investigation cases, assign analysts, and trigger actions like transaction holds all without sensitive data ever leaving Cloudera's governed

[3] Ibid.
[4] Source: Omdia Complete Survey Results, *Optimizing Cloud Analytics Costs in an Agentic AI Future*, October 2025.

environment. This approach not only accelerates response times but also ensures that all data access is logged and auditable, simplifying compliance with regulatory authorities such as the FDA or financial regulators.

Tangible business outcomes

The following are tangible business outcomes that organizations can expect to see from using the ServiceNow platform.

- **Enhanced efficiency.** Automating high-stakes GRC workflows reduces investigation response times from hours to minutes, enabling faster action to prevent fraud.
- **Improved accuracy.** Institutions can achieve a significant reduction in false positives, freeing up highly skilled compliance teams to focus on genuine threats rather than manual data stitching.
- **Regulatory confidence.** By maintaining data sovereignty and ensuring all workflows are auditable, organizations can confidently meet regulatory requirements without exposing themselves to data privacy violations.

Cloudera's ability to unify AI-driven insights with automated workflows empowers financial institutions to not only mitigate fraud and compliance risks but also optimize operational efficiency and ROI.

Use case: Clinical decision support in healthcare without compromising patient privacy

Healthcare organizations deploy AI models that analyze patient data to identify high-risk conditions and flag potential adverse events. These AI insights could improve care coordination, yet most remain disconnected from clinical workflows. The barrier is that patient records protected by HIPAA cannot be freely copied to workflow systems.

Traditional integration creates an impossible choice to replicate protected health information (PHI) to enable automation and risk HIPAA violations or maintain compliance at the expense of automation. Most organizations choose compliance, leaving care teams to manually transcribe AI insights.

Zero Copy resolves this conflict. When Cloudera's AI models identify a patient requiring intervention, ServiceNow queries Cloudera for specific clinical context. Cloudera's governance enforces role-based access controls, ensuring workflows access only authorized data. PHI never leaves Cloudera's HIPAA-compliant environment.

56% of healthcare and life sciences organizations cite concerns about data privacy and HIPAA and GDPR compliance in AI applications as a most significant challenge. [5]

ServiceNow automatically creates care coordination tasks, assigns care team members, and schedules follow-ups. Healthcare organizations achieve automation that improves outcomes while maintaining privacy protections that regulations demand.

[5] Source: Enterprise Strategy Group Research, "Optimizing Cloud Analytics Costs in an Agentic AI Future," July 2025

Use case: Secure, predictive maintenance at scale

Organizations across industries face the challenge of maintaining critical infrastructure and operations while minimizing downtime and costs. Predictive maintenance powered by AI offers a transformative solution, enabling businesses to anticipate and resolve issues before they escalate into costly disruptions. However, achieving this at scale requires a secure, governed data foundation and seamless workflow automation.

Cloudera and ServiceNow together deliver a secure, predictive maintenance framework that empowers enterprises to act on insights in real time without compromising data sovereignty or operational efficiency.

Components of the Cloudera and ServiceNow framework

The following components of the Cloudera and ServiceNow framework enable enterprises to effectively and efficiently act on insights.

- **Localized predictive intelligence.** Cloudera's data lakehouse securely ingests and analyzes massive, complex datasets directly where they reside. Leveraging Cloudera's agentic AI, organizations can continuously monitor data to predict anomalies, whether it is a failing telecom server, a disrupted supply chain route, or a manufacturing bottleneck.
- **Connect without copying.** ServiceNow's Workflow Data Fabric acts as the connective tissue, enabling enterprises to connect, understand, and act on data across systems without the need for replication. This eliminates the risks and costs associated with traditional ETL processes.
- **Governed, automated resolution.** When Cloudera predicts an issue, ServiceNow's AI agents autonomously trigger compliant workflows to resolve it. This could include routing a replacement part, dispatching a technician, or reallocating resources before the business impact is felt. Sensitive data remains securely governed within Cloudera's environment, ensuring compliance with regulatory requirements.

Tangible business outcomes

- **Proactive issue resolution.** Predicting failures before they happen minimizes unplanned downtime and ensures operational continuity.
- **Cost savings.** Keeping data at the source eliminates expensive ETL processes and reduces infrastructure costs.
- **Operational efficiency.** Automating the resolution of predicted issues drastically reduces manual workloads, freeing up resources for higher-value tasks.

By uniting Cloudera's predictive intelligence with ServiceNow's workflow automation, organizations can achieve secure, scalable predictive maintenance that drives efficiency, reduces costs, and ensures business resilience.

Cloudera and ServiceNow: The platform for zero-copy AI automation

Cloudera provides the trusted data foundation. The Cloudera Data Platform unifies structured and unstructured data in an open lakehouse architecture that supports AI workloads across on-premises, edge, and public cloud environments. Cloudera's Shared Data Experience (SDX) provides enterprise-grade

governance, including fine-grained access controls, complete data lineage, and comprehensive audit logging. When ServiceNow queries Cloudera through Workflow Data Fabric's Zero Copy Connector, SDX enforces the same security policies that govern internal access.

ServiceNow provides the workflow automation platform. The ServiceNow AI platform orchestrates complex multi-step processes spanning departments, systems, and decision points. ServiceNow Workflow Data Fabric enables these workflows to access data in Cloudera without requiring replication. When a workflow needs context to route a case, prioritize a repair, or approve a request, ServiceNow queries the authoritative source in real time.

The integration creates a closed-loop system. When AI models in Cloudera identify patterns requiring action, ServiceNow workflows orchestrate the response, querying Cloudera via Workflow Data Fabric's Zero Copy Connector for the context needed to route cases, assign resources, and track resolution to completion. ServiceNow queries Cloudera for the context needed to make these decisions without data replication, and then Cloudera logs these queries for audit and compliance.

Conclusion

The AI activation gap represents one of the most significant barriers to realizing the full value of enterprise AI investments. While organizations have deployed advanced AI solutions capable of generating accurate insights and workflow platforms designed to orchestrate complex responses, the connection between insight and action often remains manual. This disconnect is driven by architectures that rely on data replication, introducing unacceptable costs, risks, and complexity.

The Cloudera-ServiceNow partnership offers a transformative solution to bridge this gap. By integrating Cloudera's "AI anywhere" architecture with ServiceNow's zero-copy capabilities, organizations can unify data and workflows into a seamless, governed ecosystem. This Workflow Data Fabric eliminates the need for data replication, ensuring data sovereignty, reducing latency, and enabling real-time automation. It empowers enterprises to transform their data into a strategic asset, driving innovation, operational efficiency, and growth.

This approach represents a fundamental shift in AI deployment. Instead of treating each use case as an isolated project requiring custom integration, organizations can establish a scalable, reusable framework where AI insights seamlessly trigger operational responses. This accelerates AI adoption, reduces implementation costs, and positions enterprises to achieve faster, more impactful business outcomes.

Omdia recommends that business leaders stop treating data and workflows as separate silos and instead invest in a Workflow Data Fabric that transforms their data into a competitive weapon for innovation and growth. Organizations should assess their AI initiatives for signs of the AI activation gap, such as insights requiring manual intervention, delays between prediction and response, or hesitancy to automate due to data movement concerns. Where these challenges exist, adopting zero-copy architecture powered by Cloudera and ServiceNow offers a clear path to unlocking the full value of AI investments while maintaining governance, security, and operational excellence.

Get in touch: www.omdia.com askananalyst@omdia.com