Driving Telecom Business Success in the Agentic AI Era

The Critical Role of Data Quality and Control

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The Critical Path to Leveraging the Next Evolution of AI Lies in Comprehensive Data Modernization

Telecom providers stand at the threshold of profound business process transformation driven by generative AI and emerging agentic AI processes, representing a shift from traditional AI informing human actions to an era where autonomous AI agents make independent decisions and take actions without human intervention.
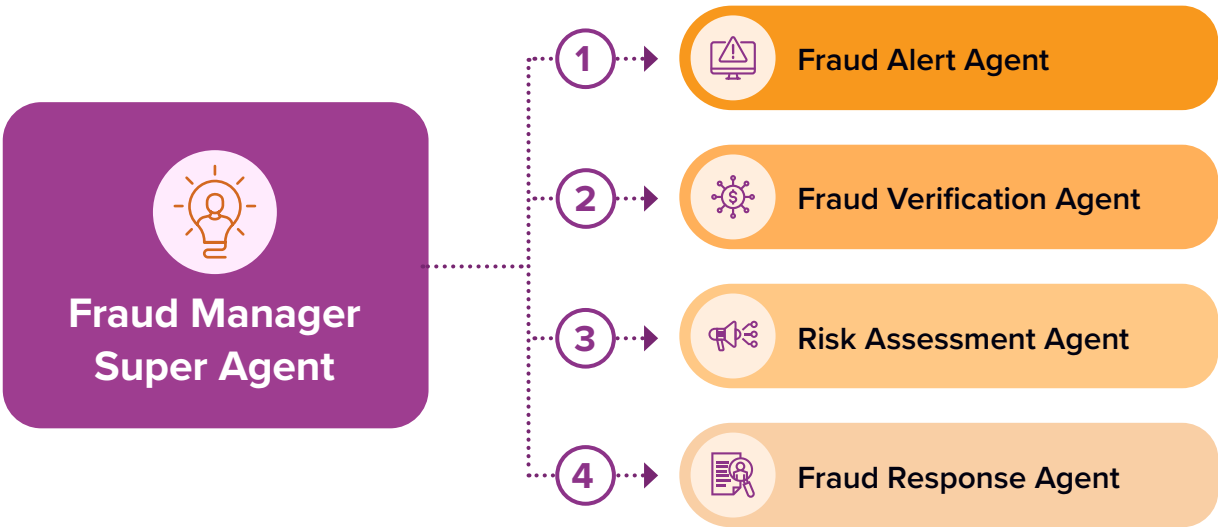
Mature data modernization capabilities are key to unlocking the business value of GenAI today and seizing the opportunities of agentic AI in the near future. These capabilities encompass five essential pillars: data architecture, data quality, data operations (dataOps), data accessibility, and hybrid interoperability.

In March 2025, IDC surveyed 151 telecom AI decision-makers to understand how an organization's approach to data modernization impacts its ability to unlock business value from current AI investments and to prepare for the transformative potential of agentic AI. This InfoBrief analyzes that data and identifies the mission-critical data modernization investments telecom providers must make to ensure they are ready for agentic AI.

Agentic AI Builds on Generative AI to Increase Business Value — But Also Increases Business Risk
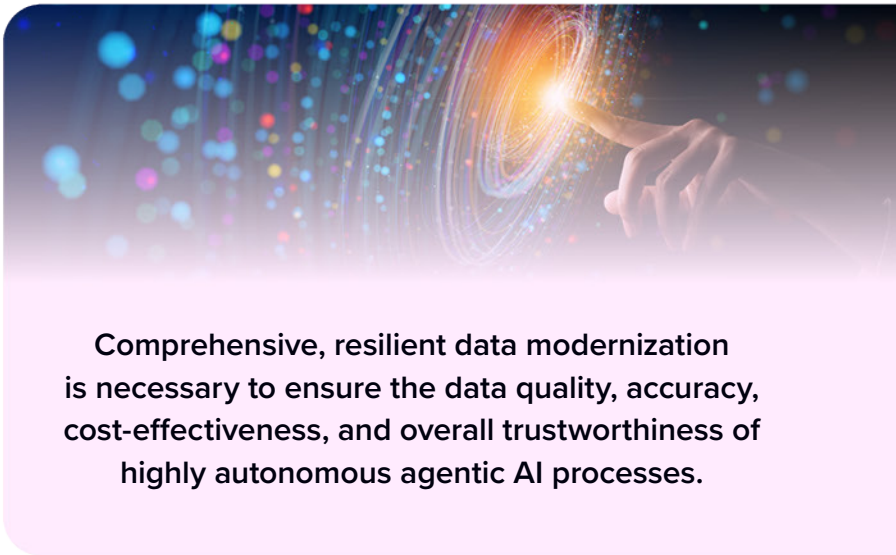
Agentic AI enables highly autonomous workflows powered by coordinated networks of generative and predictive AI agents. These agents execute complex tasks across diverse environments — unlocking significant business value through scale, speed, and intelligence.

Fraud Manager Super Agent

1 → Fraud Alert Agent

2 → Fraud Verification Agent

3 → Risk Assessment Agent

4 → Fraud Response Agent

However, as autonomy increases, so do the risks — reliance on accurate, real-time data; model orchestration; trust; and control all become mission-critical.

Agentic AI can deliver breakthroughs in:

▶ Autonomous fraud detection and remediation

▶ Network anomaly identification

▶ Proactive customer profiling and response

Comprehensive, resilient data modernization is necessary to ensure the data quality, accuracy, cost-effectiveness, and overall trustworthiness of highly autonomous agentic AI processes.

Less than One-Third of Telecom Providers Have Sufficiently Mature Data Modernization Today
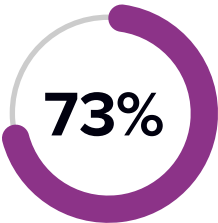
Telecom Providers Lack Mature Data Modernization Frameworks and Are Already Falling Behind in AI Rollouts

67%
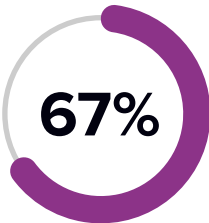
of mature providers successfully run multiple production GenAI and predictive AI apps

versus

just **15%** of the least mature organizations.

73%

of internal data is accessible by AI models in the most mature organizations

versus

28% for the least mature organizations.

Worldwide Telecom Data Modernization for AI Maturity Distribution

29% Most mature

35% Least mature

36% Mid-level mature
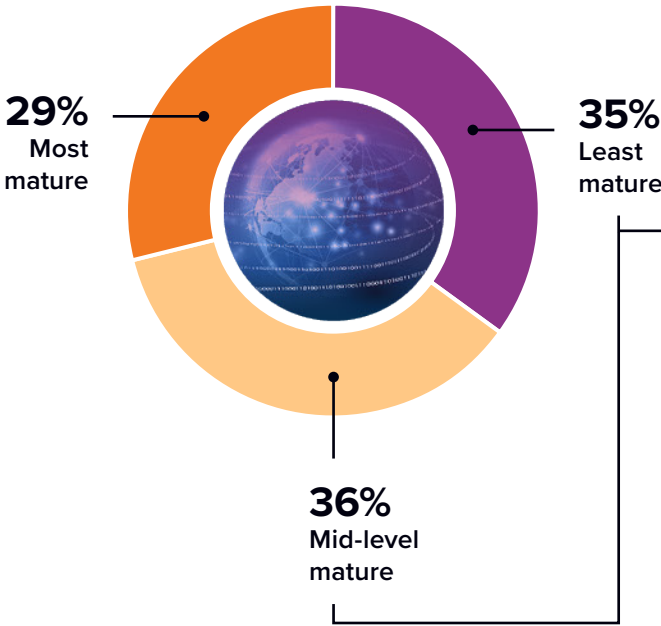
Less mature organizations will miss out on opportunities to reduce costs and transform business operations if AI pilots fail due to poor data quality, a lack of data access, or inefficient data operations.

Mature Telecom Providers Are Already Pulling Ahead and Realizing Important Business Outcome Improvements with GenAI

In the past 12 months, what level of annualized business outcomes change did your organization experience as a result of investments in data modernization for AI?

25% Increased customer satisfaction
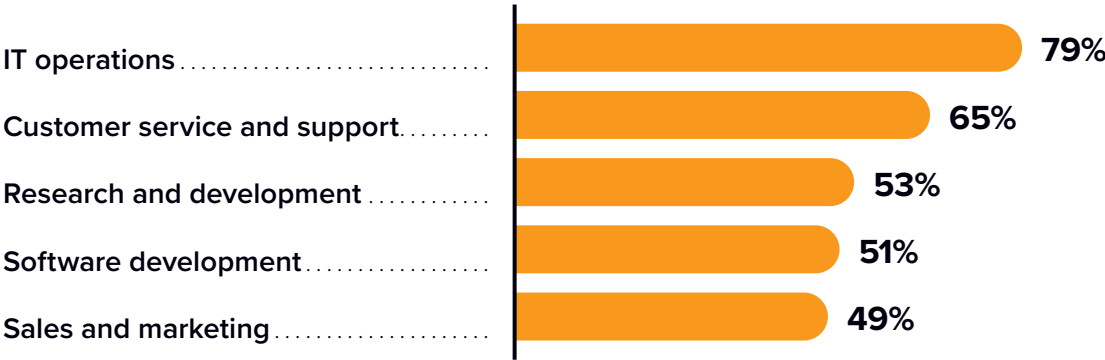
17% Increased employee productivity

15% Increased operational efficiency

12% Increased revenue growth

Where Do Most Mature Telecom Providers Expect to See the Greatest Value from Agentic AI?

IT operations	79%
Customer service and support	65%
Research and development	53%
Software development	51%
Sales and marketing	49%

Organizations with mature approaches to data modernization are best positioned to take advantage of agentic AI in the future.

Base: worldwide telecom provider AI decision-makers with highly mature data modernization strategies for AI. n = 43; Source: IDC's *Data Modernization for AI Survey,* March 2025

Five Pillars of Data Modernization for AI

Data Architecture

Data Quality

Data Operations

Data Accessibility

Hybrid Interoperability

"Over the next 3–4 years, generative and agentic AI advancements will help push applications to where the majority of offerings available will be significantly enhanced and augmented by agent-driven capabilities."

Source: IDC's *The Agentic Evolution of Enterprise Applications* **#US53194625, February 2025**

Data modernization for agentic AI enables the following key benefits that will allow organizations to accelerate deployment:

- ✓ Eliminate data silos.

- ✓ Ensure data reliability.

- ✓ Maintain data security and compliance.

- ✓ Faster transition from AI POCs to production.

- ✓ Optimize cost and performance.

Comprehensive Data Architecture Is Non-Negotiable

PILLAR 1: Data Architecture

The organization's overall plan for collecting and managing data must ensure multiple AI models and agents can reliably access the data, analyze it quickly, and deliver accurate, trustworthy answers.

Share of mature telecom providers:

95%
Have completed or are undertaking a **full data inventory/cataloging** effort to identify all available data assets

93%
Have implemented **an integrated and consistent AI-ready data architecture strategy** across their most critical data assets

"The biggest challenge related to adopting AI is data and getting it to a point where it's usable … our whole strategy is to build a trusted data layer."

VP of IT, U.S. wireless provider

Base: worldwide telecom provider AI decision-makers with highly mature data modernization strategies for AI. n = 43; Source: IDC's *Data Modernization for AI Survey,* March 2025

FIVE PILLARS OF DATA MODERNIZATION FOR AI

Mature Organizations Invest in Automated Data Quality Checking and Cleaning Across All Critical Data Assets

PILLAR 2: Data Quality

Ensuring data quality requires a multipronged approach: setting clear criteria and standards, maintaining semantic consistency, automating cleansing, deduplicating, and training to uphold quality across all systems.

Share of mature telecom providers:

100%
Implement automated data quality checking and cleaning across all critical data.

91%
Invest more in automated data cleaning and quality checks for GenAI, compared to traditional AI.

79%
Prioritize internal data quality and cleanliness to avoid AI bias and hallucinations.

"Make a commitment enterprisewide. Format all your data the same way. You will see how well the system operates, improves quality, and reduces errors."

AI technology lead, U.S. wireless provider

Base: worldwide telecom provider AI decision-makers with highly mature data modernization strategies for AI. n = 43; Source: IDC's *Data Modernization for AI Survey,* March 2025

FIVE PILLARS OF DATA MODERNIZATION FOR AI

Mature Organizations Invest in Large-Scale, Automated Data Operations

PILLAR 3: DataOps

DataOps is a set of practices that streamline and automate the data life cycle. It combines DevOps, agile methodologies, and data engineering to boost pipeline speed, quality, and reliability.

Share of mature telecom providers:

70%
More robust real-time and streaming data access

60%
The ability to redesign data pipelines to handle unstructured and semi-structured data

> "Moving from POC to production exposes the full cost and complexity of sustaining GenAI operations at scale."
>
> **AI technology lead, U.S. wireless provider**

Base: worldwide telecom provider AI decision-makers with highly mature data modernization strategies for AI. n = 43; Source: IDC's *Data Modernization for AI Survey,* March 2025

Automated and Comprehensive Data Accessibility Streamlines Business Processes

PILLAR 4: Data Accessibility

Organizations must ensure AI agents and models have easy access, understanding, and data usage for training, inference, and autonomous decisions across any source, format, or location.
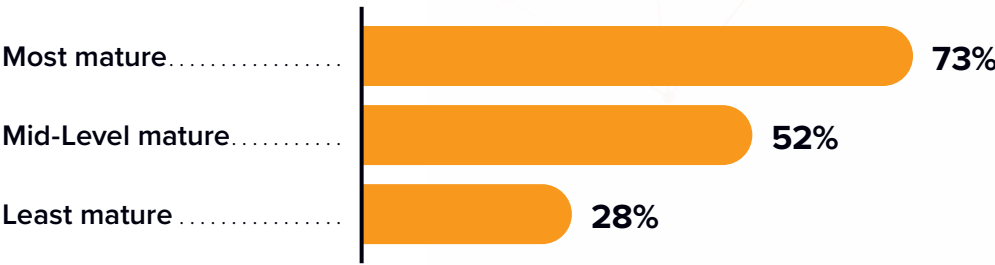
Share of mature telecom providers:

74%
Make it a priority to enable integration of a wider range of data types, content types, and APIs.

Percentage of Telecom Provider Internal Data Currently Accessible by Organization's AI Models and Analytics

Most mature	73%
Mid-Level mature	52%
Least mature	28%

"It's a complex journey because there are so many touch points when the customer wants to interact, and agents are supposed to pull the data without anybody's assistance. …. Homo sapiens are now moving into the new age of auto-sapiens."

VP, Asia-Pacific telecom provider

"It's a team sport — everyone needs everyone's data, across all business functions. … Many use cases use the same data."

VP of IT, U.S. wireless provider

Base: worldwide telecom provider AI decision-makers with highly mature data modernization strategies for AI. n = 43; Source: IDC's *Data Modernization for AI Survey,* March 2025

Cost-Effective and Interoperable Hybrid Infrastructure Must Be the Goal

PILLAR 5:
Hybrid Interoperability

Organizations must maximize ROI through intelligent workload and data placement across hybrid cloud environments. This enables telecom providers to optimize model training, tuning, and inference across on-premises, public cloud, and edge applications while balancing cost, performance, security, and compliance.

IDC estimates that IT infrastructure will represent 33.6% of worldwide AI spend in 2025.*

Agentic AI will place rapidly growing demands on compute, storage, and networking as more powerful models and agents proliferate, fueling constant, high-speed interactions across complex, automated workflows.

The criteria most mature telecom providers use when choosing where to deploy data for AI across hybrid architectures:

86% Total cost of ownership

74% Security

74% Performance/latency

60% Compliance/auditability

"It is critical to put bandwidth and infrastructure costs into the ROI calculation."

AI technology lead, U.S. wireless provider

Base: worldwide telecom provider AI decision-makers with highly mature data modernization strategies for AI. n = 43; Source: IDC's *Data Modernization for AI Survey,* March 2025; *Worldwide Artificial Intelligence IT Spending Forecast, 2024–2028* (IDC#US52635424, Oct 2025)
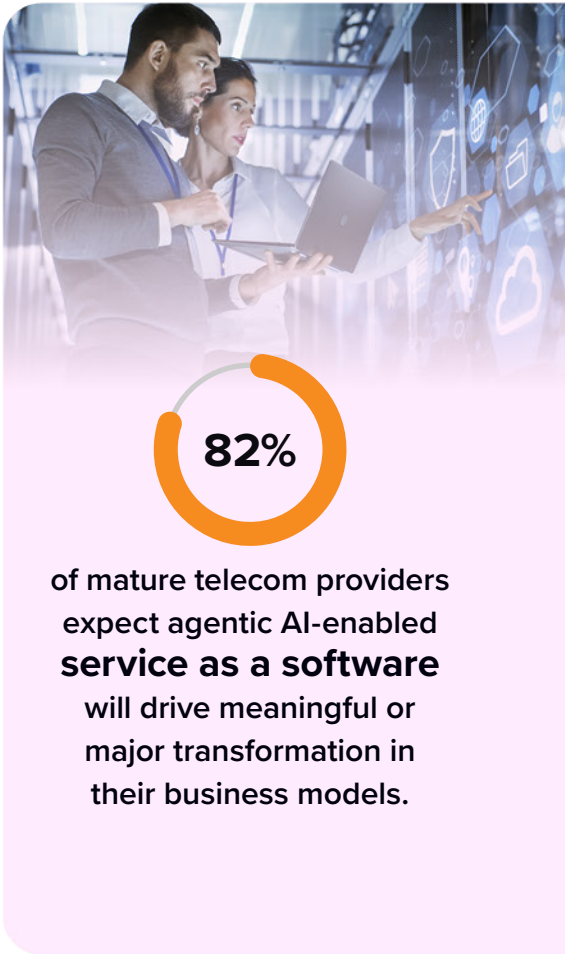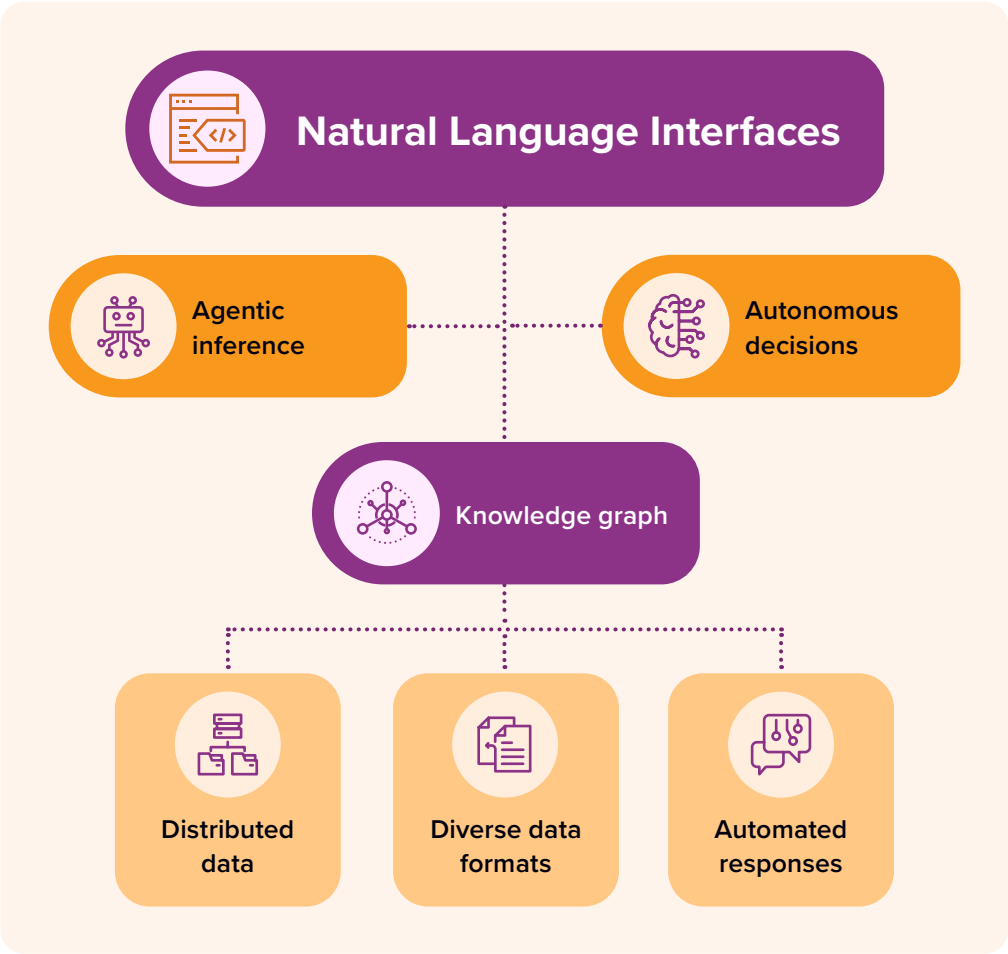
Looking to the Future

Agentic AI Will Radically Transform Software and Services Business Models — If the Data Is Ready!

Service as a software (also known as SaaS 2.0 or Service as SaaS) delivers **complete services** through a cloud-based, technology-led model. By combining with **AI, automation, and orchestration,** it enables end-to-end service delivery, often blending autonomous execution with minimal human oversight for greater speed, scalability, and efficiency.

Agentic AI apps, delivered through a service-as-a-software model, will autonomously orchestrate and automate business logic and data analysis across diverse data sources and formats, giving users on-demand access to tailored insights via natural language interfaces.

Knowledge graphs will replace traditional data stores by mapping relationships and patterns across distributed data. This foundation will empower agentic AI to better understand context, reason across systems, and execute tasks autonomously without relying on traditional software engineering.

Natural Language Interfaces

- Agentic inference
- Autonomous decisions
- Knowledge graph
- Distributed data
- Diverse data formats
- Automated responses

82%

of mature telecom providers expect agentic AI-enabled **service as a software** will drive meaningful or major transformation in their business models.

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Essential Guidance

Act Now to Fill Your Organization's Data Modernization Gaps Today

Telecom providers must modernize data and plan for agentic AI-driven transformation today before they lose out to more agile and innovative competitors.

Consistent data quality, access, and operations will be critical to ensuring that AI models and agents can consume and act on accurate, trusted data across interoperable hybrid infrastructure environments.

Telecom providers that invest proactively in data modernization for AI will reduce costs, complexity, and risks while gaining an agentic AI first-mover advantage.

About the IDC Analyst

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Mary Johnston Turner is research vice president within IDC's Worldwide Infrastructure Research organization and global research lead for the Digital Infrastructure Strategies practice. Turner's coverage tracks enterprise tech buyer sentiment related to compute, storage, edge, operations, cloud platforms, and deployment models. Current research priorities emphasize the impact of rising requirements for data-driven AI-ready infrastructure, fit-for-purpose hybrid and multicloud architectures, autonomous operations, edge integration, and collaborative business and IT governance. Her practice emphasizes the voice of the enterprise customer, based on surveys and in-depth analysis of best practices and infrastructure investment priorities.

More about Mary Johnston Turner

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Amdocs Data & GenAI Studios enables enterprises to implement AI solutions that are scalable, secure, and aligned with business goals. Our offering is built on four core pillars: Data Strategy, AI-Ready Data, AI Factory & Analytics, and GenAI & Intelligent Agents.

With 4500+ data experts and strong partnerships—including AWS, Azure, GCP, NVIDIA, Snowflake, Databricks, and Illumex—we help enterprises overcome complex data challenges. From data modernization and pipeline orchestration to MLOps, real-time analytics, and GenAI integration, we support the full data and AI lifecycle. As a system integrator, we help organizations move from strategy to execution, embedding AI into operations to deliver business results.

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