Context-Powered AI Agents: Use Cases

How enterprises across industries are deploying context-powered agents that move from data access to genuine business action

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Across more than 150 enterprise AI engagements in the past year, we at Teradata have observed a consistent pattern. Organizations are investing in models, modernizing infrastructure, and expanding access to data, yet many AI initiatives struggle to progress from promising pilots to trusted production outcomes.

AI can access data, but data alone is not enough. Business definitions, relationships, governance policies, institutional knowledge, and operational context are what transform information into action. Without that context, even the most sophisticated models produce answers that are plausible but not reliably aligned to how the business actually operates.

Context Engine was built to solve this problem. By connecting business glossaries, industry knowledge models, semantic relationships, lineage, governance, and trusted data products into a shared context layer, it enables AI agents to reason with the same understanding that guides experienced teams.

The next generation of enterprise AI will not be defined by bigger models. It will be defined by which organizations can provide AI with the business context required to act with precision, consistency, and trust.

It is almost always the absence of a reliable mechanism for making business meaning available to AI at the moment of decision.

This eBook explores how organizations across *industries are using Context Engine to bridge the gap between data and action, transforming AI from a system that retrieves information into one that understands what that information means and what should happen next.*

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Use cases across seven industries

A landscape field guide to context-powered outcomes.

01 Financial Services

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08 Building Enterprise Context

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The Context Imperative

AI pilots succeed but production deployments often don't: not because the models underperform, but because they operate without the organizational context that makes intelligence actionable. Teradata has completed more than 150 enterprise AI engagements in the past year. The pattern is consistent: the constraint is never compute, and it is rarely data volume. It is the absence of a reliable mechanism for making business meaning available to agents at the moment of decision. Context is that mechanism.

Generic AI terminology rarely survives contact with an actual business problem. The concepts in this eBook are defined against the specific scenarios where they drive decisions — each grounded in the outcomes that separate production-grade AI from a proof of concept. Every use case in the chapters that follow illustrates what changes when an AI agent has access not just to your data, but to what that data means in your organization.

THE CONTEXT GAP

AI without context sees your customer as a row in a table. It sees revenue as a number. It sees a complaint as a transaction. It has no understanding of what a 15-year relationship means to your business, what a 34% balance decline signals about risk, or what your organization's definition of "at-risk" actually is. Without context, AI can only process what it is given. It cannot reason about what it means.

WITH CONTEXT ENGINE

"This customer has been with us for 15 years. Their balance has declined 34% over two quarters and NPS score is 3/10 — our highest-risk churn profile. Escalating to a Senior Relationship Manager with a personalized retention offer and fee waiver pre-approval. Response target: same business day." — Same data. Completely different outcome. The difference is context.

Context is what transforms AI from a data processor into a true business reasoner. The organizations that will lead the next decade of enterprise AI are not the ones with the largest models. They are the ones whose AI understands the business deeply enough to act on its behalf.

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Teradata's data foundation: The competitive advantage AI can't replicate

Decades of governed, integrated enterprise data represent something that no amount of model investment can replicate: institutional knowledge, encoded in relationships, lineage, and business logic accumulated across business cycles. The competitive question in enterprise AI is no longer which model to deploy. It's which organization can make its data foundation available to AI agents in a form that reflects how the business actually reasons—not as raw tables, but as connected, contextualized intelligence.

Teradata's Autonomous Knowledge Platform was built on this premise. For organizations that have built their data foundations on Teradata over years or decades, Tera Context Engine represents the activation layer that transforms that foundation into a competitive advantage for the AI era—connecting the data you already have to the intelligence your business needs, without disruption and without starting over.

What you've actually built

The Teradata estate is not just a data warehouse. It's an enterprise knowledge base waiting to be activated. The governed pipelines, the metric definitions, the data lineage, the quality rules, the access controls—these aren't technical artifacts. They're encoded institutional knowledge. They represent, in structured form, how your organization understands and interprets its own operations.

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3 layers of enterprise intelligence

Data: What you have

Decades of governed, structured, integrated enterprise data: transaction histories, customer records, operational metrics. The raw material that few organizations in the world can match.

Context: What it means

The business definitions, relationships, thresholds, and rules that turn data into decisions. The knowledge that experienced teams carry—now encodable and available to AI agents in real time through Tera Context Engine.

Action: What to do about it

AI agents equipped with context can move from analysis to execution: triggering workflows, escalating cases, generating responses, and driving outcomes without human intermediation at every step.

Tera Context Engine: The activation layer

Tera Context Engine automatically discovers, organizes, and delivers business context to AI agents at the moment of query. It knows what your organization means by "at-risk customer," "high-value account," or "material exception"—because it learns those definitions from your data, your models, and your business logic.

Unlike generic AI that applies statistical averages derived from public training data, Tera Context Engine applies your organization's specific intelligence. The result is agents that produce answers and take actions that experienced teams recognize as correct—not plausible approximations that require human validation before anyone acts on them.

The organizations building context now are creating an advantage that compounds. Each use case adds to the knowledge model. Each deployment makes the next one faster, more accurate, and closer to how the business actually thinks.

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Teradata’s Data Foundation

The competitive advantage AI cannot replicate

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Data

What you have

Decades of governed, structured, integrated enterprise data: transaction histories, customer records, operational metrics.



Context

What it means

The business definitions, relationships, thresholds, and rules that turn data into decisions.



Action

What to do

AI agents equipped with context can move from analysis to execution: triggering workflows, escalating cases, generating responses, and driving outcomes.

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Financial services use cases

Financial institutions possess some of the richest customer and operational datasets in the world. The challenge isn’t discovering information. It’s providing AI systems with sufficient context to reason about customer relationships, risk, complaints, regulations and business priorities in the same way experienced employees do. Tera Context Engine enables that understanding.

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FINANCIAL SERVICES

Relationship growth and next best product

BUSINESS PROBLEM

Most recommendation systems identify what customers purchased previously but lack understanding of broader financial relationships.

CONTEXT-POWERED OUTCOME

Product holdings, financial behavior, customer maturity, life stage, and relationship history are interpreted through a shared banking knowledge model. Tera Context Engine grounds agents in governed product definitions and semantic relationships, helping them identify opportunities that reflect the customer's broader financial needs. Recommendations become more relevant, explainable, and aligned with the reasoning of experienced advisors.



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FINANCIAL SERVICES

Customer attrition prevention

BUSINESS PROBLEM

Customer churn rarely originates from a single signal. Declining balances, complaint histories, satisfaction scores, service interactions, product ownership, and customer lifetime value all contribute to risk. These signals typically live in separate systems and are interpreted independently.

CONTEXT-POWERED OUTCOME

A governed customer 360 data product brings together relationship history, transaction behavior, complaints, service interactions, attrition indicators, and approved business definitions. Powered by Tera Context Engine, agents understand not only that a customer may leave, but why that risk is increasing, how strategically important the relationship is, and which intervention fits the circumstances. Retention actions can therefore reflect customer value, business priorities, and the complete relationship context.



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FINANCIAL SERVICES

Financial crime investigation

BUSINESS PROBLEM

Fraud analysts work across fragmented datasets, often spending more time collecting information than investigating suspicious activity. Even sophisticated AI models struggle when they cannot understand how customers, accounts, transactions, external entities, and previous investigations are connected.

CONTEXT-POWERED OUTCOME

Using relationship-aware knowledge graphs, Tera Context Engine connects customers, transactions, counterparties, alerts, policies, and investigations into a unified contextual model. Agents no longer analyze single events; they reason across connected entities and historical patterns. Investigators receive contextual explanations instead of isolated alerts, reducing investigation time while improving confidence in decisions.



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FINANCIAL SERVICES

Regulatory complaint resolution

BUSINESS PROBLEM

Complaints rarely exist in isolation. Investigators must manually correlate customer records, transactions, policies, prior complaints, regulatory requirements, and service interactions. Significant time is spent assembling context before action can begin.

CONTEXT-POWERED OUTCOME

Tera Context Engine creates governed semantic relationships across complaints, customers, regulations, transactions, and service histories. Agents can immediately understand whether an issue represents a routine service request, a regulatory breach, or a high-risk legal escalation. Context transforms investigations from document gathering exercises into rapid decision-making workflows supported by traceable lineage and governed business definitions.



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Healthcare and life sciences use cases

Healthcare organizations generate vast amounts of structured and unstructured information across clinical, operational, research, and patient systems. Yet critical decisions are often made using fragmented views of patients, providers, treatments, and outcomes. Tera Context Engine provides the semantic layer that connects healthcare terminology, patient journeys, clinical knowledge, governance requirements, and organizational policies, enabling AI systems to reason across the full continuum of care rather than isolated data points.

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HEALTHCARE & LIFE SCIENCES

Patient journey intelligence

BUSINESS PROBLEM

Healthcare organizations generate vast amounts of clinical, operational, and patient-generated data. Yet providers frequently operate with fragmented views of the patient journey. Critical information is distributed across encounters, procedures, diagnostics, care plans, and outcomes.

CONTEXT-POWERED OUTCOME

Tera Context Engine organizes patient interactions into a governed clinical context model. Agents understand relationships between diagnoses, appointments, medications, providers, and outcomes while preserving business and clinical definitions. Instead of retrieving isolated records, healthcare professionals receive a contextual narrative explaining the patient's complete care journey, improving care coordination and decision quality.



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HEALTHCARE & LIFE SCIENCES

Clinical research knowledge assistant

BUSINESS PROBLEM

Research organizations struggle to connect structured trial data with publications, clinical notes, study protocols, and external knowledge sources. Researchers spend significant effort gathering information before meaningful analysis can begin.

CONTEXT-POWERED OUTCOME

Structured and unstructured research assets are connected within a governed knowledge graph, with semantic mappings preserving relationships among trials, protocols, evidence, and clinical concepts. Tera Context Engine makes source provenance and lineage available alongside the retrieved information, allowing researchers to explore evidence in business and clinical language while understanding where it originated and how it relates to the research question.



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Retail and consumer goods use cases

Every customer interaction generates valuable signals, but most retailers struggle to connect purchases, loyalty activity, customer feedback, campaigns, digital engagement, and operational performance into a unified view. Tera Context Engine transforms fragmented customer interactions into contextual understanding, allowing AI to reason about customers, products, and journeys as connected business entities rather than disconnected transactions.

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RETAIL & CONSUMER GOODS

Customer journey intelligence

BUSINESS PROBLEM

Retailers collect interactions across stores, websites, mobile applications, contact centers, and loyalty programs. Despite this abundance of information, understanding why customers buy, leave, or shift preferences remains difficult because context is fragmented across channels.

CONTEXT-POWERED OUTCOME

Tera Context Engine creates a unified customer understanding that connects transactions, campaigns, loyalty behaviors, service interactions, and product relationships. Agents understand customer behavior within the context of the broader journey rather than isolated purchases. This enables highly relevant recommendations, improved engagement, and more effective retention strategies.



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RETAIL & CONSUMER GOODS

Customer satisfaction intelligence

BUSINESS PROBLEM

Most organizations measure satisfaction through surveys while ignoring the broader context surrounding customer experiences. Survey scores alone rarely explain why customers behave the way they do.

CONTEXT-POWERED OUTCOME

The workshop use case demonstrates how Tera Context Engine enriches customer satisfaction analysis with transaction history, lifetime value, service interactions, complaints, sentiment, churn indicators, and behavioral signals. Rather than reporting survey scores, agents identify root causes, predict future actions, and recommend interventions that directly improve business outcomes.



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Manufacturing and supply chain use cases

Manufacturers have spent decades building operational knowledge across engineering, production, maintenance, quality, and supply chain systems. Much of that expertise remains trapped inside documents, processes, and individual teams. Tera Context Engine transforms institutional knowledge into a reusable enterprise asset, enabling AI systems to understand operational relationships, business rules, asset dependencies, and manufacturing terminology in the same way experienced engineers and plant operators do.

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Supply chain disruption intelligence

BUSINESS PROBLEM

Supply chain disruptions occur within highly interconnected ecosystems. Traditional systems report delays after they happen but rarely explain the broader operational consequences.

CONTEXT-POWERED OUTCOME

Tera Context Engine constructs contextual relationships across suppliers, inventory, logistics networks, production schedules, and customer commitments. Agents understand how disruptions propagate across the enterprise and recommend proactive actions based on business priorities rather than isolated operational metrics.



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RETAIL & CONSUMER GOODS

Factory knowledge assistant

BUSINESS PROBLEM

Manufacturing environments contain enormous volumes of operational knowledge locked inside engineering documents, maintenance records, procedures, and expert experience.

CONTEXT-POWERED OUTCOME

Tera Context Engine transforms manufacturing knowledge into a reusable organizational asset. Agents understand equipment hierarchies, operational terminology, maintenance history, and process relationships through governed semantic models. Employees can access decades of institutional knowledge through natural language while maintaining trust in the information's accuracy and provenance.



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Telecommunications use cases

Telecommunications operators sit on extraordinary volumes of network data, subscriber behavior signals, and service interaction history. The challenge is the speed at which fraud patterns evolve, churn signals appear, and customer satisfaction deteriorates. Context-powered agents close the gap between data generation and action.

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TELECOMMUNICATIONS

Subscriber churn prevention

BUSINESS PROBLEM

Subscriber churn rarely results from a single event. Service quality, support experiences, contract status, billing issues, and competitive pressures interact in ways that conventional analytics struggle to explain.

CONTEXT-POWERED OUTCOME

Tera Context Engine combines network performance, billing information, customer service interactions, usage behavior, and customer feedback into a single contextual view. Agents understand both the operational and customer dimensions of churn risk, enabling targeted interventions before customers leave.



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TELECOMMUNICATIONS

Network incident impact analysis

BUSINESS PROBLEM

When outages occur, operations teams know what failed but often cannot immediately determine who is affected, how much revenue is at risk, and what actions should be prioritized.

CONTEXT-POWERED OUTCOME

Tera Context Engine establishes relationships between infrastructure assets, subscribers, geographies, service agreements, and operational metrics. Agents can assess business impact in real time, prioritize recovery actions, and provide executives with a contextual understanding of consequences rather than technical events.



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Insurance Use Cases

Insurance organizations depend on context more than almost any other industry. Claims, policies, customer interactions, risk models, regulations, service providers, and historical outcomes all influence decisions. Tera Context Engine provides the connective tissue between these information sources, allowing AI systems to reason with the same contextual understanding that underwriters, investigators, claims handlers, and risk specialists use every day.

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INSURANCE

Claims investigation intelligence

BUSINESS PROBLEM

Claims handlers spend significant time gathering policy information, customer histories, repair records, and fraud indicators before making decisions.

CONTEXT-POWERED OUTCOME

Tera Context Engine creates contextual relationships across policies, customers, claims, repair providers, and historical outcomes. Agents understand the complete claim context immediately, accelerating investigations while improving consistency and accuracy.



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INSURANCE

Fraud detection and prevention

BUSINESS PROBLEM

Fraud indicators often span multiple entities and historical interactions that traditional analytics fails to connect effectively.

CONTEXT-POWERED OUTCOME

Using enterprise knowledge graphs and contextual relationships, Tera Context Engine enables agents to identify suspicious patterns across customers, policies, claims, providers, and historical investigations. Investigators receive evidence-based contextual narratives rather than isolated alerts.



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Cross-industry use cases

While industry-specific workflows vary, the underlying challenge remains remarkably consistent. Organizations struggle to make business meaning, institutional knowledge, governance policies, and trusted information accessible to AI systems. The most successful Tera Context Engine deployments often begin with capabilities that apply across every business function and every industry, creating reusable context that compounds across use cases.

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CROSS-INDUSTRY

Enterprise business glossary agent

BUSINESS PROBLEM

Terms such as “customer,” “active account,” “high risk,” or “material exception” may carry different meanings across business functions. When agents infer those meanings independently, outputs become inconsistent and difficult to govern.

CONTEXT-POWERED OUTCOME

Approved definitions, associated metrics, ownership, policies, and related concepts are made available through a shared business glossary. Tera Context Engine allows agents to retrieve that governed meaning before interpreting a request or making a recommendation. Business terminology becomes an operational asset that promotes consistency across AI experiences rather than a reference document consulted after a disagreement occurs.



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Data product creation and discovery

BUSINESS PROBLEM

Organizations frequently struggle to transform business knowledge into reusable, governed data products. Business concepts, definitions, relationships, and governance rules are often recreated across teams and projects, resulting in duplicated effort, inconsistent interpretations, and longer deployment cycles. At the same time, employees and AI agents have difficulty finding and understanding existing data products because critical context is scattered across technical metadata, documentation, and subject matter experts.

CONTEXT-POWERED OUTCOME

Tera Context Engine helps organizations create, govern, and discover trusted data products through a shared contextual foundation. Business concepts, glossary definitions, asset mappings, semantic relationships, governance controls, quality information, ownership, and lineage can be organized into reusable knowledge products that support multiple agents and use cases. This business intent is then connected to certified data products, enabling users and agents to discover relevant assets based on meaning and purpose rather than technical table names or system-specific metadata. Instead of rebuilding context for every initiative, organizations can reuse previously defined and approved knowledge, making governed data products easier to create, understand, trust, and apply across the enterprise.

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CROSS-INDUSTRY

Trusted agent grounding

BUSINESS PROBLEM

Agents operating directly on raw enterprise data may retrieve accurate records but still misinterpret their significance. Without approved definitions, policies, and relationships, a technically correct answer can remain operationally wrong.

CONTEXT-POWERED OUTCOME

Relevant glossary terms, knowledge models, trusted data products, policies, and semantic relationships are delivered as grounding context when an agent reasons over a business request. Tera Context Engine provides this shared enterprise understanding, helping different agents interpret the same information consistently and align their outputs with the way the organization operates.



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CROSS-INDUSTRY

Lineage-aware decision support

BUSINESS PROBLEM

Users may hesitate to act on AI recommendations when they cannot see where the supporting information originated, how it was transformed, or which business rule shaped the result.

CONTEXT-POWERED OUTCOME

Source provenance, transformations, data-product relationships, and governed definitions accompany the business context used by the agent. With lineage supplied through Tera Context Engine, recommendations become easier to inspect and explain. Users can understand both the proposed action and the information path that contributed to it, creating a stronger foundation for accountable decision-making.



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Building enterprise context: A practical starting point

Organizations often ask where to begin with Tera Context Engine. The answer is rarely to start with the most complex agent. The most successful programs begin by identifying a high-value business decision and then encoding the knowledge, definitions, relationships, and governance required to support that decision. The objective is not to build a single use case. The objective is to build reusable context that accelerates every future use case.

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Step 1:
Identify high-value business decisions

START WITH DECISIONS THAT

- Occur frequently
- Have measurable outcomes
- Depend heavily on business context
- Already leverage trusted enterprise data

EXAMPLES

- Customer retention
- Claims investigation
- Care gap identification
- Supply chain disruption response



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Step 2:
Build shared business understanding

CAPTURE

- Business glossary terms
- Domain definitions
- Policies
- Governance controls
- Entity relationships

The goal is to encode how experienced employees interpret information.



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Step 3:
Create reusable knowledge products

Package context into governed assets that can support multiple use cases.

EXAMPLES

- Customer knowledge product
- Claims knowledge product
- Supplier intelligence product
- Patient journey product



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Step 4:
Scale across agents

Every new agent should consume existing context before new context is created.

The organizations achieving the fastest AI adoption aren’t creating more agents; they’re creating more reusable understanding.



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The enterprise context advantage

For years, the goal of enterprise data platforms was to make information available. The goal of enterprise AI is fundamentally different. AI does not simply require access to information. It requires access to understanding.

Organizations already possess decades of institutional knowledge embedded within their data foundations, governance frameworks, business processes, and operational decisions. The challenge is making that knowledge available at the moment an AI system needs to reason, recommend, or act.

That is the role of Tera Context Engine. By transforming business glossaries, industry knowledge models, semantic relationships, governance policies, lineage, and data products into reusable context, organizations can move from AI that retrieves information to AI that understands what that information means within the business.

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Why context matters more than models

As AI becomes increasingly accessible, models will become less differentiating.

Context will not.

Competitors can access similar foundation models. They can purchase similar infrastructure. They can deploy similar AI frameworks.

What they can't easily replicate is the business knowledge accumulated across years of customer relationships, operational experience, governance policies, business rules, and enterprise decision-making.

Organizations that successfully operationalize this knowledge create a lasting advantage: one that improves every future AI initiative rather than every future model.

The organizations that will lead in enterprise AI aren’t those with the largest models. They’re those whose AI understands their business most deeply.

Why Teradata is different

Many AI vendors focus on helping organizations connect AI to data. Teradata focuses on helping AI understand the business behind the data.

Tera Context Engine provides the enterprise understanding layer that connects business meaning to AI through:

- Semantic relationships
- Governance and stewardship
- Lineage-aware context
- Trusted agent grounding
- Business glossaries
- Industry Knowledge Models
- Knowledge products
- Knowledge graphs

This allows context to be created once and reused across multiple agents, workflows, and business functions rather than being rebuilt for every individual use case.

The result is a foundation that becomes stronger with each deployment, enabling organizations to scale AI while maintaining consistency, governance, and trust.

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The compounding value of context

Every business definition captured, every relationship mapped, every knowledge product published, and every governance rule codified strengthens every future AI initiative.

Unlike traditional AI projects that often begin from scratch, context-powered systems continuously build upon the knowledge already created. Each use case enriches the next. Each knowledge model becomes a reusable asset. Each agent benefits from a growing understanding of how the organization operates.

Over time, this creates an intelligence layer that becomes uniquely representative of the business itself.



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Your next step

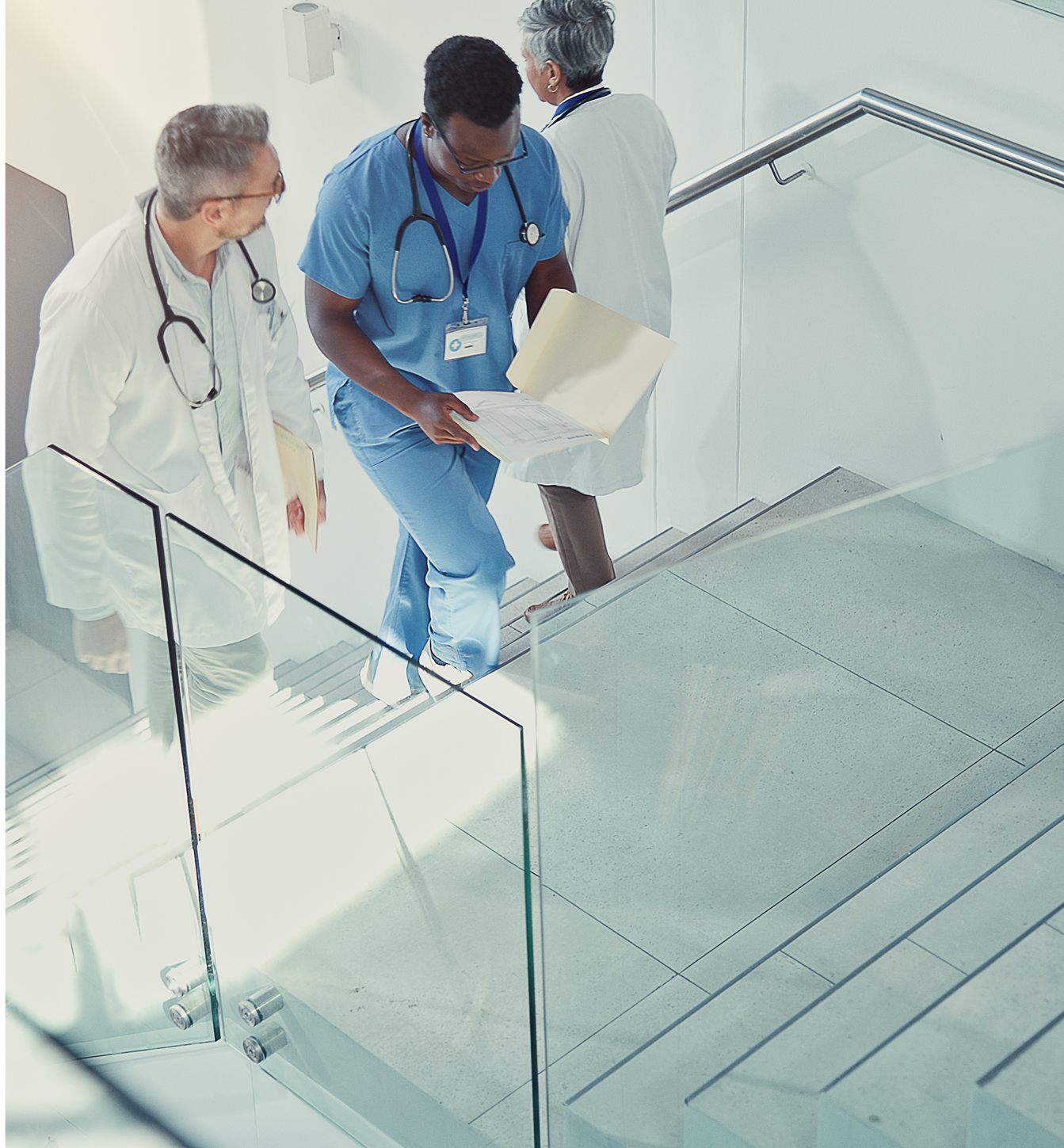
Most organizations don’t need another AI pilot. They need a repeatable way to transform enterprise knowledge into trusted, scalable business outcomes. Start with a decision that matters:

- A customer at risk of churn
- A claim requiring investigation
- A patient requiring intervention
- A supplier disruption impacting production

Then identify the business context that experienced employees use to make that decision successfully and make that knowledge available through Tera Context Engine.

The value of AI doesn’t begin with a model.

It begins with context.



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Ready to build your context advantage?

Your organization has already invested years building data foundations, governance frameworks, operational processes, and institutional expertise.

The opportunity now is to activate that knowledge.

Talk with Teradata about identifying your highest-value context-powered use case and establishing the foundation that can support every AI initiative that follows.

Build context once. Reuse it everywhere. Scale AI with confidence. Because the future belongs to AI that understands your business, not just your data.

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