RELTIO®

The 10 data rules to win in the age of intelligence

Authors:
Manish Sood
Founder and CEO of Reltio

Venkat Venkatraman
Professor Emeritus at Boston University Questrom School of Business

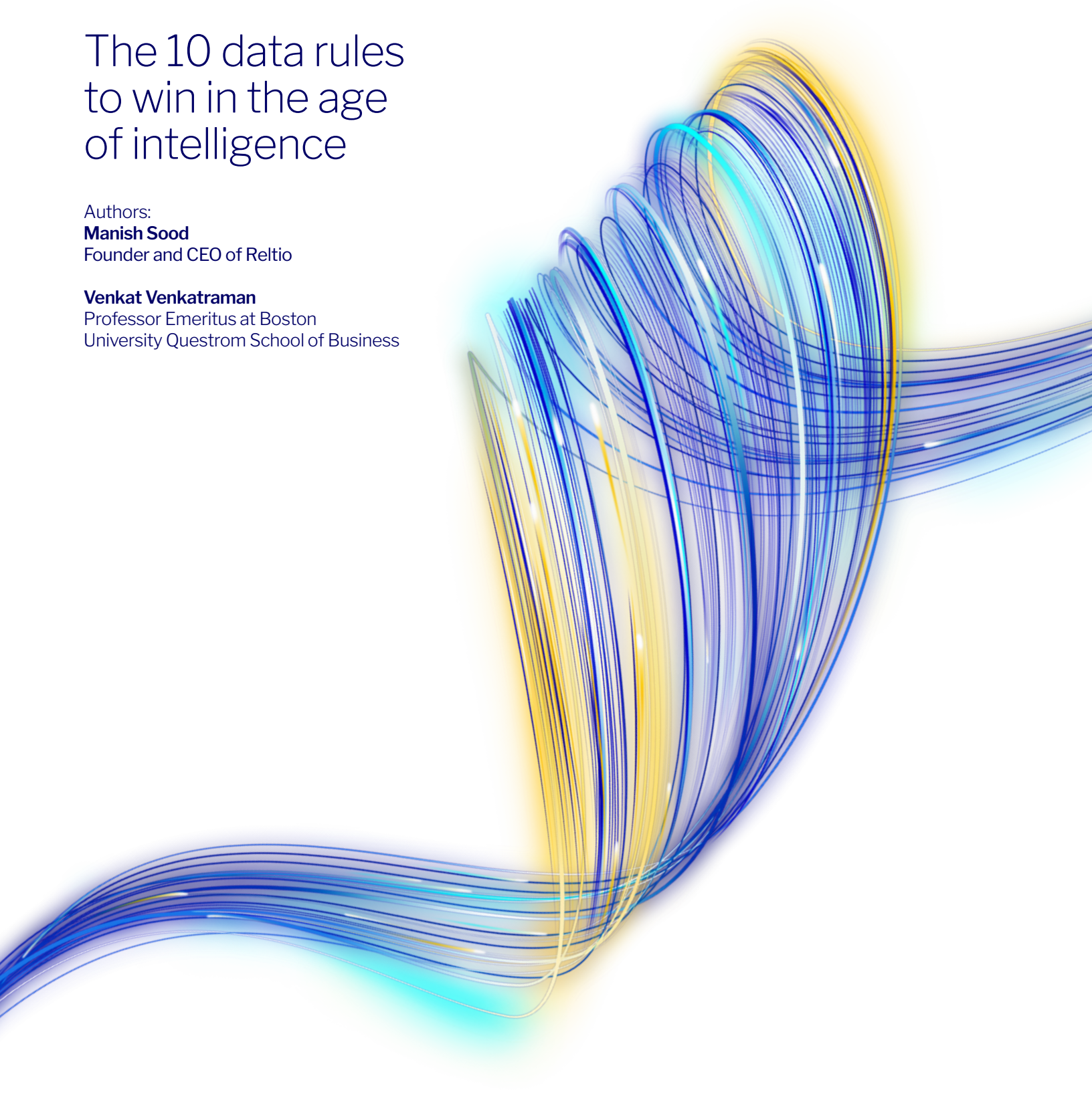


Table of Contents

Why new data rules are critical in the age of intelligence

To understand how modern data management is driving smarter business, imagine a trip to McDonald's a decade ago.

Guests walked up to a counter, described what they wanted – often changing their minds in the moment – and then waited while an employee struggled to input that into a point-of-sale system. A few long minutes later, the order would arrive, mostly correct but sometimes containing an error. Food might be returned and tossed, or the hungry but unsatisfied customer might grudgingly eat it.

Today, McDonald's full embrace of data throughout its business allows it to offer personalized offers, mobile ordering, and in-restaurant kiosks. An AI-powered supply chain and real-time performance tracking have streamlined workflows, reduced waste and improved reliability and wait times. More of those hungry customers are getting exactly what they want and leaving satisfied. McDonald's is playing by a set of new rules–where data is at the center of how it operates and delivers value.

Over the past decade, businesses have invested billions in digitizing their assets, convinced that volume and "big data" would lead to better decisions and a competitive advantage. Instead, more often than not, those repositories became digital landfills, siloed pools of information that offered little value. Data became something to manage, not something to activate. Not something central to strategy. Now, the game has changed. And new rules are needed.

We're entering the age of intelligence, when AI agents generate content, make decisions, and continuously learn. In this environment, the legacy rules of data are cracking. Most companies still treat data as a back-office asset—something to collect, store, and protect. That mindset is obsolete. Data can't sit still anymore. It must move, connect, and inform every part of the business in real-time.

The Industrial Age was built on physical assets and hierarchical control. The age of intelligence is being built on data strategies and digital infrastructure that unlock autonomous decision-making by humans and machines at unprecedented scale and speed.

Key takeaways:

Architect data for action, not storage. Transform data from static assets into real-time, connected intelligence layers that drive operational decisions and adaptability.

Compete on data velocity, not volume. The speed at which data is turned into insight is the new competitive edge—real-time beats big data.

Unify and trust your data across boundaries. Success in the age of intelligence depends on clean, governed data that flows seamlessly across internal silos and external ecosystems.

Design operations for human-AI collaboration. Empower autonomous systems with feedback loops, while enabling seamless coordination between machines and people.

Elevate data strategy to business strategy. Make data literacy, strategic investment, and governance core leadership priorities—not just IT concerns.

As agentic AI systems begin making millions of decisions autonomously and in collaboration with humans, the winners will be those who architect superior data strategies and link them throughout their business operations. Those who do will enhance growth opportunities, mitigate risk and improve customer experience, compliance, and efficiency.

The new rules for enterprise data

Examining these trends reveals 10 new data rules for success in the age of intelligence. Companies that adopt these rules can utilize them as a strategic playbook for this transformation, where unified, trusted data enables both human insight and AI to operate seamlessly across entire business ecosystems.

We divide the rules into three categories: (1) Business Strategy, (2) Investment, and (3) Operations. These categories reflect the core levers leaders must pull to compete.

Business Strategy defines how data creates advantage, from real-time decisions to ecosystem collaboration. Investment focuses on building the right data foundations—unifying platforms, enabling access, and developing talent. Operations is where strategy and investment turn into action, with AI and humans working side by side.

Thinking across all three dimensions ensures that data isn't just a technology issue—it's a company-wide capability for growth, innovation, and resilience. The time to act is now.

Part 1: Business strategy, rearchitected.

Rule #1: Architect data like a neural network, not a filing cabinet

In the early 2010s, "Big Data" was hailed as the next frontier of business advantage.

Companies raced to collect and digitize vast volumes of information, investing heavily in data lakes and storage infrastructure. For many large enterprises, however, the movement fell flat. Rather than using data to drive decisions or enhance customer experiences, they became skilled at stockpiling it—amassing petabytes with little strategic application.

Consider Sears, for example. Despite being an early adopter of data lakes, Sears struggled to translate its vast troves of data into actionable insights or operational agility, highlighting that simply amassing data was insufficient to address its underlying business challenges.

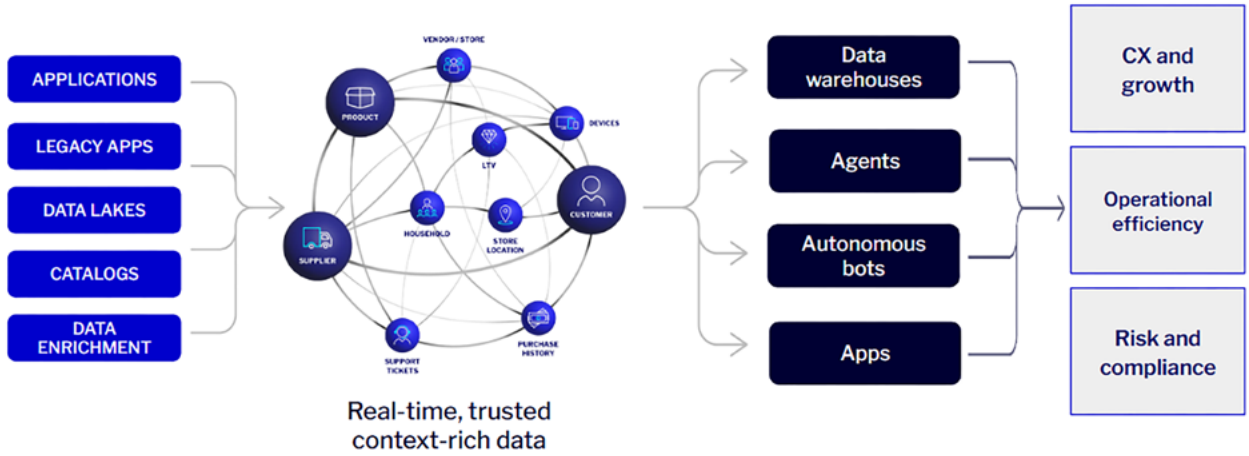
GE, too, invested billions into Predix, its industrial IoT (Internet of Things) and Big Data platform, but failed to translate the data into sustainable business value.

These examples underscore a hard truth: collecting data is not the same as activating it. Without interoperability, context, and access, data becomes inert, just another line item in IT spending. Real transformation only happens when data is architected for action.

Modern, intelligence-age companies see data differently: they structure it as interconnected networks, enabling every data point to support decisions and fuel operational transformation across the entire enterprise instantly.

Applications and business processes constantly evolve, and with the rise of agentic AI, this evolution is expected to accelerate. Amidst this rapid change, data remains the consistent intelligence layer companies rely upon. To fulfill this role effectively, data must be inherently interoperable, accessible, and applicable across shifting contexts without constant rebuilding.

Exhibit 1: Real-time, context-rich multisource data fuels agentic transformation



Ant Financial is an example of a company getting data right. Its unified data architecture processes billions of transactions each day, powering real-time fraud detection, instantaneous credit approvals, and dynamic risk assessments. Ant's AI-driven systems autonomously execute over 300 million decisions daily, fully leveraging integrated and interoperable data streams. This neural, interconnected approach underpins Ant's $150 billion fintech ecosystem.

To thrive in the age of intelligence, your strategic playbook must prioritize a robust, interconnected, and interoperable data architecture—the enduring intelligence layer your company will rely upon.

Rule 2: Compete on data velocity, not data volume

Advantage in the age of intelligence arises from converting data into decisions more swiftly than competitors can process the same information. The speed of insight determines market advantage. Industrial leaders who have mastered linear speeds of evolution now face competitive threats from innovators with a natural talent for operating at nonlinear speeds.

McDonald's data transformation, for example, has significantly enhanced the fast-food customer experience, optimized operations, and driven smarter business decisions through the use of advanced data analytics and digital technologies. By leveraging personalized offers, mobile ordering, and digital kiosks, McDonald's delivers greater convenience and engagement, improving customer satisfaction and loyalty. Operational efficiency has increased with the use of AI-powered supply chain management, real-time performance tracking, and streamlined restaurant workflows, resulting in reduced waste and wait times.

Data analytics provides deep insights into customer behavior and market trends, enabling predictive modeling and more informed decisions on menu development and marketing. Cloud computing, AI, machine learning, and big data analytics collectively support McDonald's agility, scalability, and continuous innovation, positioning the company to respond swiftly to evolving customer needs and market demands.

Exhibit 2 illustrates how leading organizations—across fast food, insurance, luxury retail, and digital payments—are delivering trusted, unified data in milliseconds to power real-time decisions and personalized experiences today. From kiosks to mobile apps to in-store tablets, these use cases show what's now expected everywhere: data-driven engagement that's instant, accurate, and seamless. Whether a customer is ordering lunch, enrolling in a service, shopping in-store, or redeeming an offer online, they now expect the same level of intelligent, responsive interaction—anywhere in the world. Enterprises that fail to meet these expectations risk losing customers to faster, more intelligent competitors who can deliver in the moment.

Exhibit 2: Today's consumer expects service in milliseconds, not days, weeks, or months

Velocity of trusted data	Use case	
50ms	Kiosks at leading global fast food franchise locations	
150ms	Service enrollment at leading global insurer	
100ms	In-store sales reps at luxury apparel retailer	
50ms	Cashback offers for online payments leader	

Most industrial companies have inherent weaknesses in their ability to have an end-to-end real-time view of their operations. Their "data-at-rest" will not be enough to win against companies that have mastered "data-in-motion."

Rule 3: Orchestrate a unified data ecosystem beyond organizational boundaries

Industrial companies secure proprietary information within their corporate boundaries. Intelligence companies develop unified data flows that extend across domains and internal and external boundaries, encompassing supplier networks, customer touchpoints, and partner ecosystems, thereby enhancing competitive advantage through shared intelligence.

Today's enterprise requires a modern data platform that unifies data from multiple sources, both within and outside an organization. It requires unified internal enterprise data—such as customer, product, supplier, and transaction records—with valuable external third-party data, including industry data, enrichment sources, or regulatory information. This combination creates a single, trusted, and context-rich view of key business entities and their relationships in real time.

Why is this important? Enterprises face huge pressures to make fast, accurate decisions powered by AI and automation. But siloed data spread across systems or outdated info leads to mistakes, inefficiency, and compliance risks. By continuously integrating external data with internal data and governing it effectively, enterprises will have a reliable and comprehensive data foundation that fuels operational workflows, AI agents, and analytics with up-to-date insights. This reduces risks, improves customer experiences, accelerates innovation, and lowers costs.

AbbVie is a biopharmaceutical company focused on developing advanced therapies to treat complex diseases. Facing challenges with multiple legacy data management systems that caused poor performance, data latency, and a lack of a unified view of healthcare providers and products, AbbVie sought a modern solution.

By modernizing its data architecture, including the transition to the cloud, AbbVie unified and cleansed its internal customer and product data, and enriched it with trusted external healthcare provider and affiliation data. This created comprehensive, real-time, trusted profiles that improved sales rep productivity by delivering fast, accurate information and enabled better compliance and marketing efforts. The platform's cloud-native architecture also facilitated seamless integration with CRM and analytics systems, enabling AbbVie to scale efficiently and respond quickly to business changes, ultimately enhancing operational agility, data trust, and business growth.

In the age of intelligence, the winners will be those who can dynamically assemble capabilities across multiple companies, leveraging real-time information about their competencies and capacities.

Rule 4: Build data trust as the foundation for autonomous systems

Industrial companies managed risk through human oversight and approval processes. Intelligence companies must build data trust that enables agentic AI systems to make autonomous decisions at scale while maintaining stakeholder confidence.

Mastercard, for example, processes roughly 1 billion transactions per day at a rate of about 5,000 per second. Over the years, it has invested in developing AI fraud detection systems on a unified data architecture capable of handling transactions with 99.9% accuracy, autonomously blocking suspicious transactions while maintaining customer trust. Trust is their business currency, which will be central as they embark on new innovations, such as Agent Pay, aiming to become a payment authority in agent commerce and competing against digital giants like Apple, Google, Samsung, PayPal, and others.

Data trust is also becoming crucial in health and wellness, with rising expectations as wearable technologies are poised to transform healthcare. Battle lines will be drawn and redrawn as health and wellness players position themselves as the trusted custodians of individuals' health and wellness. As people become more aware of how the tech industry has accumulated and leveraged data over the past two decades, the winners will be those who gain consumer loyalty based on a track record of data trust.

Part 2. Investment, rearticulated.

Rule 5: Create a cohesive enterprise-wide investment logic

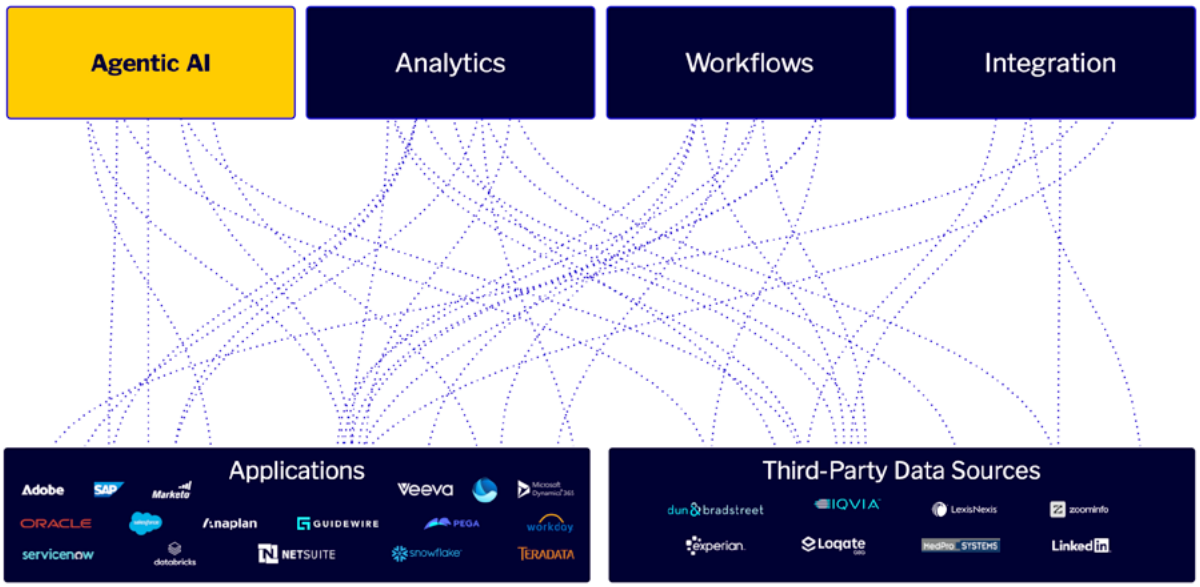
Investment in data during the industrial age primarily aimed at optimizing existing processes, funded as a patchwork of projects defined by functions, domains, or geographies.

As a result, the C-suite lacked comprehensive, real-time visibility into overall data investments across all operations. Such practices inevitably meant that the investment wasn't optimized, with some domains receiving excessive funding or resources while others were neglected.

Furthermore, investments in data concentrated on current operations often came at the expense of data that could serve as a catalyst for new innovations. The state of enterprise data at many companies today is depicted below: fragmented, siloed, and inefficient.

Agentic AI requires the full picture, but legacy systems and approaches pose a significant barrier to achieving this.

Exhibit 3: AI can't find the truth buried in the enterprise data mess



The age of intelligence requires an enterprise-wide view of data, one that balances the optimization of today's operations with the creation of future capabilities. Only by adopting a unified, enterprise-wide data strategy can companies ensure that their investments simultaneously enhance current operations through automation while augmenting human capabilities with powerful digital technologies that rely on a single unified data foundation.

Fidelity Investments' move to the cloud was more than an infrastructure upgrade—it was a strategic shift designed to unlock enterprise-wide data liquidity and agility.

By replacing over 100 fragmented data warehouses and data marts with a single, cloud-based data repository, Fidelity eliminated the operational drag of scattered data silos.

This unification enabled teams across the enterprise to access a consistent, trusted version of data, transforming what was once a maze of disconnected sources into an internal data marketplace. This architecture ensures that data, like any financial asset, can flow easily to where it's needed without losing value.

The result is faster insight delivery, reduced redundancy, and a stronger foundation for innovation and compliance—advantages that simply aren't possible when data remains scattered across pockets of the enterprise. For organizations looking to modernize, Fidelity's example underscores the importance of consolidating data into a single enterprise layer as a critical first step.

Rule 6: Monetize data through autonomous value creation

Industrial companies created value through human labor applied to physical resources. Intelligence companies create value through agentic systems that continuously generate insights, optimize processes, manage risks, and create customer experiences without human intervention. In doing so, new avenues to monetize data emerge.

Aircraft and their engines are classic businesses that define the industrial age. Rolls-Royce's "Power by the Hour" model uses unified aircraft engine data to enable autonomous predictive maintenance, fuel optimization, and performance enhancement.

Their digital systems, under the "R2 Data Labs" organization, continuously create value for airlines through reduced downtime and improved efficiency, generating multiple billions of dollars annually from data-driven services, rather than just engine sales.

Beyond aircraft, the age of intelligence presents numerous additional opportunities to monetize data, provided the data is integrated and accessible for agentic value creation and capture.

Mercury Insurance, a major U.S.-based personal and commercial insurance provider, serves millions of policyholders across auto, home, renters, and business lines. Known for its agent-driven model, Mercury operates in highly competitive markets where personalization, efficiency, and data-driven operations are key to growth.

Mercury created a real-time, unified data backbone to empower its agents with context-rich customer and policy profiles. This not only reduced call times and increased quote accuracy but also enabled automated, personalized cross-sell opportunities, driven by ready-to-consume data that was previously fragmented across 13 systems.

With trusted information fueling its operations, Mercury shifted from reactive customer service to proactive value capture.

Mercury Insurance's solution:

Unified source of truth across lines of business

- Consolidated data into >17M individual, 500K organization, 17M vehicle, 6M policy, 4M property, and 13M quote records.

Agent enablement with good performance

- Powered customer 360 views with households, policies, potential upsell/cross-sell opportunities, and prior balances.

Analytics-ready data for AI

- Fueled the AWS Redshift data warehouse and S3 data lake with clean, enriched data to power analytics and AI.

Real-time and batch integration

- Integrated modern apps such as Guidewire with real-time Reltio APIs, and legacy systems relied on batch processing.

Rule 7: Embed data literacy across the enterprise

Industrial organizations have historically separated data analysts from decision-making managers. Intelligence organizations now require embedded data literacy so that every role, from frontline workers to C-suite executives, can collaborate effectively with agentic AI systems.

JPMorgan Chase requires all of its nearly 300,000 employees worldwide to complete data literacy training, enabling seamless collaboration between humans and AI across investment banking, retail banking, and asset management.

The CEO's vision is that while technology may serve as a major catalyst, the force multiplier necessitates that humans know how to be equal partners in the age of intelligence.

When investment advisors work alongside AI portfolio optimization tools, when loan officers collaborate with predictive risk assessment systems, and when executives interpret autonomous market analysis, the entire organization should transform into an intelligence-amplified entity. Only then will JP Morgan lead in the new age.

Our message is that data literacy is essential. It is not limited to certain levels or functions. Every part of modern organizations will be infused with data at its core, and every decision will depend on processing real-time data at scale and speed. Those who cannot step into the role of 'humans-in-the-intelligence-loop' will find themselves at a disadvantage in this rapidly changing global labor market.

Part 3: Operations, reengineered.

Rule 8: Deploy agentic intelligence with feedback loops that learn and decide autonomously

Industrial systems have traditionally relied on human operators to analyze data and make informed decisions. We are at a pivotal moment, with intelligent systems capable of deploying agentic AI that continuously learns from integrated data streams and makes autonomous decisions, thereby enhancing business outcomes without requiring human intervention.

There's no doubt that a company like Spotify could not have existed in the industrial age. Its recommendation algorithms—the core of what makes it distinct—process unified user behavior data from 500 million users, making billions of autonomous content decisions every day.

These systems continuously learn from listening patterns, automatically optimizing playlist creation, artist promotion, and podcast recommendations. Spotify's music graph is based on autonomous intelligence that drives the business model, generating about $15 billion in annual revenue (and capitalized at around $150 billion) through decisions too complex and rapid for human management. We will see new business models emerging that are rooted in such agentic intelligence.

CarMax stands as a striking irony in retail history: it has far outlived its parent company, Circuit City, which filed for bankruptcy in 2009, while CarMax has continued to thrive in an age of digital upstarts. The key difference? CarMax recognized early on that the future belonged to digital-native disruptors and that consumers increasingly demanded frictionless, no-haggle online experiences for car shopping, financing, and trade-ins—whether online, in-person, or over the phone.

CarMax solution:

Personalized and responsive omnichannel experience.

- Customers and prospects enjoy seamless experiences, from initial online car searches to in-store purchases.

Standardized, unified view of vehicle specifications.

- Consolidated, curated views across internal and external sources improve pricing and merchandising.

Trusted data analytics for timely insights.

- Comprehensive, unified data for customers and vehicles delivers actionable insights into customer behaviors.

Aggregated source data for audits and compliance.

- Unified data with lineage and history enables internal process audits and simplifies privacy compliance.

Launched by Circuit City in 1993 as a traditional brick-and-mortar venture, CarMax could have easily followed its parent into obsolescence. Instead, it pivoted to a digital-first, data-driven customer experience, integrating autonomous intelligence across every interaction. By harnessing real-time, connected profiles of customers, vehicles, and transactions, CarMax's intelligent systems personalize offers, trigger next-best actions, and adapt buying journeys on the fly, without waiting for

human input. Sub-second data flows power everything from inventory recommendations to order routing, enabling CarMax to operate with the speed, precision, and autonomy that modern consumers expect, effortlessly matching the agility of digital disruptors on an enterprise scale.

Rule 9: Design unified human-AI data collaboration

Industrial work separated human decision-making from automated processes. Work in the age of intelligence requires unified collaboration where humans and agentic AI systems share data seamlessly, with each contributing their unique capabilities to optimal outcomes.

For example, UPS's ORION system combines package delivery data with human driver expertise, enabling agentic route optimization to work alongside drivers' knowledge of local conditions. This unified approach decreases delivery miles by 100 million annually while enhancing customer satisfaction, illustrating that human-AI data collaboration outperforms either method individually. The same principle applies to FedEx, Amazon logistics, Uber, and others, where data must be crafted for seamless coordination between humans and machines.

Today, the focus is on a narrow view of "Agentic AI," where machines act independently of humans. While those demonstrations are exciting, they are also limited since most organizations will not operate autonomously with AI agents without human involvement.

Instead, we will witness organizations where there is seamless coordination between humans and machines, both virtual and embodied, developing routines that will challenge companies that haven't established a unified data infrastructure.

Rule 10: Transform data governance into a strategic advantage

Industrial compliance focused on internal risk management and regulatory requirements. Intelligence governance must enable confident deployment of agentic AI systems across extended ecosystems while creating market differentiation through superior data stewardship.

> Apple has effectively leveraged data governance as a strategic advantage within its ecosystem. By emphasizing user privacy and security through measures like App Tracking Transparency and data minimization, Apple builds user trust and fosters customer loyalty.

This approach attracts users who prioritize data protection, thereby strengthening the ecosystem and creating a competitive edge. Apple's tightly controlled "walled garden" enables stringent quality control and consistency across devices and services, which enhances the user experience and fosters loyalty within the ecosystem. This focus on robust data governance not only distinguishes Apple from more open ecosystems but also ensures that the ecosystem remains appealing to both users and high-quality developers.

Digital companies, such as Apple, excel in exemplary practices, while traditional companies have also implemented solid governance to transform ecosystems into sources of advantage. TSMC's semiconductor data governance framework facilitates autonomous manufacturing optimization, all while upholding the security and quality standards that attract 90% of global chip design companies.

Empire Life solution:

Improved customer experience

- Improved first-call resolution by 60% after upgrading data unification and management capabilities.

Increased data pipeline quality

- Reduced its suspect match pool by 60% after implementation and experienced 10-30% faster data retrieval via API calls compared to a legacy provider.

Higher IT team productivity:

- Minimized time IT spends supporting customer service representatives and other business users, allowing it to focus on more value-add activities.

Easier and broader access to trusted data

- A friendly user interface enabled users across the business to access trusted data.

Their governance excellence should empower agentic systems to enhance production throughout the semiconductor ecosystem, generating a competitive edge through reliable autonomous operations.

For many organizations, data governance is viewed as a compliance necessity. But Canadian insurer Empire Life turned it into a strategic differentiator—streamlining operations, accelerating value delivery, and strengthening trust across its entire ecosystem.

By modernizing its data backbone, Empire Life centralized governance with real-time visibility, audit trails, and role-based access, making data stewardship intuitive and actionable across teams. This shift empowered business users, not just IT, to take ownership of data quality and unlock new use cases. Empire Life's governance model didn't just reduce risk. It created a trusted foundation that improved every interaction across customer service, marketing, and compliance.

When governance is embedded into the operational fabric, it becomes a force multiplier across the ecosystem.

CXOs: Can you meet the moment?

You recognize the inflection point. You are aware that the shift to the age of intelligence is accelerating at an unprecedented rate. Now is not the time to wait. Or to act in haste.

> *Our purpose in this paper is to elevate the role of data as the catalyst in this transformation. These 10 new data rules represent the strategic foundation for competing when agentic AI systems make most operational decisions, and unified data flows determine competitive advantage. Companies that master these data strategies won't just optimize current performance—they'll architect the intelligent systems that define their industries.*

This task cannot be delegated to technical specialists. This is strategic, as data is the driver of advantage in an intelligent world. The transformation from industrial to intelligence-age competition is necessarily a revolution in data strategy. Those who architect superior data capabilities will lead; those who don't will follow systems designed by their competitors.

The data advantage framework: 10 rules for competing in the age of intelligence

The 10 rules function as an integrated system. Strategy defines the vision, investment builds the capability, and operations turn that capability into competitive execution. Together, they form the blueprint for data-driven leadership in the age of intelligence.