Rocket® software

From Legacy to Leading Edge:

How Mainframe Data Can Transform AI and Analytics

A whitepaper for Chief Data and Analytics Officers

Contents

Executive Overview

As the top data strategist for your company, are there significant concerns that still keep you up at night, like:

- Are we moving fast enough?
- Are we making the most of every byte of data we have?
- Are we orchestrating data as a true business asset?
- Are critical sources still untapped, leaving massive business value on the table?

Driving competitive advantage through enterprise data, actionable insight, and trustworthy AI is central to your mission. And yet, despite decades of investment, most organizations continue to underleverage one of their most strategic assets: mainframe data. A recent study of 200+ senior data and analytics leaders reveals both the scale of this untapped opportunity — and the real-world challenges that stand in the way.

This paper interprets these survey findings through your lens, explains what these findings mean for your data strategy and governance, defines a clear, actionable path forward — and finally, outlines how Rocket® DataEdge can support your journey. Let's end those sleepless nights.
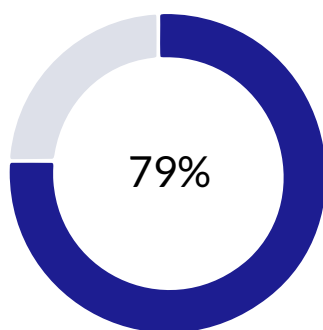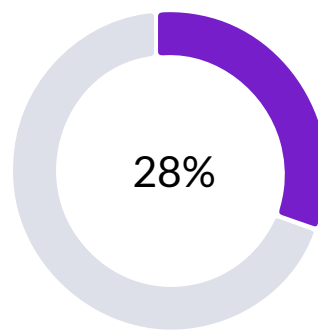
Strategic Findings: What CDOs & CDAOs Need to Know

AI and analytics are top priorities — but data gaps remain

92%

79%

28%
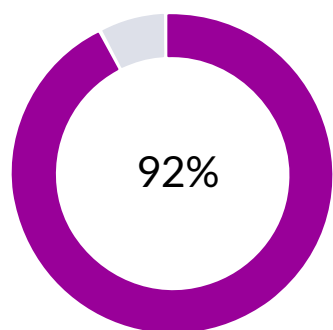
92% of organizations are executing active AI/analytics programs, often five or more simultaneously.

79% of IT executives agree that mainframes are essential for enabling AI-driven innovation and value creation.

Only 28% currently use mainframe data extensively in these initiatives, with 72% of those admitting to only limited access and integration.

Imagine if Formula One teams ran their races on half a tank of gas. That would be absurd. Well, organizations are clearly driving AI and analytics projects hard, but very few are tapping the mainframe data that could supercharge them. As a result, their initiatives are underpowered and results are limited. AI and analytics demand more fuel than we're giving them.

Mainframes: Your largest unmined data source

- 100% confirm their mainframes house their most critical transactional, operational, and historical records.

- Mainframes still handle 90% of all credit card transactions and process 68% of the world's production IT workloads, yet they account for only 6% of IT costs.

The reality is mainframes aren't an open box where you can just reach in and grab what you need. All that valuable data is locked away in a vault, protected by legacy technology, proprietary formats, and specialized interfaces. Data visionaries recognize that this data is more than historical record-keeping — it's a goldmine of untapped potential. It's not about modernizing IT, it's about seeing what the business can achieve by bringing core transactional data into modern analytics and AI platforms. But accessing it feels more like deciphering an ancient language than simply turning a key.

Barriers persist: complexity, security, scalability, and more

- Complexity (59%), security/compliance (56%), proprietary data formats (41%), and skill gaps (31%) are stubborn obstacles.

- 76% find it very or somewhat challenging to access mainframe data and metadata; 42% find integrating it with cloud data sources very challenging.

- Scalability, interoperability, and governance are top of mind, with leaders favoring scalable, pre-built solutions over DIY integration.

Data extraction can be daunting — like trying to dig through granite with a teaspoon. And the people skilled at it are rapidly disappearing. Compliance, privacy, and security worries just keep growing. Interestingly, a Cisco survey said 94% of companies think customers would leave if they don't protect their data. Yet the IAPP found just over 80% of customers say they would *actually* leave after a breach. Clearly, losing trust looms large for all parties. And, with so many formats, databases, storage types, and user requirements spread across the organization, the project plan alone requires genius-level puzzle-solving skills just to keep everyone on the same page and moving forward.

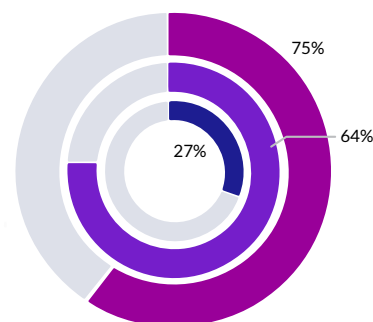## Decision-making stalled by legacy bottlenecks

- 75% don't have mainframe data feeding their analytics.

- 64% report that ease of use for business/non-technical users remains difficult.

- Knowledge workers still waste 27% of their time searching for the data they need to do their jobs.

Clearly, making all your data truly accessible and easy to use for business and non-technical teams is still a major headache. You need data to flow like water, but it's often dammed behind legacy walls. Without leveraging mainframe data for analytics specifically, critical trends and patterns go unnoticed, and strategic decisions are made without seeing the full picture. Simply put, until you bring mainframe data into your analytics ecosystem, you risk making decisions with blind spots and losing out on competitive advantages hiding in plain sight.

Modernization brings new urgency

- Hybrid cloud and unified data strategies are rising priorities.

- More than half of IT leaders see enabling entirely new analytical or business capabilities as the primary driver for leveraging their mainframe data.

- 73% of enterprises have already adopted hybrid cloud strategies, projected to grow to 90% by 2027.

As stewards of enterprise data, you see how the cloud is redefining what's possible — and what's required — for modern applications. But its potential can only be fully realized if it connects effortlessly with what's already running your business. Success depends on bridging distributed systems, mainframes, and cloud environments into a single, cohesive ecosystem. You're no longer just storing data; you're orchestrating it across environments, often in real time. Moving away from piecemeal do-it-yourself solutions just makes sense. Modern applications rely on fast, secure, and unified data. And teams (who already have too much to do and too little time to do it) need to focus on driving value, not wrestling with integrations. It's your job to architect a landscape where this is the default, not the exception.

75%
64%
27%

Decision making stalled by legacy bottlenecks.

90%
73%
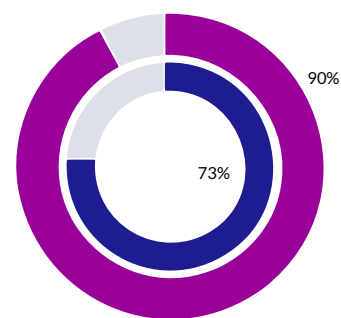
■ Projected growth by 2027
■ Enterprises with hybrid cloud strategies

What This Means for Data Leadership

01

You can't afford to fly blind

In your role, you're expected to *create* impact, not just measure it. If mainframe data remains locked away, your AI/analytics engines are running on fumes. Remember the half-empty gas tank? You might finish, but you certainly won't win. Without mainframe integration, you risk making decisions with incomplete insights, missing operational opportunities, weaker risk management, and customer experience falling behind market leaders.


02

The barriers are real, but not insurmountable

Mainframes were never designed for democratized self-service analytics or dynamic AI. Agility just isn't their strong suit. And the challenge isn't only technical. There are processes, talent, and legacy perceptions to consider. But the right approach can turn that fortress into a launchpad. With today's technologies and partners, you don't have to choose between "safe" and "fast" — you need both.

03

The path forward is strategic modernization — not wholesale replacement

These days, successful data leaders are all in on hybrid architectures. They're the recognized best practice for data management. Real business value is unlocked when you can integrate and govern critical mainframe data seamlessly with everything else, so your analytics and AI tools actually see the whole picture. Leaving your best data stuck in silos just doesn't cut it anymore. Today's businesses move fast and real-time insights drive competitive advantage. In short, breaking down silos is now an imperative.
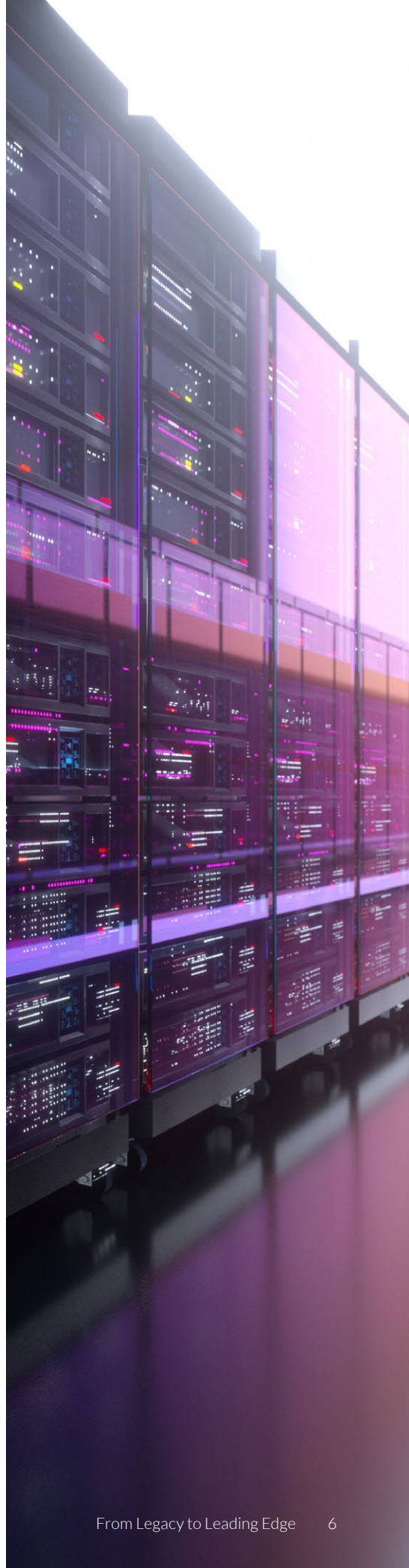
What's next: The Data and Analytics leader's roadmap

01 **Audit and catalog:** Conduct a strategic inventory of your mainframe data. Understand its provenance, value, compliance implications, and alignment to high-impact use cases (e.g., fraud, risk, real-time personalization). Every possible business use can be an idea leading to buried treasure; map it out with intention.

02 **Accelerate secure integration:** Leverage scalable, enterprise-class integration solutions like DataEdge that offer real-time, policy-driven, and automated delivery of mainframe data to your cloud/data lake and analytics environments — with full audit, lineage, and privacy controls. Throw out your chisels (or teaspoons) and start using diamond-tipped drills.

03 **Make data easy to find and safe to use:** Enable easy, governed self-service access for both technical and business users by removing IT bottlenecks while preserving control. Open the vault, but don't leave the door swinging unattended. Business teams do need easy access; compliance and lineage should be built-in guardrails.

04 **Upskill teams, bridge the gap, and strengthen culture:** Don't relegate mainframe skills to folklore. Foster cross-platform data literacy. Train existing teams, leverage expert partners, and break down operational silos. Pair experienced hands with new tech. Your seasoned team knows your business, systems, and data inside and out. They've seen what works (and what doesn't). But they're working with yesterday's tools. At the same time, cutting-edge technology needs real-world context to deliver real results. Matching expertise with innovation accelerates your data modernization and makes sure you get real business value right from the start.

05 **Build data trust and governance into every journey:** You wouldn't send explorers out without a compass. Every modernization journey must keep governance, privacy, and compliance at its core to navigate risk — not just to gain momentum. Ensure all modernization efforts align with evolving privacy, sovereignty, and industry compliance requirements (e.g., DORA, PCI DSS 4.0, NY State, etc.). Automate enforcement and monitoring as you scale.

How DataEdge delivers for data and analytics leaders

Unified metadata and lineage:

Provides a comprehensive metadata view across mainframe, cloud, and hybrid sources for traceability, context, and data transformations — no more guesswork.

Real-time data virtualization:

Queries your entire data landscape without the headaches of physical data movement or integration complexity. Data remains at the source and subject to existing access controls and policies.

Seamless integration:

Automates real-time, bi-directional data replication, transformation, and secure delivery — no more brittle, manual workflows, and no data leakage.

Enterprise-grade security and compliance:

Enables end-to-end encryption, access policy controls, and integrated audit/compliance tooling. Data is protected every step of the way.

Access for everyone:

Breaks down barriers and gives business analysts, data scientists, and decision makers easy, direct access to the information they need, when they need it.

Scalable for tomorrow:

Open integration with mesh, fabric, and modern analytics ecosystems enables expansion without disruption. Bring new clouds, ingest new data, scale up teams — DataEdge adapts smoothly.

Final Word

As a data leader, your value is measured by how well you put your data to work for actionable, trustworthy, and differentiated business outcomes. Integrating mainframe data into your enterprise AI and analytics initiatives is the next frontier.

The mandate is clear: Lead with vision, architect for agility, and ensure that every decision-maker, developer, and business line has what they need to succeed. Fuel the breakthroughs that set your organizations apart. With the right strategy — and the right platform — you won't just keep up, you'll set the pace.

Don't just free your data, empower it with Rocket DataEdge.

Learn More

About Rocket Software

Rocket Software is the global technology leader in modernization and partner of choice that empowers the world's leading businesses on their modernization journeys, spanning core systems to the cloud. Trusted by over 12,500 customers and 750 partners, and with more than 3,000 global employees, Rocket Software enables customers to maximize their data, applications, and infrastructure to deliver critical services that power our modern world. Rocket Software is a privately held U.S. corporation headquartered in the Boston area with centers of excellence strategically located around the world. Rocket Software is a portfolio company of Bain Capital Private Equity. Follow Rocket Software on LinkedIn and X.

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