The App Economy Requires Mainframe Intelligence

ca technologies

Digital Transformation and the Mainframe

Today, customer experience is paramount to business survival. Frankly, every interaction—whether with a bank or even a local gym—is now viewed as mission-essential. And more than simply working, that interaction must delight. Digital disrupters understand this and are harnessing their mainframes to meet the challenges of the application economy.

Mainframes host mission-essential applications that support thousands of applications and devices simultaneously for thousands of users. Consider these statistics:

The growing use of data analytics and mobile—and the transactions they generate—is also adding to your performance pressures.

As an IT leader, your ability to help drive the business forward depends on a high-performance and continuously available environment. And achieving that is critical as your organization continues to transform to enable more digital operations.

Complexity Stalls Performance

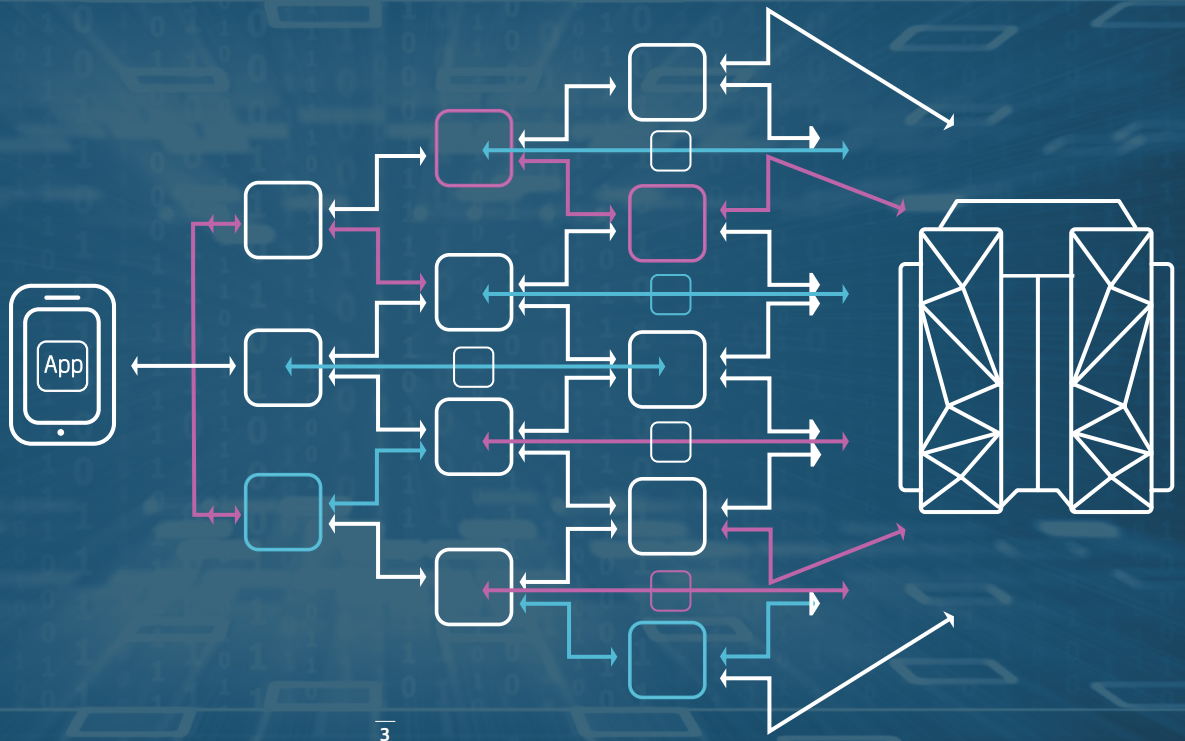
Effectively supporting these new business demands has become more complex and challenging. The increased use of mobile devices alone is driving exponential growth in transaction volumes.

A customer pushes a button on his or her cell phone, for example, to check a bank balance. That single transaction triggers a cascade of transactions as the request is validated and data is accessed, retrieved and then sent back to the customer.

With the growing complexity of these mission-critical apps, a performance alert or system breakdown often results in hours in “the war room” trying to find and resolve the root cause of problems.

This reactive approach to root cause analysis will be difficult to sustain over time given limited budgets and resources. This includes a changing workforce that is increasingly composed of staff with shrinking mainframe skills and expertise.

A single transaction drives up to 100 system interactions.[4]



New Demands Require New Approaches

Every day there are more applications, data, changes and tools to manage. With more pressure to get it right, a status quo response will fall utterly short. And your people alone won't be able to keep up.

The result? Long mean time to resolution (MTTR) and root cause analysis that spark serious repercussions. This includes high costs and lost business opportunities associated with poor performance and downtime.

But there's good news. The next generation of the machine age is making everything smarter. Data analytics are embedded in your everyday shopping experience. Media learns your preferences and makes real-time suggestions. Cars are on the cusp of driving themselves.

And now your mainframe environment can apply machine learning to work more intelligently.

Risks from business as usual

The real-world consequences of long MTTR and root cause analysis aren't pretty:

$1.25 billion → $2.5 billion
The average total cost of application downtime per year for the Fortune 1000.[5]

68% of consumers will abandon an app if it doesn't load in at least 6 seconds.[6]

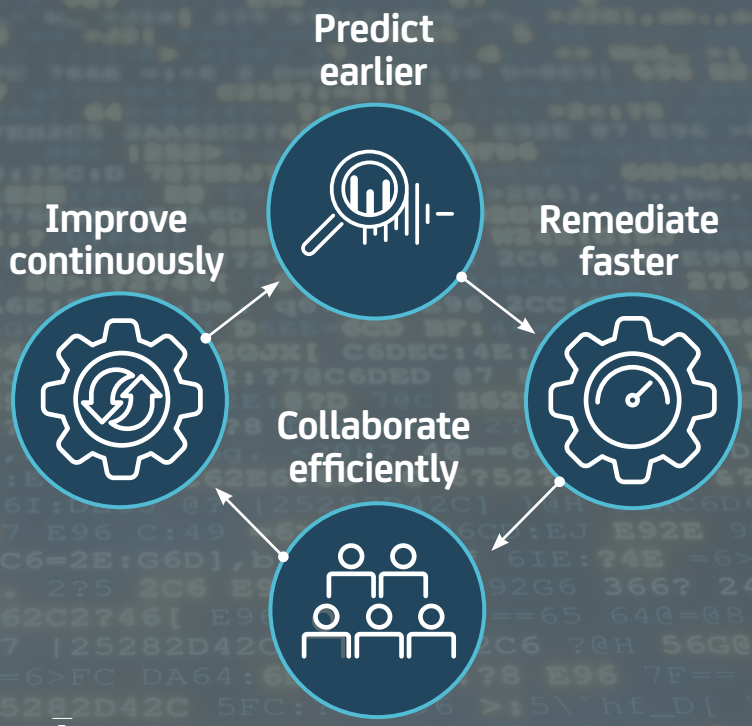
Machine Learning Brings New Intelligence

Your entire staff can work more proactively and responsively in a mainframe environment that incorporates machine learning. Under this approach, data-science algorithms provide your team with embedded and predictive analytics that enable them to prevent and remediate problems faster.

As a result, they can maximize mainframe performance and uptime to better support the business. This approach benefits everyone on your team—from mainframe experts to less-experienced analysts.

Let's see how.

Machine learning and intelligent mainframe operations are your key to driving MTTR toward zero.



Predict Incidents Earlier

Ralph is your go-to person to resolve critical mainframe performance issues. He's increasingly inundated with escalations from Sheila and other analysts, whose limited experience impedes their ability to validate actual performance issues and pinpoint their cause. As a result, Ralph spends a lot of time researching and fighting false alarms. He barely has time to address legitimate performance issues, let alone deliver more value through new business services.

Intelligent mainframe management is proactive.

You can enable Sheila to identify root cause faster, so Ralph stays focused on real performance priorities that run the business. Embedded analytics, which use a combination of data-science algorithms to predict anomalies, make this possible. Specifically, they help you to:

- Detect abnormal patterns of operation
- Compare real-time data to prediction intervals
- Classify alerts into zones of likelihood
- Dynamically set data-driven alert thresholds

Results:
Disruption averted. Happy customers. And Ralph's team avoids wasting time on false positives.

Remediate Faster

With fickle customers and lost business at risk, fast remediation is essential. Yet, analysts like Sheila frequently engage in manual triage to solve problems—toggling among multiple mainframe systems, dashboards and tools to determine root cause. It's a complicated process and Sheila has more questions than answers. That's why she often calls five different people for help—sending out numerous requests to try to get the information she needs. The typical result? Delays and high-cost problem resolution.

Intelligent mainframe management is data-driven.

With intelligent mainframe management, Sheila can handle more performance problems herself since she's able to:

- More easily navigate through a single system to correlate mainframe systems data
- Identify and flag specific patterns like unusual performance spikes

Results:
No more cumbersome, multipane environment to sift through for data. Dynamic alerting and drill-down means Sheila handles problems faster or routes them to the right expert.

Optimize efficiency and skills.

Empowering analysts through dynamic remediation and alerting expedites problem resolution. Meanwhile, the experts on your team are free to troubleshoot your most critical performance issues.

Collaborate More Efficiently

Operating from a single source of truth is fundamental to effective collaboration. But it's not possible if your staff is struggling to pull together, share and report on mainframe performance data. What if you could enable your mainframe analysts and experts like Sheila and Ralph, as well as supporting IT staff, to easily access and analyze this data within a single environment?

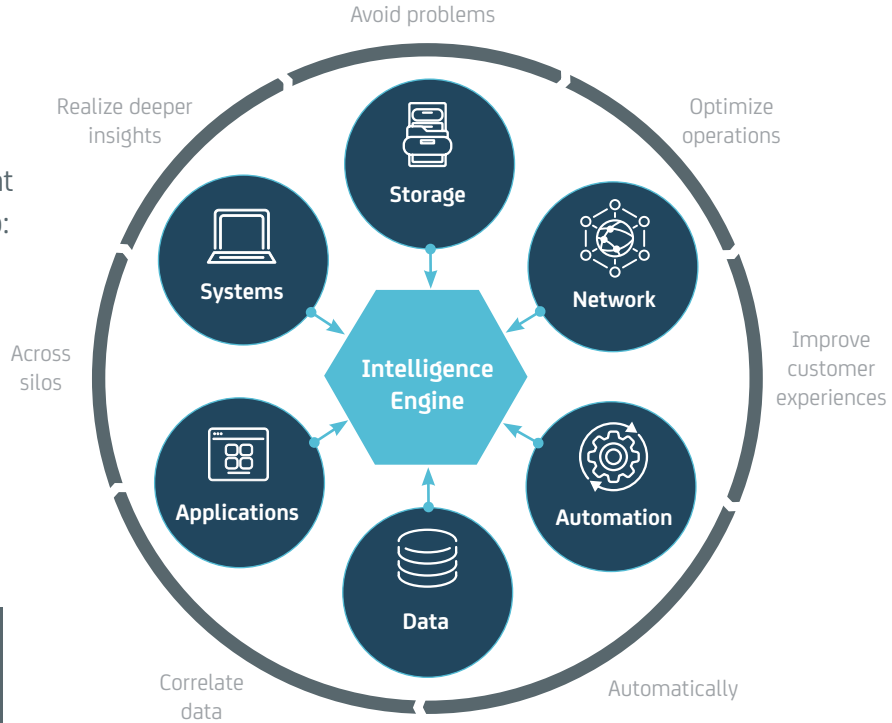
Intelligent mainframe management increases efficiency.

At the heart of intelligent mainframe management is a team-centric work environment in which everyone—both generalist and experts—can work together more efficiently to:

- More easily access and share information from multiple sources.
- Drill down into specific regions of underlying systems, networks and applications.
- Leverage historical analytics and patterns to identify root causes.
- Gather accurate data, metrics and reports to communicate what's happening and why.

Results:
A team that more effectively shares information and builds knowledge day in, day out.

When something goes wrong, you have one place to look:



Improve Performance Continuously

The current approach to managing performance could buckle under the pressure of ongoing digital transformation. For example, Ralph knows how to manage mainframe CICS performance, but now he's also responsible for being the database and network expert.

What's more, mobile apps are resulting in complex interactions and dependencies that strain performance and make problem resolution tricky. And if your analysts and experts, like Ralph and Sheila, still manually gather and apply historical precedents, they can only react to performance problems after the fact.

Intelligent mainframe management is self-learning.

Instead of operating in a reactive mode, Ralph and the team can work in an intelligent mainframe management environment that:

- Applies advanced analytics and machine learning for more dynamic operations
- Captures what parameters were set and actions were taken for specific patterns
- Recommends actions the next time a specific pattern occurs

With intelligent mainframe management, self-learning capabilities and analytics help you continuously maintain high performance while constantly adjusting to new conditions—all with less staff time and effort.

Results:
Analysts and experts who stay ahead of performance problems. High performance in a digital world.

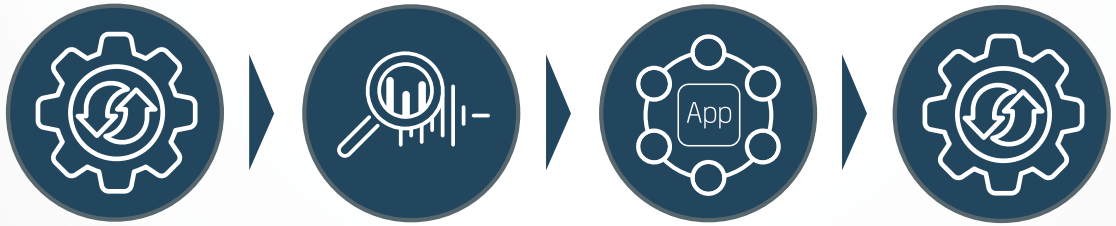
Give Your Mainframe Team the Machine Learning Advantage

Prevent problems from happening in the first place thanks to proactive anomaly detection and dynamic thresholds.

Help your team speed problem remediation through embedded analytics, data correlation and improved collaboration.

Fill the skills gap by embedding intelligence into your existing solutions and making them self-learning.

Combining machine-learning algorithms with embedded intelligence tremendously improves your ability to predict and prevent problems in your mainframe environment.



MODERNIZED VISIBILITY

- Threshold events
- Self-service views
- Modern UX

ANOMALY DETECTION

- Predict anomalies
- Proactive response

PATTERN DISCOVERY

- Topology discovery
- Predict business service disruption

INTELLIGENT AUTOMATION

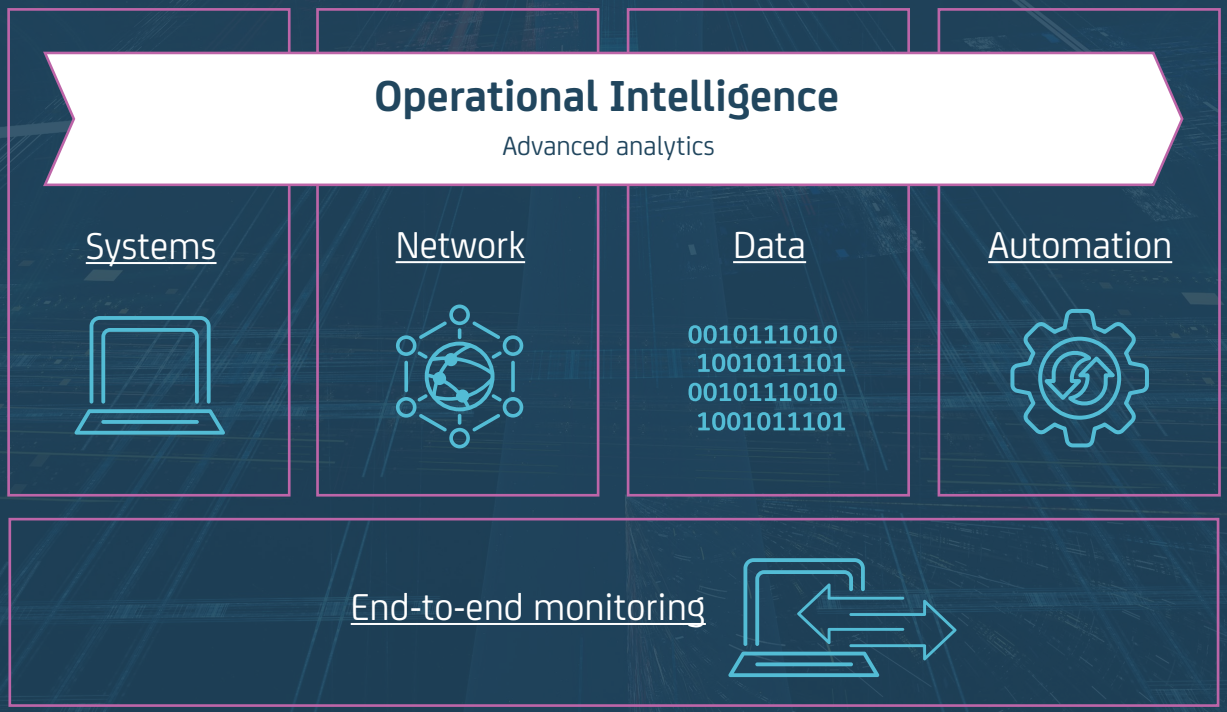
- Root cause analysis
- Resolution guidance
- Automate response

Data and event processing → Machine-learning algorithms → Automation

Mainframe Intelligence from CA Technologies

CA Mainframe Operational Intelligence brings together systems and network management in a single, collaborative environment while incorporating embedded analytics, automation and end-to-end monitoring.

The result is far more than the sum of its parts. It's intelligent mainframe management that equips your team to proactively and more rapidly detect and resolve performance problems through deep-dive analytics, automated alerts and powerful predictive capabilities.



To succeed in a digital world, bring machine learning to your mainframe.

Learn more at:
CA Mainframe Operational Intelligence.

[1] Rosalind Radcliffe, IBM, "Shift left to drive continuous integration in mainframe software development," Nov 17, 2015.
[2] Alan Shimel, DevOps.com, "The real cost of downtime," Feb 11, 2015.
[3] IBM press release, "IBM Launches z13 Mainframe," Jan 13, 2015.
[4] Ibid.
[5] Stephen Elliot, IDC, "DevOps and the Cost of Downtime," Dec 2014.
[6] Brandy Shaul, adweek.com, "Study: Consumers will Abandon Apps with Greater Than Six Second Load Time," March 4, 2015.

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