

**EBOOK**

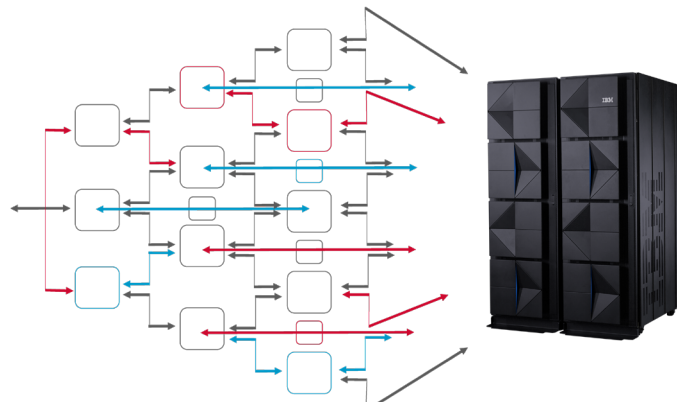
# HOW TO START YOUR MAINFRAME AIOPS JOURNEY

Mainframe AIOps enables performance insights, automates tasks, and more. Learn how to get started.



# Delivering Optimized Digital Experiences is Complex

In today's hyper-connected world, the demand to deliver excellent digital experiences is greater—and more difficult—than ever before. Customers expect apps to work flawlessly, always be available, respond in seconds, and remain ultra-secure.



What many don't realize, though, is that behind the scenes of all these digital apps, there has been an exponential growth of data, transactions, and complexity.

It's overwhelming! There's simply **too much** data, which takes **too long** to analyze, resulting in issues going undiscovered until it's **too late**.

Compounding the matter: IT teams tend to monitor and automate in a siloed fashion, which impedes their ability to detect, diagnose, and act on complex issues.

## TOO MUCH<sup>1</sup>

data, complexity, and change,  
to manage manually

# 88%

Increase in operational data

## TOO LONG<sup>2</sup>

to access information and  
diagnose problems

# 3.7

Average MTTR (hours)

## TOO LATE<sup>3</sup>

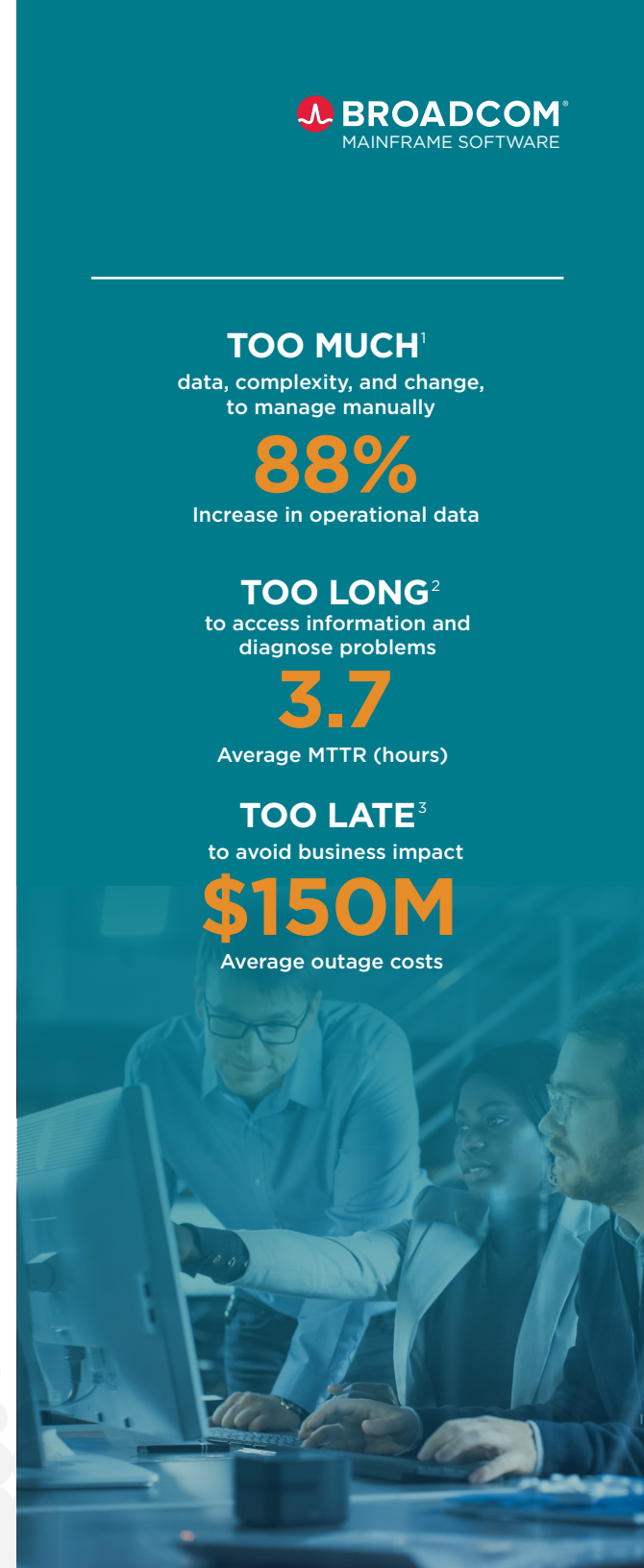
to avoid business impact

# \$150M

Average outage costs

Sources:

1. Too Much: Modernizing IT Operations for Digital Economy, Digital Enterprise Journal 2017
2. Too Long: <https://www.dej.cognanta.com/wp-content/uploads/2019/08/Slide7.jpg>
3. Too Late: Delta's Computer Outage to Cost \$150M, Forbes 2016





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## **AIOps is a journey, not a destination**

AIOps requires a pragmatic approach, customized to each organization using it. The key to moving forward is to make small changes incrementally that will add up over time, shifting focus from reactive IT to proactive IT.

# Managing Diverse, Hybrid IT Environments with AIOps

Traditional approaches to managing hybrid IT environments simply won't cut it anymore. That's why more and more companies are turning to AIOps to help address operational challenges. AIOps applies artificial intelligence to IT operations, bringing together big data, machine learning, and automation.

## **Combining Machine AND Human Intelligence**

At Broadcom, we believe AIOps is about applying augmented intelligence to IT Ops, combining machine intelligence with human intelligence to continuously improve operations.

It's not about replacing IT operators—the machine learning algorithms need to be trained by the data collected and by the domain experts. It's about augmenting your team with actionable insights and fast, automated remediation to prevent issues and minimize the impact when they do arise.

# Analyze Issues and Diagnose Root Causes Faster

AIOps solutions from Broadcom integrate data across hybrid IT—including mobile, multi-cloud and mainframe—enabling holistic visibility and automated correlation for faster root cause analysis.

When issues arise, the key is to be able to view meaningful data in context so that your team can intelligently identify the true cause of issues and automatically resolve them, rather than simply chase symptoms.

## With broad visibility and in-depth diagnostics, you'll experience:

- Increased IT efficiency through faster problem triage and remediation
- Improved productivity and resource efficiency
- Reduced mean time to resolution (MTTR)

### USE CASE

#### Analyze 5x Faster



#### CHALLENGES:

- Being notified after a customer is impacted is too late
- Static thresholds yield too many false positives and cause a lot of unnecessary churn to investigate

#### RESULTS:

- “Performance insights in near **real time** are spectacular”
- “We **reduced time** to analyze cause of issue from hours to minutes”
- “Test is one thing, being able to **see in production** provides the real insights”



# Proactively **Anticipate** Issues Before They Impact Business

By shifting from reactive to proactive operations you can:

- Detect potential issues before business impact
- Quickly isolate and diagnose problems
- Automate corrective action

The best kind of problem is one that never occurs. AIOps solutions from Broadcom provide early warnings through machine learning-based algorithms, which proactively identify issues that may affect service levels.

With AIOps, your team can discover potential issues sooner and fix them—or even better, prevent them from happening in the first place. Processing millions of change events, logs, metrics and trends gathered across subsystems and applications, the machine learning algorithms detect recurring patterns that have led to problems in the past.

The key is detecting when patterns start to emerge, as opposed to after the fact. This enables your team to tackle small sparks before they become five-alarm fires.

## USE CASE

### Anticipate Problems Hours Earlier



Large Financial  
Services Company

#### CHALLENGES:

- Major system incident resulted in **eight-hour** outage
- Average **cost of** a critical application **failure** per hour is **\$500,000** to **\$1 million**

#### RESULTS:

- “Issue easily found **within minutes**”
- “Anomaly detection would have alerted of the issue **two hours before** we even knew we had a problem and **five hours before** we took action”



# Automate to Increase Efficiency and Protect Your Experts

AIOps solutions from Broadcom deliver outcome-driven automation across hybrid IT environments, enabling systems to heal and optimize themselves. You specify your preferences and goals—such as service level metrics, cost constraints or security policies—and the software takes care of the rest. These decisions are made in milliseconds, around the clock, adjusting in real-time based on your unique IT environment conditions.

These capabilities not only eliminate manual efforts and streamline workflows, they provide incremental **automation you can trust**, with built in feedback loops and guardrails.

## Automating along the way wherever possible allows you to:

- Prevent system slowdowns and outages
- Increase efficiency of your day-to-day operations
- Protect your experts for more strategic initiatives

### USE CASE

#### Automate to Reduce Manual Effort



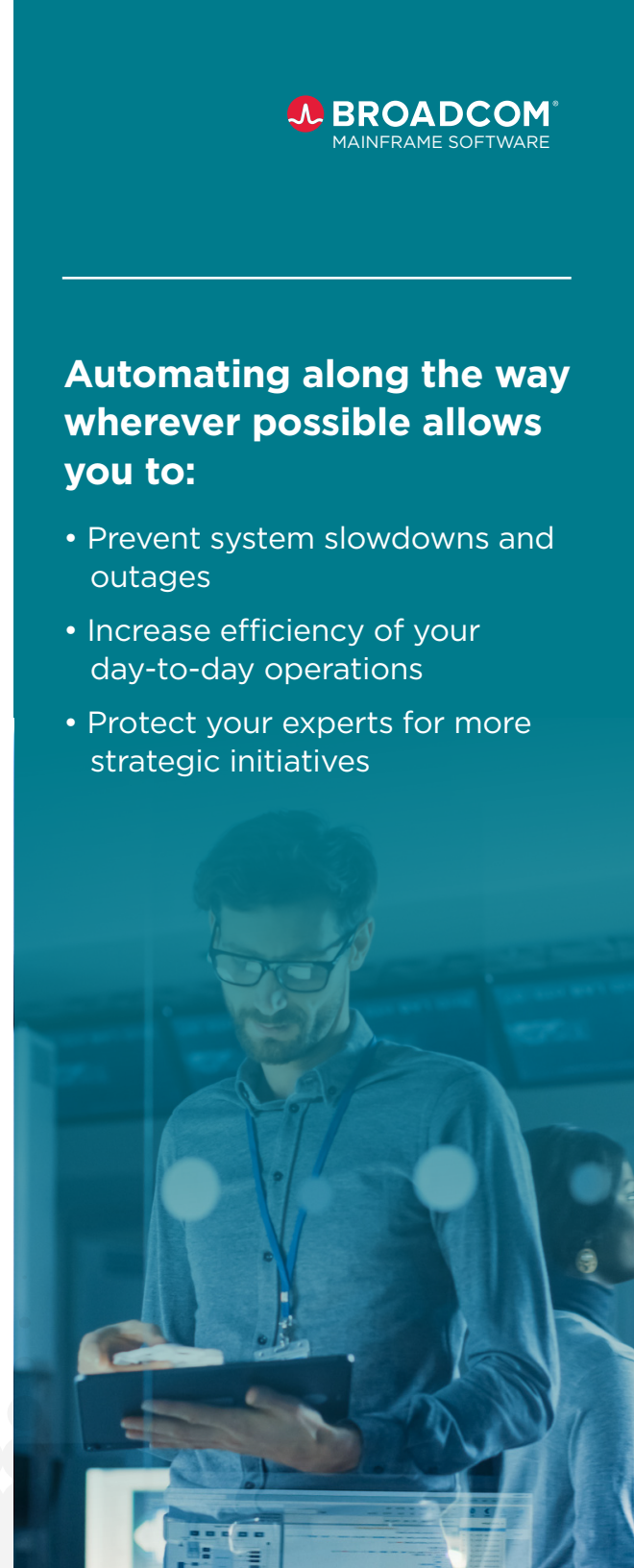
Global Insurance Company

#### CHALLENGES:

- Exploding mainframe demands and complexity
- Shrinking staff resources
- Needed to offload and automate low level staff work

#### RESULTS:

- “Over **40% reduction in manual effort**”
- “CA/Broadcom approach is **way ahead** of other intelligence engines which aren’t real time”
- “...able to avoid having experienced staff waste their time...instead they are available to **apply their expertise** to next gen solutions”



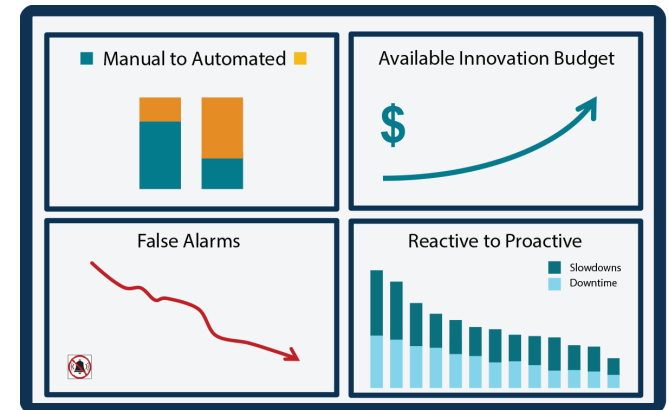
# Before You Can Optimize, You Must **Prioritize**

AIOps is a journey, a continuous process of incremental improvement, but determining where to start can be one of the hardest steps. There's no one-size-fits-all approach, and on top of that, you probably lack the time, insight and resources to determine the greatest opportunities for improvement.

## Prioritize Based on Data-Driven Insights

Broadcom will partner with you, using a data-driven approach to help you determine what projects to focus on first to make the biggest impact. Where to start depends on your goals, your resources, and what YOUR data reveals. For example:

- If your staff is finding out about problems long after they've occurred and end users have been impacted, you want to focus on anticipating problems.
- If your teams are exhausted by the time it takes just to collect the data—much less analyze it—we'll help you leverage APIs to expedite data gathering and use newest tools to speed analysis.
- If your teams are doing the same manual actions over and over, let's focus on automation to free them up to work on higher priority efforts.



**The key is to get started, and Broadcom will help you:**

- **Expedite** decisions using data-driven insights
- **Compare** opportunities to assess ROI
- **Allocate** resources for optimal outcomes
- **Uncover** the best path forward

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**Transform your data into contextual insights that drive operational excellence, helping you:**

- Reduce manual efforts by over 40%
- Predict problems hours sooner
- Identify root cause 5x faster

## It's All About Contextual Insights

The key to AIOps is data. All the data already exists in your systems, but by itself it's not enough. Relevant data must be put into context, transforming it into contextual insights that are meaningful and actionable.

Broadcom AIOps solutions help you surface the hidden relationships across IT silos by integrating the data, using an open architecture approach. Now, your IT Ops team can gather data from numerous sources, including Broadcom tools, third party tools and the mainframe itself—there's no need to rip and replace what you already have. This allows you to act faster by rapidly discovering what is happening across your systems to deliver the right insights to the right people at the right time.



# Get Started on Your AIOps Journey Today

Broadcom provides a pragmatic approach to implementing AIOps that lets you keep and leverage the tools you already have while taking the incremental steps towards adoption. In summary, here are a few best practices to consider on your AIOps journey:



## Design Around an Open-First, Secure Data Strategy

Simply stated, without data, AI does not work. You need to ease access to operational data using open and secure APIs—but you also need to understand where it's being used, and by whom.



## Embed Domain-Trained AI to Drive Outcomes

Generic algorithms spliced from open source will not serve your needs effectively. Instead, look for analytics and algorithms that have already been trained for your domain and embed them within your existing systems.



## Integrated Breadth of Visibility With Deep Analysis and Expertise

While no single solution can do everything, leveraging AIOps components does allow for easy integration of new capabilities as they emerge—facilitated by an open and extensible architecture.

This allows you to incrementally build up breadth and depth as opposed to being stuck at a dead end with a single solution.

# Start Your AIOps Journey Now

Mainframe AIOps solutions from Broadcom offer a pragmatic and open architecture approach for combining big data and machine learning with domain expertise to deliver meaningful and actionable insights to incrementally augment and automate your day-to-day operations.

You can rely on Broadcom as your trusted AIOps partner. Get started today to gain critical insights based on your environment data, helping you make informed decisions to guide your path forward.

**GET STARTED**

[mainframe.broadcom.com/AIOps](https://mainframe.broadcom.com/AIOps)

## Questions?

Broadcom is here to help.

[TALK TO A MAINFRAME EXPERT](#)



### About Broadcom Mainframe Software

Broadcom Mainframe Software empowers customers to amplify the value of their mainframe investments. Our commitment to partnership is grounded in delivering to customers greater success with the platform. It starts with embracing open technologies in ways that unite the mainframe and hybrid cloud environments. Our leading DevOps, AIOps, Security, Data Management, and Core Infrastructure software solutions and innovative value programs go beyond code to unlock the platform's full potential.

**For more information, please visit our website at: [mainframe.broadcom.com](https://mainframe.broadcom.com)**

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