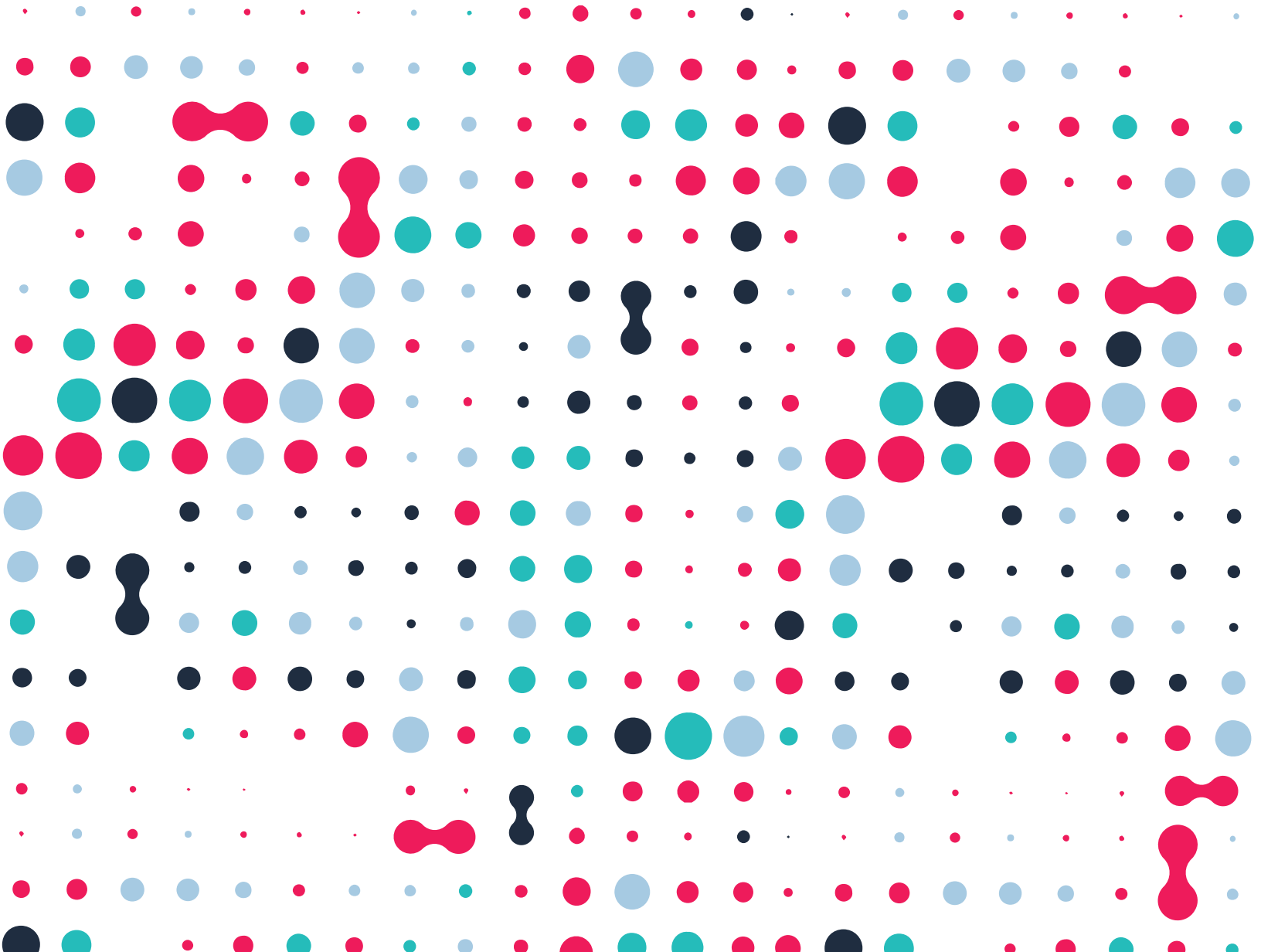
moogsoft
Continuous Assurance

SOLUTION **BRIEF**

Moogsoft Enterprise

Continuous Assurance for your Digital Business



You Now Have the Power to Prevent Outages

Organizations must provide continuous assurance across critical applications, cloud services and infrastructure to succeed in today's global marketplace. But that is easier said than done, as digitally-transformed IT environments are harder to manage because they're more distributed, hybrid and heterogeneous.

Fortunately for IT Operations teams, Artificial Intelligence for IT Operations (AIOps) has emerged as a proven and scalable way to streamline these complexities and reduce the alert fatigue draining operations teams of key resources.

Built on Moogsoft's industry-leading AIOps platform, Moogsoft Enterprise delivers continuous service assurance for your digital business. As your system of engagement, it adds the critical layer of intelligence and integration between performance monitoring and IT Service Management (ITSM) systems to correlate events at scale across your technology stacks, whether on-premises or in the cloud. It also provides a collaborative workspace to resolve situations and capture the remediation knowledge for probable root cause of similar situations. Bottom line: Moogsoft Enterprise provides rapid mean time to detect (MTTD) and mean time to resolve (MTTR) incidents so you can meet service level agreements (SLAs) with your customers.

The Moogsoft AIOps platform uses artificial intelligence (AI) and machine learning (ML) applied to the huge array of monitoring data from applications, cloud services, networks and infrastructure. It proactively provides early detection of changing conditions so IT Operations teams can detect and resolve the situation before it impacts customers, partners or employees. And DevOps teams can effectively manage the agility that your digital busniess needs for improved responsiveness at scale, all from a single view.

Today's IT Operational Challenges

Legacy IT Operations monitoring and management tools fall short in today's IT environments.

The number of daily events triggered across multiple clouds, cloud services, applications and infrastructure elements is overwhelming and unmanageable with traditional IT Operations tools.

Today's global business services require interconnected microservices — identity, authentication, compute, storage, network services, and other processes — across the enterprise and from public cloud services. This service architecture's fluidity and dynamism generate the required business agility, but if any link in this "service chain" fails, then the related business-service performance degrades or crashes .

Making sure system failures don't occur is a tall order. As each VM or container fluctuates state, capacity or availability, multiple monitoring systems collect these dynamic event changes to process and present a current situation. Doing this thousands or millions of times daily triggers downstream event storms lacking context and resolution recommendations. The result: Legacy enterprise management systems get overloaded, and IT Ops and DevOps teams get overwhelmed.

The first generation rules-based enterprise management systems simply cannot handle dynamically changing conditions. Rules-based systems cannot process the implications of data from unknown or never-seen events, or streaming monitoring data. The rigid logic and limited scope of rules are unable to do anything useful for global multi-cloud environments.

Another problem is an overabundance of legacy monitoring tools that generate data and reports that are siloed and fragmented. Thus, IT Ops and DevOps teams lack a unified and comprehensive view between application, network and cloud service interactions. This forces IT Ops and DevOps teams to manually cobble together the information, a time- and labor-intensive process that doesn't scale and leads to errors.

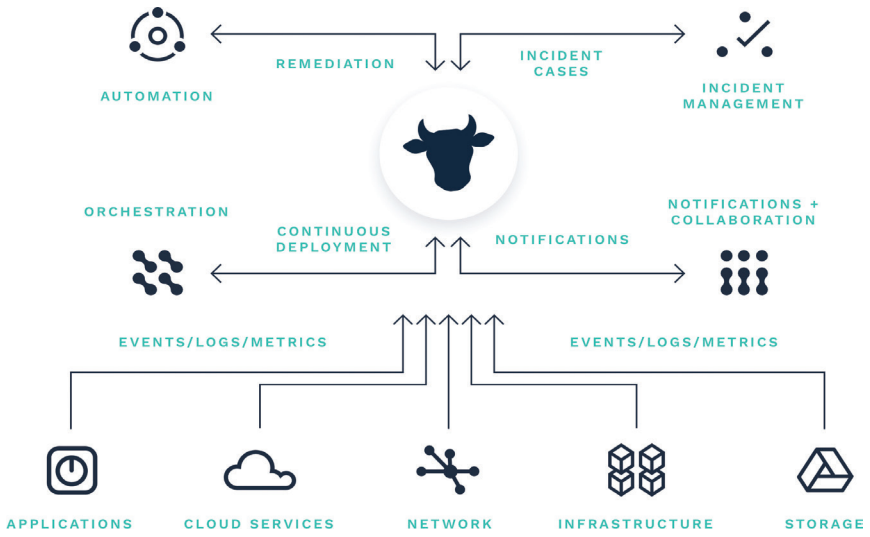
The result is a slow, incomplete and inaccurate data correlation that affects incident remediation and resolution. Poor customer and employee experience directly translate into inefficient use of IT resources, lower productivity, less revenue, and reduced profitability.

Now there is a better way for today's services assurance: Moogsoft AIOps.

Solving these Challenges with Moogsoft AIOps®

Moogsoft AIOps applies artificial intelligence (AI) techniques to solve the problem of availability for today's portfolio of business services. It is a purpose-built System of Engagement powered by the most advanced AI algorithms; it endows IT Ops and DevOps teams with complete visibility and control from a single view across the entire service delivery cycle.

The Moogsoft AIOps platform streamlines IT Operations workflows and provides Ops



Moogsoft AIOps - System of Engagement

teams with the rapid incident resolution capabilities they need to avoid outages, meet SLAs and help accelerate the digital transformation of their business.

System of Engagement – Moogsoft AIOps

As a single system of engagement, Moogsoft AIOps provides a complete view of event correlation of your application, cloud and infrastructure monitoring systems. It automates workflows with out-of-the-box integrations and API integrations to external systems such as: incident management, runbook automation and continuous software delivery. Through dashboards and insights, IT Ops and DevOps teams can quickly see service and system health across the entire portfolio of business services. IT Operation integrations provide the means to customize Moogsoft AIOps for delivery of the highest value a business needs, such as:

- **Simplifying operations** - Moogsoft AIOps offers a single view for all business services. It is where the work gets done.
- **Meeting and exceeding service metrics** - Moogsoft AIOps drives down the mean time to detection (MTTD), mean time to acknowledge (MTTA), and mean time to resolution (MTTR) for optimum IT performance and greatly enhanced customer experience.
- **2w** - Moogsoft AIOps bridges the gap between IT Operations and IT Service Management by creating a Situation Room (virtual war room) for each incident to facilitate just-in-time social collaboration and business service continuity.

Moogsoft AIOps adapts to changes instantly, enabling DevOps to continually release applications and services at the speed your business demands.

Moogsoft AIOps Intelligent Service Integration

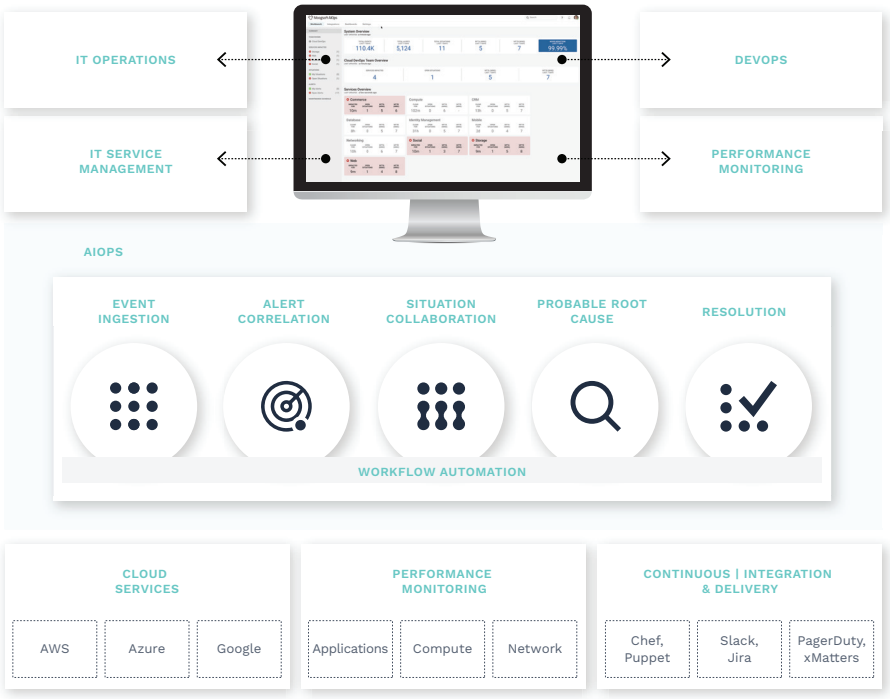
Moogsoft AIOps adds a critical layer of intelligence between performance monitoring and IT Service Management (ITSM) systems - including applications, cloud services, and infrastructure monitoring systems to proactively identify and resolve incidents before they impact business services.

With a broad portfolio of out-of-box integrations and Moogsoft AIOps Workflow Engine, Moogsoft AIOps automates workflows to increase efficiencies and lower IT operating costs. Through automated ticketing, knowledge recycling and probable root cause, IT Ops and DevOs teams are in the driver's seat.

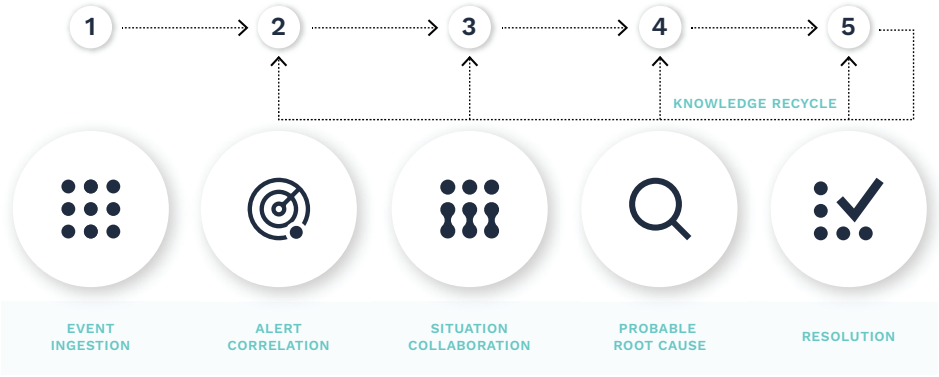
A key advantage of Moogsoft AIOps is its ability to perform millions of event correlations across multiple service domains for complete real-time situational awareness. Event correlation dramatically reduces the alert fatigue noise by as much as 99%. With events clustered together and automatic ticketing funneled to incident management systems, Moogsoft AIOps shortens the mean time to acknowledge (MTTA) and mean time to resolve (MTTR) metrics for critical business services and applications.

Workflow Optimization Driven by Moogsoft AIOps

Moogsoft AIOps helps to ensure availability, performance, and customer experience expectations are met, enabling IT Operations teams to provide continuous assurance for their complex IT environments.



Moogsoft AIOps Service Layer Integration



Moogsoft AIOps Workflow Lifecycle

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Moogsoft AIOps follows a closed-loop workflow lifecycle and uniquely integrates a collaborative workspace with dynamic visualizations, AI-driven probable root cause, and API integrations to external systems to automate workflows. You get integrated run-book automation, incident and change management, DevOps, and other service management processes all from one view.

Moogsoft AIOps Workflow

With traditional ITIL Incident and Problem Management, IT is placed in a reactive mode once a ticket is issued. This leaves many organizations behind the curve when the business service is digital. By the time the incident is detected and escalated within the service management organization, customers, employees and partners have lost time, transactions and, worst, brand faith.

A notable change from the hierarchical ITIL process, Moogsoft AIOps workflow eliminates the frequent “all hands on deck” clumsy war-room conference calls that are typical for organizations using legacy approaches.

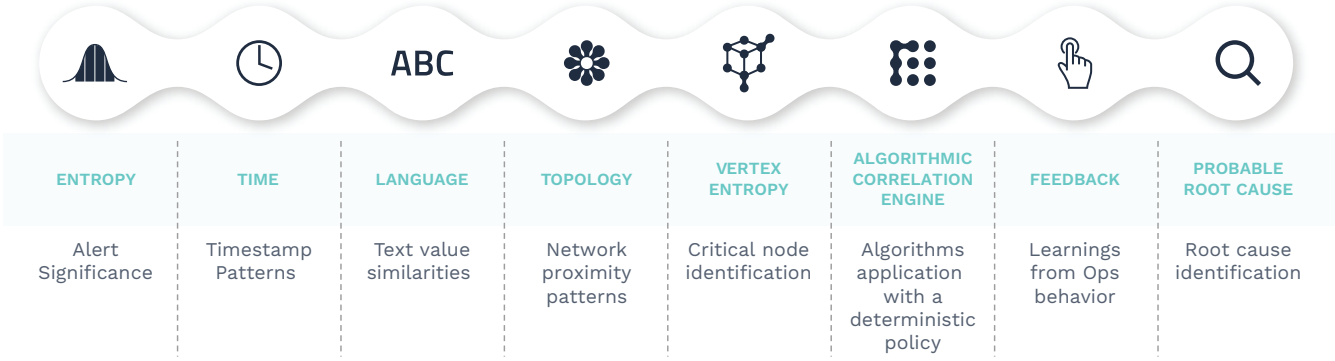
Moogsoft AIOps redefines the role of the “war room” with collaborative situation rooms. These virtual workspaces provide integrations to external IT systems such as incident management or runbook automation for more IT efficiencies and productivity. Every operator responsible for elements of a situation can get all the information they need with a few clicks of a mouse.

Moogsoft AIOps is a game changer in both reducing the MTTD and MTTR needed for performance and service management, and increasing the service quality that can be achieved. Moogsoft AIOps delivers proactive notification of meaningful changes in your environment. This puts IT in a very different mode of operation, shifting processes to the left (before) a service-impacting situation and enabling IT to deliver continual service assurance.

With this algorithmic workflow approach, Moogsoft AIOps delivers service assurance by shortening the mean time to detect (MTTD), mean time to acknowledge (MTTA), and mean time to resolution (MTTR) by up to 99%, with a 60% reduction in incident tickets logged.

Here is an overview of the Moogsoft AIOps workflow, and an explanation and overview of the value to the business:

Workflow	What it does	What values it brings
Noise Reduction	• **Deduplication** of events at ingestion point • **Entropy** (semi-supervised Machine Learning) analytics of events' importance and uniqueness, and then elimination of alerts with low entropy score. Think of this as **Noise Elimination**	• **Alert severity change detection** and self-clearing of alerts when monitoring agent indicates underlying issue has been resolved • **Reduced efforts to manage** noise as semi-supervised algorithms replace 1000s of rules • **Reduced number of non-actionable incidents** as noisy alerts are eliminated • **Reduced MTTD** as the haystack is significantly smaller
Event Correlation	• **Grouping** multiple contextually related alerts together and presenting them as a situation for context • **Aligning** alerts from different monitoring tools to the single business service incident	• **Reduced MTTR** as contextual analysis of multiple related alerts together speeds up incident resolution • **Reduced number of actionable incidents** as this is an alerts compression technique • **Cross-Silo visibility** as grouped alerts represent application and infrastructure events
Situation Collaboration (Situation Room)	• **Teams work together** and in parallel on a given incident • **Communication** takes place through a "single pane of glass" in the Situation Room	• **Reduced MTTR** as no time is wasted in ticket handover process and all participants see the same real-time events data • **Enable transformation** to DevOps/Site Reliability Engineer (SRE) operating model as alerts grouped in a situation can span multiple technology domains
Probable Root Cause	• **Investigating** which of the alerts in the situation reflects the root cause of the incident • The operators can use neural net recommendations (as trained by operators during previous incidents), alerts timelines, topology and vertex entropy visualizations	• **Reduced MTTR** as Moogsoft AIOps will recommend what alerts may be root cause • **Increased productivity** for operators as they are given effective tools to troubleshoot quicker
Resolution / Knowledge Recycle	• **Marking resolution steps** in the collaboration journal • **Marking probable root cause alerts** prior to closing • **Rating situations** to analyze quality of events and tuning entropy settings	• **Reduced MTTR** as system suggests probable root cause alerts • **Operator upskilling** as knowledge from subject expert is passed down • **Improved stability and MTBF** as problem management is low-effort detection for repeat incidents regardless of severity



Moogsoft Portfolio of Artificial Intelligence Algorithms and Application

Moogsoft Portfolio of Artificial Intelligence Algorithms and Applications

Moogsoft AIOps uniquely integrates a portfolio of AI algorithms for optimizing business value through superior service delivery. The algorithms infuse the platform with an ability to learn from your data, including situations based on known patterns — and unknown conditions never seen before.

Moogsoft AIOps algorithms include both supervised and unsupervised AI techniques such as Machine Learning and Deep Learning to automatically learn from and leverage new information in hybrid and multi-cloud environments. With over 50 patents in artificial intelligence, Moogsoft's portfolio of AI algorithms is integrated with a closed-loop workflow to align service management and monitoring for a scalable solution addressing today's dynamic IT world.

To assist IT Operations in incident and problem management, Moogsoft AIOps further enriches the clustered alerts by adding situational-specific information from a system of record such as an organization's Configuration Management Database (CMDB). The CMDB acts as a data warehouse of defined IT relationships for an organization's assets and business services. Enrichment with Moogsoft AIOps adds supplemental data such as host names, site names, business criticality, service classification and other information. Enrichment can:

- Improve accuracy for clustering alerts into Situations
- Improve readability of alerts for operators
- Aid operators in investigating situations
- Provide critical reporting data

Over time, Moogsoft AIOps becomes even more valuable to IT Ops and DevOps as it learns from its previously resolved situations to further reduce the MTTD and MTTA metrics. When similar trouble-borne conditions start to arise, Moogsoft AIOps will recognize these circumstances and bring information from previous incidents to the operators' attention.

Delivering Business Value

With the Moogsoft solution, IT Ops and DevOps teams gain a deeper understanding and control of the critical IT architecture, services and business applications underpinning the enterprise. Team members get a rich set of tools for proactive notification and recommended probable root cause to avoid business service interruptions. Business value and outcomes provided by Moogsoft AIOps include:

- **Reduction of IT Operations complexity and cost** - Through AI correlation and causality, organizations can reduce actionable operator alerts by up to 99% and incident ticket volume by up to 60%.
- **Continuous Assurance** - Dynamically, Moogsoft AIOps handles millions of events per day. Through ingestion, correlation and causality, IT Ops and DevOps teams now have fewer situations to manage with situational context and root cause to keep critical business services at peak performance levels.
- **Fulfillment and topping of service quality goals** - Drive down the mean time to detection (MTTD), mean time to acknowledge (MTTA), and mean time to resolution (MTTR) for greatly enhanced customer experience and increased productivity.
- **Continuous Software Delivery** - Automate workflows with out-of-box integrations and open APIs to incident management, runbook automation and continuous software delivery external systems for improved responsiveness and scale.

Resources

For further information please:

See customer success stories: **www.moogsoft.com/customers**

Review our blogs: **www.moogsoft.com/blog**

Take a test drive: **www.moogsoft.com/request-trial/**

Come to an event and meet us: **www.moogsoft.com/events**

Moogsoft is a pioneer and leading provider of AIOps solutions that help IT teams work faster and smarter. With patented AI analyzing billions of events daily across the world's most complex IT environments, the Moogsoft AIOps platform helps the world's top enterprises avoid outages, automate service assurance, and accelerate digital transformation initiatives.

Moogsoft | 1265 Battery St., SF, CA, USA, 94111

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