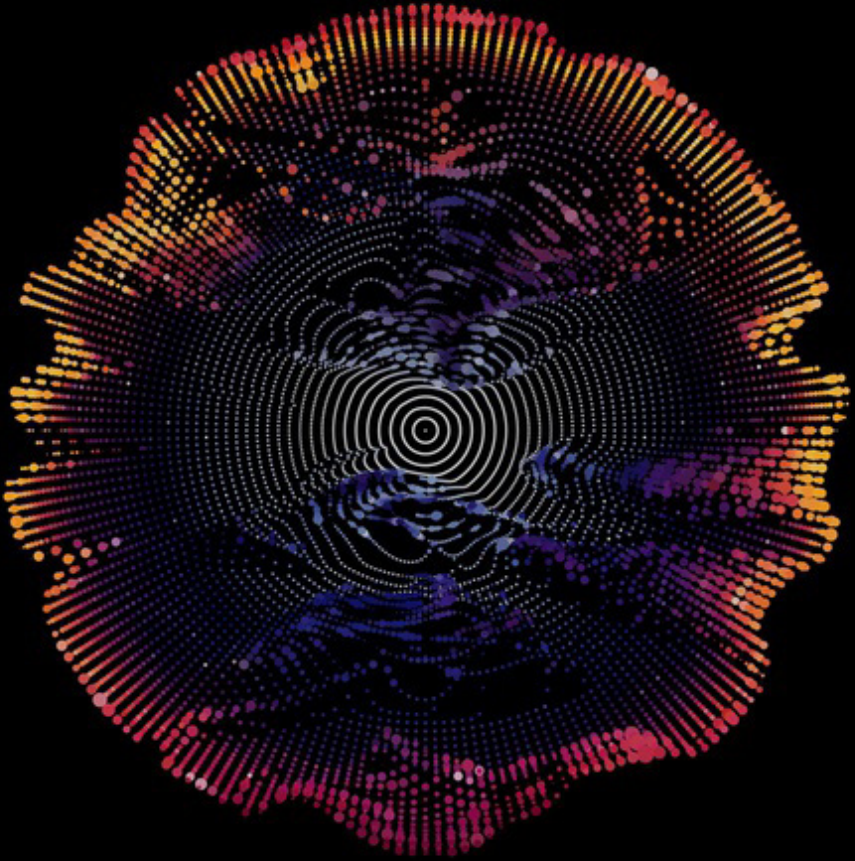# Deloitte.

Moogsoft®

**Comprehensive approach
for Artificial Intelligence for IT
Operations transformation**
Deloitte and Moogsoft partnership

Digital Transformation challenges companies for effective management of complex and dynamically changing IT architecture.

Digital Transformation Delivers Change at Scale

Just about every company right now is going through some sort of digital transformation. For most, it's about surviving, for many, it's about disrupting and leading. Software and user experience (UX) are the new competitive edge. Managing availability and performance is now a matter of life or death for IT Operations / DevOps. Speed and accuracy are crucial. What takes humans potentially hours to accomplish can be done in just seconds with machines, and with far better precision.

**Artificial Intelligence for IT Operations (AIOps) is the solution**

Compute power today is fast, available and cheap. Software algorithms are capable of processing millions of events in a few milliseconds. Better still, algorithms today are capable of deriving meaning from large data sets on their own with or without human input. This is called supervised and unsupervised machine-learning. AIOps is about algorithms augmenting and assisting humans within IT Operations.

AIOps platforms use big data, modern machine learning and other advanced analytics technologies to directly and indirectly enhance IT operations (monitoring, automation and service desk) with proactive, personal and dynamic insight. AIOps can be applied to automate many use cases within IT DevOps.

The AIOps Way

Algorithms today can automate the process of analyzing and correlating event data. In fact, what takes humans hours to achieve can be done in milliseconds as alerts unfold in your environment. Millions of events can be reduced to tens of incidents automatically, using software algorithms that can de-duplicate, blacklist and correlate event feeds in real-time.

Figure 1. AIOps Platform Enabling Continuous Insights Across ITOM
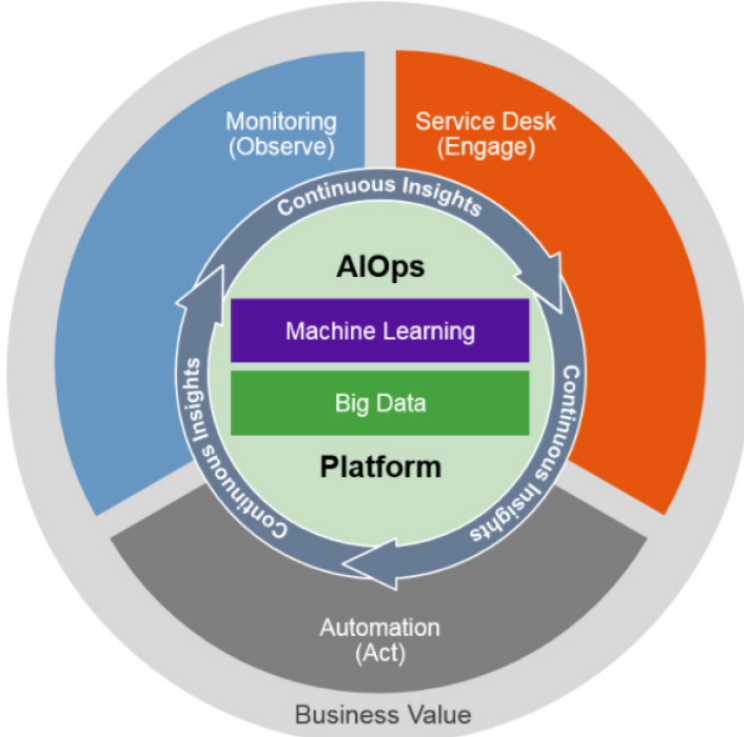
This real-time insight now allows IT Operations to be proactive 24/7 – to detect early warnings and solve them before the failure comes. Algorithms enable humans to focus on the tens of incidents instead of millions of events every day. This level of automation means that incidents can be detected instantly without requiring humans to manually connect the dots across various tools and silos. AIOps can also automate incident ticketing, notifications, knowledge re-use and decision support.

For example, algorithms can blueprint every incident observed and capture all the tribal knowledge which was used to resolve that incident. Should a similar incident be observed in the future, those same algorithms can be used to automate knowledge re-use and decision support.

Humans are still central to incident management, AIOps is merely increasing their productivity, responsiveness and value by automating the manual tedious tasks which they perform. Algorithms on their own cannot resolve incidents or business impact.

AIOps platforms' extensibility and ideally loose coupling of the data source, collection, storage, analysis, and presentation layers help avoid vendor lock-in and retain the ability to add new capabilities as they emerge. AIOps platforms' datasource-agnostic approach also lends itself to being used in a uniquely flexible fashion, supplementing and enhancing other IT operations management (ITOM) tool investments while minimizing their lock-in potential.

Benefits & Uses
Key to the decision to use an AIOps platform is that such platforms uniquely provide more than just a method for gaining visibility into all the activities associated with an application's creation, performance and evolution (using a variety of data sources). Importantly, they also add the capability for both machines and people to learn from the behavior of the people and systems involved and recycle this knowledge for faster diagnose and remediation.

The following are just a sample of use cases within major IT operations functions that illustrate both augmentation and assistance capabilities enabled by AIOps

Automation

Intelligently Adaptive (Heuristic) Automation

Automated workflows could be made "smarter" by having them take advantage of deterministic explicit knowledge, human tacit knowledge and AIOps-driven behavioral analysis.

Machine-Generated and Managed Automations

AIOps platforms could be used to identify patterns of positive behavior that could be automated, to codify that behavior in the form of automated tasks sequence, to initiate those tasks given certain conditions, and to evolve those tasks based on outcomes.

Proactive Monitoring

Automated Behavior Prediction

The behavior of applications, infrastructure and users can be observed and analyzed on an ongoing basis to predict probable future events that may impact availability and performance.

Causal Analysis

 A combination of analytical approaches (Bayesian, Granger/ temporal, etc.) can be applied to a broad set of data to suggest and compare multiple probable root causes of availability and performance issues.

Service Support

Intelligent Notification

End users and IT operations personnel can be proactively notified across current or potential service impairments that will specifically impact them or need their specific attention.

Intelligent Collaboration

Collaborative workspaces or communications streams can be enhanced with contextually relevant knowledge artifact (knowledge base/ FAQ articles, product documentation, support site links, etc.) recommendations or suggestions that dynamically adjust as the interaction progresses.

Dynamic Decision Support

Decision scenario design can be informed by AIOps platform recommendations based on real-time and historical analysis of both IT operational and business behavioral data.

Due to dynamically changing IT infrastructure environments, **73% of incidents are unique.**

Traditional approach to IT operations processes optimization gives the potential of maximum **5% costs savings.**

By 2019, 25% of global companies will have strategically implemented an AIOps platform that supports two or more major IT operations functions, up from fewer than 5% today.

Innovation Insight for Algorithmic IT Operations Platforms by Gartner, Refreshed: 26 April 2017 | Published: 24 March 2016

Deloitte and Moogsoft
Innovation technology empowered with consulting experience
Partnership between Deloitte and Moogsoft, a world-wide leader in AIOps platforms supporting IT Operations and author of Moogsoft AIOps V6, allows to provide our clients unique solution for their challenges related with supporting and maintaining high-availability and reliable services based on complex and dynamically adjustable IT infrastructure.

Our clients are increasingly seeing the need to move from siloed approach to IT infrastructure management to fully collaborative AIOps. We support them in this transformation journey. Our partnership with Moogsoft, provides Deloitte's clients with access to cutting-edge technology, which will dramatically improve and optimize their IT procedures. Building on Deloitte's transformational experience, we ensure that all relevant success factors are properly addressed during the AIOps platform implementation, thus significantly reducing the risk of insufficient focus on non-technical aspects of the implementation. As appropriate skills, roles and changes in processes are crucial for the overall success, our offer spans from the technological to the organizational elements of the AIOps transformation.

**Andrzej Lachowski,
Deloitte Consulting**

We are excited to partner with Deloitte to support true digital transformation for the world's top enterprises. With Moogsoft AIOps, companies realize immediate benefits by the transformation of operational practices with the support of Deloitte's best-in-class consultancy services. With this partnership, Deloitte's clients will receive leading-edge strategy paired with revolutionary technology that will fundamentally improve their customer's experience.

Phil Tee, CEO and Co-Founder of Moogsoft

Comprehensive approach
Benefits for customer

By combining the technical knowledge and experience of Moogsoft with Deloitte's Technology practice and transformational experience, our offering provides the customers with unique solution, bringing tangible benefits while reducing the implementation and operational risks.

Deloitte Technology practice is a combination of Strategy, Organizational and Technology capabilities to deliver end-to-end solutions - from strategy to implementation. From Infrastructure & Operations perspective, Deloitte can cover comprehensive IT Operations architecture design, relevant tools selection and implementation, processes re-design to allow full cross-units collaboration and knowledge base building, leading to proactive and continuous operations management.

We support our clients in the journey from silo-centric and infrastructure management approach to fully enabled AIOps organization. Building on Deloitte's transformational experience, our offering assures that all relevant success factors are properly addressed during AIOps platform implementation, thus significantly reducing the risk of insufficient focus on non-technical aspects of the implementation. As appropriate skills, roles and processes changes and adjustments are crucial for overall success, our offering covers them all – technological and organizational parts of the AIOps transformation.

As a result, our solutions help our clients to achieve significant reduction in operational workload and costs, boost the productivity and get outstanding change in operational metrics.

Properly designed and implemented AIOps result in minimum:

↘**66%**

reduction of requests to support departments
Source: GoDaddy

↘ **35%**

shorter mean time to diagnosis
Source: Global Financial Institution

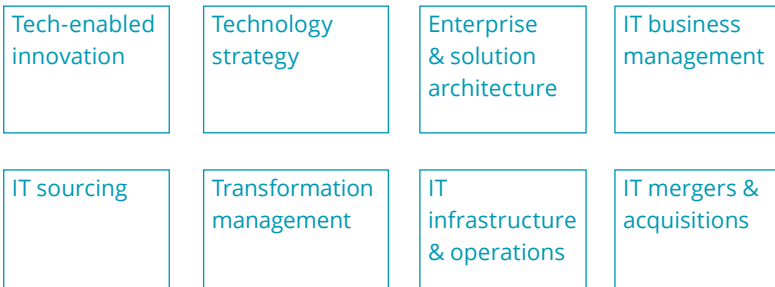↘ **33%**

shorter mean time to solve the problem
Source: HCL Technologies

↘ **30%**

Reduction of incidents reported by users
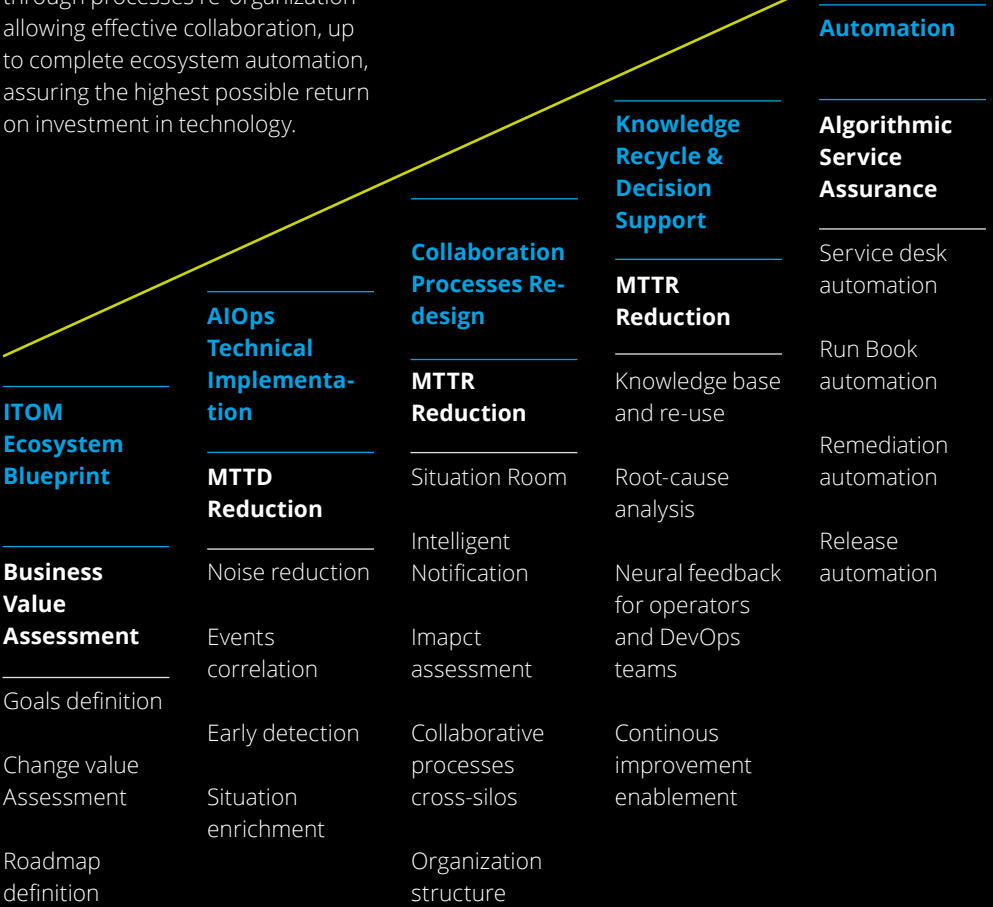*Source: Global provider of telecommunications services*

Deloitte, Technology Strategy & Architecture

Tech-enabled innovation	Technology strategy	Enterprise & solution architecture	IT business management
IT sourcing	Transformation management	IT infrastructure & operations	IT mergers & acquisitions

Deloitte implementation methodology

Our implementation methodology allows the companies to achieve the highest level of AIOps transformation maturity. From goals definition, noise reduction & events correlation being the first steps, through processes re-organization allowing effective collaboration, up to complete ecosystem automation, assuring the highest possible return on investment in technology.

AIOps implementation model

Automation

Algorithmic Service Assurance

Service desk automation

Run Book automation

Remediation automation

Release automation

Knowledge Recycle & Decision Support

MTTR Reduction

Knowledge base and re-use

Root-cause analysis

Neural feedback for operators and DevOps teams

Continous improvement enablement

Collaboration Processes Re-design

MTTR Reduction

Situation Room

Intelligent Notification

Imapct assessment

Collaborative processes cross-silos

Organization structure

AIOps Technical Implementa-tion

MTTD Reduction

Noise reduction

Events correlation

Early detection

Situation enrichment

ITOM Ecosystem Blueprint

Business Value Assessment

Goals definition

Change value Assessment

Roadmap definition

The primary risk associated with investment in AIOps platforms mirrors that of most transformational efforts - an overemphasis on the technological component with insufficient focus on the changes in skills, roles, metrics and processes required to get value from the technology.

Innovation Insight for Algorithmic IT Operations Platforms by Gartner, Refreshed: 26 April 2017 | Published: 24 March 2016

Moogsoft AIOps Product Overview

Moogsoft AIOps helps enterprise IT Operations and DevOps teams become more agile, lower cost of operations, and improve the quality of customer experience via real-time machine learning algorithms that, reduce the amount of incoming noise to operators (alert fatigue), proactively detect incidents and correlate events across IT ecosystems, streamline collaboration and workflow across teams and toolsets, and codify knowledge to make operators smarter when encountering future incidents. Moogsoft AIOps is available on both desktop and mobile devices (beta).

Algorithmic Noise Reduction

Moogsoft AIOps uses patented machine learning algorithms (entropy) to automatically reduce event volumes from across application monitoring, automation, service management, and notification tools. Events are de-duplicated into unique Alerts - real-time and without relying on static rules, filters or models.

Algorithmic Clustering Engine

Moogsoft AIOps leverages both structured and unstructured data and applies time, linguistic, logical, and physical topological proximity filtering to dynamically cluster unique Alerts into actionable Situations. These Situations are surfaced to operators with a visual narrative of how the issue occurred (timeline view).

Collaborative, Team-Based Workflow

The Situation Room is a virtual war-room technology that unifies communication across tools and teams. Intelligent notification systems automatically alert assigned users and teams based upon the root cause of the Situation and allow teams to collaborate via a series of workflow tools such as Kanban boards.

Full Ecosystem Integration

Moogsoft AIOps is a fully extensible solution that integrates across a company's entire IT ecosystem. Popular integrations (data adapters) include Splunk, Nagios, Solarwinds, New Relic, AppDynamics, JIRA and ServiceNow. Moogsoft AIOps also supports webhooks and REST APIs for custom integrations.
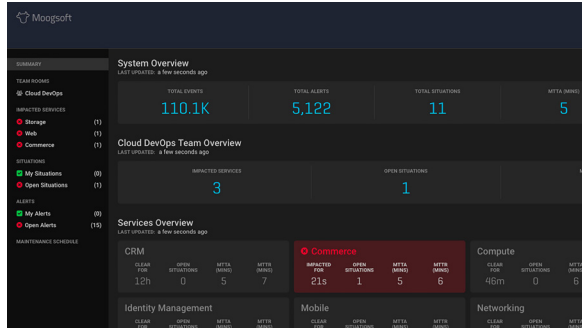
Algorithmic Knowledge

Algorithmic Knowledge captures data from previous incidents and automates decision support for operators encountering recurring incidents in the future. For every new Situation, Moogsoft AIOps analyzes its event narrative to past Situations and presents a list of those with significant similarity. This automation helps Ops to resolve and restore recurring incidents faster, with immediate access to past Situations, root causes and resolutions where knowledge was successfully used.
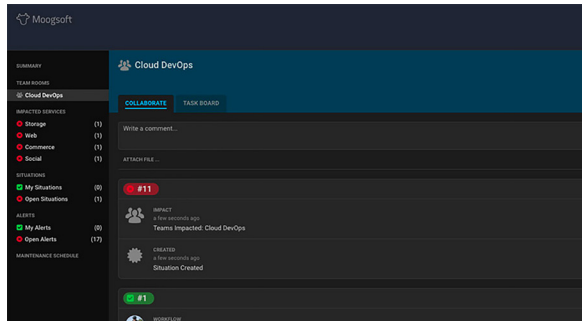
Closed Loop Remediation

Moogsoft Bots allow teams to automate remediation or trigger actions across their ecosystem of management tools. ChatOps capabilities are also embedded inside Moogsoft AIOps so teams can execute scripts or commands to remediate problems across the infrastructure.
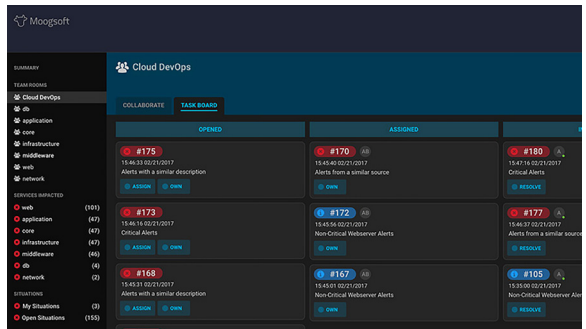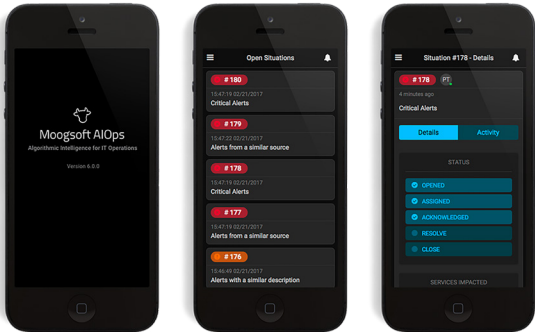
Real-Time Service Dashboard
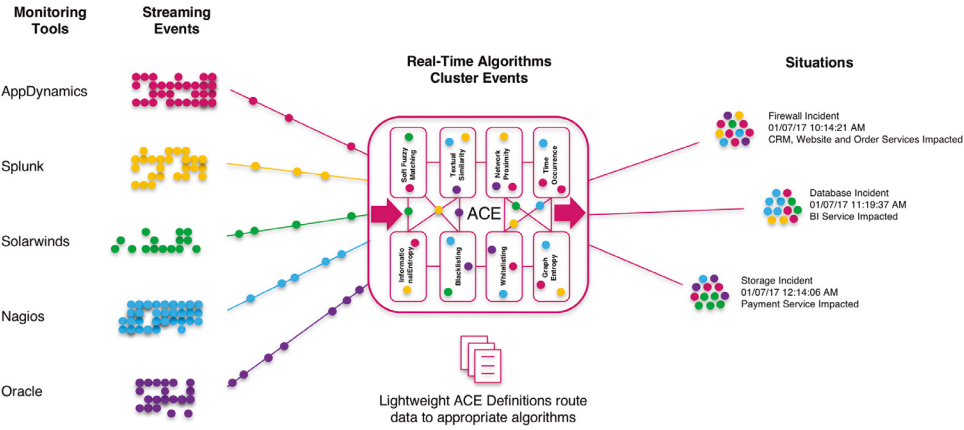

Collaborative, Team-Based Workflow

Kanban Situation Board

Mobile Version

Algorithmic Knowledge "Next Steps"

Contact us

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About Deloitte

As the world's largest management consulting business, Deloitte is distinct in its ability to help clients solve their most complex problems, from strategy to implementation. We are differentiated by our capability to execute the advice we provide to help clients in the markets where they operate today and where they want to be in the future. Delivering this kind of value requires the skills to integrate a broad range of talent and skills – across human capital, strategy & operations, and technology – aligned to the unique needs of our clients' industry sectors, businesses, and organizations.

Deloitte has been operating in Poland since 1990. Our head office is located in Warsaw, with a network of local offices in 8 major Polish cities. Currently, Deloitte in Poland has over 2500 practitioners, while Deloitte Central Europe counts almost 6000 practitioners. To learn more visit www.deloitte.com/pl/en

About Moogsoft

Moogsoft provides AIOps technology to help enterprise IT Operations and DevOps teams become faster, smarter and more effective. Moogsoft helps companies such as Intuit, SAP/SuccessFactors, HCL and GoDaddy achieve agility and automation through the application of algorithmic technology in complex production environments, allowing IT Ops and DevOps teams to focus their resources intelligently and ensure a higher quality customer experience. To learn more visit www.moogsoft.com