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Get closer to self-healing enterprise IT with AI-powered service operations

Improve predictability, observability, and real-time decision-making

A technology service operations guide: spotlight on IT operations management

How are you coping with the explosion of digital services?

Digital services power customer experiences, connect employees, automate processes, unlock business insights, and more. And the number of services continues to explode as enterprises like yours accelerate your digital transformation.

These demands put the IT organization at the center of business strategy and execution. You are expected to deliver an ever-increasing number of digital services, and to keep these services up and running.

It's a huge challenge because the explosion of digital services is mirrored by a tidal wave of data—on-premises and cloud resources, logs, events, and metrics—that is rapidly overwhelming IT services and operations teams. Just detecting and diagnosing service issues after they've surfaced is almost a losing battle. And predicting and preventing service issues is often just a dream. There's too much data, too much complexity, and too little time for humans to cope.

But there is a way you can cope and even thrive: artificial intelligence for IT operations (a.k.a. AIOps). In this ebook, we will explore the right way to implement AIOps and why it's most effective when it's part of a technology service operations solution.

What is AIOps

Artificial intelligence for IT operations is the use of machine learning (ML) and artificial intelligence (AI) to automate and manage the digital complexity of modern IT service operations processes.

Self-healing enterprises defined

Self-healing enterprises are always-on, running 24/7. They use AI-driven IT service operations to proactively detect lead signals for potential issues, pinpoint those issues with precision, isolate root cause, and resolve them automatically. The goal is to avoid issues before they turn into problems because self-healing systems have the foresight to predict where issues might occur in the future.

Every CIO would like to have a self-healing enterprise. We're not there yet, but predictive AIOps gets us closer than ever before.

Self-healing has long been the unattainable goal of enterprise CIOs, but the goal is ever nearer thanks to predictive AIOps. Now, AIOps puts predictability, observability, and real-time decision making in the hands of your services and IT operations teams. This ensures they can fix unanticipated problems before employees and customers across the enterprise are impacted.

Today CIOs are strategically responsible for delivering digital products and driving innovation, and at the same time their teams still oversee hundreds or thousands of applications, resources, and data sources. Implementing AIOps in this environment requires a carefully planned strategy and patience, but the result is truly predictive IT moving you along the path to achieving self-healing enterprise IT.

AIOps is not instantaneous – it takes a platform approach

For AIOps to successfully predict the next service degradation or outage, it takes more than the flip of a switch. AIOps requires a platform approach that applies ML to IT operations functions and data.

This includes:

- human-generated incidents and knowledge articles;
- machine-generated data, such as events and metrics from servers and applications;
- deployment changes from your CI/CD pipelines.

The reality is that machines, like people, need time to learn. For example, identifying weekly seasonality requires at least a couple of weeks of observation. And just like your team getting feedback from your customers and employees on the quality of their IT experiences, feedback from your IT operations team allows AIOps to identify whether what it learned was useful and the reasons why. Given time and feedback, AIOps will provide your IT services and operations teams more accurate insights, allowing them to make better decisions.

How AIOps works

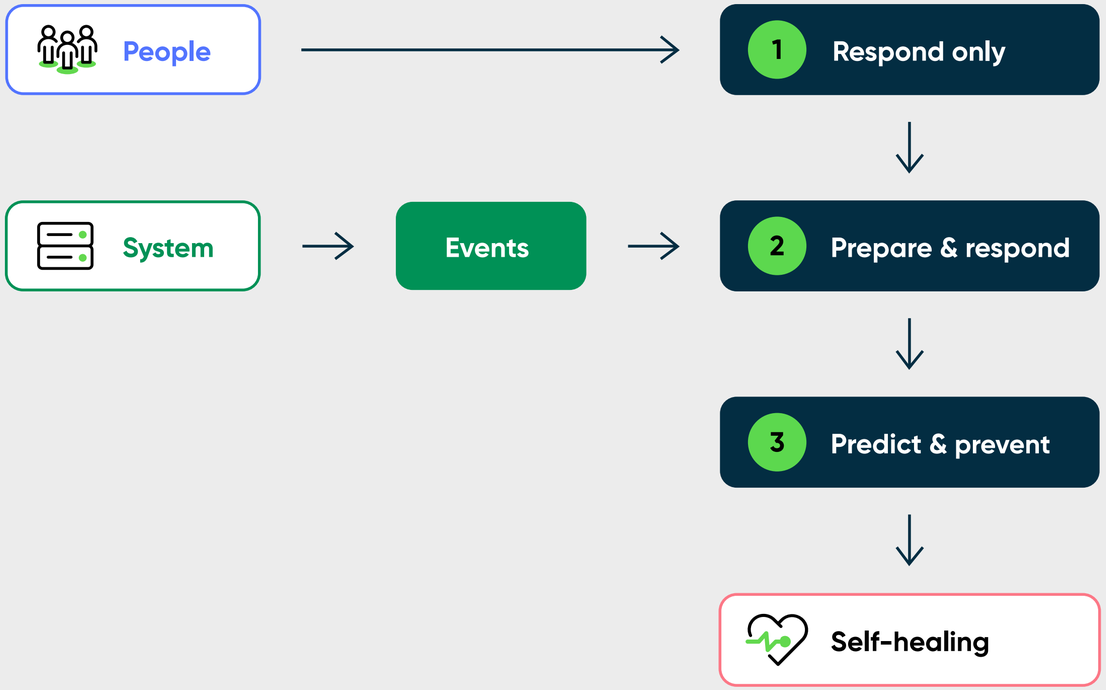
AIOps applies extensive automation and statistical analysis to events, performance metrics, logs, and trace data collected from IT operations monitoring tools to learn behaviors, identify anomalies, correlate alerts, reduce noise, and pinpoint root causes. When it comes to prediction, AIOps deals with probabilities – receiving a notification about whether an issue currently unfolding is likely to lead to an outage is realistic. A service-aware Configuration Management Database (CMDB) significantly increases the accuracy of the insights AIOps can provide your team.

49%
of IT departments use automation for detection and monitoring.[1]

53%
of IT departments use automation for incident management.[2]

Figures represent percentage of those IT departments with automated functions

ServiceNow AI-powered service operations



AI-powered service operations

AI-powered service operations bring together employee requests with machine data and use AI to find answers that significantly transform how you work.

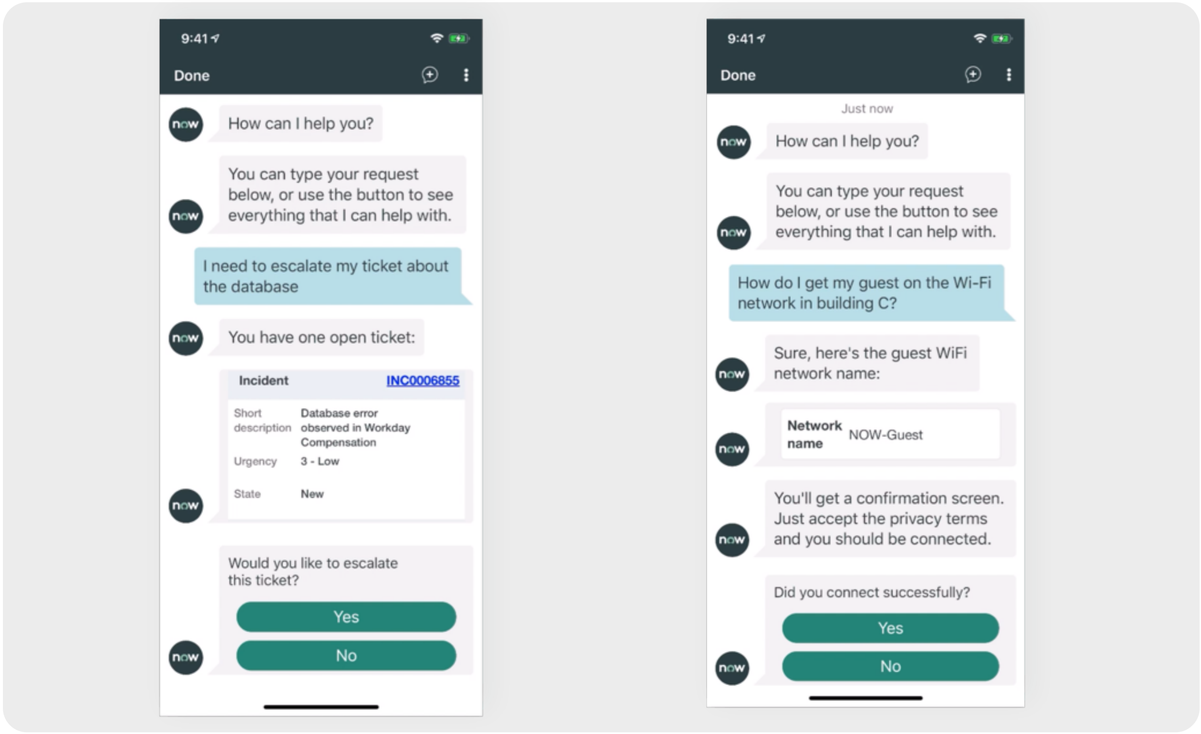
ITSM provides key data to AIOps

IT service management (ITSM)is the system of engagement between the business, your employees, and your IT team. It provides AIOps with critical information such as change requests, incidents, problems, and knowledge articles. Change requests can be correlated with alerts to help identify changes that led to a system failure. Past incidents may be used to identify an issue experienced across multiple instances of the same application. Problems with known errors documented as knowledge articles can be automatically presented to IT as recommended solutions.

ITSM coordinates responses to issues AI has identified

In addition to providing information, ITSM incorporates AI to coordinate responses to detected issues. For example, when ServiceNow IT Service Management customers use Virtual Agents (chatbots) for incident detection, they are seeing that they can reduce anywhere from 10% to 20% of their top requests by automating responses via chatbots. This improves IT efficiency by more than 50%.

When you bring TSM and ITOM together on a single platform, then add AI, you not only transform IT but you also ensure your employee experiences are the best they can be because you prevent issues from ever impacting services.



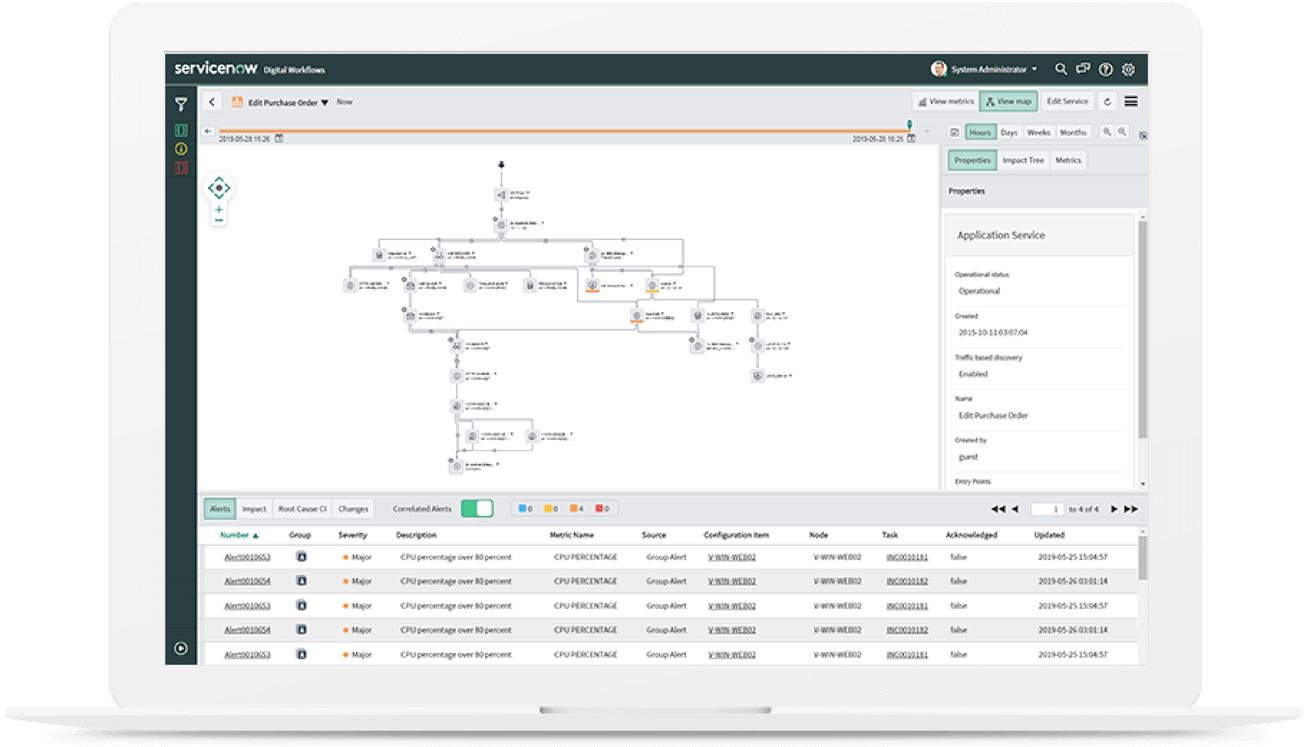
46% of IT departments use automation for customer self- service support (e.g., chatbot).[3]

Figures represent percentage of those IT departments with automated functions

Map your infrastructure

For many IT teams, it's a huge challenge to identify the impact of infrastructure changes to applications and services. Just imagine how a small update on an Apache server can impact payroll services upstream. ServiceNow Service Mapping allows teams to view these changes in real time and see the impacted devices and services. Furthermore, it enables them to identify anomalies at an exact place in the infrastructure and take appropriate action.

While there are a variety of **service mapping options**, intelligent traffic-based mapping uses ML to identify significant service-level relationships from traffic flow data while filtering out distracting noise. It can be used to extend top-down maps or add relationships to tag-based maps.

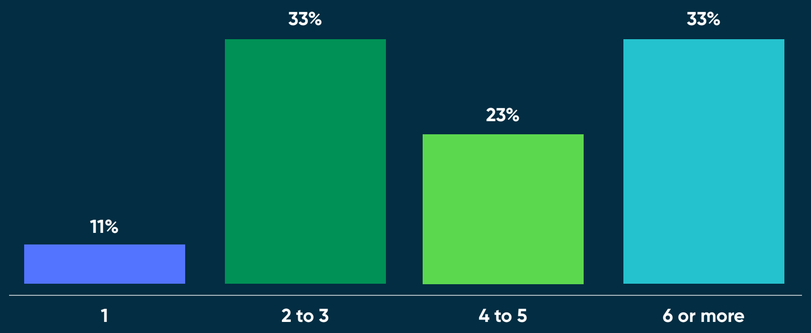


Barriers to achieving a self-healing enterprise: too many siloed tools

Achieving a self-healing enterprise is still a pipe dream for many organizations because their IT operations teams use siloed monitoring tools, constantly confronting a never-ending stream of events in different formats.

In fact, a recent survey of IT executives, Intelligent Approaches to Resilient IT Operations and AIOps* reveals that 56% of respondents use more than three tools to view and manage IT operations and services.

How many tools and systems do you use to view and manage IT operations and services?



Most (56%) of respondents say they use more than three tools to view and manage IT operations and services.

* Intelligent Approaches to Resilient IT Operations and AIOps, by Gatepoint Research, 2021

Optimizing IT operations through automation

After you reach a steady state in AIOps and are delivering on your original outcomes, you can start thinking about optimizing your operations through automation.

With knowledge of past failures presented to the IT team you can:
1. Analyze root causes
2. Determine how issues were resolved
3. Identify potential candidates for automation

Your team can be armed not just with knowledge that predictive AIOps reveals by using natural language processing, but also automated corrective actions to remediate issues.

And, for well-understood issues with highly reliable automated actions, many IT teams are moving toward using playbooks with curated actions to help speed response. These curated playbooks are easily deployable using workflow designer tools.

47% of IT departments believe that strategic automation can increase the efficiency of their operations.[4]

Figures represent percentage of those IT departments with automated functions

Maximize the power of predictive AIOps

ServiceNow Predictive AIOps offers powerful capabilities to:

- Analyze and create insights via observability data such as events, metrics, traces, and logs
- Correlate asset, incidents, changes, problems, vulnerability, configuration data
- Automate corrective actions

The extensive functionality reduces integrations and the associated technical debt for maintaining them.

Learn more about ServiceNow Predictive AIOps here

Building AIOps bench strength

As with anything that requires more than one person, it's important to make sure your IT operations team develops AIOps skills. They should become familiar with what AI and ML bring to the table when attempting to keep your business running at today's digital speed and move the team to a proactive stance.

You should not be required to hire a new stable of data scientists to implement AIOps. Stakeholders from various departments most impacted by technology infrastructure will likely be excited to participate when they learn about how AIOps reduces the amount of downtime they experience, the improvement in business efficiency that results, and delighted customers.

You'll also work with distributed teams such as DevOps and SREs who are constantly looking to drive service uptime. AIOps can be a useful tool to find issues in realtime across the CI/CD pipeline and fix them before services are impacted.

The payoffs of automated discovery and a healthy CMDB

One beautiful thing about ML is that it continually learns. Of course, the old computer adage of garbage in – garbage out still applies. That's why automated discovery and a healthy CMDB are so important.

AIOps improves things in a couple of ways:

1. It can continually gain insight using NLP to read through updated logs, knowledge bases, prior alert resolutions, and operator feedback.
2. It makes your IT team more proactive. When not burdened with continual firefighting, the team has more time to stay current with new technologies as they're developed, making your company an industry leader.

Getting started

You may have a vision for AIOps in your organization and be eager to get started, but don't make the mistake of attempting to do everything in one massive undertaking.

Instead, start small. Set reasonable goals so your team has the chance to:

1. Learn from your accomplishments

2. Validate and fine-tune your approach

3. Acquire and build skills

4. Achieve all-important quick wins for your organization

Reap the benefits of AIOps

AIOps benefits extend to all areas of your business. Take DevOps. Suppose software recently released by your DevOps team results in an issue detected by AIOps. AIOps can automatically notify the DevOps team, and recommend an emergency change to roll back the software to a previously known good release. Each step and configuration change are recorded and tracked in the CMDB.

The self-healing enterprise realized

ServiceNow AIOps allows organizations to get closer to making self-healing enterprises a reality by connecting AIOps to business processes outside of IT. This extends benefits to areas including – but not limited to – customer service management, DevOps, SecOps, risk and governance, HR, and operations.

Learn more

For a deep-dive into implementing AI-powered service operations at ServiceNow, **download this guide.**

References:

1. Future Workforce Insights: Why Strategic Automation Empowers Employees in IT, September 2022, Author: Angela Salmeron, Research Director, European Future of Work, IDC #EUR149378222, An IDC eBook, sponsored by ServiceNow.
2. ibid
3. ibid
4. ibid

About technology service operations

For technology-driven organizations, providing dynamic digital services for hybrid workforces has become mission-critical. Burdened with legacy tools, talent shortages, and disparate data silos, IT is overwhelmed and struggles to support organization-wide innovation. As an industry leader, ServiceNow offers a solution to unlock development and innovation by automating and optimizing technology service operations on a single cloud platform. In synchronizing IT services and operations, teams gain complete visibility to best deliver modern, cost-effective services –across hybrid and multi-cloud environments. Teams can also scale with AI to resolve common employee requests and predict, then remediate issues to keep digital services running 24/7, all resulting in the ability to govern and deliver extraordinary technology experiences with high productivity.

About ServiceNow

ServiceNow (NYSE: NOW) makes the world work better for everyone. Our cloud based platform and solutions help digitize and unify organizations so that they can find smarter, faster, better ways to make work flow. So employees and customers can be more connected, more innovative, and more agile. And we can all create the future we imagine.

The world works with ServiceNow™.

For more information, visit: **www.servicenow.com.**