

NOCs can transform from reactive centers to proactive operational hubs, becoming both a center of excellence and a model of efficiency and effectiveness that can drive business outcomes for a broad group of teams.

From Legacy NOC to Modern Operations Center: Leveraging AIOps and Automation for Operational Excellence

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NOC Modernization Empowers Cost Efficiencies, Business Resiliency, and Innovation

Today's IT environments are incredibly complex, characterized by an increasing influx of data from diverse sources, including customer signals, network devices, applications, and security systems. As a result, NOCs struggle with staying ahead of problems, managing business demands, and maintaining cost efficiencies. To successfully navigate these challenges, technology executives should consider adopting a NOC modernization strategy before these issues impact the business and the customer experience. The legacy NOC faces challenges around achieving operational efficiency, business resiliency, and innovation goals. Three common characteristics of a NOC primed for modernization include:

- » **Resource inefficiency and high costs:** The legacy NOC is saddled with siloed operations and manual processes, which hinder the proper prioritization of incoming issues. NOC engineers, especially at the L1 and L2 levels, often resort to "catch and dispatch" because they lack the knowledge or rely on outdated runbooks, making it challenging to resolve issues independently. This approach creates friction with other teams and minimizes the value the NOC can deliver. In addition, being inundated with noise leads to missed critical alerts, false alarms, and wasted valuable cycles, further complicating the identification and proactive resolution of root issues. These challenges often result in poorly performing services, unhappy customers and partners, and lost revenue. Coupled with a high volume of incidents and manual incident handling, this places intense operational strain on the organization and increases the total cost of operations. In addition, it can lead to burnout among subject matter experts.

AT A GLANCE

WHAT'S IMPORTANT

- » NOC modernization enables teams to focus on high-value work by automating menial tasks and providing a foundation for continuous improvement through AI-driven capabilities.
- » AIOps can enable machine-to-machine auto-remediation, improve root causes analysis by improving noise reduction, and move teams from a reactive to a proactive posture through pattern matching.
- » The combination of AIOps and automation offers a blend of incident and problem management capabilities that drive proven business results.

- » **Increased risk of operational failure and poor customer experience:** Business resiliency is limited with a legacy NOC. In many cases, business-impacting incidents are still being discovered by customers because the NOC doesn't have the visibility it needs to identify the issues that matter. Fragmented tools and manual processes make it challenging for teams to find the right team to route issues to, which slows resolution and puts customer experience at risk. Burdened with manual processes, inaccurate escalations, and dated runbooks, teams struggle to know where to look first and what to do next for every incident, further prolonging resolution. The legacy NOC is striving unsuccessfully to improve key performance indicators (KPIs) such as mean time to resolve (MTTR) and mean time to innocence (MTTI), while trying to minimize infringements against service-level agreements (SLAs), service-level indicators, and service-level objectives, in order to mitigate additional costs to the business.
- » **Impaired innovation velocity:** There is a direct trade-off between innovation and toil when teams are using inefficient manual processes and prolonged issue handling. Legacy NOCs lack critical visibility across systems and teams, which hinders their ability to manage customer-impacting incidents effectively. To support innovation, especially within distributed teams, modern operations centers must evolve from mere reactive entities into facilitators and enablers. This transformation involves equipping distributed teams with the necessary technologies and visibility to self-manage their teams and services. In addition, operations centers should provide metrics and guidance on automation and process opportunities, all while maintaining enterprise guardrails. By effectively correlating and analyzing data streams, operations centers can proactively detect, isolate, and predict potential issues, enabling teams to take automated or proactive measures that drive innovation and operational efficiency.

The NOC needs a better way to proactively and automatically analyze, identify, and address issues in real time to reduce costs and establish a proactive foundation that scales to meet business demands. It needs an improved ability to increase team collaboration, empower developers to spend more time developing, and enable technology teams to focus on the "data that matters" to prevent customer issues.

NOC modernization addresses these challenges by updating operations center processes to remove work and improve efficiency. Harnessing AI and automation-driven capabilities, such as signal correlation and runbook automation resolution/auto-remediation, can remove manual work and give teams more time to spend on innovation. This automation-led, people-centric approach can empower teams to scale and thrive by focusing on optimizing business outcomes that impact the customer experience.

Benefits of Modernization

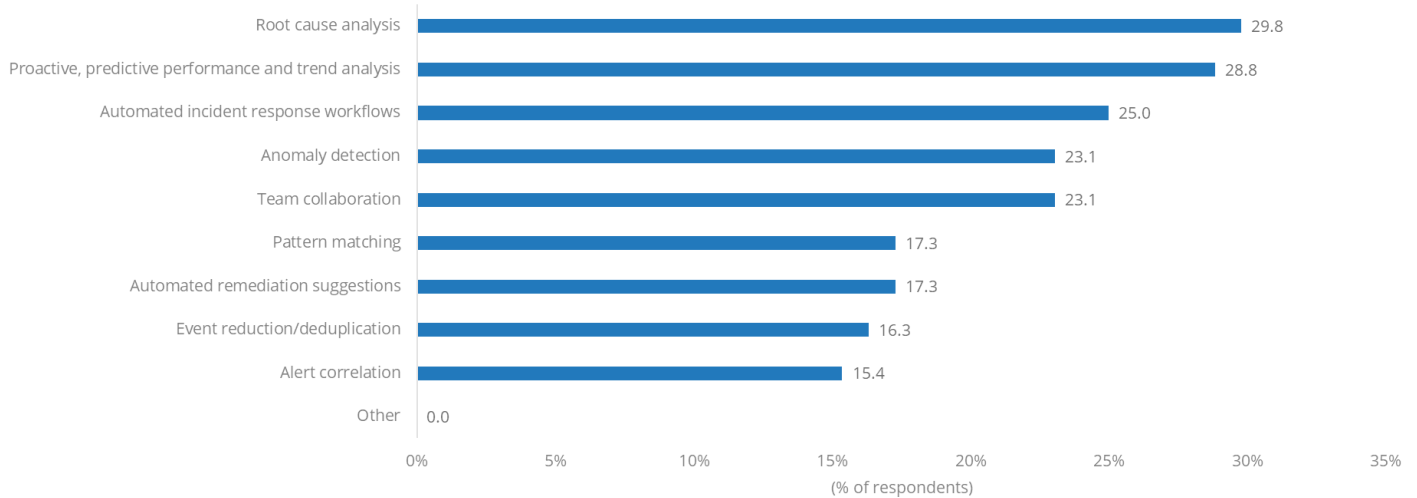
Undertaking a transformation initiative is never easy, but modernization in the operations center can unlock significant benefits for NOC teams. For many teams, it's a requirement to make progress on strategic road maps for operational excellence to improve cost efficiencies and drive innovation. Tasked to do more with less, many organizations are turning to AIOps and automation to modernize the NOC to scale teams and processes while infrastructure and service complexity continues to increase. The application of AI and ML to IT operations data can supercharge correlation to glean actionable insights, while automation to remove manual processes and sidestep legacy event processing challenges can free up time for innovation.

In addition, some of the benefits of modernizing a NOC using AIOps and automation include:

- » **Lower total cost of operations and greater resource efficiency:** Teams need to spend their time on the highest priority projects. Automating toilsome processes and well-understood issues before engaging human responders means subject matter experts are only deployed toward the most critical problems. Upgrading operations center processes with AI and automation as the first line of defense using event correlation and event-driven automation means faster identification, classification, and potential auto-remediation of known problems, so teams don't waste time unnecessarily.
- » **Greater resiliency and better customer experience:** AI-powered prediction and pattern-matching capabilities allow for proactive mitigation of potential issues before they impact operations. ML algorithms can learn from historical data to identify patterns and predict potential issues before they escalate into major outages. A proactive approach using automation to handle and resolve known problems before escalating to human response positions the operations center as a hub for triaging and coordinating only the highest priority issues. A NOC that can significantly reduce MTTR or MTTI minimizes disruption and downtime to help deliver a better customer experience and drive the business forward.
- » **Faster innovation velocity and increased productivity:** The more unplanned work the NOC can take on, the more developers can focus on building and innovating. By using AI/ML algorithms to analyze and correlate events from various sources, as well as automating tasks with streamlined workflows, NOC personnel can focus, prioritize, and potentially resolve critical incidents while avoiding unnecessary interruptions for other teams. Modernizing the NOC and associated processes to bridge silos with a standardized approach across teams for handling major incidents means fewer and shorter incidents.

Best Practice Recommendations for Modernizing NOC Processes with AIOps and Automation

NOC modernization continues to obtain investments and prioritization across most technology organizations as business demands for scalable, efficient, and effective operations accelerate and empower competitive advantage by delivering consistent digital services and customer experiences. By establishing a foundation, technology leaders can start small and iterate fast for a more sustainable approach to modernization. In fact, IDC survey research indicated that technology organizations are turning to AIOps to help establish many of the foundational technology-led capabilities for the modern NOC. These expected capabilities are seen in Figure 1.

FIGURE 1: **Most Important Capabilities for AIOps***Root Cause Analysis and Proactive Trend Analysis Are Top AIOps Capabilities***Q What are the two most important capabilities in your AIOps implementation?***n = 104**Base = all respondents**Notes:**Data is managed by IDC's Global Primary Research Group.**Data is not weighted.**Multiple responses were allowed.**Use caution when interpreting small sample sizes.**Source: IDC's AIOps and Observability Survey, October 2023*

Foundational best practices include:

- » **Leveraging AI/ML-powered tools:** Look to solutions that offer event correlation, event-driven automation, analytics, and automated incident management functionalities. Generative AI is a fast-developing space that should provide value in context for the NOC to streamline work. Knowing that distributed teams often work from their preferred applications, consider those that integrate with collaboration solutions. Keep an eye out for time to value and ease of implementation to understand how quickly the organization can start seeing results.
- » **Sharing platform and data across teams with established standards:** Ensure consistent and standardized data collection from all relevant sources for effective analysis by AI/ML algorithms and dashboarding. Sharing access to this data across central and distributed teams via standardized operating procedures accelerates decision-making and produces a "single source of truth."

- » **Maintaining a pragmatic approach to automation:** Identify the processes and tasks that are most suitable for automation and AIOps based on their impact, complexity, and feasibility. Focus on areas that will deliver the highest return on investment and maximum benefits. Event-driven automation can correlate, enrich, and orchestrate incidents at ingest for more precise, highly efficient incident management.
- » **Using feedback to inform continuous improvement:** Establish a developer and/or operational feedback loop to refine AI/ML models and related incident processes continuously based on historical data and real-world customer experience for continuous improvement.
- » **Investing in upskilling and training:** Empower NOC personnel with the skills through training and use to leverage AI-powered tools and interpret insights effectively, invest in core teams, and expand as more users adopt the platform.
- » **Prioritizing change management:** Create a detailed change management plan that outlines the key stages, timelines, and responsibilities for a NOC modernization initiative. Identify potential risks and challenges and develop mitigation strategies with stakeholders.

Next Steps for Expanding NOC Modernization, Processes, AIOps, and Automation

After establishing the foundation, technology leaders should consider an additional set of recommendations for expansion and acceleration of benefits. Effectively managing major incidents requires a coordinated effort, often spanning multiple teams. Some of the leading practices for NOC modernization and incident management transformation that can empower cross-team collaboration, automation, and AIOps adoption fall into four key areas, as detailed in the sections that follow.

Establishing Clear Goals

- » Incorporate NOC resilience and customer experience goals and objectives in the incident management transformation, bridging operating models with both IT operations and distributed teams to swarm on major incidents.
- » Define clear SLAs for critical services and applications, establish relevant KPIs to measure the performance and effectiveness of NOC processes, and report on these KPIs regularly to drive continuous improvement.

Defining Consistent Incident Management Processes

- » Adopt a structured approach to incident management, including incident classification, prioritization, escalation, and resolution; implement and streamline problem management processes to identify and address the root causes of recurring incidents using AIOps technologies.
- » Implement proactive monitoring and alerting based on insights to prevent downtime and performance degradation.

- » Facilitate communication and collaboration between NOC personnel and distributed teams for a swift and coordinated response using AI-powered incident response platforms. ML algorithms can correlate events, detect anomalies, and identify patterns and insights, getting the right data to the right person at the right time.

Maximizing Automation and AIOps

- » Leverage AIOps for event correlation and anomaly detection. Implement AIOps platforms that can ingest and analyze large volumes of data from various sources and that have sophisticated integrations with collaboration and service desk solutions. Utilize event-driven automation for scalable approaches to drive the next best action.
- » Use standardized runbooks and automated workflows to ensure the consistent and efficient execution of incident response procedures across geographically dispersed teams.

Ensuring Continuous Alignment

- » Communicate the goals, benefits, and progress of the NOC modernization initiative to all relevant stakeholders, including IT teams, developer teams, business users, and executive leadership.
- » Monitor and report on the progress of the NOC modernization initiative regularly. Use data-driven insights to identify areas for improvement and optimize processes and technologies. Incorporate feedback from the NOC team, cross-functional stakeholders, and end users to drive ongoing enhancements.

Considerations for Operational Excellence

Building world-class NOCs requires technology executives to introduce AI/ML, automation, and analytics into their NOC modernization strategy. It means starting with a handful of known problems, identifying patterns, and selecting a platform that can reduce the manual overhead with easy-to-adopt features that meet an organization at its operational maturity level. It also requires teams to improve their visualizations and incident processes by enriching data (for added context) to identify root causes, outlier concerns, and change-related issues. Applying AI and automation to these capabilities (and more focused/refined data) enables the orchestration of events, driving an optimized and cost-efficient process. To drill in deeper, technology executives should consider the following functional areas in-depth to achieve service delivery excellence for NOC modernization:

- » **Smart dashboard:** Create a centralized view that aggregates both machine-generated and customer-generated incidents.
- » **Event correlation:** Enrich incidents with configuration management database, topology, telemetry, log, and diagnostics information.
- » **Generative AI:** Obtain guided remediation for incidents sent to operations center responders (through recommendations, summarization, and AI-powered assistive support).
- » **Event-driven automation:** Trigger automated response and handling with orchestration at the event level to create automated diagnostics or auto-remediation for well-understood incidents.

- » **Analytics and learning:** Generate analysis of operations center response to identify sources of high cost with recommendations on how to automate; focus on easy-to-implement/low-cost automation (less than one day) to automate incident category.

Conclusion

By embracing the principles and practices highlighted in this paper, executives have a road map for NOC modernization. NOCs can transform from reactive centers to proactive operational hubs, becoming both a center of excellence and a model of efficiency and effectiveness that can drive business outcomes for a broad group of teams. This modernization empowers efficient management of massive data volumes, fosters operational excellence, and enhances resilience to protect customer experience and minimize costs. By implementing the recommendations outlined in this document, organizations can create a future-proof NOC that delivers exceptional IT service delivery, more cost-optimized teams and processes, and measurable business outcomes.

About the Analyst



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