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WHITE PAPER

Using Predictive AI for Proactive and Preventative Incident Management

Executive Summary

Predictive AI is changing the game for IT operations by shifting from reactive problem-solving to proactive, data-driven prevention. Using machine learning and advanced analytics, predictive AI examines historical data and real-time metrics to uncover patterns, detect anomalies, and recognize early signs of potential issues before they escalate. In today's complex IT environments—spanning hybrid infrastructures, multi-cloud deployments, and interconnected systems—this proactive approach is indispensable.

Traditional incident management focuses on alerts after issues arise, often resulting in prolonged downtimes, increased operational costs, and a compromised user experience.

Predictive AI, however, enables IT teams to anticipate and prevent incidents, optimize uptime, and ensure service continuity. By proactively identifying potential performance degradations, hardware failures, or network capacity issues, predictive AI empowers IT teams to respond quickly and efficiently, enhancing service quality. For modern enterprises, this capability is essential for maintaining resilience and a competitive edge in a digital-first world.

Key takeaway: Predictive AI equips CxOs with the tools to prevent incidents before they impact operations, transforming IT into a proactive, strategic asset.

Challenges Facing Incident Management

Managing incidents in today's complex IT environments is a growing challenge for IT teams. Hybrid clouds, multi-cloud deployments, and interconnected systems make it easy for even minor issues to cascade across the infrastructure. Traditional reactive approaches, which address issues only after they impact performance, lead to delayed resolutions, higher costs, and more frequent disruptions.

Additionally, the increasing volume of alerts from monitoring tools can overwhelm IT teams, creating data overload and alert fatigue. This constant flow of notifications makes it difficult to prioritize critical issues, delaying response times and increasing the risk of missed incidents.

For CxOs, minimizing downtime and ensuring business continuity are critical. Every disruption has the potential to impact customer satisfaction, revenue, and productivity. A proactive solution like predictive AI enables IT teams to prevent issues before they occur, improving resilience and positioning the organization for sustainable growth.

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What is Predictive AI?

Predictive AI is a forward-looking approach to incident management that combines advanced analytics and AI models to predict and prevent potential incidents before they impact service. By analyzing both historical and real-time data, predictive AI identifies patterns and early warning signs, enabling timely intervention. This empowers IT teams to address issues before they affect operations.

In practice, predictive AI continuously monitors data flows and compares them to past behaviors, using machine learning to identify patterns that often precede problems like resource strain, latency, or hardware degradation.

For instance, when an increase in resource usage suggests an impending failure, predictive AI can alert teams, providing time for preventive actions like reallocating resources or scheduling maintenance to avoid disruption.

Predictive AI differs from traditional monitoring, which only triggers alerts after a problem has occurred. Predictive AI continuously learns from patterns, offering IT teams valuable foresight to prevent incidents before they escalate, resulting in smoother and more reliable performance.

A good predictive analytics solution will show you the analytics behind the prediction and provide access to more detailed diagnostic data.

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Top Use Cases for Predictive AI in Incident Management

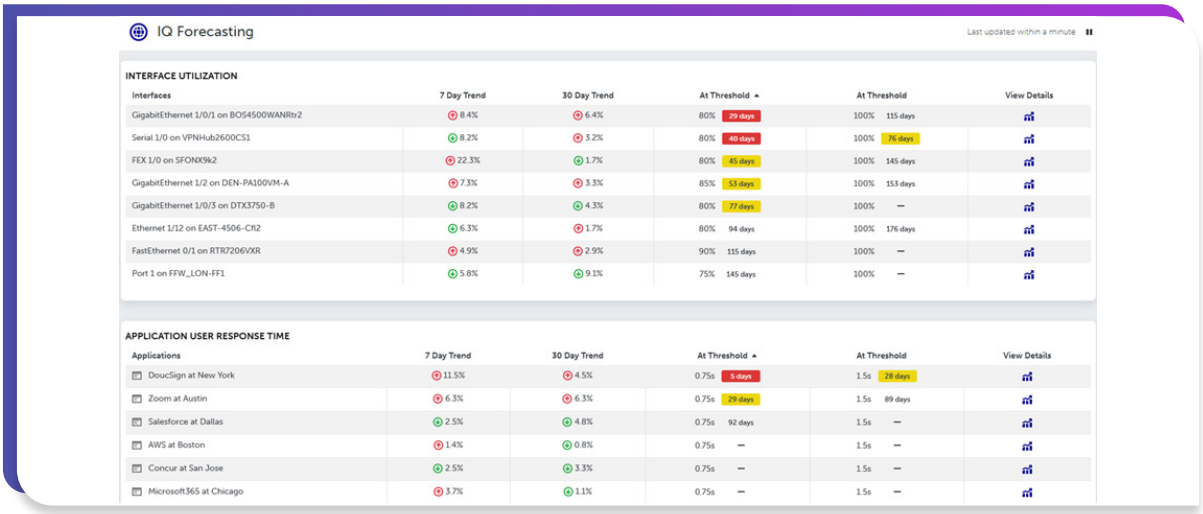
Predictive AI delivers measurable benefits across critical areas of IT, enabling teams to proactively manage performance and reliability:

Proactive Detection of Network and Application Issues: Predictive AI identifies early warning signs—such as rising latency or traffic spikes—before they impact users. By analyzing both real-time and historical data, predictive AI provides IT teams with the foresight needed to prevent disruptions, ensuring a reliable user experience.

Predictive Maintenance for Hardware and Infrastructure: Unexpected hardware failures disrupt operations, but predictive AI analyzes usage and environmental data to foresee potential failures. For instance, if a router shows increased interface utilization trends, predictive AI can alert teams to address the issue before escalation, reducing the risk of costly, unplanned outages.

Capacity Planning and Resource Allocation: In fluctuating hybrid and multi-cloud environments, managing resources is a challenge. Predictive AI uses historical data to forecast demand, enabling IT to allocate resources efficiently, even during high-demand periods. This helps prevent performance bottlenecks and ensures cost-effective operations.

Automated Root Cause Analysis: When issues arise, identifying the root cause quickly is essential. Predictive AI analyzes data correlations across network, application, and infrastructure layers, identifying likely causes based on past incidents. This accelerates troubleshooting, allowing IT teams to resolve issues faster and with greater accuracy. Predictive AI allows you to identify potential future issues. In this example we see several interfaces that will soon reach 80% of capacity in the next 30-40 days and also that the DocuSign application experience is expected to degrade past acceptable in just 5 days.



By adopting predictive AI across these areas, IT teams can proactively manage their environments with precision and foresight. This approach enhances reliability, optimizes resources, and reduces costs—empowering organizations to meet today's performance demands with confidence.

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Key Benefits of Predictive AI

Predictive AI is reshaping IT operations by offering substantial advantages over traditional reactive management:

- **Reduced Downtime and Faster Response Times:** Predictive AI enables early detection, helping IT teams address potential issues before they affect users, minimizing downtime and ensuring seamless operations.

- **Enhanced Operational Efficiency:** By automating tasks like issue detection and root cause analysis, predictive AI allows IT teams to focus on strategic initiatives, driving operational efficiency.

- **Improved Service Levels and User Experience:** Predictive AI ensures consistent, high-quality performance, enhancing service levels and providing a seamless experience for users.

Embracing predictive AI gives IT leaders the tools to transform operations, offering control, reliability, and proactive insights essential for delivering exceptional service in today's fast-paced digital world.

Conclusion

In the rapidly evolving IT landscape, predictive AI is key to moving from reactive incident management to a proactive, strategic approach. It enables IT teams to anticipate and resolve issues before they impact performance, minimizing downtime, boosting efficiency, and enhancing user experience—all critical to maintaining a competitive edge. For CxOs, predictive AI is not just a solution for immediate challenges; it's a strategic investment in a resilient, scalable, and future-proof IT environment.

We invite you to explore predictive AI as a pathway to elevate your IT operations, ensure continuity, and meet the growing demands of today's digital world.

Learn how Riverbed IQ can help modernize your IT Operations by predicting and preventing incidents before they impact user experience.

Get started with Riverbed today.
Visit Riverbed's website

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About Riverbed

Riverbed, the leader in AI observability, helps organizations optimize their users' experiences by leveraging AI automation for the prevention, identification, and resolution of IT issues. With over 20 years of experience in data collection and AI and machine learning, Riverbed's open and AI-powered observability platform and solutions optimize digital experiences and greatly improve IT efficiency. Riverbed also offers industry-leading Acceleration solutions that provide fast, agile, secure acceleration of any app, over any network, to users anywhere. Together with our thousands of market-leading customers globally – including 95% of the FORTUNE 100 – we are empowering next-generation digital experiences. Learn more at riverbed.com

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