

AI and observability

AI and observability unlock deep insights and better decision-making

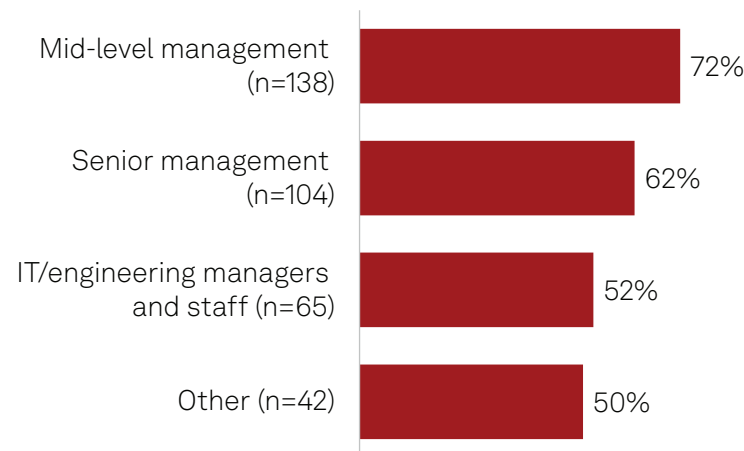
Introduction

As the rapid advancement and proliferation of AI presents new use cases for the digital enterprise, IT executives must navigate the hype to determine which areas of their organization could benefit the most from AI transformation. Observability is one area where AI is being readily adopted due to its ability to analyze the large amount of data generated by an increasingly complex IT landscape. AI-powered observability can surface unforeseen insights, suggest application and infrastructure optimizations, improve performance and reliability, and learn from incidents to predict failures before outages occur. These improvements allow organizations to effectively drive productivity, improve system resilience, accelerate innovation and deliver enhanced customer experiences.

In fact, both IT teams and management are broadly optimistic about AI. More than half (52%) of IT respondents to 451 Research’s Voice of the Enterprise (VoE): Cloud Native, Observability 2024 survey disagree with the idea that “AI will never live up to the hype.” Even larger proportions of senior management (62%) and mid-level management (72%) share this positive outlook on AI’s potential.

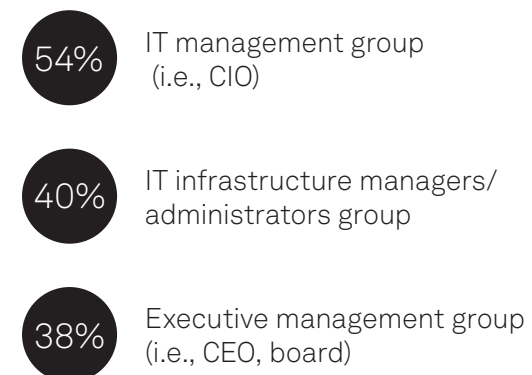
Figure 1: Mid- and senior-level management are optimistic about the usefulness of AI

Somewhat or strongly disagree: "AI will never live up to the hype"



AI/ML decision-makers

% of respondents who cite the given group's involvement in the approval of AI/ML projects



Q. Please indicate whether you agree or disagree with each of the following statements – AI will never live up to the hype in our IT operations.

Base: Respondents whose organizations are using, planning or considering observability tools and platforms with AI capabilities (n=218).

Source: 451 Research’s Voice of the Enterprise: Cloud Native, Observability 2024.

Q. Which of the following groups are involved in the approval of AI/ML projects at your organization? Please select all that apply.

Base: All respondents (n=991).

Source: 451 Research’s Voice of the Enterprise: AI & Machine Learning, Use Cases 2024.

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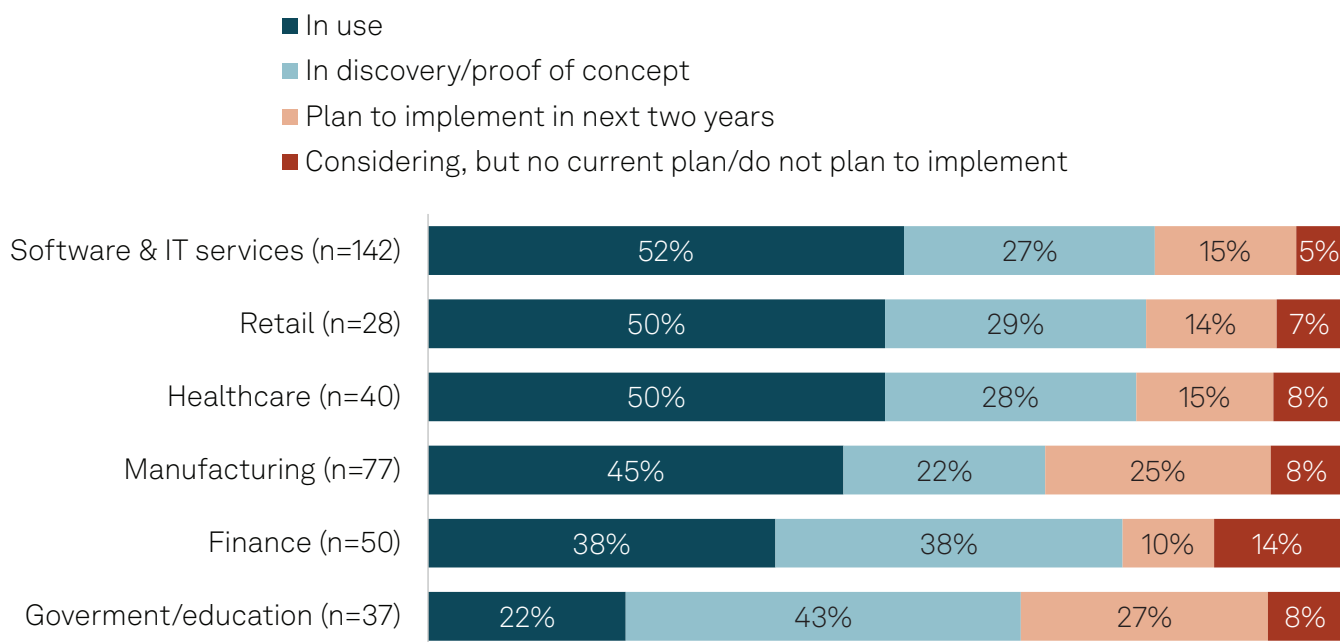
This optimism positively impacts the approval of AI projects across the organization, which is critical given the sway that IT teams have on AI project decision-making. For example, respondents to 451 Research's *VotE: AI & Machine Learning, Use Cases 2024* survey say that IT management (i.e., CIO) (54%) and IT infrastructure managers and administrators (40%) are the top groups involved in the approval of AI/machine learning (ML) projects at their organization, with IT management being the most frequently selected primary decision-maker (35%).

Adoption

Several industries have already implemented observability platforms with AI capabilities to rapidly sift through vast amounts of application and infrastructure metrics, events, logs and traces, identifying relationships and patterns — work that would take staff hours or days to perform manually. As AI learns, it can help IT staff identify the root causes of incidents quickly and recommend next steps. IT staff can also save time by using GenAI to summarize system and event status, answer questions through interactive prompts, and generate reports including post-incident reports. Use of GenAI leads to faster mean time to repair, resulting in less downtime for mission-critical applications.

Figure 2: A significant portion of enterprises are using observability platforms with AI capabilities

Adoption of AI-powered observability by industry

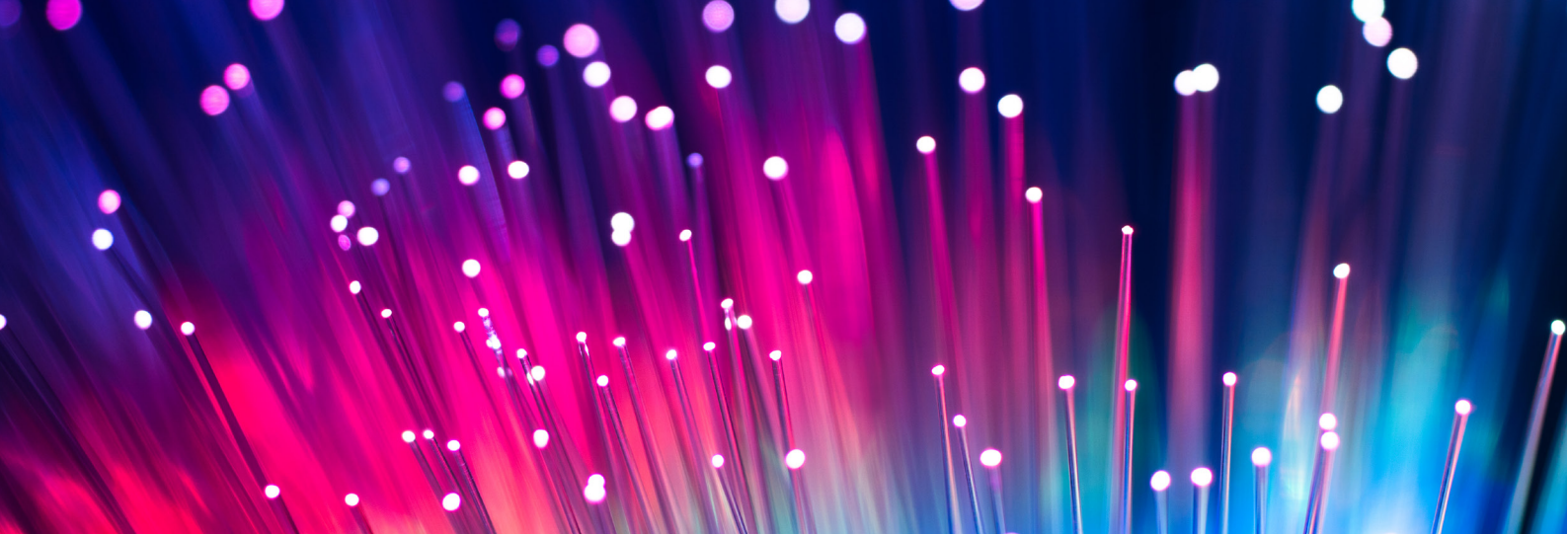


Q. Which of the following best describes your organization's use of observability platforms and tools with AI capabilities (either as a native or integrated/added functionality)?

Base: Respondents involved or with knowledge of observability platforms and tools decision-making.

Note: Percentages may add up to slightly more or less than 100% due to rounding.

Source: 451 Research's *Voice of the Enterprise: Cloud Native, Observability 2024*.



IT teams in all vertical market segments are adopting AI-powered observability tools. Top adopters include:

- **Software and IT services:** Given the technology-driven culture of these organizations, it is unsurprising to see software and IT service organizations as top adopters of AI-enabled observability platforms. IT teams in these companies are managing infrastructure both for their own operations and for customers. Using AI to gain visibility and preemptively identify issues across the customer base is critical to maintain uptime, ensure consistent service delivery and support other key outcomes to keep software products up and running and customers happy.
- **Retail:** E-commerce and web applications are centered on customer workflows, data, insights and performance. IT teams and line-of-business owners can be challenged by the sheer scale and volume of managing traffic across domains where thousands, if not millions, of consumers are making purchasing decisions at any given moment. AI-powered observability brings some order to this commerce chaos by detecting site crashes and performance degradation or predicting instances that could hamper the user experience.
- **Healthcare:** Delivering patient-facing applications requires stringent adherence to regulations and security standards, as well as consistent performance. IT teams struggle to keep pace with the variety of applications and the wide range of personas that are using the applications both within a given practice and across partner practices. The criticality of healthcare applications drives demand for robust, fast and informative observability throughout the application life cycle. AI-powered insights into IT and application performance help IT staff maintain healthcare systems critical for patient care.

Impact on business outcomes

AI-powered observability has a positive impact on the business by helping IT teams provide performant, reliable services and quickly resolve or even prevent issues before they impact users. Improved efficiency driven by AI analytics and automation allows IT operations staff and developers to spend less time on maintenance tasks, which they can devote instead to building new and innovative experiences that give their organization a competitive edge. In addition, business leaders can make informed, timely decisions about new features to improve the customer experience.



Customer scenario: Information democratization

Hypothetical: The learning curve associated with analyzing telemetry data prevents both technical and non-technical teams from using observability insights.

Before AI for observability

- The technical skill set to execute certain functions, such as generating queries, is limited to a few IT employees, diminishing its impact outside a subset of staff.
- Significant IT resources are consumed performing menial tasks such as data visualization and formatting for non-technical team members.
- Departmental silos and non-standardized data (i.e., telemetry) from disparate systems result in a lack of alignment among teams, slowing IT processes and inhibiting feature rollouts.

Business impacts of AI for observability

- + Natural language interfaces allow non-technical users to describe the information and format they want to see. Conversational GenAI allows for further refinement and inquiry.
- + Democratization of understandable IT information to non-technical staff improves productivity, empowers non-technical roles' decision-making and reduces demands on technical staff.
- + Elevated data-driven decision-making and cost management based on standardized observability KPIs drive better IT alignment with business goals.

Surfacing new insights

AI and ML are particularly adept at finding patterns in seemingly unrelated data points. Analyzing the flood of data streaming in from applications, historical performance data, outcomes from incident reports and chat logs helps identify potential threats to system reliability that might otherwise go unnoticed. Over half (54%) of respondents to 451 Research's 2024 VotE: Cloud Native, Observability survey are using AI/ML-driven pattern recognition to surface performance insights from data. For example, rising temperatures in a datacenter could indicate a problem in the HVAC, which, if left unchecked, could cause IT equipment to overheat and fail, leading to downtime. Similarly, anomaly detection surfaces new insights on unusual behaviors across a system to quickly detect and mitigate any cybersecurity or IT risks.

Democratization of IT data

Democratizing access to observability data raises its value in the enterprise, streamlines workflows and improves decision-making by allowing line-of-business stakeholders to investigate performance data and build reusable visualizations and dashboards without having to learn query and programming languages. Dynamic and complex application environments can be better understood across the organization and placed into a business context with relevant data enrichment, deep analysis and contextual presentation. Generative AI, natural language processing and machine learning data analysis capabilities can help teams — regardless of technical skill level — to collaborate effectively across technical and non-technical roles.

Expanding observability's sphere of influence

Making observability data accessible to business leaders expands the role observability plays throughout the enterprise, such as creating KPIs for application performance that are aligned with the needs of the business. As enterprises continue to explore application placement based on factors such as cost, geographic location, proximity to end users and customers' business, leaders with AI powered observability can make better decisions by visualizing their spending and understanding what is impacting user experience in real time. Broader access to observability data means better decision-making and customer outcomes.



Customer scenario: IT workforce optimization

Hypothetical: An ITOps team spends the majority of its time maintaining existing applications — debugging code, troubleshooting and investigating issues, and writing incident post-mortem documentation.

Before AI for observability

- Incident response time is consumed with collecting and processing data across multiple IT systems and analyzing the output for root causes, resulting in longer mean time to repair.
- IT team spends much time on operations, maintenance and incident response, forming a significant cost footprint derived from a break-fix culture.
- Only a few IT employees have the skill set to establish proper data collection and monitoring and abstract insights from the current IT infrastructure.
- Chat logs, support tickets and post-mortems contain institutional data that could provide important lessons but is time-consuming to review. They are wasted resources if left unused.

Business impacts of AI for observability

- + AI shortens incident response with initial analysis and assists IT teams as an active member in collaboration channels. All stakeholders can have up-to-the-minute summaries of incident status and updates.
- + IT staff spends less time working incidents and more time adding new features and optimizing applications, both of which have an impact on revenue.
- + By querying GenAI chatbots in natural language, all roles can get updates on system status and incident progress, investigate applications, understand complex applications, and generate reports and dashboards.
- + Historical analysis of events is applied to the real-time incident management workflows.

Increased ITOps productivity

IT teams are tasked with maintaining enterprise applications and infrastructure that powers the business. During an outage, IT teams scramble to collect and process telemetry data to perform root-cause analysis and remediation, which contributes significantly to the time to get applications back online. AI-powered observability also uses the vast amount of telemetry data to look for indicators of potential issues. In both cases, the use of AI drastically improves operational efficiency by reducing the time to complete tasks from hours to minutes or less. IT professionals planning on using GenAI with observability seek these IT productivity gains. Automated data management (including summarization), problem resolution recommendations and interactive chat interfaces are the top three features that AI can improve, according to VotE: DevOps, GenAI in ITOps 2024 survey respondents. AI-powered observability makes IT staff more productive and efficient.

Greater and faster innovation

Saving time using AI in workflows benefits IT teams and the entire organization. For example, developers spend much of their valuable time on menial tasks — debugging code, writing up incident post-mortem documentation and answering analytics tickets for non-technical teams, among countless other tasks associated with managing a complex and outdated IT infrastructure. Freeing up this time to spend on innovation leads to revenue growth, improved efficiencies and better user experience. IT staff can spend more time ideating new products or features, bringing them to market faster and gathering customer feedback on a cadence that can outpace the competition. There are also less quantifiable benefits to a company culture that embraces innovation: increased satisfaction of IT workers who can spend more time on creating rather than maintaining, as well as reduced turnover.

Improved customer and user experiences

Due to their influence on end-user experiences, customer-facing applications are the lifeblood of any company, and they can give companies a competitive edge. At the same time, disruptions present a sizable business risk, not only to revenue generation but to reputation and customer sentiment. Front-end applications that serve end users are data-rich and complex environments to manage, which makes them an excellent use case for AI. In addition to application management, AI can be used to track KPIs to ensure performance goals are being met. Insights from AI-powered observability can also be used to inform application owners and business leaders about new features and enhancements. AI can analyze the user journey through an application and highlight sections that work well and those that need improvement. Such analysis can improve the customer experience, which in turn can raise customer spending, lower customer retention costs and reduce customer churn.

Outlook

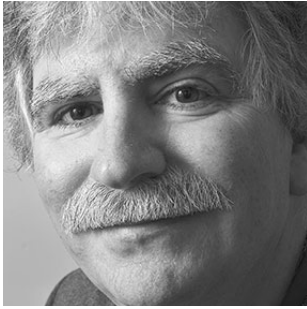
AI unlocks multiple advantages for enterprises, including optimizing workflows during high-tension events such as outages, and making IT telemetry data accessible to non-experts via natural language interfaces such as copilots used to build queries and generate reports. AI-powered analysis provides deep insights from data that might otherwise remain hidden, allowing IT teams to focus on fixing the root cause of an issue rather than simply mitigating symptoms. AI reinforces learning from current and past events, which can improve troubleshooting by suggesting root causes and recommending remediation or optimization steps based on what it has learned. AI-guided support speeds up IT processes and can lead to positive outcomes with improved performance, reliability and, ultimately, customer satisfaction. IT staff can use the time saved on manual processes to add value to the business by bringing new services, products and capabilities to market.

The adoption of AI projects is set to increase, as embedding AI into business applications and services enables companies to differentiate their products and services. In a recent custom 451 Research survey, respondent organizations leveraging AI/ML have an average of 11 AI/ML projects in production. As organizations build new AI applications and experiences, observability practices must maintain visibility across the AI stack, including lesser-known components such as orchestration frameworks, vector databases, model-serving platforms and infrastructure to maximize their AI investments. Comprehensive AI application monitoring tools offer visibility into the performance, cost and response quality of AI-powered applications, enabling organizations to mitigate risks, confidently deploy AI applications and maximize ROI.

Methodology

This report is commissioned by New Relic and based on data from Voice of the Enterprise surveys conducted by S&P Global Market Intelligence 451 Research.

About the authors



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Mike Fratto is a senior research analyst at S&P Global Market Intelligence 451 Research, leading the observability and networking research segments. He focuses on understanding the competitive landscape of the segments he covers by understanding the competitors' strategies and putting them into context. He has extensive experience in enterprise security and network infrastructure products, as well as consulting with enterprise IT, equipment and software vendors, and service providers.



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