



The State of Observability 2025

The emerging control plane for
AI transformation

INTRODUCTION

Observability in 2025

Observability is shifting from a reactive IT tool to a proactive, enterprise-wide intelligence layer. AI accelerates this shift—making observability more predictive while demanding greater transparency and control.

As AI transforms observability practices, organizations also rely on observability to make AI explainable, reliable, and auditable.

In this year's annual report on the state of observability, we focus on the convergence of observability and AI to illuminate:

- How AI is being integrated into observability and operations across organizations
- What use cases and capabilities are producing measurable value
- Where AI adoption gaps and trust concerns persist
- Why observability is becoming a shared capability across security, compliance, sustainability, and automation
- The mandate for observability for operational and business advantage in the AI era

By examining where organizations are investing in observability and AI, where they're struggling, and where they see the greatest return on investment, this report provides a vendor-neutral and data-driven foundation for informed strategic decision-making.

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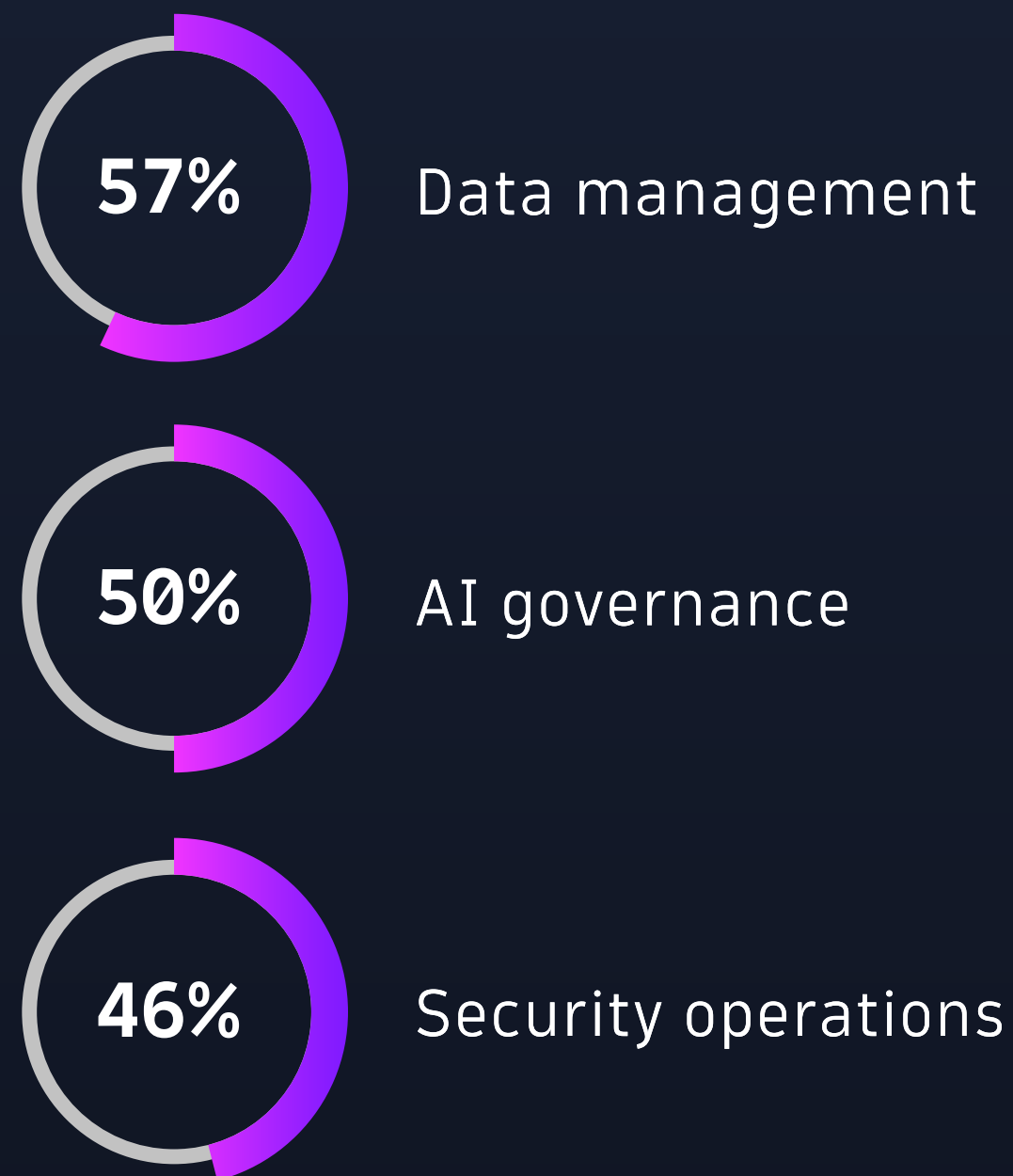
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100%

reported that their organization uses AI as part of its operations



CHAPTER ONE

AI adoption across the enterprise

Enterprises have taken to heart today's prevalent advice: Organizations that resist adopting AI risk falling behind their competitors.

Every respondent in our survey reported that their organization has adopted at least some form of AI. AI adoption is now essential.

Yet despite this widespread embrace, AI adoption is far from uniform. Deeper analysis reveals that AI usage has not yet permeated throughout most organizations. Adoption is concentrated on a particular set of use cases rather than for more global, organization-wide AI integration.

More than half of organizations are using AI to streamline and automate data workflows—improving efficiency in data collection, cleaning, analysis, and security. Half are using AI to help manage the safety and ethical use of AI systems, and just under half are leaning on AI to strengthen security operations, including threat detection, prevention, and incident response.

While a third of respondents currently use AI in their observability programs, this area is growing.
Forward-looking teams use AI to improve system performance, resilience, and decision-making.

Additional AI uses (share of respondents)

32%

Observability

30%

DevOps and software delivery

29%

Log management

27%

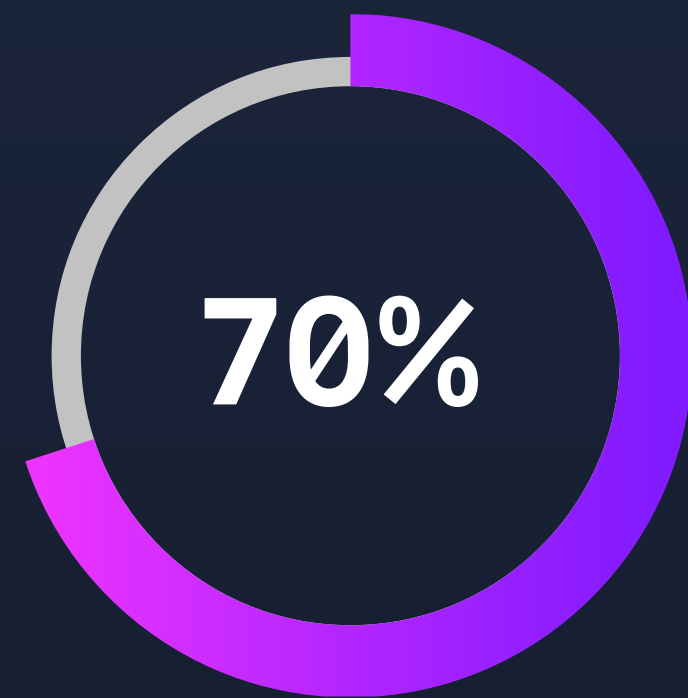
Sustainability

Progress AI from pilot to production

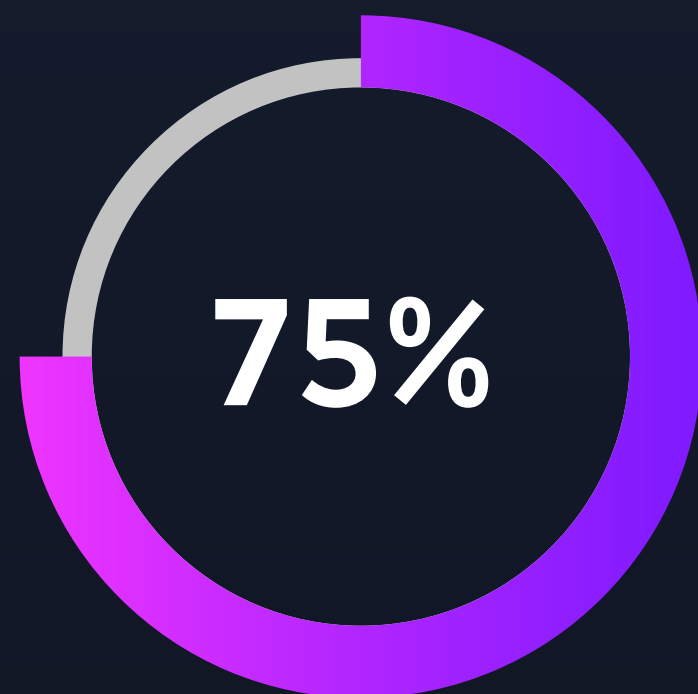
Although most organizations have moved beyond experimentation, AI that operates in isolation creates risk.

The rapid growth of observability indicates how organizations are using it to move from fragmented pilots to enterprise-wide value so they can:

- Prioritize high-impact, operational use cases
- Break down silos among teams
- Streamline AI governance
- Build on existing observability data



report their observability
budget has increased
in the past year



expect observability budgets
to increase next year

CHAPTER TWO

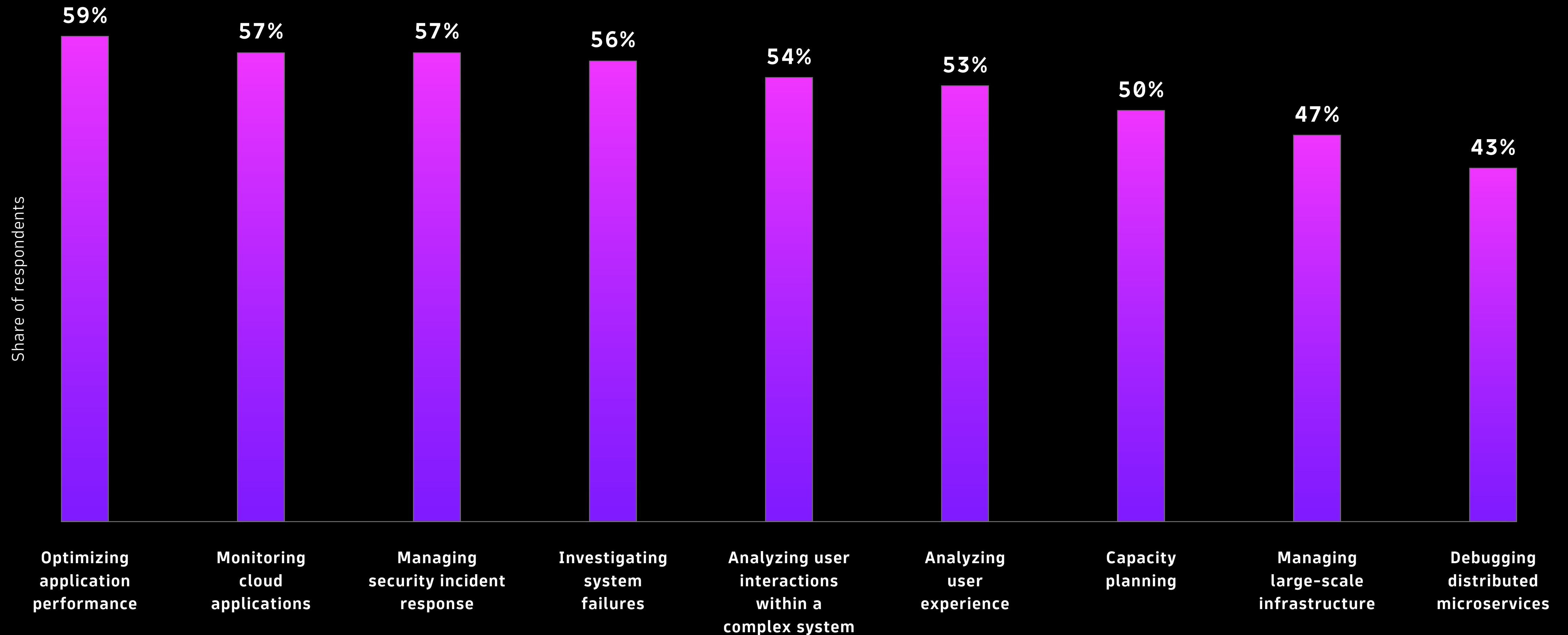
Observability in the era of AI

Organizations are recognizing the importance of observability for delivering efficient cloud-native environments and successful AI projects and are increasing their investment in it.

More than two-thirds of respondents indicated that they increased observability budgets in the past year and expect to increase those budgets in the next fiscal year.

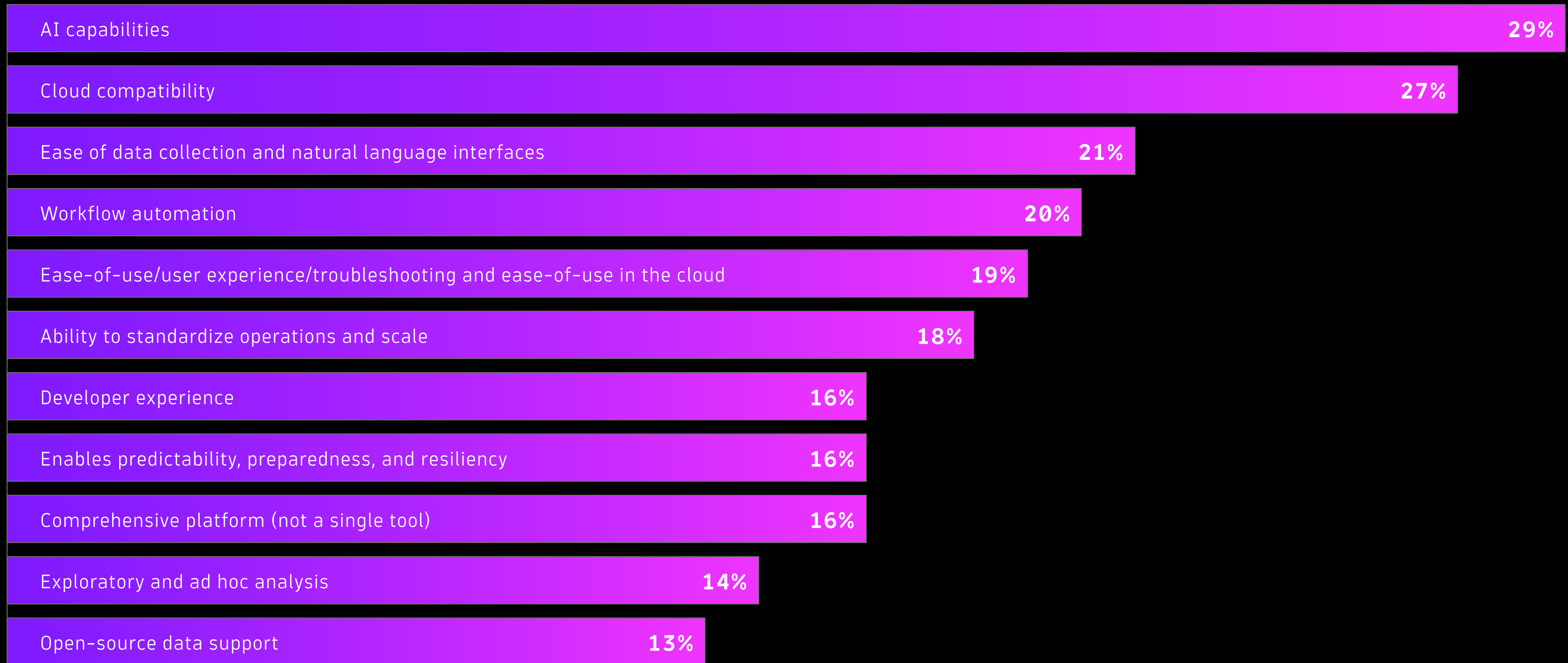
Current use of observability solutions

Leaders are recognizing the convergence of observability and AI as an opportunity to reduce the burden of exponential data growth from cloud-native technology stacks, while also introducing new benefits to their businesses.



AI capabilities are now the #1 criterion for selecting an observability platform

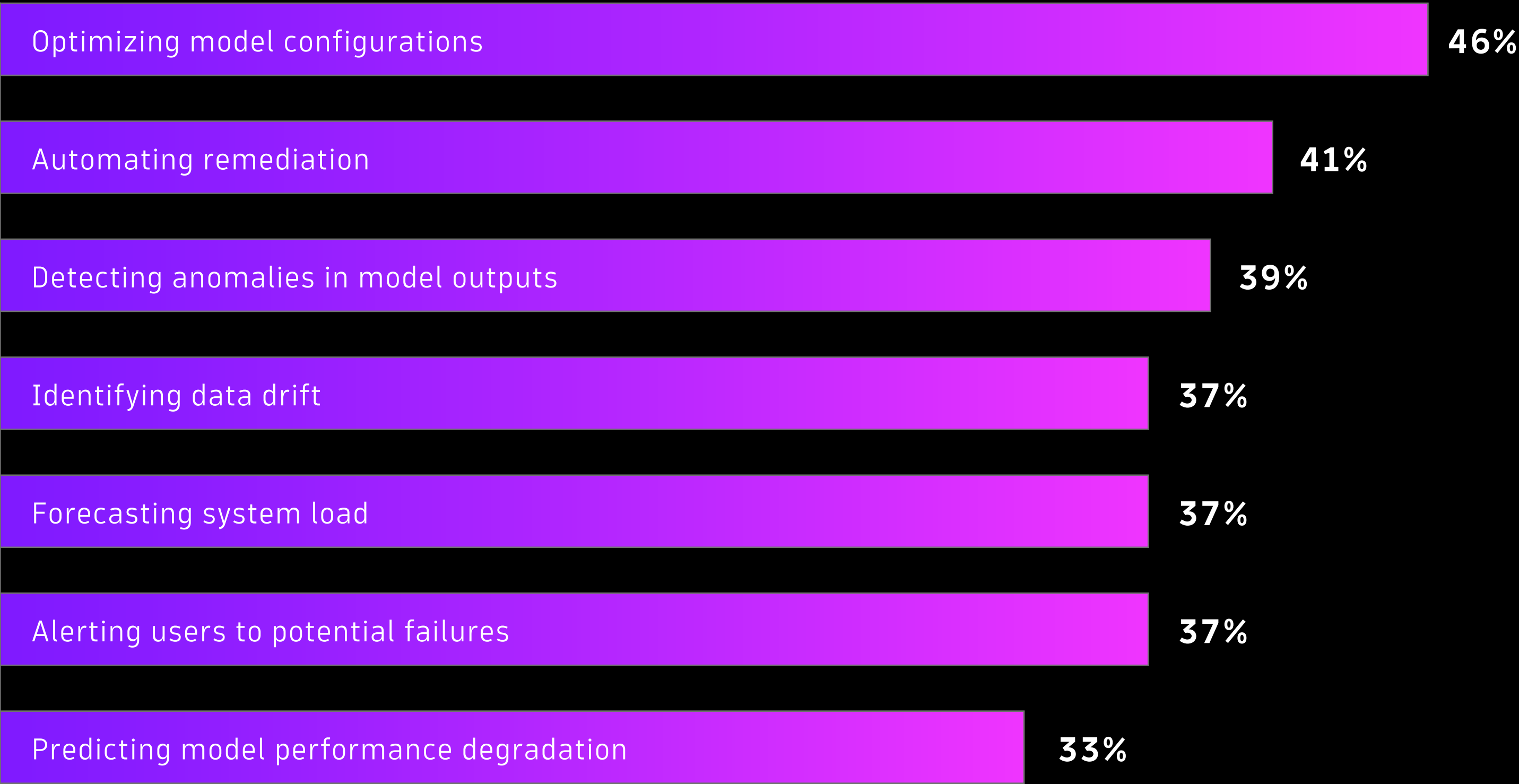
For the first time in the history of this annual observability survey, **AI capabilities now outrank long-established criteria** like cloud compatibility and ease of data collection when selecting observability platforms.



The impact of observability on ROI

The data indicates that leaders are expecting AI to supercharge their observability efforts and assist their AI adoption. Nearly half of respondents anticipate that the major ROI of AI-powered observability will come from optimizing model configurations. Leaders also expect to see significant ROI from their observability systems to detect anomalies in AI model outputs and predict AI model performance degradation.

Greatest expected ROI (share of respondents)



Driving the shift to shared intelligence

The growing expectation of value from observability indicates that leaders are recognizing it as a strategic enabler for sharing intelligence that can advance:

- AI readiness
- Cost control
- Application security
- Operational resilience

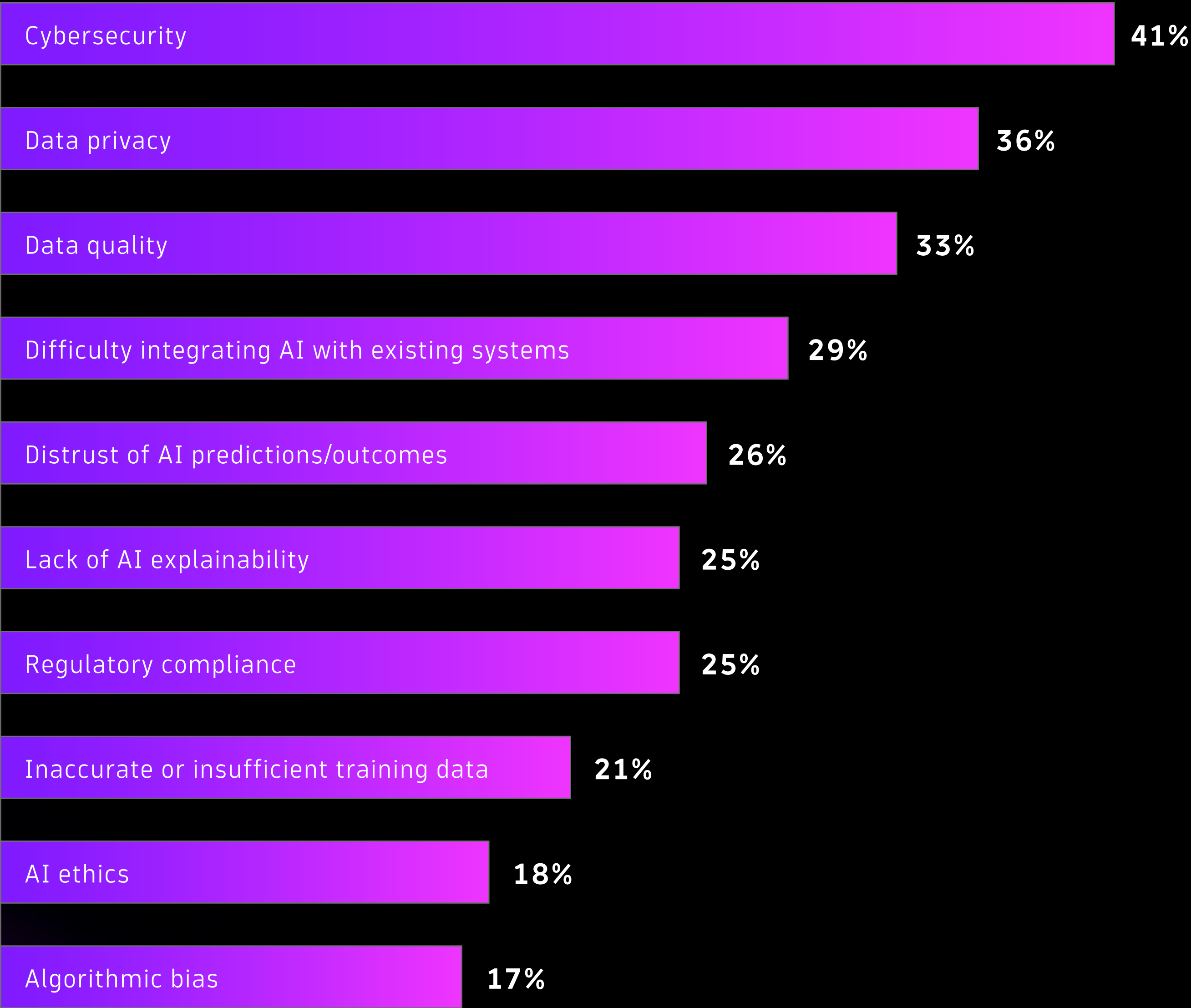
Leaders who understand this shift are better positioned to align observability investments with cross-functional priorities.

Trust and transparency in AI

Although AI adoption is universal, the survey also shows its rapid adoption has come with organizational challenges.

Not surprisingly, data privacy and cybersecurity are the top concerns among respondents, followed by worries about data quality and integrating AI into existing systems.

AI usage concerns (share of respondents)



As a result, respondents say humans verify 69% of AI-powered decisions at their organizations. Further, a full 99% of respondents in AI governance roles report taking human-monitored measures to validate AI decisions.

In response, more than two-thirds of AI leaders report that their budget for AI trust and transparency is increasing now and in the coming year. These findings also suggest that leaders may not be fully ready to hand critical business decisions over to AI, but rather use AI to help inform and accelerate the most important human decision-making.

69% of AI-powered decisions
are verified by humans

99% of AI governance leaders
report their organization
takes human-monitored
measures to validate AI
decisions

70% of AI governance
leaders report AI trust
and transparency
budget increases this
year and next

Building trust in AI systems

Results indicate that AI trust and transparency are driving investment in observability for AI oversight to:

- **Verify critical decisions** involving sensitive data, financial impact, or critical infrastructure.
- **Establish LLM guardrails** to safeguard against biases, hallucinations, and misuse.
- **Monitor AI** for performance, cost, efficiency, security, compliance, and drift over time.
- **Tie AI to business outcomes** and measurable KPIs.

Converging observability, application security, and DevOps automation

Survey data reveals that AI and observability are also converging across traditional application security and DevOps automation domains.

AI assistance in managing security compliance is nearly universal (98%), which is influencing teams' budget priorities.

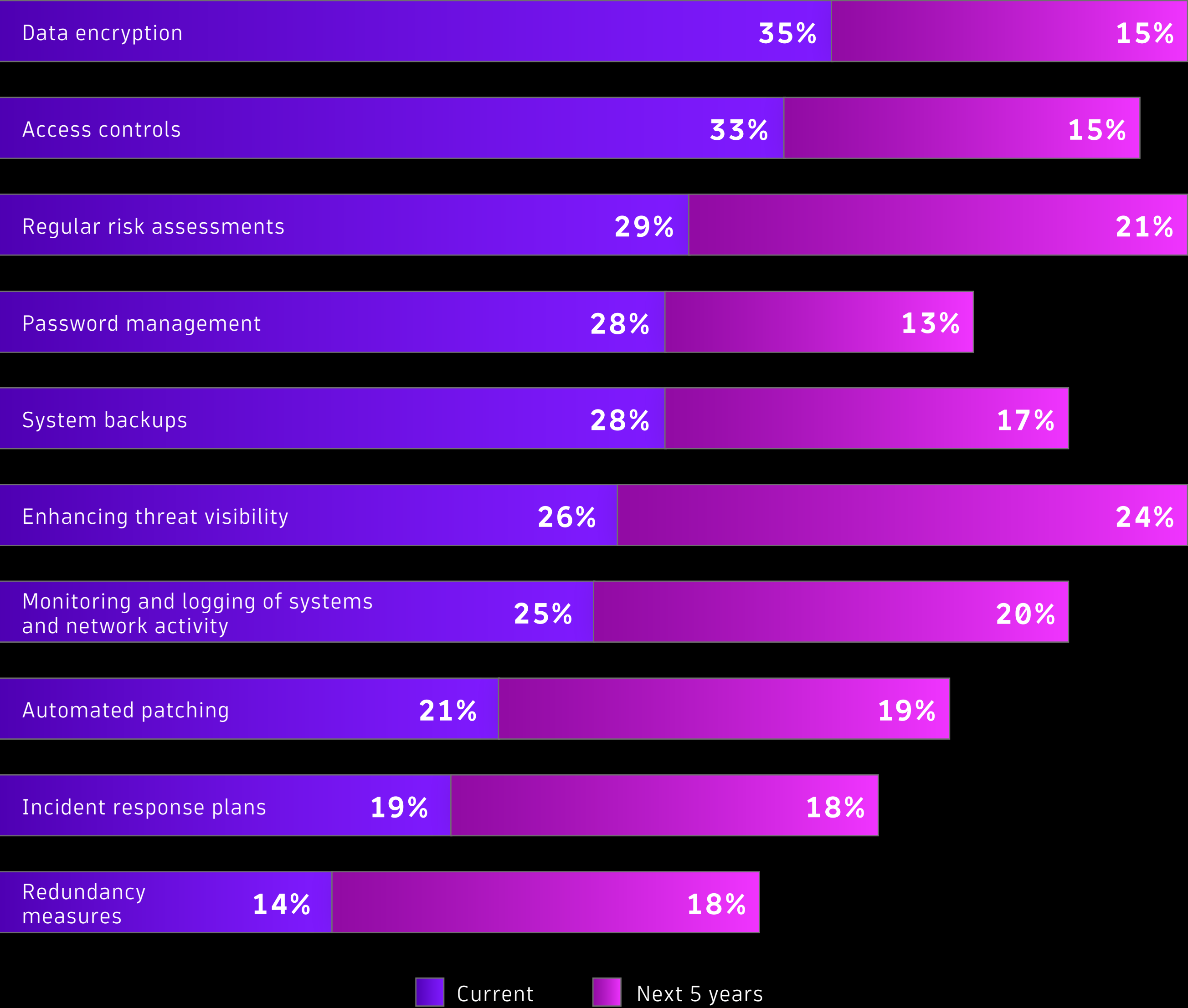
98%

of security leaders reported using AI to manage security compliance in some capacity

69%

have seen increased budgets for AI-powered threat detection in the past year and expect budgets to increase next year

Using AI in security compliance



Three action items for IT leaders to enhance security with observability

AI-powered observability is enabling proactive threat detection by identifying anomalies and potential threats that might otherwise go unnoticed. This suggests several important considerations for security leaders:

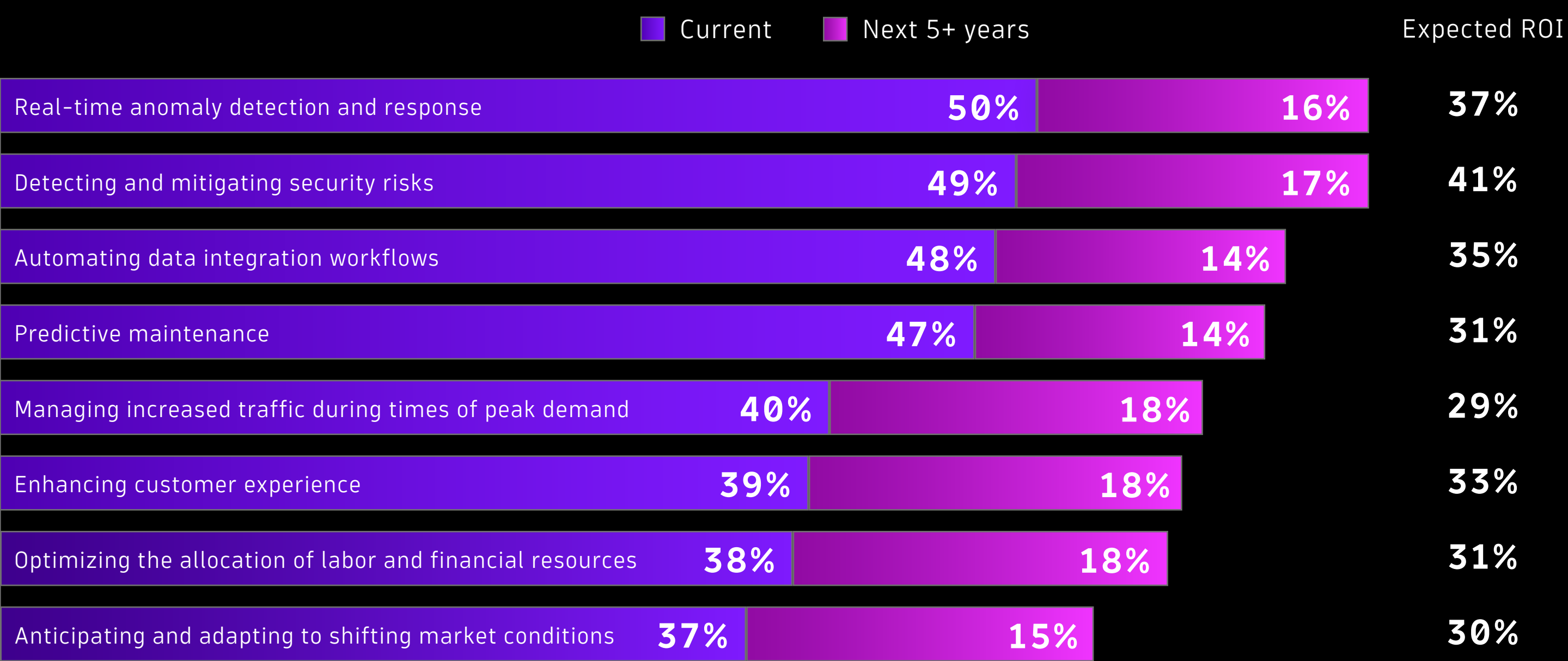
- Regular risk assessments and enhancing threat visibility are expected to grow fastest in the near term.
- AI-powered threat detection, automated patching, and redundancy reduction are expected to double in the next five years.
- By 2030, 50% of organizations expect to have adopted AI-powered data encryption, risk assessments, and threat detection capabilities.

Real-time DevOps automation is on the rise, giving way to agentic AI

Up to 50% of DevSecOps leaders currently use real-time automation solutions across a range of use cases and more expect to expand their adoption—and increase their expected ROI—in the next five years.

Mitigating security risks and real-time anomaly detection are the top automation use cases, with adoption anticipated to expand from about 50% to up to 70% in the next five years. This DevSecOps focus is also the AI/observability nexus where survey participants expect to see the greatest ROI (41%), suggesting increased investment in developing agentic AI workflows: AI that can autonomously plan and execute tasks toward a goal within guardrails.

Real-time automation use: Current use, next 5 years, and expected ROI



Gaining control of agentic AI

The ongoing expansion of agentic AI into DevSecOps automation represents a powerful shift in how teams:

- Respond to incidents
- Manage infrastructure
- Debug complex systems

Real-time observability of AI systems with natural language interaction is increasingly important to ensure safe agent behavior, model performance, and system health.

Top 3 sustainability priorities

56% Improving efficiency

50% Reducing costs

45% Meeting organizational
ESG goals and regulatory
requirements

Top 3 barriers to progress

29% Concerns about ROI

28% Upfront costs of
implementing energy-
efficient solutions

25% Lag in data collection
to remediation

CHAPTER FIVE

Overcome sustainability barriers

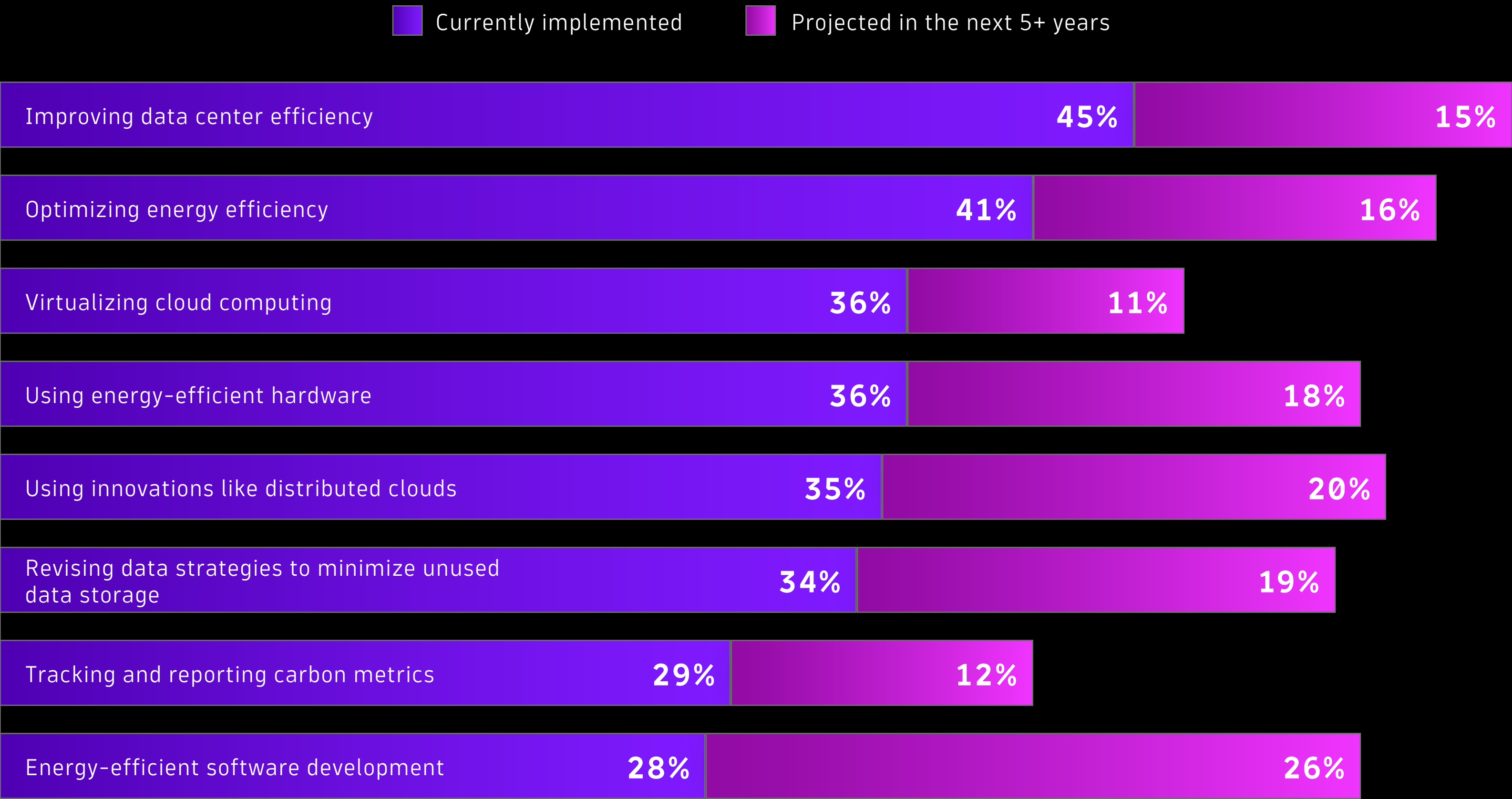
Environmental sustainability is another key focus where observability is also proving essential.

Environmental, social, and governance (ESG) is rapidly becoming a board-level priority, especially as electricity-intensive AI technologies drive up energy consumption.

While ESG efforts are often viewed through a regulatory or ethical lens, organizations increasingly recognize sustainability as a path to improved efficiency, cost savings, and long-term resilience.

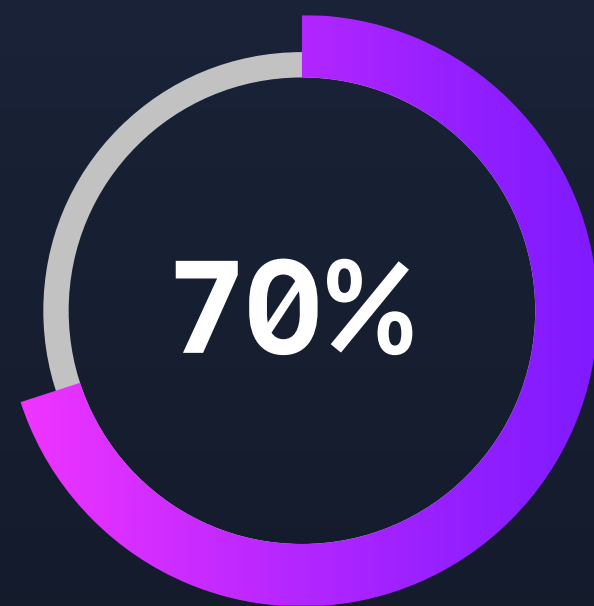
So far, most organizations have focused on sustainability strategies that deliver clear financial impact. **Improving data center efficiency** is the top priority, with 45% already implementing it and another 11% planning to do so within two years. Likewise, **energy optimization** is underway at 41% of organizations, with an additional 12% preparing to launch efforts soon.

Looking ahead, leaders are investing in more innovative approaches. **Distributed cloud adoption** is projected to grow from 35% today to 54% in five years, reducing both energy use and e-waste. The biggest shift is in **energy-efficient software development**, expected to rise from 28% adoption today to 51% by 2030.

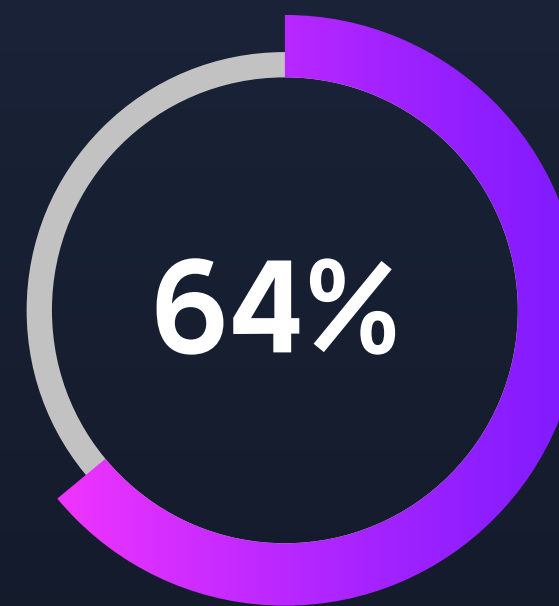


Among organizations pursuing sustainability, observability has become a foundational capability. More than 70% use their observability platforms to monitor energy consumption, track emissions, and manage ESG-aligned operations in real time.

This momentum is backed by investment: More than 80% of organizations have a dedicated sustainability budget, and 64% of sustainability tech leaders report budget increases for observability-aligned sustainability efforts—both this year and next.



Use observability to monitor and manage their sustainability initiatives



Report growing budgets for observability-aligned sustainability efforts

Turning sustainability into strategic advantage

Results indicate that observability is central to overcoming the challenges of meeting sustainability goals, for example:

- Translating utilization metrics—CPU, memory, network I/O—into energy usage (kWh) and carbon emissions (CO₂e) to measure environmental impact.
- Combining utilization metrics with cloud cost data to reveal the financial impact of sustainability efforts.

The rise of business observability

Observability has evolved to use cases beyond its origins in IT infrastructure.

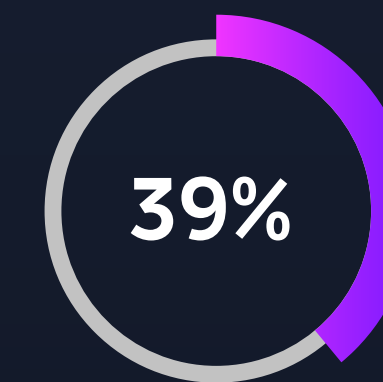
Today, business observability is emerging as a core capability for leaders seeking real-time insight into how technology impacts customer experience, operational performance, financial efficiency, and sustainability outcomes.

Although less than 30% currently use AI to align observability data with KPIs, nearly a third cite **AI capabilities as the most important factor in observability solutions**. This interest underscores the shift toward intelligent, automated platforms that align IT telemetry with business KPIs.

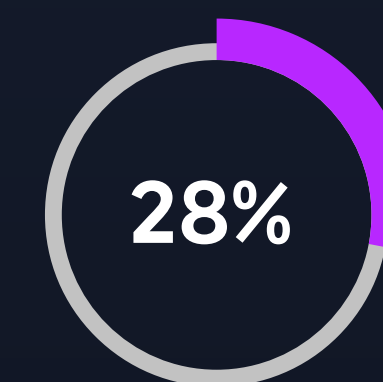
Respondents include enabling business resiliency, ability to scale, predictability and preparedness, exploratory and ad-hoc analysis, and improved developer experience (DevEx) among their most important observability considerations.

29%

cite AI capabilities as the most important factor in observability solutions



are already using automated real-time solutions to enhance customer experience



are using AI to align observability data with KPIs

Organizational resilience and agility

2025 results show that implementing observability capabilities across the enterprise beyond traditional IT applications is growing.

22%

say **converging real-time data and AI-driven automation with observability positively impacts business agility**, enhancing their ability to respond quickly to changing market conditions, customer demands, and advancements in open-source software and other technologies.

24%

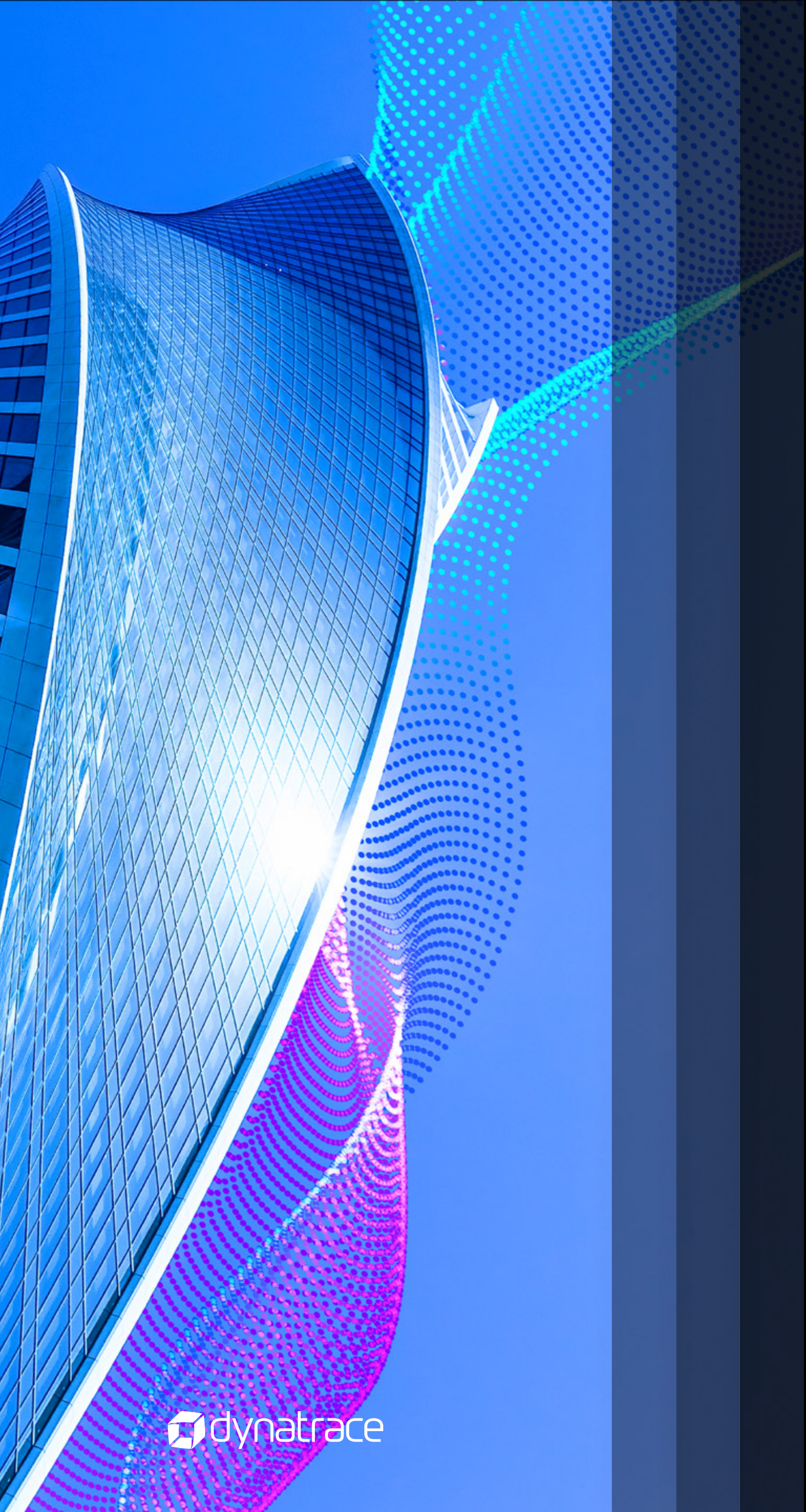
say **AI-based automation driven by real-time data also improves their organization's resilience** by helping teams to more effectively predict and avoid downtime, system failures, and cyber threats.

Achieving strategic business goals

Survey results stress the importance of AI capabilities and cloud compatibility for an observability solution that aligns with strategic business goals. Observability connects IT performance with business outcomes, driving benefits such as:

- Data-driven decision-making
- Resource optimization
- Enhanced user experiences

These benefits confirm the value of AI-driven observability to mitigate risks, unlock innovation, and drive digital transformation.



CONCLUSION

What's next: The mandate for observability in the age of AI

The enterprise IT landscape is rapidly evolving toward an AI-native model.

This transition involves more than just integrating AI into existing systems. It's about fundamentally reimagining the entire approach to business around the capabilities of AI—and observability is the key capability that will make this transformation possible.

Observability in the AI era breaks down functional silos and creates a shared intelligence layer across departments for smarter decisions, safer automation, and more efficient operations.

This report demonstrates how observability translates AI into concrete strategies, investments, and real-world projects in the following ways:

- With increasing investments in priority areas such as AI governance/trust and security operations, organizations are **prioritizing observability for their future budgets.**
- Observability investment is expected to have a significant impact on **organizational resilience and business agility.**
- Expected increases in AI usage over the next five years indicate strategic shifts toward **predictive observability, security convergence, and sustainable operations.**

For these reasons, organizations that unify observability with transparent and sustainable AI practices will lead the next wave of enterprise innovation.

Methodology overview

This report is based on a global survey of 842 senior leaders and decision makers across IT, security, operations, DevOps, and sustainability functions in large enterprises with annual revenues of \$100 million or more. It was conducted and analyzed by Qualtrics partner Y2 on behalf of Dynatrace during 1H 2025.

Respondents held roles such as CIO, CTO, CISO, Head of DevOps, Director of Cloud, Sustainability Lead, and similar positions that involved decision-making.

The sample included respondents from the United States, Spain, France, Italy, Germany, and Japan.

Participants were asked a series of questions about their organizations' observability and AI programs including adoption rates, budget sizes, ROI expectations, trust metrics, use case maturity, and more.

All findings were analyzed to uncover not only current-state benchmarks but also emerging trends across automation, trust, security convergence, and sustainable IT in enterprise organizations.

The margin of error is $\pm 3.4\%$ at a 95% confidence level.

Global data summary

UNITED STATES (206)

- **Improving AI governance and trust** is the top priority of the respondents in the US.
- Enhancing threat visibility and improving crisis management are the top security convergence goals in the US **(37%)**, followed by optimizing cloud security **(36%)**.
- The top sustainability goal of US respondents is to improve efficiency **(60%)**. Their greatest barrier to adopting sustainability is upfront costs **(42%)**.
- US organizations **(56%)** are especially concerned about complex compliance requirements compared to other countries.

GERMANY (125)

- The top priority of respondents in Germany is **improving real-time, data-driven automation and observability solutions**.
- Exposing vulnerabilities **(40%)** and optimizing cloud security **(39%)** are the top security convergence goals in Germany, followed by enhancing threat visibility **(31%)**.
- **68%** of German respondents cited reducing costs as their top sustainability goal. As their greatest barrier to sustainability practices, 42% ranked data center optimization.
- When it comes to sustainable AI practices, most German respondents **(63%)** were concerned about wasting hardware resources.

FRANCE (129)

- Respondents in France ranked **improving AI governance and trust** as their top priority.
- The top security convergence goals in France are to optimize cloud security **(43%)**, support compliance with security policies **(33%)**, and enhance threat visibility **(32%)**.
- Organizations in France **(52%)** are especially concerned about complex compliance requirements of sustainable AI practices compared to other countries.

SPAIN (130)

- **Improving real-time, data-driven automation and observability solutions** is the top priority of respondents in Spain.
- Streamlining security operations (**36%**), optimizing cloud security (**32%**), and improving crisis management (**29%**), are the top security convergence goals.
- The top AI sustainability priority of respondents in Spain is reducing costs (**77%**). Respondents cite concerns about ROI (**45%**) as their top AI sustainability barrier.

ITALY (128)

- In Italy, the top priority of respondents is **improving real-time, data-driven automation and observability solutions**.
- The top security convergence goals in Italy are optimizing cloud security (**36%**), enhancing threat visibility (**35%**), and streamlining security operations (**32%**).
- Respondents in Italy cite reducing waste (**64%**) as their top AI sustainability priority. Their top barrier to AI security is concern about ROI (**32%**).

JAPAN (124)

- **Converging security and observability** for more efficient security practices is the top priority of respondents in Japan.
- In Japan, the top security convergence goals are optimizing cloud security (**45%**) and improving crisis management (**32%**), followed by enhancing threat visibility (**29%**).
- When it comes to AI sustainability, respondents in Japan say that reducing costs (**61%**) is their top priority, and resistance to change (**32%**) is their biggest barrier.

Dynatrace: The intelligence platform for modern enterprises

We hope this report has provided valuable insights about how AI is influencing observability, security, compliance, sustainability, and automation initiatives. Dynatrace is committed to empowering leaders to drive strategic transformation by unifying business, IT intelligence, and security through AI-powered automation and real-time observability.

Learn more

To experience the Dynatrace difference, visit www.dynatrace.com/platform for assets, resources, and a free 15-day trial.

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