

# Generative AI in IT Operations: Fueling the Next Wave of Modernization

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## Research Objectives

Artificial intelligence (AI) is expected to be a game changer for IT operations. According to recent Enterprise Strategy Group research, 85% of organizations are actively using, planning to use, or considering artificial intelligence (including generative, causal, and predictive) across many of their functional areas, including IT operations. In an era when IT operations teams are under tremendous pressure to accelerate processes, enable digital transformation, and reduce the unit cost and environmental impact of compute, artificial intelligence is seen as a key enabling technology.

To address these challenges, organizations are turning to AI tools that eliminate manual processes to move faster, improve efficiency, promote productivity, and improve outcomes. Whether through generative AI (GenAI)-based tools, copilots, natural language querying, or advanced usage of causal and predictive AI, IT operations teams have an ever-increasing set of tools available to help them achieve their goals, improve stakeholder satisfaction, and optimize for their important metrics. Lastly, providers in these markets need to understand how GenAI will impact their value proposition and what buyers prioritize when it comes to AI in IT operations.

To gain further insight into the current status and near future of AI in IT operations, TechTarget's Enterprise Strategy Group surveyed 360 IT professionals at organizations in North America (US and Canada) involved with observability, ITSM, and AIOps technologies and processes. This survey explored how AI is impacting the selection and use of IT operations tools, key stakeholders influencing purchasing decisions, functional requirements, business and technology drivers, tool consolidation plans, and spending intentions.

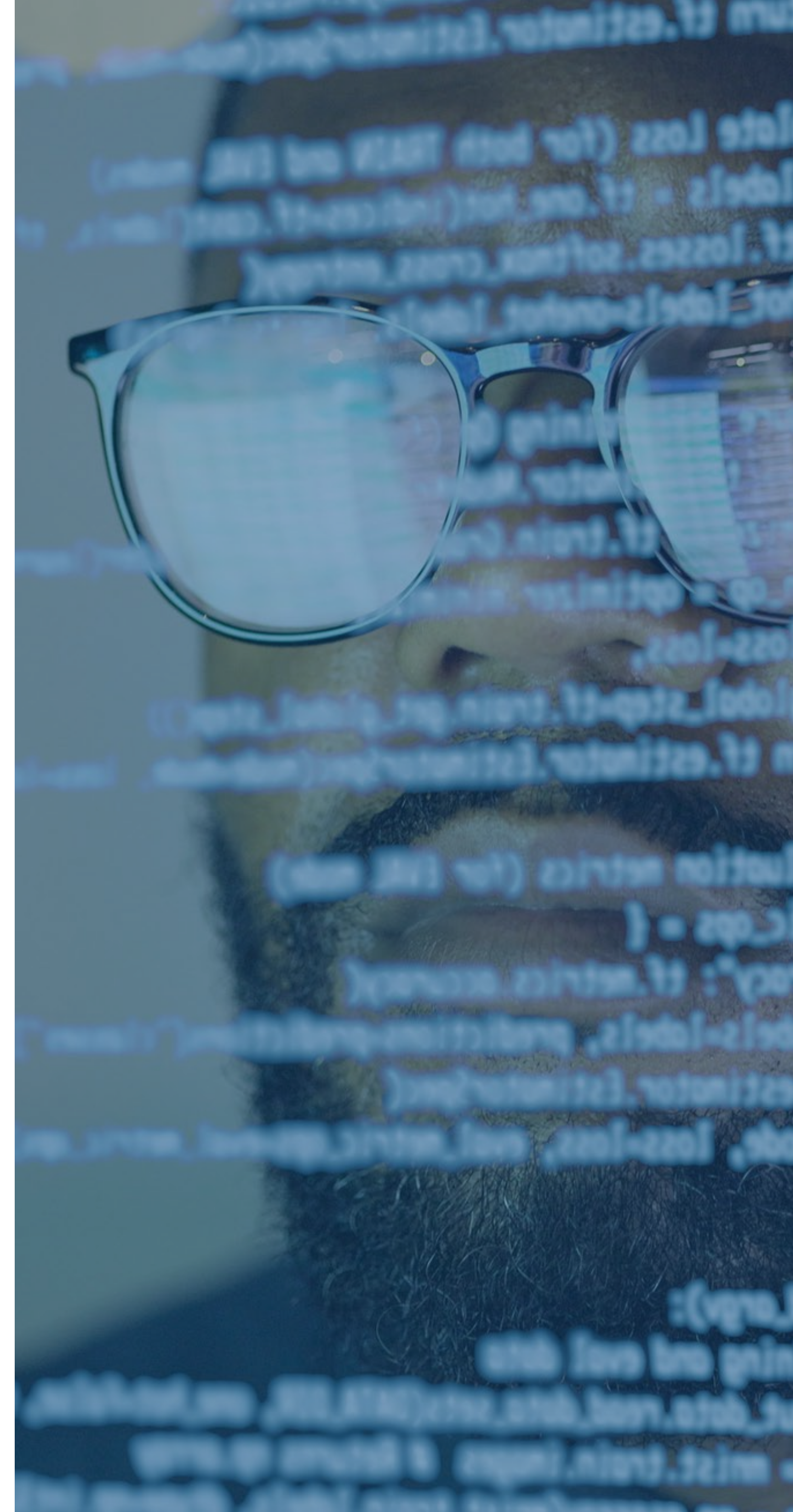
### THIS STUDY SOUGHT TO:

**Identify** current and future use cases and drivers for generative artificial intelligence in IT operations.

**Learn** how and from whom organizations intend to source their AI for IT operations.

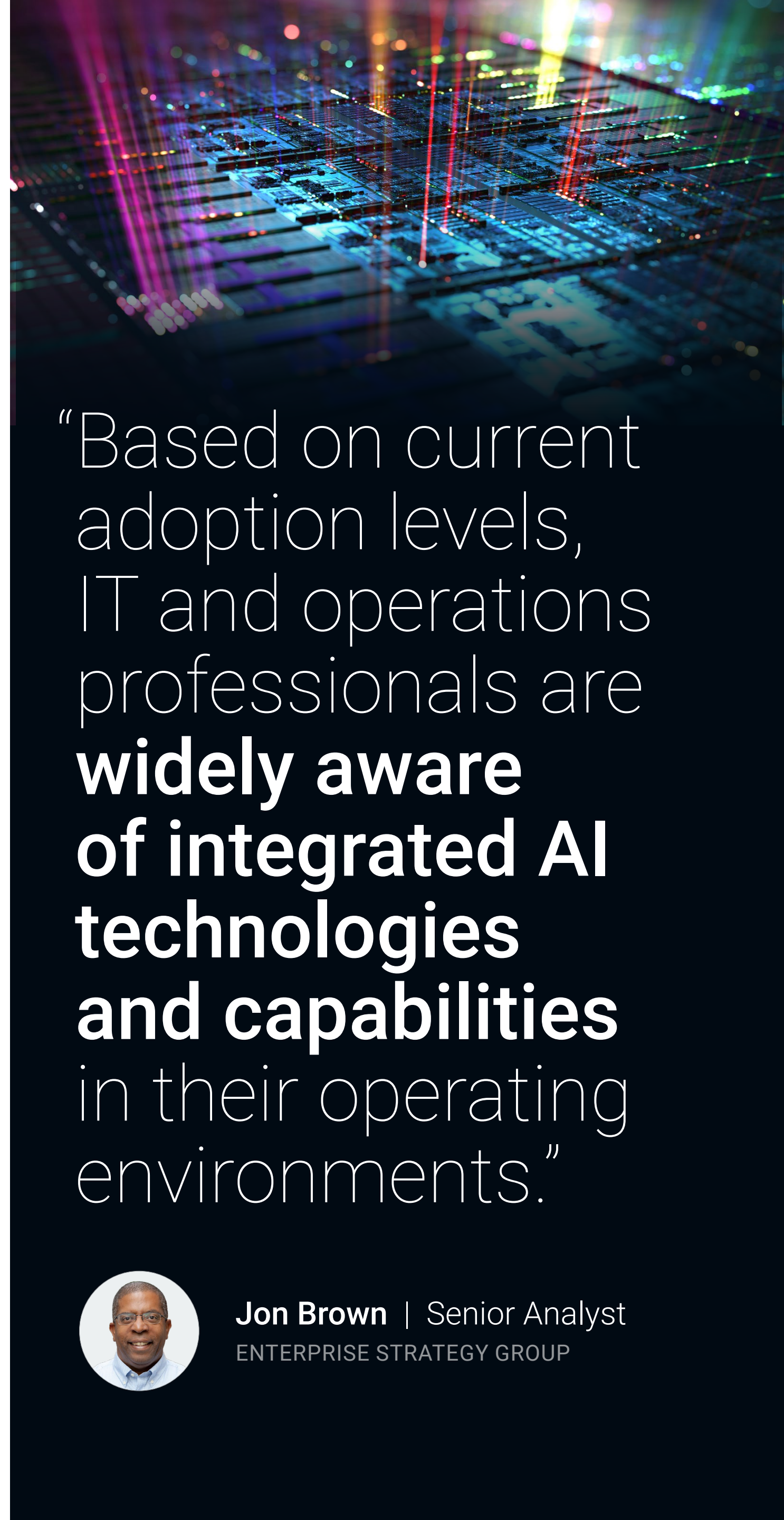
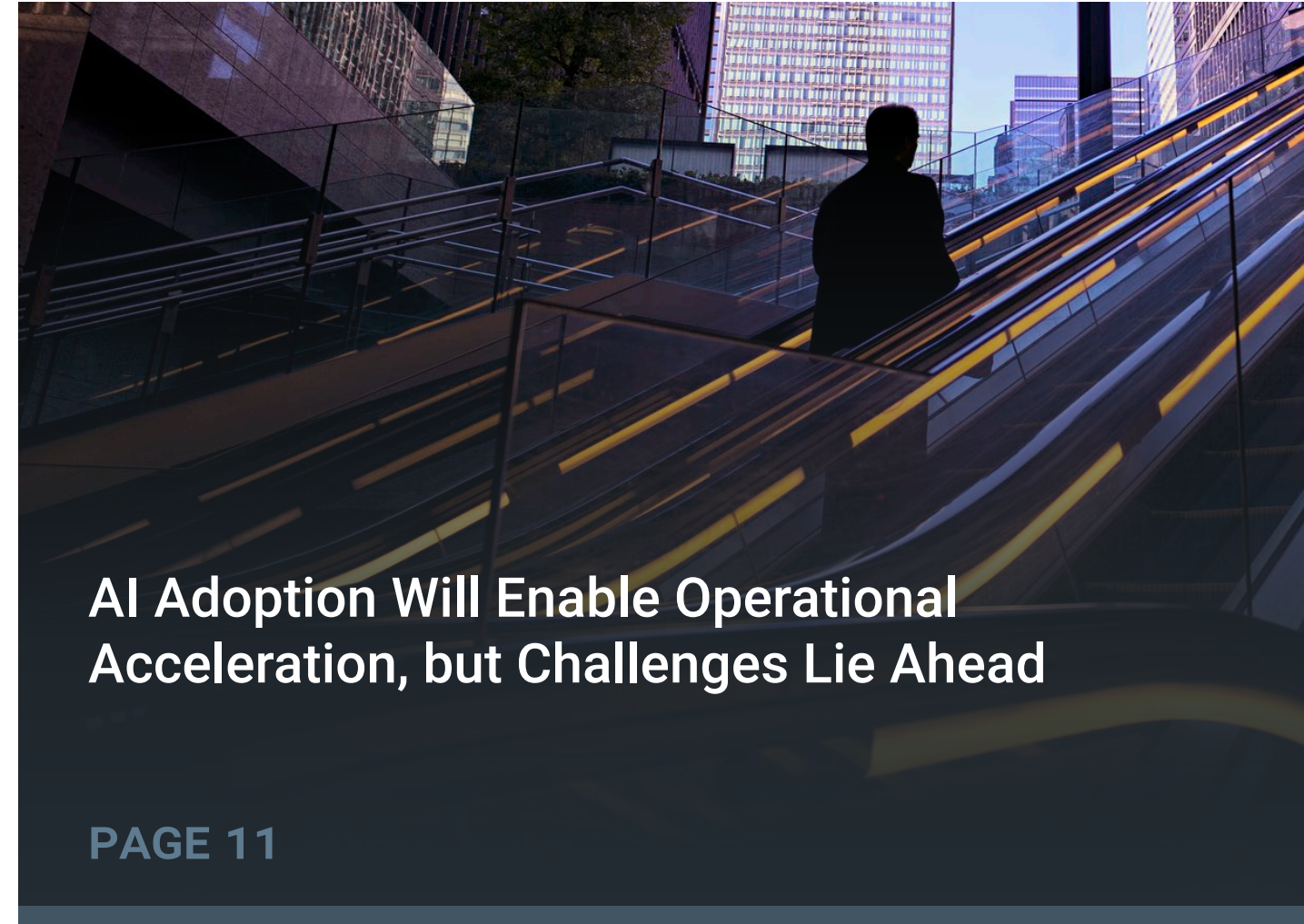
**Determine** the value of artificial intelligence and how that value is expected to be measured.

**Capture** sentiment about the expected challenges and outcomes of AI adoption in IT operations.





## KEY FINDINGS



“Based on current adoption levels, IT and operations professionals are **widely aware of integrated AI technologies and capabilities** in their operating environments.”



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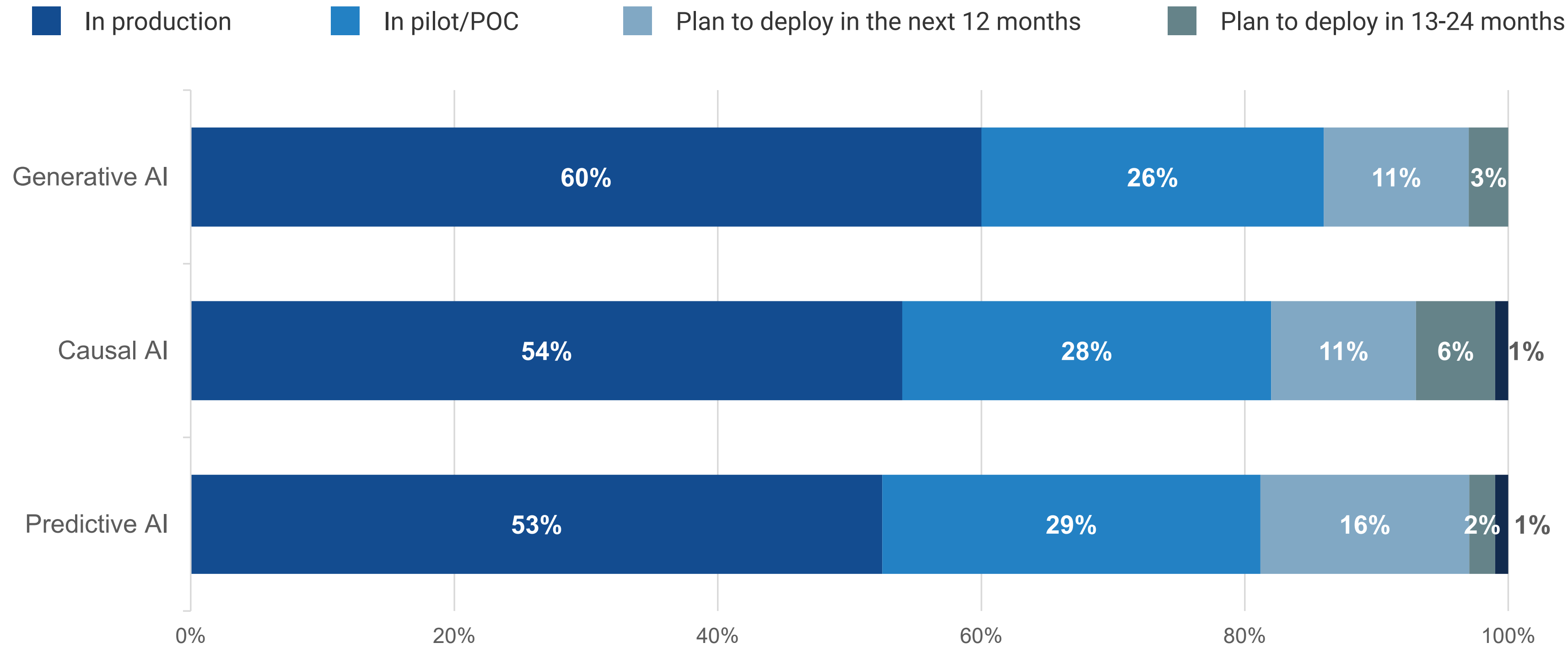
**Teams See Benefits of Automation and AI Adoption, but IT Operations Are Still Complex for Most**



## Over Half Report AI Integration in Production IT

Based on current adoption levels, IT and operations professionals are widely aware of integrated AI technologies and capabilities in their operating environments. Generative AI is most widespread and has an early adoption lead due to the popularity of ChatGPT, Bard, and similar tools on the consumer side, as well as the proliferation of generative AI-enabled user interfaces allowing for natural language querying. Generative AI is essentially a mainstream concept, while causal and predictive AI maturity levels and understanding are likely less evident. Vendors will focus on differentiating AI types and highlighting different use cases in line with what will be increasing buyer sophistication.

Status of AI tools or technologies in terms of integration with IT operations.



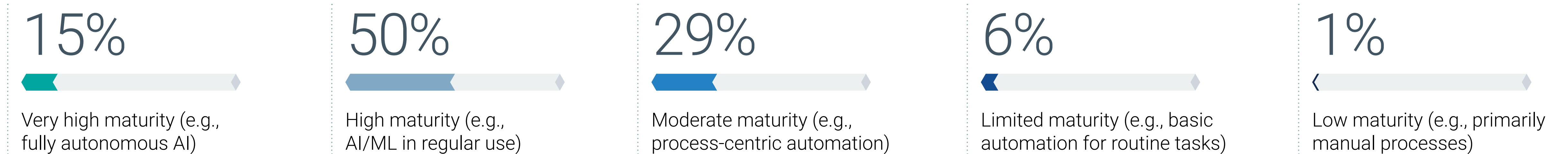
“Generative AI is essentially a **mainstream concept**, while causal and predictive AI maturity levels and understanding are likely less evident.”

## Most Organizations Have Room to Grow Operations-centric AI/ML Usage

Different levels of maturity with a new technology, especially in a space where initial deployments and pilot projects are prevalent, are standard. Those at the beginning of their journey may be responding to pressure to improve certain metrics and satisfy their curiosity while those at a more mature level may be looking for more specialized use cases. Maturity in IT automation and AI is a rapidly moving target that will see applications, use cases, and quality related to AI expand and cover more functions over time. Currently, over half of organizations feel they have high automation maturity levels, but of those, only 15% report very high maturity. As such, there is substantial room for growth at most organizations.

“Currently, over half of organizations feel they have **high automation maturity** levels, but of those, only 15% report very high maturity.”

### Automation maturity within IT operations.

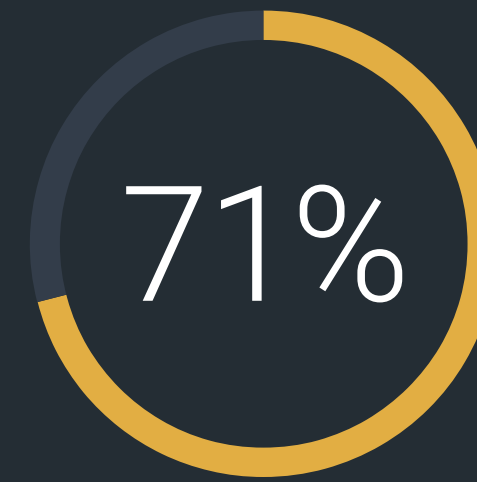


“The pain of spending too much time on root causes and incidents was much more pronounced in organizations with fewer than 1,000 employees, which were most likely to say they’re **spending too much time identifying root causes** (46%).”

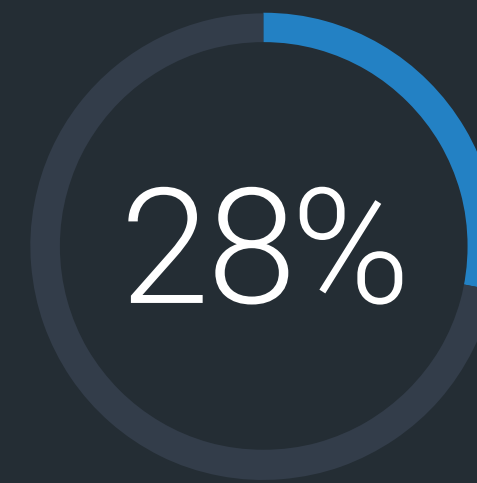
## Organizations Report Reasonable Root Cause Investigation Times

Although 71% of organizations report they spend a reasonable amount of time finding the root causes of incidents, all is not necessarily fine. Likely, this means that these IT operations teams feel that they’re doing as well as can be expected, and they’re potentially not aware of breakthroughs being used by their peers that would make their metrics look poor in comparison. The pain of spending too much time on root causes and incidents was much more pronounced in organizations with fewer than 1,000 employees, which were most likely to say they’re spending too much time identifying root causes (46%). In larger organizations, four out of five were satisfied with the time spent with root cause analysis. Still, less time is better, so anything that shortens this time is still beneficial and valuable.

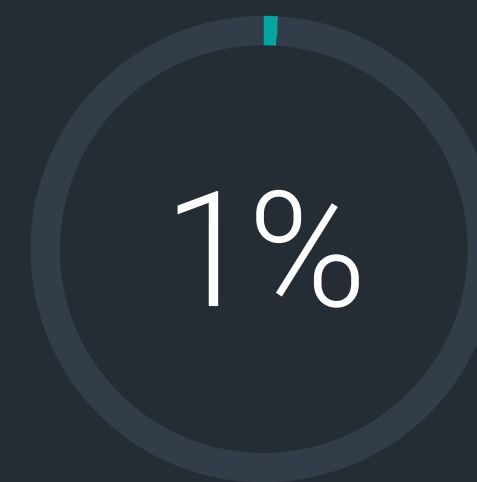
### Perception of time spent investigating root cases of incidents.



We spend a **reasonable amount of time** identifying root causes of incidents, and new or additive observability tool investments **likely would not help**



We spend **too much time** solving root causes of incidents and **should invest** in better observability tools to help

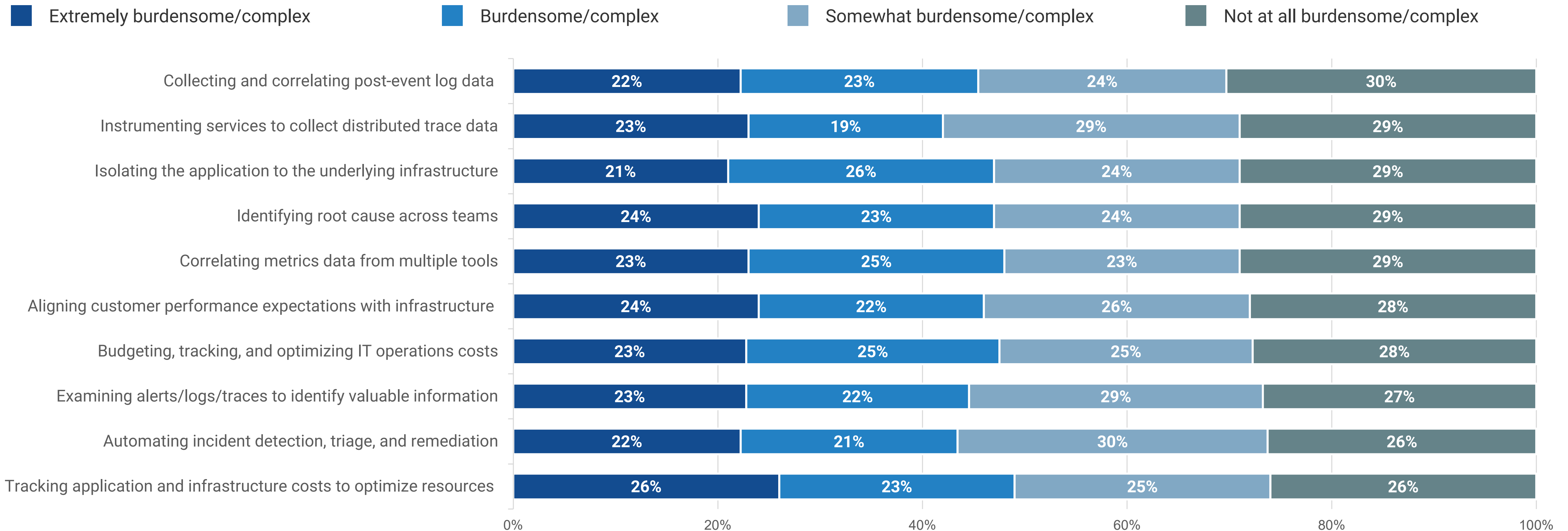


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# IT Operations Management Remains Burdensome and Complex

The widely held perception that most functions related to metrics, events, logs, and traces (MELT) are difficult remains true. Log data collection and correlation as well as tracking application and infrastructure costs are most difficult. Progress has been made on instrumentation, but many organizations continue to struggle with complexity in IT operations. However, many of these tasks are ripe for efficiency improvements through AI.

Level of resource burden and overall complexity for each IT operation.

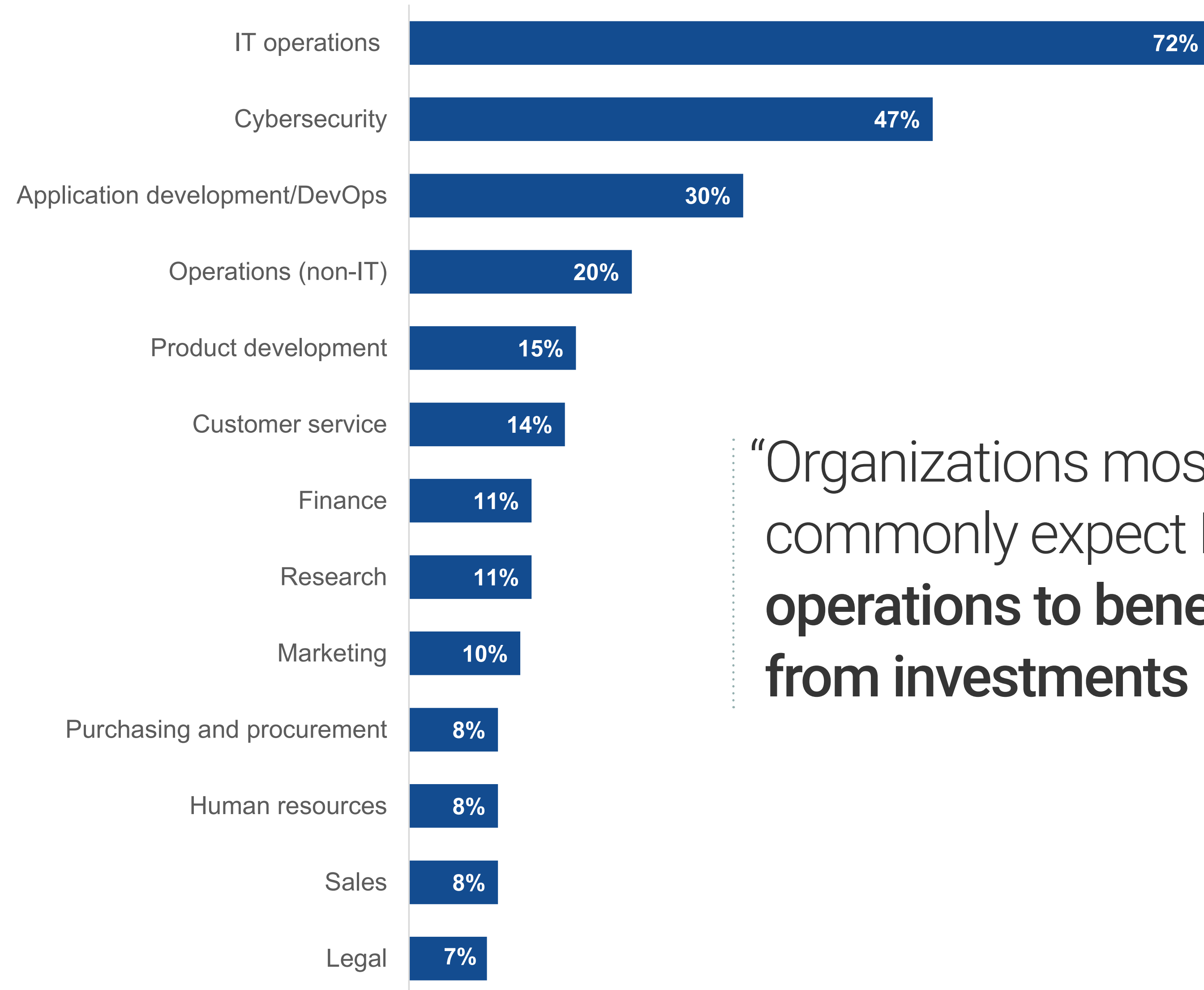




## IT Operations Expected to Benefit Most From Integration of AI in IT Ops

Organizations most commonly expect IT operations to benefit most from investments in AI because regular, manual tasks are typically easiest to automate and apply AI to. Cybersecurity, consistently a top concern for IT operations, follows. Other departments are all expected to receive some benefit. Users need to cost-justify investments by proving economic and technical benefit to any area. Depending on the use case, various metrics can be applied during pilots or trials to obtain that justification.

Areas served by IT operations most likely to benefit from generative AI.



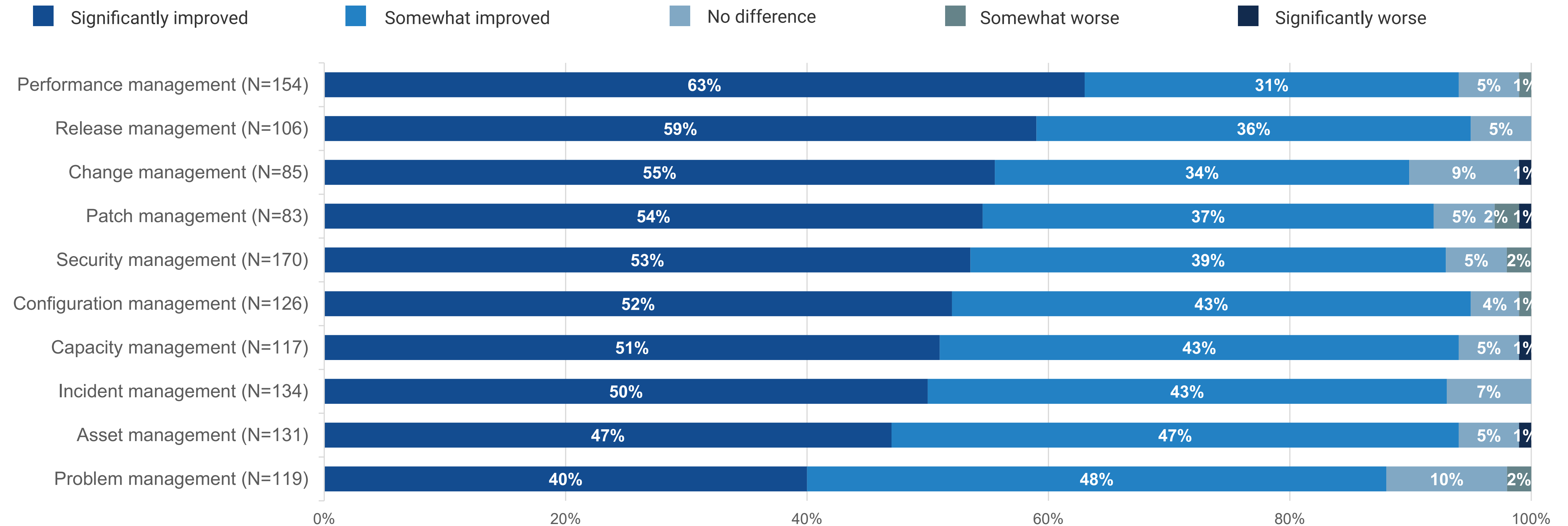
“Organizations most commonly expect **IT operations to benefit most from investments in AI.**”




## Organizations Using Automation in IT Operations See Widespread, Significant Improvements

Organizations are commonly seeing positive benefits from the integration of automation into IT operations processes. Performance management, notoriously a complex task, tops the list of significantly improved processes. Automating release management, part of the general trend toward operational acceleration, is also enjoying automation-related benefits within many organizations. These early successes will fuel heightened growth and adoption through 2024 and 2025.

### Impact of integrating automation into IT operations processes.





A person is silhouetted against a bright, modern staircase with glowing yellow lights. The staircase is part of a larger architectural structure with glass railings. In the background, a city skyline is visible under a blue sky, with several tall buildings. The overall scene is a blend of modern architecture and urban landscape.

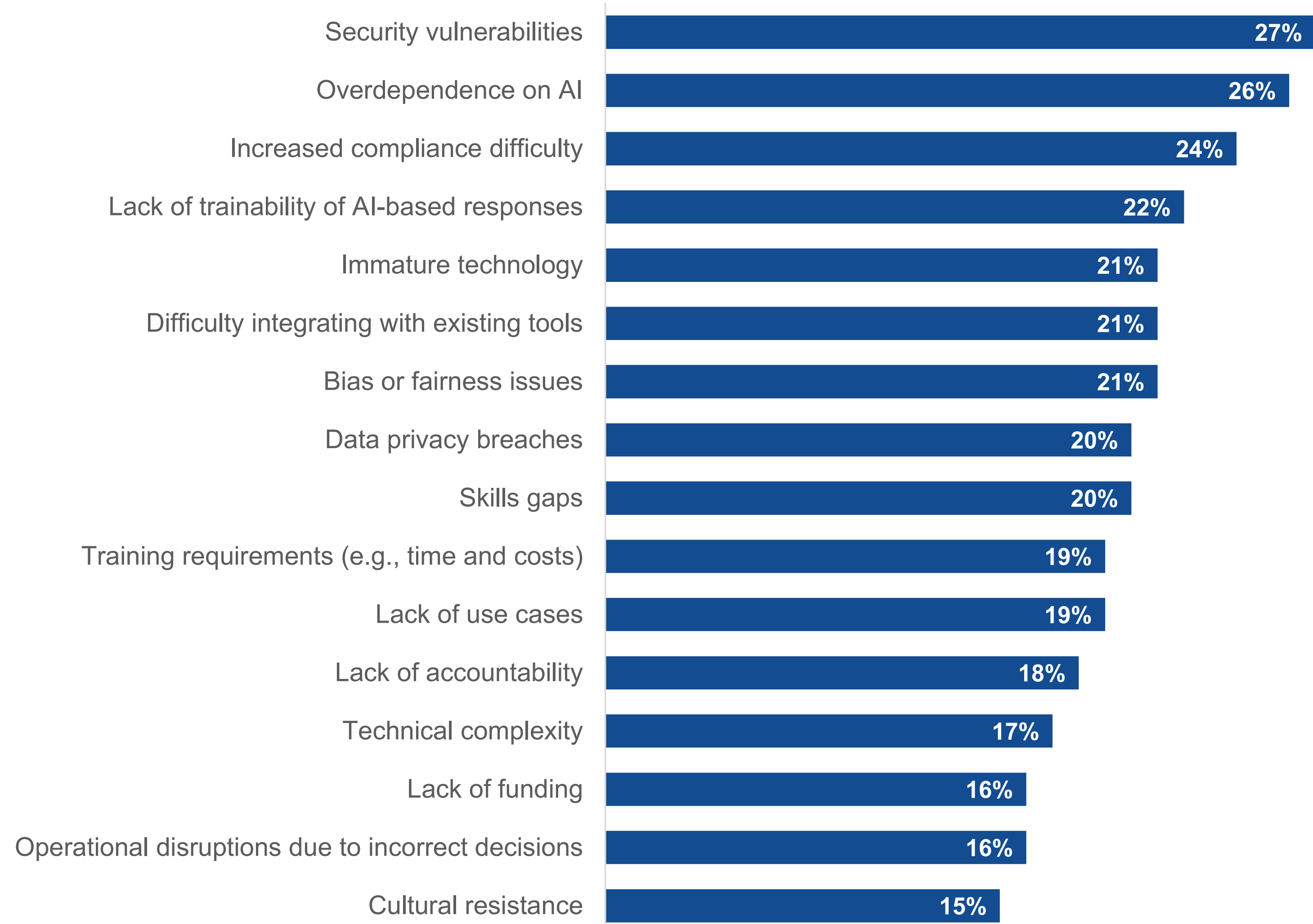
**AI Adoption Will Enable Operational Acceleration, but Challenges Lie Ahead**



## Traditional and New Challenges Expected When Integrating AI in IT Operations

Organizations have healthy concerns about bias, fairness, trainability, and accountability in terms of challenges when integrating AI into IT operations. Although there are no overwhelmingly common issues, the overall incidence of challenges could stall further adoption in the near future. Cultural resistance being low may indicate that there is little current fear of AI, but fear of overdependence on AI is surprisingly high. With the exception of security, this list will be fluid.

### Concerns or challenges with integrating AI into IT operations.





## Business Needs and Increasing Centrality of IT to Business Initiatives Drive Operational Acceleration

Digital transformation initiatives continue to impact the importance of operational acceleration, spurring increased investment in—and reliance on—IT to get more work done and satisfy customer requirements. The addition of AI in IT operations is spawning the next wave of digital transformation by enabling less-structured processes to be automated, in turn saving significant resources across both teams and spending.

### Most influential factors driving need to accelerate IT operations.

47%



Increased investment in IT operations

41%



Need to align IT costs with business objectives

36%



Increased focus on digital-first products and services

31%



Initiative to automate activities

30%



Increased complexity of individual tasks requires us to move faster

27%



Increased demands from line-of-business teams

24%



Increased pressure to meet SLAs

22%



Executive mandate

21%



Need to meet tighter deadlines



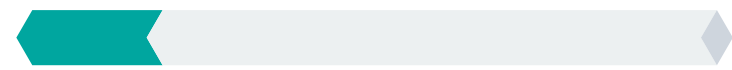


## IT Operational Acceleration Is a Constant Driver for Improvement

Over the last few years, IT operations and application development teams have consistently reported that the pace of operations has increased dramatically. Organizations undergoing this acceleration are under more pressure to solve issues faster, streamline operations and collaboration, and do more with less. This ongoing need for acceleration will continue into the foreseeable future and even possibly increase in intensity for some organizations.

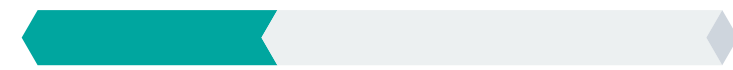
How much faster IT operations teams need to perform compared with three years ago.

19%



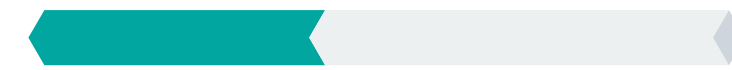
We have to perform twice as fast (or more)

35%



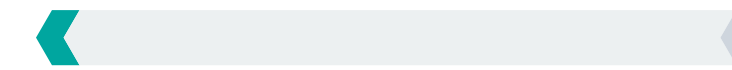
We have to perform between 50% and 99% faster

41%



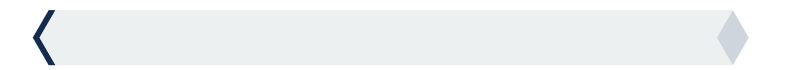
We have to perform between 25% and 49% faster

4%



We have to perform less than 25% faster

1%



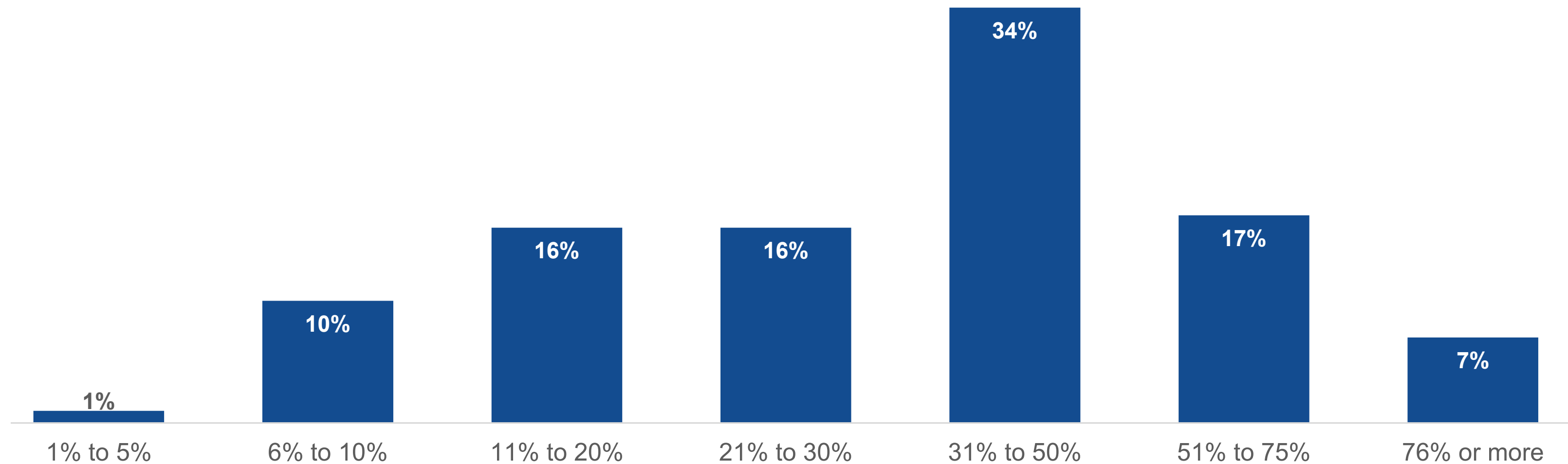
We have not been required to perform faster



## AI to Power Next Wave of Operational Acceleration

The operational acceleration expectations among organizations due to the integration of generative AI are substantial, with well over half of organizations expecting at least a 31% improvement in the next 24 months. The value of AI in operational acceleration is understood and carries tangible value above and beyond incremental features. This acceleration translates to a better return on assets (ROA) but can also increase greenhouse gas (GHG) emissions, complicating the ability of organizations to sustainably meet acceleration objectives.

Expected percentage of improvement to IT operations metrics/KPIs from generative AI integration in 24 months.



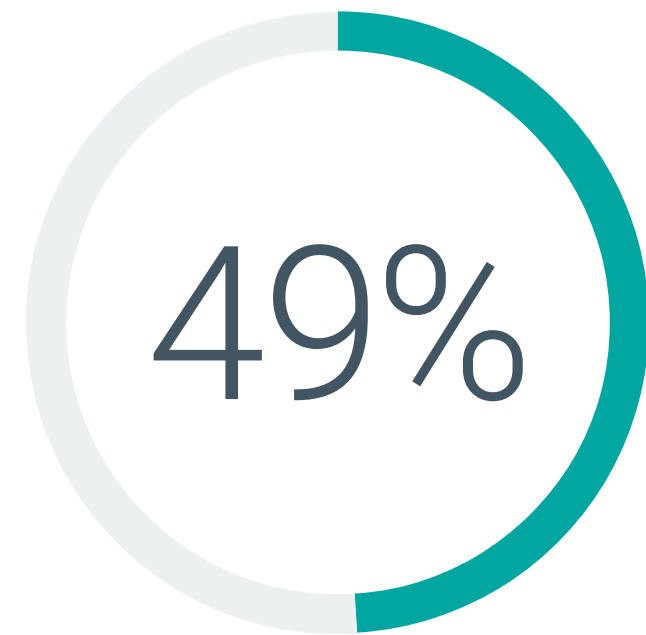
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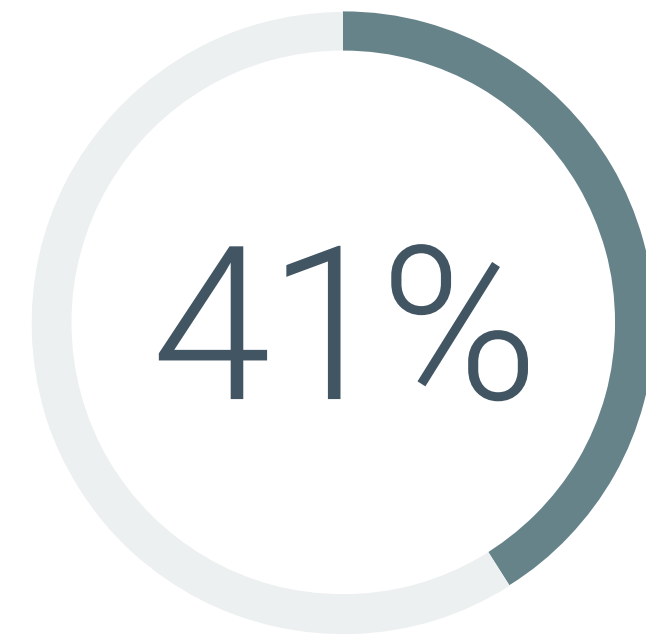
## Sustainability Has Arrived for IT Management Tools

For 90% of surveyed organizations, sustainability frequently or always factors into the purchase of IT management tools. Increasingly, organizations place a premium on sustainable solutions and approaches to obtain environmental, social, and economic benefits. These technologies and processes also tie into corporate social responsibility (CSR) goals, which are growing in importance as organizations look to vendors and service providers that demonstrate a commitment to environmental responsibility.

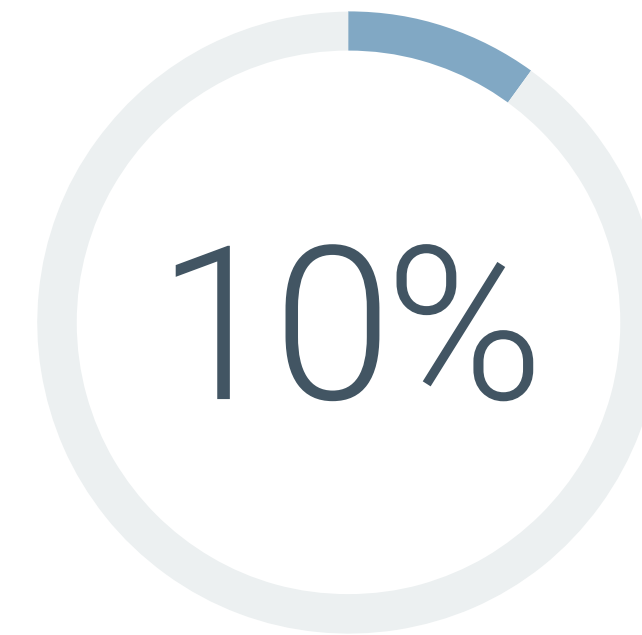
**How often sustainability (e.g., energy efficiency, e-waste management, etc.) factors into the purchase of IT management tools.**



Always



Frequently



Occasionally



“Increasingly, organizations place a premium on sustainable solutions and approaches to **obtain environmental, social, and economic benefits.**”



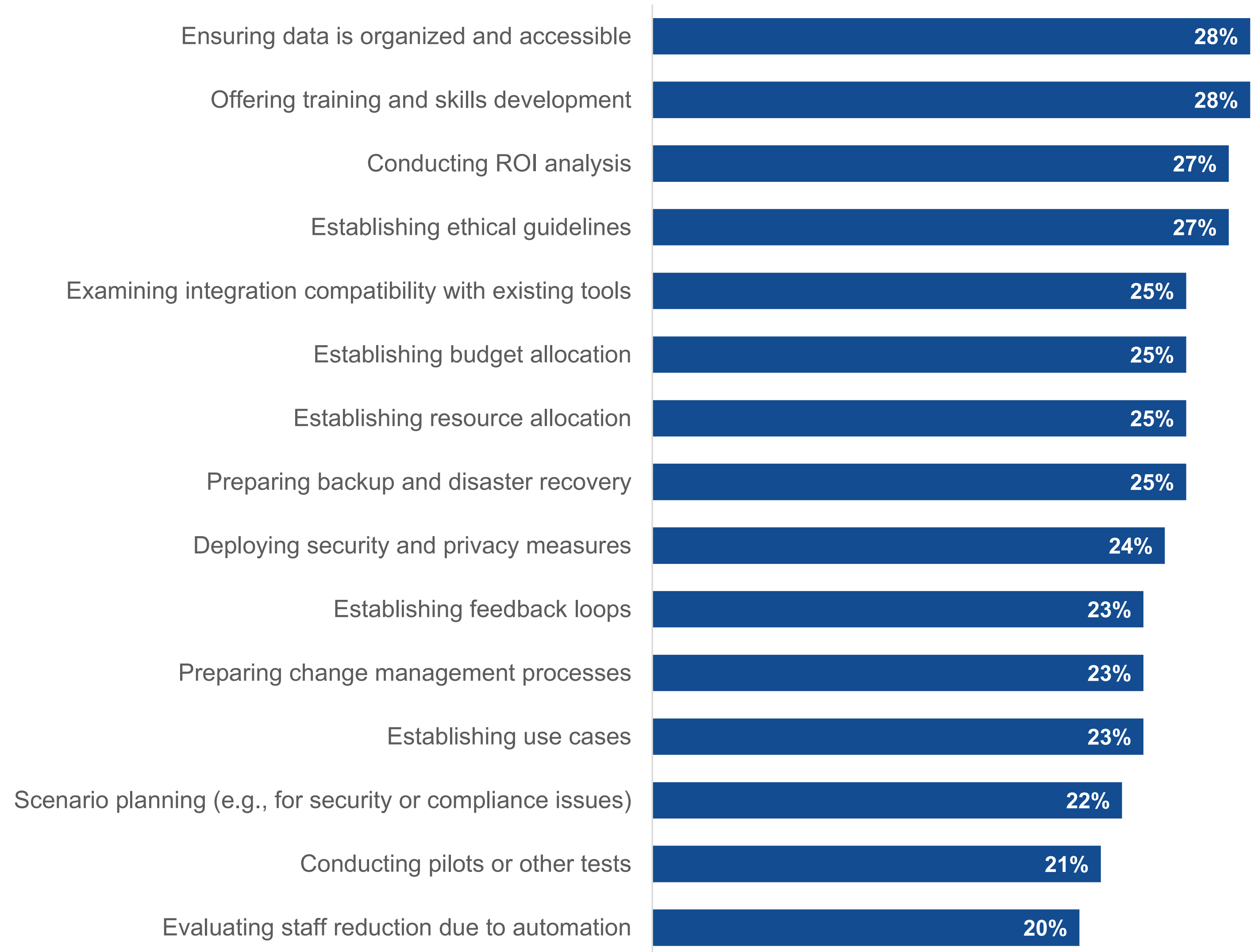
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## Data Management, Ethics, and Training Are Critical on the Path to Operationalizing GenAI in IT Operations

AI starts with data management and potentially ends with staff reduction, which is the least common AI preparation step. For more than a quarter of organizations, general data housekeeping is a must to ensure they receive optimal returns from their AI investments, and this requires effective data management. Further, it is imperative for many to also quantify the value of potential purchases and establish guidelines prior to the arrival of AI in operations.

Steps taken to better prepare for the integration of AI (including generative AI) into IT operations.



A close-up photograph of a person's hand holding a white pen, pointing at a tablet. The tablet displays a colorful chart with a blue circle and a yellow line. The background is dark with many out-of-focus, warm-toned lights, creating a bokeh effect. The overall scene suggests a professional or analytical setting.

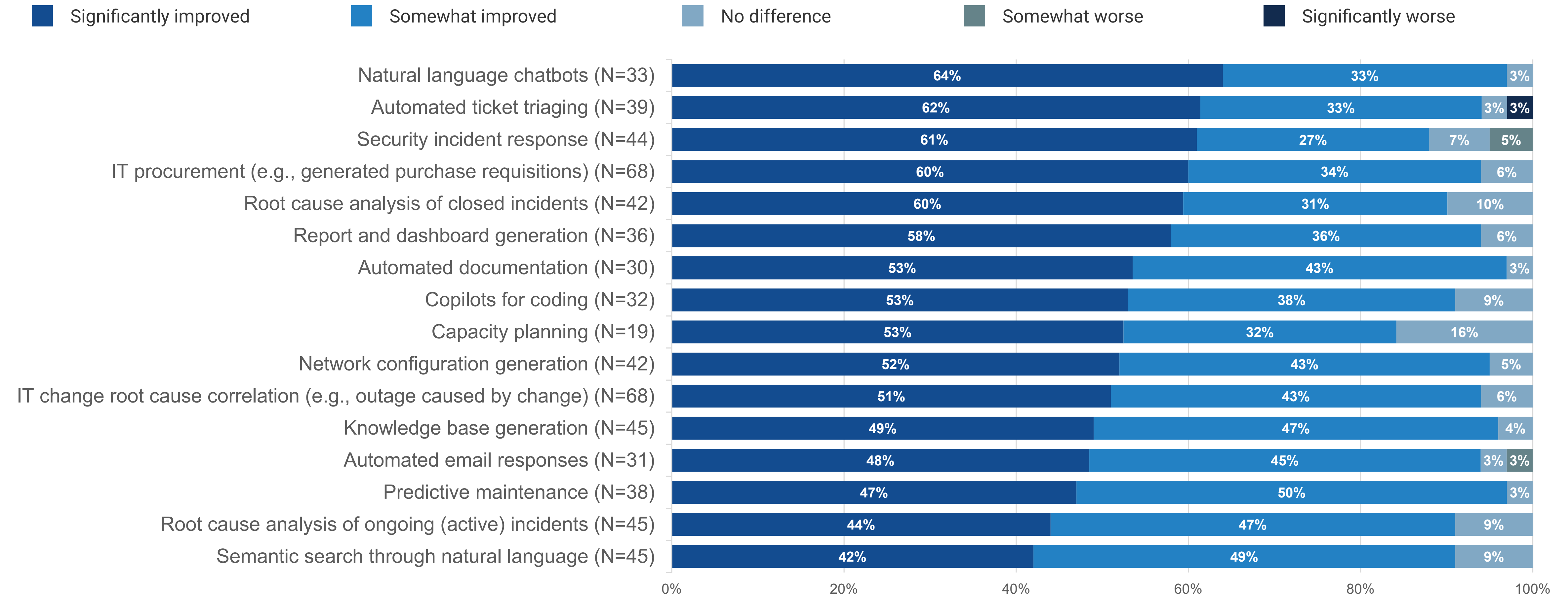
**High Value and Impact of Initial AI  
Investments Will Fuel a Wave of Additional  
Technology Acquisition**



# Results of Generative AI Investments in IT Operations Are Overwhelmingly Positive

Although production usage of generative AI in IT operations is still relatively low, it is ramping quickly behind a wave of positive initial results. Across the board of typical operations use cases, organizations are seeing at least some improvement due to the integration of GenAI, if not significant improvement. However, the jury remains out on whether these overwhelmingly positive returns will continue as adoption grows.

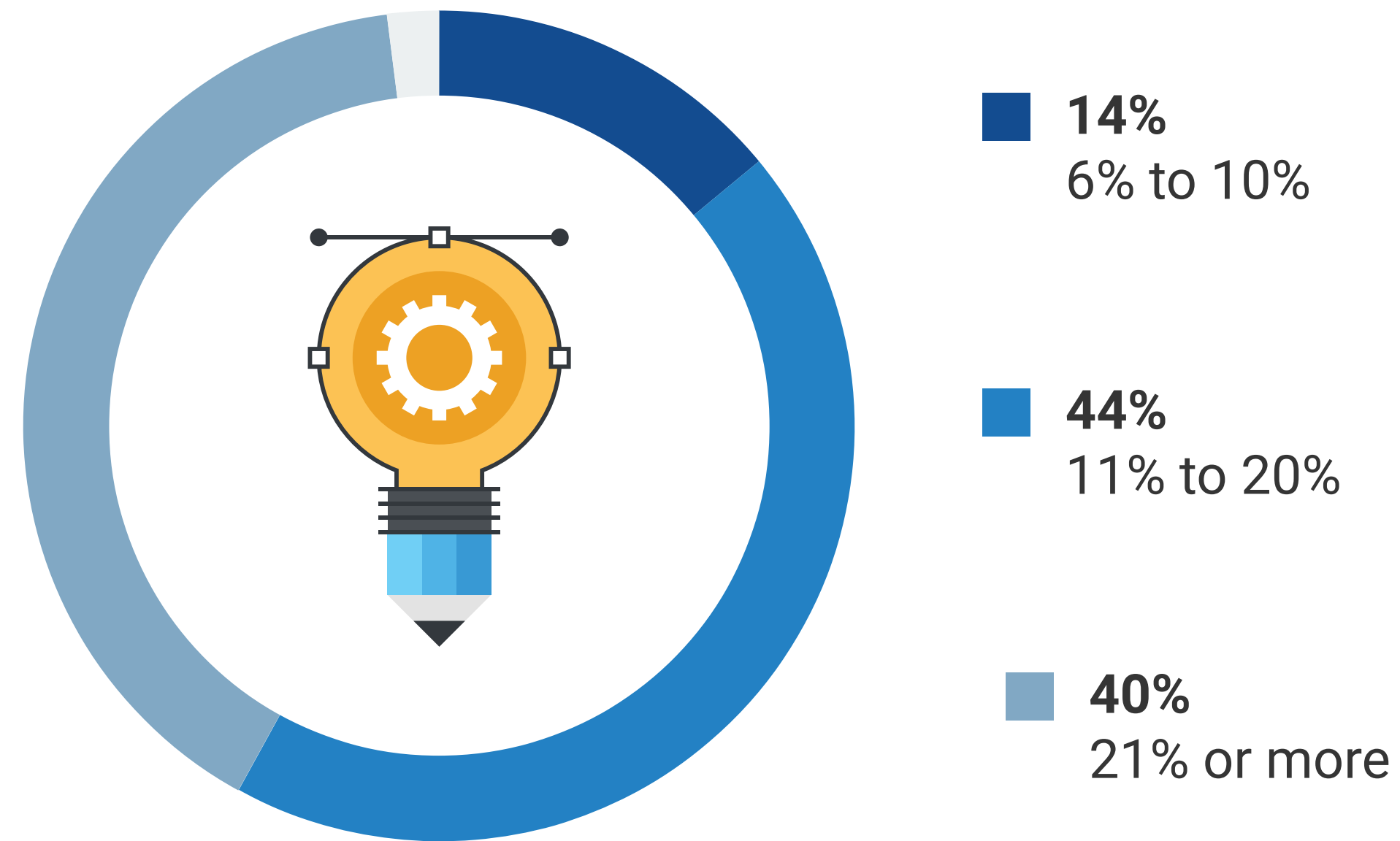
## Impact of generative AI on IT operations use cases.



## Generative AI Has Value Above and Beyond Table Stakes

Nearly all (99%) organizations are willing to pay a premium for IT operations tools, platforms, and services that use generative AI, reflecting the perceived value of the integration of this technology. However, while the perception of value is strong, organizations will still perform significant levels of due diligence prior to purchases, in part because these technologies are still young. Those organizations with more AI usage maturity likely will have an easier time understanding the value of GenAI-enabled offerings.

Premium percentage organizations are willing to pay for IT operations tools, platforms, or services that use generative AI.



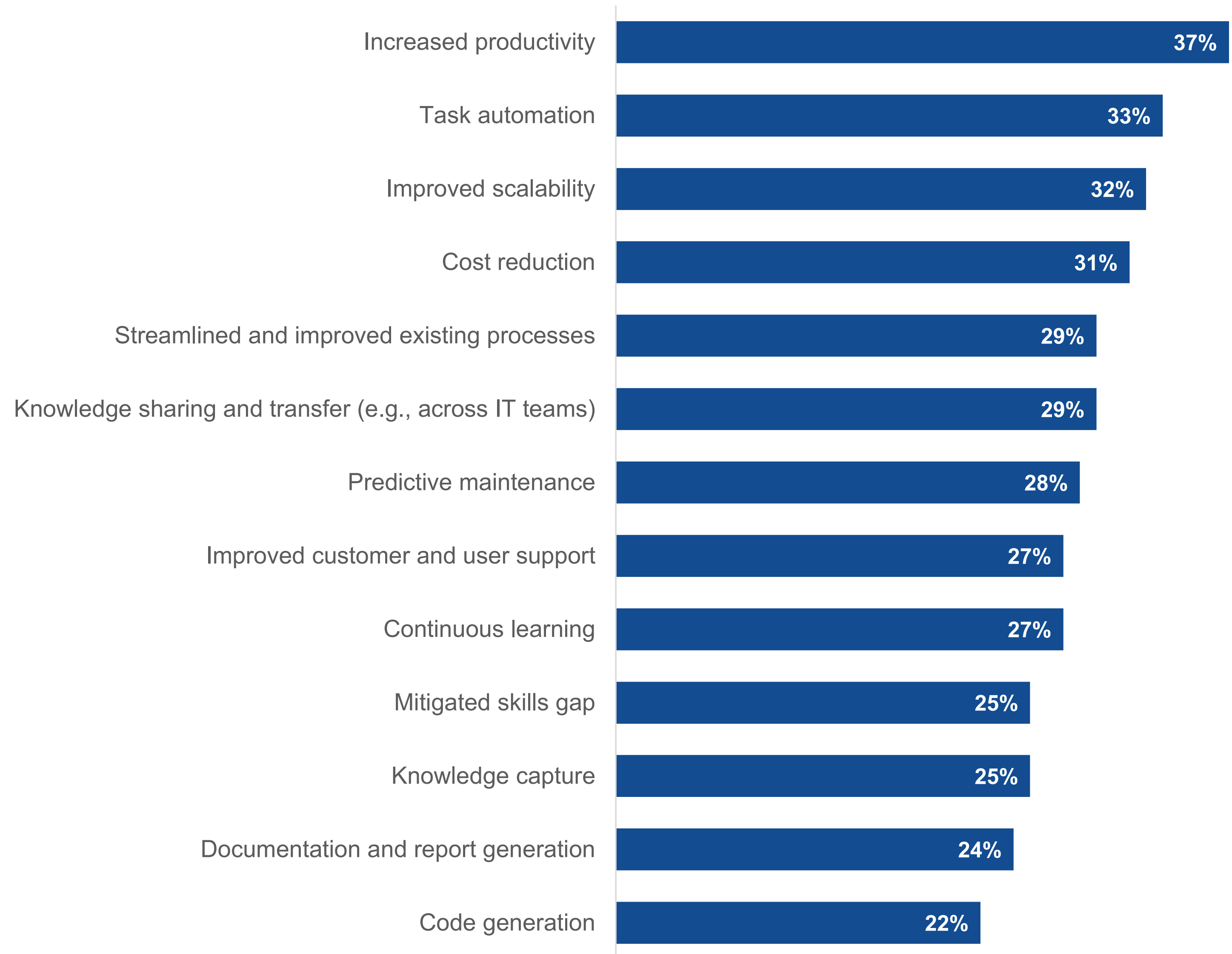
“Nearly all (99%) organizations are **willing to pay a premium** for IT operations tools, platforms, and services that use generative AI.”



## Respondents Expect AI to Help Them Do More With less

Organizations are counting on AI for increased productivity, cost savings, and a range of improvements enabled through automation. While this could be considered “digital transformation 2.0,” organizations generally retain the mindset of preferring to do what they already know how to do but faster and with less labor. AI is a new work medium or lever, like transitioning from wood to steel: It’s the same basic function but much more extensible.

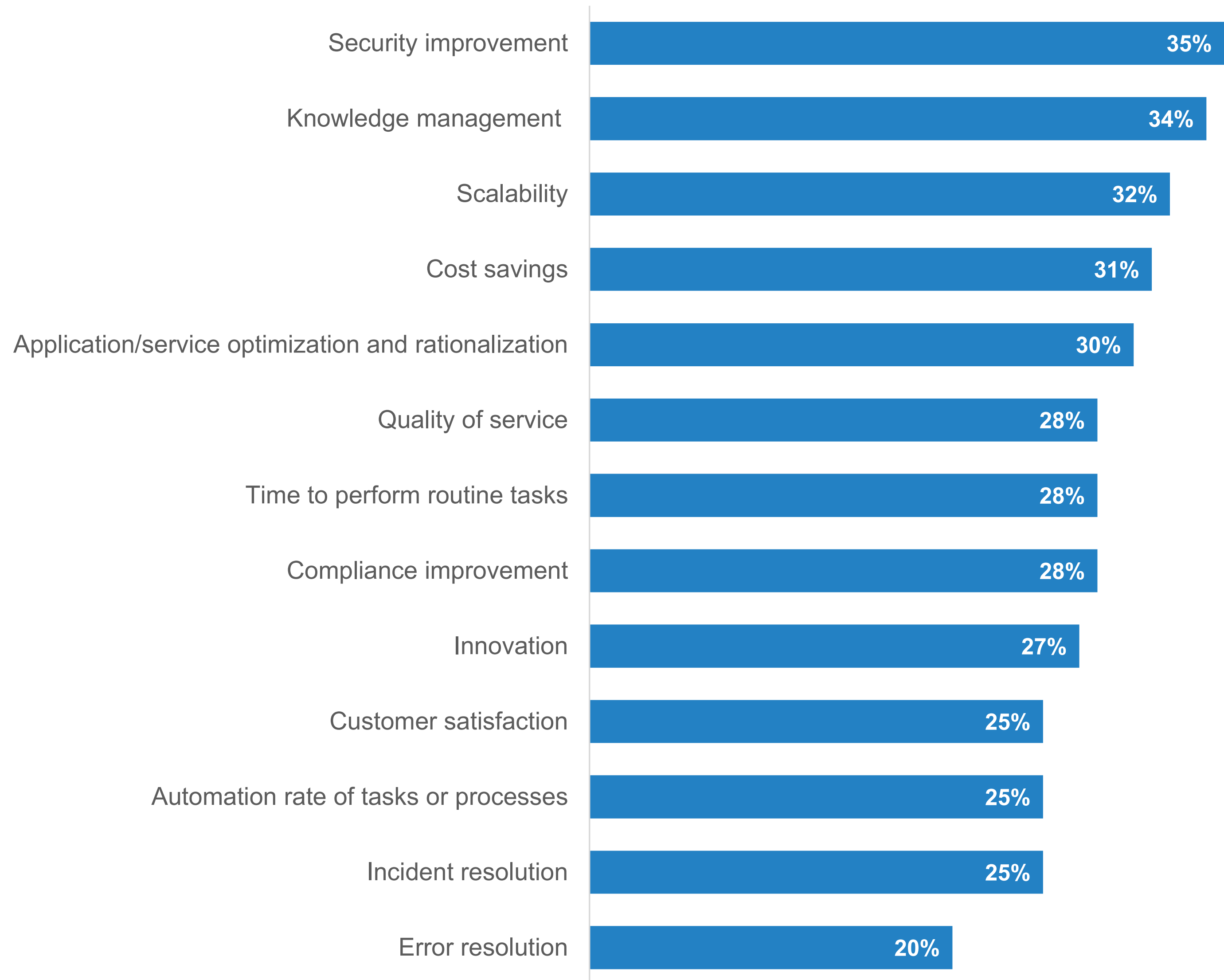
### Benefits expected from integrating AI into IT operations.



## Security Improvement, Knowledge Management, and Optimizations Are Measured to Quantify Value

Reflecting the importance of AI to nearly every process involved with IT, AI is measured by higher-order achievements than simply time saved and cost savings. Keeping pace with evolving security threats, which themselves are increasingly AI-driven, is a key outcome. Knowledge management, the ability to find and then capture and apply known facts or organizational knowledge, is rapidly rising in value and helps to position generative AI as an irreplaceable component of IT operations.

Metrics used to measure the value and effectiveness of generative AI in IT operations.







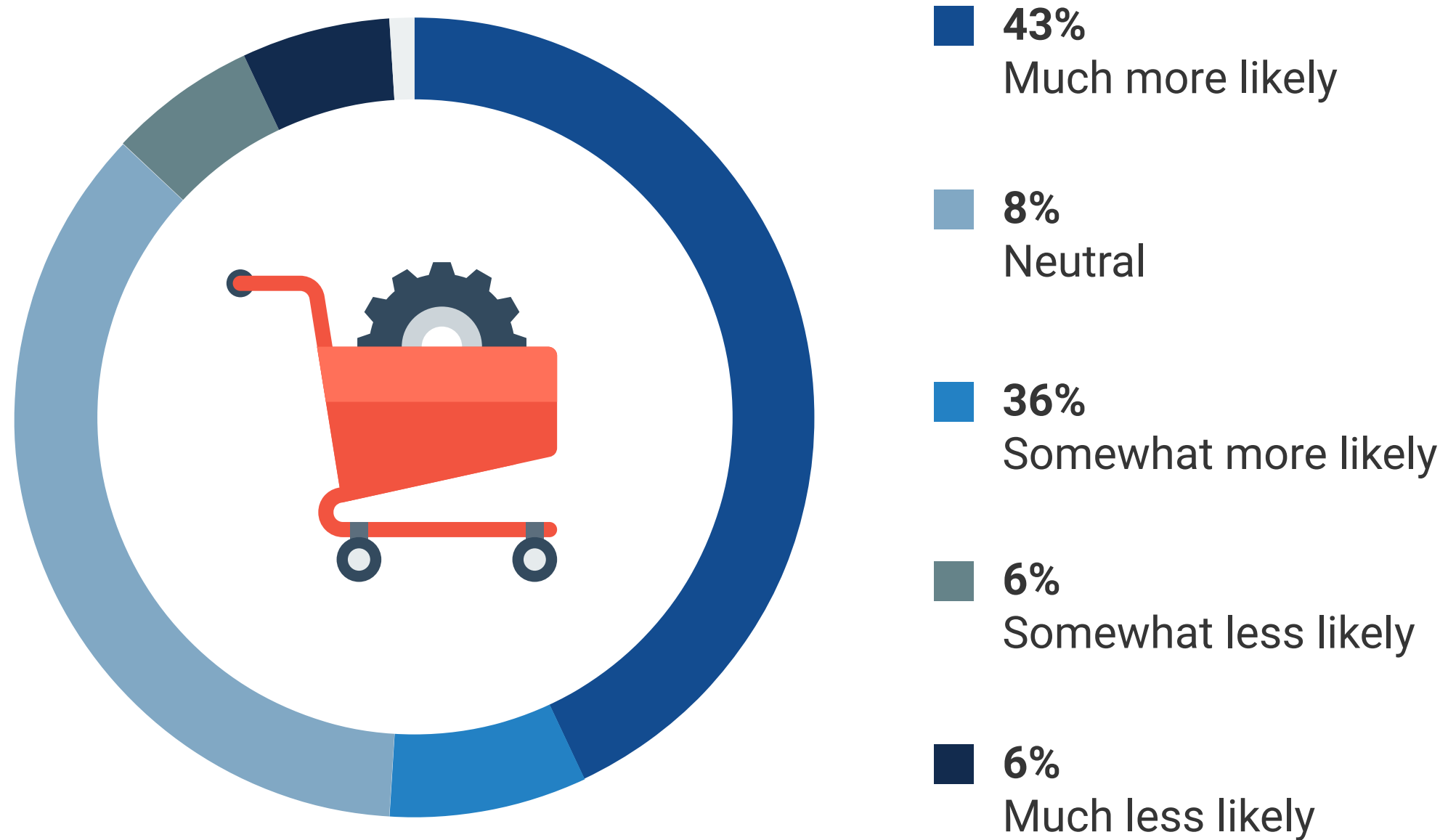
# Ops Teams Expect to Source AI Technology From a Range of Providers



## Most Agree That GenAI-enabled Solutions Are More Likely to Make the Short List for Purchase Consideration

In most cases, generative AI-enabled solutions have a leg up on solutions that don't offer generative AI capabilities when it comes to organizations making a short list. However, 12% of organizations don't share this view and would presumably prefer to evaluate solutions that do not include generative AI. As generative AI capabilities mature over time, this percentage of organizations will likely decline.

Likelihood of considering vendor or service provider that integrates generative AI capabilities into products or services.



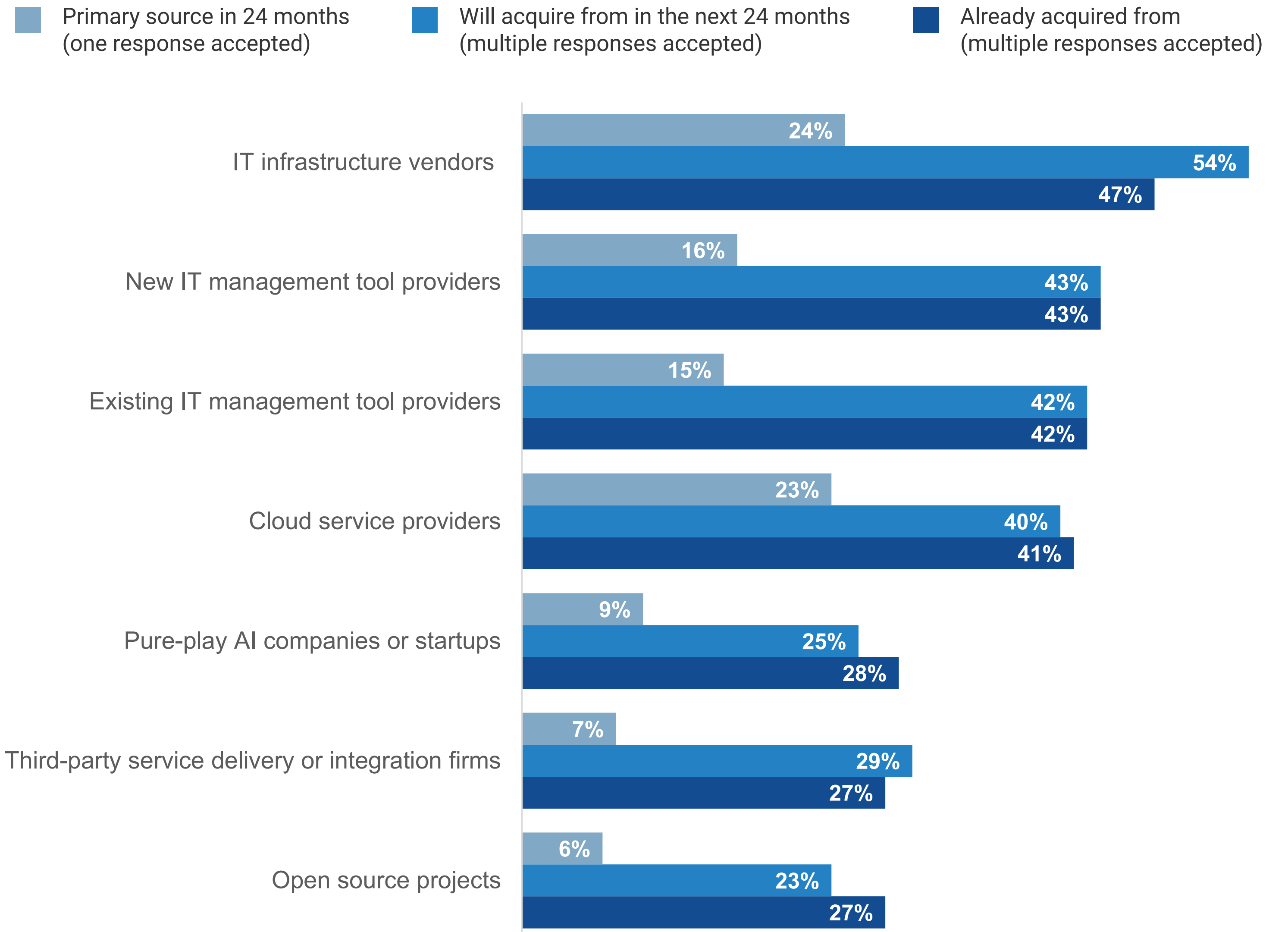
“In most cases, **generative AI-enabled solutions have a leg up** on solutions that don't offer generative AI capabilities when it comes to organizations making a short list.”



## GenAI Purchases Will Span Multiple Sources

Buyers more often expect to purchase GenAI-enabled IT operations tools, platforms, and services from IT infrastructure vendors and cloud service providers than from pure-play IT companies or third-party delivery or integration firms. However, all of these sources will play a part in delivering these capabilities. The broad scope of market competition will benefit organizations looking to boost the efficiency and effectiveness of their IT operations across a wide range of use cases.

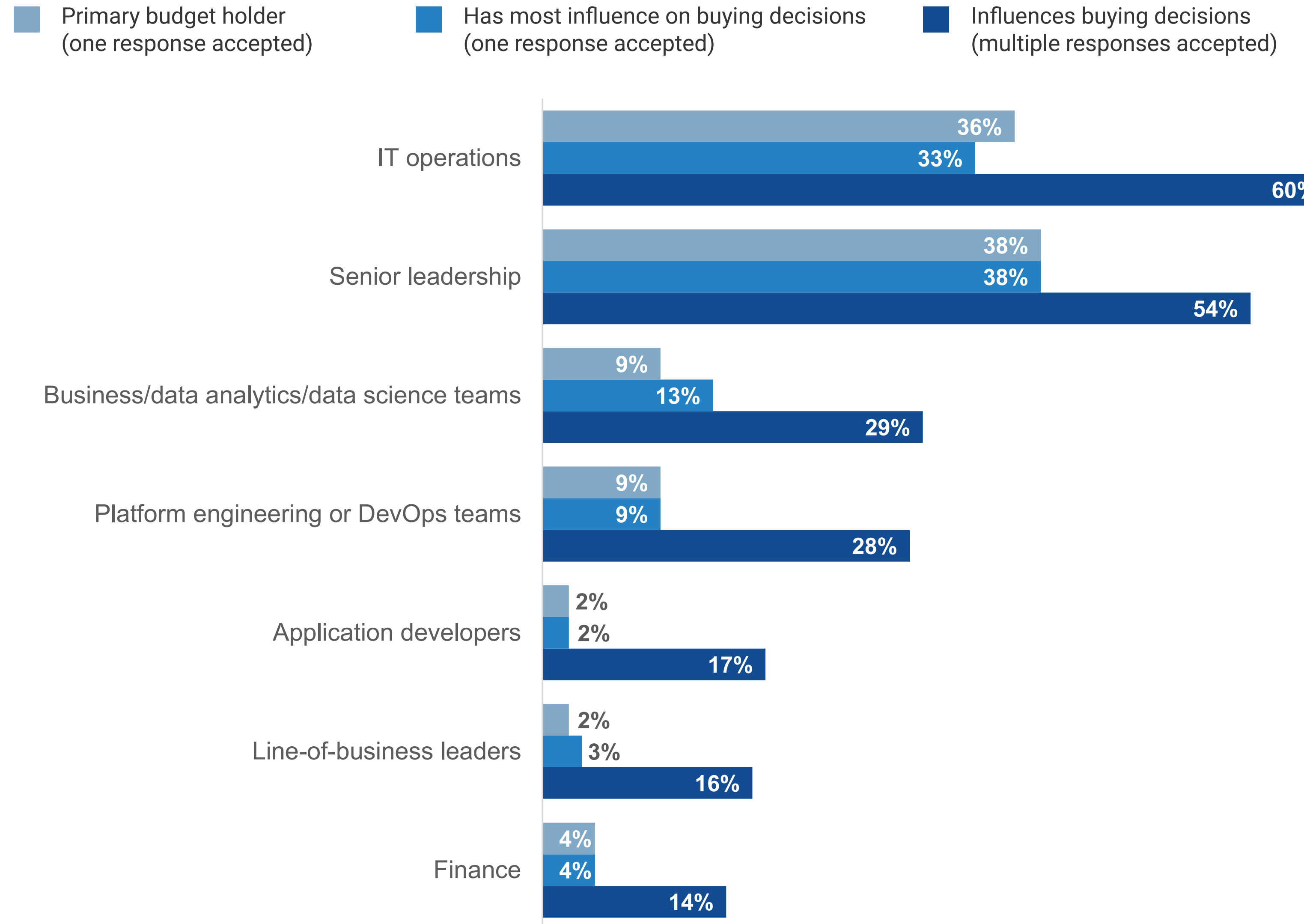
Sources for acquiring IT operations tools, platforms, and services that leverage generative AI.



## Operations-centric AI Stakeholders Span a Broad Range of Internal Teams

In general, the budget authority for IT operations tools doesn't change when AI enters the picture, but the level of influence across teams rises when compared against the process for non-AI-enabled solutions. This means the buying team will be bigger and have more diverse perspectives. Even within the IT operations team, more diverse sets of IT practitioners are likely involved.

Groups influencing buying decisions and holding budget for AI tools related to IT operations.



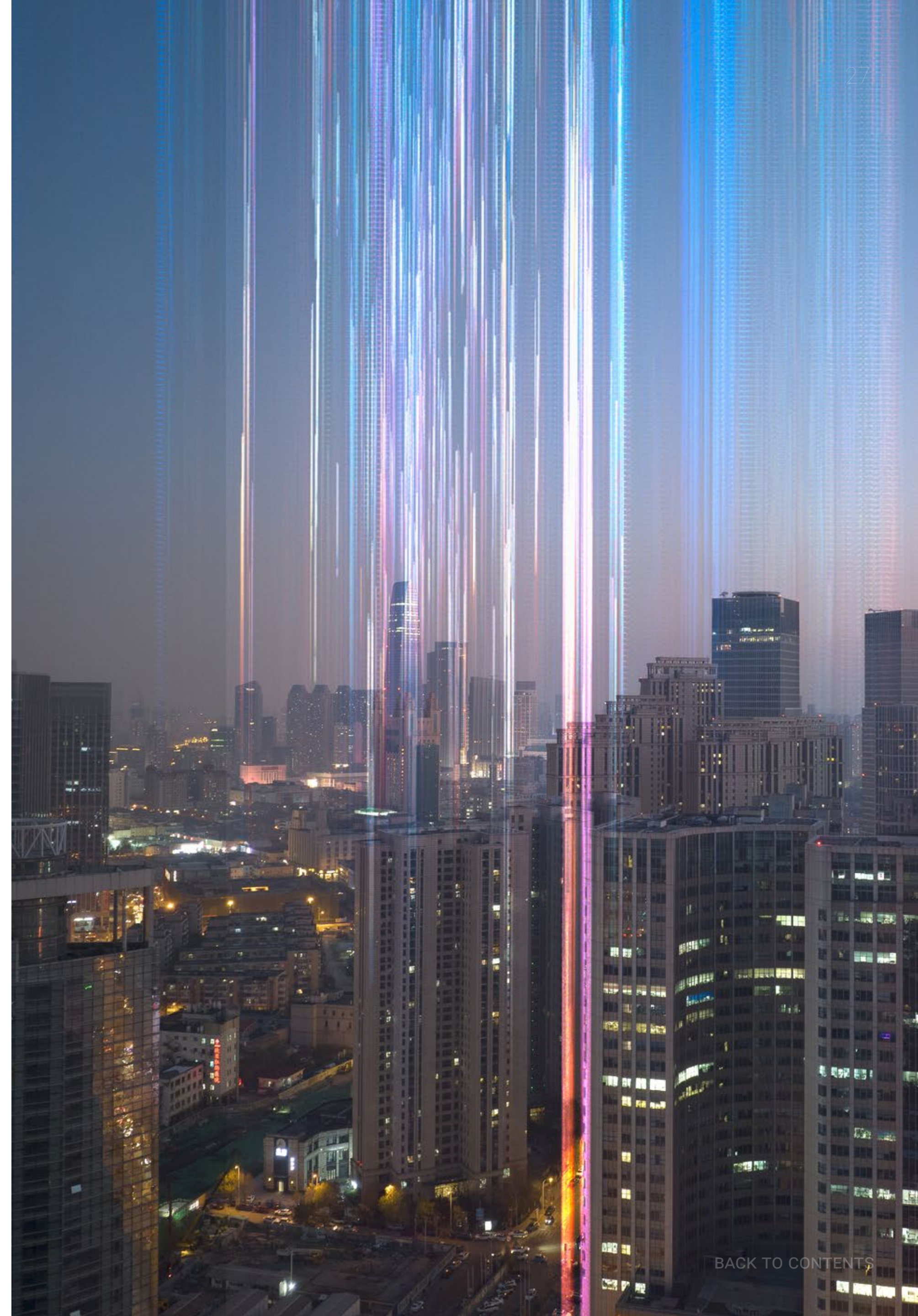




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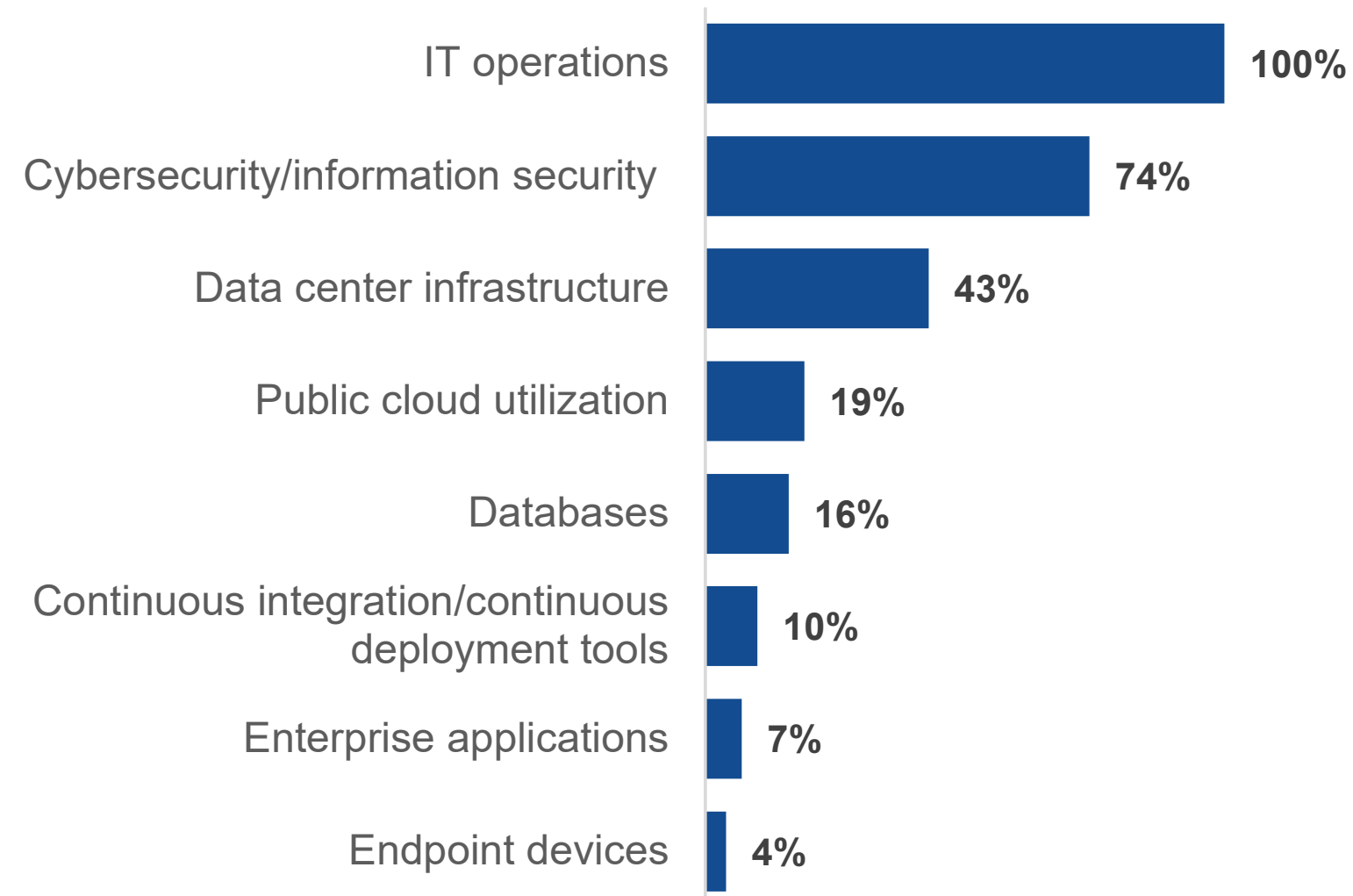


### RESEARCH METHODOLOGY AND DEMOGRAPHICS

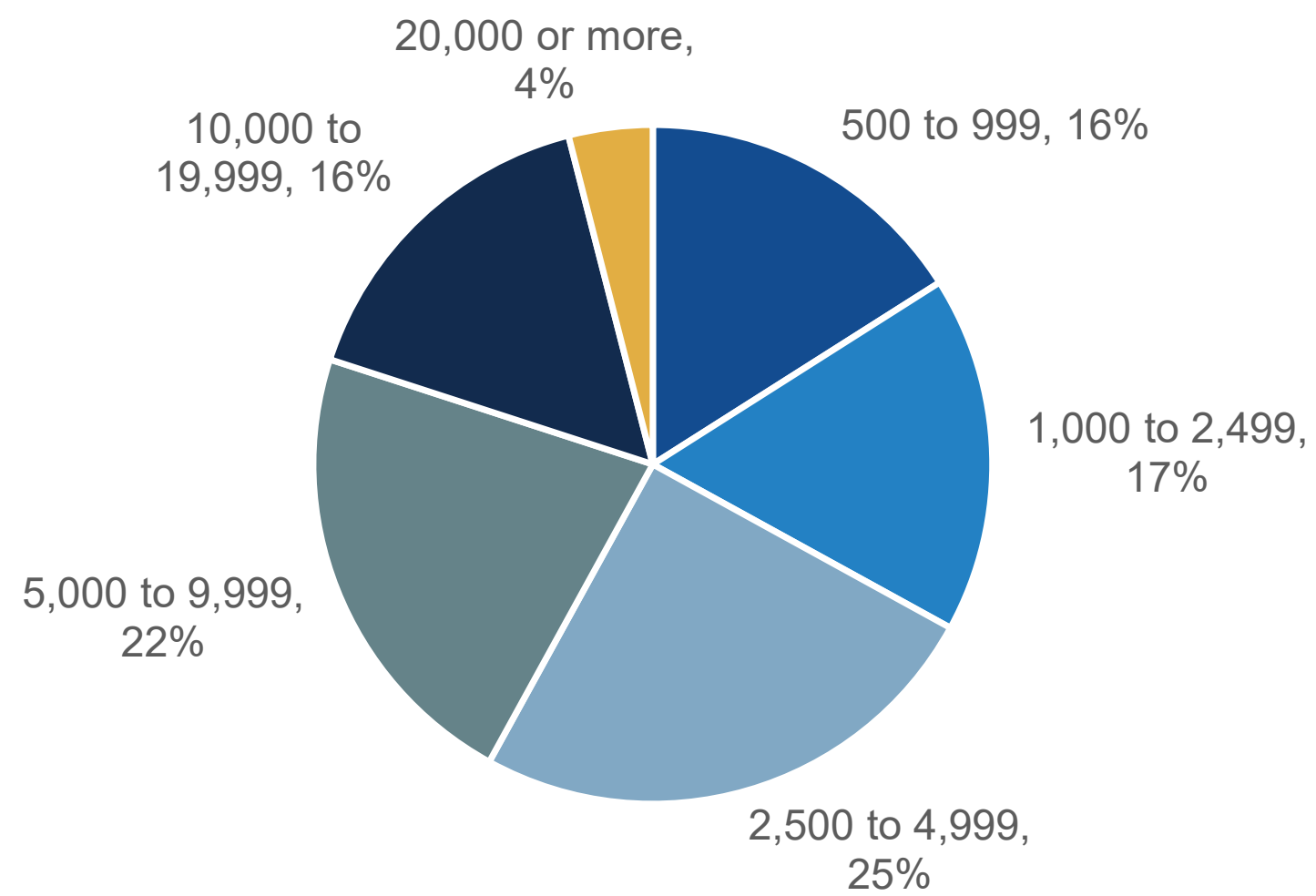
To gather data for this report, TechTarget’s Enterprise Strategy Group conducted a comprehensive online survey of IT operations professionals from private- and public-sector organizations in North America between November 28, 2023 and December 18, 2023. To qualify for this survey, respondents were required to be involved with observability, ITSM, and AIOps technologies and processes. All respondents were provided an incentive to complete the survey in the form of cash awards and/or cash equivalents.

After filtering out unqualified respondents, removing duplicate responses, and screening the remaining completed responses (on a number of criteria) for data integrity, we were left with a final total sample of 360 IT operations professionals.

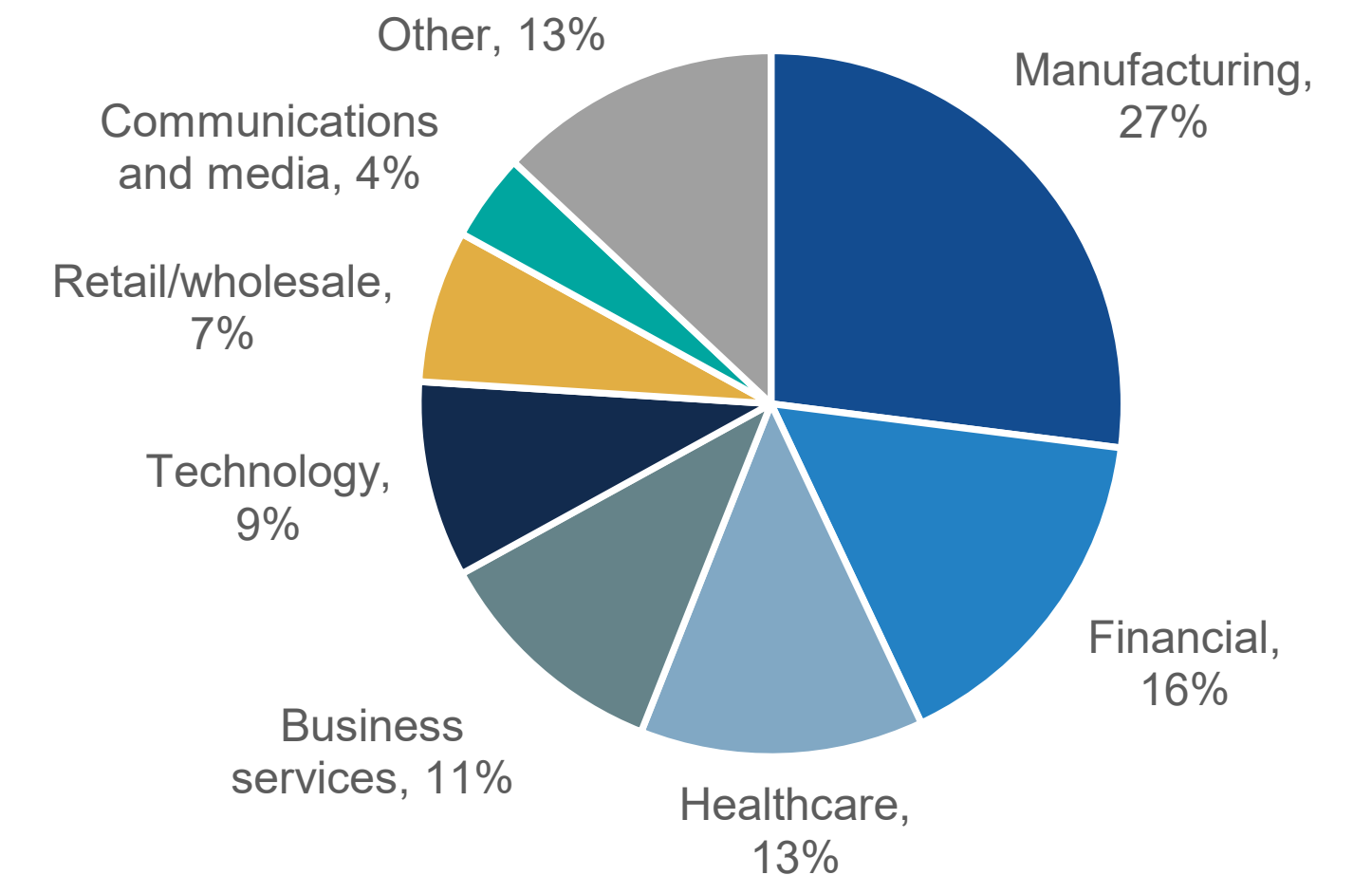
Respondents by day-to-day responsibilities.



Respondents by number of employees.



Respondents by industry.





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