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Global Business Consulting

EMPOWERING THE PROGRESS OF SOX INNOVATION WITH ANALYTICS AND AUTOMATION

Findings from a SOX compliance poll of audit and finance executives and professionals

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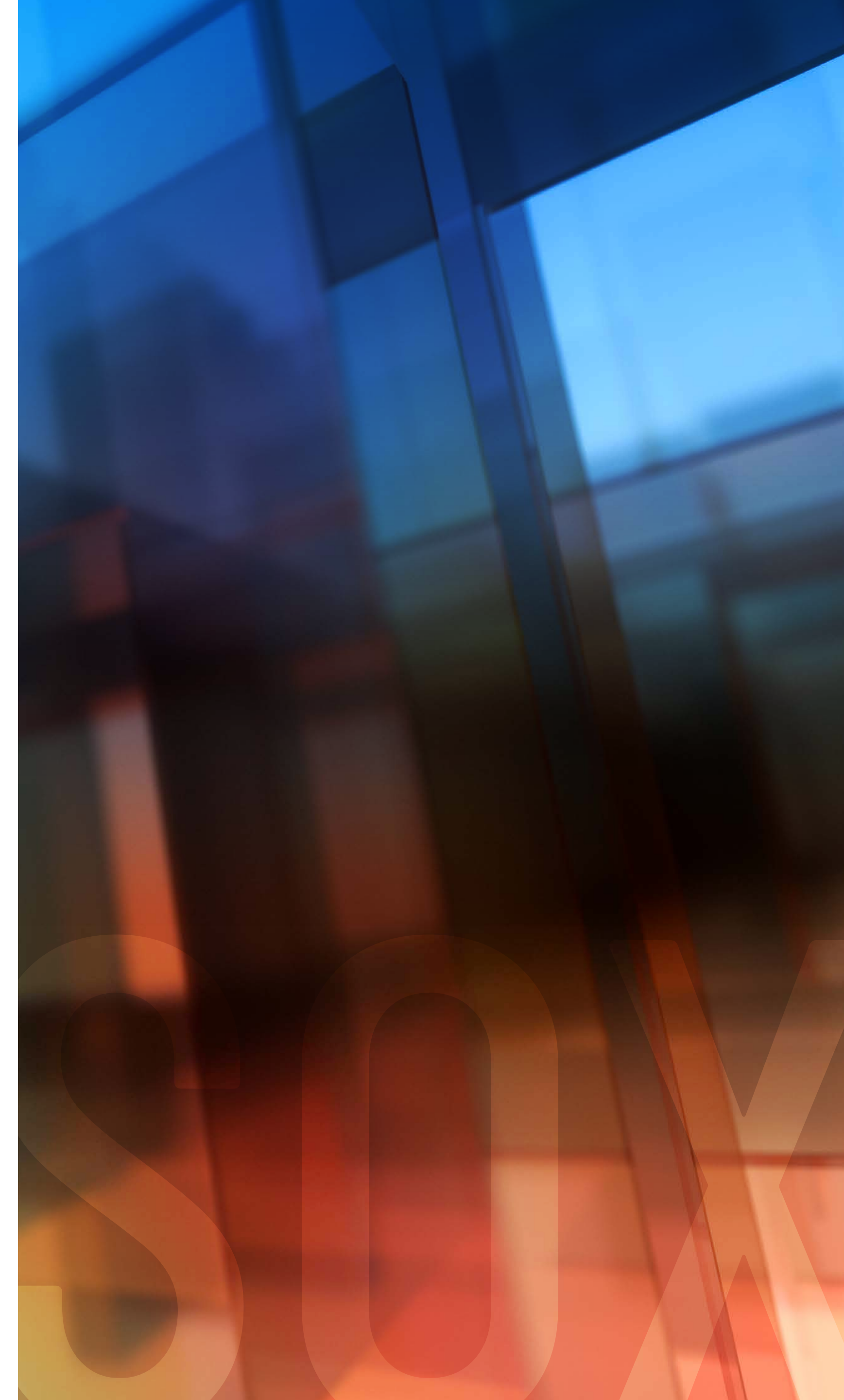
Executive summary

It's been more than two decades since the Sarbanes-Oxley Act (SOX) was created to enhance corporate governance and restore investor confidence following several financial scandals involving publicly traded companies. While implementing and maintaining an effective SOX compliance program is better understood today than it was in the early 2000s, the need for rigorous audits and effectively designed, executed and documented control environments to help ensure the accuracy and integrity of financial statements has not changed and, it can be argued, has become more resource- and time-intensive.

Automation and technology tools can ease the burden of SOX work for internal audit and SOX teams. Audit management software; governance, risk and compliance (GRC) platforms; and data analytics and automation techniques are used widely today to enable compliance activities, which is positive to see. However, many organizations have an opportunity to leverage other powerful technology tools available today — including but not limited to generative AI — to increase the efficiency, effectiveness and opportunities to expand coverage from their SOX compliance efforts, and drive improvements into the overall system of internal controls.

The key takeaways to the right are from an interactive poll of more than 1,500 audit and finance executives and professionals who attended a webinar on SOX innovation conducted by Protiviti and AuditBoard, a leading cloud-based platform transforming audit, risk, compliance, and ESG management.

In the following pages, we review notable findings from our poll and provide further analysis and commentary on the trends and recommended actions organizations should take to enhance their SOX compliance programs.

57%
of organizations believe AI has high or moderate potential to transform SOX compliance activities.

Key takeaways from our poll

- The scope, hours and costs for SOX compliance continue to increase.
- Most organizations are not currently using AI in their SOX compliance programs, but they acknowledge its potential for transformation.
- There is a significant opportunity to use enabling technologies to manage SOX compliance costs — just one in three organizations currently are doing so.
- Insufficient availability of skilled personnel is a significant barrier to using analytics and automation in SOX compliance — just one in five poll participants have a high level of confidence that they possess the necessary skills.
- Yet, few organizations see training and development in the use of analytics and automation in SOX compliance as a high priority.

About our poll

We conducted live polling of participants in a webinar hosted by Protiviti and AuditBoard in June 2024.[1] This webinar explored various topics, including the breadth of SOX programs, the application of analytics, automation and emerging technologies, and the development of essential skills. This webinar was uniquely designed to blend expert insights with real-time audience participation.

We provide these results as directional observations related to notable insights and trends in SOX compliance programs and activities. Since completion of these polling questions was voluntary, there is some potential for bias if those choosing to participate have significantly different views on matters covered in the webinar from those who did not participate. Therefore, the results may not represent all SOX filers. In addition, some respondents answered certain questions while not answering others. Despite these inherent limitations, we believe these results provide valuable insights regarding SOX compliance practices in organizations today.

[1]   The on-demand webinar is available here.

Scope, hours and costs for SOX compliance continue to increase — while budgets are tightening

How the scope of SOX compliance has changed over the past year

24% Significantly expanded

39% Moderately increased

32% Remained relatively unchanged

5% Decreased
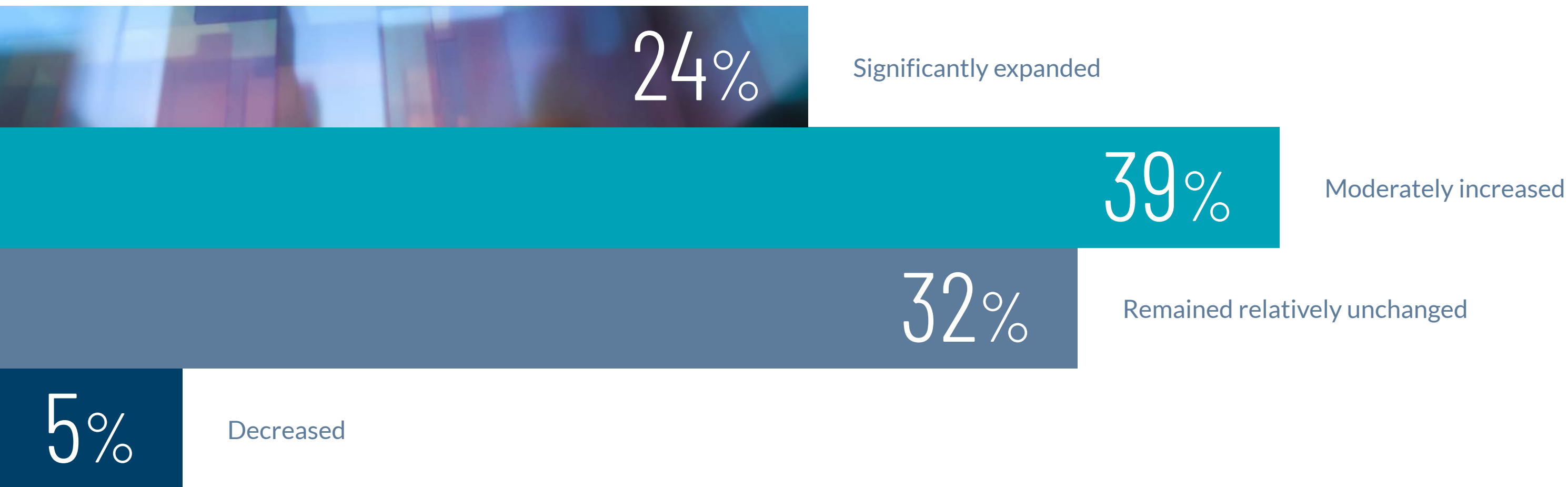
SOX compliance workloads are growing. A majority of respondents indicated that the scope of SOX compliance has significantly expanded or moderately increased over the past year, continuing a trend we have seen in recent years.

Contributing factors include additional control design evaluation efforts and enhanced procedures to test control operating effectiveness. This has been tempered somewhat by technology accelerators and automation.

The goal to reduce the time and resources devoted to SOX compliance activities while maintaining a robust control environment remains an ongoing challenge for companies and their internal audit and SOX teams. This was evident in the results of Protiviti's 2023 SOX Compliance Survey, which showed the hours and costs dedicated to SOX compliance have been increasing due to various factors, including external volatility, internal transformation resulting in changes to scope, increasing organizational complexity and changes in organizations' IT environments.[2]

2 *The Evolution of SOX: Tech Adoption and Cost Focus Amid Business Changes, Cyber and ESG Mandates*, Protiviti, August 2023: www.protiviti.com/us-en/survey/the-evolution-of-sox-tech-adoption-and-cost-focus-amid-business-changes-cyber-and-esg-mandates.

Changes in SOX compliance internal costs over the last two years

52% Increased
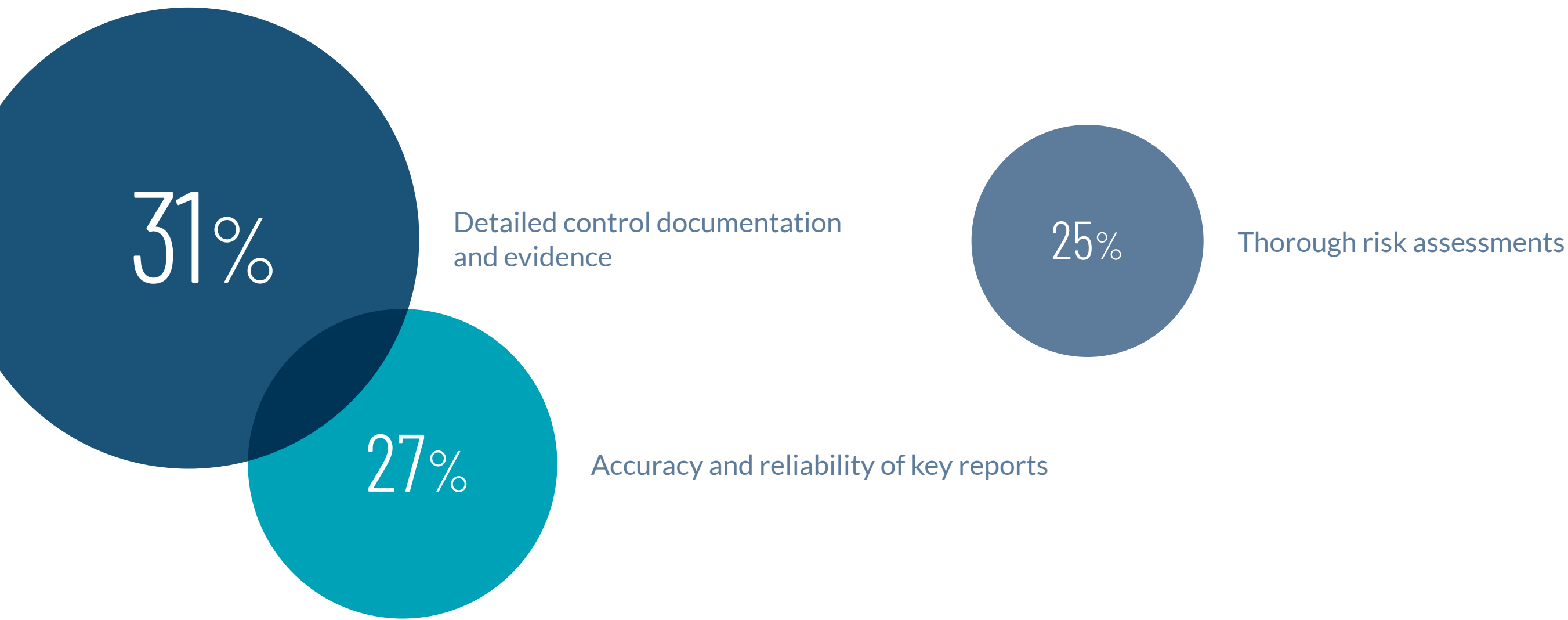
43% Stayed the same

5% Decreased

The results of our poll reinforce this expanding cost of SOX programs trend, with more than half of our webinar participants reporting that their internal costs associated with SOX compliance have risen over the past two years.

Compounding these challenges, many internal audit and SOX teams are facing tighter budgets for SOX compliance activities as their companies navigate economic uncertainty, inflation, higher cost of capital, historically high labor costs, supply chain challenges and other dynamics in the market. Budget constraints for SOX compliance teams are particularly difficult to address at a time when the following factors are in play:

- The U.S. Securities and Exchange Commission's (SEC) adoption of rules regarding cybersecurity and climate-related disclosures (currently, the ESG rules are stayed) has put an additional burden on internal audit and SOX teams and management to support the design of the controls and their implementation as part of an organization's disclosure controls and procedures.

- Significant changes in the workplace — namely, the embrace of hybrid and remote work arrangements, as well as a shift to shared services and lower-cost operations centers — are exposing organizations to an increased risk of fraud, segregation of duties challenges and breakdowns in operating effectiveness, prompting management teams to rethink how traditional SOX controls operate.

- The Public Company Accounting Oversight Board (PCAOB) continues to increase its audit standards and enforcement actions, adding more pressure on external audit firms — and, by extension, on management teams — to keep pace with shifting expectations originating from the inspection and review processes, rather than changes in the core underlying regulations. The level of documentation required to support control performance has increased, too, driven by PCAOB reports indicating many external audits lack sufficient or appropriate evidence to support controls and lack sufficient procedures to verify the accuracy and reliability of key reports, information produced by the entity (IPE), and management review controls (MRC).

- External auditors are increasing the scope and depth of their audits — a response, in part, to the PCAOB's actions and reports. They are asking to attend more meetings, see more detail in the precision with which MRCs operate, review draft reports, and more. They also are challenging the scope of IT systems and controls more frequently. A top focus for many external auditors, according to our poll, is obtaining more detailed documentation and evidence to support both management's and their own assessment of controls.

Where external auditors are focusing most when it comes to SOX compliance activities

31% Detailed control documentation and evidence

27% Accuracy and reliability of key reports

25% Thorough risk assessments

44% *of audit and finance executives and leaders say IT access controls and security represent the area of the control environment in which they encounter the most challenges or deficiencies.*

In addition to innovative ways of working that are changing the way we need to think about risk and how to mitigate it, technological changes within organizations are creating additional SOX compliance risks. Respondents cited IT access controls and security as an area where they are encountering the most challenges or deficiencies in their control environment.

IT access control and security issues often stem from segregation of duties conflicts or gaps in user access review and terminations procedures. For example, in many organizations, key players in the accounting function may have sensitive or elevated access to the enterprise resource planning (ERP) system or other systems critical to financial reporting. Systems implementations or major upgrades, including ERP, also introduce risks and process changes, necessitating new controls to be implemented and/or existing controls to be modified to address areas such as user access and integrity of data, reporting and interfaces. However, these risks are often not discovered until an after-the-fact audit is conducted or an untoward event occurs.
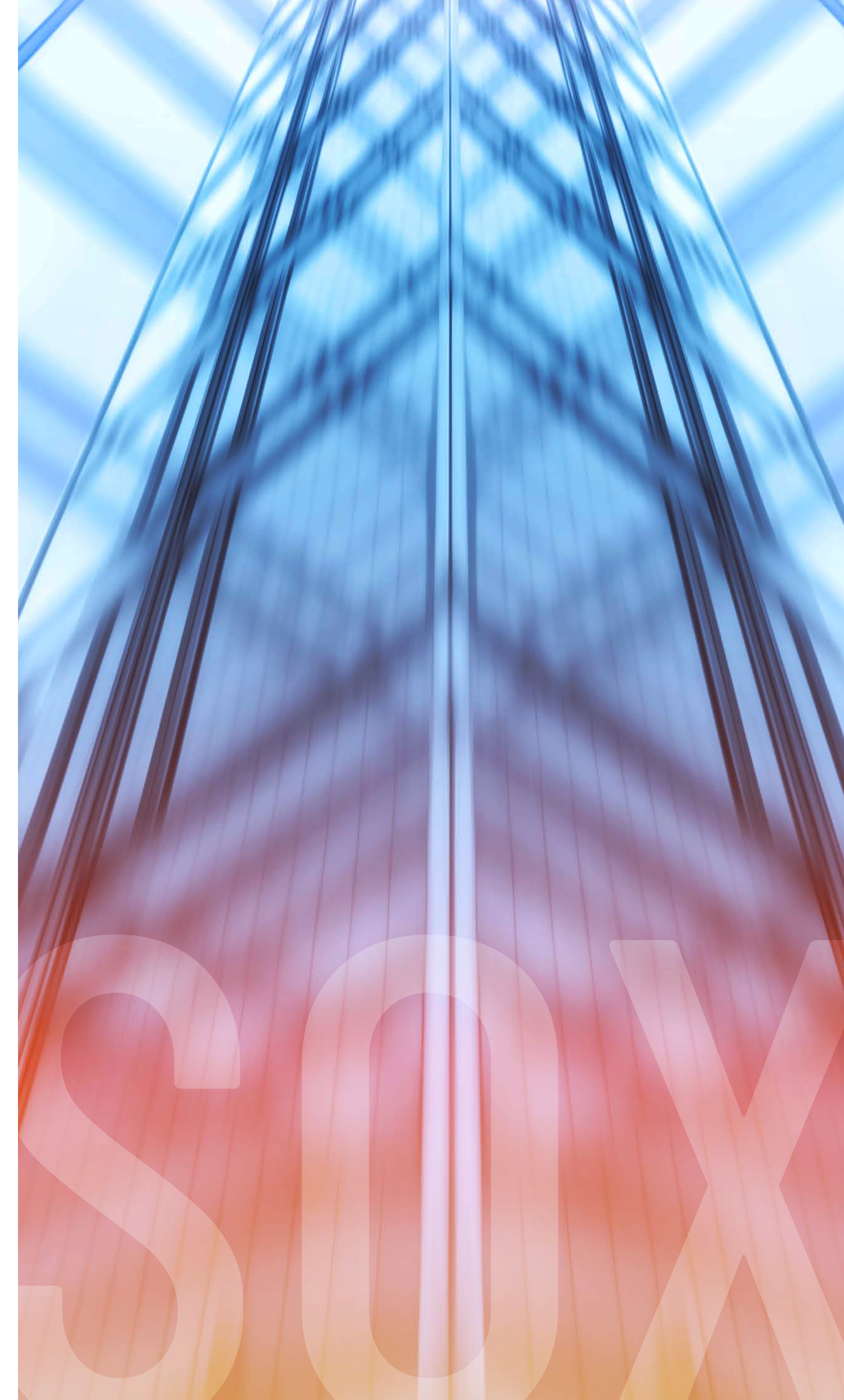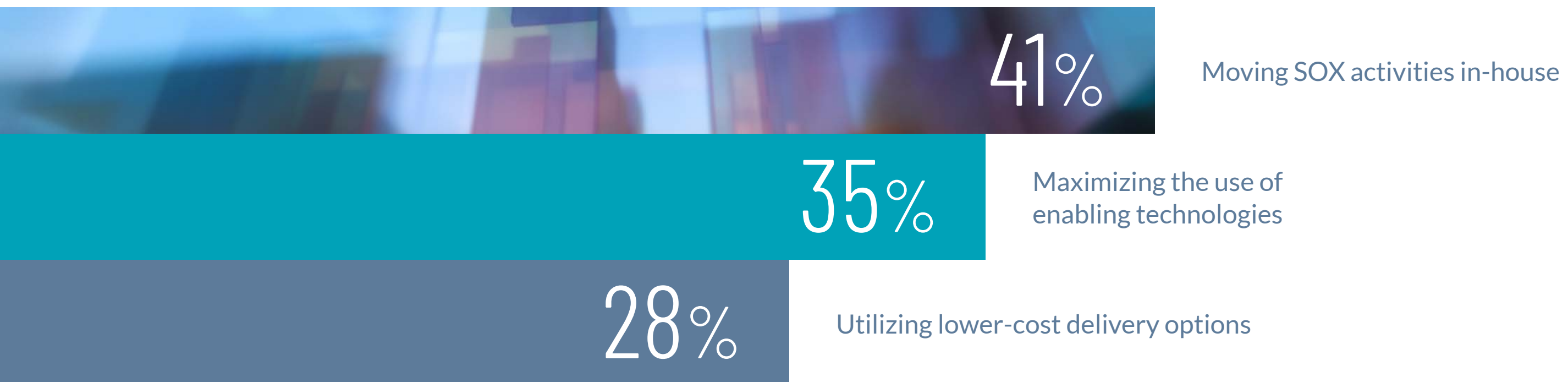
Our poll indicates organizations are undertaking a number of steps to try to manage SOX compliance costs. The most common trends include bringing SOX activities in-house; increasing the use of shared service centers, and in-house offshore and centralized teams; and leaning more heavily on enabling technologies. This shift is, in part, a response to tighter budget constraints, delayed capital investments and transformation projects, as well as surplus capacity from rapid hiring in 2021 and 2022, which has led to a reallocation of tasks to internal resources. As we discuss later in our paper, maximizing the use of enabling technologies represents an opportunity for organizations to achieve significant efficiencies in their SOX compliance programs.

We have seen some of these trends before, although there appears to be a more serious focus on right-sizing the budget and delivery models for ongoing SOX compliance. Time will tell if these hold as economic conditions improve, although there is increasing evidence that SOX programs can be managed more cost-effectively through increasing use of technology, as well as exploring more cost-effective delivery models to support activities, including documentation updates, evidence collection and controls testing.

Top approaches to manage SOX compliance costs

41% Moving SOX activities in-house

35% Maximizing the use of enabling technologies

28% Utilizing lower-cost delivery options

Few organizations are using AI to transform SOX compliance activities — for now

While relatively few organizations currently use AI to support SOX compliance activities, they clearly see the technology's potential.

AI's potential to transform SOX compliance activities

26%	32%	29%	11%	2%
High potential to completely transform and revolutionize SOX compliance activities	Moderate potential to significantly improve efficiency and effectiveness in SOX compliance activities	Some potential to enhance certain aspects of SOX compliance activities	Limited potential to transform SOX compliance activities	AI usage is not a good match

AI and machine learning hold the promise to drive significant efficiency in risk assessments; process mapping, risk and control documentation activities; evidence gathering; validation; and data extraction. Other uses include assisting with validating scope and completeness of risks and controls, enhancing control testing efficiency and quality, and driving broad efficiencies in SOX compliance programs, as well as in the in-scope process and controls themselves.

AI can also streamline compliance reporting. For example, AI-powered tools can extract relevant data from various systems, perform necessary calculations and generate comprehensive compliance reports with minimal human intervention. A valuable application of AI in SOX compliance is the generation of walk-through documentation, including narratives, process flows, risk and control documentation, test scripts, and document requests, all derived from a recorded and transcribed walk-through meeting. AI can enhance the efficiency of internal controls testing by automating routine tasks, such as reconciling accounts and reviewing transactions, which are traditionally resource-intensive tasks.

Fraud detection is another critical area where AI can make a significant impact on SOX compliance efforts. Machine learning algorithms can analyze historical transaction data to identify patterns indicative of fraudulent or erroneous activity. By continuously learning from new data, these algorithms can adapt to evolving fraud tactics and improve their detection capabilities.

However, despite AI's potential to transform SOX compliance activities, our polling results reveal that most organizations are not currently using AI in their program, and are still in the understand, explore and experiment phases of AI use, and have not yet progressed to adoption and integration.
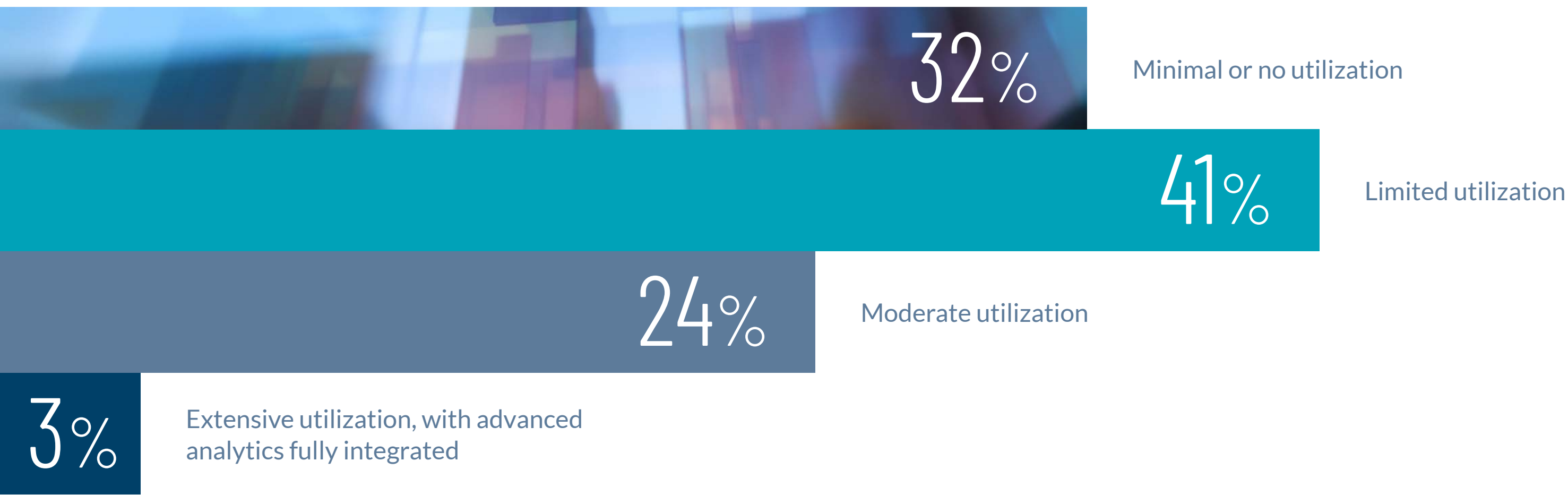
78%

of organizations are currently not using AI to support their SOX compliance program.

Lack of skills is hindering broader use of automation and advanced analytics in SOX compliance work

The application of data analytics and other tools and technologies can significantly enhance SOX control testing and broader compliance and risk management efforts. According to Protiviti's 2023 Sarbanes-Oxley Compliance Survey,[3] only 38% of organizations use data analytics and visualization platforms to enable SOX compliance work. The results of our webinar poll suggest little has changed, as three out of four organizations use analytics tools minimally or in a limited manner. A very small percentage of respondents reported extensive utilization and full integration of analytics solutions in their SOX control testing efforts.

Utilization of analytics in testing SOX controls

32% Minimal or no utilization

41% Limited utilization

24% Moderate utilization

3% Extensive utilization, with advanced analytics fully integrated

Interestingly, we posed to webinar attendees a separate question about the technologies their teams primarily rely on for enhancing SOX compliance activities. Respondents overwhelmingly selected data analytics tools. This suggests many respondents may be distinguishing between data analytics tools like Microsoft Excel and the more advanced analytic features available in technologies that have emerged in recent years and are still being adopted. This contrast in results could also indicate there is broad recognition of the potential for analytics to deliver benefits, although the tools themselves have only been minimally adopted and integrated into SOX compliance and testing efforts.

Companies that use advanced analytics are moving toward continuous monitoring and exception testing based on data storytelling. For instance, SOX teams can analyze 100% of the journal entries booked in a year and, from that, focus testing on entries falling outside of the delegation of authority, booked on nonworking days, or that have other characteristics that fall outside of normal. Likewise, companies can use analytics to manage the perennial issue

[3] Ibid.

of segregation of duties. Visualization tools can be used to identify violations at the role and user level, enabling the team to pinpoint issues and follow up on them in a timely manner rather than in semiannual lookbacks. Moreover, analysis of transactional data sets can identify instances of where an actual violation occurred and support quantification of SoD control deficiencies.

A lack of confidence in using technologies for data analysis and reporting is a factor that leads some teams to apply advanced data analytics tools minimally or sporadically in their SOX work. In our poll, just over 10% of respondents reported a high level of confidence in their proficiency in using advanced analytics tools and leveraging them to drive insights. Some of this lack of confidence is attributable to the limited investments by SOX teams to propel these technologies forward. Tools need to be licensed and implemented, teams need to find time to learn the skills, day-to-day demands of SOX need to be managed, and with teams running lean, it is hard to prioritize focusing on new technologies.
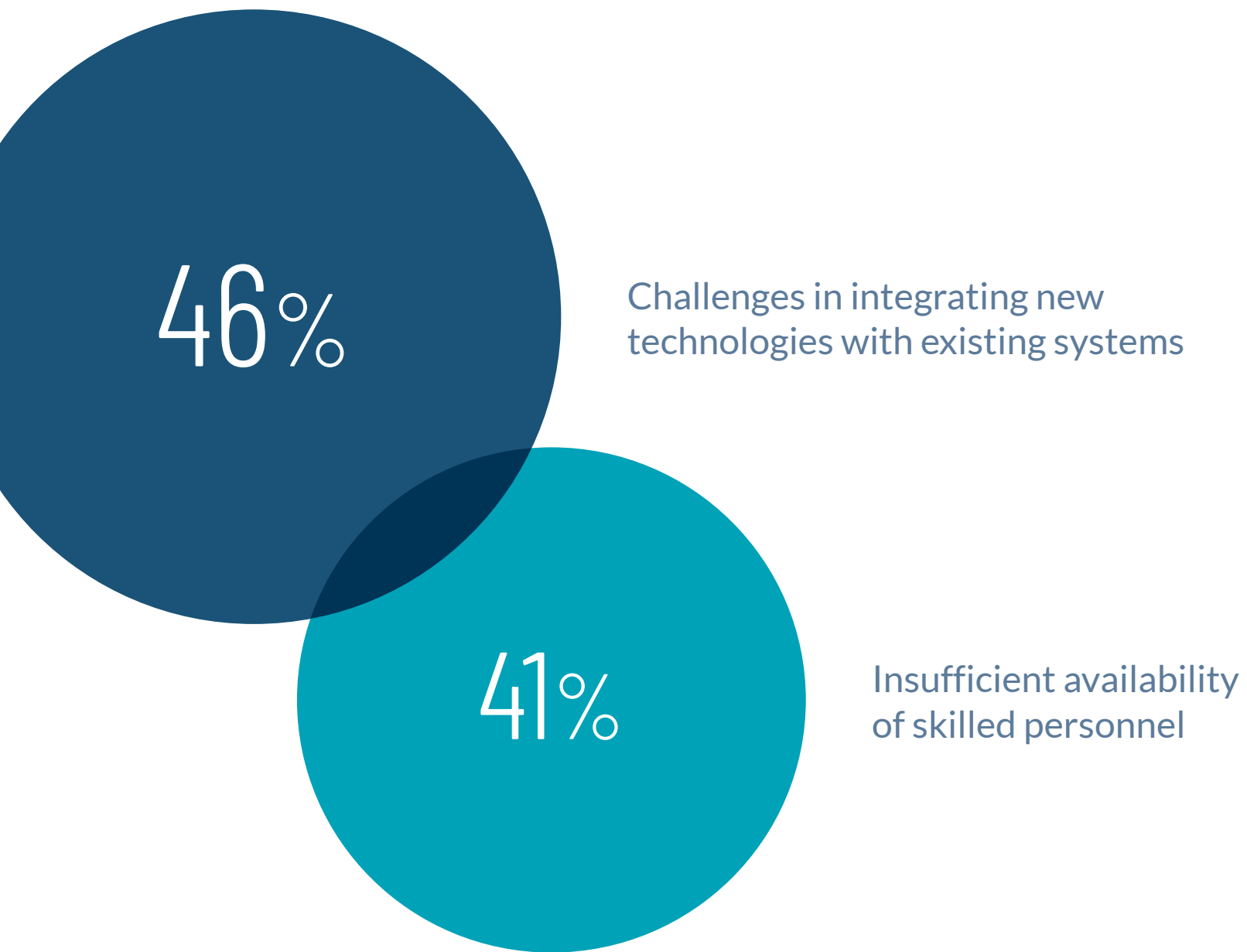
70% of organizations rely primarily on data analytics tools to enhance SOX compliance activities.

Level of confidence to utilize tools for data analysis and reporting

3%	10%	24%	39%	24%
Very confident	Confident	Moderately confident	Somewhat confident	Not confident

Primary barriers preventing the effective utilization of analytics and automation in SOX compliance

46% Challenges in integrating new technologies with existing systems

41% Insufficient availability of skilled personnel

The most common barriers to effective utilization of analytics — and, more broadly, automation — in SOX compliance are challenges in integrating new technologies with existing systems (with respect to data analytics tools, this is the age-old challenge of being able to access data in an efficient and reliable manner) and insufficient availability of skilled personnel. This suggests that organizations can benefit from making upskilling and reskilling staff a greater priority as they seek to enable their SOX compliance programs with advanced analytics and other technology tools.

Laying the foundation for a more future-forward SOX compliance program

Many organizations continue to make gradual strides in implementing automation and technology tools to support SOX compliance processes, which traditionally have been focused on manual, time-consuming and error-prone procedures. Our poll results reinforce what we have seen in the market in recent years, namely that control testing, alongside monitoring and reporting, are perceived as the key SOX tasks that stand to reap significant benefits from heightened integration of automation and technology.

By expanding the use of automation and technology tools in control testing, SOX compliance teams can reduce the time and effort required for this work, allowing them to focus on higher-value activities. Automation solutions can streamline evidence extraction, aid in validating documents against requests, organize documents and support automated follow-ups and notifications, execute predefined test scripts, validate data against control criteria, generate comprehensive test results, upload results and documents into GRC solutions,

and more. Automated testing solutions can also be performed continuously (or on a high-frequency basis), providing close to real-time insights into the effectiveness of controls and enabling more timely remediation of identified issues. These are all use cases from which the majority of SOX programs could realize significant value.

SOX compliance activities that would benefit most from increased automation

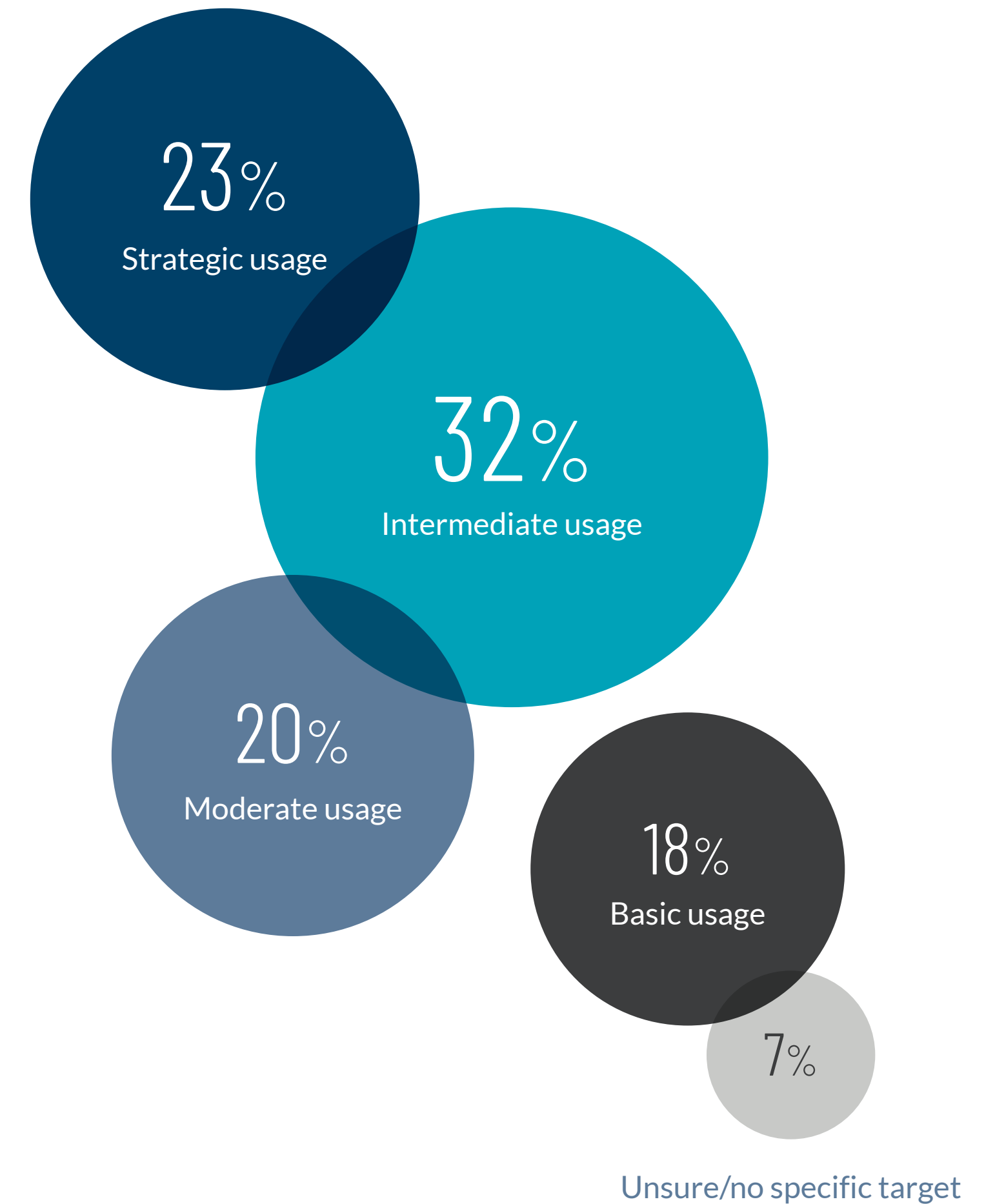| 41%	29%	17%	12%	1%
Control testing	Monitoring and reporting	Risk assessment	Control documentation	Remediation activities

In regard to monitoring and reporting, automated data entry can enhance data accuracy and consistency, while advanced analytics can be employed to identify anomalies and inconsistencies in financial and related data. Techniques such as data profiling and validation, data quality assessment, and reconciliation automation help ensure data reliability and completeness. Automation tools can also provide continuous monitoring of financial transactions and controls, allowing SOX compliance teams to identify and address issues as they arise. Further, dashboards can be developed in analytic and visualization tools like Power BI to allow teams to closely monitor the organization's compliance status and control effectiveness in real time.

The results of our poll indicate that most individuals with a stake in SOX compliance, from those in executive offices to those in management, would like to see their organization increase efforts to use analytics, automation and other technologies to support SOX efforts. Our findings suggest a majority of organizations have yet to reach an intermediate level of usage, which we define as incorporating analytics and automation into core processes. This falls well short of the desired usage levels that organizations reported through our polling.

In our view, greater use of technology and automation is among the top opportunities organizations have in order to achieve efficiencies, innovate and increase the overall effectiveness of their SOX compliance activities. While a commitment of resources is required to achieve significant progress in this area, this has proven to be a worthwhile investment for many organizations.
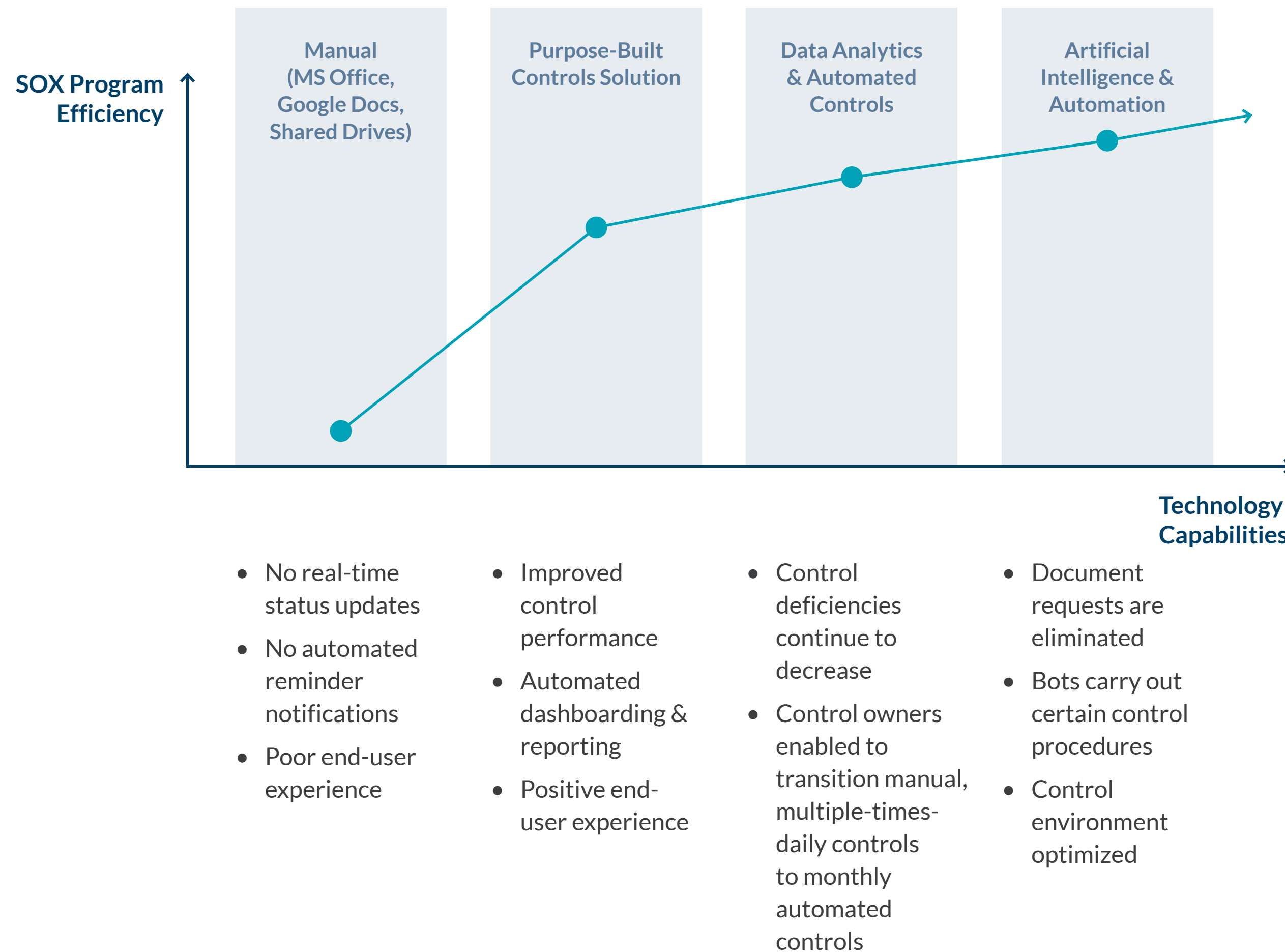
35% of organizations are maximizing the use of enabling technologies to manage SOX compliance costs.

Level of desired usage for analytics, automation and other technologies in SOX compliance

23% Strategic usage

32% Intermediate usage

20% Moderate usage

18% Basic usage

7%

Unsure/no specific target

Technology maturity model for SOX compliance*

SOX Program Efficiency (vertical axis)

Technology Capabilities (horizontal axis)

Manual (MS Office, Google Docs, Shared Drives)	Purpose-Built Controls Solution	Data Analytics & Automated Controls	Artificial Intelligence & Automation
• No real-time status updates • No automated reminder notifications • Poor end-user experience	• Improved control performance • Automated dashboarding & reporting • Positive end-user experience	• Control deficiencies continue to decrease • Control owners enabled to transition manual, multiple-times-daily controls to monthly automated controls	• Document requests are eliminated • Bots carry out certain control procedures • Control environment optimized

*   Model contributed by **AUDITBOARD**

A commitment to technology is essential in moving SOX compliance programs forward. The evolution of SOX compliance programs highlights the transformative impact of technology. Initially reliant on manual processes, these programs faced inefficiencies. However, with the development of purpose-built solutions, technology has shifted SOX compliance from a regulatory challenge to a potential driver of enhanced governance and even business efficiency.

The maturity model at the left demonstrates that once a purpose-built control solution is used for SOX compliance programs, the adoption of analytics, AI and automation becomes significantly easier and more effective. This solution creates an integrated environment enhancing the overall system's capacity to integrate more complex technologies seamlessly while also enabling aligned assurance and more effective use of resources.

With each step forward — be it through purpose-built control solutions or the integration of analytics, AI and automation — the potential for improved compliance programs becomes more tangible. It is essential for SOX teams to be innovative and embrace the momentum of advancements in technology while striving toward evolving their technology maturity.
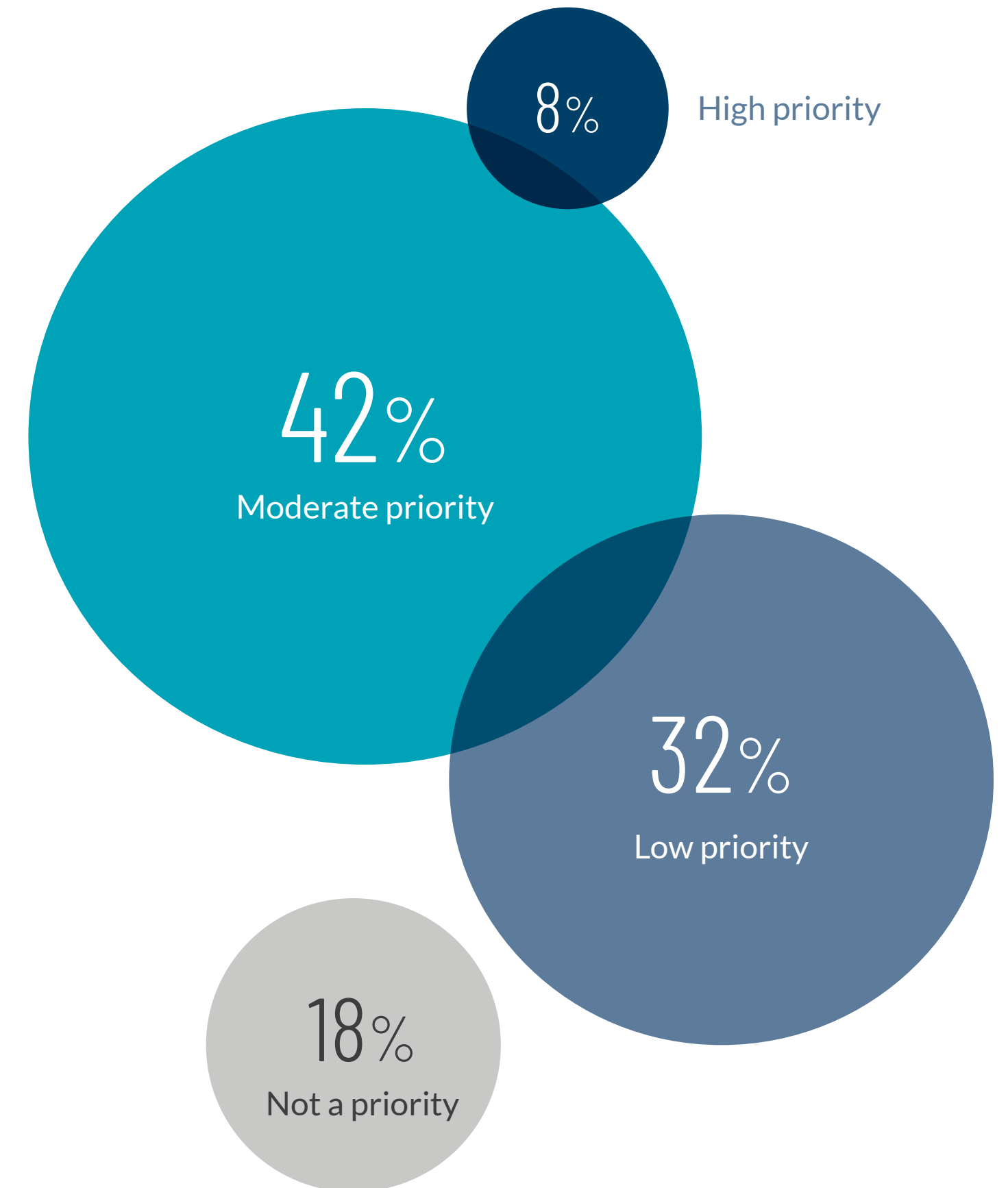
Based on Protiviti's extensive experience helping companies establish and evolve their SOX compliance programs, we know that several factors can impede efforts to introduce and increase the use of automation and technology tools in SOX work — particularly AI and machine learning solutions. The lack of skills, time, budget and stakeholder buy-in typically are the top obstacles to overcome.
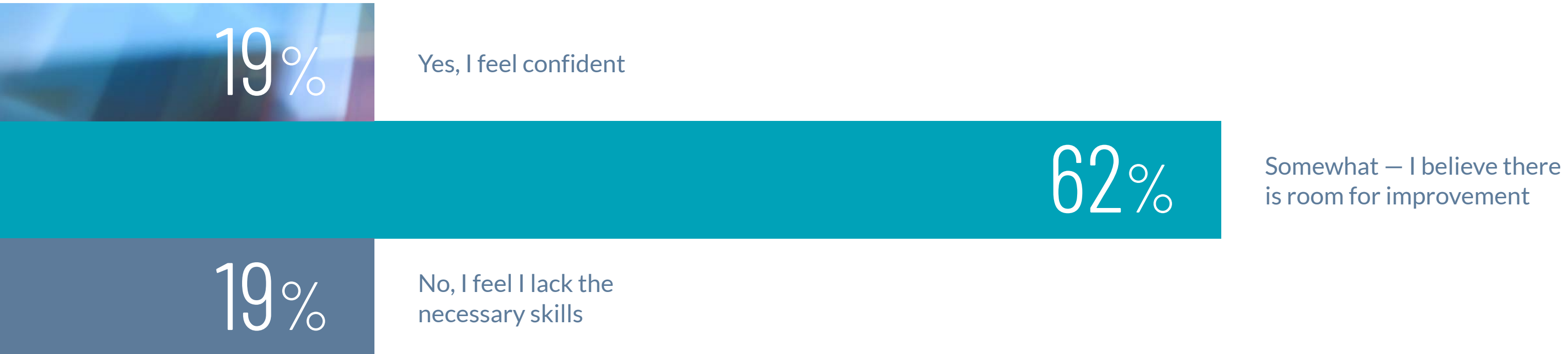
Talent and skills are other key components of enhancing SOX compliance activities through increased technology use. Of note, less than 20% of the participants in our poll expressed a high level of confidence that they possess the skills necessary to utilize technologies for SOX compliance now and in the future.

Compounding this reported skills gap, fewer than 10% of organizations indicate training and development in this area to be a high priority.

How training and development in use of analytics and automation in SOX compliance is prioritized

8% High priority

42% Moderate priority

32% Low priority

18% Not a priority

Views on having the necessary skills to utilize technologies for SOX compliance effectively

19% Yes, I feel confident

62% Somewhat — I believe there is room for improvement

19% No, I feel I lack the necessary skills

One of the quickest paths to advancing the use of automation and technology tools in a SOX compliance program is to invest in training and development for SOX team members, from formal training programs to hands-on workshops. A clear commitment from the SOX program's leadership to make meaningful progress in this space, with buy-in from senior management and even at the board level, will help ensure sufficient focus and delivery of results. These efforts are critical to building competence and confidence in using these technologies and maximizing investments.

We also know from a recent pulse survey Protiviti conducted on the topic of future-ready auditing that there is an urgent need among internal audit and SOX professionals to ramp up the development of AI and machine learning skills.[4]

Given the labor-saving advantages and insights that using AI-enabled technologies can provide, this pulse survey finding isn't surprising. For instance, AI-enabled technologies such as process mining solutions allow for data-driven process views and use transactional data to visualize how processes are actually operating, identifying deviations from expected process paths, inefficiencies, segregation of duties issues and more. This is a high-value use case that has numerous benefits across assurance and operations.

[4] "Survey Finds Internal Audit Leaders See Urgent Need to Confront Skills Gaps in AI and Cybersecurity," by Angelo Poulikakos, Protiviti blog, May 17, 2024: https://blog.protiviti.com/2024/05/17/survey-finds-internal-audit-leaders-see-urgent-need-to-confront-skills-gaps-in-ai-and-cybersecurity/.

We know from a recent pulse survey Protiviti conducted on the topic of future-ready auditing that there is an urgent need among internal audit and SOX professionals to ramp up the development of AI and machine learning skills.

Call to action — embrace technology and an innovation mindset

SOX compliance requirements continue to present a number of challenges for organizations. Demands for expanded scope and more detailed procedures are rising while changes in the enterprise (e.g., expansion into new markets, new product offerings, M&A transactions, technology transformations, reliance on third parties) and hybrid working models create further complications. Bottom line, our latest poll, as well as our ongoing market research, show that the time and resources organizations must commit to SOX compliance efforts continue to rise. Our call to action focuses on helping organizations to address these hurdles through innovation and technology enablement, allowing them to take advantage of emerging capabilities and also to manage budgets and costs:

- **Make the most of existing tools.** Use current audit management platforms to integrate workflow, automation and analytics functionalities as a starting point. Many platforms have built-in capabilities that are underutilized and can be leveraged to enhance SOX compliance. By maximizing the use of existing tools, organizations can start to make incremental improvements in their SOX work without a significant upfront investment.

- **Develop a strategic technology road map.** Create a long-term plan for integrating AI, automation and analytics into SOX compliance activities, focusing on continuous improvement and innovation. This road map should align with the organization's overall strategic goals and be revisited periodically to ensure ongoing alignment and consideration of advancement in technology. It can be used to guide resource allocation and investment decisions, and ensure that technology initiatives are aligned with business objectives.

- **Start small with pilot projects.** Begin with manageable pilot projects (focused on high-value use cases) that demonstrate the value of automation and AI. These projects can serve as proofs of concept and value, helping to build confidence and gain support from leadership and other key stakeholders. For instance, automating the document-gathering or evidence-extraction activity can showcase how efficiency and accuracy can be improved, as well as how time savings for stakeholders can be delivered, setting the stage for broader adoption.

By maximizing the use of existing tools, organizations can start to make incremental improvements in their SOX work without a significant upfront investment.

- **Challenge the internal team to develop critical skills.** Key areas of focus include existing and emerging technologies. By developing these skills, organizations can address challenges that have led to increased workloads and hours. Identify team members who have the interest and aptitude and support them in their development of further knowledge and skills. Give them some specific goals to help with the pursuit of specific enabling technology solutions.

- **Leverage external expertise.** Partnering with third-party experts can provide valuable support and guidance on latest trends, highest-value use cases and delivered ROI to help accelerate technology adoption and maximize the benefits of using automation, advanced analytics and AI for SOX compliance. For instance, external consultants can assist with developing the strategic technology road map, identifying the most impactful areas for automation and analytics. And technology providers can offer ready-to-go and customizable solutions to address specific compliance needs, ensuring seamless integration with existing systems.

- **Embrace the opportunity for change.** Perhaps most important, SOX compliance leaders should be open to and embrace change and a mindset of innovation, and make a strong commitment to explore and adopt solutions that have clear potential to deliver ROI.

Ultimately, the successful integration of powerful technologies like generative AI into SOX compliance activities requires a commitment to continuous learning and a wide embrace of change. By fostering a culture of innovation, making a firm commitment related to the increased use of technology, and prioritizing investments in the necessary skills and tools, organizations can more effectively and efficiently meet SOX compliance demands. The use of new advanced analytics and other emerging technologies, or a combination thereof, can free up internal resources to focus on more strategic activities to support the enterprise. These skills and tools can also improve the level of engagement, experience and satisfaction of their teams and provide a lift to the broader enterprise related to the pursuit and use of technology to drive improvements in risk management, operations and results.

The challenges we have outlined here are not new. When it comes to SOX compliance, required hours and resources undoubtedly will continue to rise unless there is a commitment to optimize the use of existing and new technologies to achieve greater efficiencies, time savings and performance. The opportunity is there — it's up to SOX compliance leaders to capitalize on it.

View technology as more than just a tool — integrate it into your routine activities, making it a vital component for improving SOX compliance efforts.

About Protiviti

Protiviti (www.protiviti.com) is a global consulting firm that delivers deep expertise, objective insights, a tailored approach and unparalleled collaboration to help leaders confidently face the future. Protiviti and its independent and locally owned member firms provide clients with consulting and managed solutions in finance, technology, operations, data, digital, legal, HR, risk and internal audit through a network of more than 90 offices in over 25 countries.

Named to the *Fortune* 100 Best Companies to Work For® list for the 10th consecutive year, Protiviti has served more than 80 percent of *Fortune* 100 and nearly 80 percent of *Fortune* 500 companies. The firm also works with government agencies and smaller, growing companies, including those looking to go public. Protiviti is a wholly owned subsidiary of Robert Half Inc. (NYSE: RHI).

About AuditBoard

AuditBoard is the leading cloud-based platform transforming audit, risk, compliance, and ESG management. Nearly 50% of the *Fortune* 500 leverage AuditBoard to move their businesses forward with greater clarity and agility. AuditBoard is top-rated by customers on G2, Capterra, and Gartner Peer Insights, and was recently ranked for the fifth year in a row as one of the fastest-growing technology companies in North America by Deloitte. To learn more, visit: AuditBoard.com.

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