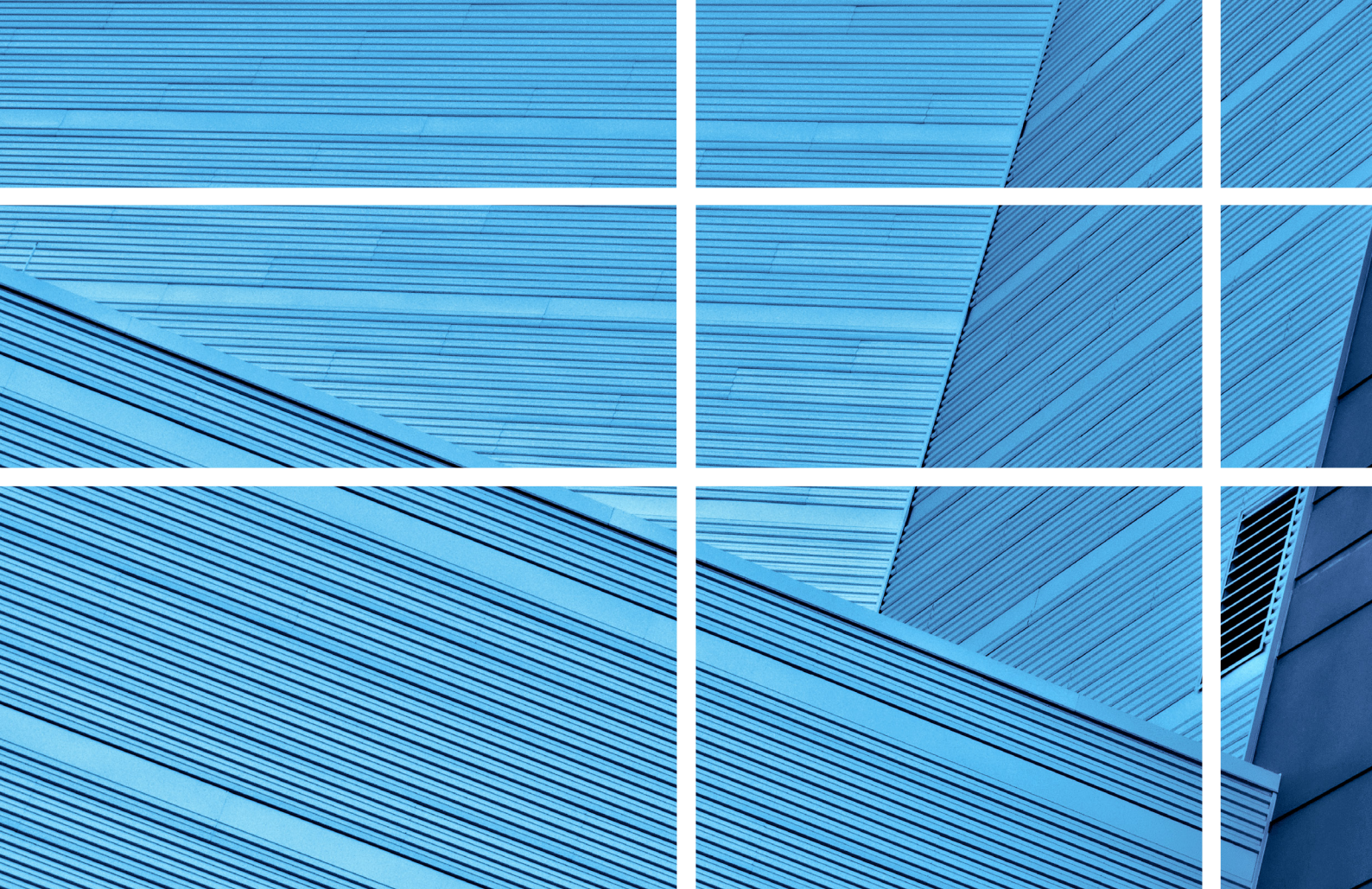




451 Research Discovery Report

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The value of a unified IT automation platform

S&P Global
Market Intelligence

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Introduction

IT departments face challenges in optimizing the implementation of numerous automation and operations tools, often numbering in the dozens or even hundreds. This complexity makes efficient management and integration difficult, especially as organizations invest in hybrid IT ecosystems, cloud services and cloud-native application modernization. Effectively integrating and optimizing these tools is crucial to unlock their potential to drive business innovation.

Multiple software tools are often required to perform common tasks such as application development, resource provisioning, configuration management and problem resolution. IT organizations increasingly need to integrate observability tools, configuration management databases, IT service management platforms and process automation technologies to orchestrate their expanding hybrid IT estates.

Key findings

- **Expanding hybrid IT estates call for increased tool interoperability:** 72% of respondents use up to 50 IT tools, while 28% use 50-100+ tools, creating complexity from tool sprawl. Often, IT functions rely on multiple tools that do not interoperate effectively. About two-thirds of respondents (69%) have established platform engineering programs or are otherwise committing resources to integrate disparate tools, expending scarce resources when purpose-built unified IT automation platforms are available.
 - **Automation is set to play a prominent role in AI success:** AI can analyze data and events in real time, make decisions based on predefined rules and take actions to resolve IT issues autonomously. Successful AI implementation will require integration into existing or new business and IT workflows through automation.
 - **As AI transforms IT, enterprises are prioritizing automation, driving increased budget allocations:** Enterprises recognize that effective automation is crucial for AI success, leading to increased budget allocations. IT organizations seek automation platforms that mitigate tool sprawl, resolve interoperability issues, reduce operational inefficiencies and establish a foundation for AI readiness.
- Tool sprawl can quickly become problematic, creating unnecessary complexity and increasing the burden on IT professionals to ensure interoperability. This diminishes IT teams' productivity and inhibits their ability to deploy their skills for the enterprise's benefit. To address this, companies are adopting a "unified IT automation platform" to establish a common environment and framework for crafting, executing and managing critical processes.
- To understand the business scenarios necessitating such a platform, we surveyed 900 business and IT decision-makers and influencers knowledgeable about automation technology across diverse IT functions and industries. Our questions focused on the state of IT automation in enterprises, anticipated changes and the implications of using disparate tools to automate IT operations. We also asked respondents about their definition of a unified IT automation platform, including expected capabilities, benefits and challenges.
- **Unified IT automation platforms emerge:** A new class of IT platforms reduces the burden on IT organizations to integrate multiple tools for various operations. These platforms provide a centralized control plane that leverages AI to integrate, automate and orchestrate IT tools, processes and resources, as well as facilitate collaboration across the IT organization.
 - **Respondents identify critical capabilities of unified IT automation platforms:** IT service management (56%) and generative AI (53%) top the list, demonstrating a critical link between automation and AI strategies. Other important capabilities include endpoint security (50%), DevOps (47%), identity and access management (43%), and configuration management tools (38%).
 - **Organizations balance the use of open-source and commercial software:** While open-source software is popular, many users prefer or require paid commercial software for the expertise and support provided by vendors. IT organizations will need frameworks that integrate open-source and commercial resources, likely seeking unified IT automation platforms to achieve this.

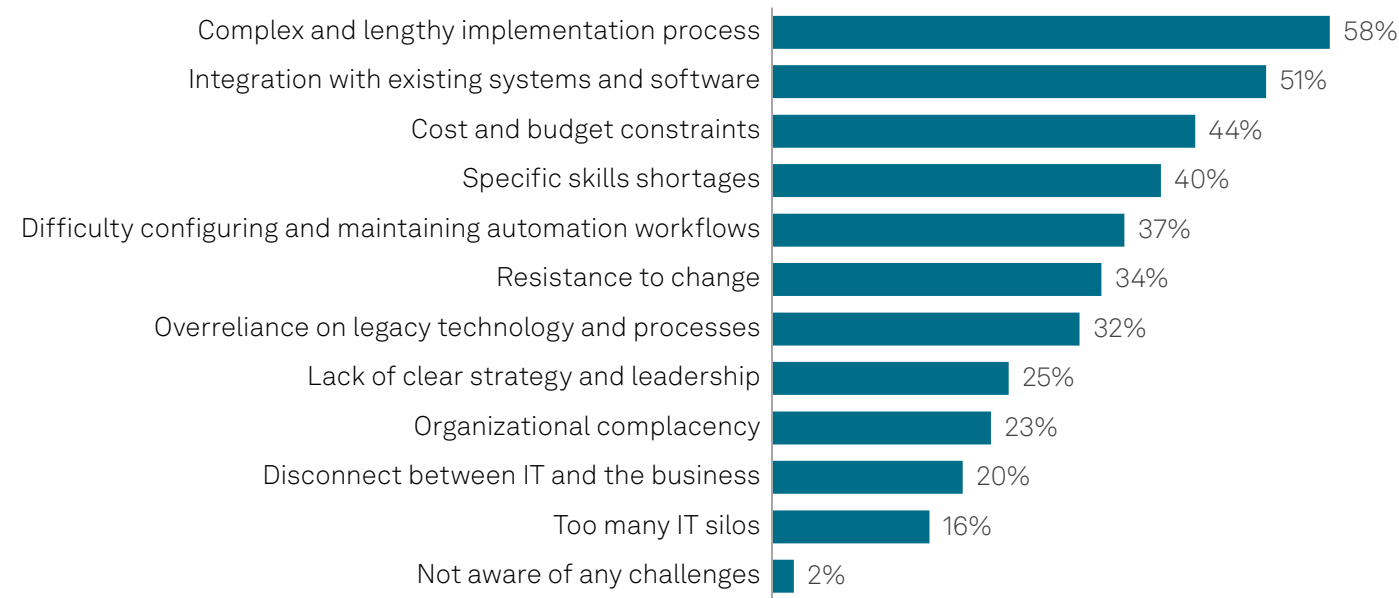
Challenges to IT automation

Much of our current research focuses on understanding how enterprises are pursuing AI to enhance business and IT operations, workforce productivity and customer experiences. We have found that AI technologies themselves are not the sole foundation for enterprise AI strategy: Automation technology and platforms are vital to support enterprise applications and complex hybrid IT environments.

By automating processes such as resource provisioning, configuration management and workload orchestration, organizations can efficiently manage the resources needed to deploy and scale all workloads, including those involving AI. Further, automation supports the reliability and repeatability required for AI initiatives, helping to improve consistency and free up scarce IT resources for other innovative pursuits. Conversely, AI enhances automation by providing insights, supporting intelligent decision-making and enabling adaptive autonomous processes via agentic IT operations.

Enterprise IT automation strategy and AI strategy are deeply interconnected. Aligning them ensures integration of AI capabilities into both business-line and IT workflows, bridging these spheres to facilitate enterprise-wide AI-driven transformation. To learn more about how these efforts are evolving in enterprises, we asked about the obstacles that IT organizations face when initiating or increasing automation. Top obstacles include complex and lengthy implementation processes (58%) and integration with existing systems and software (51%) (see Figure 1).

Figure 1: Obstacles to IT automation

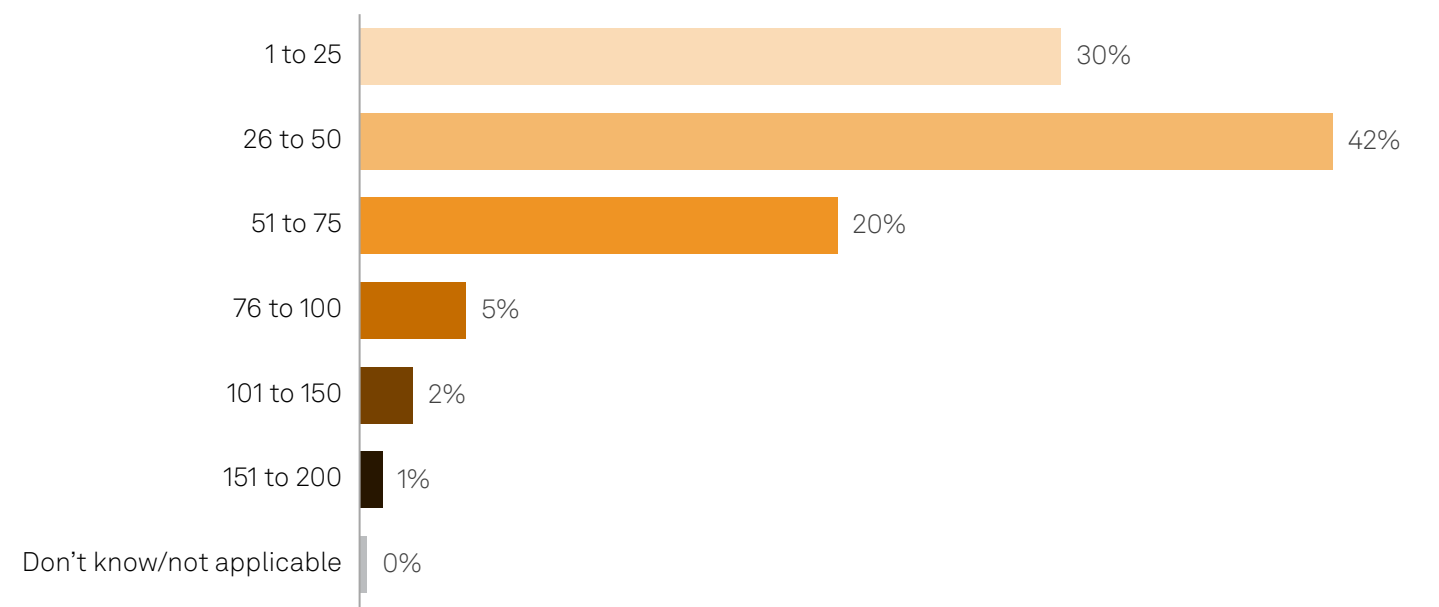


Q. What obstacles (challenges) to IT automation does your enterprise IT organization need to overcome?
Base: All respondents (n=922).
Source: S&P Global Market Intelligence 451 Research IT Automation Platforms and Process Automation custom survey, 2024.

Budget constraints (44%) and skills shortages (40%) are common across all IT projects, while challenges specific to IT automation include difficulty in configuring and maintaining automation (37%), reliance on legacy processes that might be too disruptive to automate (32%) and lack of a clear automation strategy (25%).

The top two challenges — complex implementation and integration — are key dependencies that must be addressed by automation and AI strategies. These challenges are particularly acute because most IT organizations have many tools dedicated to specific domains and functions. Respondents indicate that these tools must integrate and interoperate to effectively automate IT processes and benefit from AI augmentation, but this is an elusive scenario, given that integration is the No. 2 challenge. Challenges may be further magnified depending on the number of IT tools in use. Nearly a third (28%) of respondents have more than 50 IT tools in use in their IT organization, and 3% have over 100.

Figure 2: Number of IT tools in use



Q. How many tools does your IT organization use to develop applications and manage IT infrastructure and operations within your enterprise?
Base: All respondents (n=922).
Source: S&P Global Market Intelligence 451 Research IT Automation Platforms and Process Automation custom survey, 2024.

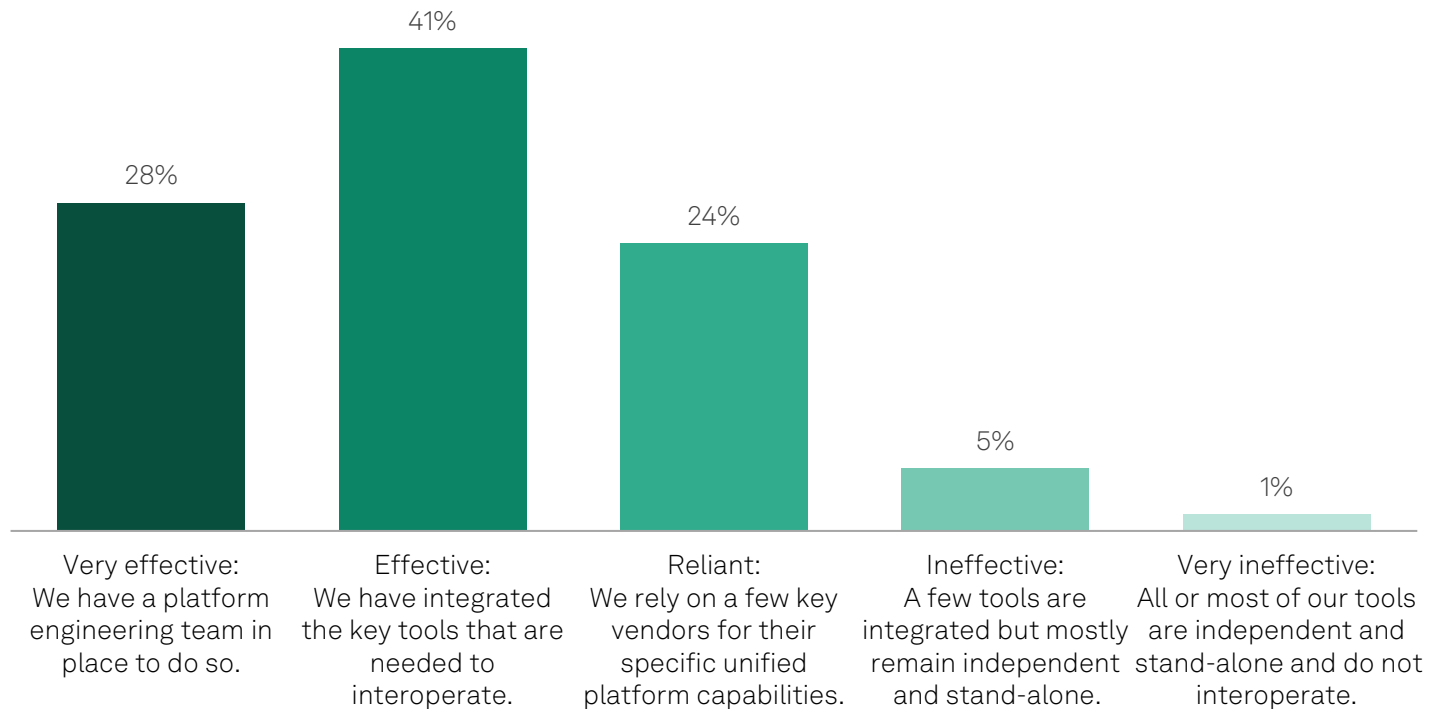
Toolchain interoperability and orchestration

Interoperability and orchestration of IT tools are crucial for streamlining workflows, increasing efficiency and reducing errors. When tools work together, they enable automated processes, real-time monitoring and unified data analysis, reducing manual effort and improving accuracy. This connectivity facilitates adoption of new technologies, better decision-making and faster response times. Ultimately, interoperable IT tools create a flexible, efficient and productive IT environment that supports business goals and drives innovative functions such as AI-powered automation, predictive analytics, real-time incident response and remediation, intelligent workload optimization and resource allocation, data-driven decision-making and business insights, and enhanced customer experiences through intelligent service delivery.

To enable IT tool interoperability and orchestration, a growing number of organizations are developing a function known as platform engineering (PE). PE encompasses practices and technologies aimed at accelerating application development, delivery and execution. Building on earlier DevOps and site reliability engineering practices, PE creates platforms of standardized tools, technologies and workflows that provide self-service capabilities to developers and automate the management, provisioning and operation of complex software environments.

Today, PE’s role has expanded to include building platforms for infrastructure provisioning (i.e., infrastructure-as-code), cloud operations, hybrid architecture management, collaboration and other IT functions. Many organizations are developing ongoing PE programs. This survey sought to understand the extent of this trend and the perceived effectiveness of these efforts in enabling IT tool interoperability.

Figure 3: Effectiveness of enabling IT tool interoperability



Q. How effective is your IT organization at enabling IT tool interoperability to exchange data and facilitate IT workflows across the tools needed for various IT functions?
Base: All respondents (n=922).
Source: S&P Global Market Intelligence 451 Research IT Automation Platforms and Process Automation custom survey, 2024.

Most enterprises surveyed (69%) have established PE programs or are otherwise committing resources to integrate necessary tools (See Figure 3). Smaller subsets rely on their vendor community (24%) or acknowledge they are ineffective in such efforts (6%).

It is important to distinguish between integration and interoperability. Integration enables data exchange (usually point-to-point) between tools, while interoperability enables bidirectional exchange of both data and workflows between multiple tools for specific IT purposes. Many PE teams and IT organizations focus on integrating key tools, but this may not translate to interoperability. The ability to exchange data and information to assist IT professionals with functions such as provisioning, configuration and remediation does not necessarily support automating workflows for such activities. And while many PE teams and other IT experts may have the competence to achieve interoperability, they may be unnecessarily reinventing the wheel.

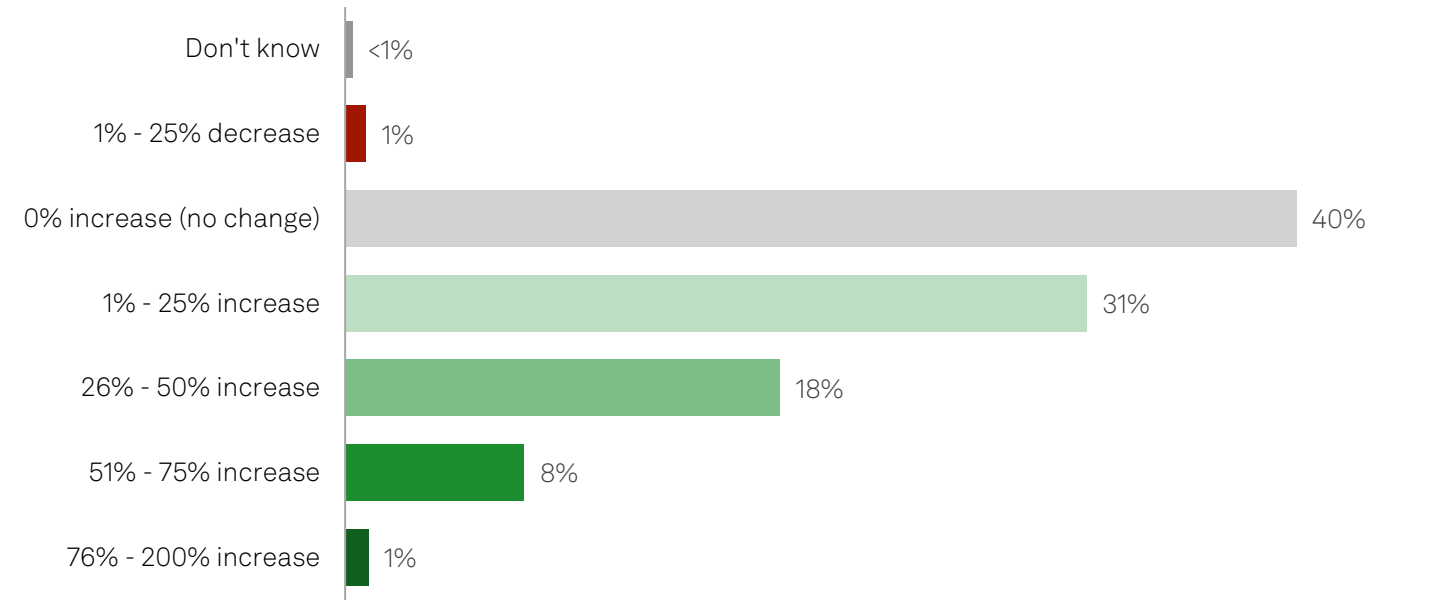
A new class of IT automation platforms is emerging, offering pre-built integrations, workflow automation technology and runtime process management, augmented with generative AI (uses natural language to create content) and agentic AI (acts independently with purpose). These “unified IT automation platforms” allow IT teams to minimize custom integrations and reduce tool sprawl, enabling a focus on strategic goals rather than reinventing automation and orchestration solutions. IT organizations may increasingly adopt such unified platforms to efficiently support the growing demand for automation within enterprises.

Budget expectations for IT automation

Enterprises continually seek to enhance the productivity, efficiency and effectiveness of scarce IT resources, particularly through innovative applications of AI in business and IT operations. These efforts are often reflected in IT budget allocations.

We asked survey respondents about their expectations for IT budget allocations to automation technologies in 2024 and anticipated changes for 2025. While 40% believe the budget will remain flat, 58% expect their IT budget for automation to increase (see Figure 4).

Figure 4: Year-over-year IT automation budget change



Q. By what percentage do you expect your organization’s IT budget allocated to automation technologies to change in 2025 compared to 2024?
Base: All respondents (n=922).
Source: S&P Global Market Intelligence 451 Research IT Automation Platforms and Process Automation custom survey, 2024.

Most enterprises maintain a combination of automated and manual IT processes. However, survey respondents express a strong desire to automate more of their IT processes, recognizing the potential for cost savings and efficiency gains. Automation can reduce manual errors, increase productivity and free up resources for strategic initiatives. Additionally, automation enables IT organizations to respond more quickly to changing business needs. For example, automation supports scalability to meet growing demands, such as those driven by increasing use of AI.

Defining a unified IT automation platform

To understand varying perspectives, we asked respondents to define a unified IT automation platform. We provided eight options and allowed respondents to select up to three. The results are as follows:

Option 1 (56%) — A single platform that integrates various IT automation tools and processes into a cohesive system. It enables organizations to automate tasks across different layers of IT infrastructure, including networks, applications, servers and cloud environments, and others.

Option 2 (48%) — A single platform that serves as a comprehensive tool for IT teams, automating the management of many IT operations associated with software development and deployment, infrastructure provisioning, configuration and security.

Option 3 (44%) — A single platform that leverages AI to create and optimize IT automation workflows, and plan and provision infrastructure and services. It enables intelligent workload distribution across resources and can execute proactive responses to IT events.

Option 4 (35%) — A single platform that automates and integrates development, operations and processes and fosters IT team collaboration, covering the entire software development and deployment life cycle from code development to infrastructure provisioning.

Option 5 (34%) — An orchestration hub that manages and automates IT workflows, making it easier to develop and deploy software, plan and provision infrastructure, and monitor and control execution across hybrid IT architectures.

Option 6 (27%) — A single source of truth for IT automation, providing centralized storage and management of all automation scripts, playbooks, policies and configurations, ensuring consistency across environments.

Option 7 (23%) — A framework that can facilitate the interoperability of disparate IT tools used by an IT organization.

Option 8 (22%) — A single platform that can automate all IT processes, tasks or activities within an enterprise.

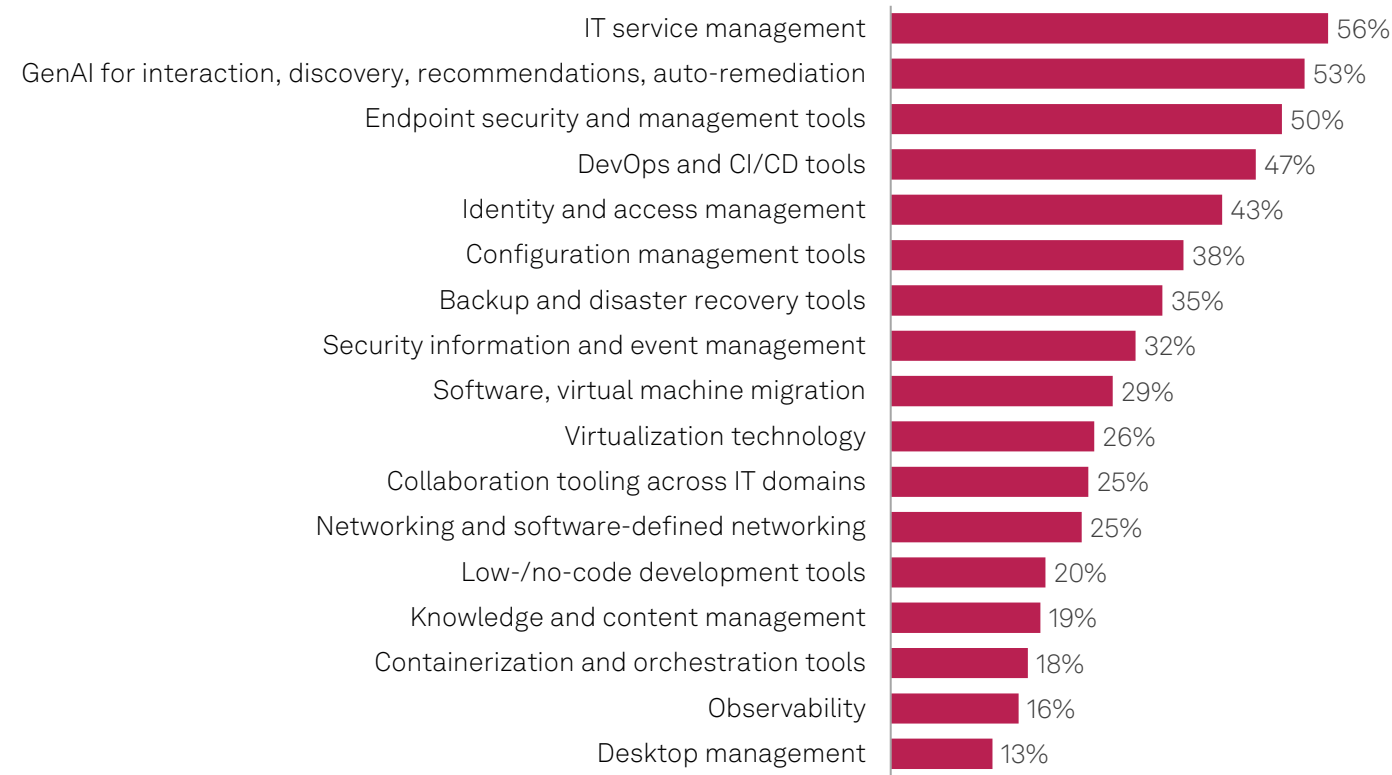
Enterprises will likely establish their own definitions based on business and IT automation strategies and PE approach. However, we believe it is useful to establish a common definition to ground our research and inform the conversation regarding unified IT automation platforms. We distilled these findings to compose the following definition:

A unified IT automation platform is a centralized control plane that leverages AI to integrate, automate and orchestrate multiple IT tools, processes and resources and facilitates collaboration across an organization’s entire IT environment.

Required domains and use cases

We further explored which capabilities respondents believe are essential for unified IT automation platforms. The results reinforce our earlier observation that automation and AI strategies are inextricably linked. IT service management (56%) and generative AI (53%) top the list of critical capabilities, followed by endpoint security (50%), DevOps (47%), identity and access management (43%), and configuration management tools (38%).

Figure 5: Critical capabilities of a unified IT automation platform



Q. Which of the following IT capabilities are the most critical to have within your ideal unified platform for IT automation?
Base: All respondents (n=922).
Source: S&P Global Market Intelligence 451 Research IT Automation Platforms and Process Automation custom survey, 2024.

The results indicate that unified IT automation platforms must deliver comprehensive capabilities across multiple IT domains and use cases. The diversity of areas cited by respondents highlights the need for a holistic strategy that can integrate and orchestrate various IT processes as IT leaders seek to automate not just individual tasks, but entire workflows that span IT functions, with the aim of enhancing efficiency, agility and resilience in operations. The unified platform must, therefore, support a wide range of automation use cases while providing a seamless user experience.

Characteristics

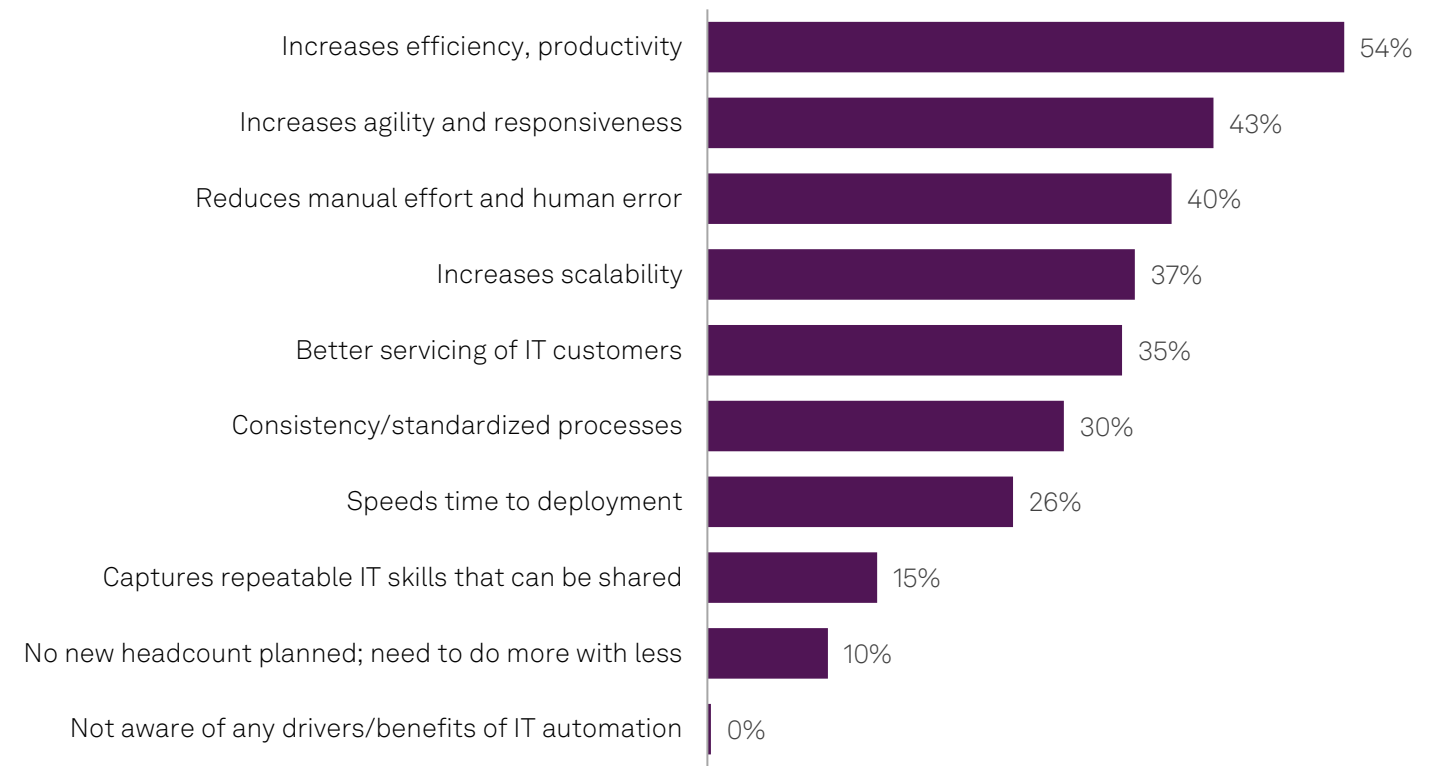
We also asked respondents to identify the most important characteristics for their ideal unified IT automation platform. The responses emphasize the need for simplicity, interoperability, consistent user interface and experience, integration and collaboration. Top responses include:

- Ease of use for converting manual processes into automations (44%)
- Seamless interoperability and data transfer across capabilities (37%)
- Consistent user interface across all capabilities (33%)
- Capabilities to share and leverage IT knowledge across domains (28%)
- Consistent user experience across capabilities (27%)
- Variety and type of integration and agentless connectivity capabilities (23%)
- Consistent collaboration techniques across all capabilities (22%).

Benefits of a unified IT automation platform

The primary drivers for IT automation include increased efficiency and productivity (54%), increased agility and responsiveness (43%), and reduced manual effort and human error (40%).

Figure 6: Primary drivers for (and benefits of) IT automation



Q. In your opinion, what are the primary drivers for (and benefits of) IT automation?
Base: All respondents (n=922).
Source: S&P Global Market Intelligence 451 Research IT Automation Platforms and Process Automation custom survey, 2024.

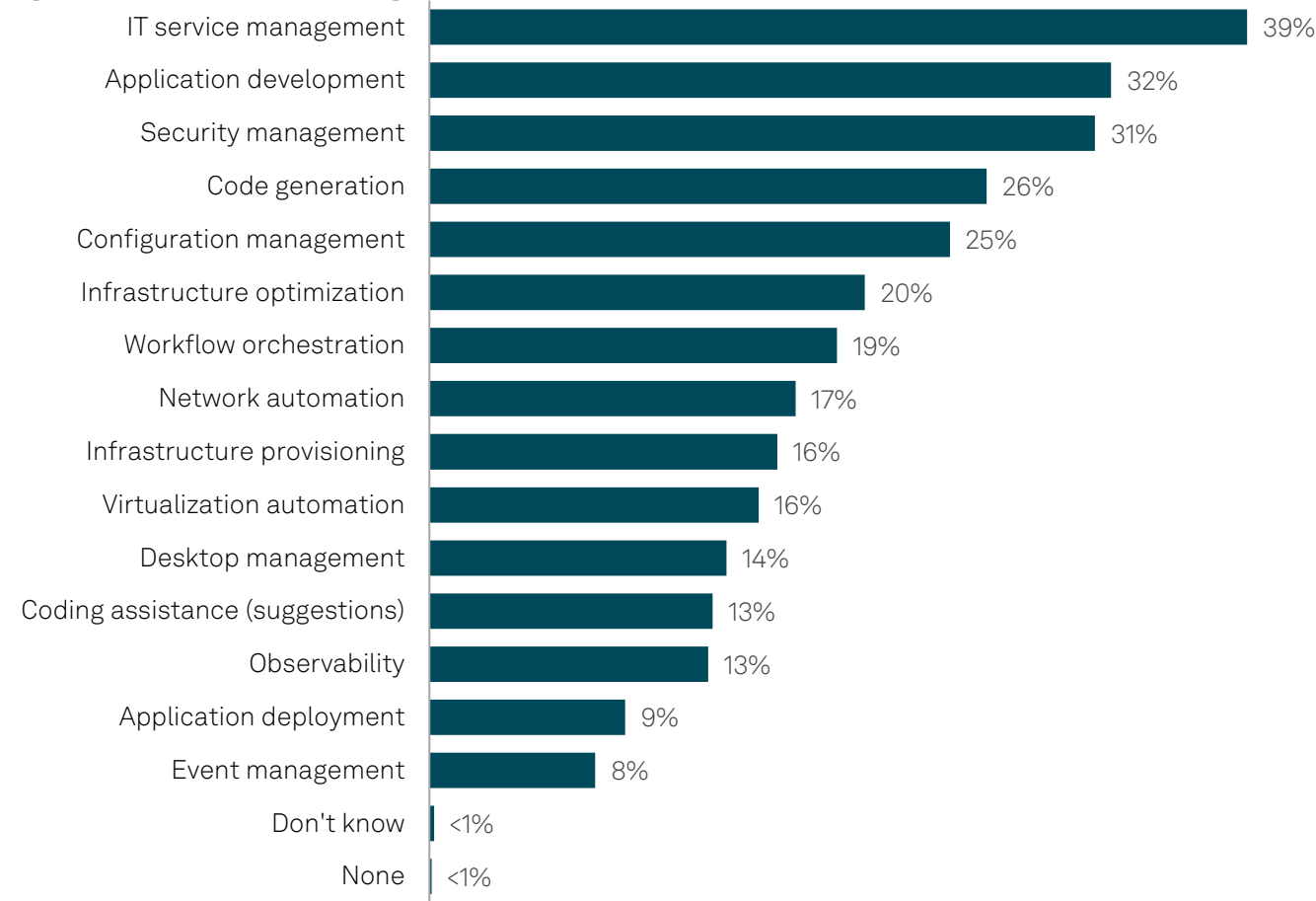
Several of the cited benefits of IT automation align with those derived from platform engineering initiatives, such as improved scalability, better IT customer service, enhanced consistency and process standardization, and faster deployment. As we noted earlier, automation and AI strategies are often intertwined within enterprise IT organizations. Platform engineering is becoming a key initiative to execute those strategies, with unified IT automation platforms as critical tools.

The implications and use of AI

The rise of GenAI has accelerated the use of all types of AI across IT technologies and platforms. AI-powered analytics can provide deeper insights into IT operations, predict potential issues and automate decision-making. Machine learning algorithms are being used to optimize automation workflows, improve efficiency and reduce errors. AI-powered chatbots, virtual assistants and agents will be integrated into unified IT automation platforms to provide personalized support and enable self-service capabilities. Furthermore, AI-driven automation will analyze and respond to IT events in real time, enabling proactive management, minimizing downtime and resulting in more closed-loop autoremediation.

We also sought to identify specific use cases that respondents believe could benefit most from GenAI. Priorities include IT service management (39%), application development (32%), security management (31%), code generation (26%) and configuration management (25%).

Figure 7: Use cases where generative AI could provide the most improvement



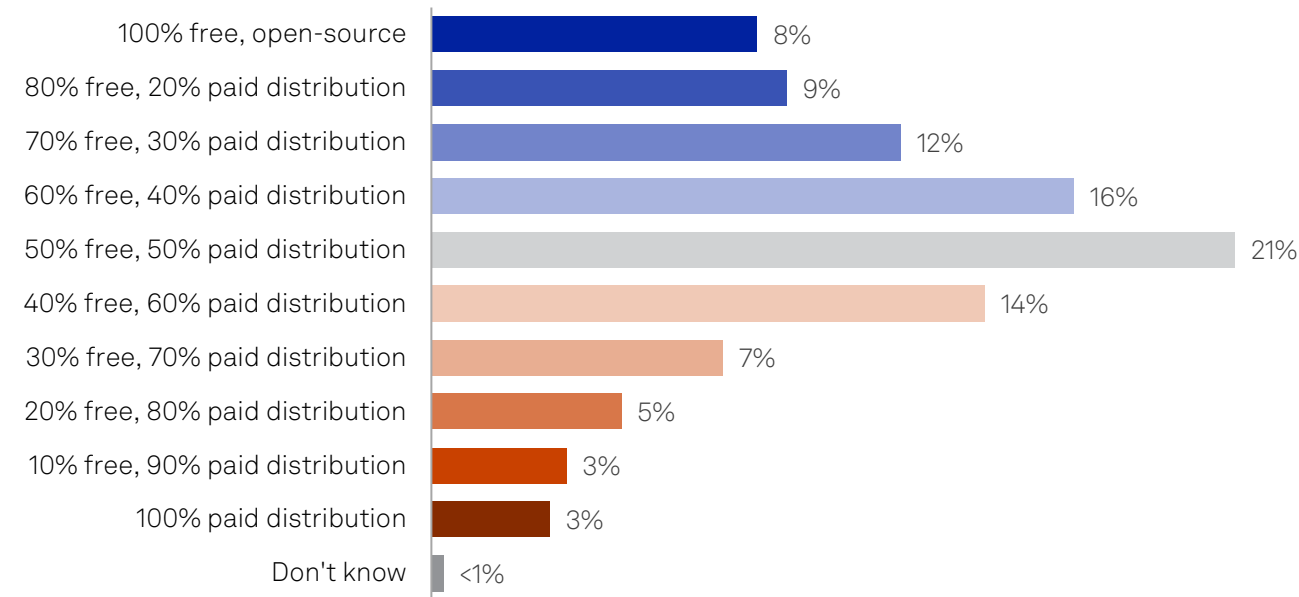
Q. Considering your IT operations, please select the top three use cases where generative AI (GenAI) could provide the most improvement.
Base: All respondents (n=922).
Source: S&P Global Market Intelligence 451 Research IT Automation Platforms and Process Automation custom survey, 2024.

We expect AI to play a prominent role in unified IT automation platforms, enabling real-time data and event analysis, independent decision-making based on predefined policies and autonomous actions to prevent or resolve IT issues without human intervention. Such capabilities allow for continuous optimization of IT workflows and processes, enhancing efficiency and effectiveness of operations while freeing up IT staff for more strategic tasks.

The implications and use of open source

Finally, we examined the role of open-source technologies in enterprise IT operations. We asked respondents to estimate the ratio of free, open-source software to paid, vendor-supported distributions in their IT organization. Figure 8 reflects a near-symmetrical bell curve, with the greatest proportion (21%) reporting an equal ratio of open-source to paid software. At the extremes, 8% report using solely free software, while 3% report using only paid.

Figure 8: Ratio of free, open-source software to paid, vendor-supported distribution



Q. To the best of your knowledge, what is the ratio of free open-source software to paid, vendor-supported distributions within your enterprise's IT organization?
Base: All respondents (n=922).
Source: S&P Global Market Intelligence 451 Research IT Automation Platforms and Process Automation custom survey, 2024.

Most organizations are distributed around the mean, with a slight bias toward free, open-source software. This suggests that open-source software is popular, but many users still prefer or require paid commercial software for the expertise and support that distributors offer. IT organizations will likely need technological frameworks that integrate open-source and commercial resources, and many will likely seek unified IT automation platforms to achieve this.

Conclusion

Given the expanding landscape of hybrid IT environments, organizations need improved interoperability among their many IT tools to address complexity-related challenges to automation and integration efforts. In response, many IT organizations have initiated platform engineering programs to enable tool interoperability. However, while PE teams may have the skills and resources to meet these challenges, they may be reinventing the wheel unnecessarily. As organizations increasingly prioritize automation, they are allocating larger portions of their IT budgets to automation initiatives.

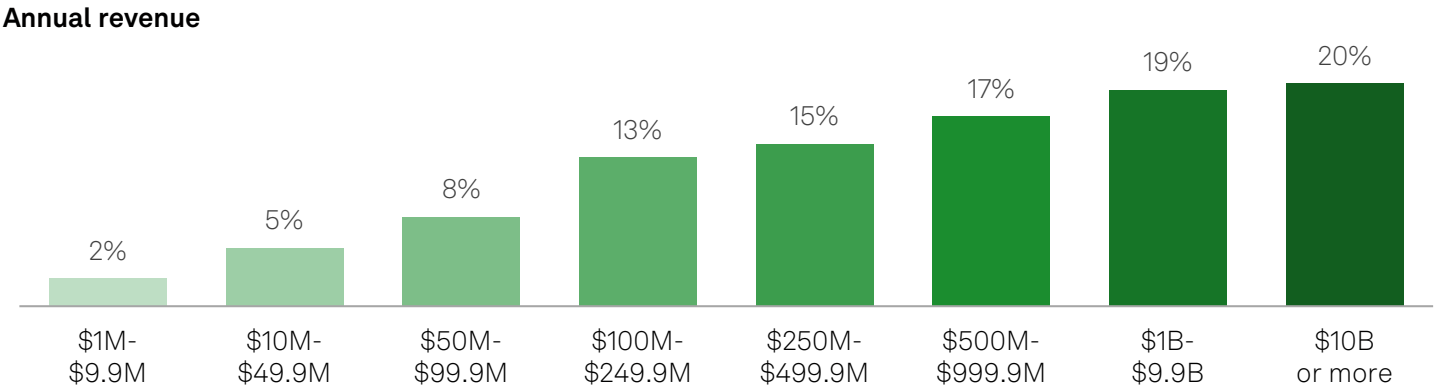
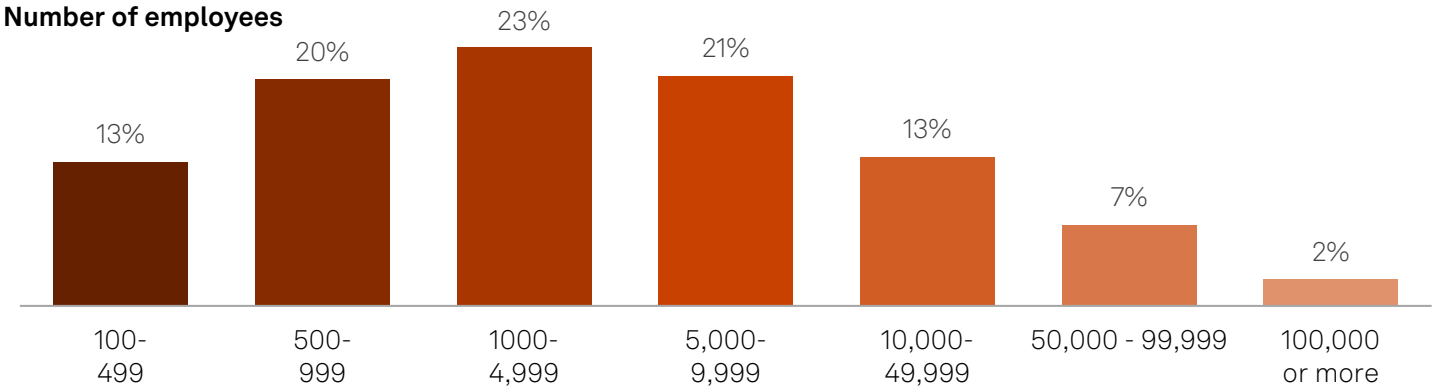
A new class of unified IT automation platforms aims to ease the integration of diverse tools, using AI to centralize control and facilitate collaboration across IT environments. Key capabilities such as IT service management and generative and agentic AI have emerged as priorities, underscoring the intertwined nature of automation and AI strategies. The benefits of such platforms include improved scalability, enhanced IT customer service and more consistent execution of IT processes. Further, AI is poised to play a critical role in enabling real-time decision-making and proactive issue resolution without human intervention. We expect that unified IT automation platforms will play a significant role in enabling IT tool interoperability, maximizing value from platform engineering initiatives, reinforcing the connection between automation and AI, and improving overall IT organizational efficiency.

Methodology

The findings presented in this report draw on a survey fielded in North America and Europe in Q4 2024. The survey targeted 900 business and IT decision-makers/influencers in companies ranging in size from 100 to 100,000+ employees, and \$1 million to more than \$10 billion in annual revenue. The study prioritized respondents with intimate knowledge of automation technology across a broad range of diverse industries. The job descriptions of respondents were a mix of executives ranging from analyst/manager grade to C-level executives. This report also draws on contextual knowledge of additional research conducted by S&P Global Market Intelligence 451 Research.

Our goal was to understand the tools and technologies that enterprise IT organizations use to automate various aspects of their IT operations. We have found from prior research that many IT organizations suffer diminished productivity resulting from too many tools, or “tool sprawl.” In this research, we structured our questions to learn, among other things, the state and nature of IT automation within enterprises; how it is expected to change over time; and the implications of using multiple disparate tools to automate various IT operations. We also postulated the concept of a unified IT automation platform and asked respondents how they would define its capabilities, what benefits could be derived, and the potential challenges they foresee with its implementation and use.

Figure 9: Respondent profile – company size



Q. What is the total number of full-time employees in your organization?
Q. What is your company's annual revenue?
Base: All respondents (n=922).
Source: S&P Global Market Intelligence 451 Research IT Automation Platforms and Process Automation custom survey, 2024.



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Carl Lehmann is a senior research analyst in the 451 Research Applied Infrastructure & DevOps and Cloud Native research channels within S&P Global Market Intelligence. He leads 451 Research's coverage of process automation and integration technologies in hybrid IT and cloud-native architectures, as well as how hybrid IT affects business strategy and operations. His research covers digital automation platforms (including workflow and business process management suites), robotic process automation technology, process discovery and mining technology, hybrid integration platforms (including integration PaaS and API management), and platform engineering practices.

About this report

A Discovery report is a study based on primary research survey data that assesses the market dynamics of a key enterprise technology segment through the lens of the “on the ground” experience and opinions of real practitioners — what they are doing, and why they are doing it.

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