ARKANCE

Digital Transformation in the AEC Industry:

2025 State of the Market Report

Survey research explores insights on profitability, project management, and business analytics in the software space

HPAC Engineering

Digital Transformation in the AEC Industry

TABLE OF CONTENTS

Executive Summary

Architecture and engineering firms continue to face margin pressure from scope creep, fragmented reporting, and limited visibility into project performance. Firms are adopting new technologies and recognize the need to modernize how they manage time, budget, and scope.

To understand where firms are gaining ground and where challenges persist, Arkance partnered with *HPAC Engineering* to survey AEC professionals across the United States. Respondents included firm leaders and project decision-makers from architecture, engineering, and design-build firms.

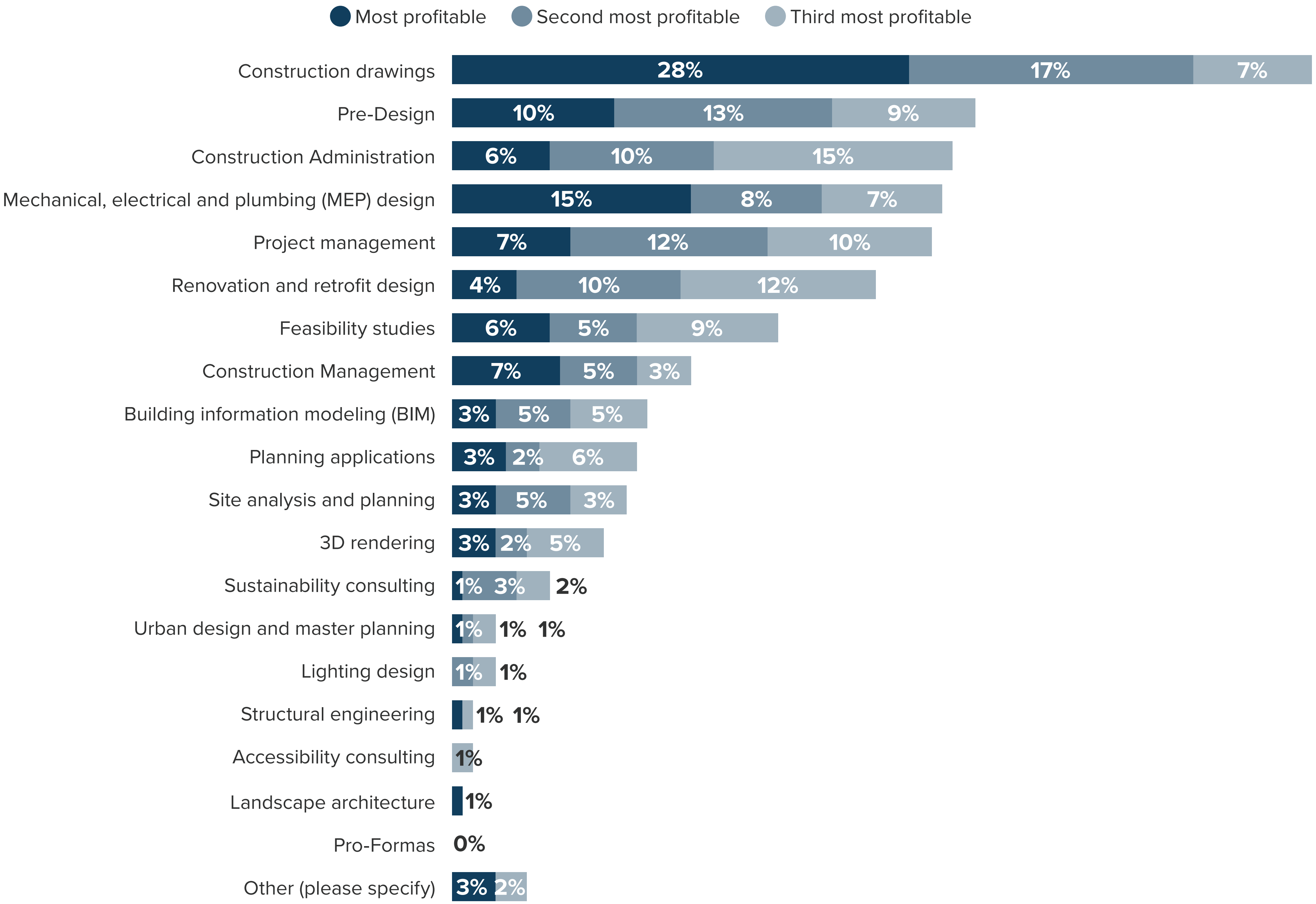
Key findings include:

- Scope creep is the top challenge to profitability, cited by 26% of respondents
- 52% feel very confident they are billing accurately for scope changes
- 65% of firms are at least somewhat willing to move to the cloud
- 19% say they are on the cutting edge of technology use
- The most profitable services are construction drawings, MEP design, and pre-design
- Spreadsheets and email remain the most common tools for project reporting

Firms with higher digital maturity are more likely to track KPIs such as planned vs. actual hours, budget variance, and schedule adherence. These same firms are also more likely to have contract protections in place to reduce revenue loss from undocumented changes.

This report outlines where firms are making progress, where gaps remain, and how targeted improvements in project tracking, reporting, and change management can help protect profitability and improve delivery.

Which of the services that your organization provides would you characterize as the MOST profitable?



All respondents, n=149.

Profitability of Services:

The survey respondents are embracing project management technology to improve productivity and profitability.

For example, the most profitable services are:

- Construction drawings
- Pre-design
- Construction administration
- MEP design

Construction drawings had twice as many votes for the most profitable, and across the top three, it was listed by half of the participants. Additionally, MEP received the second most votes for being the most profitable part of a business.

On the flip side, respondents considered the least profitable services to be:

- BIM
- Rendering
- Feasibility
- Pre-design

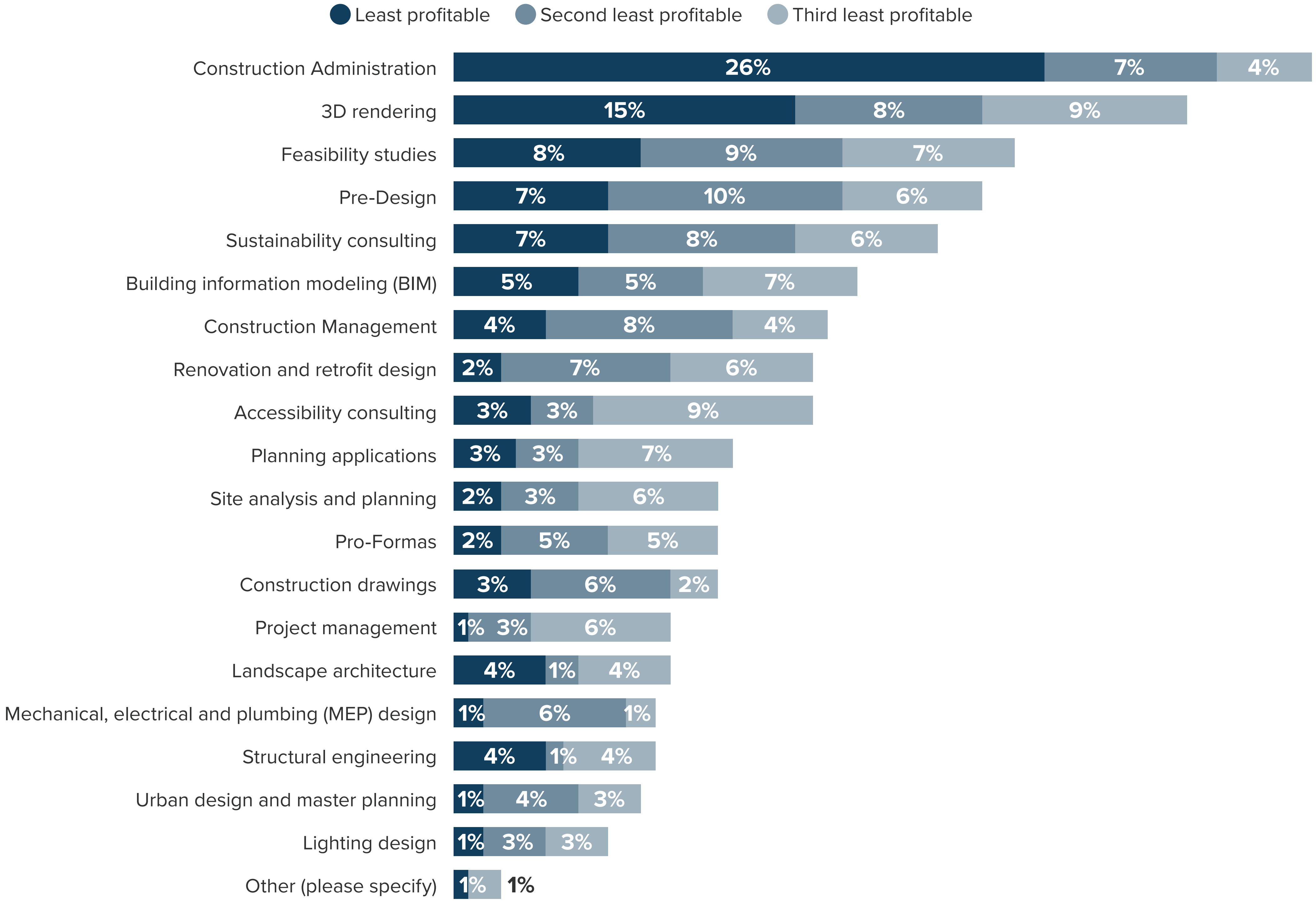
KEY TAKEAWAYS:

For example:

- a total of 65% of the respondents are somewhat or very willing to adopt cloud-based server technology, which can enhance efficiency in the design phase, reducing time, resources, and rework.
- By breaking this data down into the type of company, structural engineering firms led the way, with 50% of their respondents stating that they were very willing to adopt this technology, followed by 33% of architectural engineering firms, and nearly 32% of architectural firms.

This shift is driven by the larger general contractors and subcontractors leveraging digital maturity to improve efficiency, enabling them to take on more design responsibilities and optimize time and resources.

Which of the services that your organization provides would you characterize as the LEAST profitable?



All respondents, n=149.

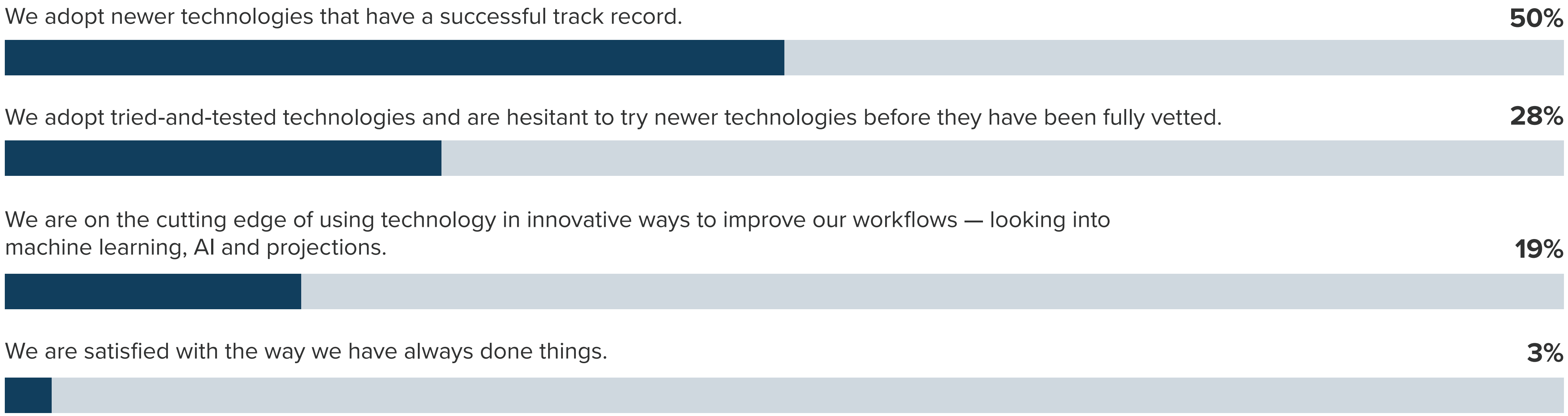
New Technology Impact: Organizational Attitudes Towards Technology:

Only 3% are satisfied with the way they have always done things and the status quo, while about 75% of the respondents only adopt tried-and-true technologies. Most respondents are risk-averse, but 20% feel like they are on the cutting edge of technology.

KEY TAKEAWAYS:

To no surprise, the results indicate that more firms are leaning toward technology to manage their business and provide efficiency. By leveraging technology, firms can save time, improve productivity, and streamline project management. The time to invest in technology is right now.

Which of the following best describes your organization's attitude toward using technology?



All respondents, n=149.

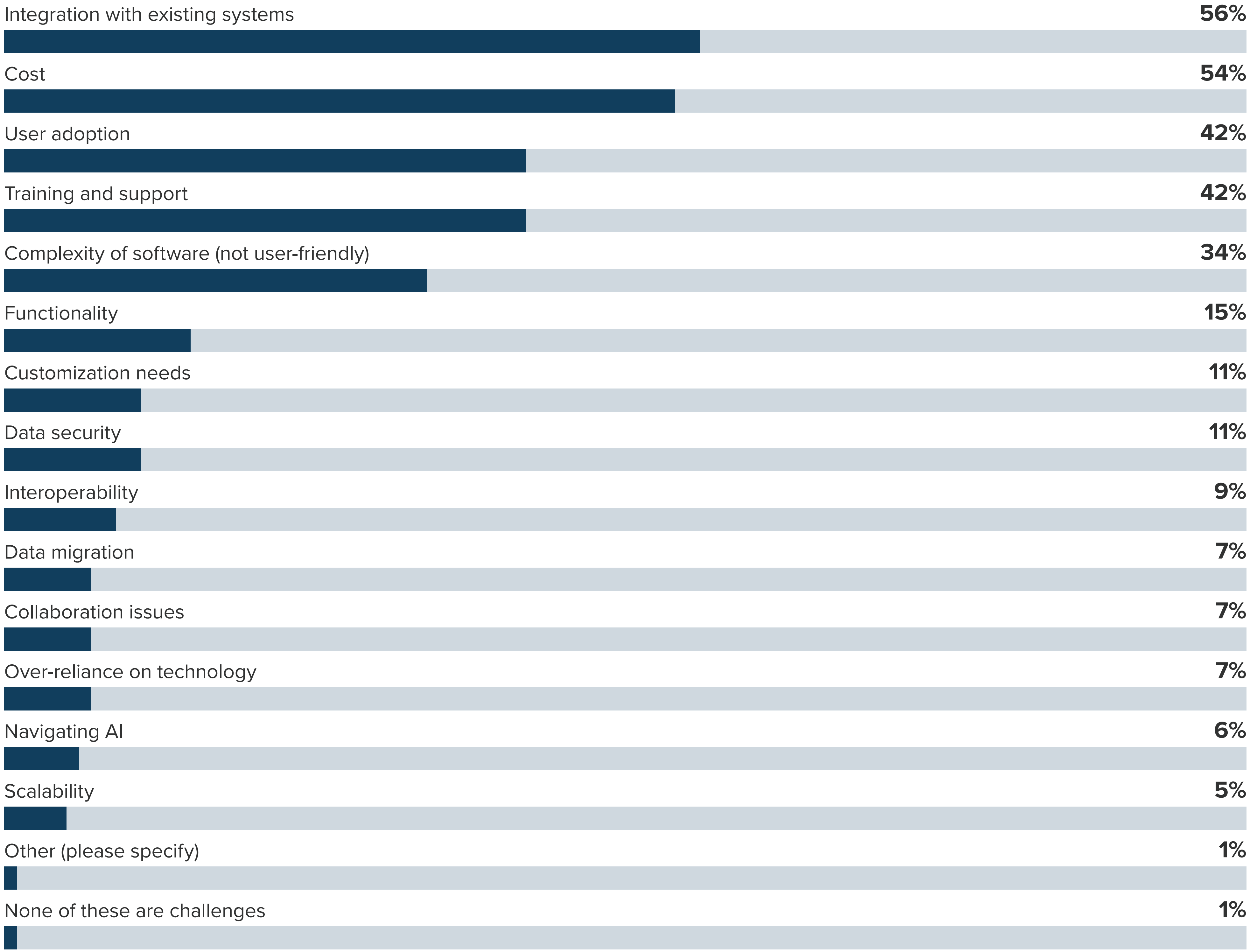
Top Challenges:

Respondents expressed that their challenges are multifaceted and include both team management and process management obstacles alike. For example, they mentioned integration with existing systems, cost, user adoption, training, and support as leading challenges. One respondent mentioned executive buy-in. They also mentioned facing obstacles with user-friendliness and complexity of the software.

KEY TAKEAWAYS:

Integration services and the need to simplify solutions are integral to better adoption. Data and systems can no longer be in isolation. Taking a holistic approach to business challenges is necessary and may require strategic partnerships to remain competitive.

What are your TOP challenges with adopting technology?



All respondents, n=149. Average number of responses given=3.1.

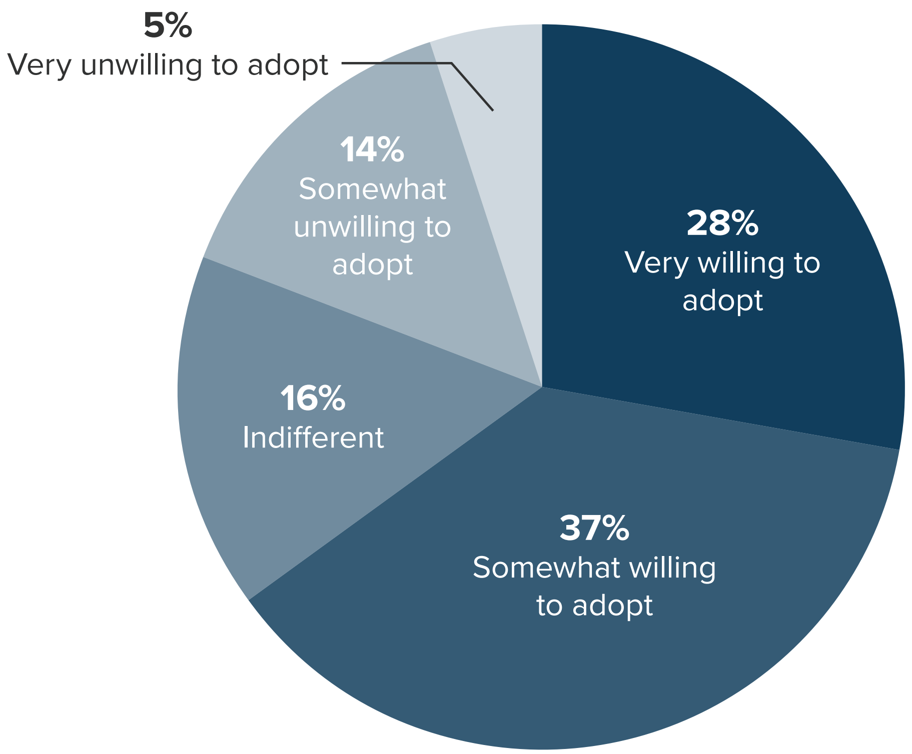
Moving to the Cloud:

About 65% of the respondents expressed a willingness to move to the cloud, which may be higher in this space than in other industries.

KEY TAKEAWAYS:

By moving to the cloud, they can scale and grow their businesses. For example, they can improve cost efficiency, scalability, and flexibility. In addition, it can enhance collaboration, which is essential to successful project management in the AEC space.

What is your firm's willingness to adopt cloud from a server-based/on-premises solution?



All respondents, n=149.

AI Impact on Technology in the Future:

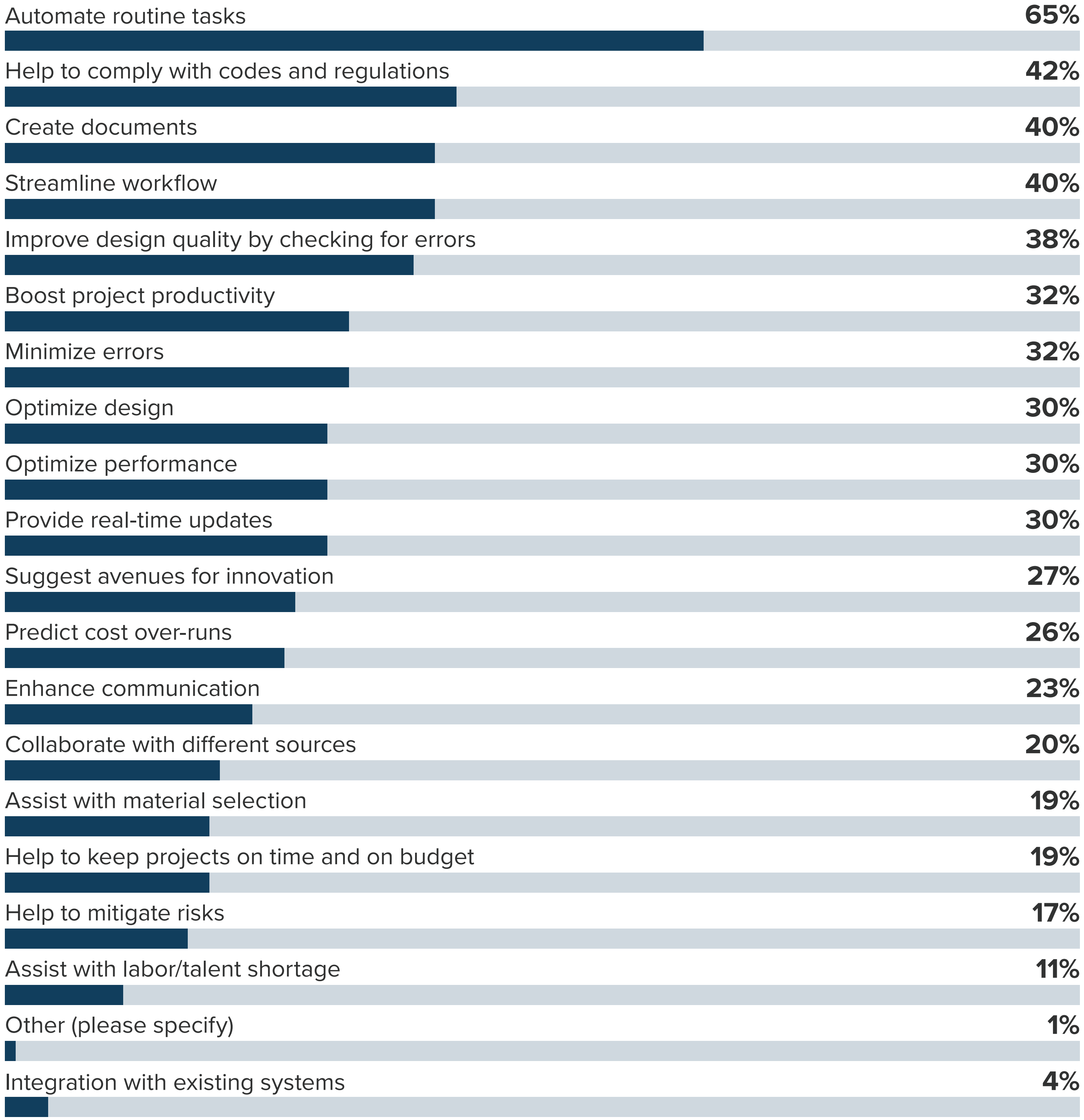
Respondents are leveraging AI technology to automate routine tasks and comply with codes and regulations. In addition, they are using it to create documents, streamline workflow, and improve quality control. Others mentioned its ability to answer frequently asked design questions and quantify takeoffs for cost estimates.

KEY TAKEAWAYS:

Many respondents believe AI can help resolve profitability challenges, particularly through automation, error reduction, and process optimization. While AI can help with collaboration, a human factor is still needed to manage business risks related to keeping projects on time and on budget.

ARKANCE is committed to leading by example, simplifying AI adoption for clients, and proving that even small steps can drive meaningful impact. As a company, ARKANCE embraces AI as a tool to boost productivity and create innovative, ethically grounded solutions that enhance rather than replace human expertise.

How do you think AI will change technology for design in the future?



All respondents, n=149. Average number of responses given=5.5.

User Satisfaction:

Many respondents are using multiple tools and are neutral about their technologies, indicating a possible lack of engagement with certain technologies.

Also, it may indicate that the majority of users aren't using tools to their full potential.

KEY TAKEAWAY:

Rather than having access to a lot of different systems they don't use, it may make more sense for firms to downsize and have everything on one platform that is customized and optimized for their unique needs.

Role of Technology in Project Management — Challenges to Organizational Profitability:

About 26% of respondents say their top challenge to organizational profitability is scope creep, defined as unauthorized or uncontrolled changes to a project's scope. Also in the top four were time management, complexity of projects, and budget management.

What is the TOP challenge to your organization's profitability?

Scope creep	26%
Time management	12%
Complexity of projects	11%
Budget management	9%
Client expectations	6%
Labor shortage	5%
Cost estimation	4%
Productivity measurement	3%
Coordination among stakeholders	3%
Technology integration	3%
Quality control	3%
Project scheduling	2%
Communication issues	2%
Increased competition	2%
Slowdown from pandemic-related challenges	1%
Resource allocation	1%
Lack of real-time data	1%
Strategic planning	1%
Client relations	1%
Documentation management	1%
Other (please specify)	1%
None of these are concerns	3%

All respondents, n=149.

Spotlight on Scope Creep:

One-third of participants say 10-25% of their projects experience scope creep. Additionally, about 10% of the respondents say more than 75% of their projects have scope creep.

Scope creep is the leading cause of project loss, primarily due to undocumented changes from owners, adjustments requested by general contractors, and revisions stemming from MEP coordination.

KEY TAKEAWAYS:

Many design teams complete additional work before securing payment, leading to revenue leakage. Survey respondents noted that their contracts could be improved to better recognize and cover these changes.

Firms that reported to be more technology forward were also more likely to have contract protections in place.

To what extent is scope creep an issue facing projects in your organization?

All respondents, n=149.

Financial Impact of Scope Creep:

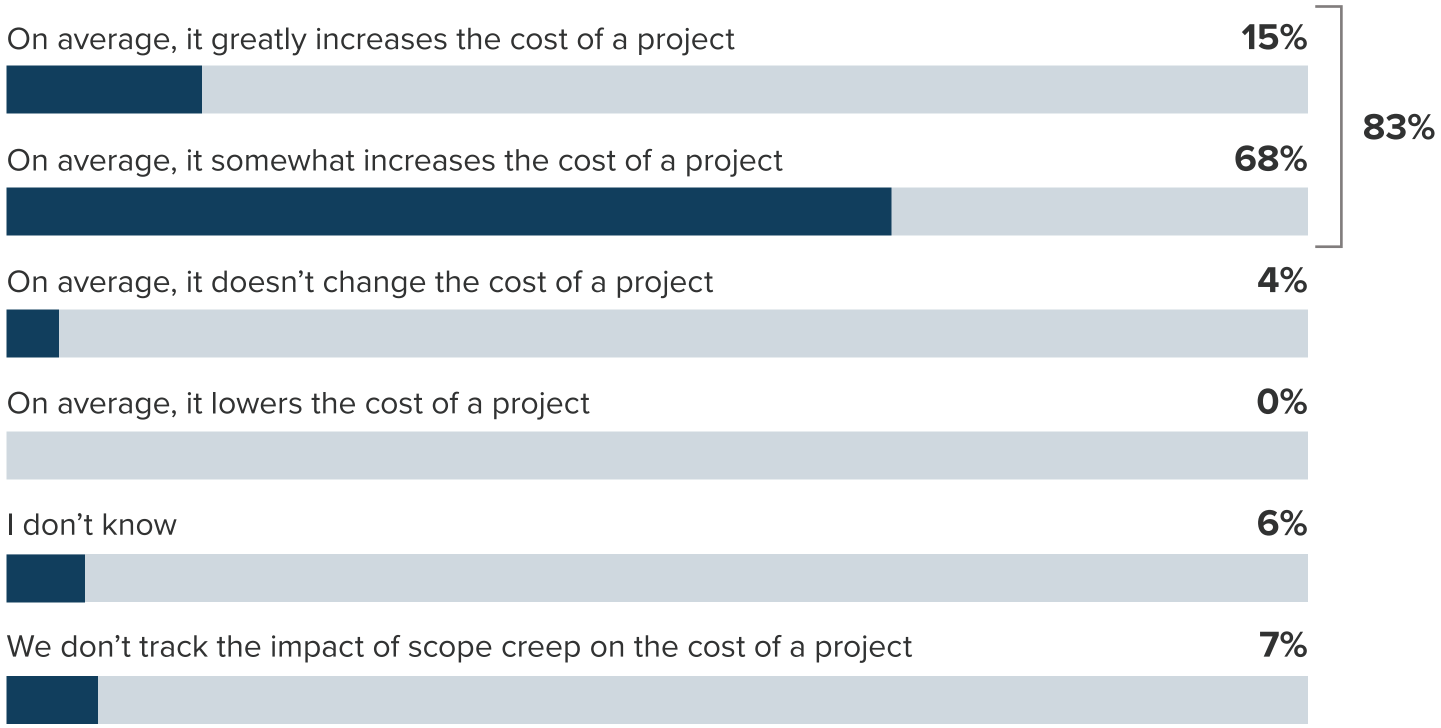
Four out of five participants said that, on average, scope creep increases the cost of a project, and no one said it lowers the average project cost.

While half of the respondents feel confident that their organization is accurately billing when scope creep occurs, a quarter are not as confident.

KEY TAKEAWAYS:

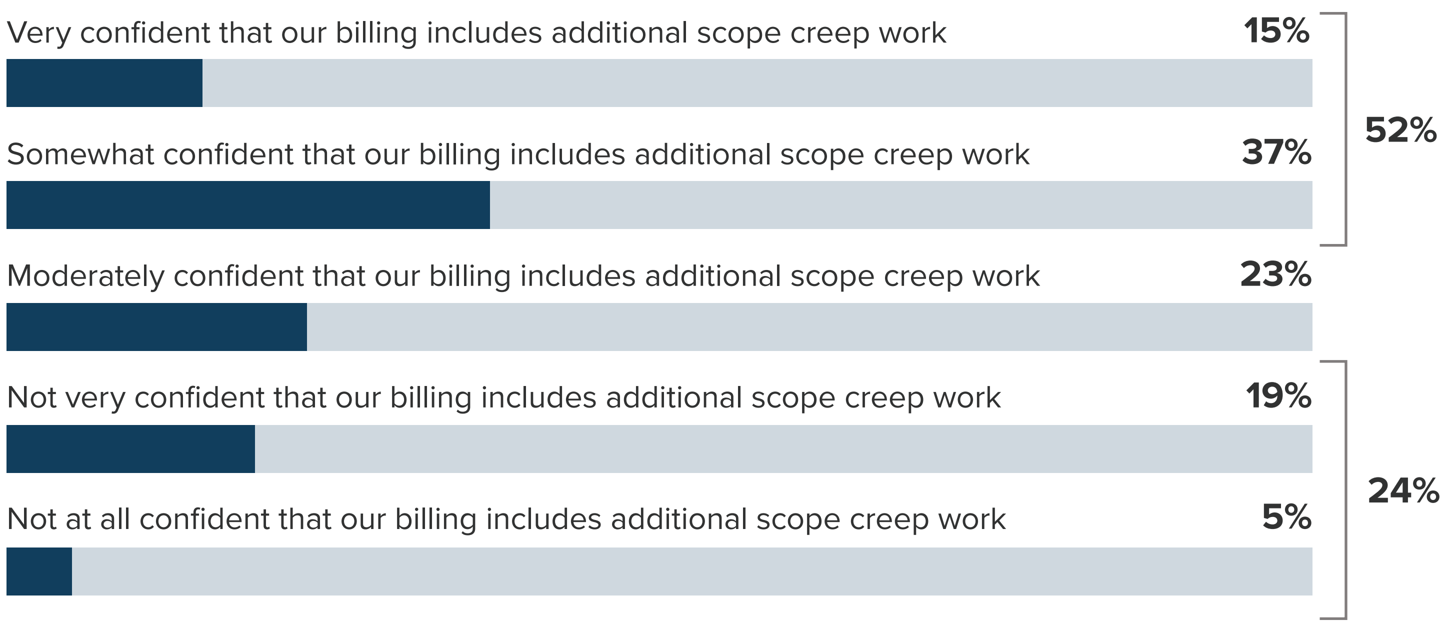
Scope creep can lead to project delays and hinder profitability. By leveraging technology, like project management software, firms can better manage and anticipate unforeseen changes on a project.

What is the magnitude of the impact of scope creep on your organization's bottom line?



All respondents, n=149.

How confident do you feel that your organization is accurately billing for the work that is being completed, particularly when scope creep occurs?



All respondents, n=149.

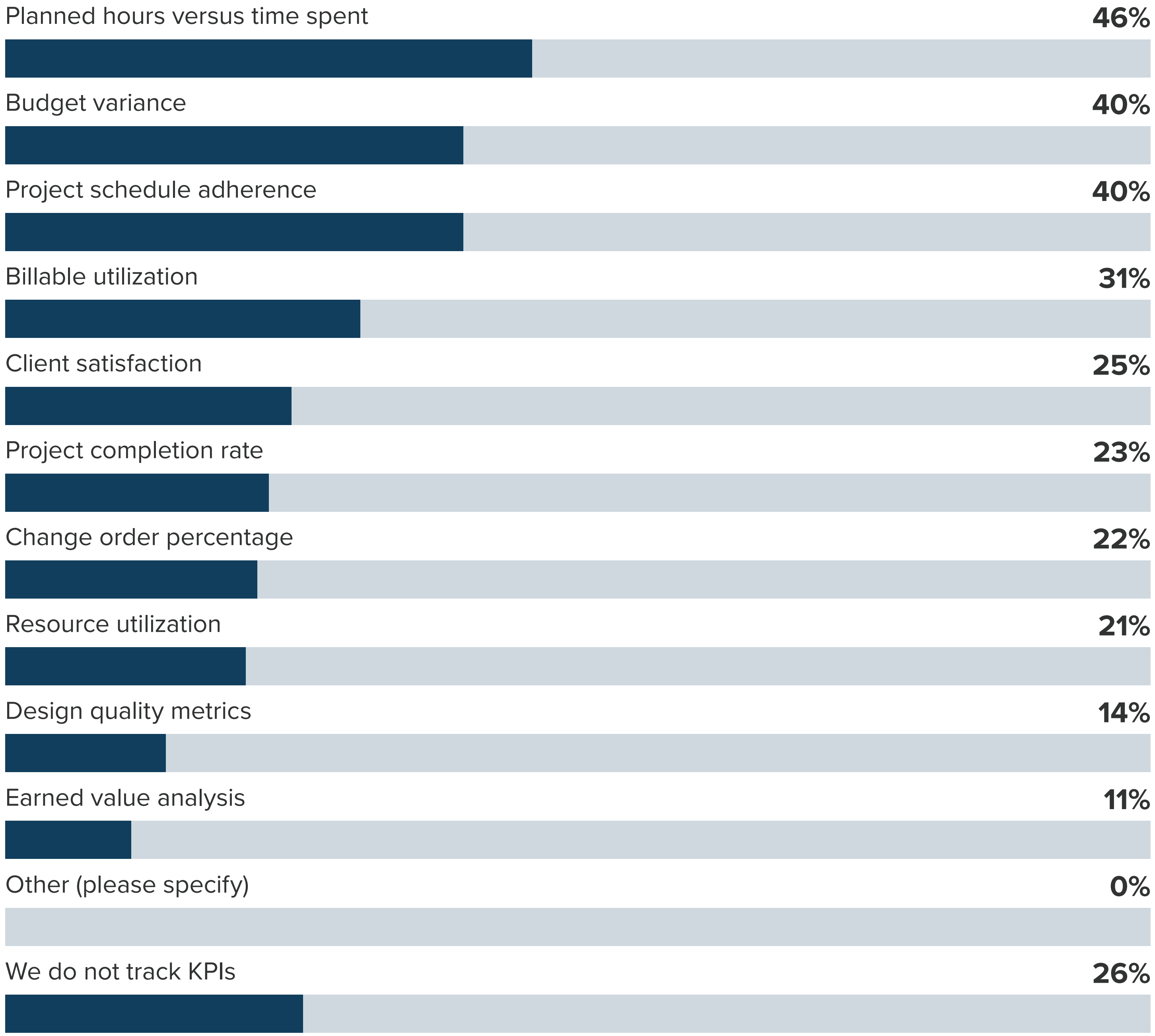
Organizational KPIs:

Planned hours versus time spent, budget variance, and project schedule adherence are the top three KPIs tracked by organizations that responded to the survey.

KEY TAKEAWAYS:

When it comes to project management, it's essential to keep tabs on labor hours, the budget, and the project schedule. If any of these three metrics are producing unexpected data, then a team can place a tighter focus on the schedule and budget to keep the project moving ahead without compromising profitability.

What KPIs does your organization track?



All respondents, n=149. Average number of responses given=3.0.

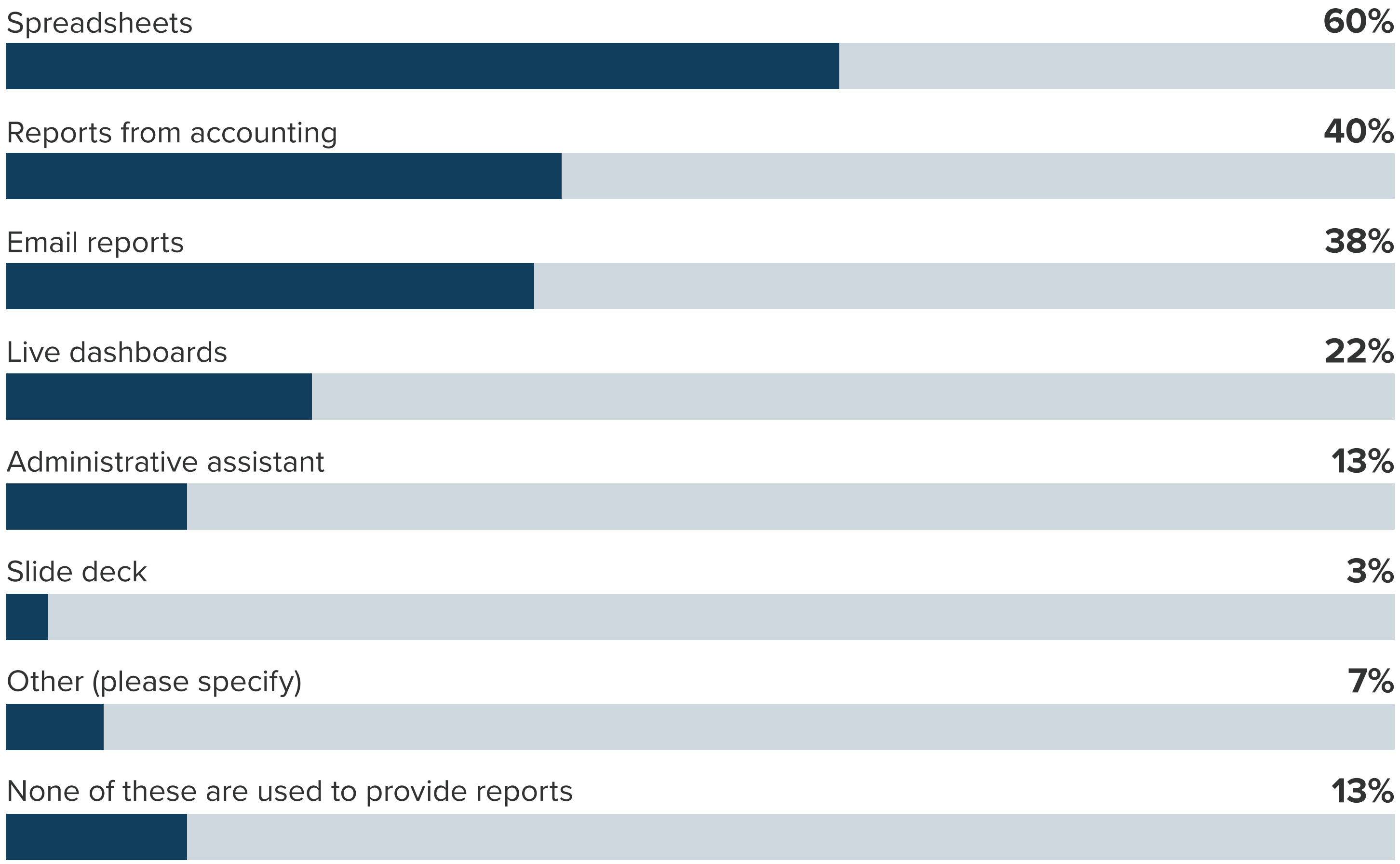
Reporting Tools Used by Project Managers:

Nearly two-thirds of participants use spreadsheets to provide reporting to higher-ups. The other two top methods are reports from accounting and email reports.

KEY TAKEAWAYS:

With project management software, they could have on-demand, real-time access to information. Using spreadsheets is inefficient because it just shows a snapshot in time

Which of the following do project managers use to provide reporting to their managers, supervisors, or executives?



All respondents, n=149. Average number of responses given=2.0.

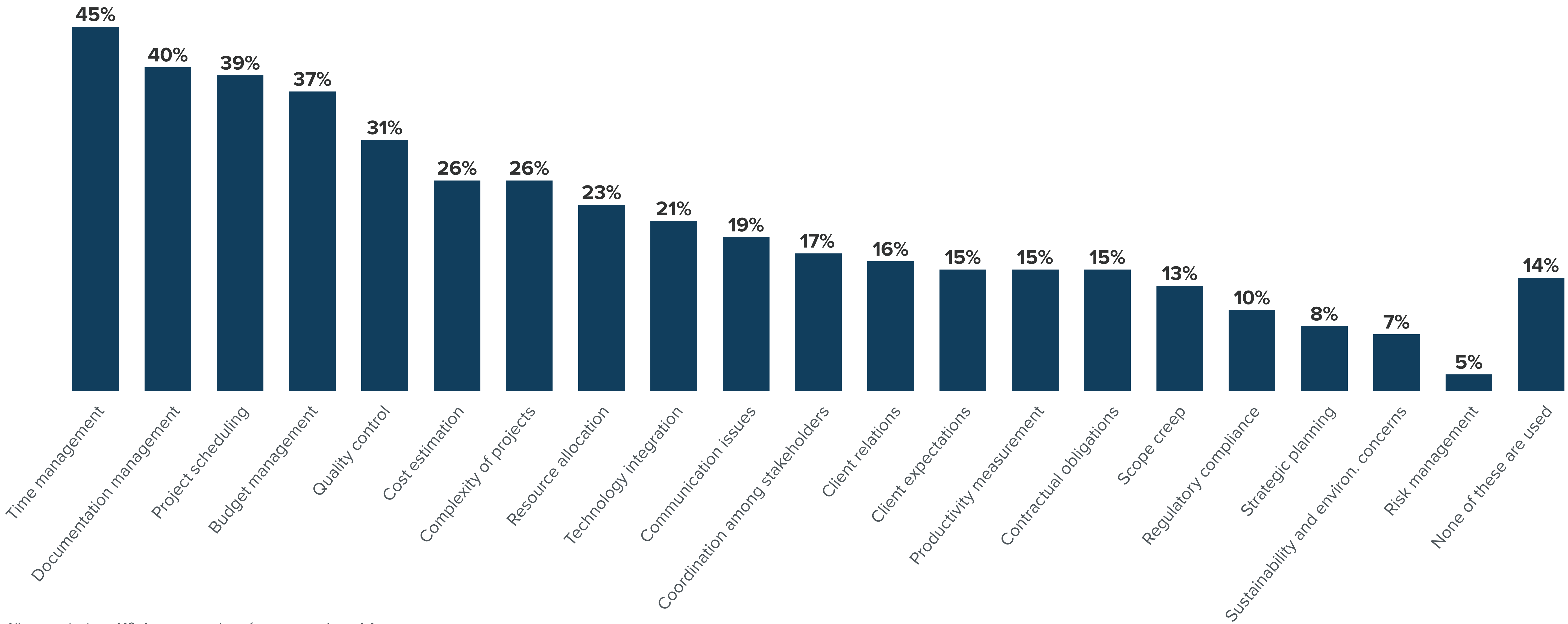
Technology Assists with Project Management:

Nearly half of participants say their organization uses technology in design project management to assist with time management. Other common uses are document management, project scheduling, and budget management.

KEY TAKEAWAYS:

Implementation of technologies in key areas like risk management, sustainability, strategic planning could have significant impact on the project life cycle.

In which of the following ways does your organization use technology to assist with design project management in building design?



All respondents, n=149. Average number of responses given=4.4.

Turning Insights Into Action: Closing Gaps, Protecting Margins

Contrary to what many may believe, the data shows that many firms still rely on spreadsheets and email to manage projects, limiting real-time visibility and increasing the risk of errors, delays, and missed revenue opportunities. In many cases, existing tools are underutilized, leaving untapped potential to improve coordination, accuracy, and billing.

Scope creep remains one of the top threats to profitability, yet few firms have systems in place to track or respond to it effectively. When used strategically, project management technologies can help regain control over timelines, budgets, and scope changes, turning reactive management into proactive oversight.

While only 19% of respondents identify as technology leaders, the firms making the most progress are those aligning digital tools with how their teams actually work, not just adding more systems but using the right ones, intentionally.

To move forward, firms should:

- Eliminate manual reporting where possible and shift to integrated, real-time dashboards
- Leverage project management technologies to support billing accuracy and reduce scope risk
- Begin adopting AI and cloud-based solutions incrementally, focused on high-impact areas
- Align internal processes with tools to drive adoption, accountability, and measurable ROI

The path to profitability is not about having more tools. It is about smarter execution. Firms that modernize with focus will be better positioned to protect their margins and deliver lasting value to clients.

How ARKANCE Can Help

ARKANCE continues to develop teams of industry experts that focus on technology and workflow optimization through solutions like:

- Consulting
- Project Planning
- Technology Deployment & Implementation
- Training and Support

Find out more at www.arkance.us or call (877) 648-7223.

ABOUT THE SURVEY:

Between Jan. 21 and Feb. 12, 2025, 149 responses were received from respondents from a cross-section of different types and sizes of companies. The majority of the respondents are in project management or executive/C-suite roles. Also, the top firms that are represented have between 1 and 24 employees. The top three company types are architecture, MEP, and architecture engineering.