AEC INSPIRE REPORT

Unanet

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Explore industry insights, best practices, and benchmarks from Unanet's comprehensive survey of over 300 leaders in AEC.
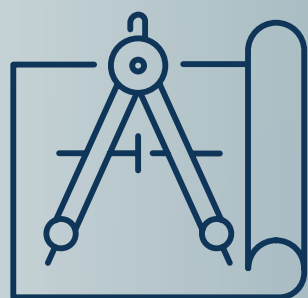
2024 EDITION

OPERATING FOR TODAY, PREPARING FOR TOMORROW:

What Our Industry Needs to Grow
Resilient, Scalable Businesses

Watch for our **INSPIRED INSIGHTS** callouts
identifying key takeaways and predictions.

FOREWORD

Welcome to the 2024 edition of the *AEC Inspire Report*.

In an era increasingly defined by technological advancement and information-driven strategy, adopting emerging technologies is no longer a matter of choice, but a prerequisite of survival in every industry—including Architecture, Engineering, and Construction (AEC).

This collective enthusiasm for technology is not just a trend. It signals a fundamental shift in how AEC firms operate in an increasingly digital world. We see it in the surging popularity of technologies like artificial intelligence, and in how data-proficient firms both perform better and express more confidence in their growth trajectories.

Which begs the question: are AEC companies evolving their tech and data practices fast enough to keep up with the competition?

As technology becomes a preeminent determinant of success, the 2024 *AEC Inspire Report* seeks to explore the impact of digital transformation on business. This report stands as both a resource and guide for the current AEC ecosystem, its key areas of opportunity, and major organizational challenges—particularly in forecasting, resourcing, and data maturity. It examines how perspectives have evolved, what priorities are critical for top performers, what factors are most salient to progress, and how experiences differ depending on sector and size.

One thing is certain: tech-advanced firms that can harness the full potential of emerging technologies are the ones best positioned to accelerate growth, overcome challenges, and navigate the unknown. Such companies are not only operating for today; they are prepared for tomorrow.

We hope that you find this year's *AEC Inspire Report* informative, helpful, and (of course) inspirational.

Lucas Hayden
Senior Director, *AEC Strategy*

Akshay Mahajan
Executive Vice President, *AEC*

RESEARCH
SPECIFICATIONS

About our respondents

This year's survey respondents comprised 337 senior-level professionals from AEC organizations.

Responses were segmented by primary industry into architecture, engineering, or construction, with some respondents indicating involvement in two or more industries (i.e., multidisciplinary). Respondents were screened for function, role, employee size and annual revenue. More detailed demographic information about our survey respondents follows on the next few pages.

Respondents were compensated for their time with a nominal monetary incentive.

Data collection approach

All responses were collected in Q1 2024 via digital survey.
To ensure the integrity and reliability of our results, our data collection methodology was guided by three key criteria:

Objectivity
Independent contributors were recruited from multiple sources, including existing databases and non-proprietary business panels.

Relevance
To ensure findings pertinent to and reflective of the industry, respondents were screened and selected for seniority from across a mix of business areas.
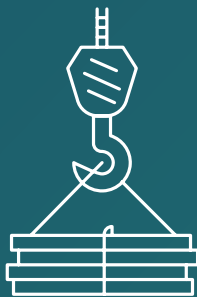
Rigor
The data collection survey consisted of 36 closed-ended questions. On average, participants spent between 15 and 20 minutes on average completing the survey.

DEMOGRAPHICS OF RESPONDENTS

It is important to note that the *AEC Inspire Report* is not designed to serve as a longitudinal study of the industry, and any year-over-year comparisons are undertaken from a cross-sectional perspective only. All 2023 data comes from the previous edition of the *AEC Inspire Report*, which was released in December 2022 for use in 2023. This year's responses provide a snapshot of the current state of our market and cannot be directly correlated to those of any participants past or future.

By industry

Almost 80% of respondents indicate their primary industry is either construction or engineering. Some respondents indicate that their organization derives revenue from more than one industry (i.e., multidisciplinary).

40% Construction
38% Engineering
20% Architecture
2% Other
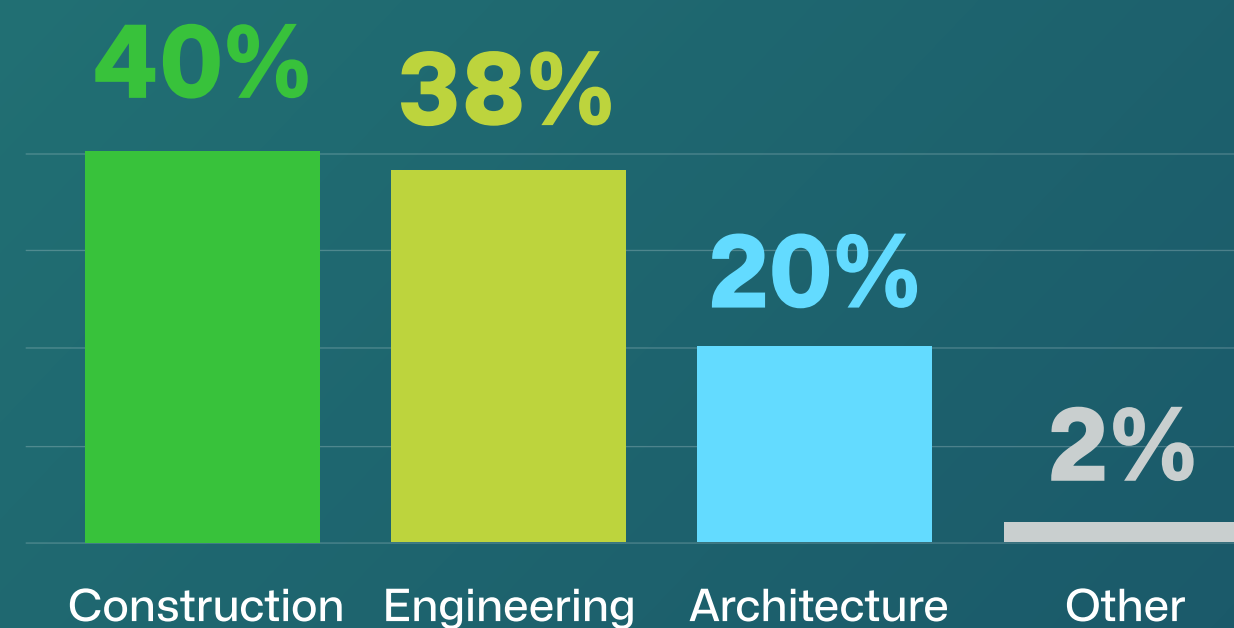
By business size

Respondents represent an even spread across small and midsize businesses (SMBs) and large enterprises.

10-199 **30%**
200-999 **38%**
1000+ **32%**
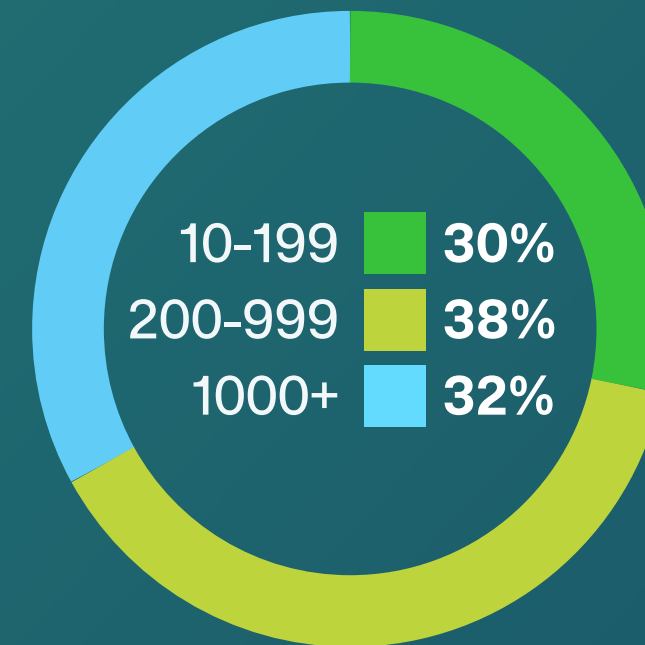
WHAT DO WE MEAN BY BUSINESS SIZE?

In this report, we often look at SMB and large enterprises separately, as defined by the number of FTEs in the firm.

SMALL: 10 to 199 employees

MIDSIZE: 200 to 999 employees

Together, these represent our SMBs.

LARGE: over 1000 employees

Most organizations maintained a consistent size over the last fiscal year: 66% reported either no change or changes of 9% or less (either increasing or decreasing) to the number of full-time employees (FTEs).

2% Don't know
3% -10 to -19%
6% -1 to -9%
8% No change
52% 1-9%
25% 10-19%
4% More than 20%
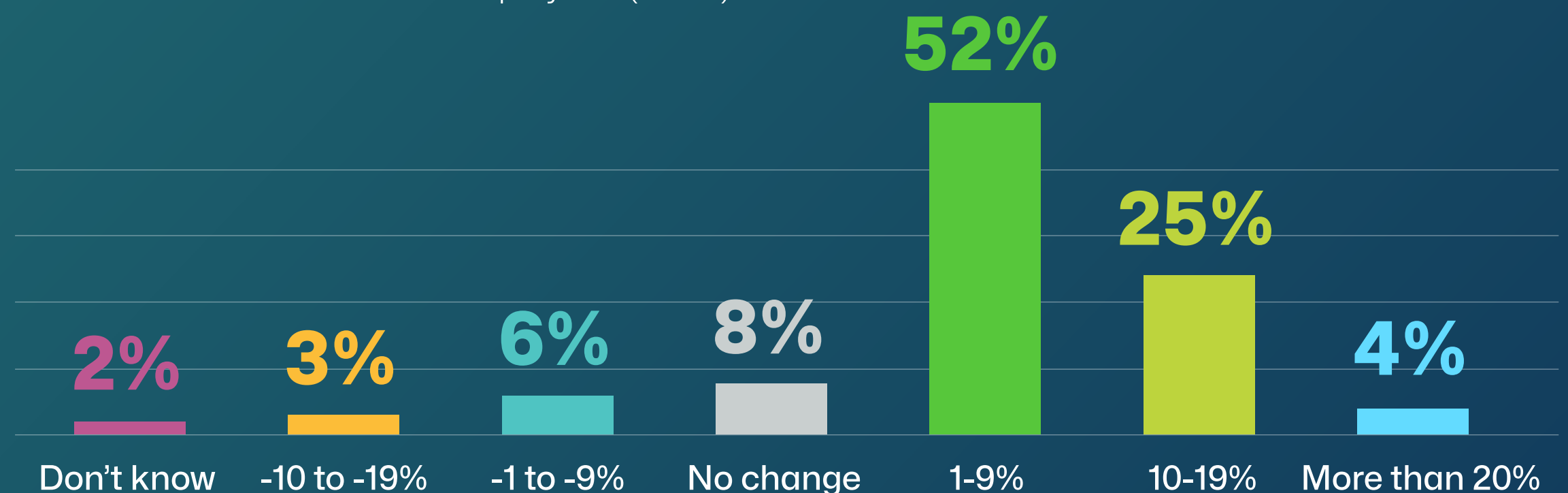
In some cases, respondents were unable to provide a clear answer. For those questions only, individual respondents were removed from the total count of respondents. For questions where multiple responses could be selected, percentages may exceed 100%.

By function and role

Almost half of the respondents hold senior leadership roles such as owner, principal, or partner. When including directors, this comprises just over 75% of respondents.

Owner, Principal, Partner, VP	44%
Director	32%
Manager	14%
Non-Managerial role	10%
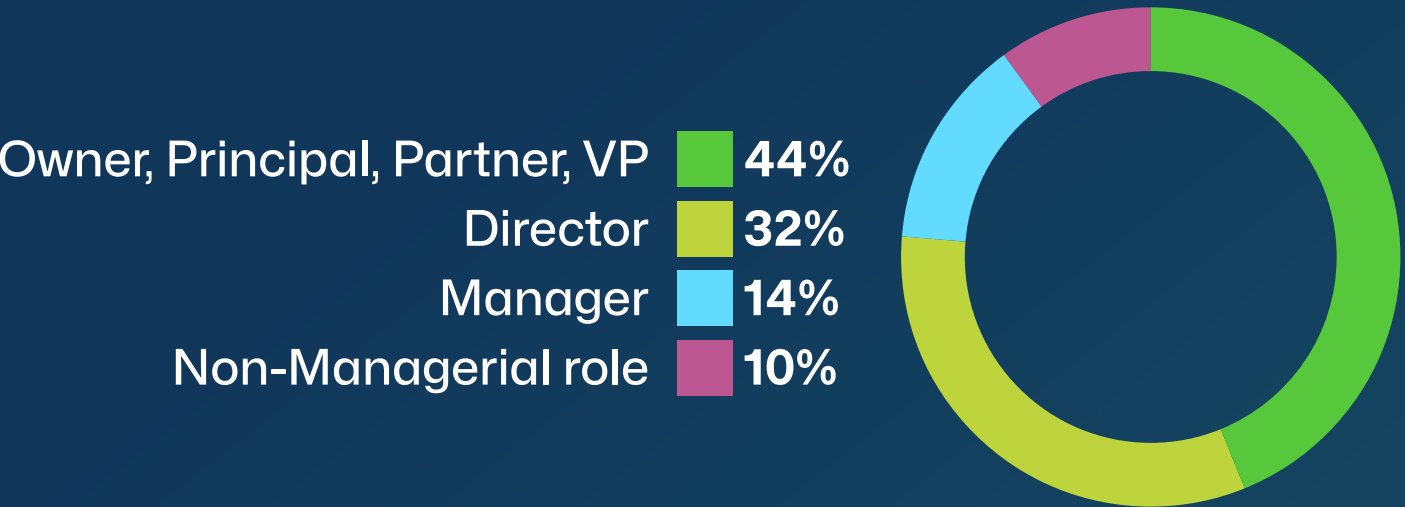
The majority of respondents came from either Finance, Marketing or Project Management functions, with Finance representing the largest group (about one-third of total respondents). Most respondents also showed moderate to high levels of involvement across all functional areas examined, suggesting a well-rounded cross-section of participants.
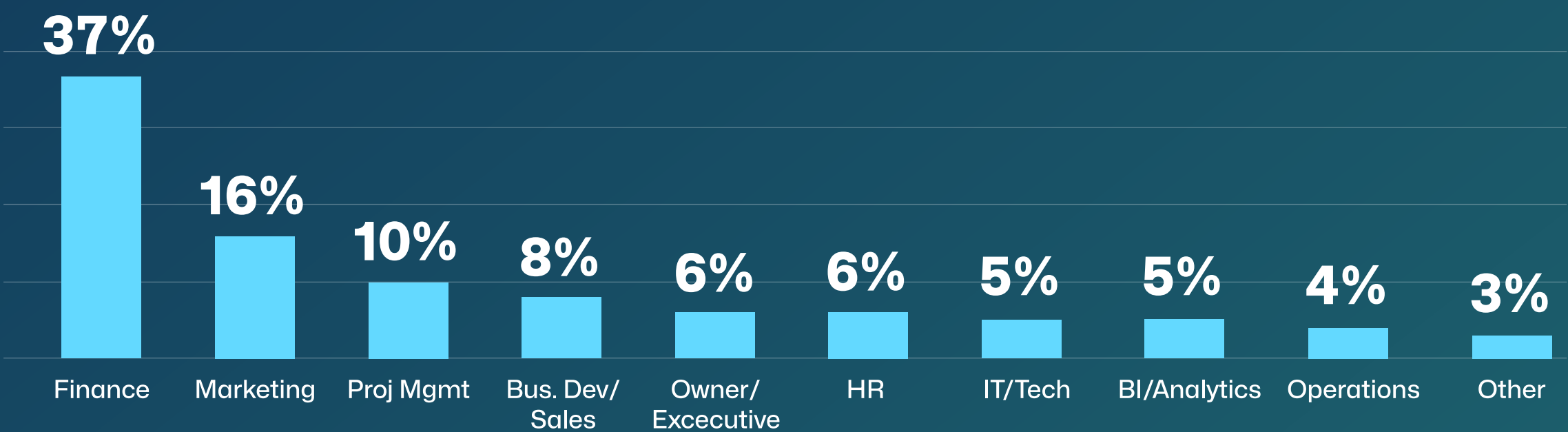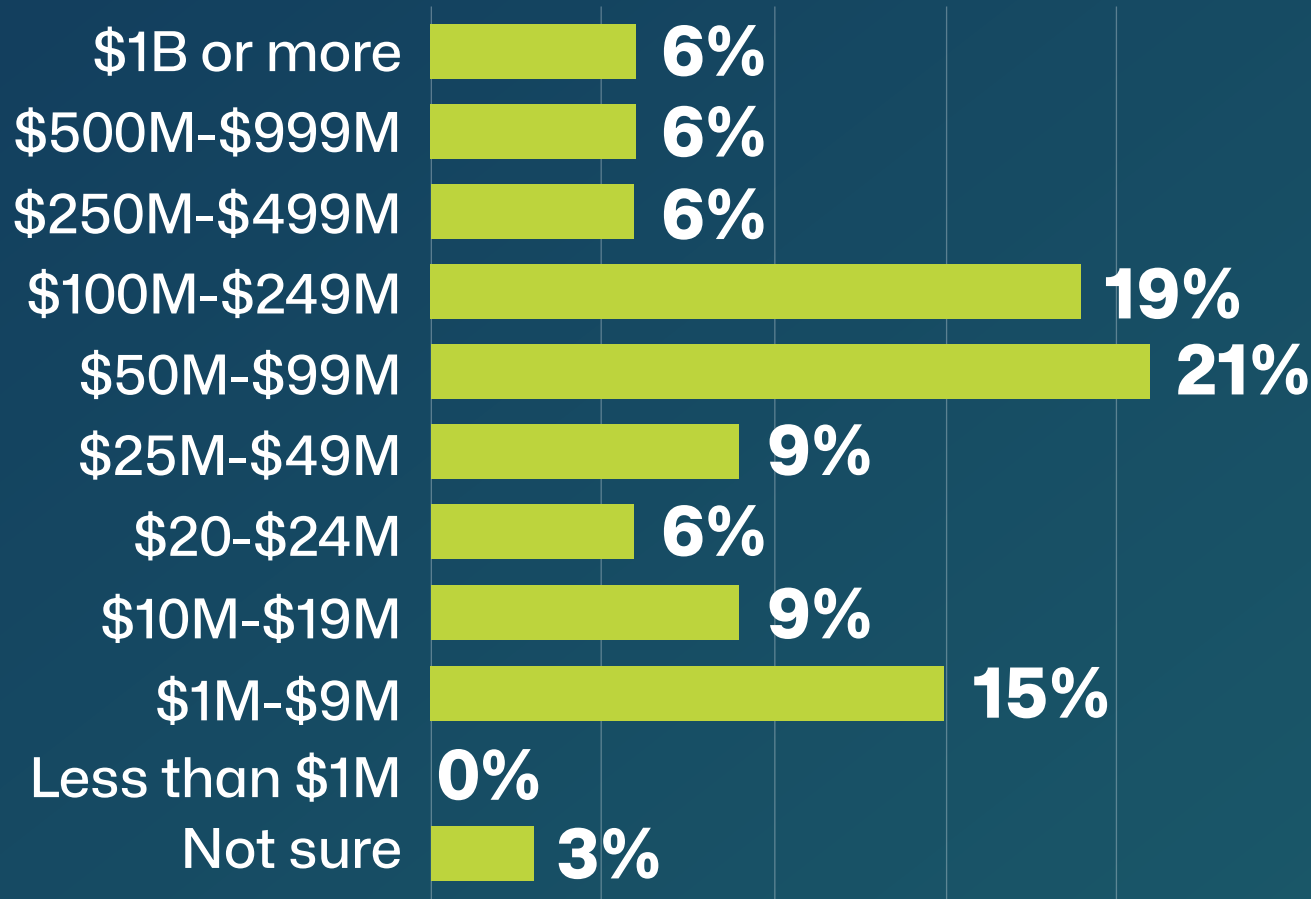
| Finance | Marketing | Proj Mgmt | Bus. Dev/Sales | Owner/Executive | HR | IT/Tech | BI/Analytics | Operations | Other |
| 37% | 16% | 10% | 8% | 6% | 6% | 5% | 5% | 4% | 3% |

By revenue and contract type

Respondents represented an even spread of revenue bands. Almost 40% reported less than $50M in revenue in the last fiscal year. Another 40% reported making between $50M and $249M; of these respondents, 60% hailed from construction. The remaining nearly 20% reported making over $250M.

$1B or more	6%
$500M-$999M	6%
$250M-$499M	6%
$100M-$249M	19%
$50M-$99M	21%
$25M-$49M	9%
$20-$24M	6%
$10M-$19M	9%
$1M-$9M	15%
Less than $1M	0%
Not sure	3%

On average, firms derived their revenue from a fairly even mix of contract types. Notably, fixed fee and lump sum make up 46%–nearly half–of all contracts, representing a continued shift away from time and materials in some parts of the industry.

Fixed Fee	26%
Time and Materials	21%
Lump Sum	20%
Percent of Construction	19%
Cost Plus	14%
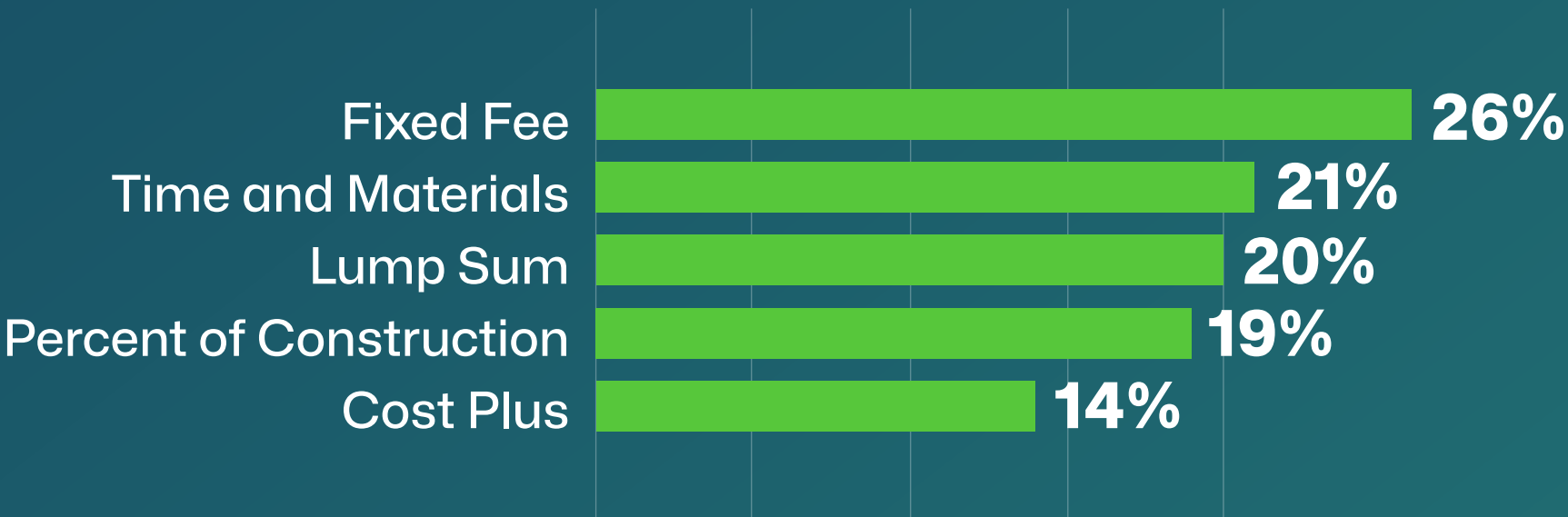
SUMMARY BY THE NUMBERS

86% of firms have **OPTIMISTIC OUTLOOKS.**

The top three industry concerns are:
1. THE OVERALL ECONOMY
2. RESOURCING
3. OPERATIONAL EFFICIENCY

PROJECT COST CASHFLOW, and **LABOR RESOURCES** are universally seen as the most important forecasts.

Not having the proper tools for **DATA MANAGEMENT** is the biggest challenge to optimizing data use. **49%** of firms find this to be a challenge.

1 in 3 firms say their projects reliably finish **ON TIME AND UNDER BUDGET.**

46% of firms have a win rate between **51%** and **75%.**

50% of firms are interested in **ACQUISITION,** but only **5%** of firms are interested in **SELLING.**

48% of respondents meet the criteria for being **TECH-ADVANCED.**

65% of firms have more than half their applications **IN THE CLOUD.**

30% of firms primarily rely on **SPREADSHEETS** for business intelligence.

1 in 3 firms think **AI WILL POSITIVELY IMPACT** content generation, data analysis, operational efficiency and forecasting.

The top source for new opportunities is **PERSONAL RELATIONSHIPS.**

95% of firms **MAKE USE** of their data to some degree. **60%** of firms use data regularly to drive strategy and decision-making.

17% of firms reported a profit rate of **21% OR GREATER.** Next year, this number is expected to go up to **39%.**

THE STATE OF OUR INDUSTRY

Right now, the **AEC industry is marked by a prevailing sense of positivity**. A significant portion of respondents expressed confidence in the current business environment, with almost half identifying as "very optimistic," especially those more advanced in size or tech adoption status. This optimism is slightly tempered, however, by broader economic concerns and the perennial challenges of technology and staffing.

The general state of **the economy remains the top industry concern**, particularly for smaller businesses and less tech-advanced firms. Such firms are also more likely to worry over resourcing and the cost of doing business; recruitment and retention of talent is of particular concern within the engineering sector.

Additionally, **there is a deepening collective anxiety over unpredictable, catastrophic events**, which have the potential to disrupt even the most robust business strategies. These phenomena, once purely theoretical considerations, have forcefully claimed center stage in recent times.

17% Last year, 17% of 2023 respondents had the pandemic as a top-ranking business concern.

27% This year, 27% of respondents indicate that unpredictable business disruptions, such as supply chain issues and natural disasters, keep them up at night.

For those whose careers have been defined by one of the largest global disruptions in recent history, these "black swans" are no longer a risk management abstract: they are a lived reality. This cohort of professionals, with its acute appreciation of what it means to work in "unprecedented times," stands poised to take executive and senior leadership positions. This gradual changing of the guard promises to redefine the way businesses approach strategic planning and innovation.

These qualms about unpredictable disruptions are most often seen in larger, more tech-advanced and AI-forward companies. It follows that such businesses are highly attuned to the ways in which future performance might be disrupted by the complexities of an ever-evolving risk environment. This mindset has proven advantageous in the past; in our last report, tech-forward firms reported improved staffing and retention since the pandemic, while their counterparts reported the exact opposite. It will remain a hallmark of foresightedness in the years to come.

This shift in perspective reflects the leading concerns of a maturing industry. It is becoming clear that technology is a lynchpin of future-thinking, proactive firms looking to establish resilience in the present and fortification for the future.

Despite mounting evidence that **tech advancement is a critical, if not the most critical, predictor of success**, data obscurity and outdated technology continue to present strategic stumbling blocks.

For more tech-advanced firms, the outlook across AEC is likely to remain generally positive. Proposal win rates and project profit percentages are both expected to climb, and growth rates are predicted to increase over the coming year as well.
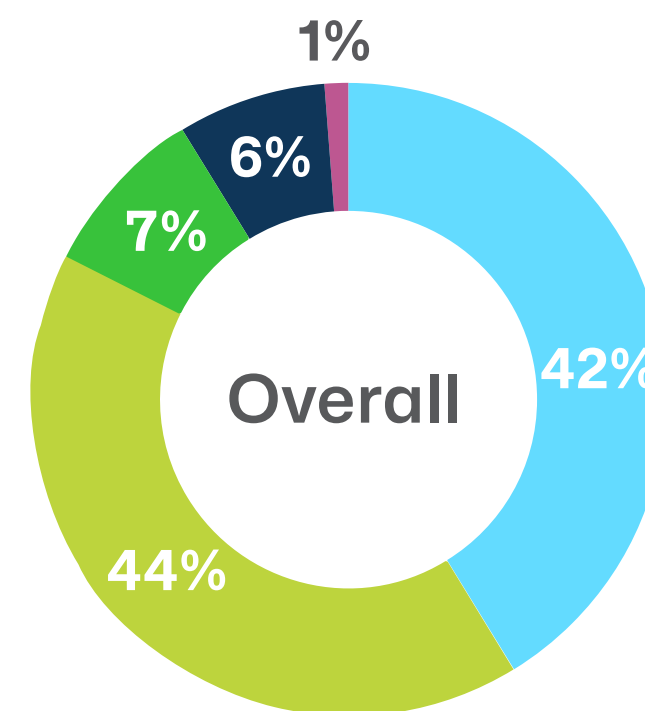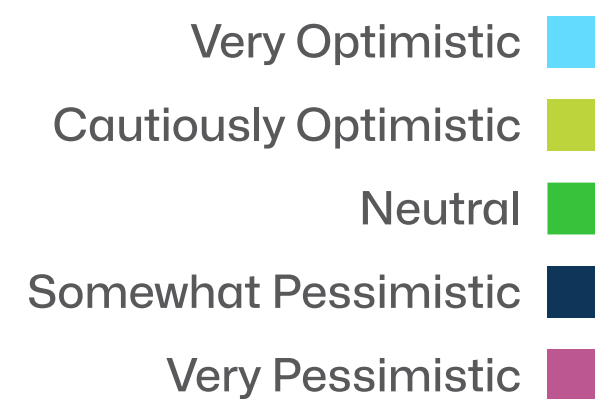
Whether this promising outlook translates into reality will largely depend on how well firms can leverage their data and align their tech with the needs of tomorrow.

RESEARCH HIGHLIGHTS

General industry forecast: mostly sunny, with a few clouds

Most AEC firms are feeling good about the current business environment—86% of all respondents express some level of optimism, with 42% feeling "very optimistic."

This sense of optimism rises with org size. It also aligns with indicators of tech advancement, including AI maturity and data expertise, illustrating how pivotal technology has become to business growth and development.

TECH-FORWARD OPTIMISM.
89% of AI-mature firms express some level of optimism, with **66%** feeling "very optimistic."

Very Optimistic
Cautiously Optimistic
Neutral
Somewhat Pessimistic
Very Pessimistic

Overall
1%
6%
7%
42%
44%

Level of optimism by business size

Small (10-199)

Midsize (200-999)

Large (1,000+)
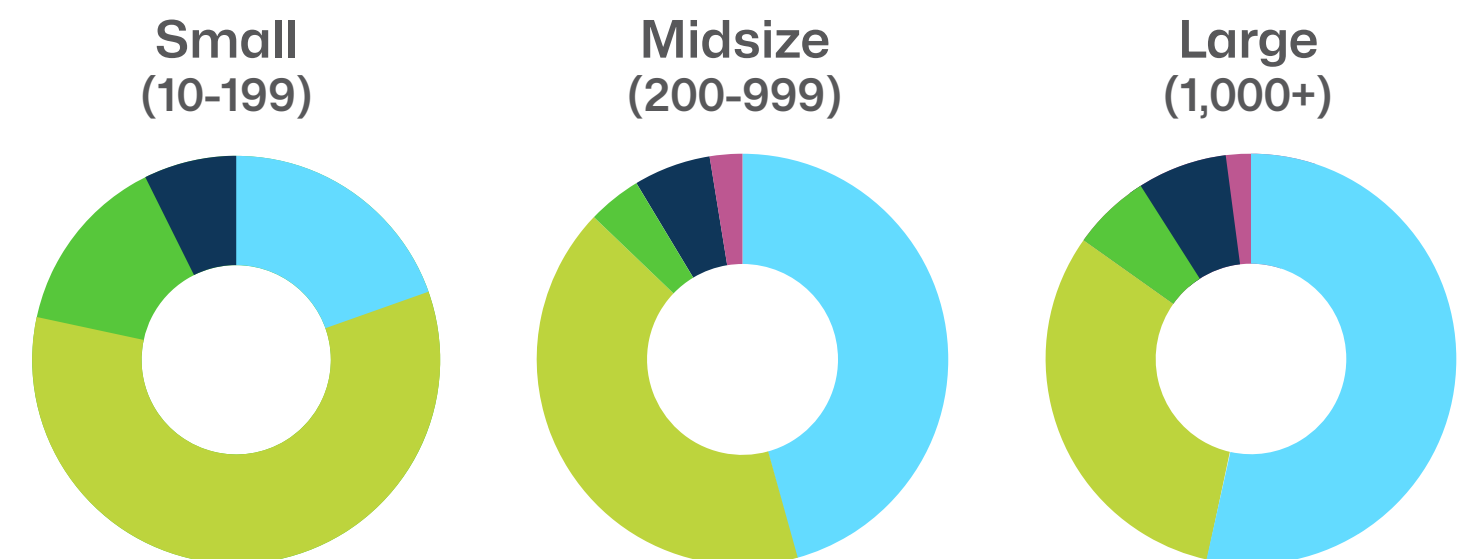
Interest in mergers and acquisitions

Interested in buying **50%**

Interested in selling **5%**

Interested in neither **45%**

About half of surveyed AEC firms say M&A is a priority for their company this year, with AI-mature firms, midsize firms and large enterprises expressing high levels of interest in buying.

This comes as no surprise—generally, M&A activity surges during periods of perceived stability and optimism.

TECH-FORWARD FIRMS WANT TO BUY. SMALL FIRMS DON'T.
70% of AI-mature firms express interest in acquisition this year. Only **13%** of small firms (<200 employees) are interested in buying.

What is interesting, however, is that despite high levels of interest in buying, there is conversely very little active interest in selling. The remaining 45% of respondents have no interest in any M&A activity; small firms, in particular, seem decisively resolved.

A few factors may be contributing to this trend. Firstly, the widespread industry optimism may be encouraging even resource-limited firms to prioritize long-term growth opportunities over immediate gains from selling. Firms may also feel that their valuation will only continue to rise and are making the strategic decision to defer selling for the time being.
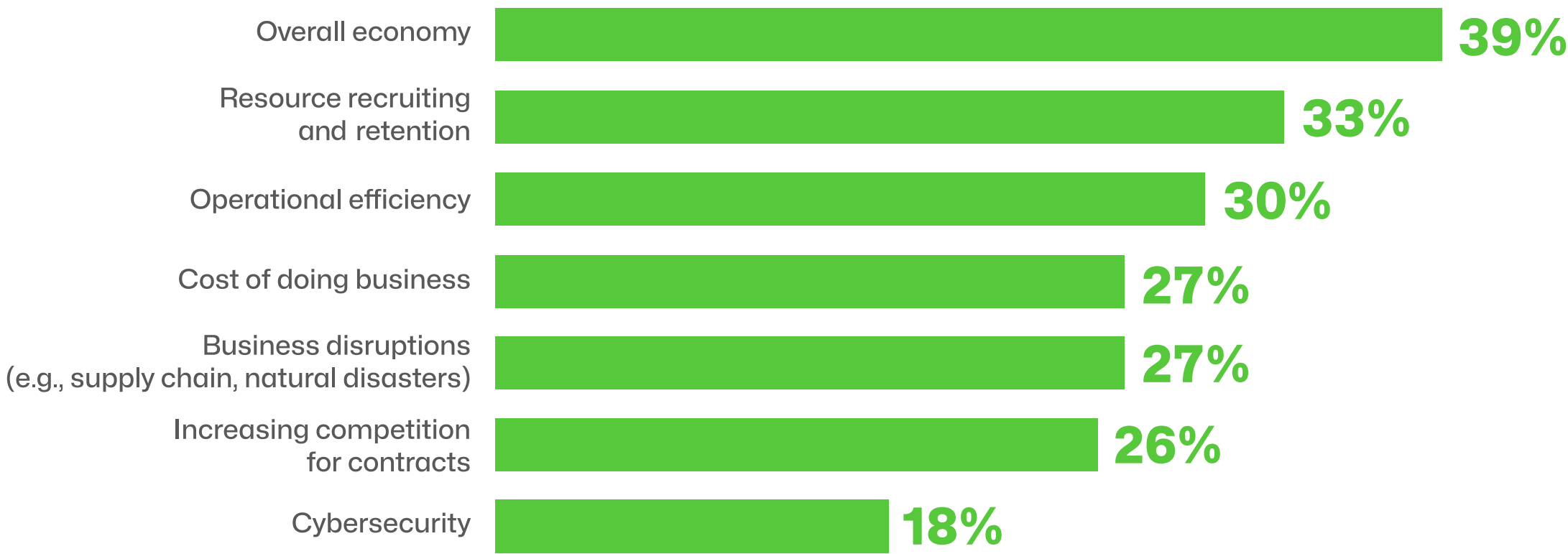
It's also possible that some organizations—for example, businesses founded as personal ventures or passion projects—may not have any desire to sell at all. In the absence of immediate economic pressure, such firms may prefer to preserve their independence and grow more sustainably.

Interest in buying, by industry

Industry	
Architecture	41%
Engineering	40%
Construction	63%
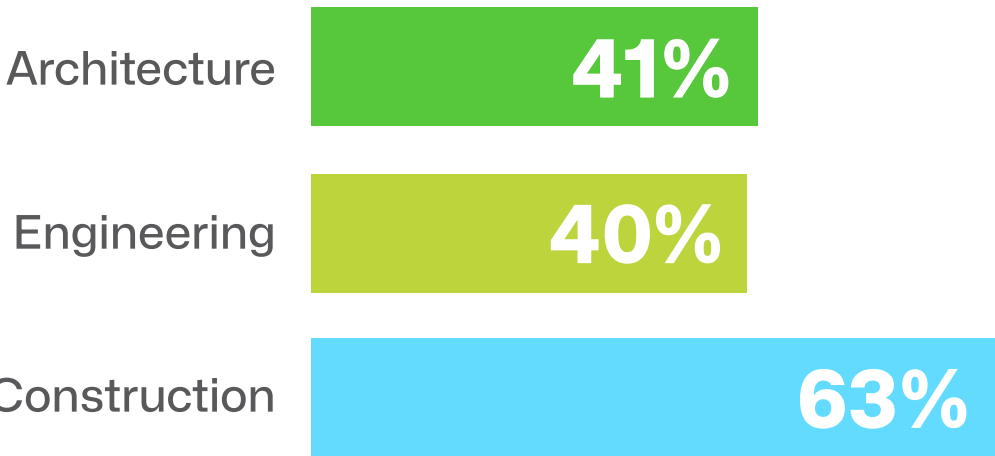
Another interesting insight emerges when looking at industry perspectives. Respondents in construction express significantly more interest in buying—a trend that echoes their generally more optimistic outlook, suggesting that construction represents a particularly promising sector of the AEC industry.

Issues that keep AEC leaders up at night

Issue	
Overall economy	39%
Resource recruiting and retention	33%
Operational efficiency	30%
Cost of doing business	27%
Business disruptions (e.g., supply chain, natural disasters)	27%
Increasing competition for contracts	26%
Cybersecurity	18%

Despite the generally positive outlook and growth-focused mindset, the state of the overall economy remains a top concern across the board. Talent recruiting and retention also continues to be an ongoing issue for AEC firms.

Perennial concerns about efficiency, cost of business and competition are now equally matched by concern over uncontrollable business disruptions—an enduring legacy of a post-pandemic world.

Tech ascendancy: the new blueprint of success

There is a clear positive link between tech status—how "tech-advanced" firms are—and other indicators of progress and confidence. Tech status is determined not only by the use of specific tools and platforms, but also organizational practices towards data, integration and infrastructure.

In past reports, mobile enablement was a key criterion of tech status.

> **MOBILE ENABLEMENT**
> The degree to which applications, data, systems and transactions are accessible through mobile devices.

Now, as hybrid or cloud-dominant infrastructures naturally facilitate mobile work practices, AI usage has taken the spotlight as a more relevant indicator of tech advancement.

Tech-advanced companies are more likely to have very mature project management and resource management. This highlights how much impact tech can have on functional areas across the business—including project delivery, relationship management and resource management.

WHAT IS A TECH-ADVANCED COMPANY?

In this report, the term "**tech-advanced**" describes organizations that meet at least three of the following criteria:

- **Data-Driven:** Regularly use data for business management, decision-making and performance assessment.

- **Cloud-Dominant:** Over 50% of all tools and applications are based in the cloud.

- **Fully Integrated:** Platforms and applications are completely integrated across all systems.

- **AI-Mature:** Actively uses AI technology, supported by comprehensive firm-wide AI policies and procedures.

Firms that don't meet the criteria for tech-advanced status may be described as **tech-emergent.**

Project management maturity vs. tech status

	Very Mature	Somewhat Mature	Somewhat Immature	Immature
Tech Advanced	35%	55%	9%	1%
Not Advanced	24%	53%	17%	6%

- Very Mature
- Somewhat Mature
- Somewhat Immature
- Immature

Resource management maturity vs. tech status

	Very Mature	Somewhat Mature	Somewhat Immature	Immature
Tech Advanced	45%	41%	14%	
Not Advanced	27%	48%	19%	6%
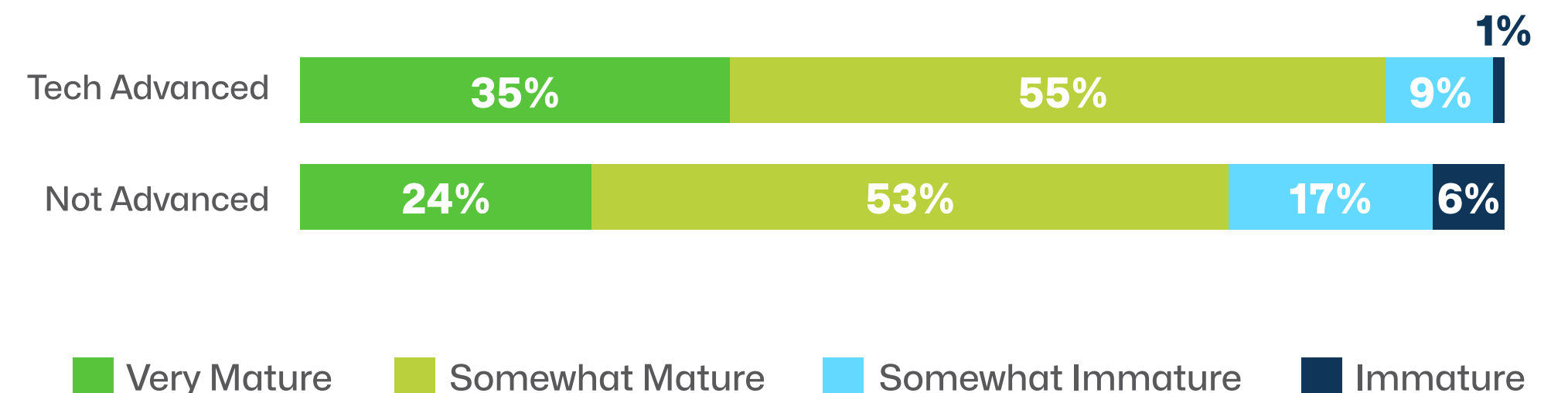
Data expertise

Over half of AEC firms describe their approach to using data as "very data-driven," or data optimized. Midsize and larger firms more frequently report using data to run the business, assess performance, and make decisions.
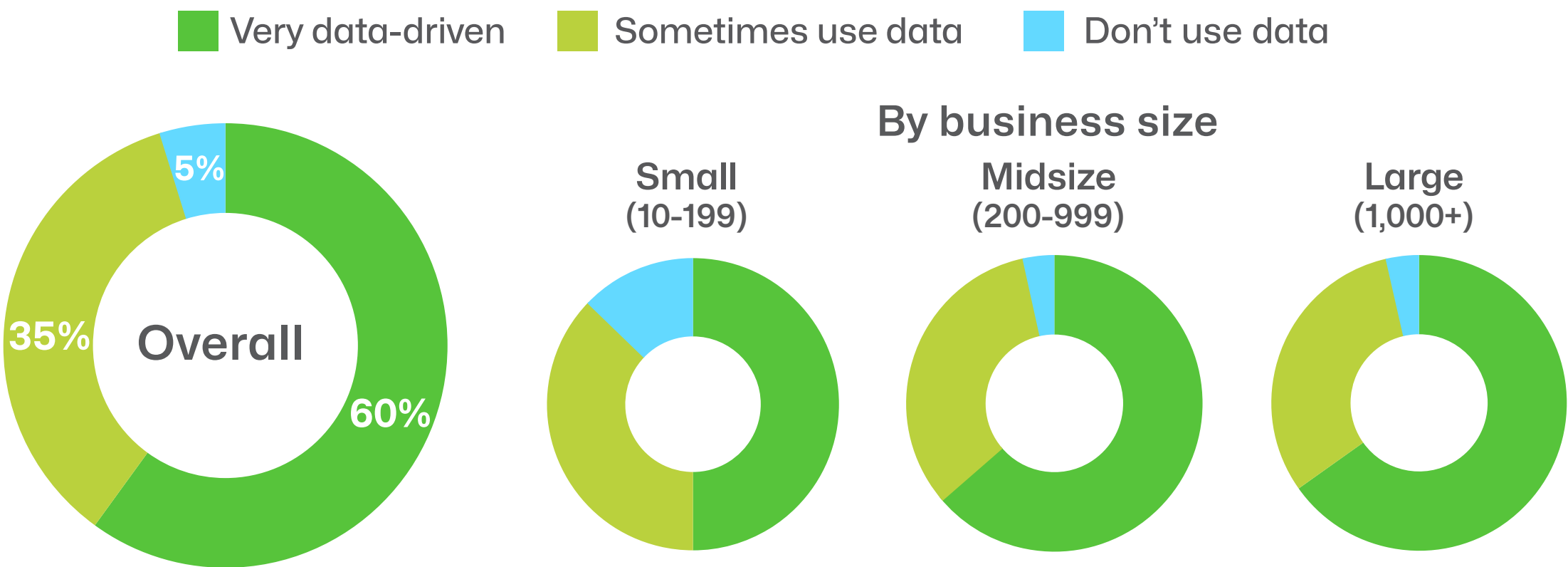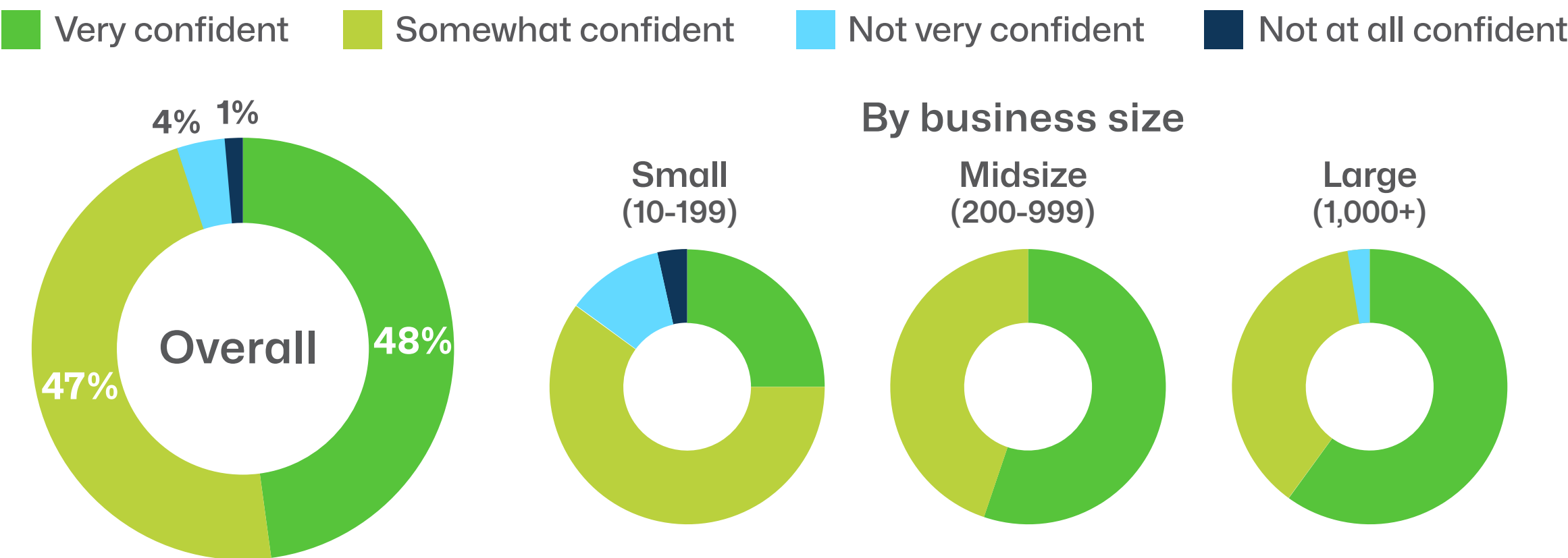
Data usage in AEC

- 🟩 Very data-driven
- 🟩 Sometimes use data
- 🟦 Don't use data

Overall
- 5%
- 35%
- 60%

By business size

Small (10-199)

Midsize (200-999)

Large (1,000+)

Confidence in data quality and accuracy

- 🟩 Very confident
- 🟩 Somewhat confident
- 🟦 Not very confident
- ⬛ Not at all confident

Overall
- 4%
- 1%
- 47%
- 48%

By business size

Small (10-199)

Midsize (200-999)

Large (1,000+)

These companies also tend to be more confident in the quality and accuracy of their data. Nevertheless, it is alarming that less than half of all respondents are "very confident" in their data. Trustworthy data is a foundational prerequisite to forecasting, decision-making and AI adoption; without it, it becomes impossible to extract meaningful value from even the most advanced tech stack.

Despite unsettling levels of uncertainty, it is encouraging to see data engagement growing: fewer AEC firms say they don't make use of their company's data than before.

Percentage of data non-users in AEC

- **11%** Pre-2022
- **8%** 2023
- **5%** 2024
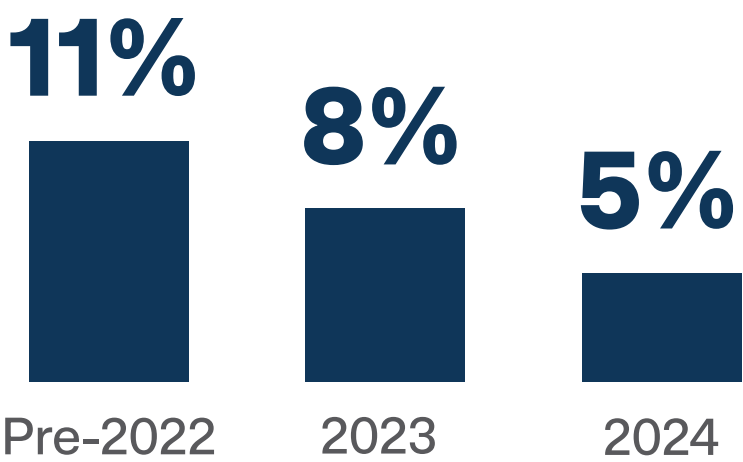
Lack of data availability or accessibility is, however, reported more often as a hindering factor. Additionally, the biggest data-related hurdle for firms continues to be lack of appropriate tools for data management.

Factors that hinder data usage

Legend: Pre-2022, 2023, 2024

- Insufficient tools for data mgmt or analysis: 45%, 41%, 49%
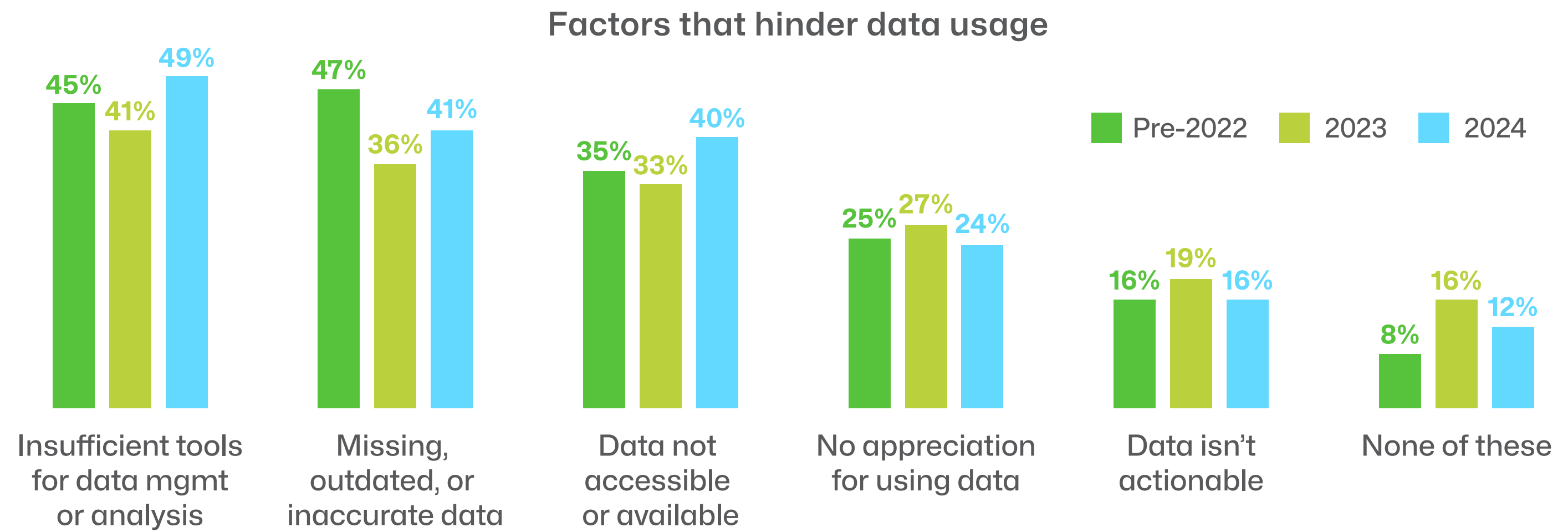- Missing, outdated, or inaccurate data: 47%, 36%, 41%
- Data not accessible or available: 35%, 33%, 40%
- No appreciation for using data: 25%, 27%, 24%
- Data isn't actionable: 16%, 19%, 16%
- None of these: 8%, 16%, 12%

These trends suggest that, despite a growing recognition of the importance of data stewardship, firms continue to grapple with its practical implementation and stewardship.

Interestingly, AI-mature firms more frequently cite data availability as a hurdle than their less AI-advanced counterparts.

This likely stems from the understanding that AI effectiveness hinges on the quality and quantity of data available. These AI-advanced firms may be more sensitive to gaps in data quality, given their more frequent use of data in operations and decision-making.

This overview of data practices illustrates how data readiness—or rather, the lack thereof—is one of the biggest deficits in AEC. Before embarking on new strategic innovations or implementing AI, firms must ask themselves first whether their data is accurate, accessible, and trustworthy.

Concern over data availability vs. AI maturity

- AI non-users: **36%**
- AI-emergent: **38%**
- AI-mature: **49%**
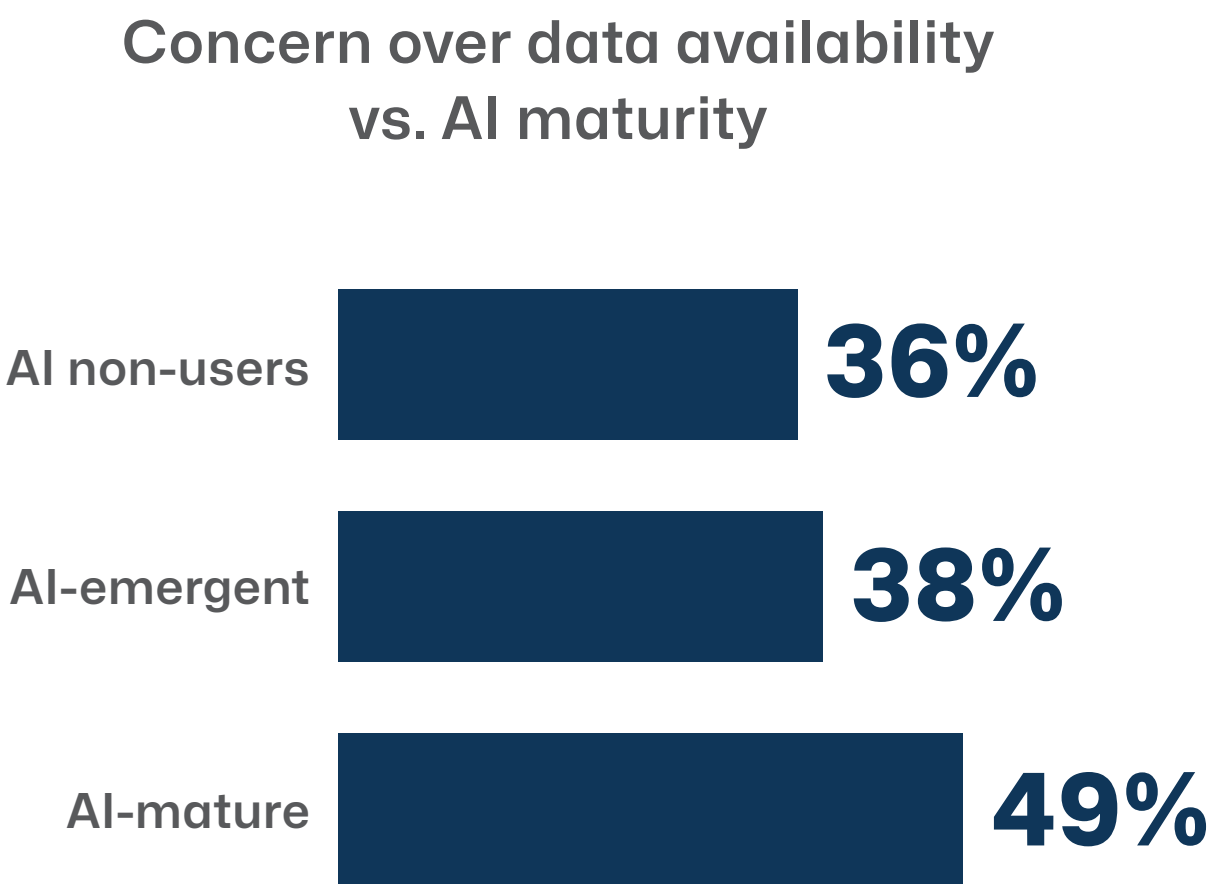
Infrastructure and tools

Application infrastructure can fall into three categories: traditional (or on-premise), hybrid or cloud-dominant. Traditional infrastructure is characterized by its locale-based approach to software and data. Software licensing and access may be tied to local servers or even individual computers, requiring users to be on-network. Cloud-dominant infrastructure is the opposite: an environment where most if not all applications are cloud-hosted. Hybrid infrastructures leverage a mix of on-premise and cloud services.

Cloud usage has become the norm for companies that prioritize scalability and flexibility. About two-thirds of AEC firms agree.
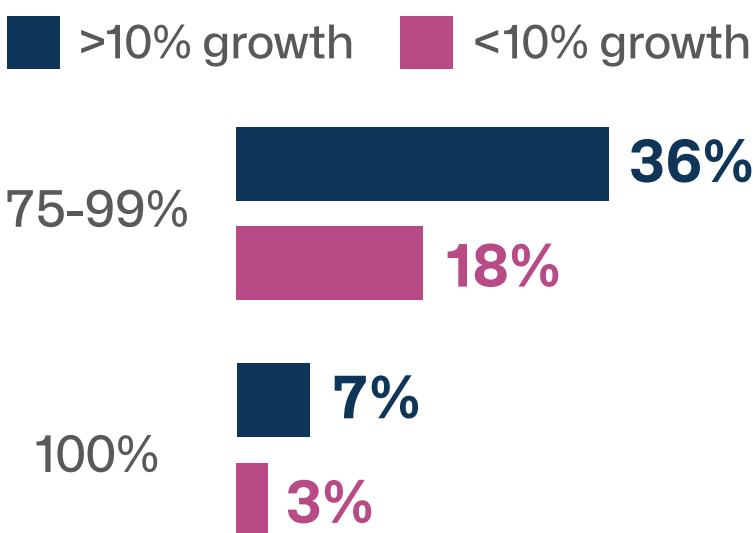
WHAT IS APPLICATION INFRASTRUCTURE?
The degree to which an organization's software framework—including databases, project management, CRM, ERP, and business intelligence solutions—is hosted in the cloud.

Firms with a double-digit growth rate are more likely to have most or all of their applications in the cloud, likely due to the high degree of scalability and flexibility offered by cloud-based software.

This general affinity for cloud-dominant infrastructures is an encouraging sign of tech improvement across AEC.

Percent of cloud dominance vs. growth rate

■ >10% growth ■ <10% growth

- 75-99%: **36%** (>10% growth), **18%** (<10% growth)
- 100%: **7%** (>10% growth), **3%** (<10% growth)

Proportion of cloud-based applications in AEC

■ Pre-2022 ■ 2023 ■ 2024

	Pre-2022	2023	2024
0%	2%	2%	1%
1-24%	16%	11%	10%
25-49%	26%	21%	17%
50-74%	26%	30%	39%
75-99%	16%	19%	22%
100%	6%	7%	4%
Don't know	8%	10%	7%
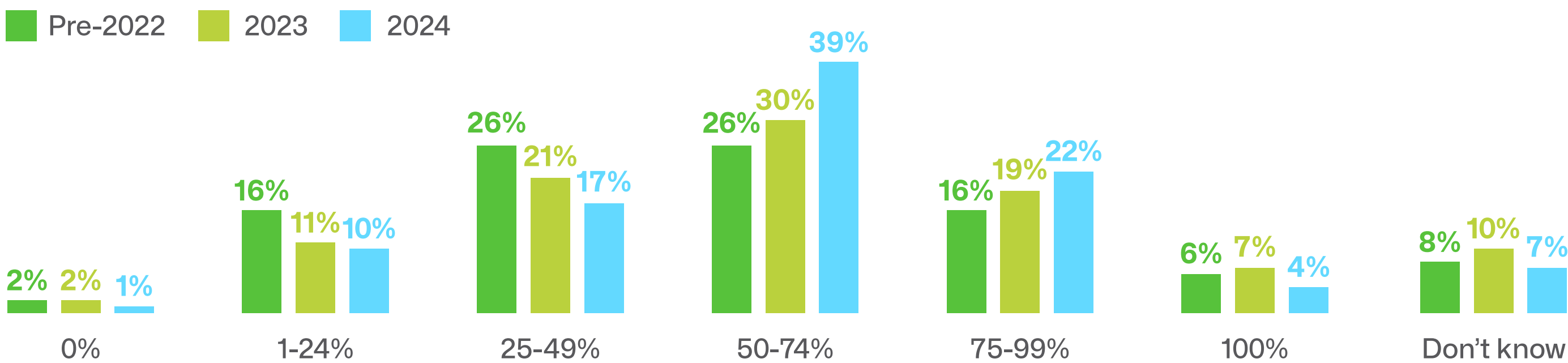
Significantly more companies have a greater proportion of business-based software now than in 2023.

Although infrastructures are advancing in the right direction, there is not as much progress being made when it comes to the applications themselves. A look at customer relationship management is particularly revealing: more than 50% of respondents either use Microsoft Excel or have no CRM software at all. Excel spreadsheets are also highly popular for capturin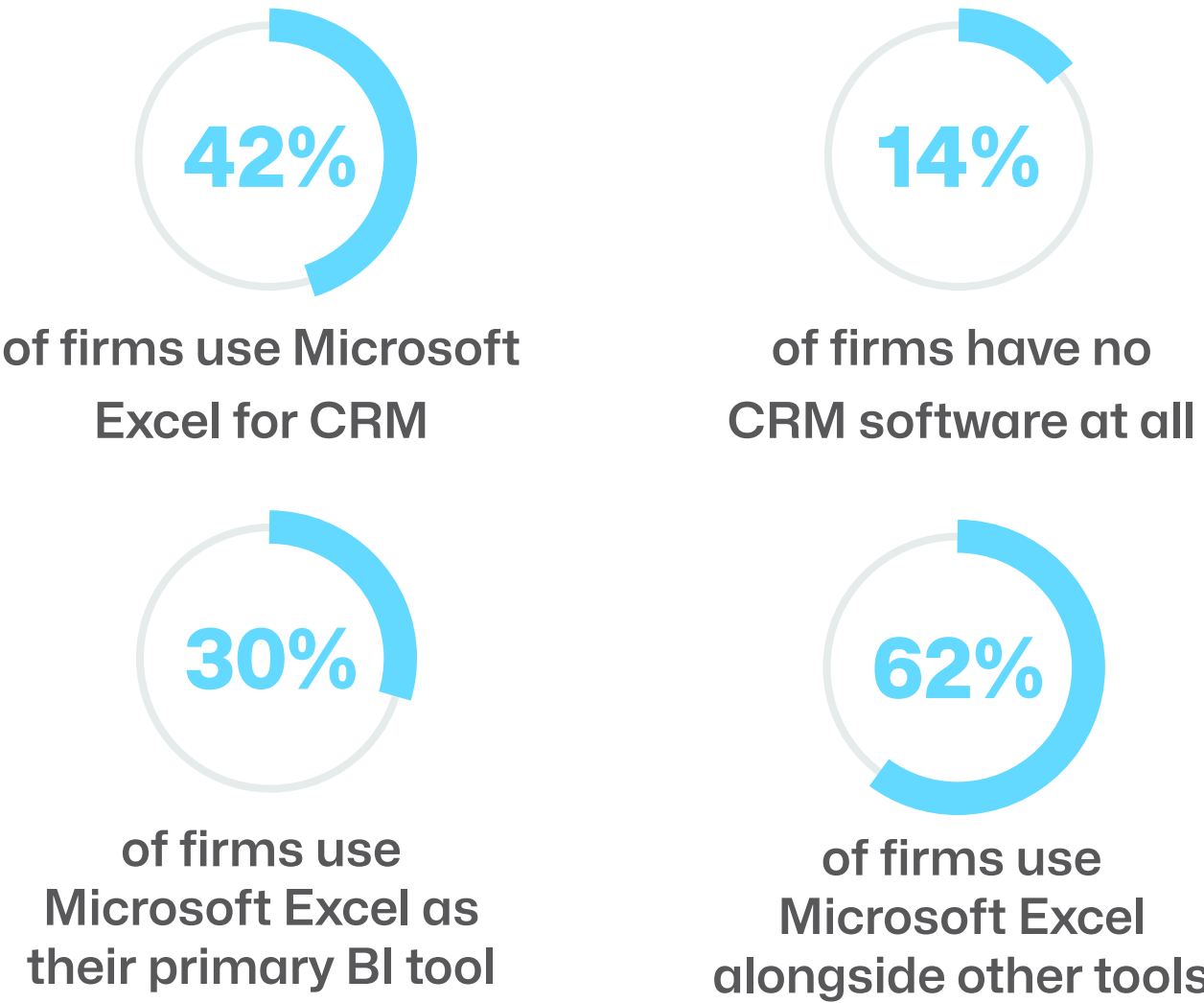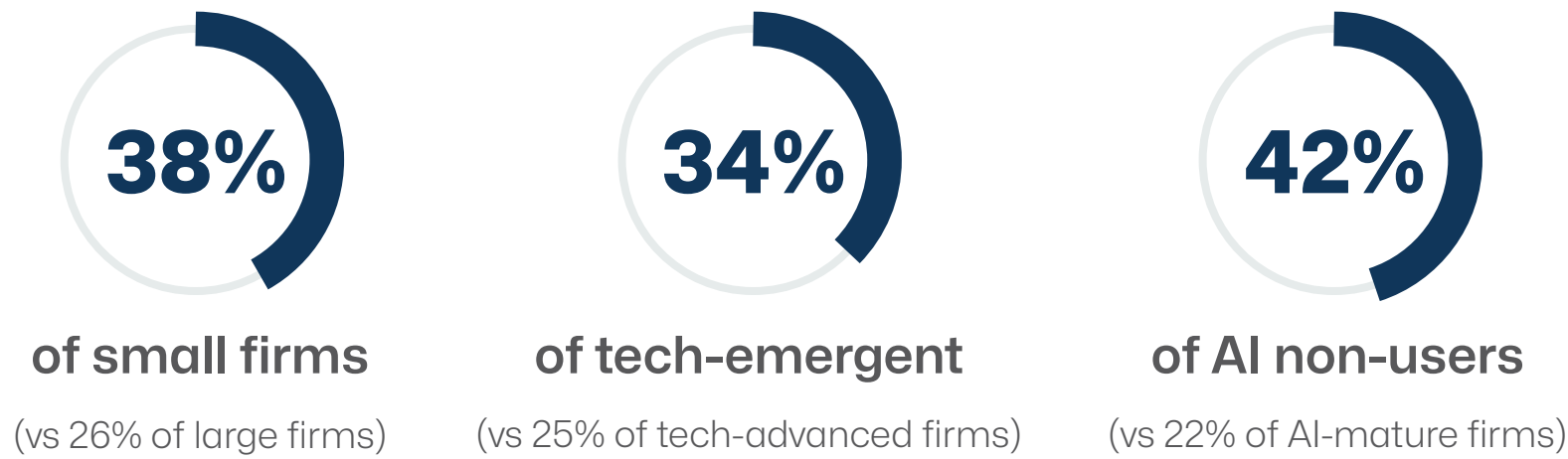g, measuring and reporting on metrics. The overwhelming majority use Excel for business intelligence in some capacity, and around one-third of firms use Excel as their main BI tool.

Spreadsheet utilization in AEC

42%
of firms use Microsoft Excel for CRM

14%
of firms have no CRM software at all

30%
of firms use Microsoft Excel as their primary BI tool

62%
of firms use Microsoft Excel alongside other tools

Smaller and less tech-advanced businesses more frequently report using spreadsheets as their primary BI tool. This relationship is particularly pronounced for companies with low AI maturity.

Top users of spreadsheets for business intelligence

38%
of small firms
(vs 26% of large firms)

34%
of tech-emergent
(vs 25% of tech-advanced firms)

42%
of AI non-users
(vs 22% of AI-mature firms)

This is significant for these 56% of respondents that either use Excel or have no tools for CRM, and the 92% of firms using spreadsheets for BI. Such firms undermine their business development and business insights by relying on such a manually driven, error-prone software to drive scalable growth.

Excel, of course, was not designed with industry-specific needs in mind. Consequently, it falls short on integrability and functionality, lacking the advanced analytics, forecasting, and automation capabilities of purpose-built platforms. While Excel is a tempting option for an accessible low-cost solution in the short term, in the long term it will hobble efficiency and compound the technical debt that often accompanies inherited legacy systems.
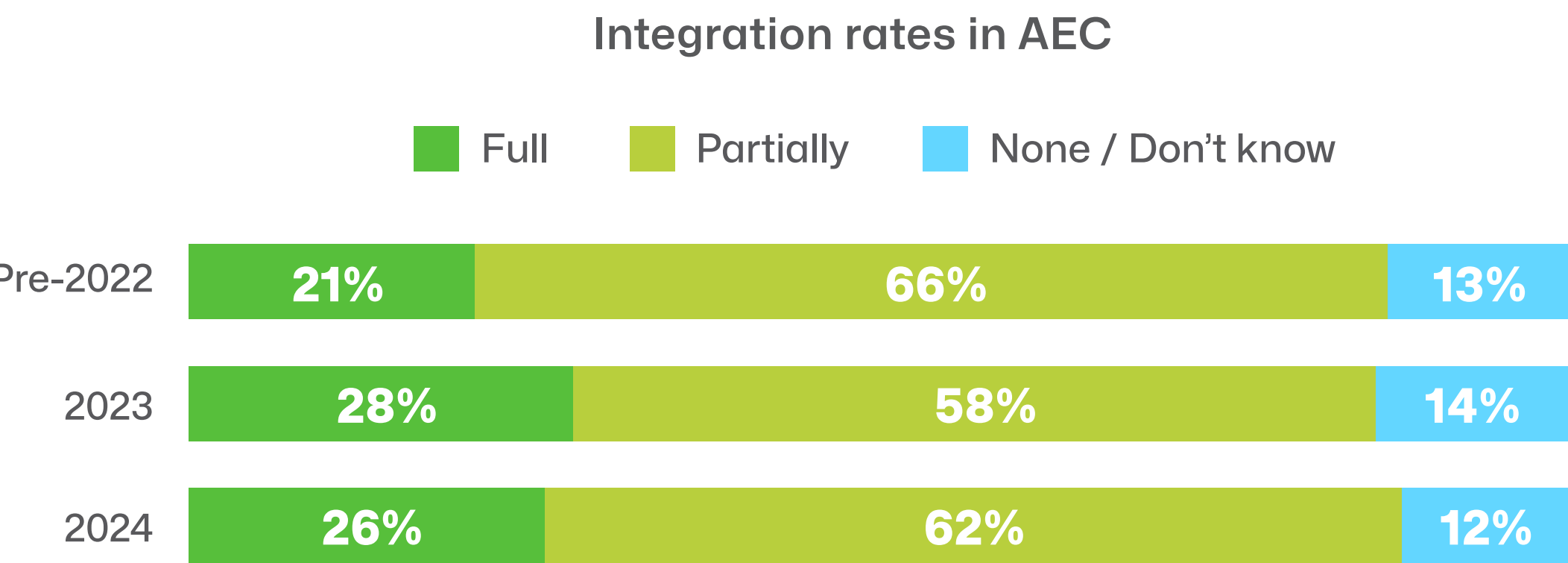
To gain sustainable operational efficiencies and scale growth with tech, firms must continue to opt for cloud-hosted, purposefully architected solutions that fulfill their criteria for automation, scalability, and integration.
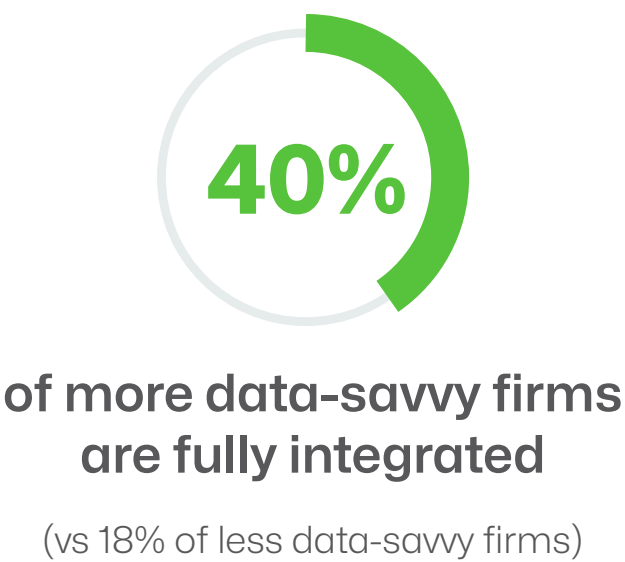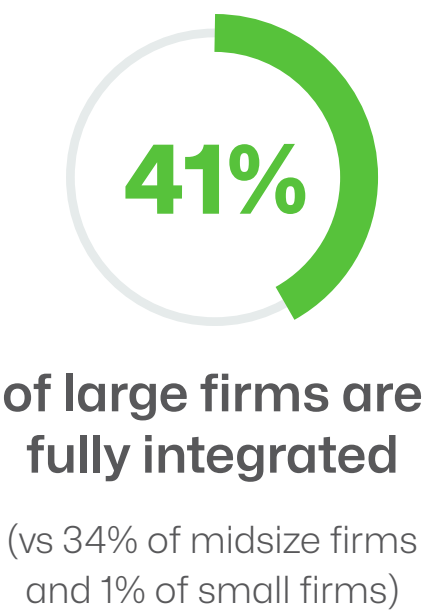
Integration practices

The goal of integration is to increase efficiency, minimize complexities, and improve data accessibility and cohesion. Integration can be achieved either by choosing software with pre-built integration capabilities, or through custom APIs and middleware solutions to allow data to flow between systems.

The rates of integration did not significantly change between 2023 and 2024. This, combined with high overall rates of integration—88% of firms being at least partially integrated, 26% being fully integrated—suggests that integration has been a fairly important priority in recent years.

Integration rates in AEC

■ Full ■ Partially ■ None / Don't know

	Full	Partially	None / Don't know
Pre-2022	21%	66%	13%
2023	28%	58%	14%
2024	26%	62%	12%

This finding holds true across the board.

41%

of large firms are fully integrated

(vs 34% of midsize firms and 1% of small firms)

40%

of more data-savvy firms are fully integrated

(vs 18% of less data-savvy firms)

Data-savvy and AI-mature companies are much more likely to have fully integrated technology systems and applications. This is not especially surprising. The relationship between integration, AI maturity and data mastery is highly interdependent. Effective AI use relies on having accurate, meaningful and complete data—which integration facilitates. A well-integrated tech stack improves data accessibility, removes data silos and transfers data between systems seamlessly without needing human intervention or risking human error.

As such, integration practices are crucial for unlocking key efficiencies and supporting data-driven decisions. When data flows freely throughout the organization, decision-makers can be more agile and proactive, resulting in improved strategic planning, process optimization, and risk management practices.

AI Maturity

Though the roots of artificial intelligence go back decades, the popularity of AI has exploded in recent years, and justly so. Never has AI been so accessible, so user-friendly, and so prevalent in public discourse.
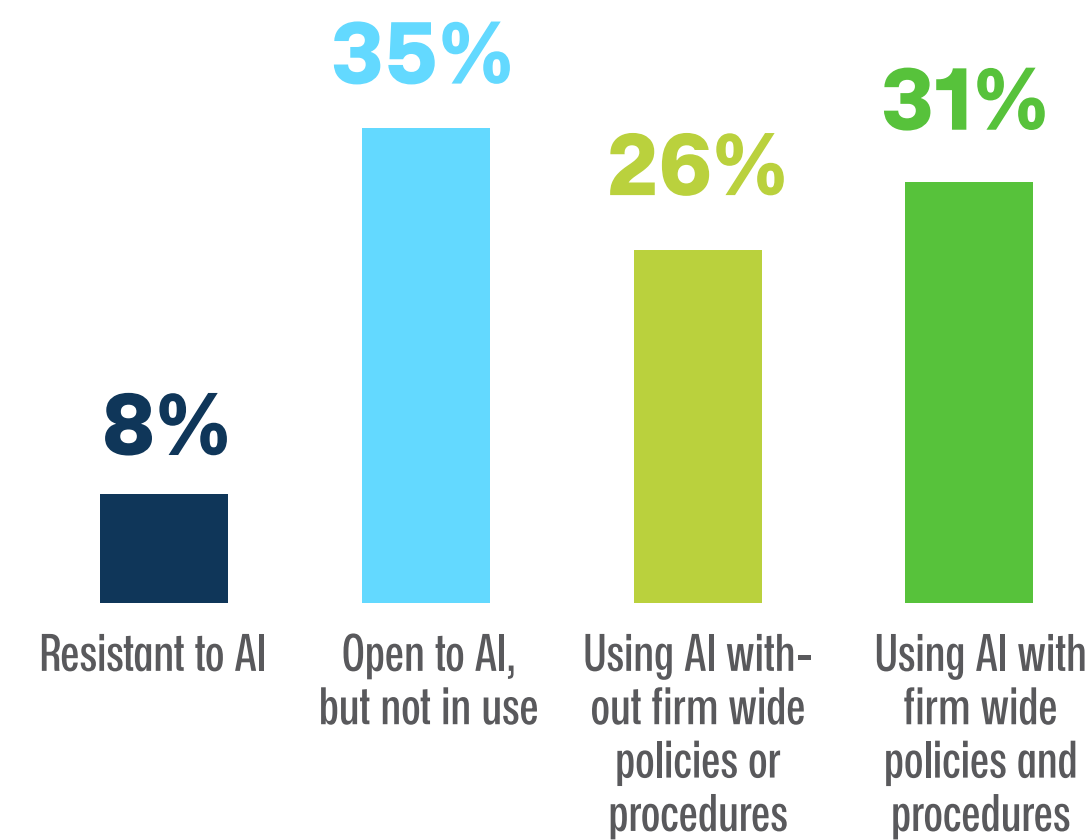
Generative AI–popularly used to create images and content–likely springs to mind first. There are, however, many different types of AI, from natural language processing to deep learning; many offer powerful data-related capabilities like gathering information for proposals and predicting project outcomes.

Though this report did not attempt to distinguish between types of AIs used by respondents, the findings are nevertheless illuminating.

Over half of respondents say they are using AI in their organization. One third are open to AI but not using it. Very few are resistant to AI.

AEC attitudes towards AI technology

- **8%** Resistant to AI
- **35%** Open to AI, but not in use
- **26%** Using AI without firm wide policies or procedures
- **31%** Using AI with firm wide policies and procedures

Respondents either use or plan to use AI across a variety of business areas, suggesting a mix of generative, computational and perhaps even predictive capabilities.

Current and future AI usage plans by business area

Legend: ■ Use today ■ Plan to use ■ No specific plans

Business area	Use today	Plan to use	No specific plans
Operations and IT	42%	30%	28%
Business development and marketing	42%	34%	24%
Project teams	39%	33%	28%
Finance and accounting	38%	26%	36%
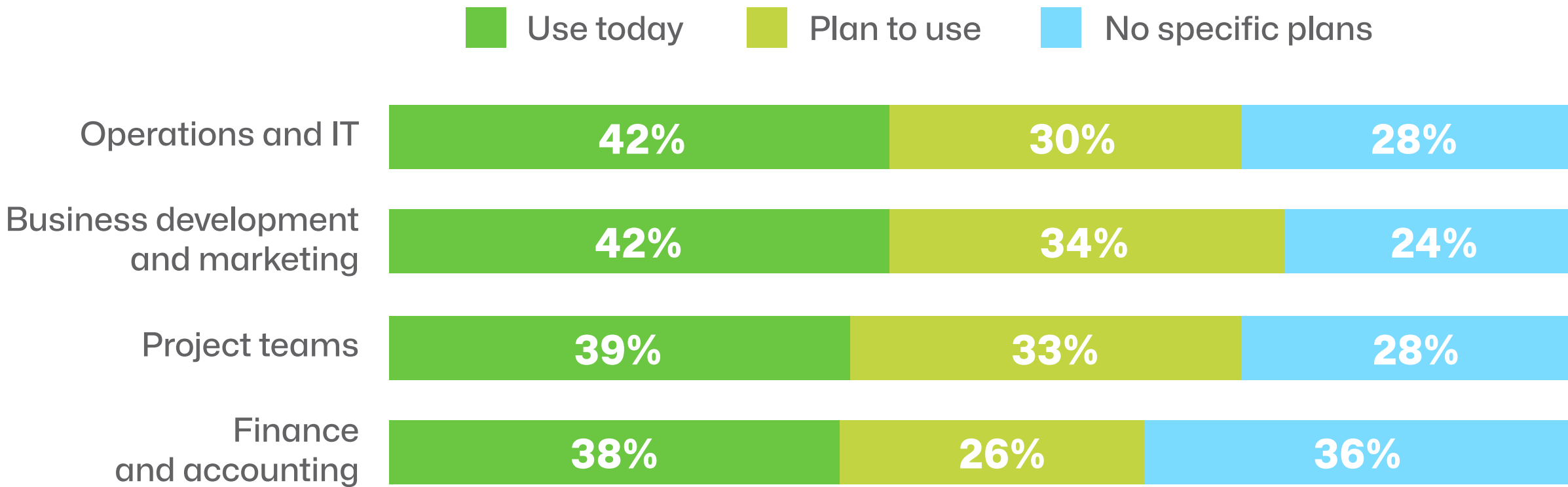
Small companies are less likely to be using AI, but most are open to it.

Attitudes of small firms towards AI

- **63%** Open to AI, but not in use
- **22%** Using AI without firm wide policies or procedures
- **10%** Resistant to AI
- **5%** Using AI with firm wide policies and procedures
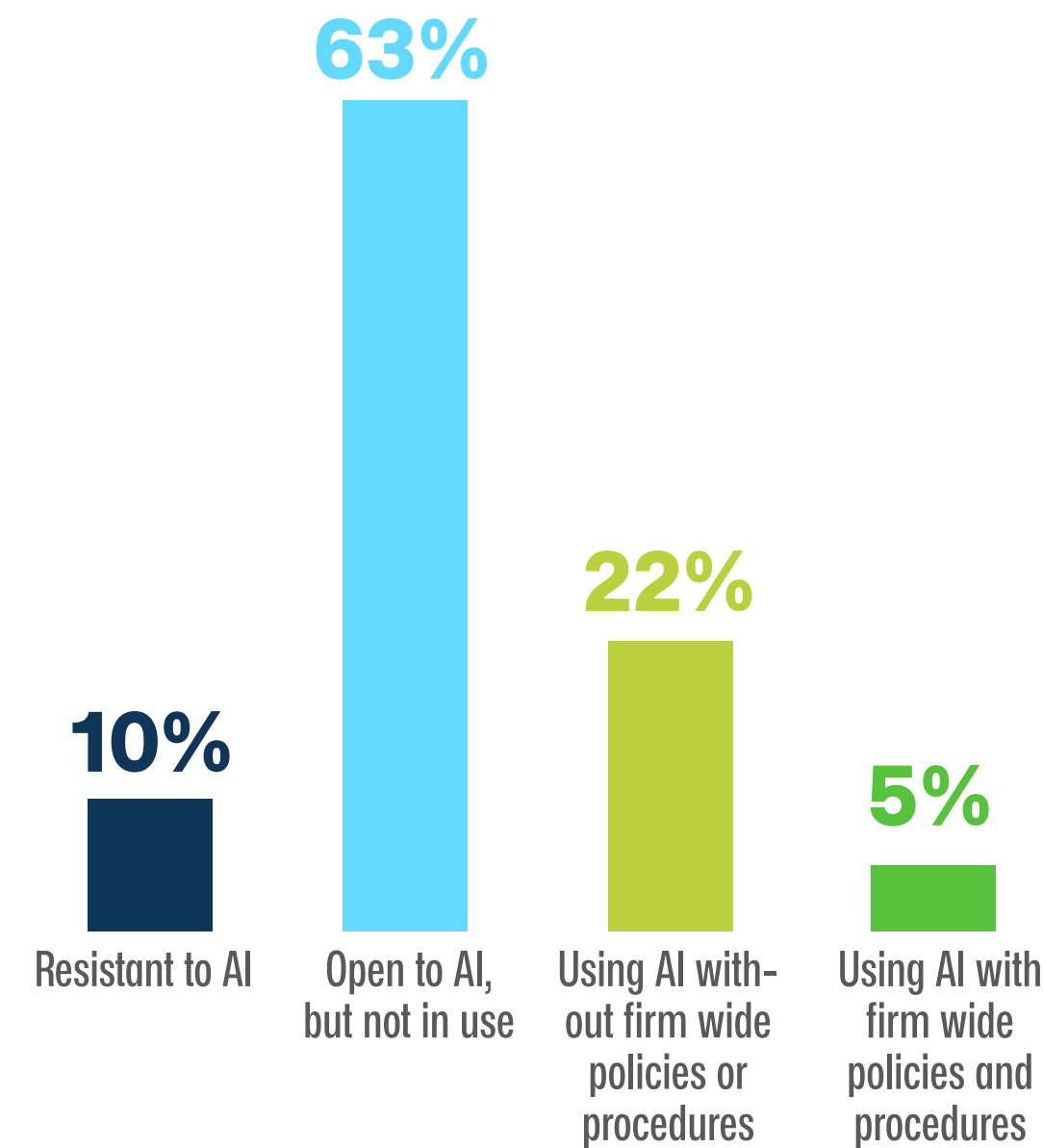
Architecture firms more frequently report resistance to AI, while construction firms are about twice as likely to have fully adopted AI usage with formal organizational governance for AI usage than their counterparts in architecture and engineering.

41%
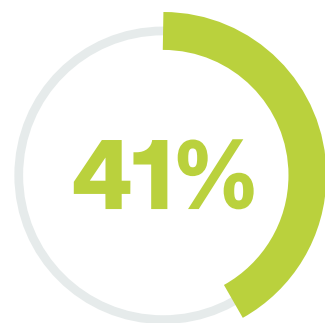
of construction firms are using AI with policies in place

(vs 18% of architecture firms and 23% of engineering firms)

13%

of architecture firms are resistant to using AI technology

(vs 7% of engineering firms and 5% of construction firms)

Unsurprisingly, construction firms also more often think AI will have a positive impact on their business.

Perceived benefit of AI on business activities

- ■ Architecture
- ■ Engineering
- ■ Construction

Content generation
- 22%
- 31%
- 46%

Data analysis
- 30%
- 33%
- 37%

Operational efficiency
- 22%
- 23%
- 48%

Predictive analysis
- 29%
- 24%
- 35%

Project delivery
- 18%
- 20%
- 36%
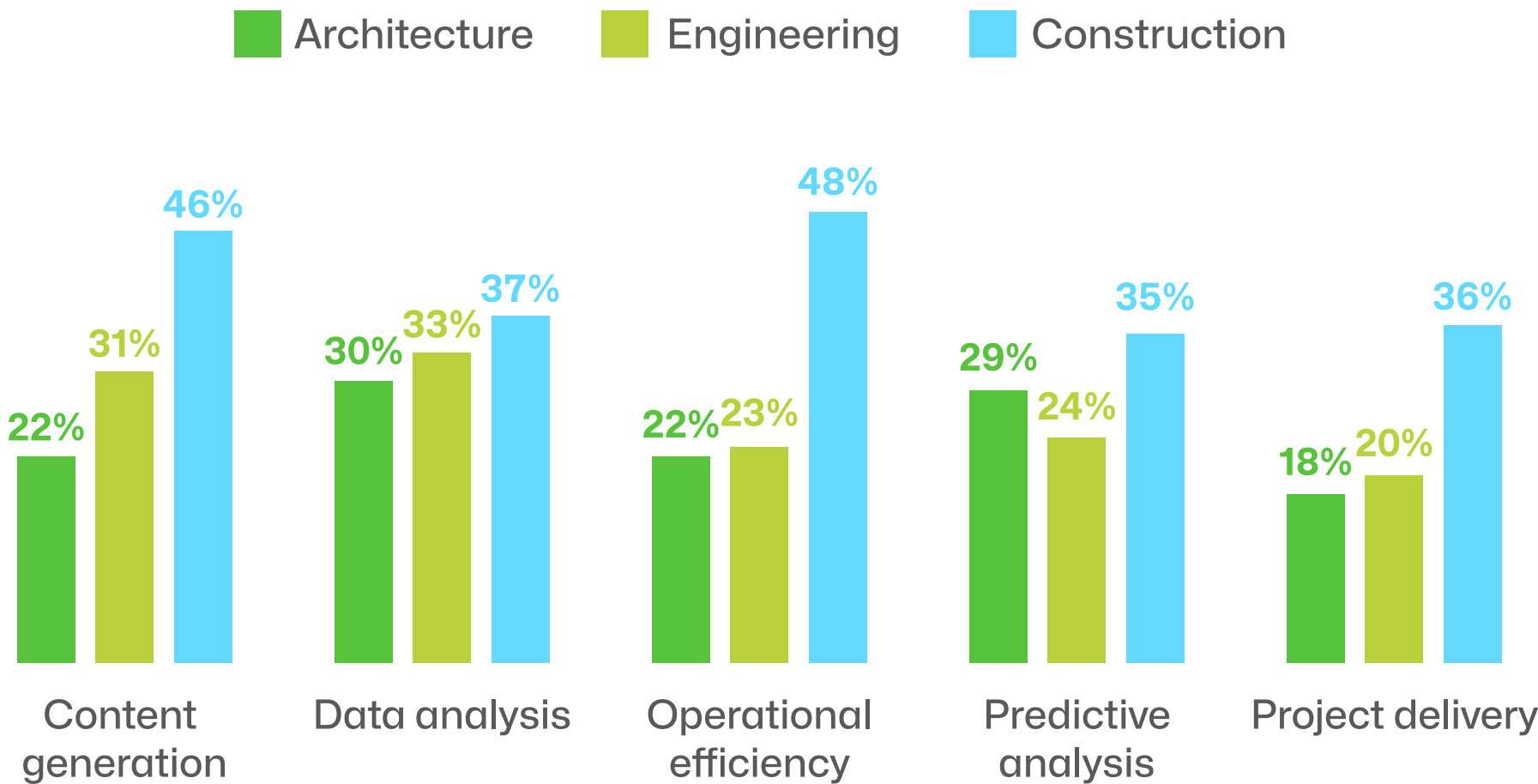
Charting business health through tracking and forecasting

Forecasting is one of the most important activities in AEC. It is also one of the biggest challenges for accounting and project management teams. The good news is that forecasting is mentioned less often as a project management challenge now than in 2023.

Percentage of firms that see forecasting as a top industry challenge

Legend: ■ Pre-2022 ■ 2023 ■ 2024

Forecasting (e.g., project costs, schedule, resources)
- Pre-2022: **57%**
- 2023: **52%**
- 2024: **42%**

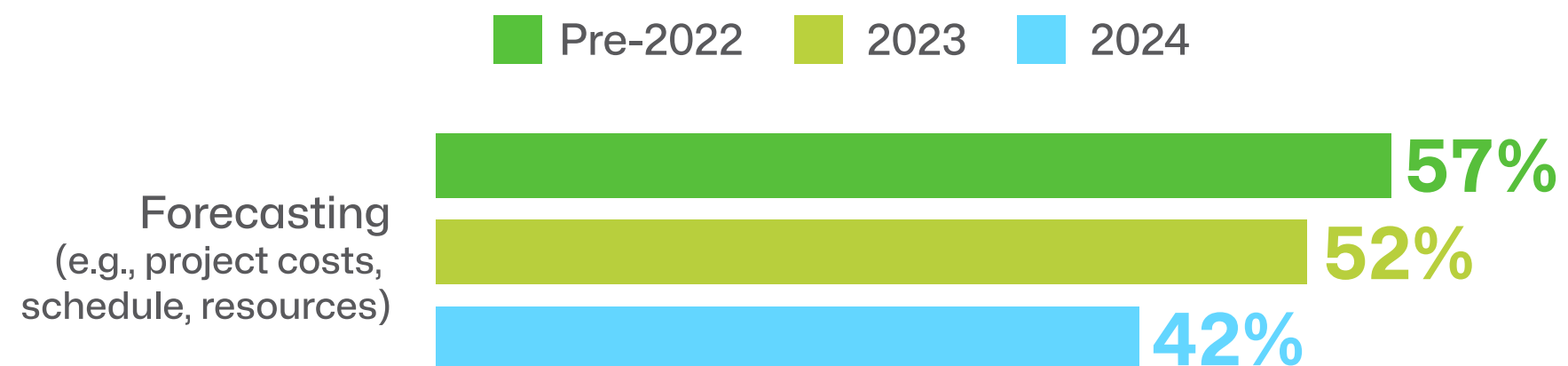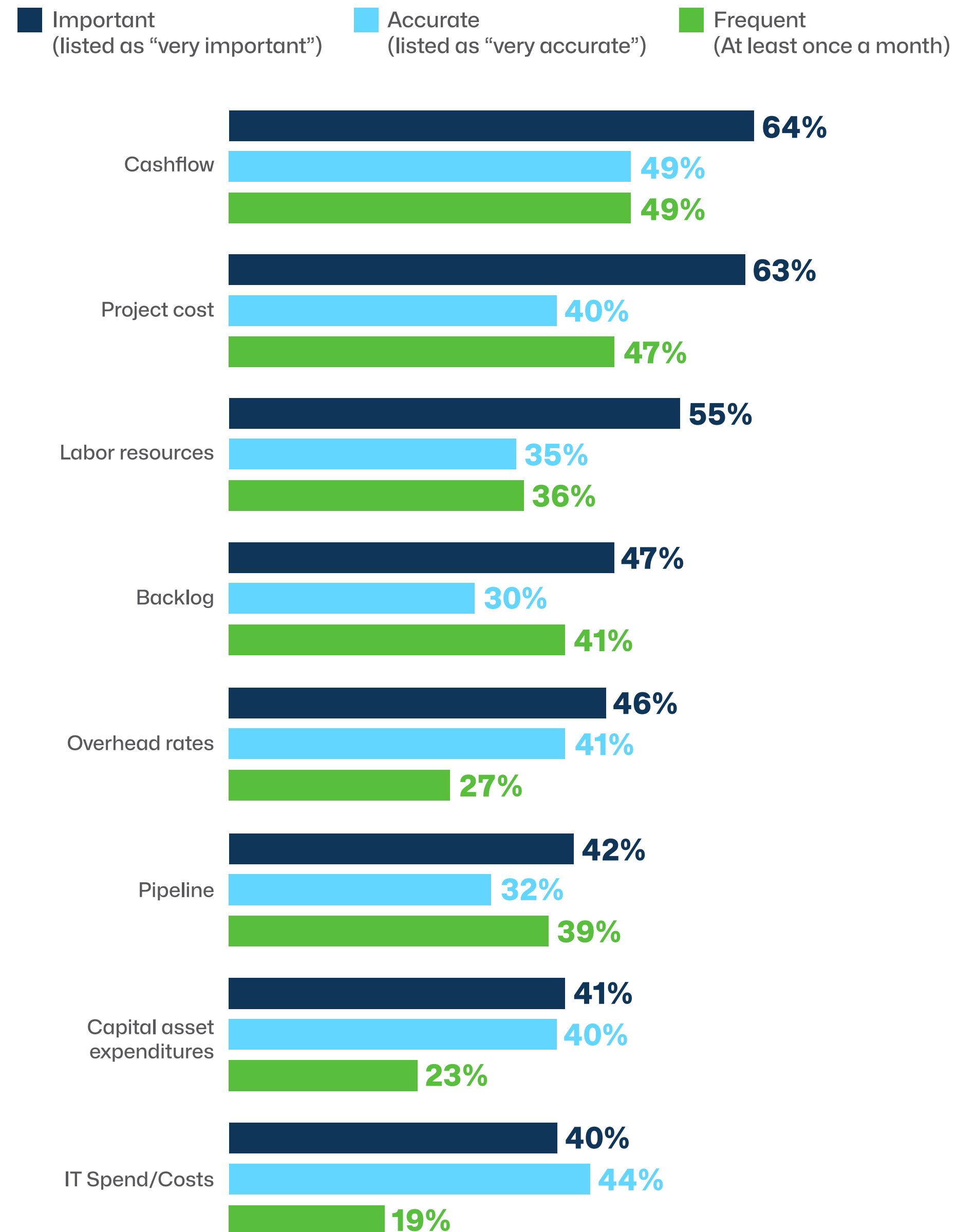Forecasting can be evaluated along three axes: **importance, frequency,** and **accuracy.** It is important to note that a forecast's perceived importance, frequency, and accuracy do not always correlate.

Most important forecasts in AEC

Legend:
- ■ Important (listed as "very important")
- ■ Accurate (listed as "very accurate")
- ■ Frequent (At least once a month)

Cashflow
- Important: 64%
- Accurate: 49%
- Frequent: 49%

Project cost
- Important: 63%
- Accurate: 40%
- Frequent: 47%

Labor resources
- Important: 55%
- Accurate: 35%
- Frequent: 36%

Backlog
- Important: 47%
- Accurate: 30%
- Frequent: 41%

Overhead rates
- Important: 46%
- Accurate: 41%
- Frequent: 27%

Pipeline
- Important: 42%
- Accurate: 32%
- Frequent: 39%

Capital asset expenditures
- Important: 41%
- Accurate: 40%
- Frequent: 23%

IT Spend/Costs
- Important: 40%
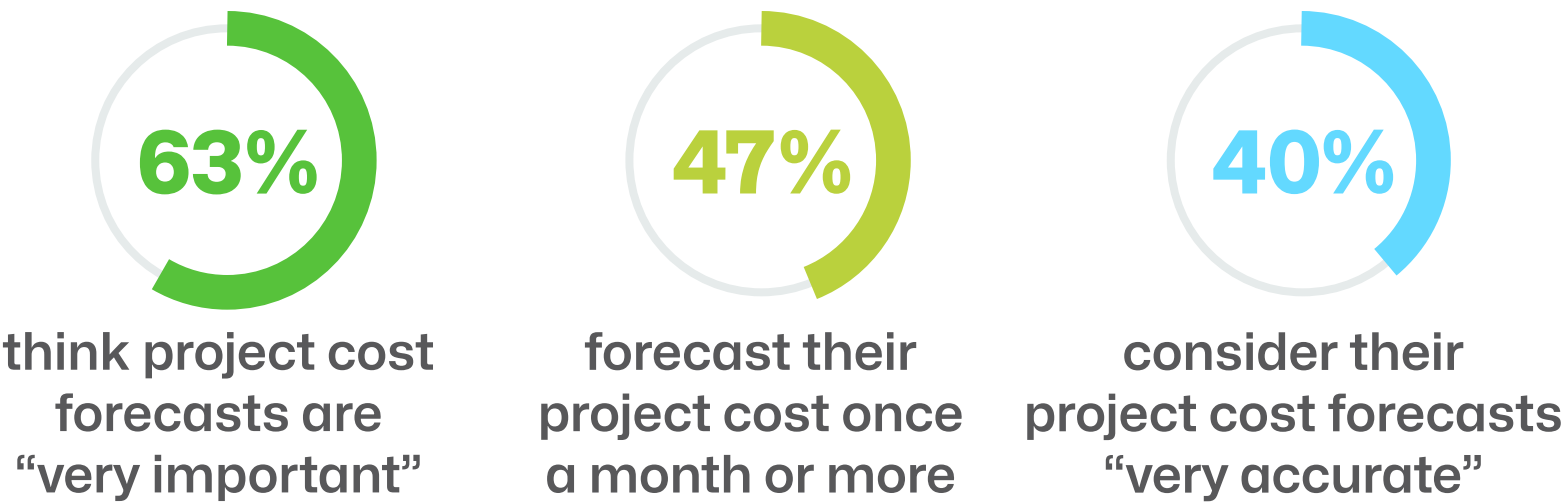- Accurate: 44%
- Frequent: 19%

The two most important metrics, cashflow and project cost, are the forecasts both most frequently perceived as accurate and most frequently performed, regardless of respondents' industry, company size or tech maturity.

It is startling, however, that less than half of AEC businesses consider these important forecasts to be "very accurate," but this trend echoes the similarly lackluster rate of firms' confidence in the overall accuracy of their data. If firms cannot trust their data to begin with, it stands to reason that they likewise cannot trust their forecasts.

Cashflow: importance, frequency, accuracy

64%
think cashflow forecasts are "very important"

49%
forecast their cashflow once a month or more

49%
consider their cashflow forecasts "very accurate"

Project cost: importance, frequency, accuracy

63%
think project cost forecasts are "very important"

47%
forecast their project cost once a month or more

40%
consider their project cost forecasts "very accurate"

Labor resource forecasting

55%
think labor resources forecasts are "very important"

36%
forecast their labor resources monthly or more

35%
consider their labor resources forecasts "very accurate"

62%
use Excel to forecast labor resources

This becomes a critical factor when considering labor resources: a forecast deemed "very important" by 55% of respondents, yet infrequently performed and rarely considered very accurate. Little wonder, considering that Excel is the tool most used to forecast labor resources; its manual nature introduces delays to data collection, risks to data accuracy, and precludes any robust real-time analysis.

Without the ability to accurately forecast labor needs, firms are liable to find themselves at a disadvantage when pursuing strategic hires and new business, especially given that one-third of firms cite resourcing and retention as a top business concern.
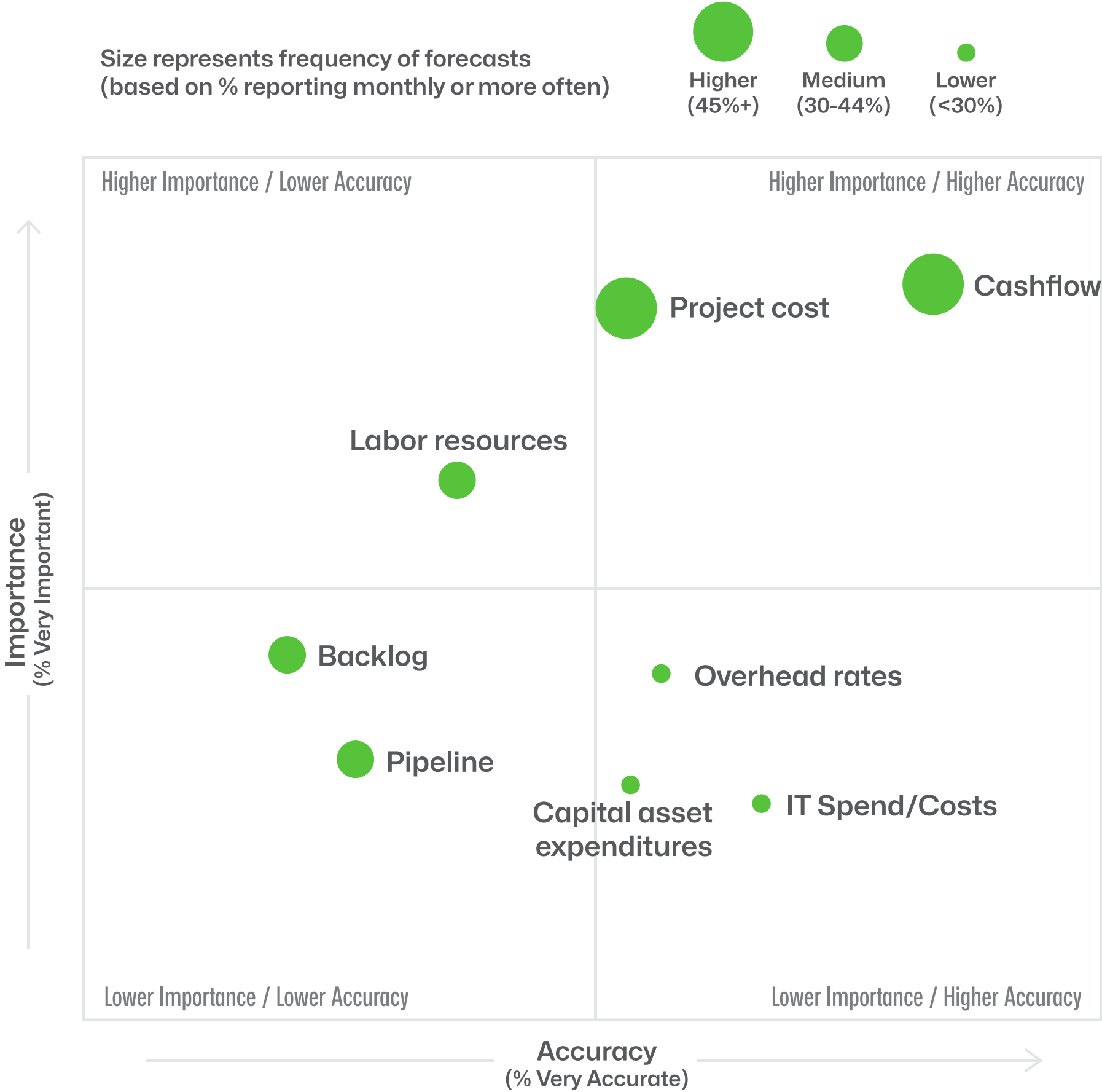
Examining the priorities of small firms against those of midsize or large firms reveals a clear difference in perspective. Smaller firms' focus on operational metrics like cashflow and project cost indicates close monitoring of the day-to-day and its concerns: maintaining liquidity, sustaining business operations in the near future.

Midsize and larger firms, on the other hand, more frequently prioritize capital asset expenditures and IT spend forecasts, connoting a more strategic mindset and longer planning horizons.

The AEC industry largely follows the small-firm mindset, where the daily blocking and tackling of business supersedes more strategic long-term planning. But to effectively plan for future growth, firms must both maintain rigor in their most reliable metrics and improve accuracy in areas like pipeline, backlog, and strategic expenditures.

	Frequency of forecasting (% monthly or more)		Importance of forecasting (% very important)	
	Small	Combined (M + L)	Small	Combined (M + L)
Cashflow	69%	40%	70%	62%
Project cost	62%	41%	76%	57%
Backlog	59%	33%	55%	43%
Pipeline	55%	31%	54%	38%
Labor resources	45%	32%	63%	52%
Overhead rates	20%	30%	46%	46%
Capital asset expenditures	11%	29%	30%	45%
IT Spend/Costs	9%	23%	29%	44%

Importance, frequency, and accuracy of key metrics

Size represents frequency of forecasts (based on % reporting monthly or more often)

Higher (45%+) Medium (30-44%) Lower (<30%)

Higher Importance / Lower Accuracy
Higher Importance / Higher Accuracy

Project cost
Cashflow

Labor resources

Importance (% Very Important)

Backlog
Overhead rates

Pipeline

Capital asset expenditures
IT Spend/Costs

Lower Importance / Lower Accuracy
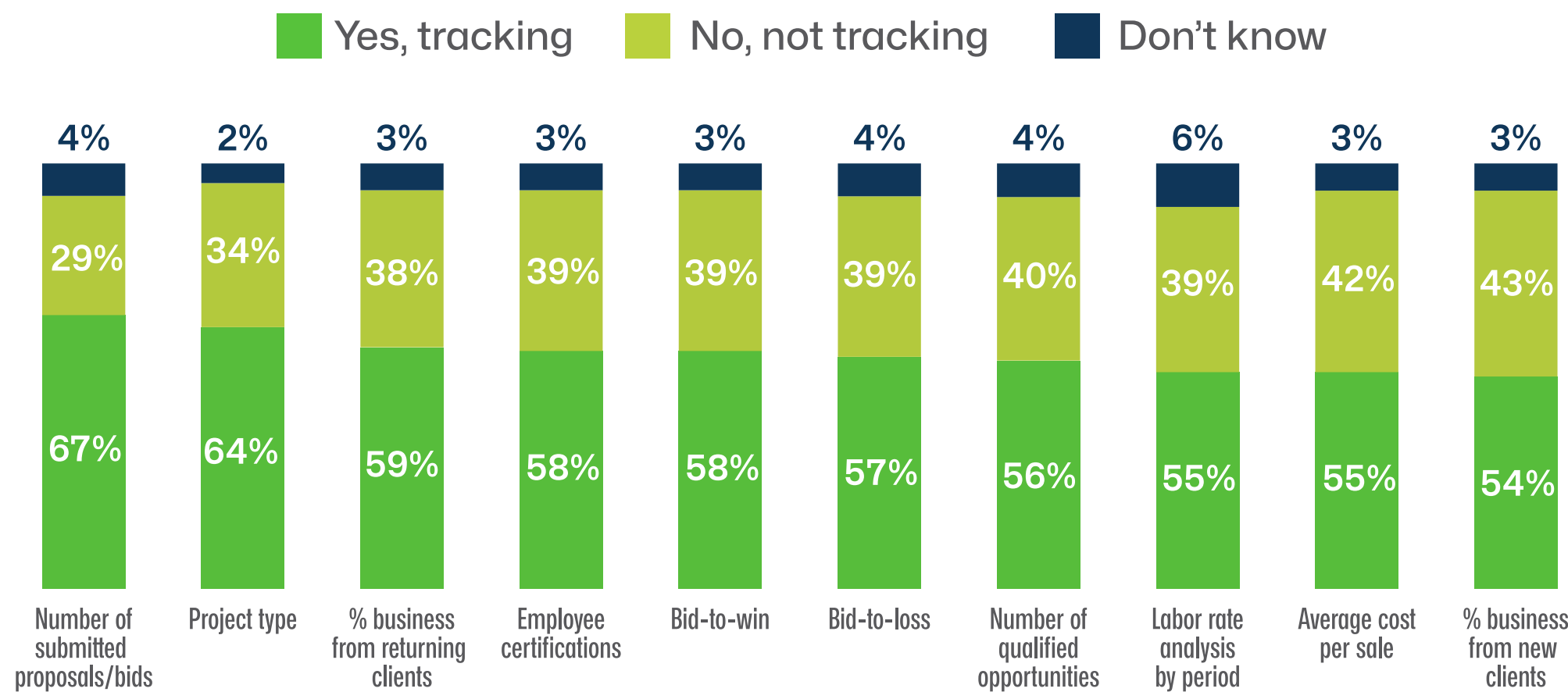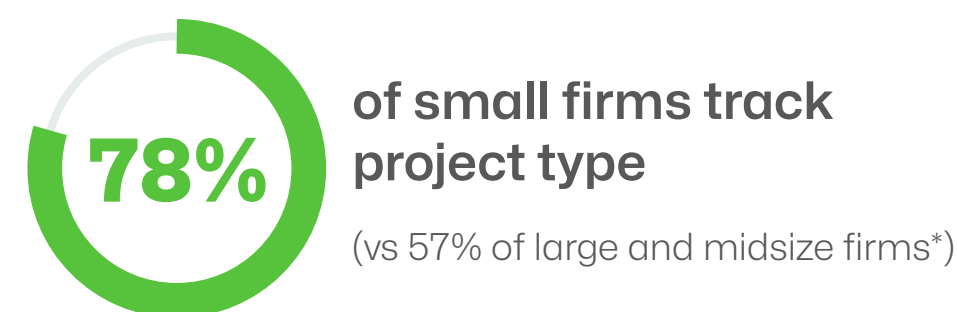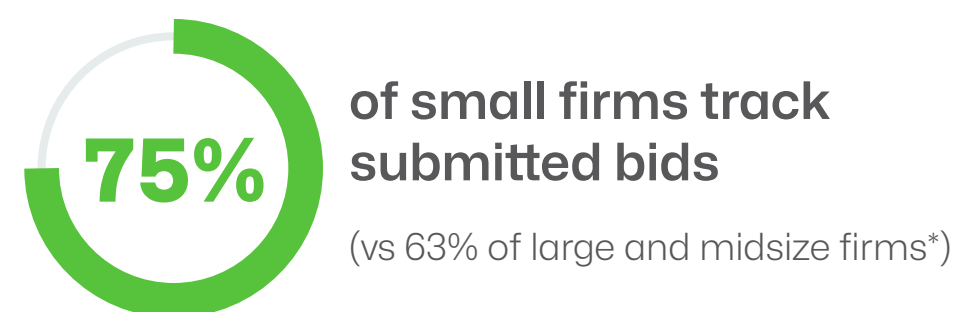Lower Importance / Higher Accuracy

Accuracy (% Very Accurate)

Business development

When looking at the types of metrics that respondents are either currently tracking or want to track in the future, several interesting insights emerge. Right away, firms' business development tracking behaviors reveal obvious room for improvement: most metrics are not even being measured by many firms.

Sales and pipeline metrics tracking in AEC
(Top 10 shown)

Legend:
- **Yes, tracking** (green)
- **No, not tracking** (light green)
- **Don't know** (dark blue)

Metric	Don't know	No, not tracking	Yes, tracking
Number of submitted proposals/bids	4%	29%	67%
Project type	2%	34%	64%
% business from returning clients	3%	38%	59%
Employee certifications	3%	39%	58%
Bid-to-win	3%	39%	58%
Bid-to-loss	4%	39%	57%
Number of qualified opportunities	4%	40%	56%
Labor rate analysis by period	6%	39%	55%
Average cost per sale	3%	42%	55%
% business from new clients	3%	43%	54%

The two most frequently tracked metrics, bids submitted and project type, are foundational to operations and strategic planning. The number of proposals submitted allows firms to calculate important growth indicators like win rate and capture rate. Project type data helps inform market strategy—small firms are especially keen on tracking project type to identify growing sectors for expansion and diversification.
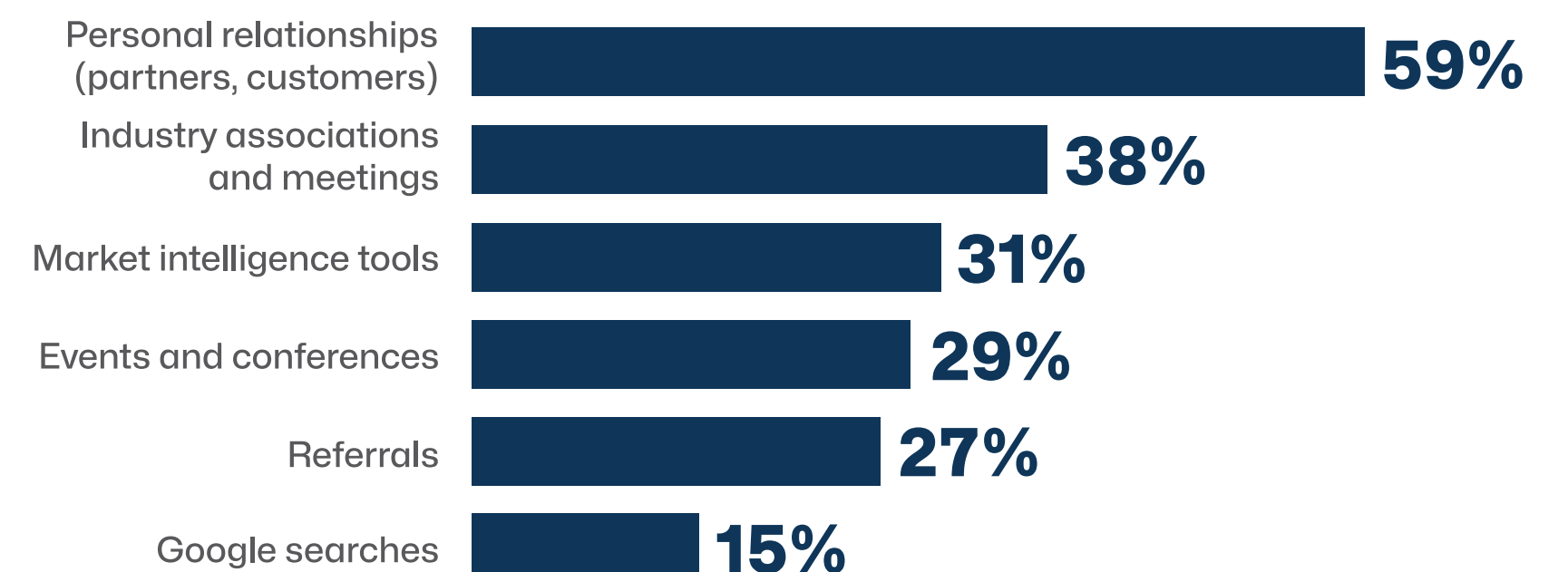
75% of small firms track submitted bids
(vs 63% of large and midsize firms*)

78% of small firms track project type
(vs 57% of large and midsize firms*)

*weighted percentage

Skill set utilization (not pictured) is the least frequently tracked metric, but has the highest level of interest—a clear illustration of the growing anxiety about recruiting and retention. Likely, firms are interested in both understanding the capabilities of their current workforce as well as revealing and addressing any possible skills gaps.

37% of respondents want to track skill set utilization but don't

33% of respondents list recruiting and retention as a top concern

There are a number of additional business development KPIs that firms are not tracking, but want to (not pictured). Notably, firms are eager to achieve more detailed pipeline views by tracking capture stage and new prospect conversions. Client satisfaction is another coveted metric—justifiably so, given that AEC remains a primarily relationship-based economy, and the top method of finding new opportunities is through personal relationships.
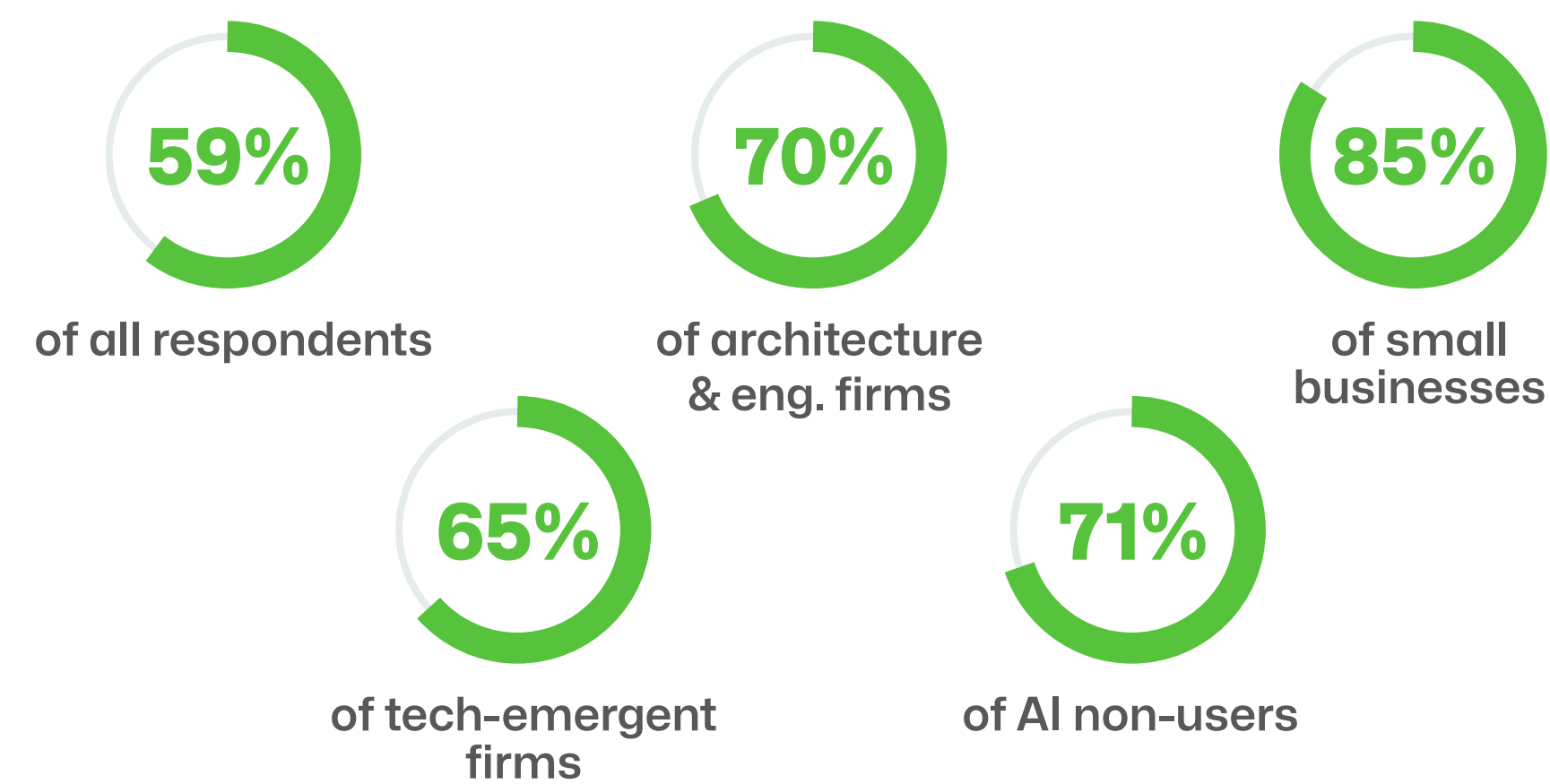
Top approaches for new opportunities

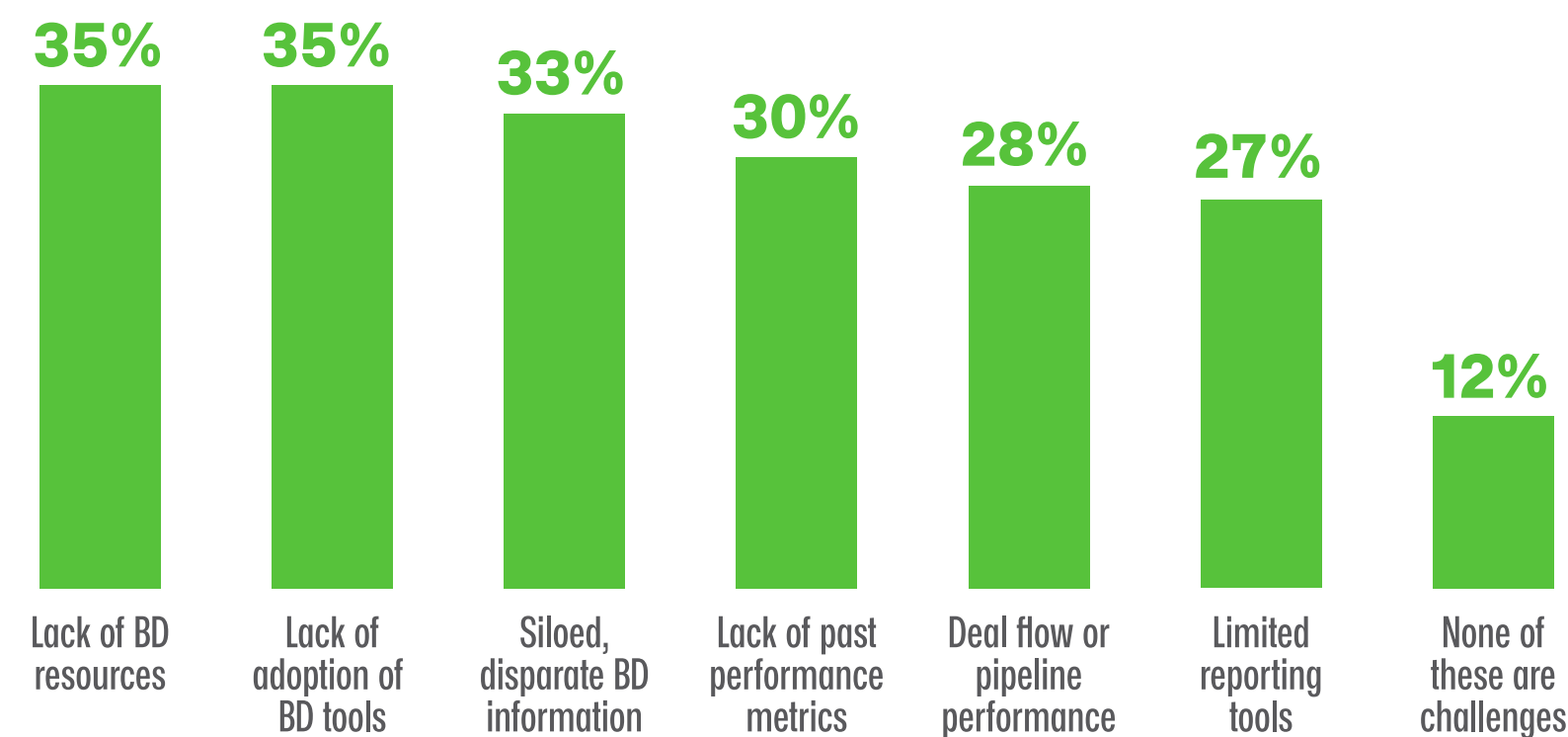| Approach	%
Personal relationships (partners, customers)	59%
Industry associations and meetings	38%
Market intelligence tools	31%
Events and conferences	29%
Referrals	27%
Google searches	15%

Firms in architecture or engineering, smaller businesses, and those with lower tech and AI maturity are all particularly likely to depend on personal relationships to secure new business.

Reliance on personal relationships to find new opportunities

59%
of all respondents

70%
of architecture & eng. firms

85%
of small businesses

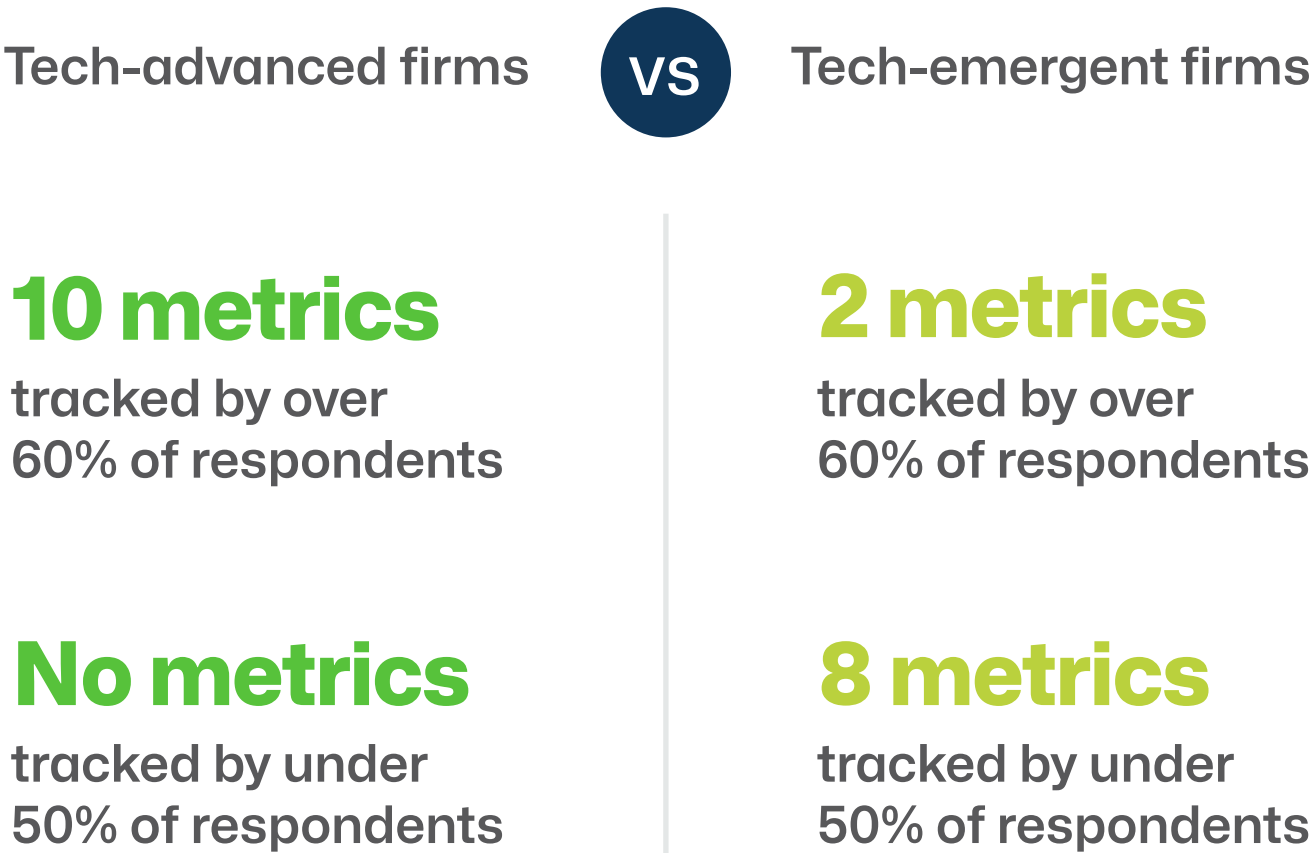**65%**
of tech-emergent firms

71%
of AI non-users

The biggest business development challenges more or less correspond with these observed behaviors. Roughly one third of respondents struggle with insufficient business development resources, low adoption of business development tools, and data silos.

Biggest business development challenges

35%	35%	33%	30%	28%	27%	12%
Lack of BD resources	Lack of adoption of BD tools	Siloed, disparate BD information	Lack of past performance metrics	Deal flow or pipeline performance	Limited reporting tools	None of these are challenges

Clearly, understaffed business development teams need to find ways to do more with less. Fortunately, these obstacles can be addressed with tech improvements. The positive impact of tech maturity is evident in the benchmarking practices of tech-advanced firms. These more data-oriented, better integrated firms boast a clear edge in visibility.

Business development insights by tech maturity

Tech-advanced firms **VS** Tech-emergent firms

10 metrics
tracked by over 60% of respondents

2 metrics
tracked by over 60% of respondents

No metrics
tracked by under 50% of respondents

8 metrics
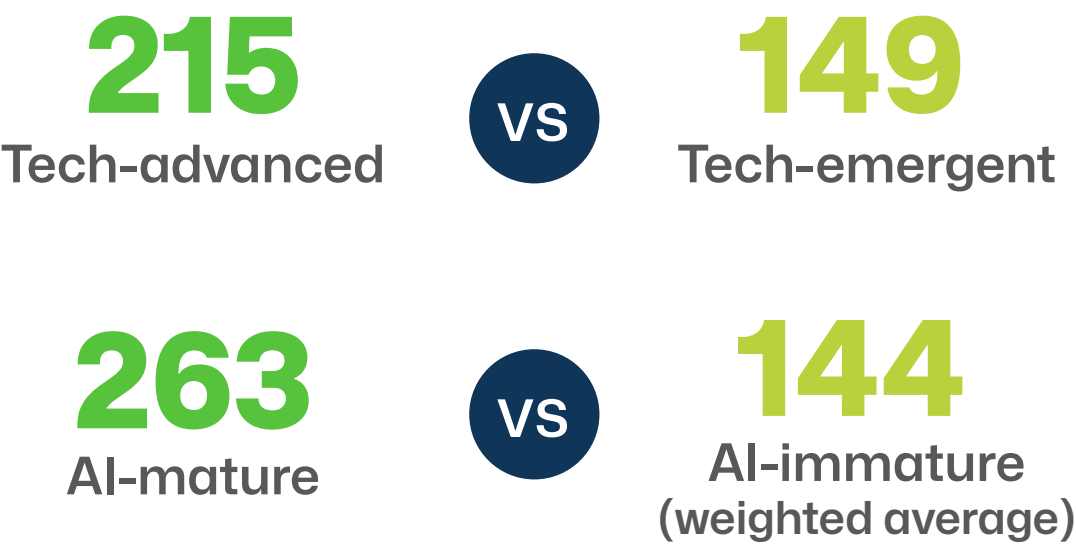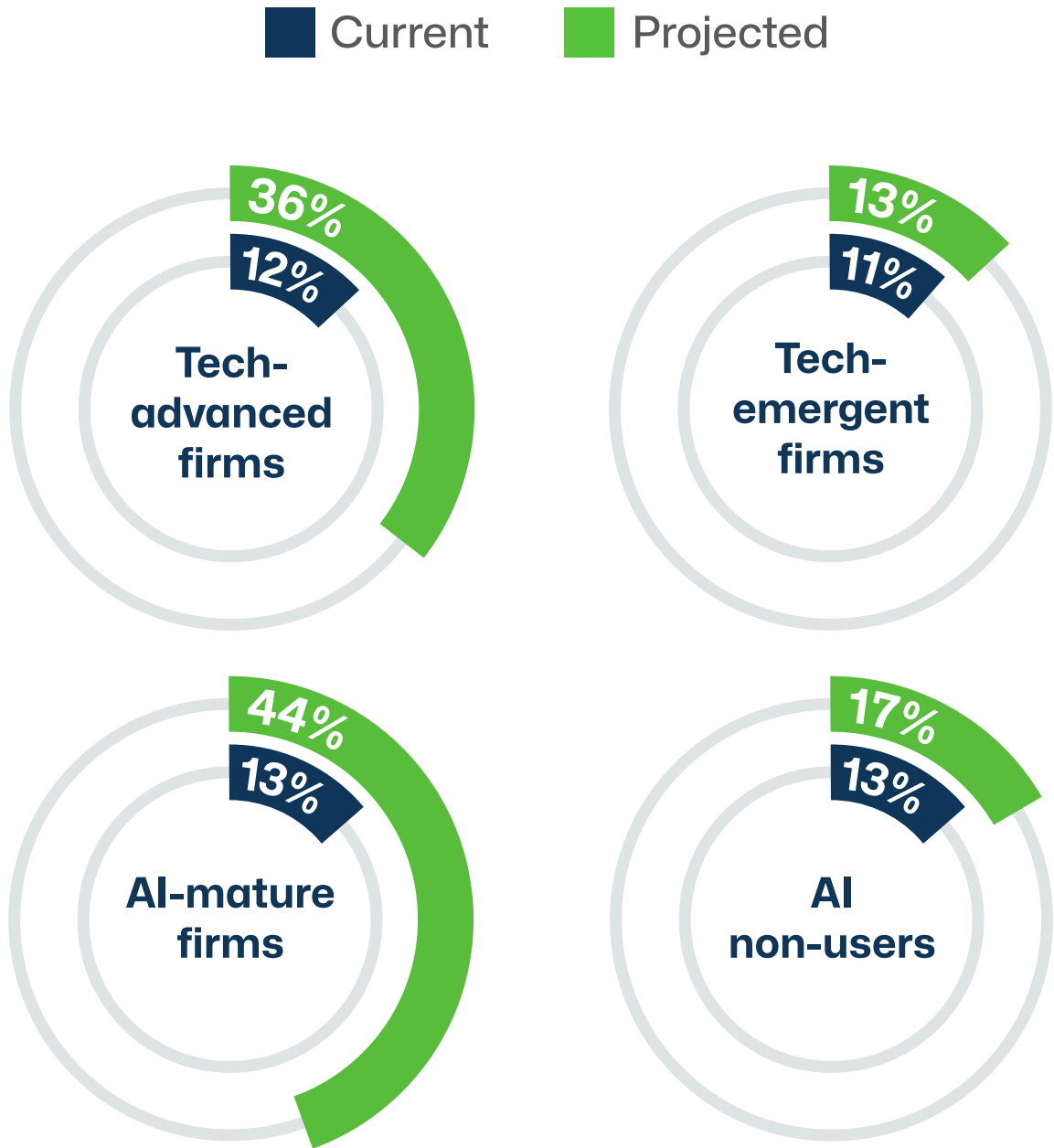tracked by under 50% of respondents

Also noteworthy is how many proposals tech-advanced and especially AI-mature firms average against their more laggard counterparts.

Average number of submitted proposals

215
Tech-advanced

VS

149
Tech-emergent

263
AI-mature

VS

144
AI-immature
(weighted average)

Similarly, although most respondents win between half and three-quarters of submitted bids, tech-advanced and AI-mature firms both win more and project higher win rates in the future.

Firms with win rates over 75%

■ Current ■ Projected

36%
12%
Tech-advanced firms

13%
11%
Tech-emergent firms

44%
13%
AI-mature firms

17%
13%
AI non-users

To enhance win rates, address resource gaps and bolster less-than-optimal benchmarking, firms must continue to invest in data governance, integration practices, and spending on adoptable tools. With greater visibility, firms can foster more robust business development practices, enhance relationship management across the organization, discover and capture more of the right opportunities and maximize their success in the markets where they excel.
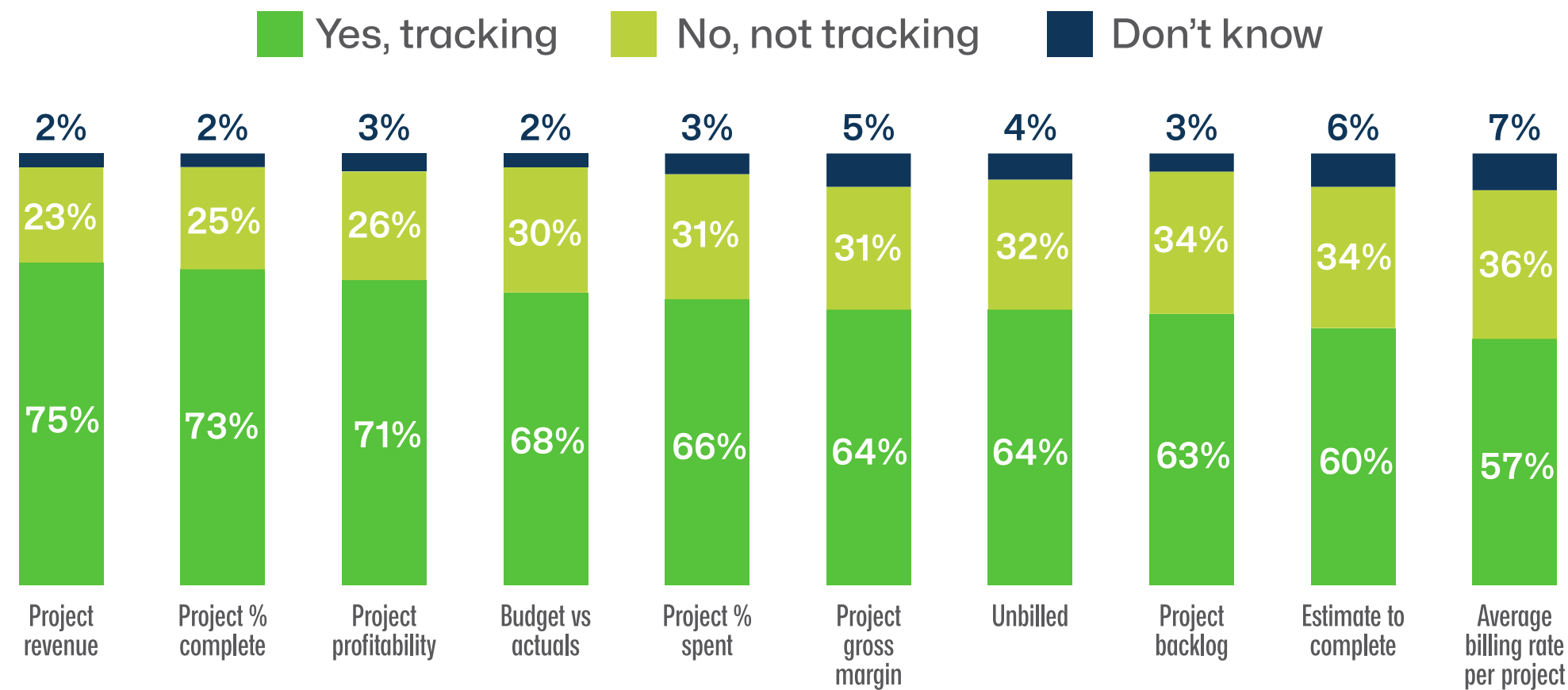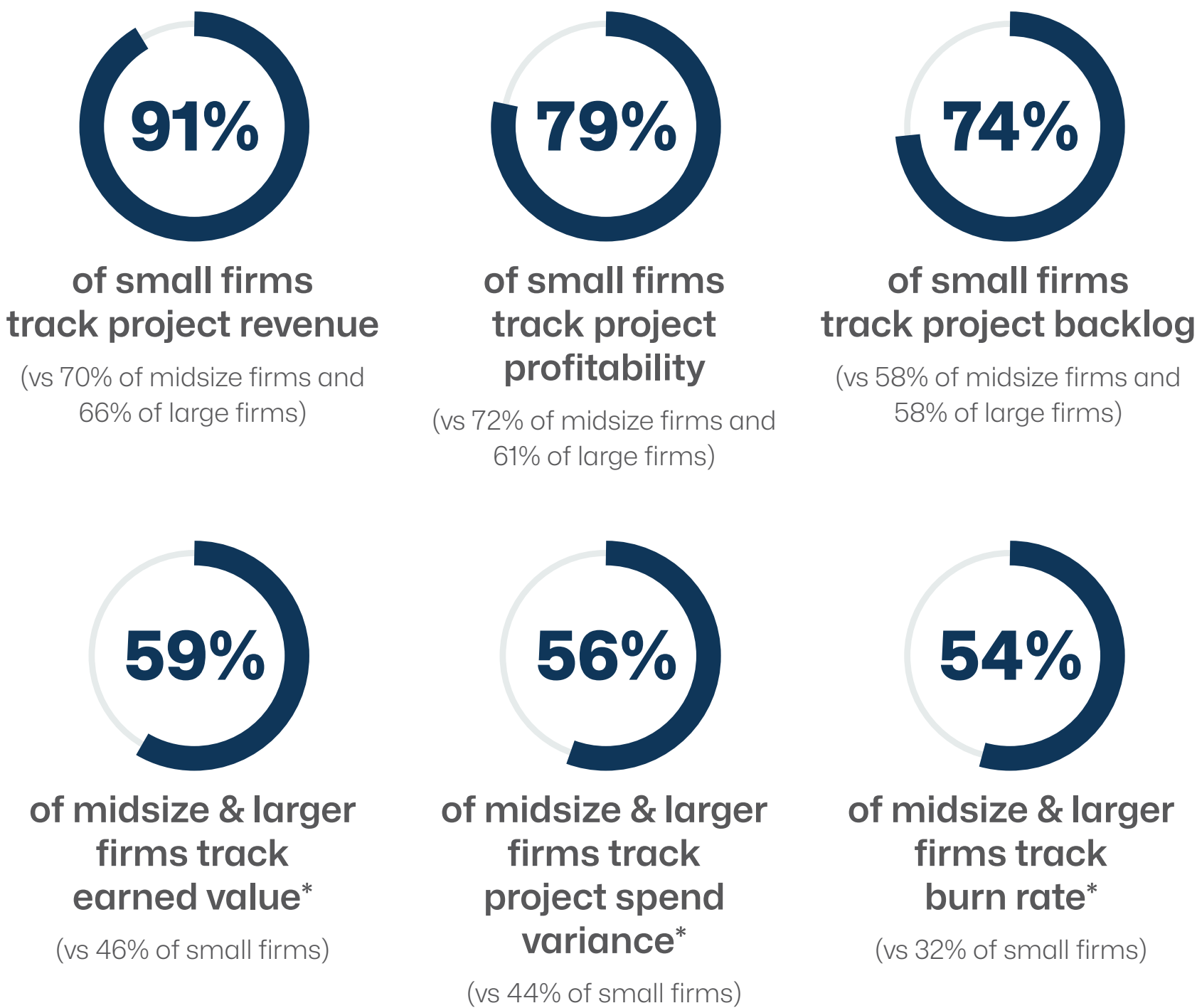
Project Management

The most commonly tracked project management metrics reveal a clear focus on overall financial stability. Firms are scrutinizing both top-line revenue and bottom-line profit to achieve a comprehensive overview of financial performance. The high levels of interest in variance metrics and project burn rates suggest concerns over project performance, resourcing, and earlier detection of problems to keep projects staffed and on track with quick intervention.

Project metrics tracking in AEC
(Top 10 shown)

Legend: ■ Yes, tracking ■ No, not tracking ■ Don't know

Metric	Don't know	No, not tracking	Yes, tracking
Project revenue	2%	23%	75%
Project % complete	2%	25%	73%
Project profitability	3%	26%	71%
Budget vs actuals	2%	30%	68%
Project % spent	3%	31%	66%
Project gross margin	5%	31%	64%
Unbilled	4%	32%	64%
Project backlog	3%	34%	63%
Estimate to complete	6%	34%	60%
Average billing rate per project	7%	36%	57%

Smaller firms are more likely to track project revenue, profitability, unbilled work, and project backlog, reflecting their need for close financial monitoring and heightened interest in cashflow indicators. Midsize and larger firms, conversely, are more likely to track average billing rate per project, earned value, project spend variance and burn rate. These last three metrics (included below), particularly, are telling barometers of risk, and especially valuable for firms handling larger, more complex projects that require tighter risk management.
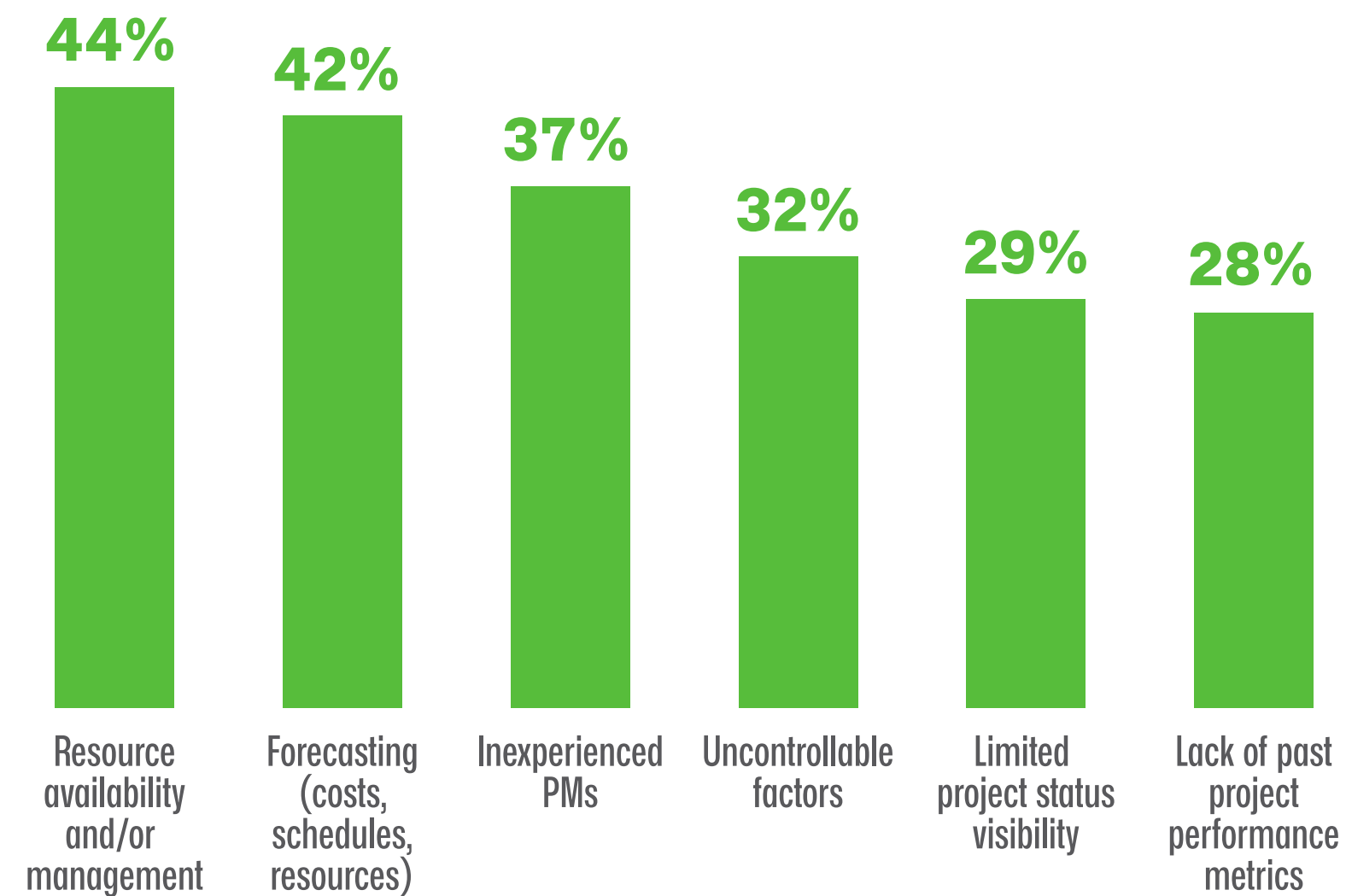
Project metrics tracking behavior by business size

91%
of small firms track project revenue
(vs 70% of midsize firms and 66% of large firms)

79%
of small firms track project profitability
(vs 72% of midsize firms and 61% of large firms)

74%
of small firms track project backlog
(vs 58% of midsize firms and 58% of large firms)

59%
of midsize & larger firms track earned value*
(vs 46% of small firms)

56%
of midsize & larger firms track project spend variance*
(vs 44% of small firms)

54%
of midsize & larger firms track burn rate*
(vs 32% of small firms)

*weighted average

Biggest project management challenges

| Challenge	Percentage
Resource availability and/or management	44%
Forecasting (costs, schedules, resources)	42%
Inexperienced PMs	37%
Uncontrollable factors	32%
Limited project status visibility	29%
Lack of past project performance metrics	28%

Firms of all sizes and levels of tech and AI maturity list resource management as their top project management challenges, and one in five firms consider their company's resource management practices to be immature.

Resource management maturity in AEC

- **Very mature** — 36%
- **Somewhat mature** — 44%
- **Somewhat immature** — 17%
- **Immature** — 3%
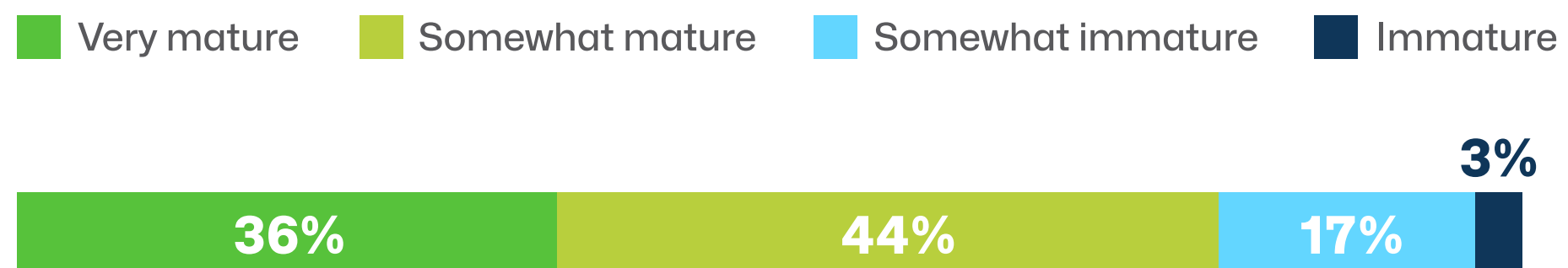
Data-savvy firms, however, are less likely to struggle with this issue, suggesting that data mastery supports better resource management practices.
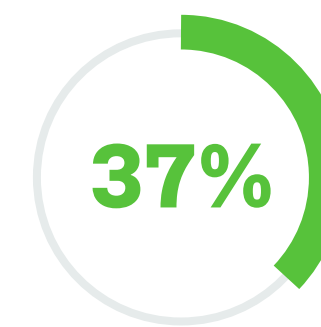
37% of data-savvy firms find resource management to be a challenge
(vs 48% of less data-savvy firms)

Similarly, firms with advanced data capabilities less frequently find project forecasting to be a challenge. This correlation is even more pronounced for fully AI-mature firms, highlighting the value of AI for project management forecasting.
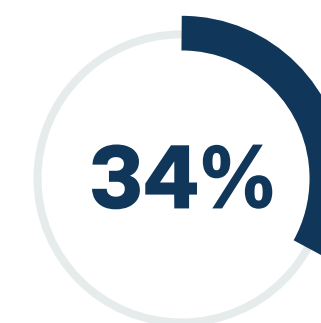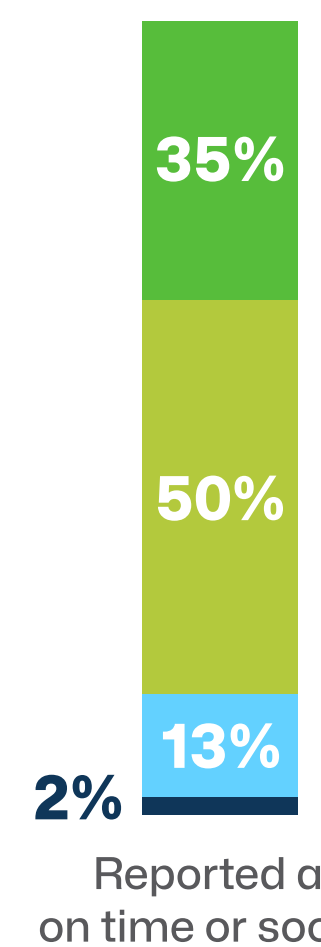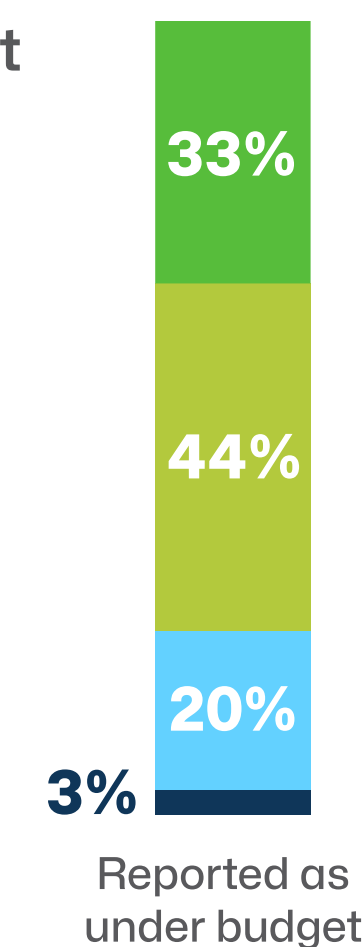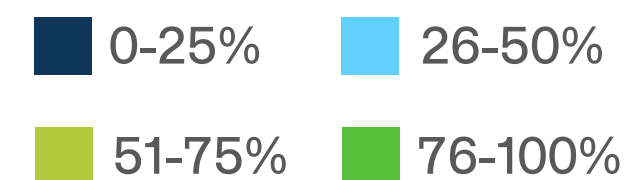
34% of data-savvy firms find forecasting to be a challenge
(vs 46% of less data-savvy firms)
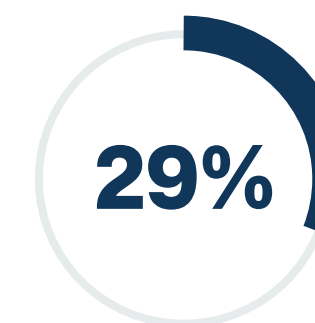
29% of AI-mature firms find forecasting to be a challenge
(vs 47% of AI-emergent firms)

Despite these challenges, most respondents indicate that at least half—if not most—of their projects are delivered either on or ahead of time and under budget.

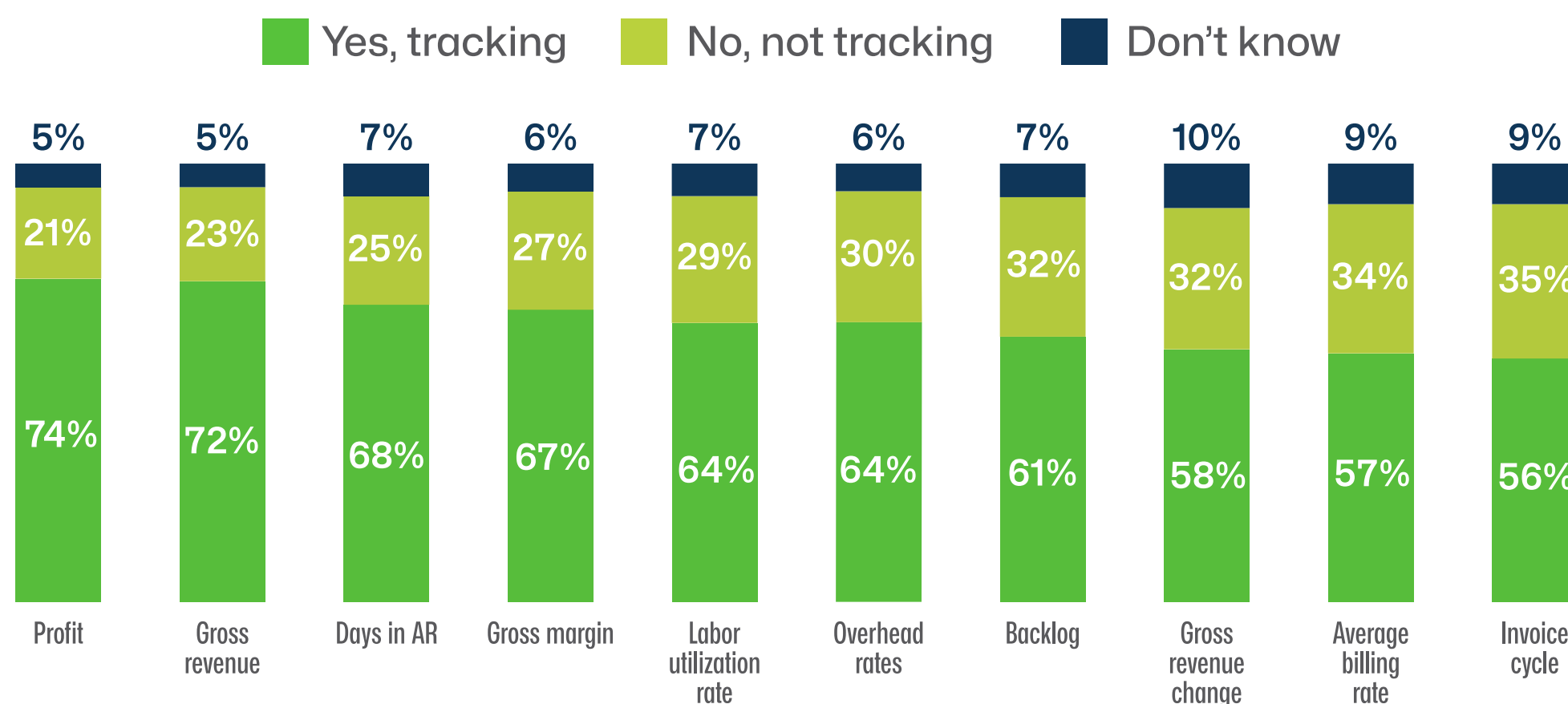## On-time and under-budget delivery of projects

- **0-25%**
- **26-50%**
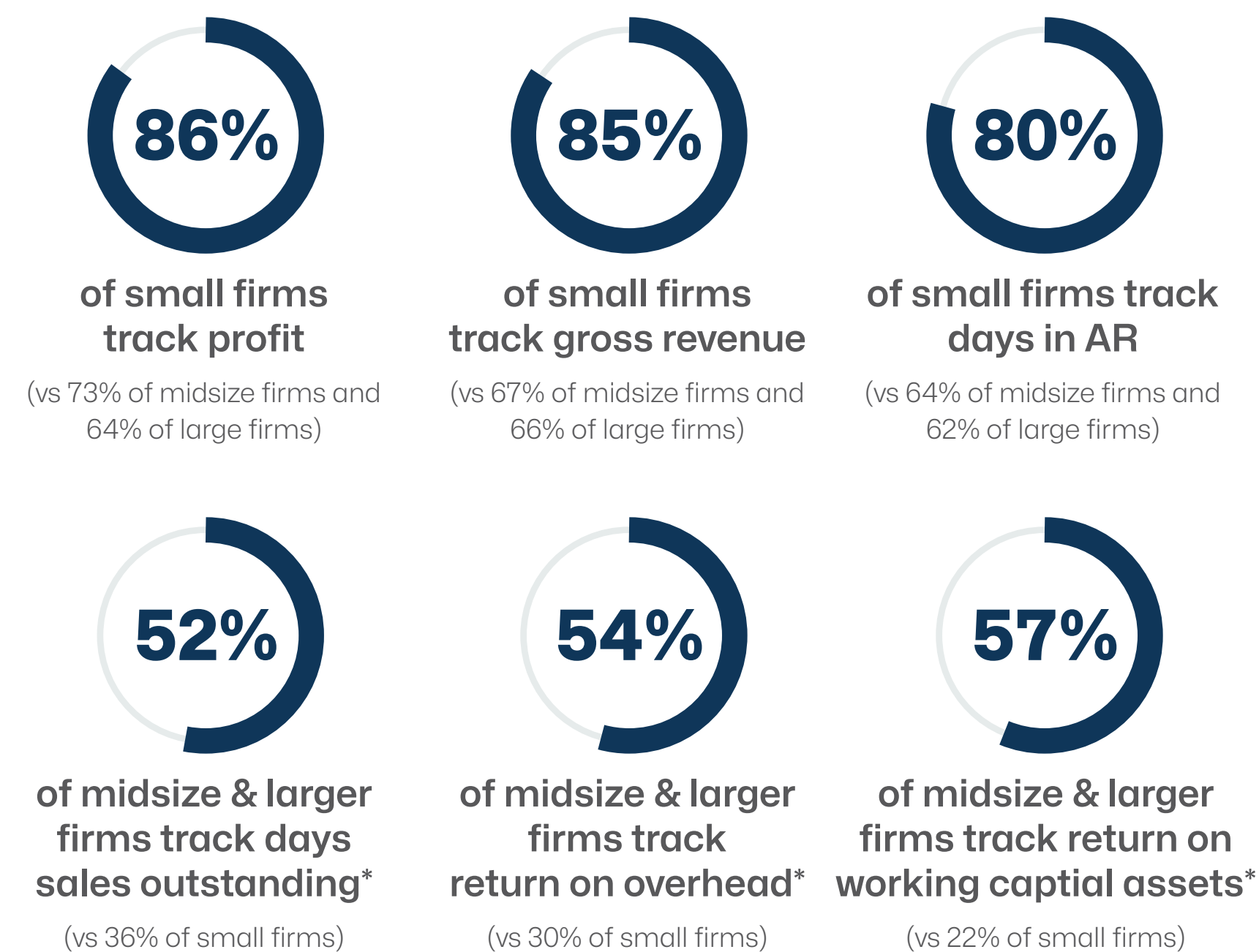- **51-75%**
- **76-100%**

Reported as under budget:
- 76-100%: 33%
- 51-75%: 44%
- 26-50%: 20%
- 0-25%: 3%

Reported as on time or sooner:
- 76-100%: 35%
- 51-75%: 50%
- 26-50%: 13%
- 0-25%: 2%

Small companies are more likely to indicate they are tracking profit, gross revenue, backlog, and Accounts Receivable collection days (days in AR), again reflecting their close attention to immediate cashflow considerations. Midsize and larger firms more frequently track Days Sales Outstanding, return on overhead, and return on working capital assets, attesting to a keener interest in strategic operational considerations.

Finance & Accounting

The top tracked finance and accounting metrics echo the concern over financial performance and operational efficiency seen in the top tracked project management metrics. About three-quarters of respondents track profit and gross revenue, highlighting a top-line-bottom-line approach towards financial health.

Firm's approach to tracking financial or operational metrics
(Top 10 shown)

■ Yes, tracking   ■ No, not tracking   ■ Don't know

	Profit	Gross revenue	Days in AR	Gross margin	Labor utilization rate	Overhead rates	Backlog	Gross revenue change	Average billing rate	Invoice cycle
Don't know	5%	5%	7%	6%	7%	6%	7%	10%	9%	9%
No, not tracking	21%	23%	25%	27%	29%	30%	32%	32%	34%	35%
Yes, tracking	74%	72%	68%	67%	64%	64%	61%	58%	57%	56%

Financial and operational metrics behavior by business size

86%
of small firms track profit
(vs 73% of midsize firms and 64% of large firms)

85%
of small firms track gross revenue
(vs 67% of midsize firms and 66% of large firms)

80%
of small firms track days in AR
(vs 64% of midsize firms and 62% of large firms)

52%
of midsize & larger firms track days sales outstanding*
(vs 36% of small firms)

54%
of midsize & larger firms track return on overhead*
(vs 30% of small firms)

57%
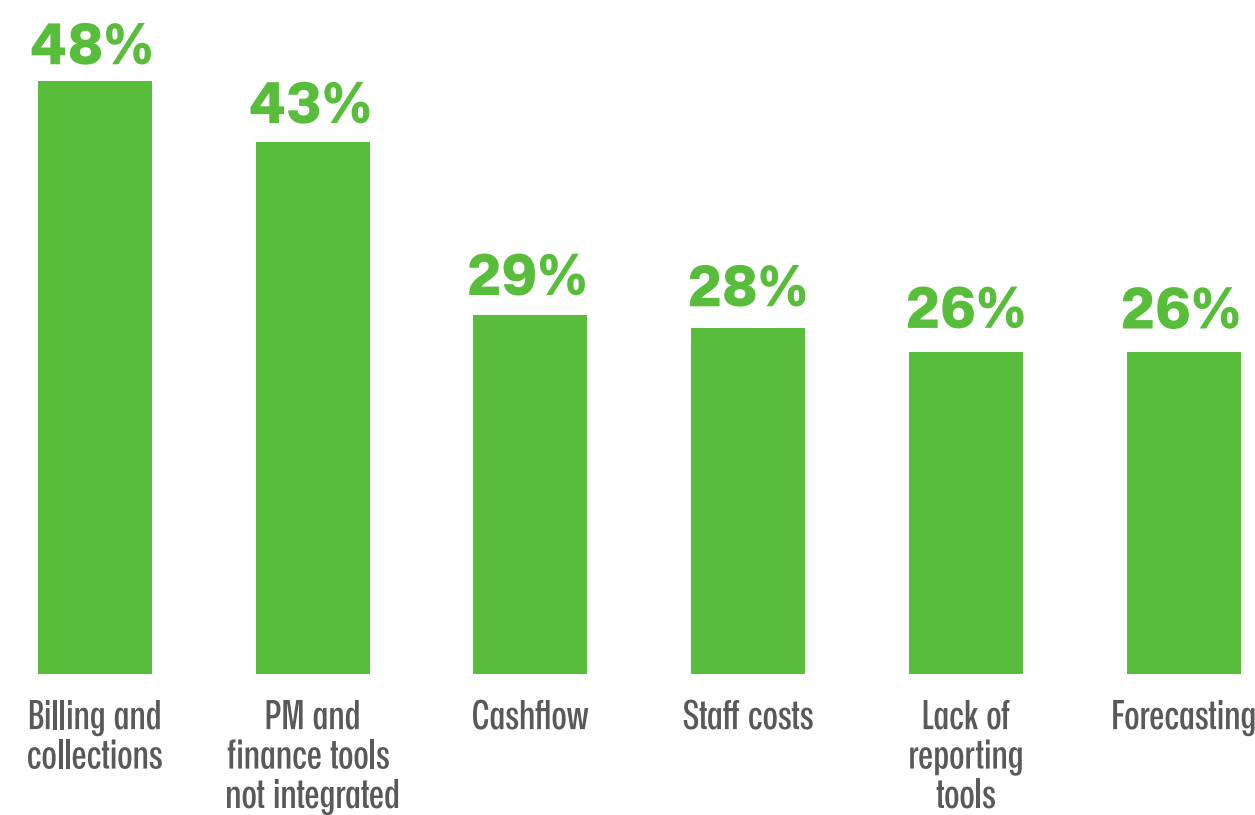of midsize & larger firms track return on working captial assets*
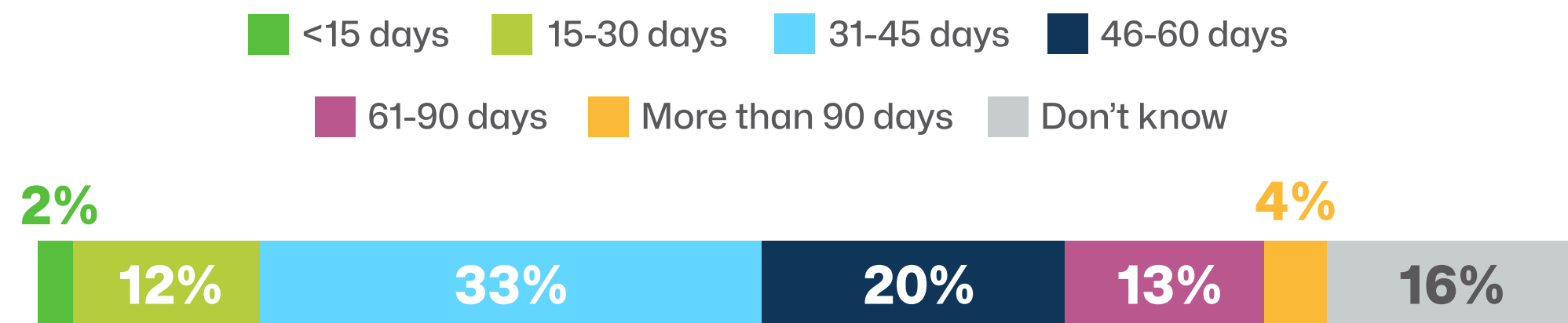(vs 22% of small firms)

*weighted average

Billing and collections activities represent the top financial challenge for AEC firms.

Biggest financial challenges

|					
48%	43%	29%	28%	26%	26%
Billing and collections	PM and finance tools not integrated	Cashflow	Staff costs	Lack of reporting tools	Forecasting

This is reflected in the general state of Accounts Receivable. More than one third report over 45 days in AR and nearly 20% wait over 60 days before invoices are paid. These delays affect cashflow and limit firms' ability to invest in the resources and initiatives that enable growth. With 35% of the industry's annual revenue going to subcontractors, cashflows become very tight indeed, making every day spent in AR collections count.

Days in Accounts Receivable

- <15 days
- 15-30 days
- 31-45 days
- 46-60 days
- 61-90 days
- More than 90 days
- Don't know

2%					4%	
	12%	33%	20%	13%		16%

Fortunately, automation can streamline billing and collections activities. Tech-advanced firms, and particularly data-forward firms, tend to report fewer days in AR.

Firms with 45 or fewer days in AR

54%
Tech-advanced
(vs 41% of tech-emergent firms)

62%
Data-savvy
(vs 37% of not data-savvy firms)
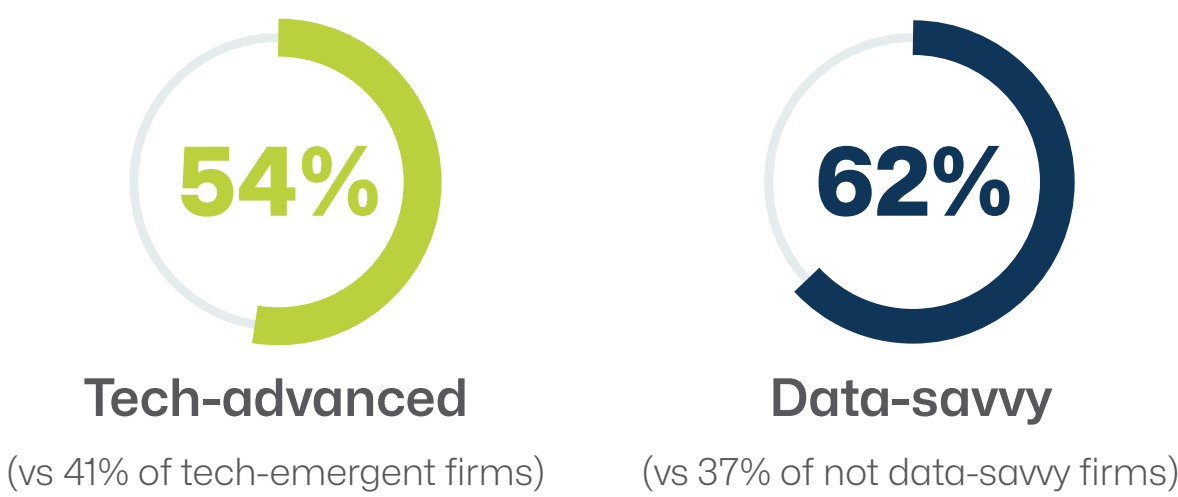
Automation also provides several advantages for Accounts Payable processes, which are typically laborious and manual. To begin with, AI-enhanced enterprise resource planning (ERP) platforms can automate invoice data entry with OCR and streamline payment approvals. Another important advantage of a dedicated centralized ERP platform , however, is that it can help facilitate cash management: with full visibility across AR and AP activity, firms can make improved tactical decisions about outbound transactions in a way that maintains healthy cashflow.
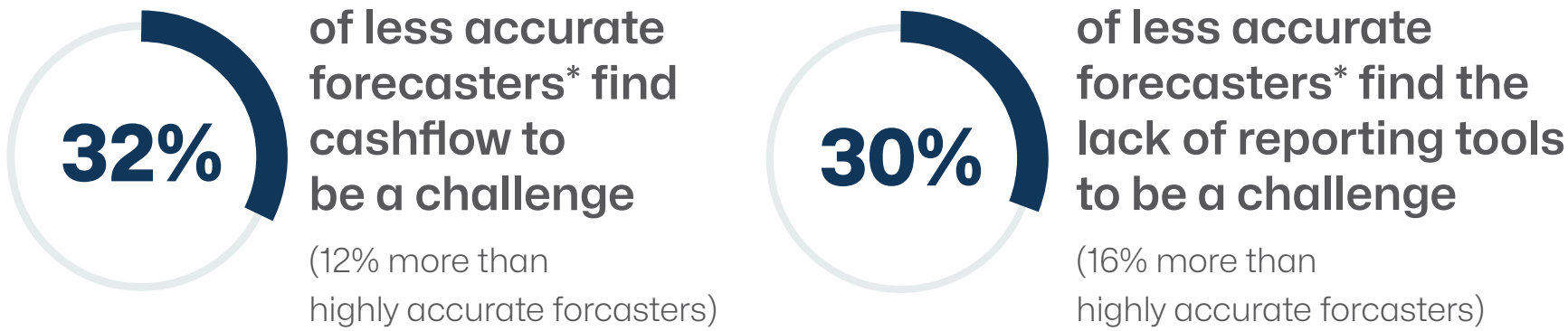
OPTICAL CHARACTER RECOGNITION (OCR)
Technology that allows for images of typed, handwritten or printed text to be converted into digital text.
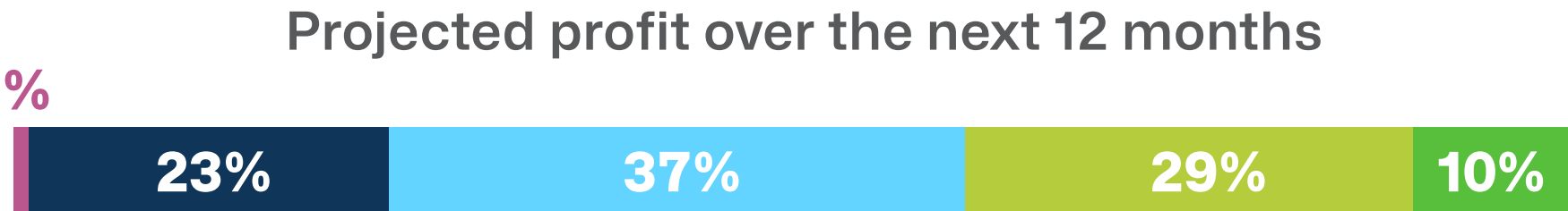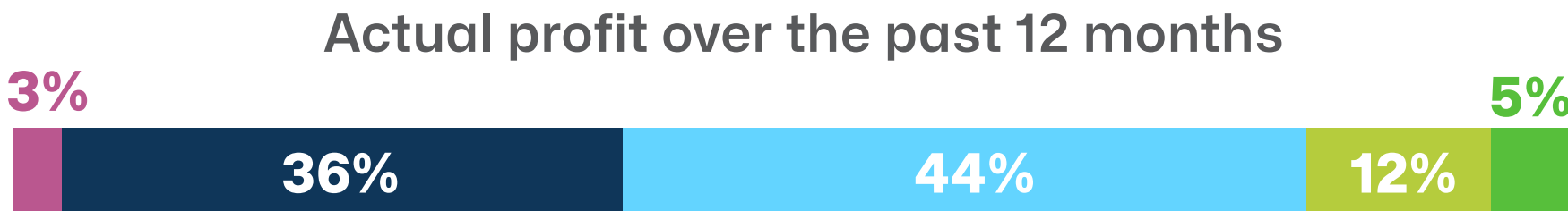
Inadequate integration of tools presents another major finance challenge. This is no surprise: project-based businesses rely on the integration of project management and accounting to promote better project and financial outcomes.

Forecasting is not listed as a top challenge for most firms, including firms that are less accurate forecasters. Interestingly, these firms tend to struggle more with cashflow and lack of reporting tools. Though the act of forecasting may not be perceived as a challenge, the accuracy of forecasting does in fact relate to their other challenges: better tools lead to better forecasts, which in turn mitigate cashflow disruptions.
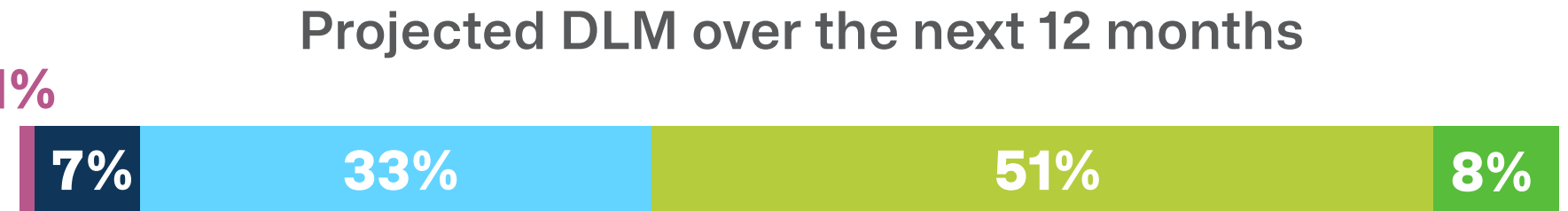
32% of less accurate forecasters* find cashflow to be a challenge
(12% more than highly accurate forcasters)

30% of less accurate forecasters* find the lack of reporting tools to be a challenge
(16% more than highly accurate forcasters)
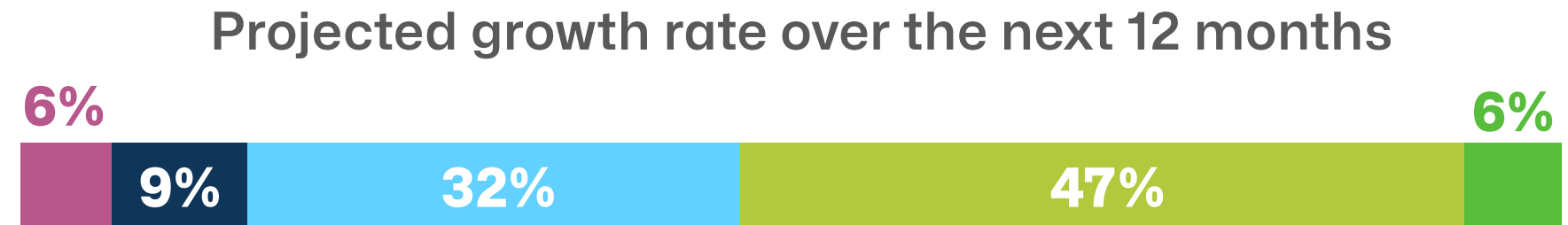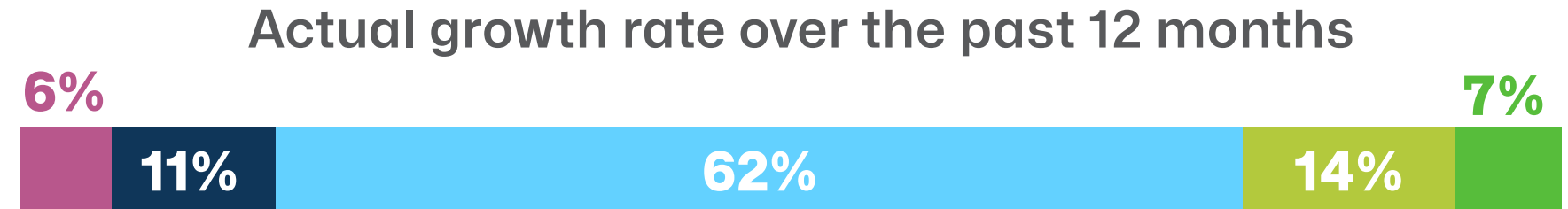
*firms with fewer than five "very accurate" forecasting areas

Most AEC firms report profit rates of 20% or less, but the number of firms reporting profit rates over 20% is expected to double next year.

■ Less than 0% ■ 0-10% ■ 11-20% ■ 21-30% ■ Greater than 30%

Actual profit over the past 12 months

3% | 36% | 44% | 12% | 5%

Projected profit over the next 12 months

1% | 23% | 37% | 29% | 10%

Just under one third of respondents achieved a target DLM between 2.6% and 3.5%, in contrast to more than half of respondents reporting 2.5% or less. Small firms more frequently report higher DLMs. More firms anticipate higher DLMs next year.

■ Less than 0% ■ 0-1.5% ■ 1.6%-2.5% ■ 2.6%-3.5% ■ Greater than 3.5%

Actual DLM over the past 12 months

1% | 13% | 53% | 29% | 4%

Projected DLM over the next 12 months

1% | 7% | 33% | 51% | 8%

Most firms reported growth in the past year, and project even higher rates of growth over the coming year. This harks back to the optimism expressed by most firms, and paints a promising business landscape.

■ Less than 0% ■ 0-9% ■ 1-9% ■ 10-19% ■ More than 20%

Actual growth rate over the past 12 months

6% | 11% | 62% | 14% | 7%

Projected growth rate over the next 12 months

6% | 9% | 32% | 47% | 6%

INNOVATING TODAY TO ADVANCE TOMORROW

The business strategies of today define the results of tomorrow.

But there are **notable differences in the strategies of small firms and large firms**, specifically in the metrics they use as barometers of the business and the investments they make.

Smaller firms prioritize operational metrics like cashflow and project costs, and are more confident in these metrics than in forward-looking metrics like labor resource forecasts, pipeline, or backlog data. Confidence in pipeline data is significantly lower at small firms than midsize or larger firms. Accordingly, smaller firms are less likely to engage in formalized business development strategies, such as standardized go/no-go processes, and rely more heavily on relationships to drive business.

The upside of focusing on operational metrics is that **smaller firms excel in the day-to-day delivery of timely, under-budget projects**. The downside is that it leaves them more vulnerable to economic turbulence.

Unsurprisingly, **smaller firms tend to be more anxious about the overall state of the economy** than larger firms.

On the other hand, **midsize and larger firms more frequently examine investment metrics** like the cost of winning new business and return on labor and capital expenditures. This focus suggests a broader, more strategic approach to growth; one that leverages tech investments to secure long-term advantages. Thanks to such investments, these firms are typically better equipped to leverage forward-looking metrics more effectively—which is to say, predictively. **They are thus better positioned to weather economic fluctuations.**

This study in strategic focus underscores a fundamental difference in how resilient these businesses are. Smaller firms, with their close attention to operational efficiency, excel in project execution. But they are less resilient to upheaval.

Larger firms, with their emphasis on strategic metrics and tech investments, are better equipped to innovate and expand, setting the stage for sustainable growth.

Businesses must adopt more forward-looking perspectives: a crucial task, but a daunting one. **Balancing operational concerns with innovation demands a heavier investment in technical resources.** It's an investment worth making now to secure the next era of success.

INTELLIGENCE REBORN:
FROM BI INSIGHT
TO AI FORESIGHT

In recent years, generative AI has emerged as a business phenomenon.

Companies are using generative AI to refine reports and presentations, create marketing materials, generate content, and support training and onboarding. Its ubiquity belies its significance in modern business.

Although generative AI has the lion's share of the limelight, **predictive AI holds arguably greater significance for business outcomes.**

Traditionally, the role of business intelligence has been to monitor and retrospect—to gauge current performance. However, as more powerful analytical tools emerge and concerns about unpredictable risks grow, this is no longer enough. To be truly resilient, firms must transition from descriptive to predictive analytics. To evolve beyond BI insights towards AI foresight.

With a robust enough AI model, firms can not only anticipate new opportunities and challenges before they manifest, they can also uncover actionable steps to improve future outcomes.

The key to unlocking AI's full potential? Data.

Artificial intelligence hinges on data quality. AI models are only as good as the data they're fed. For data to be transformative, it must be centralized, well-managed, and trustworthy. This much is clear from the leading performance of data-savvy firms: they are more optimistic, more profitable, and more accurate in their current forecasts, making them better positioned to achieve considerable growth.

To transition from insight to foresight is a firm-wide commitment to data governance. Leaders must pave the way as champions of data stewardship. Employees at every level must be educated, aware, and engaged in managing data across its entire lifecycle, from collection and storage to analysis and eventual retirement.

Organizational **data governance is foundational to AI implementation**, and AI implementation is a must in today's data-driven reality.

The intelligent businesses of tomorrow won't just interpret the past—they'll predict and shape their future.

NAVIGATING THE TALENT CLIFF IN A CHALLENGING INDUSTRY

The talent crisis in AEC is not new— but it is intensifying.

Fewer people are entering the industry. Effects of the "Great Resignation" continue to be felt, with professionals quitting the field to pursue other opportunities. Top leaders are stepping back from active roles, taking decades of insight and experience with them. **Hiring the right people, let alone keeping them, is becoming a serious challenge.**

This "talent cliff" holds serious implications for the overall success and sustainability of firms. Not only is the talent pool shrinking—the skills gap is widening, institutional knowledge is being lost, and relationships networks are being disrupted.

Our industry is acutely aware of these problems: **one in three firms cites recruitment and retention as a top business concern**, and **nearly half list resourcing as a top project challenge.** Response, however, has been lacking; last year, almost 50% of firms saw deteriorating staffing practices since the pandemic, specifically less tech-advanced firms.

Efforts to improve workplace practices are underway, seen in the emphasis on mobility and integration to allow employees to work from anywhere. But firms still need to do more to bolster recruitment, support retention, and get ahead in this crisis.

Historically in AEC, there has been a strong emphasis on maximizing revenue per professional to drive productivity. **The modern workplace must prioritize employee experience as highly as it does productivity**. Foster an environment of safety and inclusivity, and leverage tech to buttress initiatives that support a more attractive work culture.

Monitor employee satisfaction and solicit feedback to drive meaningful action. Review and adjust compensation plans against industry and global standards. Establish formal organizational practices for mentorship, training and development to help employees build key skills and cultivate meaningful careers. **Amplify your workforce's capabilities with tools that can automate repetitive tasks, streamline processes, and facilitate collaboration without increasing administrative burden.**

With the right cultural, operational and technological advancements, there is no need to fear the talent cliff will prove a fatal drop.
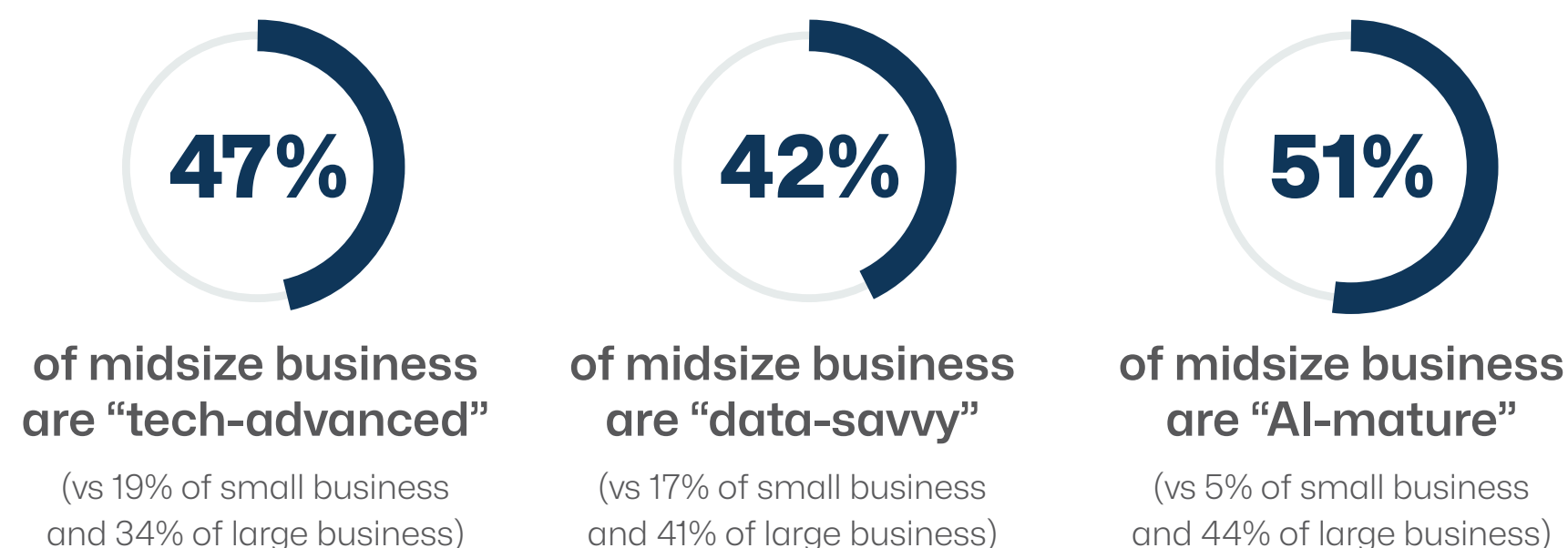
OUTLOOK FOR 2025 AND BEYOND

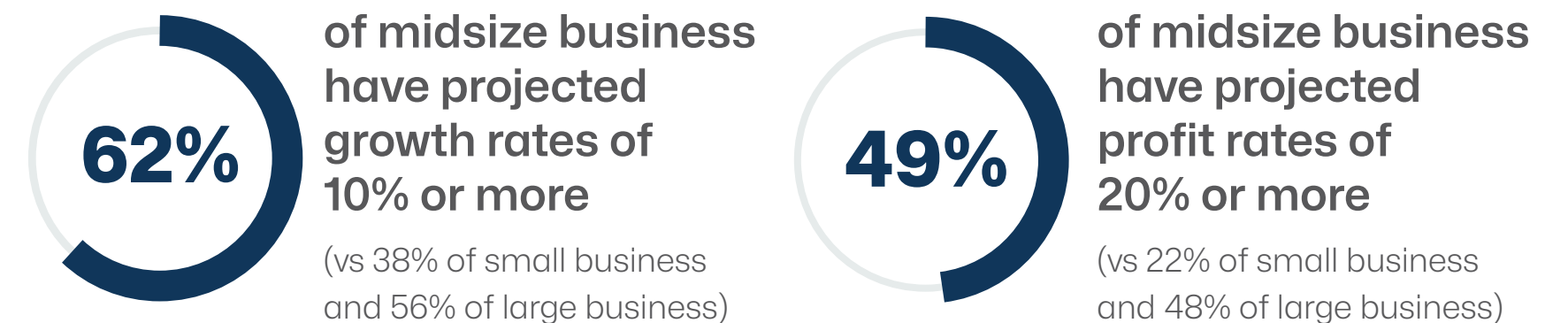## The urgent case for evolving with purpose.

The 2024 *AEC Inspire Report* proves that, as a whole, our industry is indeed evolving in its approach to tech and data.

This promising conclusion, however, comes with a caveat: **for many of us, the pace of evolution needs to pick up.**

Fast-growing midsize companies are particularly interesting to watch. This cohort, which comprises almost half of all respondents, is intriguingly forward-thinking when it comes to their tech, data and AI practices. And although large companies are generally keeping pace when it comes to data, midsize firms have the edge in tech status and AI maturity.

47%
of midsize business are "tech-advanced"
(vs 19% of small business and 34% of large business)

42%
of midsize business are "data-savvy"
(vs 17% of small business and 41% of large business)

51%
of midsize business are "AI-mature"
(vs 5% of small business and 44% of large business)

Similarly, midsize firms overwhelmingly report positive growth indicators. Among respondents tracking growth and profitability, nearly half project growth rates of 10% or more, and 36% anticipate profits greater than 20%—their slight edge over larger companies is testament to the unique combination of agility and rigor that characterizes the midsize firm.

62%
of midsize business have projected growth rates of 10% or more
(vs 38% of small business and 56% of large business)

49%
of midsize business have projected profit rates of 20% or more
(vs 22% of small business and 48% of large business)

These agile, tech-advanced firms weathered the pandemic admirably, having laid the foundation for better business with tech and innovation. They are now reaping the benefits of their preparation and continue to anticipate significant gains, leveraging data, tools and AI as the engines of their expansion.

They are the bellwethers of our industry, and innovation-minded firms should look to these pacesetters to guide their own advancements.

For AEC, success is now synonymous with tech advancement. It may be tempting to stay the course, to tackle change in slow increments, but this approach will not serve for much longer.
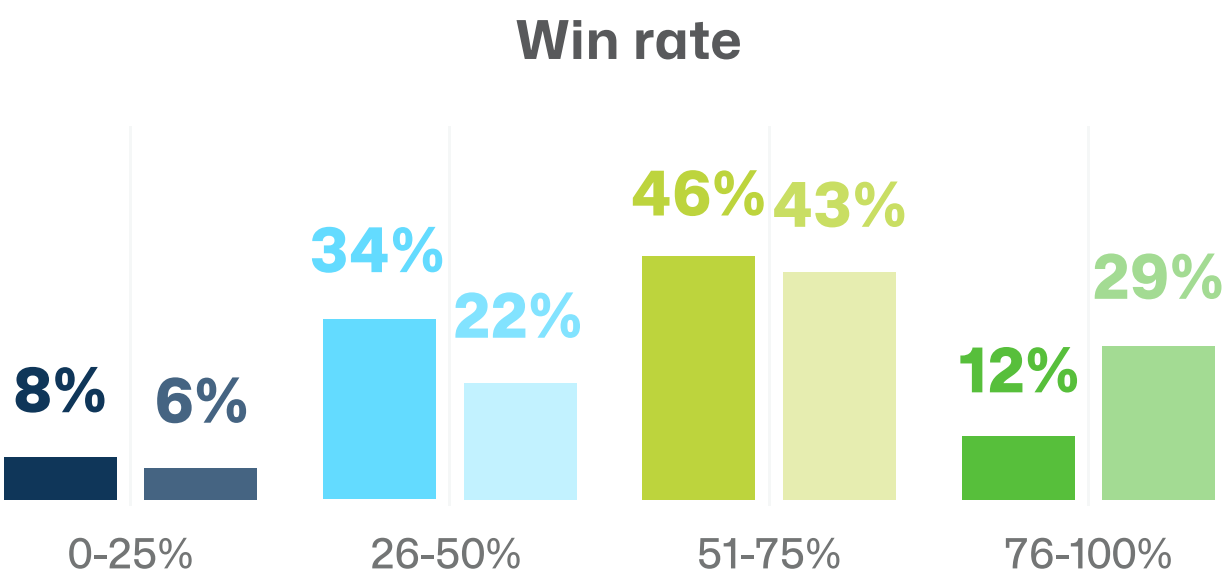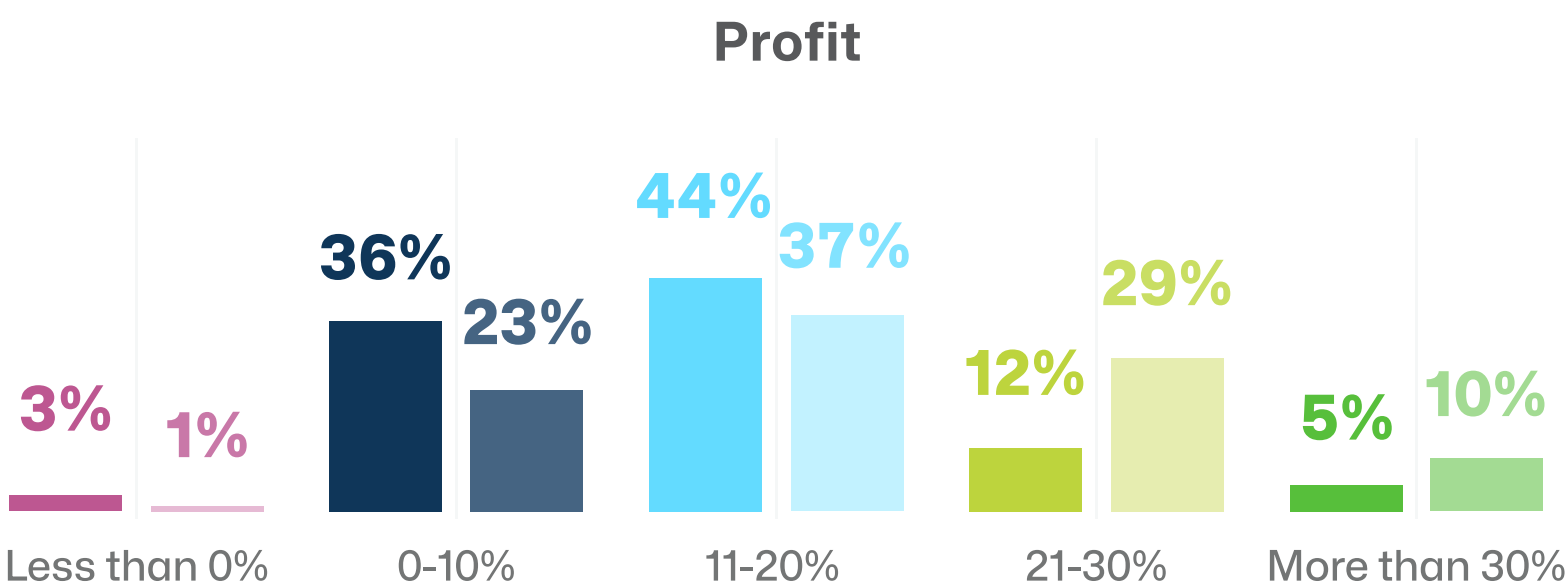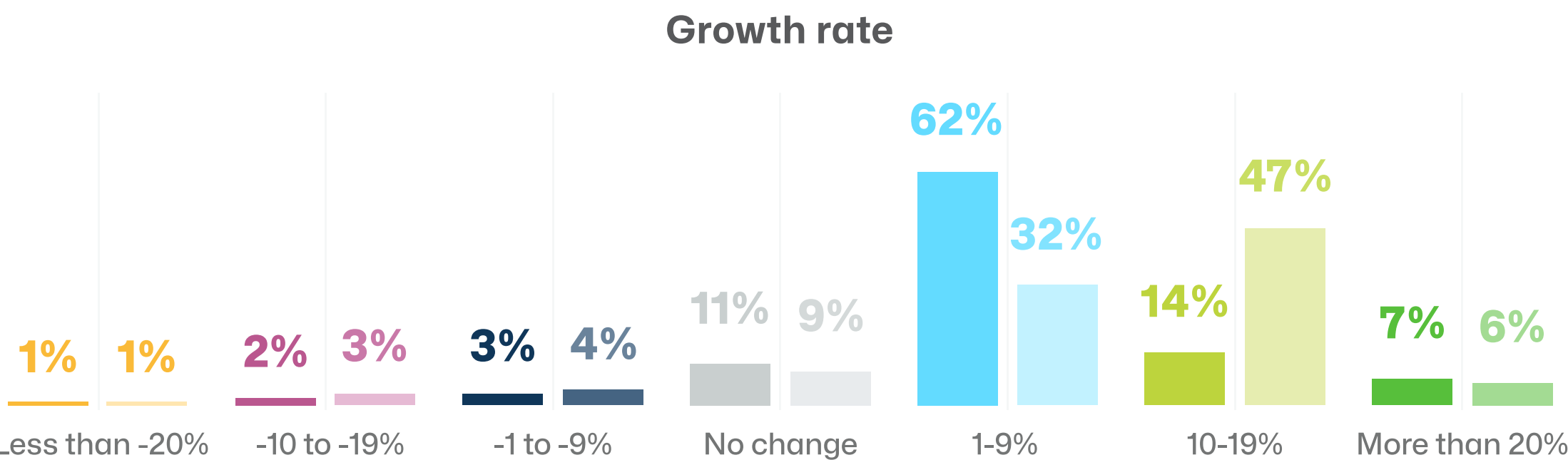
Our industry stands at a crossroads: fueled by optimism, restrained by concerns about economic stability and unforeseeable disruption. The answer—the fulcrum—is tech. Commit to enhancing your company's tech and data capabilities, keep technology at the forefront of your business strategy, and not only will you improve operations today, you will also establish a more secure future—whatever it might hold.

How to leverage tech and turn promise into profit

Now is the ideal time to embrace a technological sea change. All signs point to surging growth, profitability, and proposal win rates in the next year.

Current (past 12 months) vs. projected (next 12 months) growth indicators

Growth rate

Less than -20%	-10 to -19%	-1 to -9%	No change	1-9%	10-19%	More than 20%
1% / 1%	2% / 3%	3% / 4%	11% / 9%	62% / 32%	14% / 47%	7% / 6%

Profit

Less than 0%	0-10%	11-20%	21-30%	More than 30%
3% / 1%	36% / 23%	44% / 37%	12% / 29%	5% / 10%

Win rate

0-25%	26-50%	51-75%	76-100%
8% / 6%	34% / 22%	46% / 43%	12% / 29%

This collective optimism signals a market brimming with opportunity. The time to re-examine your strategic priorities and establish your tech evolution roadmap is now. No matter where you are in your tech adoption journey, a few essential principles will prepare your firm to capture these future opportunities.

Nurturing a mindset of tech-empowered innovation

Keep these foundational principles in mind when embarking on your journey of technological transformation.

Adopt a culture of continuous innovation.
Leadership must champion an innovation mindset for the entire organization, regardless of size or tech maturity.

Strategize for now and next.
Balance present operational priorities with future-facing, value-added planning—and then ask yourself how you can leverage tech to progress towards your goals.

Commit to data excellence.
Regularly audit your data practices. Consider, for example, how data travels across departments and platforms, who can access it, how it's kept up-to-date, and what upgrades or tools you might need for analytics and reporting.

Stay cyber-vigilant.
Cybersecurity is crucial in today's tech-driven environment. Don't be caught off guard. As you expand your technological capabilities, be sure to upgrade your cybersecurity measures in parallel to protect your firm's data.

Fit tech to purpose.
The best tool is the one that works for you. Rather than trying to adapt horizontal solutions to your unique needs, invest in purpose-built AEC tools that come equipped with the capabilities you need to run your business.

Where are you in your tech journey?

Tech-emergent

Data limited
AI curious
Traditional infrastructure
Basic or manual tech tools
Sliced systems

Seek quick tech wins.
Identify where immediate upgrades could provide the most benefit. Consider cost, speed, and impact.

Timeline your transformation.
Set a date by which you want to upgrade basic Excel or freemium tools.

Upskill your talent.
Invest in training and education for your team. Get people proficient in data and comfortable with new technology.

Unify.
Begin integrating software systems to reduce silos and improve data visibility.

Explore AI use.
Look into entry-level AI tools for data analysis, automation, report writing and other easy-win areas.

Tech-progressing

Data proficient
AI adopted
Hybrid infrastructure
Enhanced tech stack
Partially or mostly integrated

Invest and explore.
Invest in advanced tools with sophisticated data visualization and predictive analytics. Provide opportunities for employees to learn and explore.

Ramp up AI use.
Expand (or establish) AI pilot projects. Diversify AI use cases. Develop and circulate organizational AI usage policies.

Get serious about data.
Revise data governance policies and procedures, prioritizing data quality and security and compliance.

Integrate, integrate, integrate.
Explore integrating existing platforms using pre-built or custom APIs to further enhance your tech and data. If your tools don't integrate, find ones that will.

Tech-advanced

Data optimized
AI-mature
Cloud dominant infrastructure
Comprehensive tech stack
Fully integrated system

Innovate at the edge.
Consider setting up an innovation lab or R&D initiative dedicated to investigating emerging technologies.

Establish in-house expertise.
Ensure your board, your executive team, and senior leadership include people with deep tech expertise.

Think AI for everything, everywhere.
AI isn't just for business strategy. Consider its widespread potential: AI can enhance activities like knowledge-sharing, surveying and modeling. As a bonus: your evolving offerings can help set you apart in the market.

Pioneer the future.
Set the stage for the next generation of firm leaders to continue to enhance design and delivery with tech. Your clients and communities will thank you.

Adopt forecasting best practices for a more resilient business

Start shifting towards robust, forecast-driven proactive pursuits with our top tips.

AI NEEDS ETHICS.
Always include mechanisms to address terms of service, privacy laws, and ethical guidelines in your organizational AI governance policies.

Tech-emergent firms
MASTER THE FUNDAMENTALS

Start gathering the right data. Focus on consistently collecting key data, establishing transparent practices to ensure your data is current, clean and—most importantly—trustworthy.

Integrate forecasting tools. Explore forecasting capabilities and tools that either exist in or can easily integrate into your tech stack. Set up regular reviews to evaluate the effectiveness of your tools and identify any gaps in either technology or data.

Practice predictive forecasting. Begin developing and applying simple predictive models to inform decision-making.

WHAT CAN A "SIMPLE PREDICTIVE MODEL" LOOK LIKE?

- **Straight-line forecasting.** Use past performance to draw a line to future predictions.
- **Key variables only.** Focus on collecting the most critical metrics like project revenue and cost.
- **Agile launch.** Start forecasting, analyze the outcomes, and then iterate.
- **Simple comparisons.** Evaluate using straightforward, single-variable analysis.

Tech-progressing firms
ELEVATE AND ENHANCE

Standardize data collection. Establish organizational standards, including key metrics and terminology, to ensure data consistency and compatibility across functional areas.

Enhance data quality. Improve data quality with AI or other tech solutions that can automate error detection, profile data and suggest improvements to enrich your dataset.

Integrate forecasting into project management. Ensure project management software incorporates forecasting capabilities to predict project outcomes and refine resource planning and scheduling.

Align forecasts with market dynamics. Consider including market research in your analytics. AI can help monitor publicly available market data, outline risks and suggest market areas to explore. Be sure to regularly evaluate organizational readiness for new project types and emerging markets.

Tech-advanced firms
GO DEEP AND LOOK FAR

Deepen forecasting with external data. Enhance your internal data with external data sources, such as market reports, industry forecasts, economic indices and geopolitical events. Leverage API integrations to automate data collection, AI to process the data, and machine learning algorithms to generate self-learning forecasting models.

Innovate and diversify. Track competitor activity, technological developments, regulatory changes and consumer preferences to identify emerging trends. Position yourself as a first mover and innovator by capitalizing on opportunities before they become mainstream.

Predict and prepare for long-term economic cycles. Develop in-house economic indicators to guide decision-making and help prepare your firm at the first signs of economic downturn or market rebound. Consider a blend of traditional indicators and performance drivers specific to your business. Regularly validate and refine your forecasting model.

Empower people through technology

Tech can address more than just operational challenges and forecasting needs. Here are five ways tech can help overcome workforce challenges.

Protect your legacy and expertise.
Ensure smoother succession planning and facilitate knowledge transfer across the company. Leverage tech to capture, document, and archive insights from experienced professionals to preserve institutional knowledge through any talent changes.

Keep leaders informed.
Use tech to gather and distribute vital business updates to leaders and executives, allowing them to make data-driven strategic decisions based on the most accurate and up-to-date information.

Enable productivity from anywhere.
Hybrid workplaces are here to stay. Preserve productivity by making sure employees can access their tools to from anywhere and can get reliable, up-to-date data whether in the office, at home, or on the go.

Reduce administrative burden with automation.
Keep employee satisfaction high by using AI to eliminate tedious tasks. For example, OCR can extract data from photos of receipts for expensing reporting; AI can identify and integrate relationship data directly from emails.

**Support demand with a flexible workforce.**
Easily scale up or down to meet projected demand with workforce plans that mix full-time, contract and gig-economy workers. Ensure your tools are easy-to-use to reduce onboarding requirements for performing mission-critical tasks.

INDUSTRY PROFILE:
ARCHITECTURE

In architecture—and in engineering—relationships stand as the cornerstone of business development.

In these industries, there is an unspoken but pervasive mindset that prizes technical expertise, craftsmanship, service delivery, and professional integrity; aggressive outbound sales tactics are considered somewhat antithetical to these values. Accordingly, firms rely heavily on their reputations and existing professional networks to drive business: 70% of architecture firms rely on personal connections for business, and 27% on referrals.

70% of architecture firms rely on personal relationships for business

27% of architecture firms rely on referrals for business
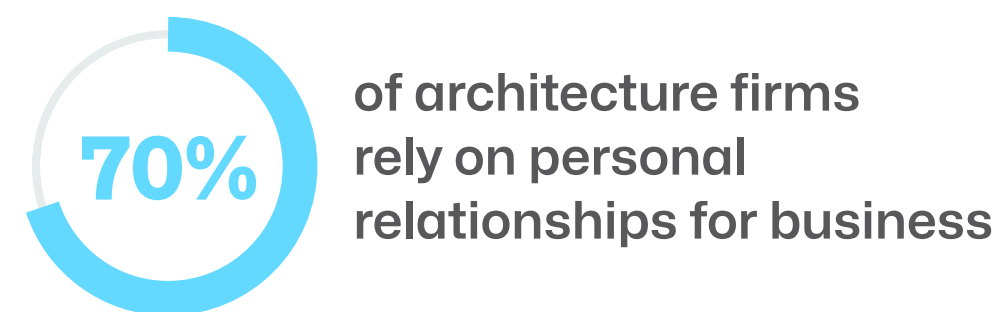
This dynamic may create a significant crisis when key partners or principals begin to retire, taking relationships and even equity with them. Further compounding this risk is a general lack of accuracy in pipeline and backlog forecasts amongst architecture firms, curtailing firms' ability to strategize for growth or prepare for economic fluctuations.

The creative practices and resilience found in the architecture industry serve as a natural foundation for adaptability—one part of the formula for managing these risks. The other part is prioritizing robust tech stacks to support data-driven business development strategies.

In particular, AI education in this sector may play an important role: resistance to AI in architecture is about twice as high as in construction and engineering. Understandably so: architecture work demands a certain degree of artistry, particularly in the early stages of ideation and design, and many artists and creatives are wary of AI.

However, AI is an invaluable tool for both data analysis and for generating better forecasts. By leveraging AI for predictive analytics, architecture firms can bolster their business development practices, drive growth and profitability, and establish more financial resilience—without compromising their deep commitment to creativity, craft, and relationships.

Investing in technological advancement now can ensure that architecture firms continue to shape not just resilient businesses, but our very skylines, cities, and communities.

INDUSTRY PROFILE: ENGINEERING

The engineering sector is deeply concerned over the current state of the workforce.

Compared to their counterparts in architecture and construction, engineering firms struggle more with recruiting, and more frequently list recruiting as a top human resource challenge. And although they share the industry's general sense of optimism over the bustling market, for many engineering firms the workforce issue has become so pressing that they are turning down work for want of labor.
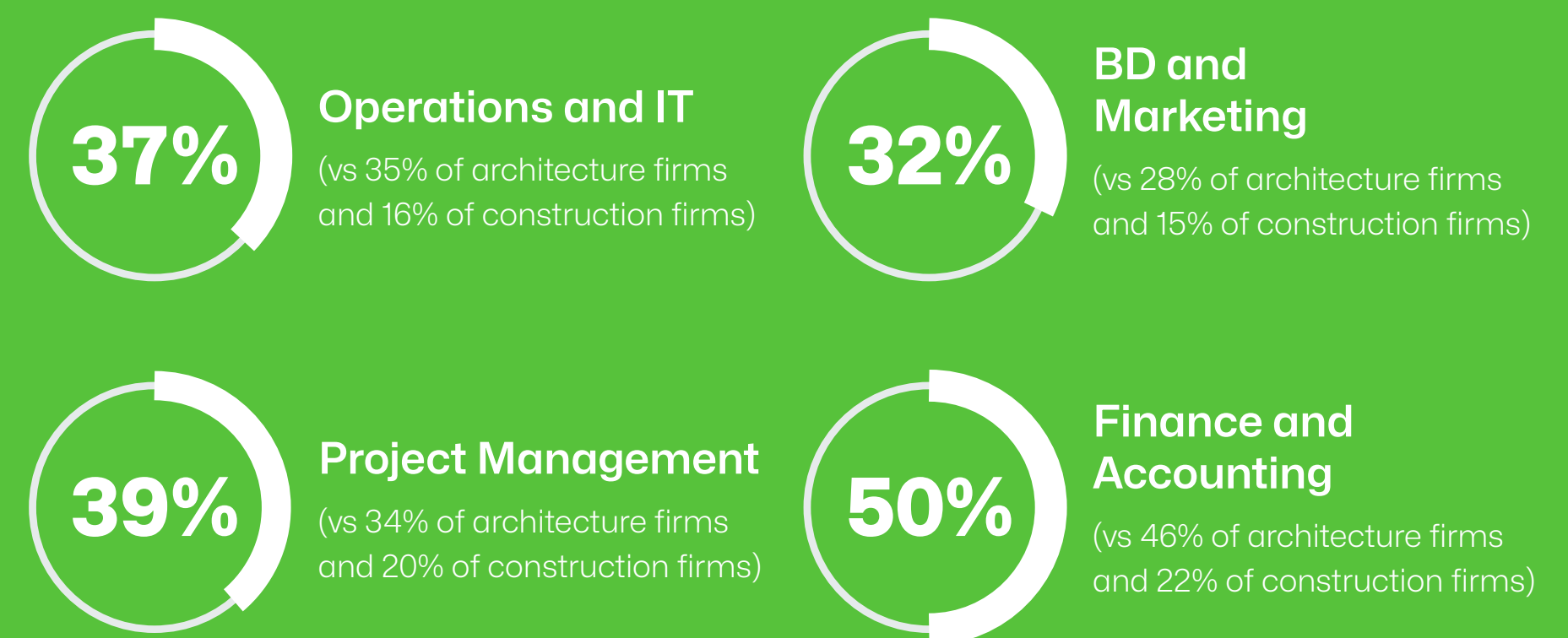
Perception of recruiting as a top workforce challenge

36% Engineering

29% Architecture

20% Construction
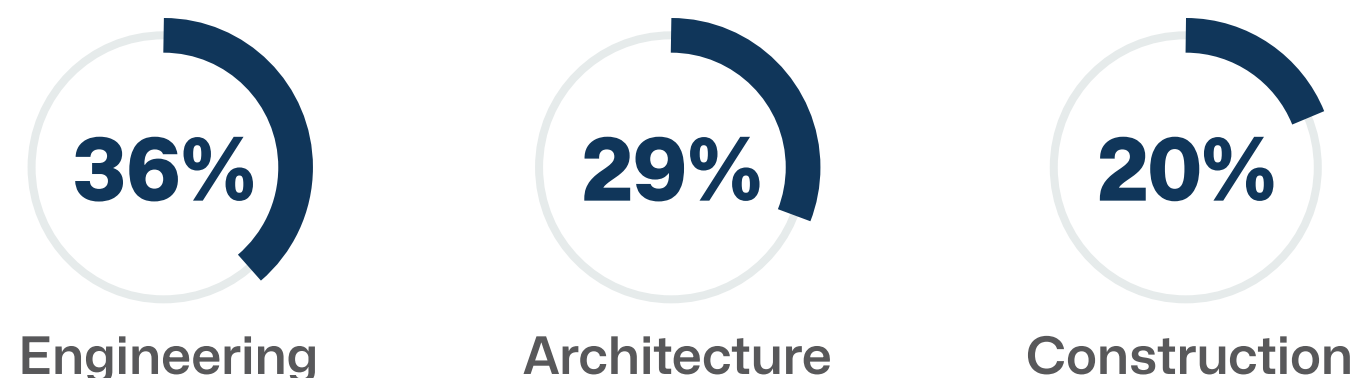
This challenge is exacerbated by the lack of sophisticated forecasting practices—engineering firms most frequently rely on Excel spreadsheets to forecast labor resources. They are also less likely to be able to predict their growth rate, with a third of engineering firms unable to project their growth for the coming year.

ENGINEERING FIRMS DON'T HAVE SPECIFIC PLANS FOR AI
Percentage of engineering firms with "no specific plans" to use AI.

37% Operations and IT
(vs 35% of architecture firms and 16% of construction firms)

32% BD and Marketing
(vs 28% of architecture firms and 15% of construction firms)

39% Project Management
(vs 34% of architecture firms and 20% of construction firms)

50% Finance and Accounting
(vs 46% of architecture firms and 22% of construction firms)

Moreover, investing in emerging tech exhibits a forward-thinking ethos, which can position engineering firms as appealing prospects to future employees. With a cutting-edge tech stack and partnership programs with local colleges and trade schools, engineering firms can help nurture and woo newer generations of talent, securing qualified candidates year after year.

Technological transformation is essential to maintaining competitive footing and operational resilience in the face of a growing talent shortage.
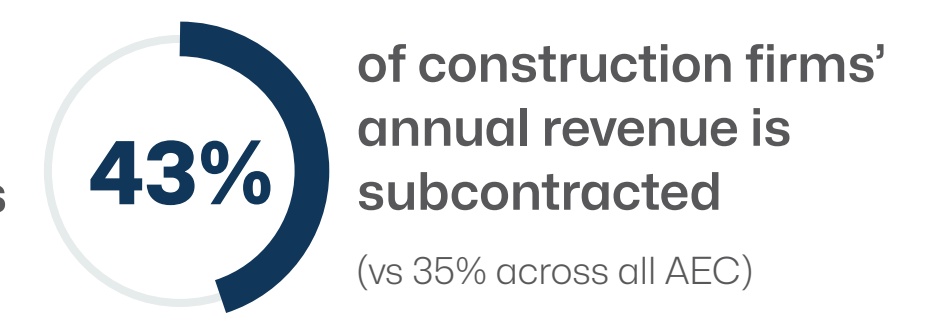
INDUSTRY PROFILE:
CONSTRUCTION

The construction sector stands out as a beacon of optimism, growth and innovation in the AEC industry.

This sector of AEC is feeling optimistic, both about their own futures and about the economy.

Construction companies are generally more confident and accurate in their pipeline forecasts, largely due to a greater degree of data and AI maturity. They are more likely to believe that AI will have a positive impact on their operations. Respondents in construction also tend to be more proficient at data management, boast more mature project and resource management capabilities, and more frequently have formalized business development practices such as standard go/no-go processes that are used on every project.

This greater degree of tech maturity not only supports better business performance and development—construction firms project higher future win rates more frequently—it positions the sector for expansion through new acquisitions.

Construction firms are raring and ready to grow; 63% are interested in M&A buying activities. This high degree of interest may be stemming from a desire to acquire more in-house service offerrings, since they subcontract almost 10% more of their annual revenue than average.

63% of construction firms are interested in M&A buying activities
(vs 50% across all AEC)

43% of construction firms' annual revenue is subcontracted
(vs 35% across all AEC)

While they remain cautious about potential black swan events, construction firms are well-placed to withstand such challenges due to their robust practices. In short, the construction industry exemplifies the strategic advantage of the tech-forward company, and is setting the standard for success in AEC.

Thank you

A big thank you!

At Unanet, our dedication to the AEC industry has always driven us to reach for greater heights. To do better for our clients, our employees, and our community.

We are immensely grateful to you, the AEC executives who set aside time in your busy schedules to share your experiences with us. Thank you for being open and candid about the practices, successes, and challenges at your firms. It is only through your insights that we can to provide reliable benchmark data and best-practices to guide our industry forward.

Your commitment to collaboration makes our industry—and our world—a better place. We appreciate your continued support.

About Unanet

Unanet is a leading provider of project-based ERP and CRM solutions purpose-built for government contractors, architecture, engineering, construction, and professional services. More than 3,700 project-driven organizations depend on Unanet to turn their information into actionable insights, drive better decision-making, maintain regulatory compliance, and accelerate business growth. All backed by a people-centered team invested in the success of your projects, people, and financials.

Visit **www.unanet.com** to learn more about how Unanet makes business easy with ERP and CRM solutions and people-first delivery teams.

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