

alteryx

DECISION INTELLIGENCE:

The Decision-Making Technologies Shaping the Future of the Enterprise



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INTRODUCTION

As organizations navigate a shifting economy, the emergence of a new way of making decisions is changing the business landscape. Decision intelligence is the process of applying artificial intelligence and analytics automation to decisions that impact organizational performance. When decision-making is automated, large-scale data is processed by analytics and machine learning technologies to achieve a decision without any human input. It empowers workers in every level of an organization from the executive to the individual contributor.

Decision intelligence allows companies to make faster and more intelligent decisions, enabling full use of all the data available and reducing the cost of doing business.

We set out to learn how the emergence of decision intelligence affects how organizations operate. Why do organizations sometimes struggle to make decisions? Are they making full use of the possibilities offered by decision intelligence? How is this new approach shaping the future of work?

EXECUTIVE SUMMARY

While organizations consider confidence the most important factor in decision-making, it can be hard to feel confident in the face of decision fatigue or inadequate access to data. Businesses report that their decision-making infrastructure is advanced, but by increasing their use of the technologies available, they may be able to address persistent dissatisfactions around decision-making within the enterprise.

Most organizations reported not giving decision-makers access to the data held by the company, despite acknowledging that people make better decisions when this data is made available. A lack of data access also makes collaboration between different areas of a business more difficult. Organizations should have policies in place outlining how all users must gather, store, process and dispose of data.

The vast majority of business decision-makers believe that in the future, all decisions in their organization could be automated with a combination of machine and human guidance. But most predict that this will not happen for at least 10 years.

Right now, complexity, cost, and regulation are perceived to be the main factors preventing the widespread adoption of decision intelligence — However, businesses are confident that new technologies are as good as humans at making some types of decisions.

¹ When decision-making is automated, large-scale data is processed by technologies such as algorithms and machine learning to achieve a decision without any human input.

² A full demographic breakdown is included in the appendix.

KEY FINDINGS



Organizations believe automated decision-making is as good as human decision-making when it comes to simpler decisions with a short-term impact.



Most companies believe it will take at least ten years before they are making full use of decision intelligence.



The majority say in the future, decision-making will be human-led, machine-supported. Few think machines will be making decisions without any human input.

24%

of companies currently use advanced decision intelligence technology.

72%

say the most important factor when making a decision is confidence.

80%

of business representatives say access to data improves their decision-making.

97%

of organizations say they can imagine a future where all their decisions are somewhat automated.

METHODOLOGY

We asked 2,800 senior business decision-makers, IT decision-makers, data analysts, and line of business leaders about organizational decision-making. The survey encompassed respondents from North America, Latin America, Europe and the Middle East, Asia and Japan. There was equal representation across four industries: financial services and banking, retail, manufacturing (including supply chain) and technology. 82% of the organizations surveyed had more than 1,000 employees and their average revenue was 3.7 billion.

Throughout the survey we asked respondents to answer questions about three different types of decisions:



Operational Decisions

Simple, routine decisions made on a daily basis



Tactical Decisions

Medium complex decisions with short-term outcomes



Strategic Decisions

Complex decisions with long-term outcomes



THE MOST IMPORTANT FACTOR IN ORGANIZATIONAL DECISION-MAKING

Throughout the organizations surveyed, one factor plays an exceptionally important role in decision-making. Confidence (73%). The only other factor with a similar ranking is accuracy (72%). (Figure 1)

When respondents are asked to think less personally and more generally, confidence still comes out ahead of other factors. The top three elements named as ideal for optimal decision-making are confidence (37%), good quality data (32%) and data analytics (23%). (Figure 2) Perhaps this indicates a relationship between confidence and access to data — access to good quality data can help you trust that you’re making the right choice.



IMPORTANT FACTORS FOR DECISION MAKING

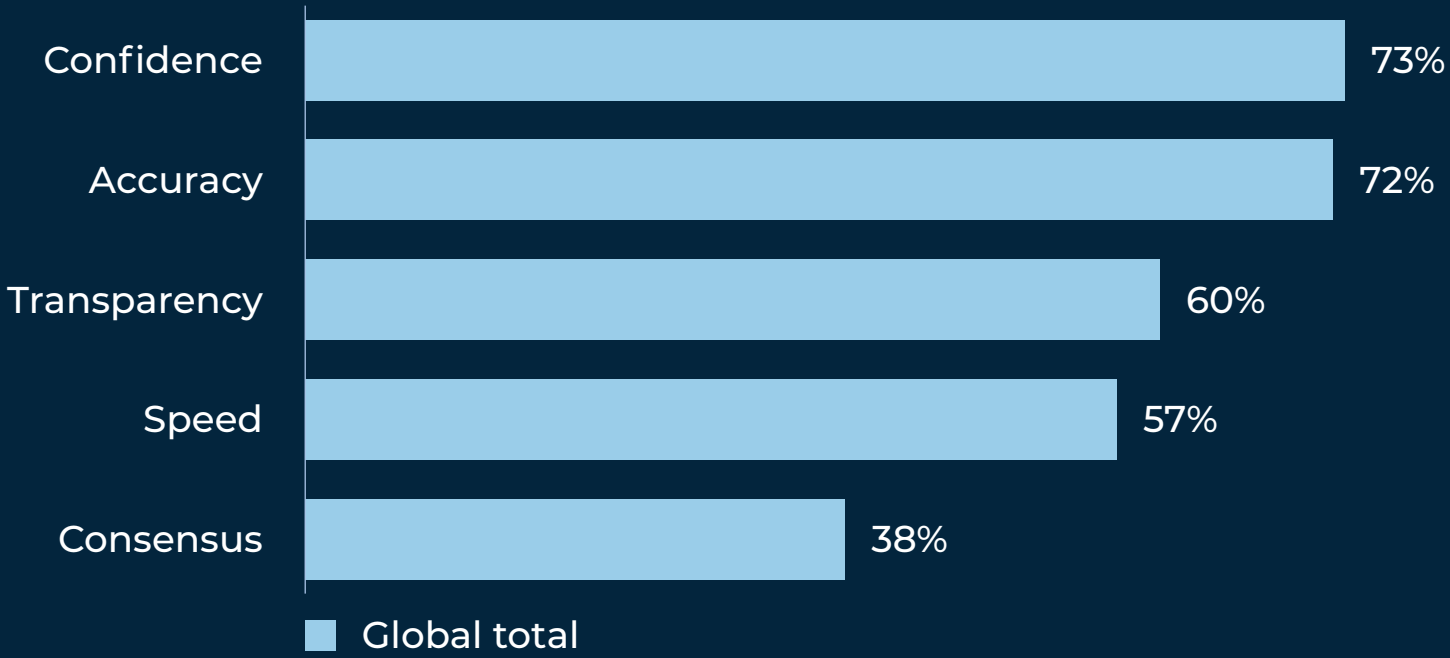


Figure 1 - What is most important to you when making a decision within your organization?

IDEAL ELEMENTS FOR OPTIMAL DECISION MAKING



Figure 2 - In your opinion, what are the top 3 elements needed for optimal decision-making?

MAIN CHALLENGES FOR DECISION MAKING CURRENTLY

1. Too many decisions to be made
2. Difficulty identifying the initial problem/opportunity
3. Long chain of command
4. Multiple data storage locations
5. Analytical tools are not available to everyone

Figure 3 - What are the top 3 challengers you currently face when making decisions in your organization?

But how confident do organizations truly feel about the decisions they're making? It seems that this varies depending on the type of decision being made. Three in four say they feel confident about strategic decisions — more difficult choices with longer term impact. 64% feel confident about tactical decisions — decisions that are less complex, but which make a difference in the short term. 64% feel confident about operational decisions — the daily choices that you might expect to be more straightforward. Contrary to expectations, it turns out when individuals make more complicated decisions, they experience a higher degree of confidence that they've made the right choice.

This could also be tied to the amount of time it takes to make each type of decision. When asked how long it took to make different types of decisions, respondents reported that, on average, operational decisions took two days, tactical decisions took seven days and strategic decisions took 20 days. It might be that more time taken to make a decision indicates that the decision-making process involved more information-gathering and collaboration and these factors increased confidence in the final decision.

In the quest to improve the quality of overall decision-making, organizations cited decision fatigue as their biggest challenge. The top-ranked challenges faced by decision-makers are too many decisions, and difficulty identifying the initial problem or opportunity. An organization's culture can exacerbate these difficulties: other prevalent issues include a long chain of command, multiple data storage locations, and lack of widespread access to analytical tools. (Figure 3) If an organization doesn't have a collaborative, accessible approach to data, it's harder for individuals to make decisions.

When asked how confident they'd be in automated decisions, respondents are optimistic. When it comes to operational decisions and tactical decisions, respondents report the same level of confidence in automated decisions as decisions made by people: 64%. For strategic decisions, the gap widens — 54% say they would feel confident in automated strategic decisions, suggesting that respondents prefer some human involvement in this type of decision.

The outlook is even brighter for organizations with a mature, developed data culture, with confidence rising by 10% for each type of decision.

THE DECISION-MAKING CULTURE IN TODAY'S BUSINESS ENVIRONMENT

Sixty-One percent (61%) of respondents feel that operational decisions are quick and efficient; there's a similar perception of tactical decisions (62%) and strategic decisions (60%). In addition, many organizations report that their approach to decision-making is advanced; 58% of companies consider their decision-making tools and processes to be sophisticated.

However, there is room for improvement in the integration and management of decision-making tools and processes. Only 31% say that their decision-making tools and processes are integrated with other systems across the organization, and only 27% report that their decision-making tools and processes are continuously monitored, evaluated, and optimized for maximum effectiveness.

Interestingly, across all organizations, decision intelligence tools — tools that apply analytics, AI and automation to decision-making — are not yet commonplace. Just 24% use advanced decision intelligence technology and analytical tools to make their decisions.

In fact, the most common technology used across decision-making processes — in data visualization, statistical analysis, automation, and data modeling — isn't business intelligence tools, relational databases, or even programming. It's a desktop standby not noted for its sophistication: the spreadsheet. (Figure 4)

Even where companies are content with the processes and tools they're using, it's clear that it would be possible to achieve a more efficient and coordinated decision-making culture with more advanced resources — resulting in more confident decisions.

LEVEL OF TECHNOLOGY USED TO COMPLETE TASKS

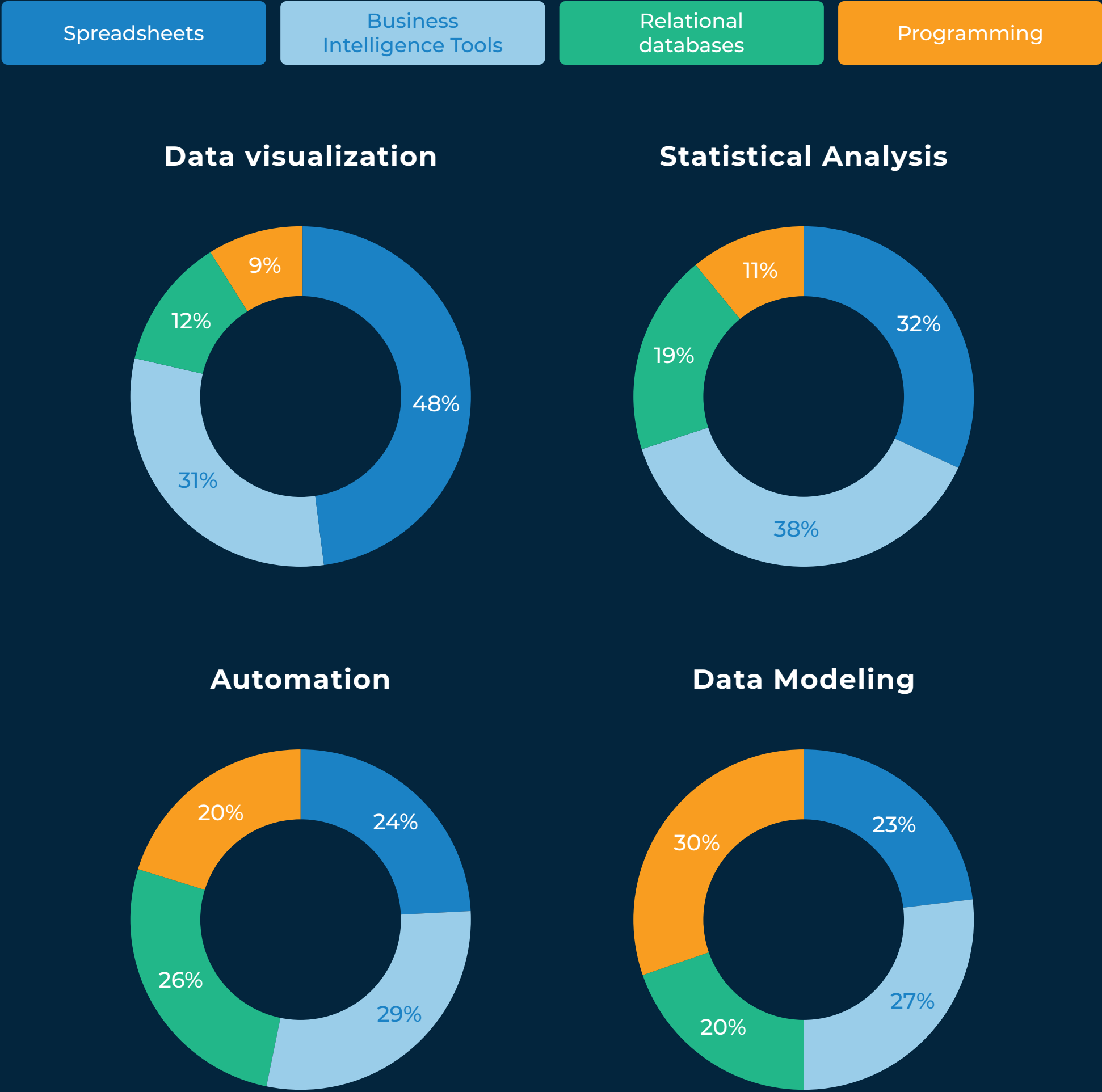
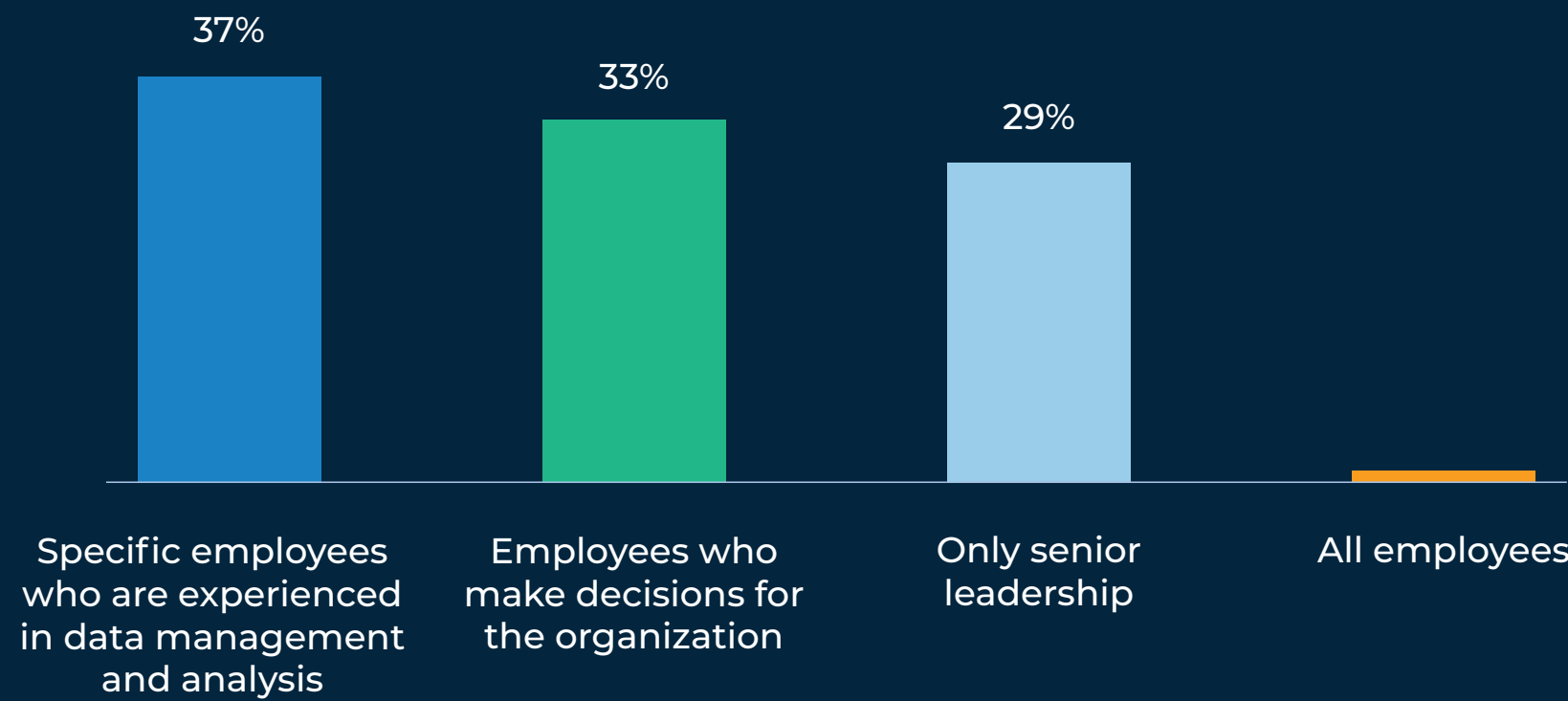


Figure 4 - What level of technology do you most commonly personally use to complete tasks in each of these areas?

ACCESS TO DATA FOR DECISION MAKING

WHO DOES HAVE ACCESS



WHO SHOULD HAVE ACCESS

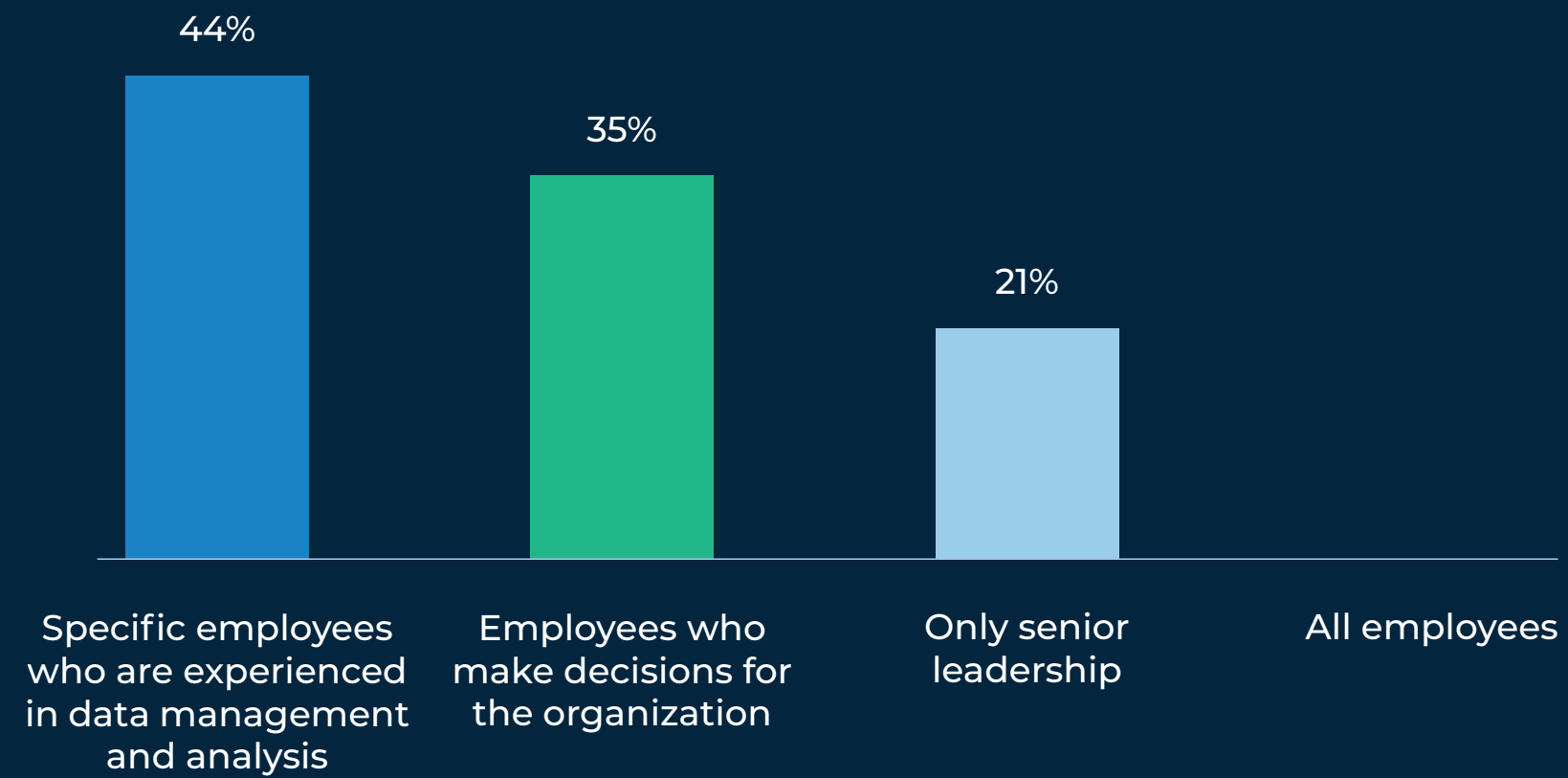


Figure 5 – Who currently has access to data for decision-making in your organization, and who do you believe should have access to data?

THE GATEKEEPING CONUNDRUM

Survey results show that there is a culture of gatekeeping around data. 65% of organizations state employees who make decisions for the business should not have access to data. Instead, they argue that data should be in the hands of senior leadership alone (21%) or those who specialize in data management (44%). Nobody at all (0%) wants to give all staff access to data. This is, in fact, very similar to the current status quo, where only 33% of organizations grant employees who make decisions for the organization access to data (and only 1% give all employees access to it.). (Figure 5)



IMPACT OF ABILITY TO ACCESS DATA ON DECISION MAKING

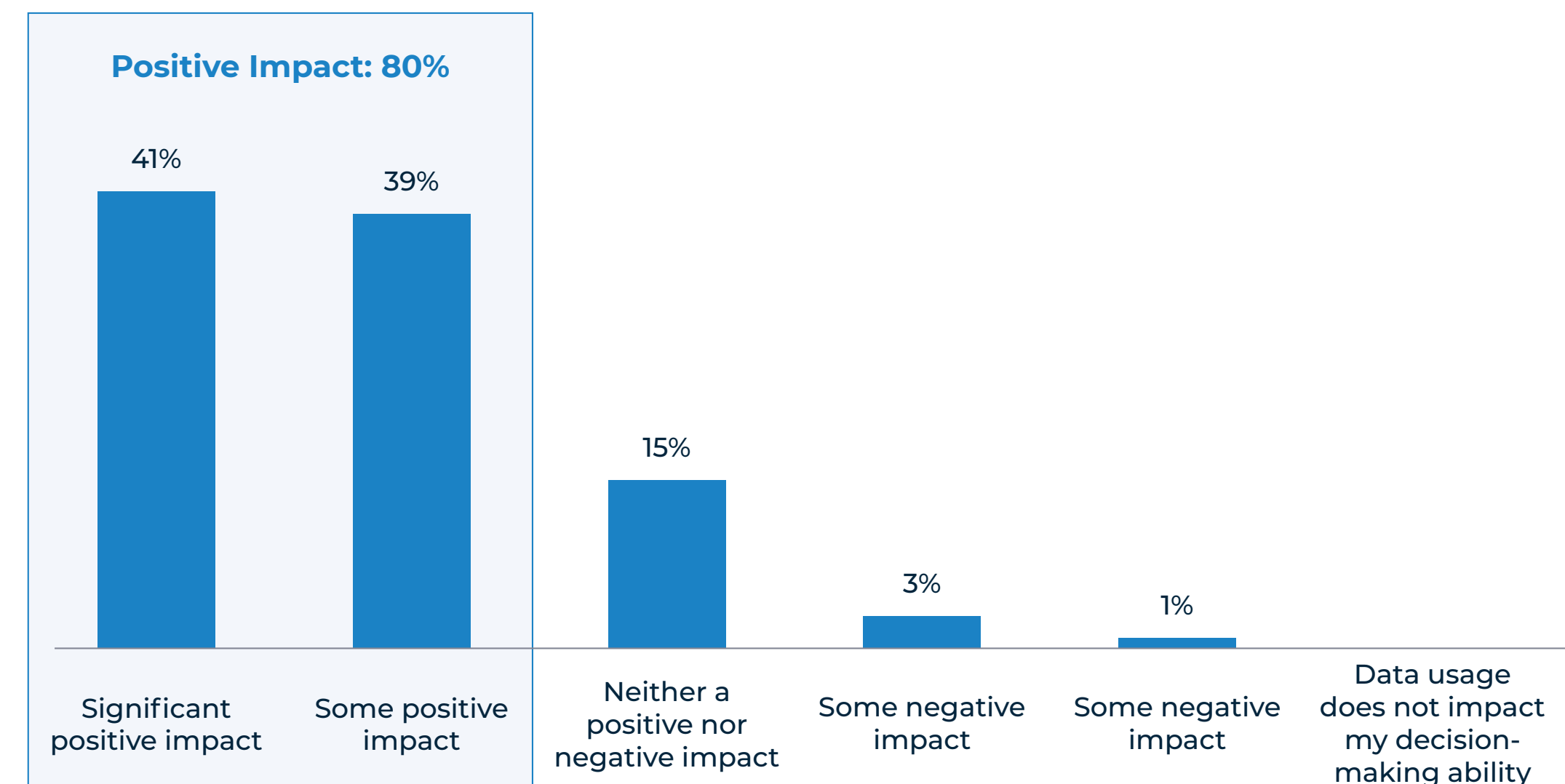


Figure 6 - What impact does your ability to access and analyze data have on your decision-making ability?

When asked if access to data improved their own decision-making, respondents were widely in agreement — 80% said that it did. (Figure 6) In fact, it was generally recognized that there are benefits to granting more employees access to data and analytics tools to help with their decision-making: 53% said it would result in better collaboration, 48% it would result in improved productivity, and 45% it would result in quicker decision-making. (Figure 7)

While it may be difficult for people to imagine a less hierarchical organization or one in which departments work in more interconnected ways, they recognize the negative effect of gatekeeping on working patterns, making it harder for teams to collaborate. Shared access to data is a way to quickly neutralize debate, providing a shortcut to agreement and enabling companies to make faster choices with more confidence.

BENEFITS OF MORE EMPLOYEES HAVING ACCESS TO DATA

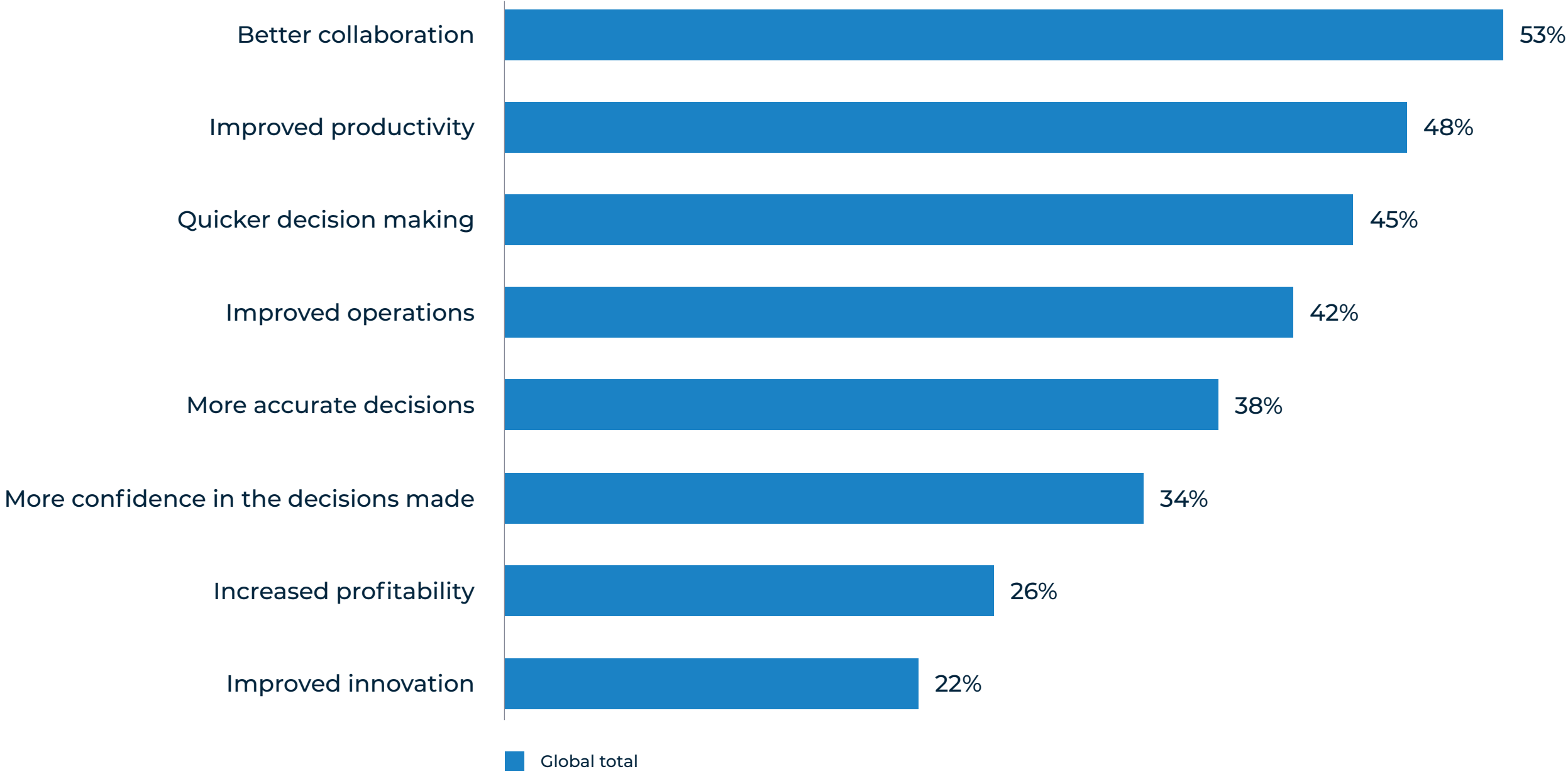


Figure 7 - What benefits do you believe could be seen if more employees had access to data and analytics tools to help with their decision-making?

It may be the case that organizations are reluctant to grant more employees access to data for one very simple reason: governance. Perhaps businesses worry that staff outside the senior leadership team, or who don't specialize in data management, won't follow best practices when gathering, storing, processing, and disposing of data. It seems clear that organizations need strong data governance if they want to give more staff access to data. Robust internal policies, consistently applied, would help organizations feel more comfortable about cracking open the gates, giving more of their employees access to data — and enjoying the resulting benefits.



IMPACT OF ADVANCED TECHNOLOGIES ON DECISION-MAKING



Figure 8 - How do advanced technologies such as analytics, business intelligence, and artificial intelligence impact decision-making in your organization?

A FUTURE WHERE ALL DECISIONS ARE AUTOMATED

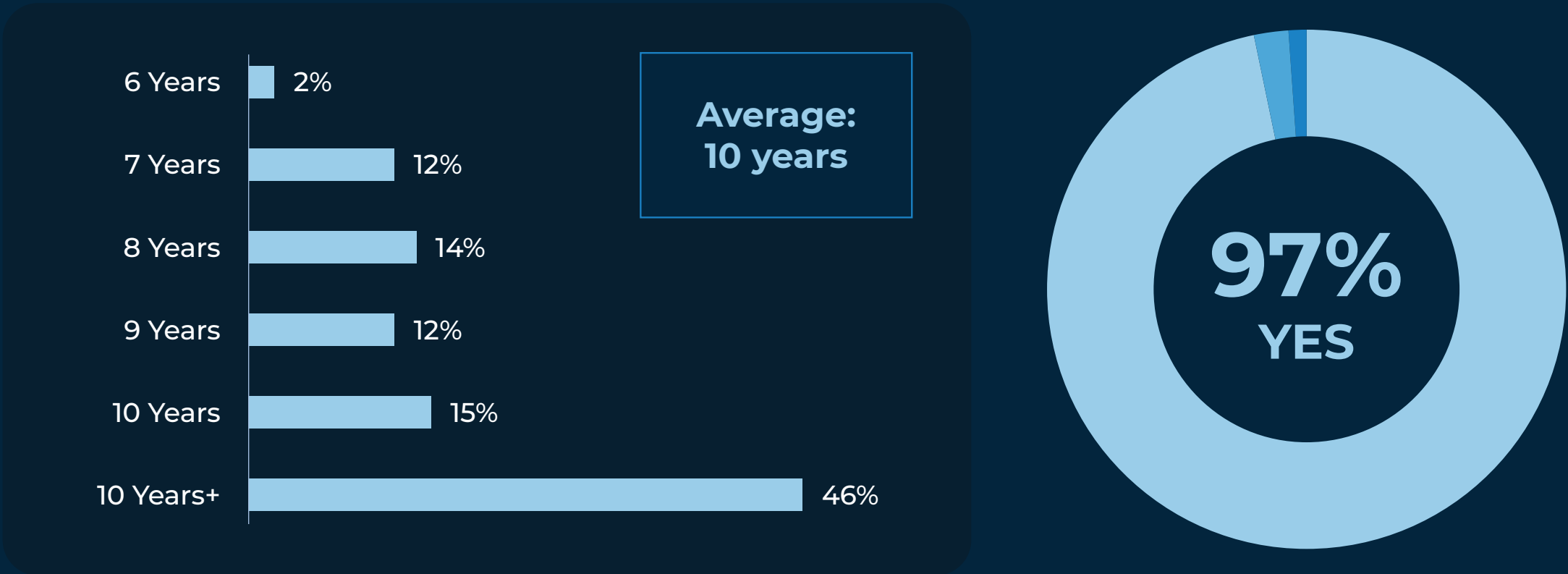


Figure 9 - Can you imagine a future where all decisions in your organization are automated? How many years do you think it will take for all decisions in your organization to potentially be automated?

THE FUTURE OF DECISION INTELLIGENCE

Organizations praise the way emerging decision-making technologies improve the speed of their decision-making (61%), their ability to collect and analyze data (55%), and their ability to communicate across the business while they’re in the process of making choices (51%). (Figure 8) At first glance, it seems as if companies are very clear about what the future of decision-making looks like. An unambiguous 97% say they can imagine a future in which all decisions in their organization are automated. (Figure 9) But when this statement is examined in more detail, it looks more complicated.

On average, organizations say decision-making will be fully automated in 10 years, with many saying that it will take longer. Only 2% think that all decisions will be automated in the next six years. By 2030, businesses expect to be making just 10% more of their decisions using automation, predicting an equal rise across operational decisions, tactical decisions, and strategic decisions. Everyone believes this future is coming — but it isn’t here quite yet.

Even as technological capabilities skyrocket, the majority of respondents expect that humans will still be involved in the future of decision-making. (Figure 10) Just 4% think that in the future, machines will be analyzing and producing insights without any human input; 12% think this process won't involve human review but will rely on a framework of human governance; 26% believe the future of decision-making is machine-led, and human-supported, that is, machines will analyze and produce insights for humans to review. The greatest number, 40%, predict that eventually, decision-making will be human-led and machine-supported: humans will create the insights and make the choices, using a range of technologies to help them do so.

THE FUTURE ROLE OF THE HUMAN IN DECISION MAKING

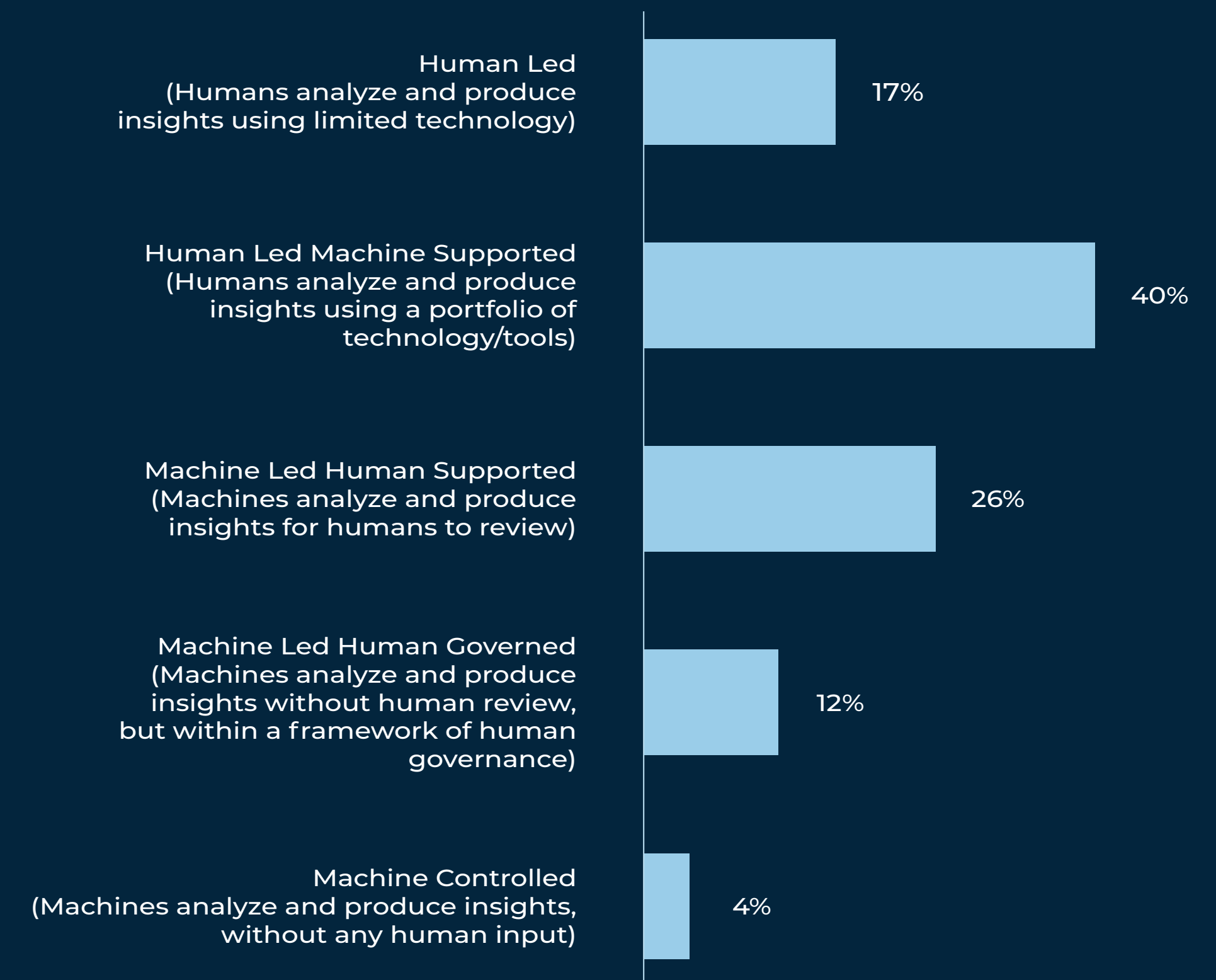


Figure 10 - What should the role of the human be in the future of decision-making?

VIEWS ON AUTOMATING DECISION-MAKING

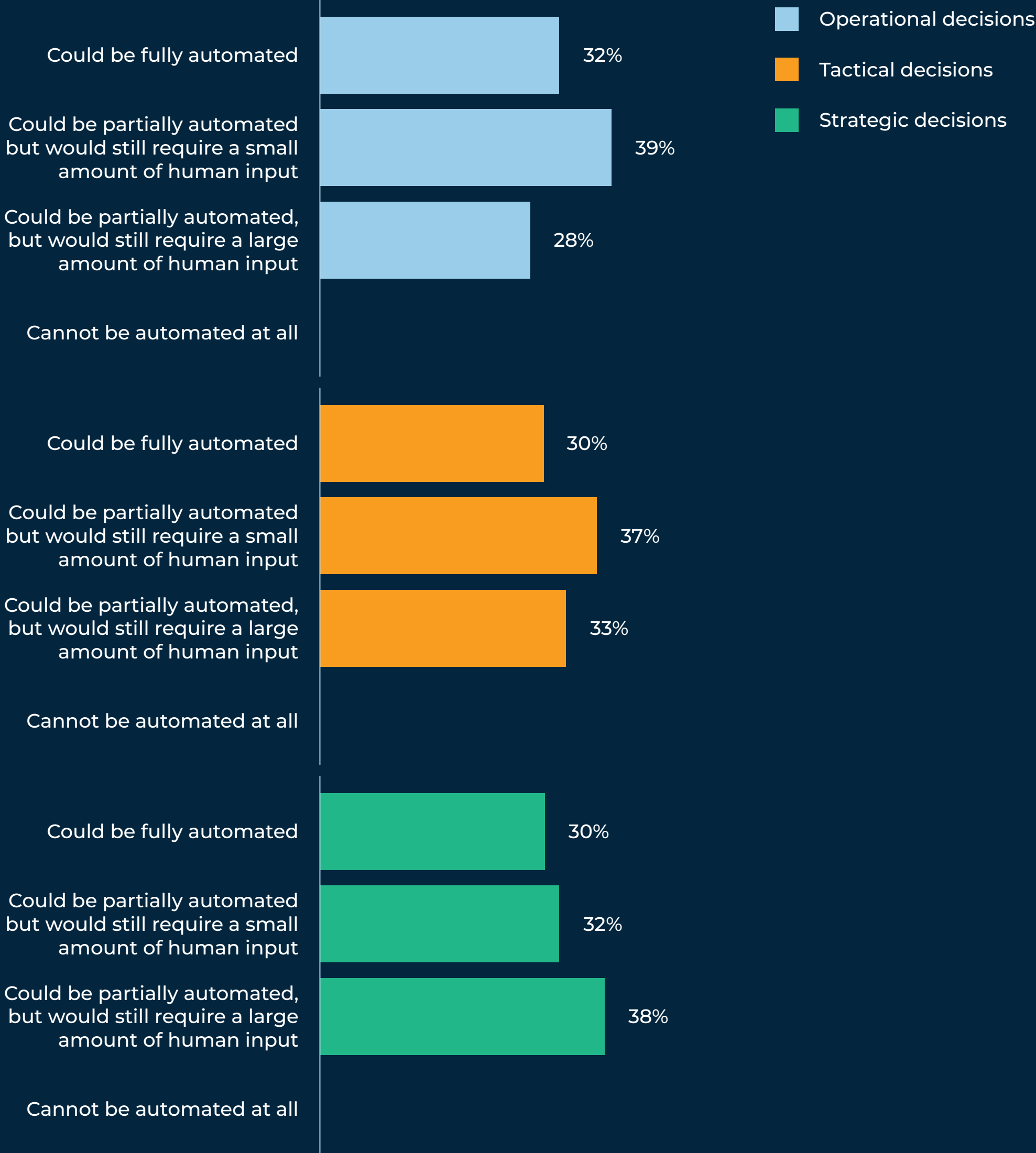


Figure 11 - To what extent do you believe each of the following decisions could be automated in your organization?

Whether a decision is operational, tactical, or strategic, no one surveyed thinks it can't be automated. But the prediction is there will be a slight variation in how different types of decisions are automated. 32% say operational decisions could be fully automated, with the remaining 67% saying humans will be involved to a greater or lesser extent. For tactical decisions, 30% think full automation is possible and 70% predict human involvement. The numbers look similar for strategic decisions, the most complex decision type with the longest impact, but respondents think that slightly more human input will be needed. (Figure 11)

This makes sense when you map the life-cycle of the decision-making process. As information is gathered, a problem is identified, different options are weighed and a solution is chosen, companies predict that technology will be more or less involved. Twenty-eight percent (28%) think that the greatest need for technology is when organizations are collecting and analyzing data, facts and options, at the very beginning of a decision-making process. 26% think that technology will come into its own at the next stage, helping workers recognize that an issue or opportunity has arisen that requires them to make a choice. 23% think that the greatest need for technological assistance is in comparing the pros and cons of different options, evaluating the potential outcomes and risks associated with each one. In comparison, only 13% think that technology will actually help them choose the best solution. (Figure 12)

A smaller number (8%) think the implementation of this solution is technology's moment to shine, and very few (4%) think that technology will be most helpful in reviewing and evaluating decisions, assessing the effectiveness of a chosen solution, and adjusting it if necessary. (Figure 12) It's clear that organizations see technology as most helpful in digesting and synthesizing information at the early stages of the decision-making process so people can step in and make confident choices, based on comprehensive, relevant information.

STAGE IN DECISION MAKING REQUIRING TECHNOLOGY

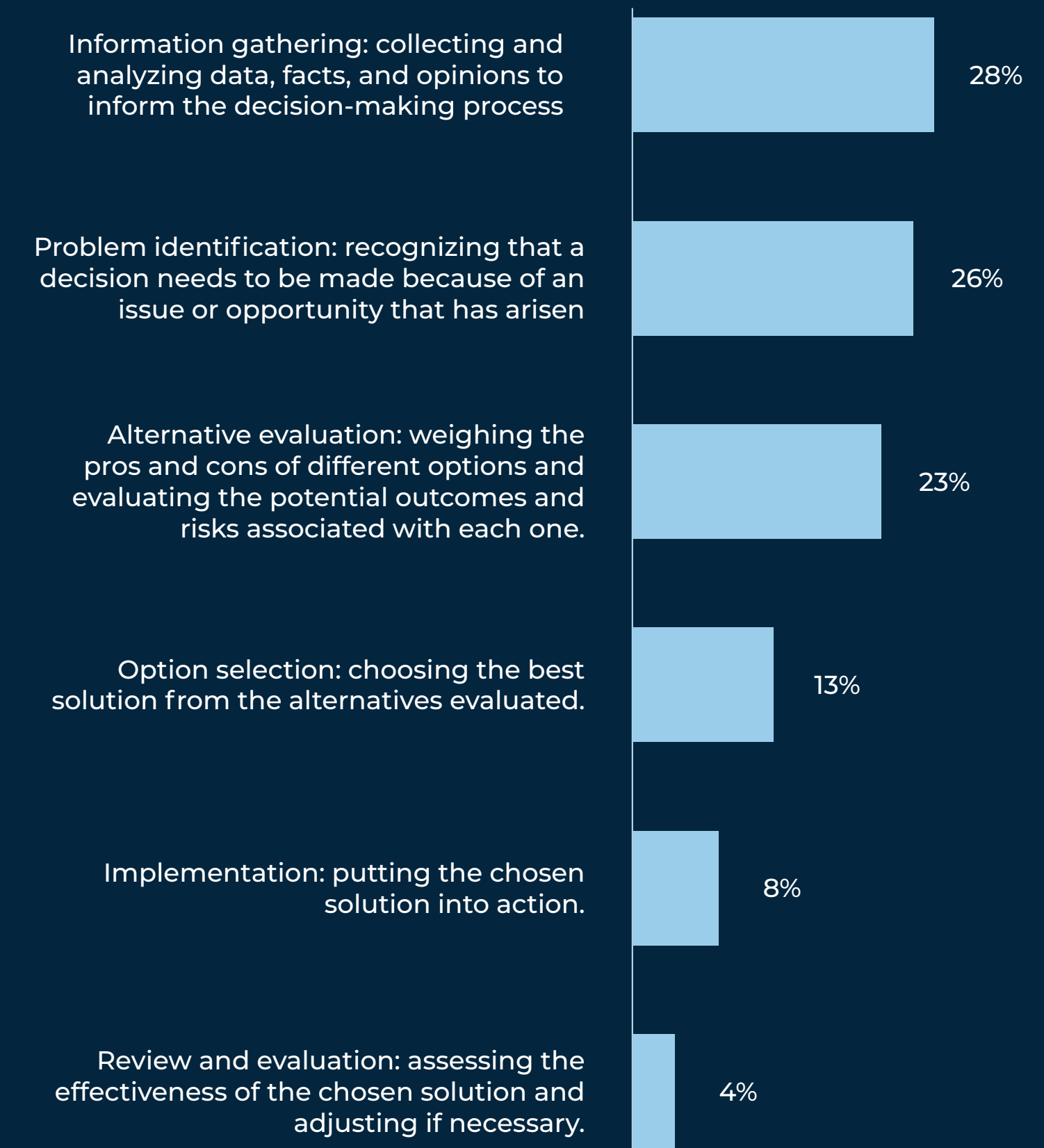


Figure 12 - At what point in an employee's decision-making journey do you envisage the greatest need for technology to assist the process of making a decision?

CONCLUSION

Many media headlines around generative AI and automation are focused on how quickly new technologies will replace human input. This research shows that organizations are much more conservative in their predictions about timelines, believing this change might take a decade or longer. And don't be worried about the terminator just yet; they also tend to think the future of decision-making will involve a collaboration between humans and intelligent technology.

When considering how they might automate their decision-making processes, companies identify several key challenges. The most prohibitive factor is complexity, named by 57% as a barrier, closely followed by cost (54%). Regulatory barriers are also a concern, named by 51%. Nevertheless, it's clear that if organizations opt to make use of it, decision intelligence could help them function more efficiently, improving processes, productivity, and even the job satisfaction of individual workers. It may be the case that businesses are not currently making the most of what decision-making technologies have to offer, but they already know decision intelligence will shape the way they work in the years to come.

About the Research

The survey was conducted by Coleman Parkes in March and April 2023, and targeted 2800 senior decision-makers in organizations across key sectors in the Americas, EMEA, and APJ.

ABOUT COLEMAN PARKES

Coleman Parkes is a full-service B2B market research agency specializing in IT/technology studies, targeting senior decision makers in SMB to large enterprises across multiple sectors globally. For more information, contact IanBeston@coleman-parkes.co.uk

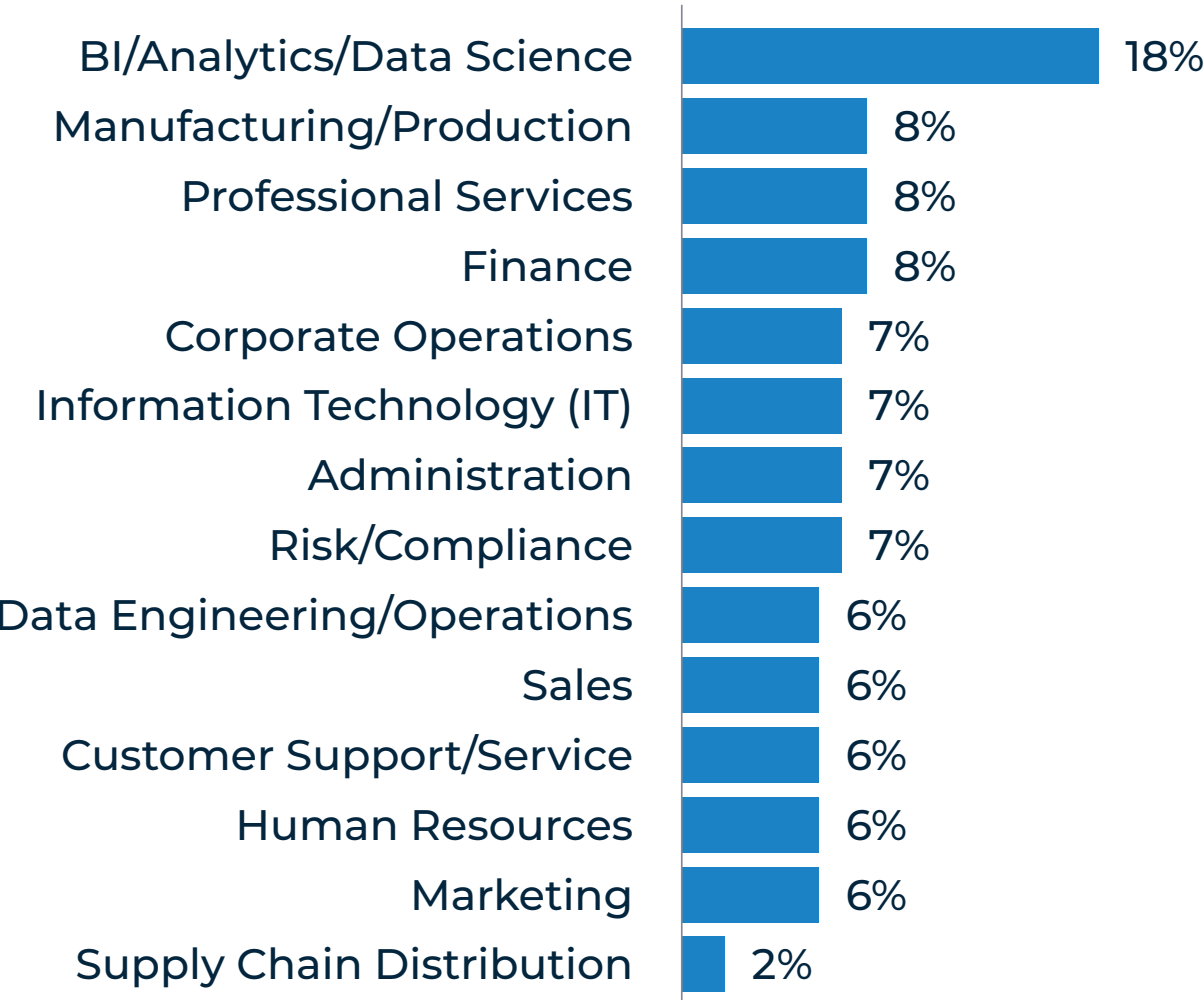
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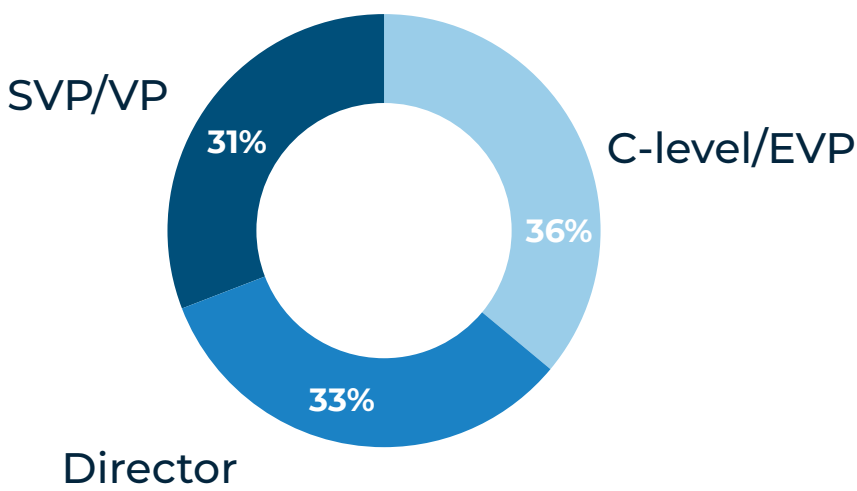


APPENDIX - AUDIENCE PROFILE

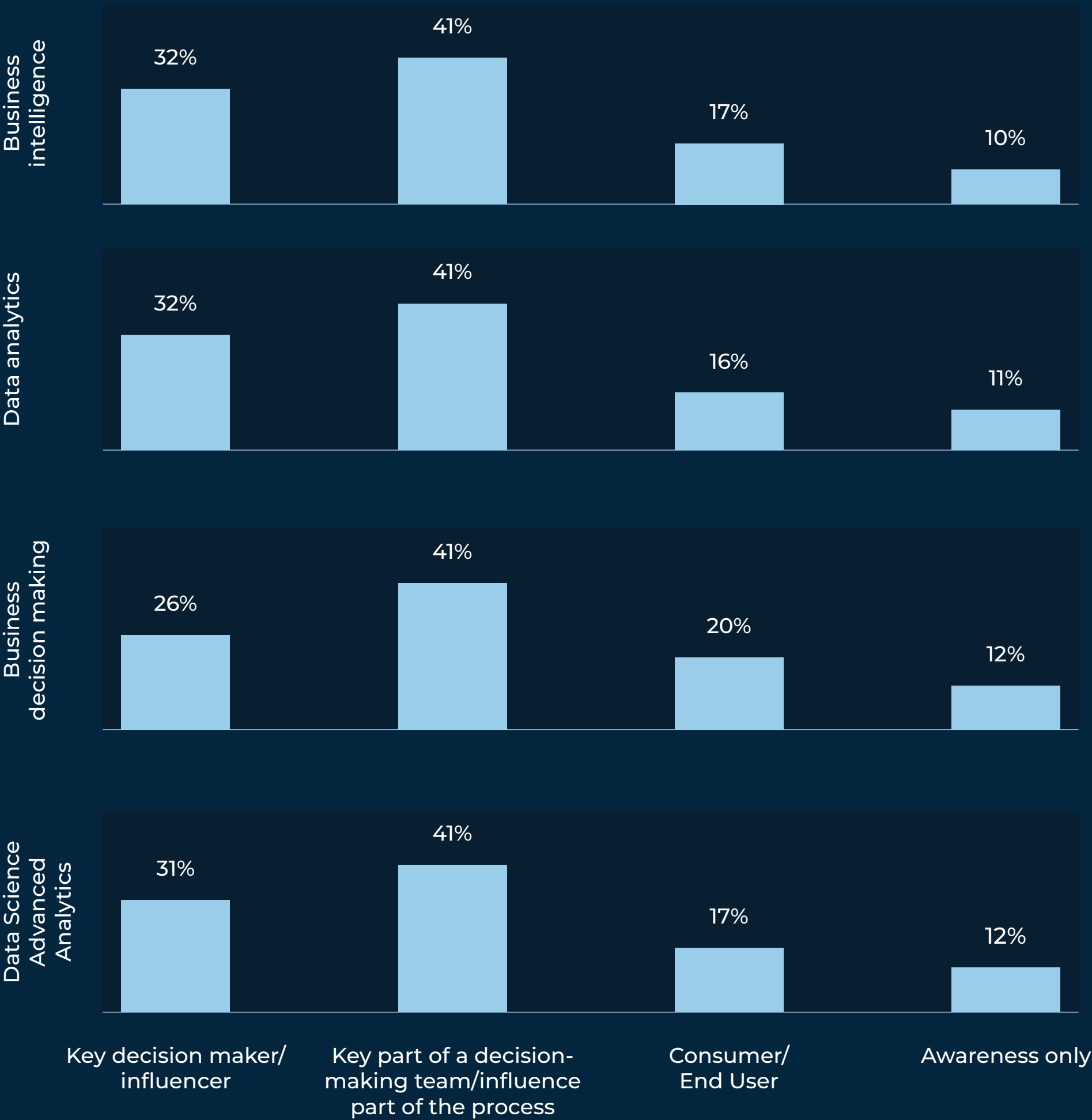
LINE OF BUSINESS JOB FUNCTION



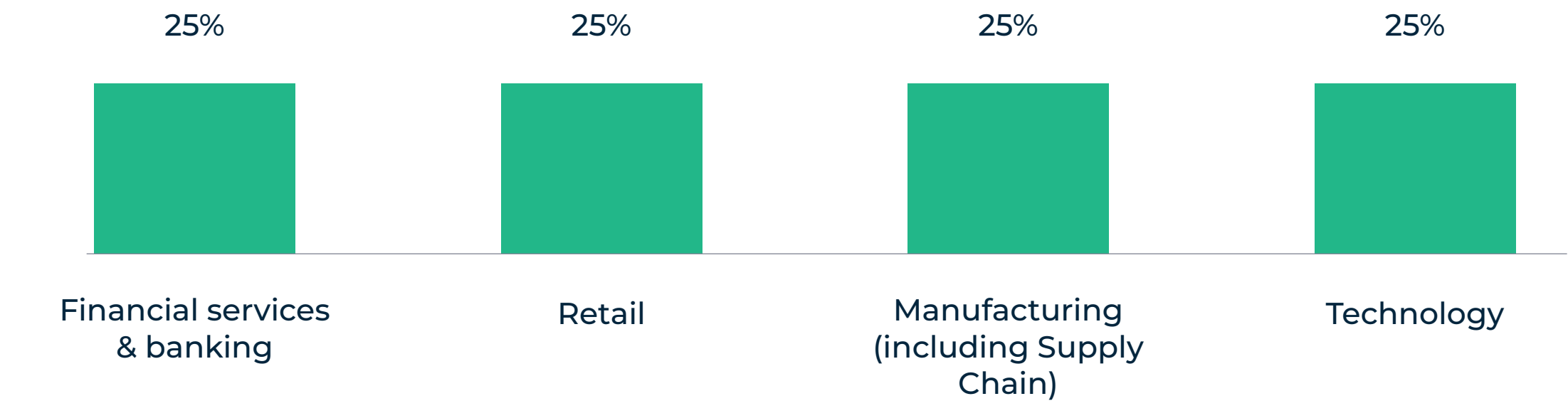
JOB SENIORITY



JOB RESPONSIBILITIES



INDUSTRY



SIZE

