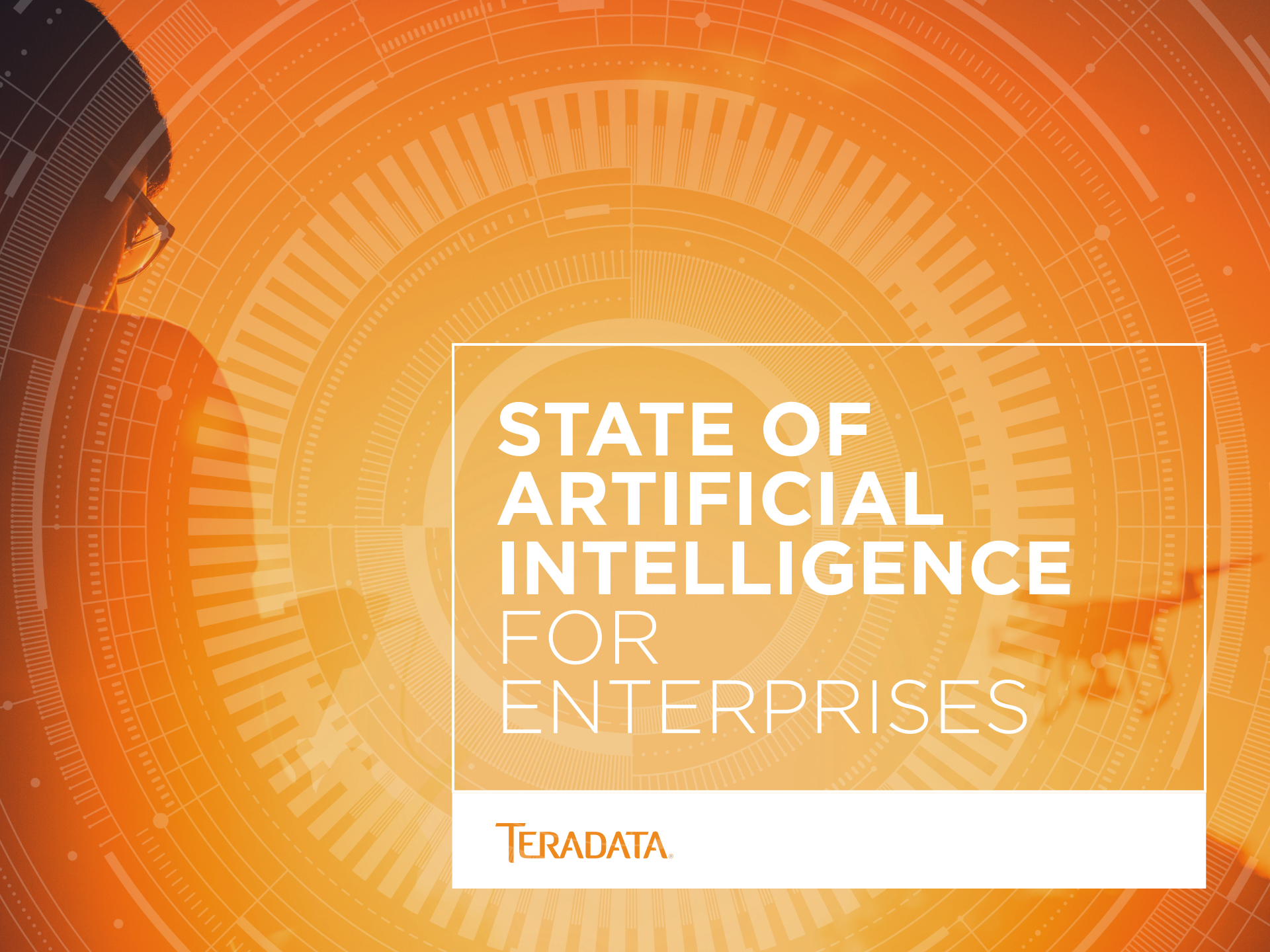

STATE OF ARTIFICIAL INTELLIGENCE FOR ENTERPRISES

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EXECUTIVE SUMMARY

Business leaders looking for increased revenue, more efficiency and a better experience for their customers can have all of that — if they adopt artificial intelligence (AI) for their organization. That is the promise of AI that many businesses are actively investing in today.

The hype evident in the commercial sector, from self-driving cars to speech-based personal assistants, is spilling over to the business world. AI is pivoting from a long-promised business solution to a real-world spark that's igniting change. Disruption is happening right now, and it's moving very fast. But, the big challenge for enterprises is figuring out the best strategy for creating value from today's AI investments, and recognizing, and avoiding, the landmines along the way.

Through a survey conducted in July 2017 by Vanson Bourne, the Teradata "State of Artificial Intelligence for Enterprises" report captures the here and now for AI — how executive decision-makers are investing in AI today, the expected return on investment (ROI), what barriers lie ahead and how businesses craft a solid game plan to realize AI's full potential.

Our survey found a healthy dose of enthusiasm for AI, with 80 percent of enterprises reporting they are already investing in some capacity in related technologies and 30 percent planning on expanding their investments over the next 36 months. Businesses expect AI to keep them ahead of the competition in their industry. They are positioning AI so it can create sweeping gains across nearly all of their revenue streams and throughout their business practice areas. In other words, and not surprisingly, businesses are bullish on AI.

But, success is going to take a concerted strategy.

Almost all respondents (91 percent) anticipate significant barriers to adoption. The majority predict roadblocks due to lack of IT infrastructure (40 percent), followed by a lack of in-house talent (34 percent). Just as many, 33 percent, claim that AI technology available today is too unproven and nascent, while 30 percent yearn for more budget. However, skepticism is lower in other areas — only 19 percent are concerned that AI has a weak business case, and only 20 percent worry about the impact of AI and automation on jobs and employee morale.

For the purposes of this report, AI is the ability to automate enterprise decisioning using human-to-machine cognitive interactions **where machines are able to augment and assist human capabilities** by sensing and continuously learning, reasoning and inferring, and deciding and acting to drive a business outcome.

80%

report that some form of AI is already in production in their organization.

EXECUTIVE SUMMARY — CONTINUED

Companies will overcome these barriers with more executive-level awareness and an enterprise-wide strategy for AI implementation and use. This is ushering in a shift within the C-suite: Today, AI strategy is typically under the scope of a CIO or CTO, but, in the near future, the majority of businesses surveyed plan to install a dedicated Chief AI Officer to lead the effort. Enterprises also realize that in-house talent that can harness AI is going to remain in short supply. So, businesses plan to create AI-driven opportunities and wins instead through vendors that will help them buy, build and deploy AI solutions.

This survey proves that business leaders realize that the benefits of AI today are undeniable — and it will continue to prove itself as a powerful investment for the future, with executives expecting ROI to double in five years and triple in 10 years. But, to maximize its potential, business leaders must re-imagine how AI will exist in their enterprise. It has the capacity to disrupt all areas of a business, from the boardroom down to the data center. Adopting a clear and agile strategy will help these decision-makers realize AI's potential by delivering new insights, creating efficiencies and innovating faster than the competition.

ALMOST ALL RESPONDENTS **(91 PERCENT)** ANTICIPATE SIGNIFICANT BARRIERS TO ADOPTION

KEY FINDINGS

With 80 percent of IT and business decision-makers reporting they are currently using AI and 30 percent saying they plan to ramp up spending on AI technologies over the next 36 months, this survey highlights enthusiasm for AI in enterprises today, a growing commitment to new investments, and optimism that AI will improve business practices and outcomes. While challenges will exist for enterprises as they shift to a new business strategy powered by AI, this report finds that they will accept those challenges, because the long-term benefits clearly outweigh near-term pains. These near-term pains include significant investment in IT infrastructure and processes, time commitment to training workforce on AI, and potential impact on employee morale. Nevertheless, C-level executives — namely CIOs and CTOs — maintain they they are committed to AI in their enterprise, because of the expected ROI over the next 10 years.

The key findings of this report depict the current state of AI adoption, its barriers to adoption and how businesses plan to strategize to extract ROI.

Enterprise Investments:

- 80 percent of respondents report that some form of AI is already in production in their organization, although 42 percent say that there is room for further implementation across the business.
- Companies expect a $1.23 ROI in the next three years for every dollar invested in AI today, $1.99 in the next five years and $2.87 in ROI over the next 10 years.
- 30 percent still believe that their organization isn't investing enough and will need to invest more in AI technologies over the next 36 months to keep up with competitors in their industry.

Challenges:

- 91 percent expect to see barriers to AI realization.
- Top barriers to AI are a lack of IT infrastructure (40 percent) and lack of access to talent and understanding (34 percent).
- Only 28 percent of respondents recognize that their organization has enough trained people internally to buy, build and deploy AI.

Strategies:

- Enterprises currently align AI strategy under traditional C-suite roles, with CIOs (47 percent) and CTOs (43 percent) leading in prevalence.
- However, 61 percent of respondents say they plan to hire Chief AI Officer in the future
- AI is not perceived to be a growing threat to workers by 2030, with only 21 percent of respondents projecting AI will replace humans for most enterprise tasks in their organization.

SURVEY DEMOGRAPHICS

260 IT and business decision-makers VP-level or higher from organizations with a global revenue of more than $50 million a year were interviewed in July 2017. They were split in the following ways:

Respondent Region

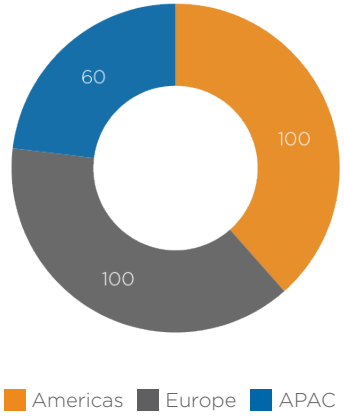


Figure D1: Analysis showing respondent region, displaying data from all respondents (260)

Respondent Type

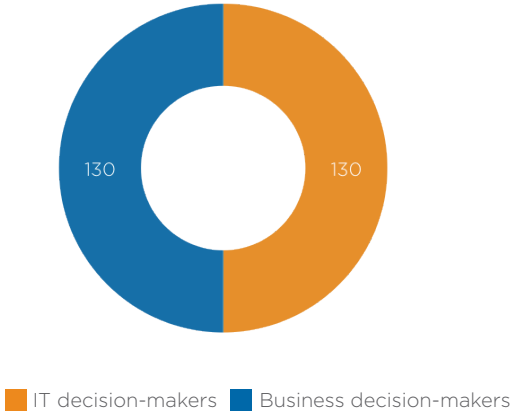


Figure D2: Analysis showing the respondent type, displaying data from all respondents (260)

Organization Sector

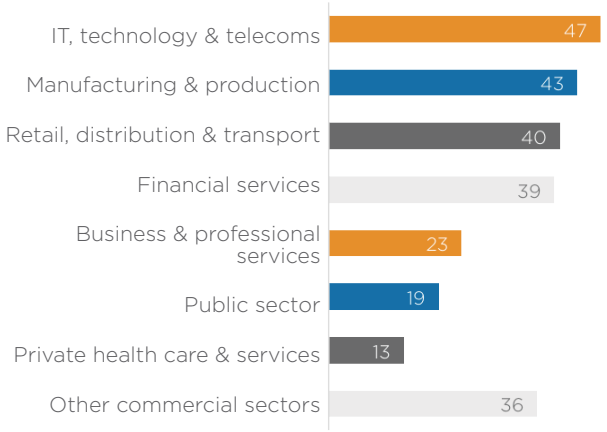


Figure D3: "Within which sector is your organization?" asked to all respondents (260)

AI INVESTMENT & ROI

CURRENT AI INVESTMENTS

AI has a robust adoption rate among those surveyed. Eighty percent of respondents report that some form of AI is already in production in their organization, although 42 percent say that there is a lot of room for further implementation across the business. While APAC has made the most current investments, both the Americas and Europe were more likely to report more room for further investment.

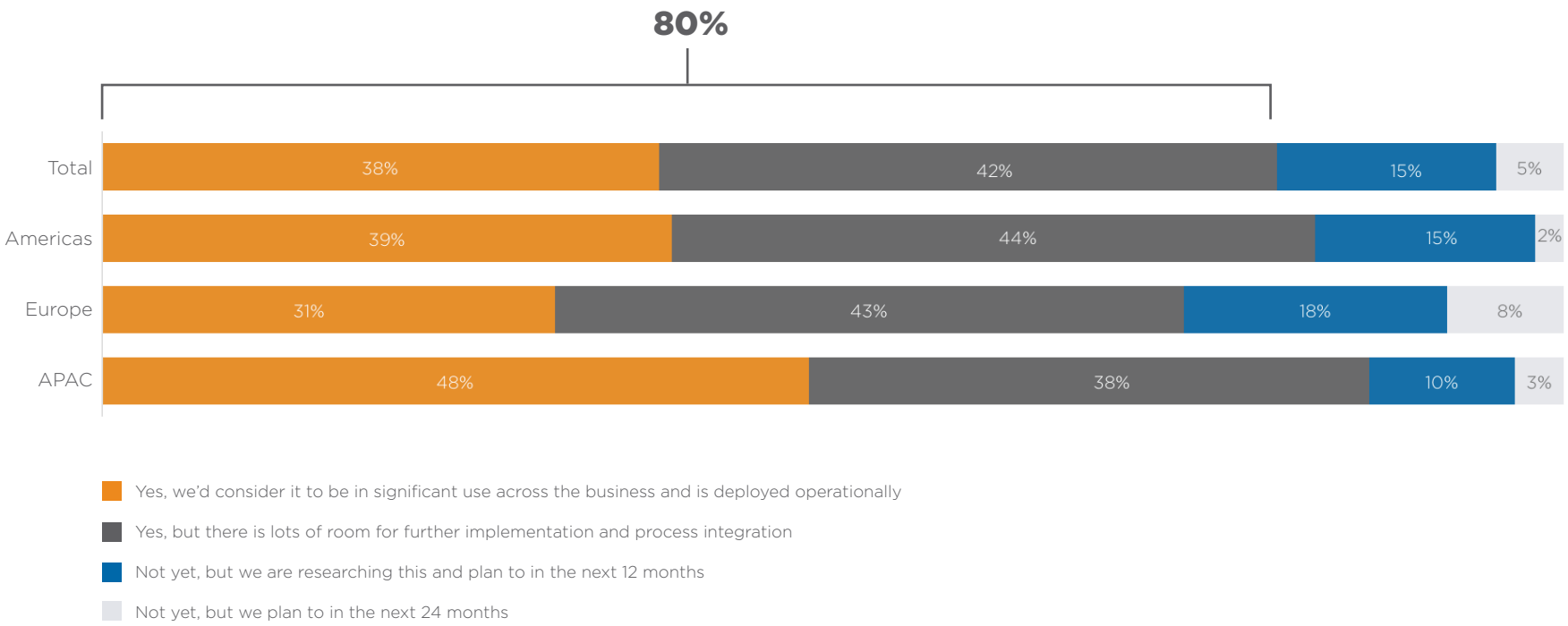


Figure 1: "Does your organization have any AI capabilities currently in production?" split by respondent region, asked to all respondents (260)

REVENUE DRIVERS FROM AI TODAY

Organizations are starting to drive revenue from AI across the board, with between 25 percent and 50 percent of respondents reporting increases. The top three areas where businesses are driving revenue are product innovation/research and development, customer service, and supply chain and operations.

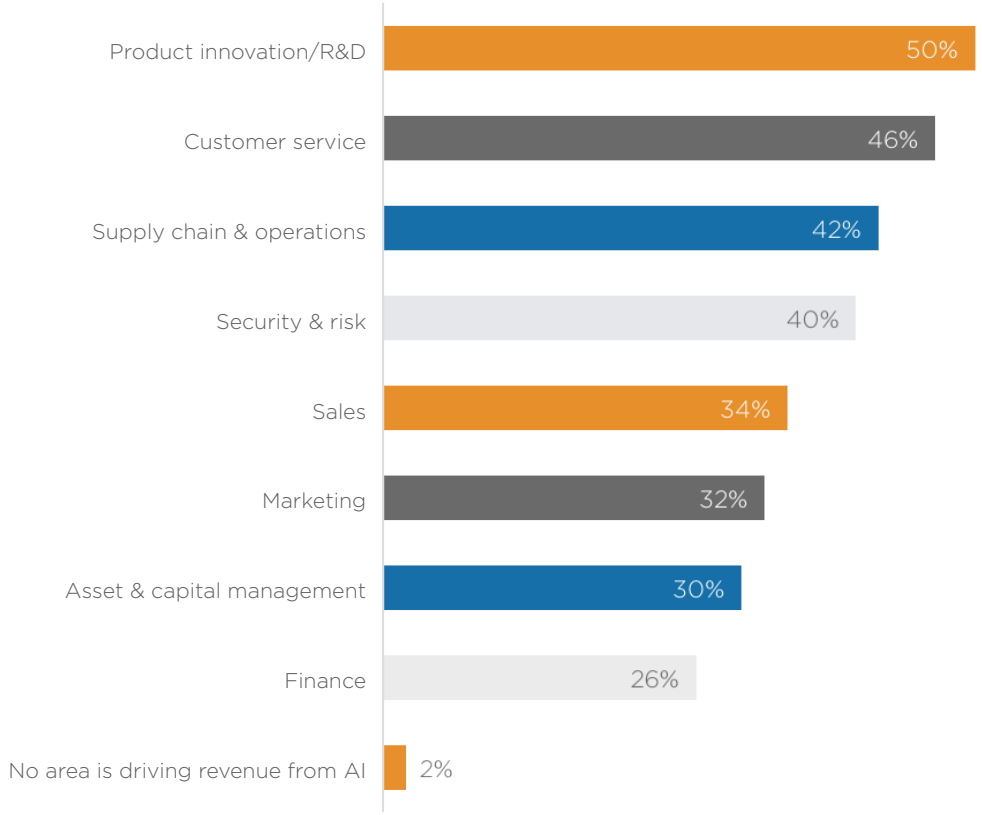


Figure 2: "Which part of your organization is driving revenue from AI capabilities today?" asked to respondents whose organization currently has AI capabilities in production (209)

EXPECTED RETURN ON INVESTMENT

Globally, companies expect a $1.23 ROI in the next three years for every dollar invested today, $1.99 ROI in the next five years and $2.87 in ROI over the next 10 years.

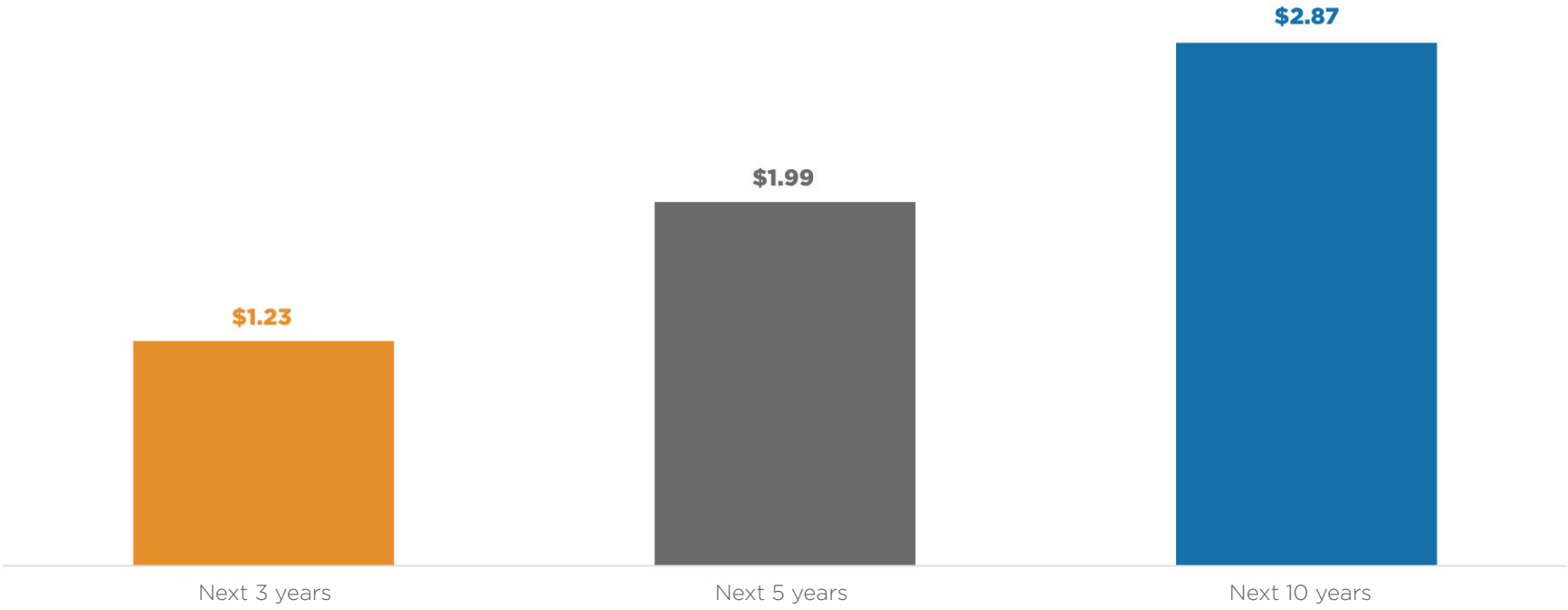


Figure 3: Analysis showing the average return on investment in U.S. dollars that respondents expect their organization could see for every $1 spent on AI technologies in the above timeframes, asked to all respondents (260)

REVENUE DRIVERS FOR AI BY REGION

Different regions have different revenue drivers related to AI investments. APAC respondents report much higher product innovation/R&D, customer service, marketing, and asset and capital management ROI than the Americas and Europe. Europe leads in supply chain and operations, while the Americas leads ROI from the sales organization.

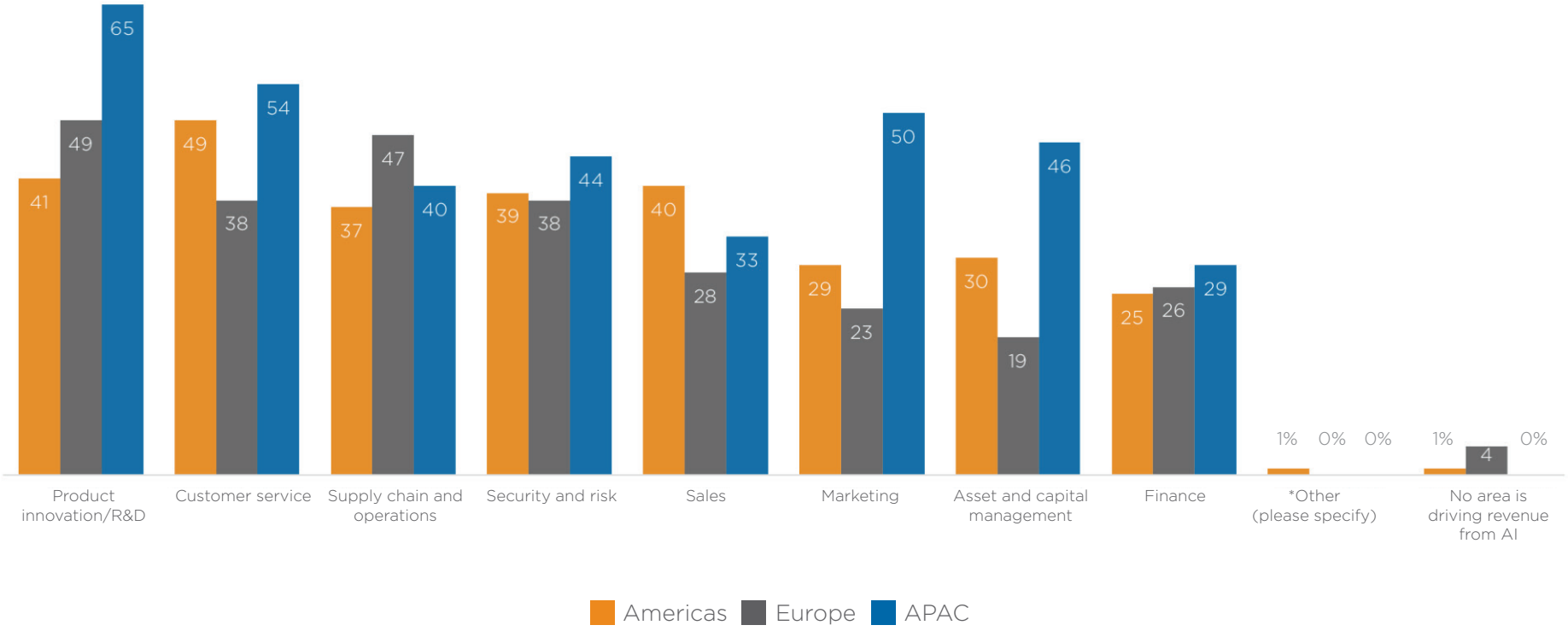


Figure 4: "Which part of your organization is driving revenue from AI capabilities today?" split by respondent region, asked to all respondents (260)

SECTORS IMPACTED BY AI

Respondents around the globe expect to see the positive impacts of AI, particularly in service sectors. They expect to see negative impacts across many sectors that currently are dominated by human-centric interactions.

POSITIVE

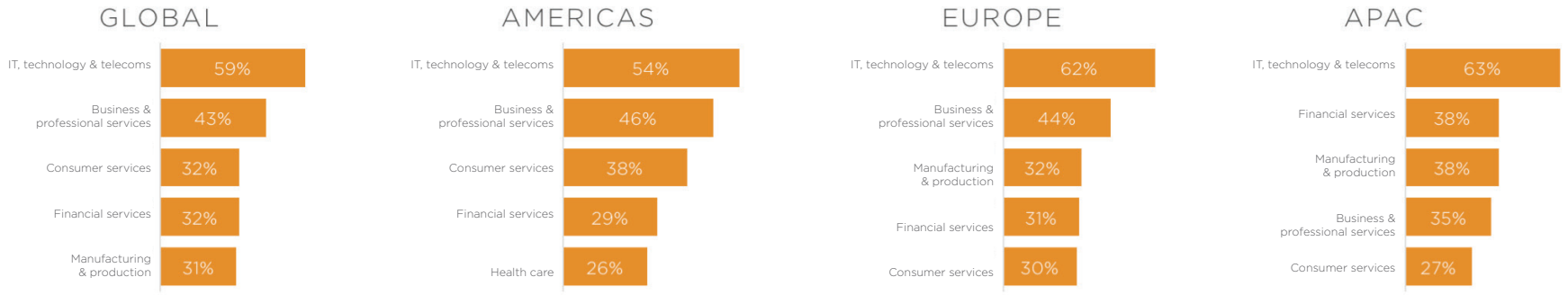


Figure 5: Analysis showing the top five most commonly selected sectors that respondents expect to see the most positively impacted by the future growth of AI, asked to all respondents (260)

NEGATIVE

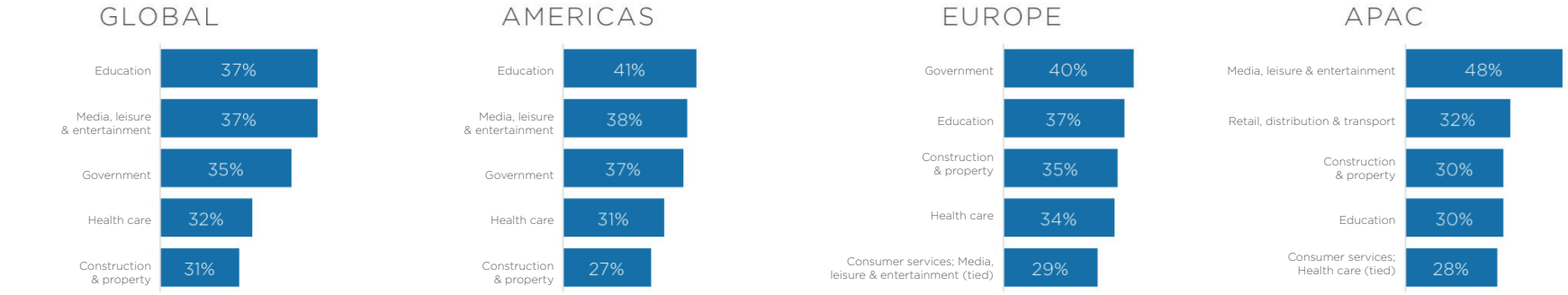


Figure 6: Analysis showing the top five most commonly selected sectors that respondents expect to see the most negatively impacted by the future growth of AI, split by respondent region. Asked to all respondents (260)

PLANNED AREAS FOR INVESTMENT

While adoption rates are already high, respondents from around the world say there is a lot of opportunity for future implementation. The top three areas that will drive business outcomes are customer experience, product innovation and operational excellence. Across the board, the APAC region rated all planned areas of investment higher.

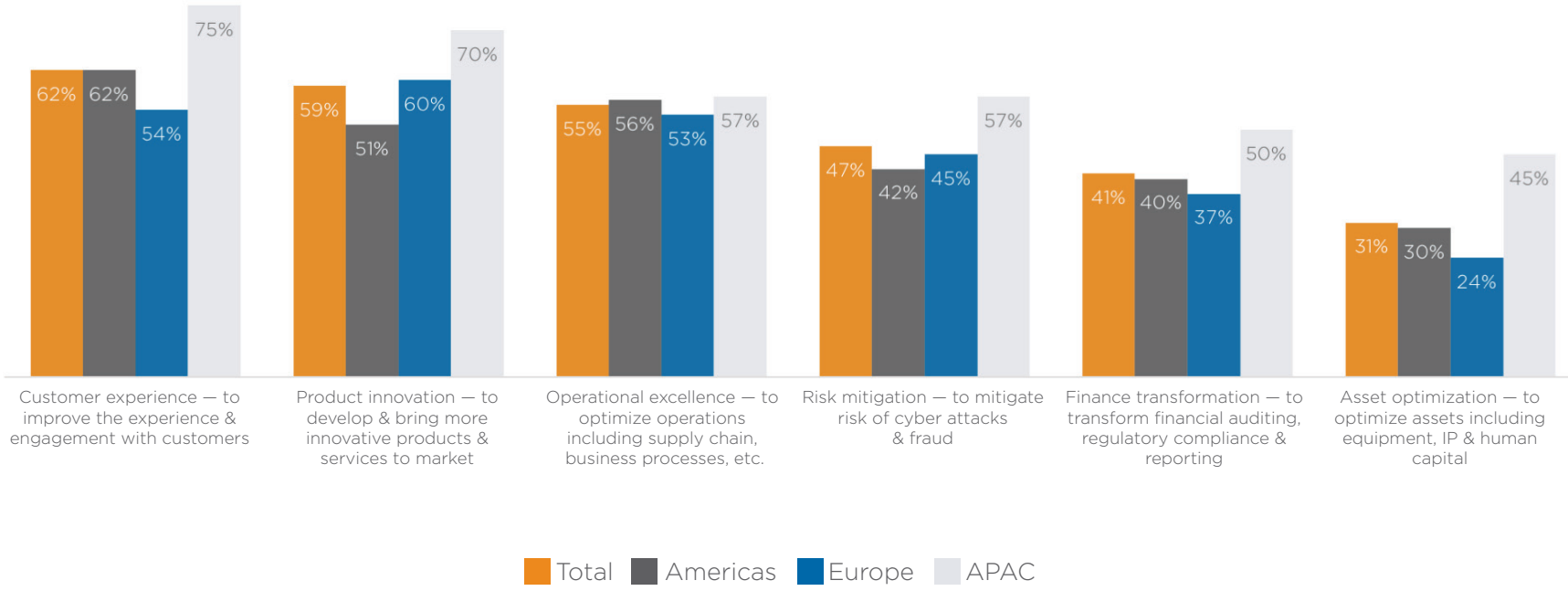


Figure 7: "Which of the following business outcomes drive your organization to invest in AI capabilities?" split by respondent region, asked to all respondents (260)

IMPETUS FOR INVESTMENT: COST TAKEOUT VS. REVENUE GROWTH

Businesses anticipate about a half-and-half split between revenue increases and cost/efficiency savings from their AI investments. This is consistent with projected ROI for three years out, which is also about even, though ROI in five and 10 years doubles and triples, respectively. The Americas are an outlier, believing revenue increases will outweigh savings, versus Europe and APAC, where the opposite is true.

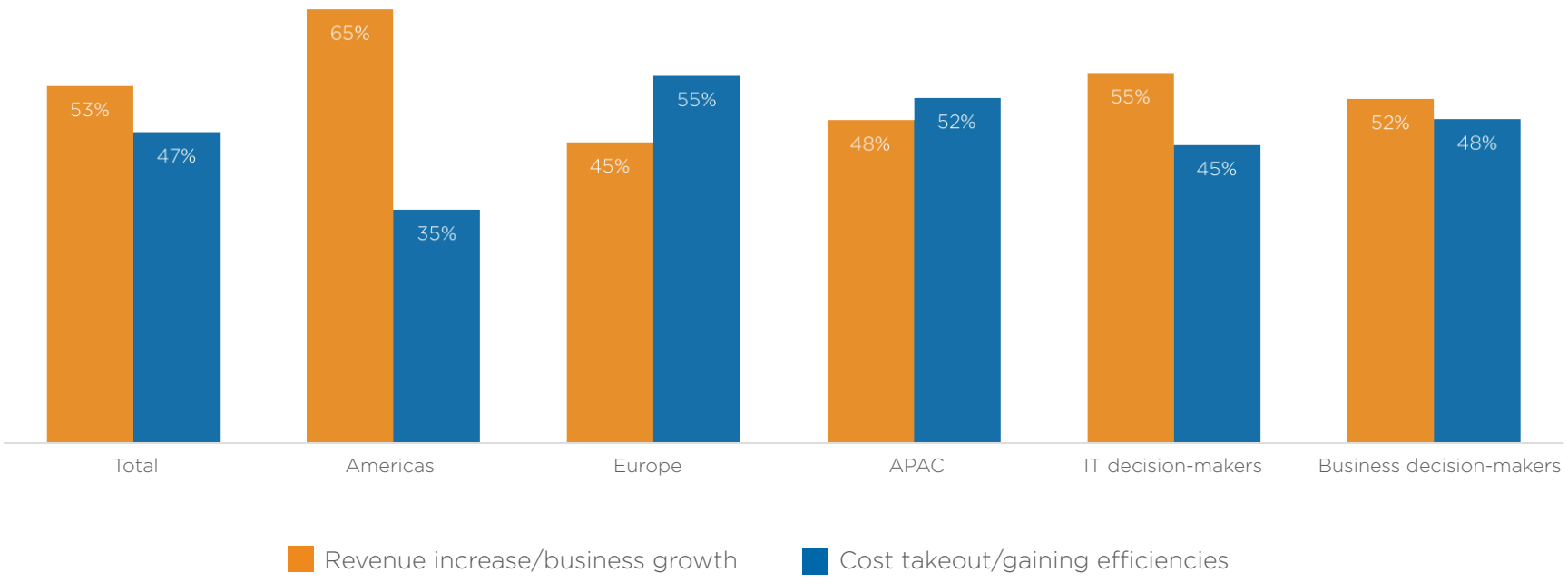


Figure 8: "Which of the below is or would be more of a driver for AI investment in your organization?" split by respondent region and respondent type, asked to all respondents (260)

REVOLUTIONIZING THE BUSINESS THROUGH AI

Across the board, respondents say AI has the potential to revolutionize their businesses. They imagine it has the biggest potential to automate repetitive tasks, deliver new strategic insights and automate areas of knowledge work. APAC, far more than any other region, is looking for AI that can reduce the need for costly human resources.

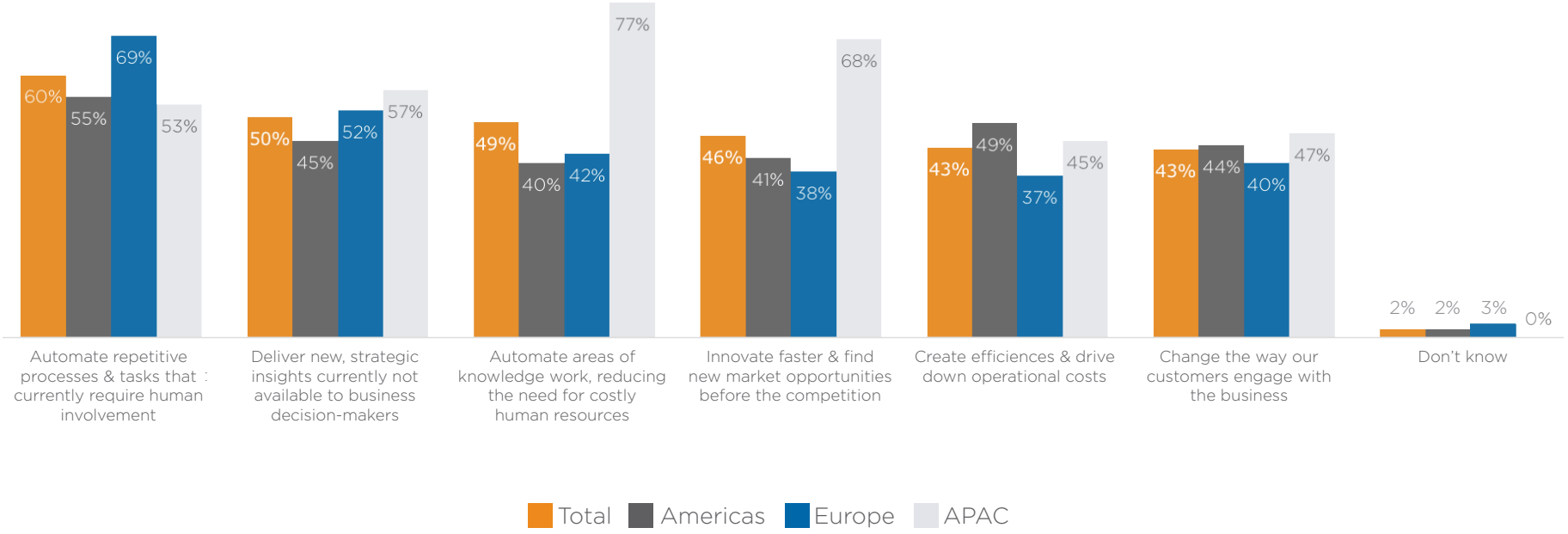


Figure 9: "What do you see as the biggest areas of potential for AI to revolutionize your business?" split by respondent region, asked to all respondents (260)

IS THE INVESTMENT ENOUGH?

Thirty percent of all respondents still believe that their organization isn't investing enough and will need to invest more in AI technologies over the next 36 months to keep up with competitors in their industry, despite a reported average spend on AI today of $19.1 million. More respondents from APAC are planning to ramp up spending than the Americas and Europe.

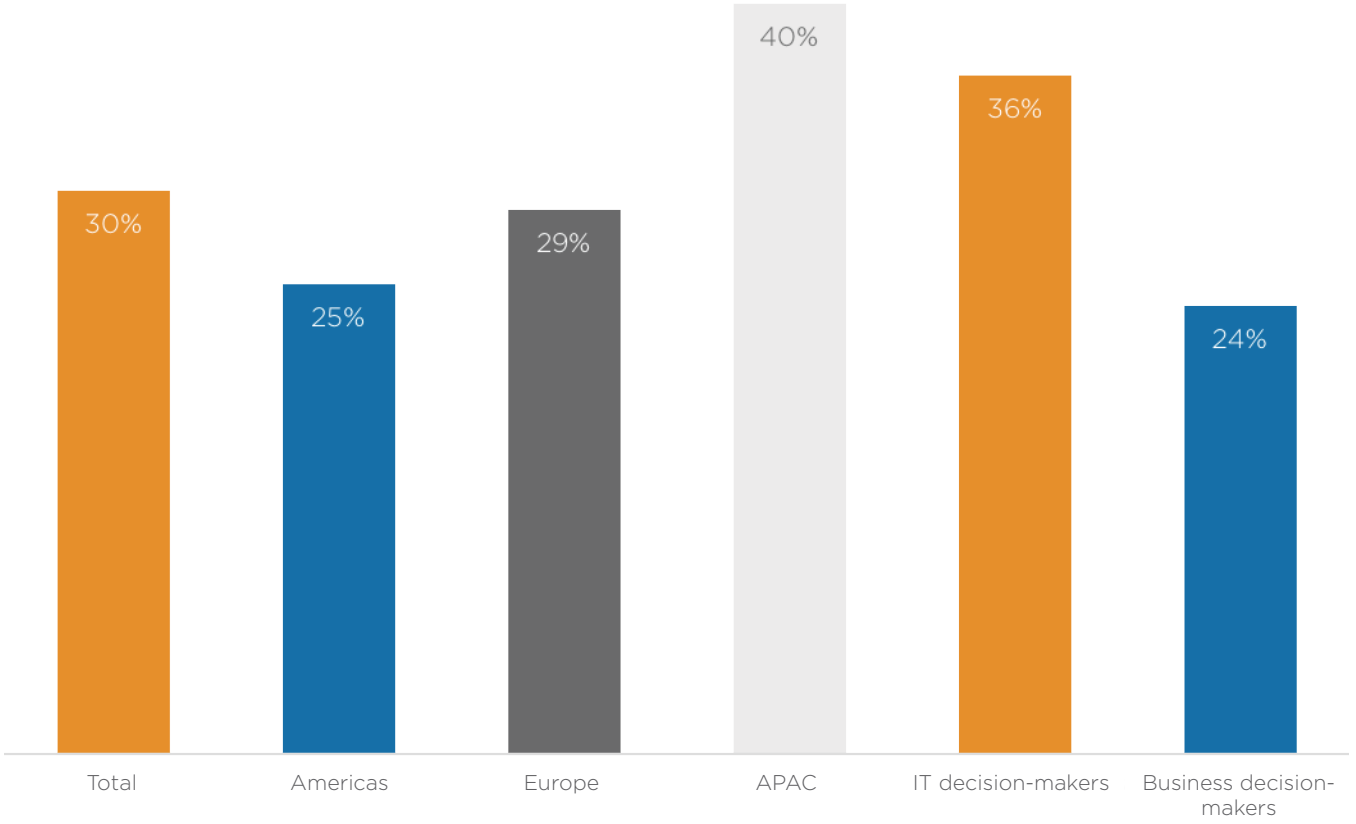
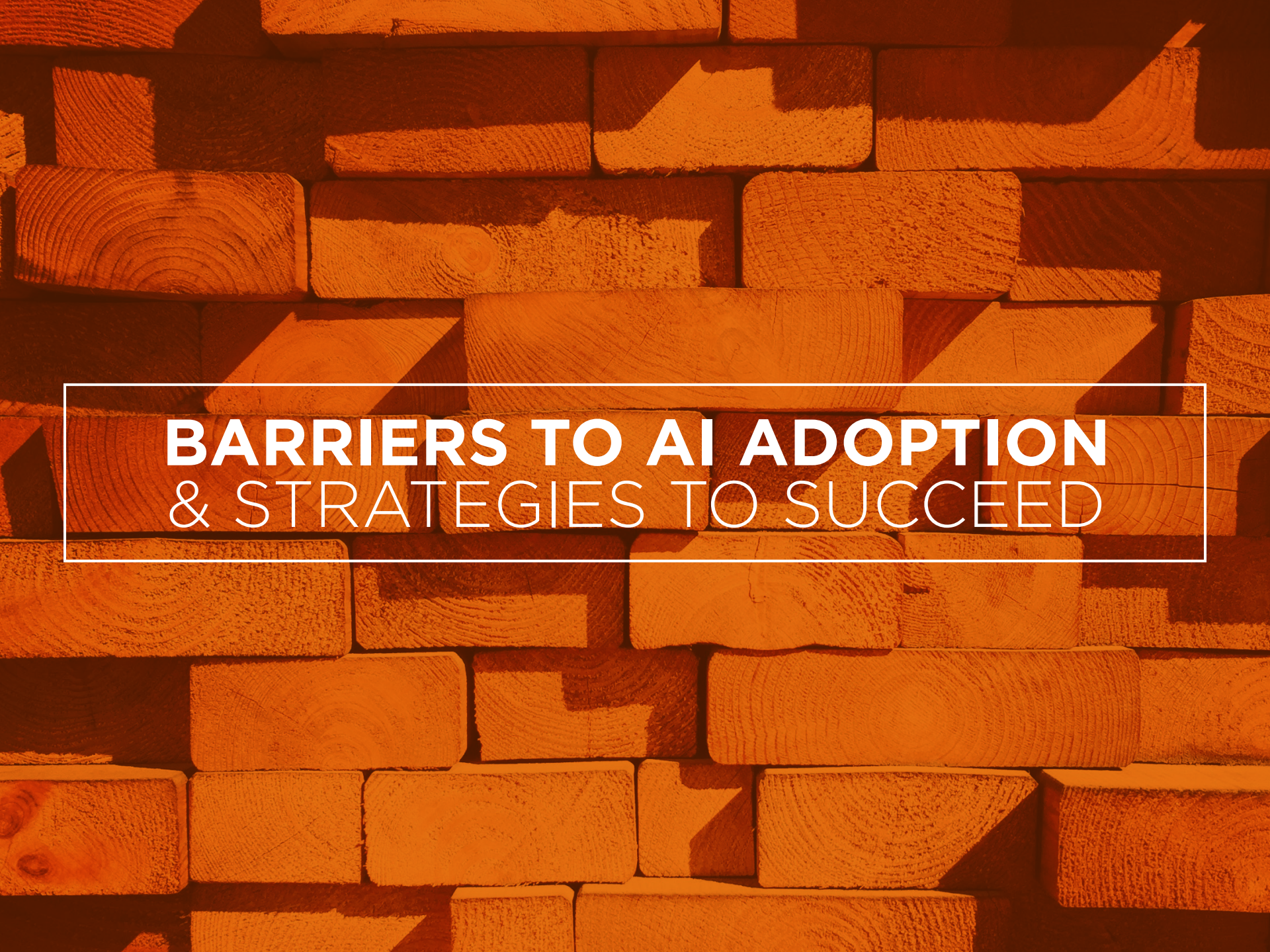


Figure 10: Analysis showing the percentage of respondents who believe that their organization needs to invest more in AI technologies over the next 36 months to keep up with competitors in their industry, split by respondent region and respondent type, asked to all respondents (260)


BARRIERS TO AI ADOPTION
& STRATEGIES TO SUCCEED

BARRIERS TO AI

Almost all (91 percent) respondents expect to see barriers to AI realization when trying to implement it across their business. Lack of IT infrastructure and lack of access to talent lead the challenges. The Americas is the only region where lack of budget for implementation edges out lack of infrastructure as the main barrier.

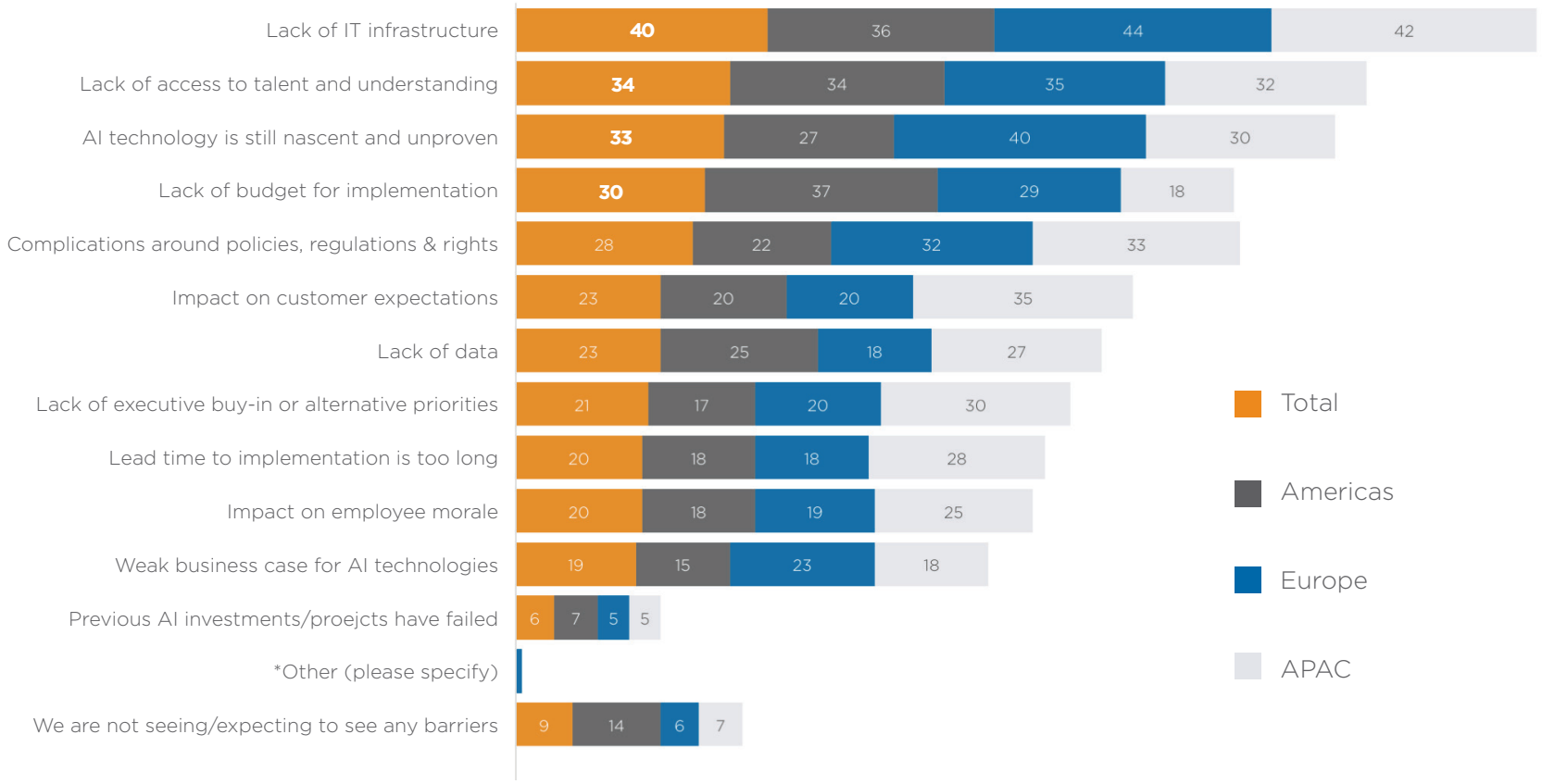


Figure 11: "What barriers are you seeing or expecting to see when trying to achieve AI realization across your organization?" split by respondent region. Asked to all respondents (260)

TALENT SHORTAGE IN AI

The majority of global respondents are relying on vendors and partners to have the skills to drive their business outcomes. Only 28 percent of respondents recognize that their organization has enough trained people internally to buy, build and deploy AI. However, APAC's data shows it has a much clearer path, with very few respondents saying they have neither vendors or in-house talent to deploy AI.

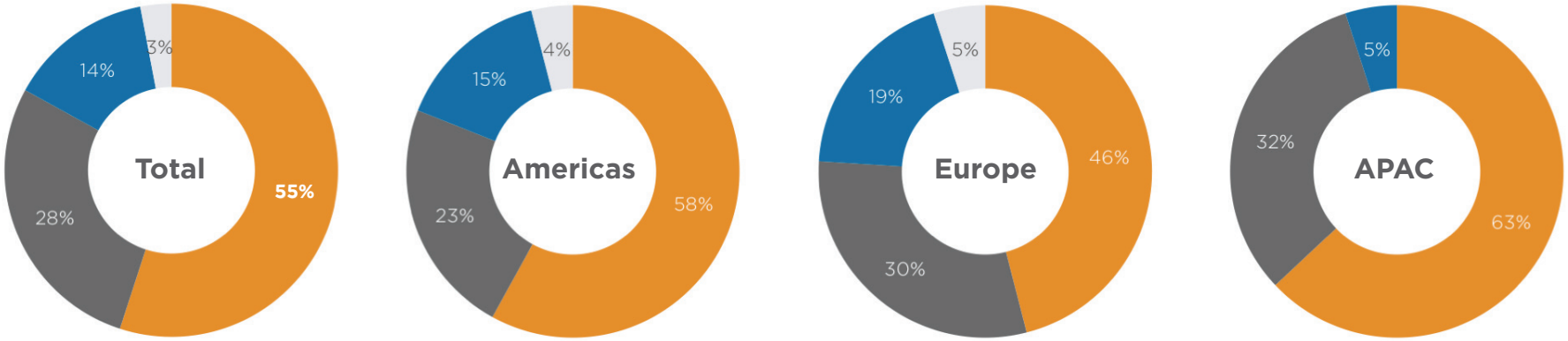


Figure 12: "Does your organization have the necessary people skills to effectively use AI technologies to drive business outcomes?" split by respondent region. Asked to all respondents (260)

WHO IS DRIVING DEVELOPMENT OF AI TODAY?

Only 8 percent of global respondents say a dedicated Chief AI Officer is responsible for AI development at present; however, APAC is already employing this position 17 percent of the time. Most global respondents are using a more traditional C-suite role, like a CIO or CTO.

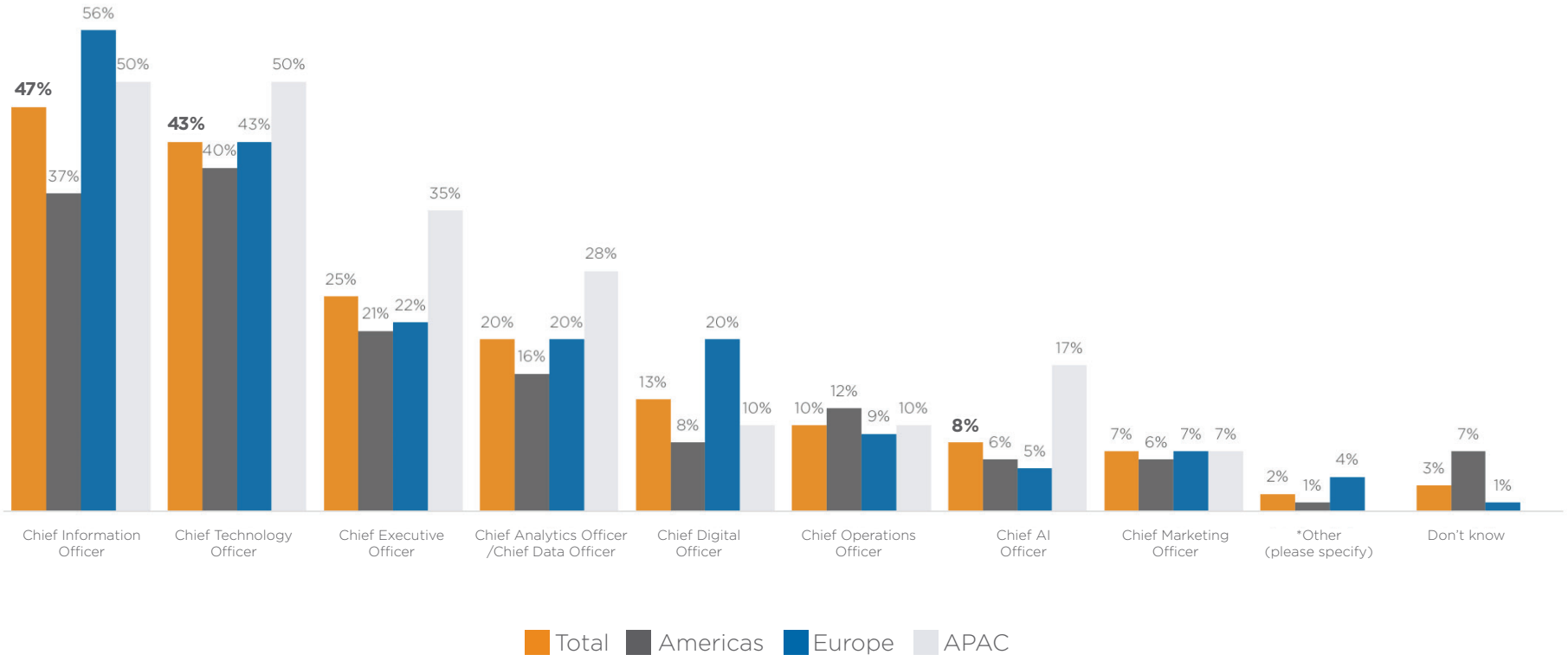


Figure 13: "Who is responsible for the development of the current AI strategy at your organization?" split by respondent region. Asked to all respondents. (260)

RISE OF THE CHIEF AI OFFICER

Globally, 61 percent of respondents report that they expect their organization to employ a Chief AI Officer in the future. APAC still plans on creating the most CAIO positions in the next 12 to 24 months.

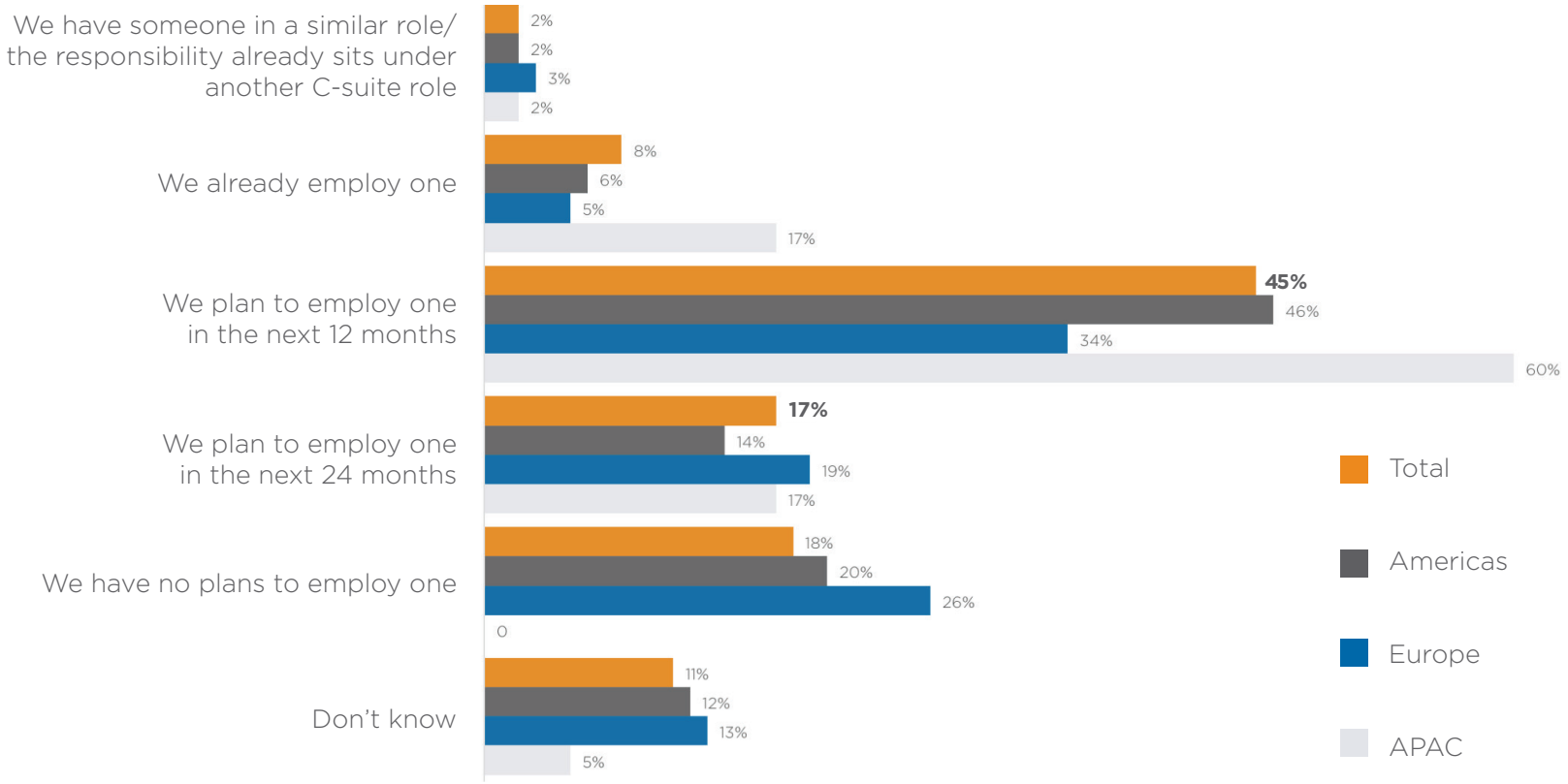


Figure 14: "Do you expect your organization to employ a Chief AI Officer in the future?" split by respondent region. Asked to all respondents (260)

MOST POPULAR ANALYTIC TECHNIQUES

Between 70 and 81 percent of global respondents are seeing benefits or anticipate benefits from having analytics techniques in production. While anomaly detection and robotic process automation lead, respondents perceived every popular analytical technique to be beneficial.

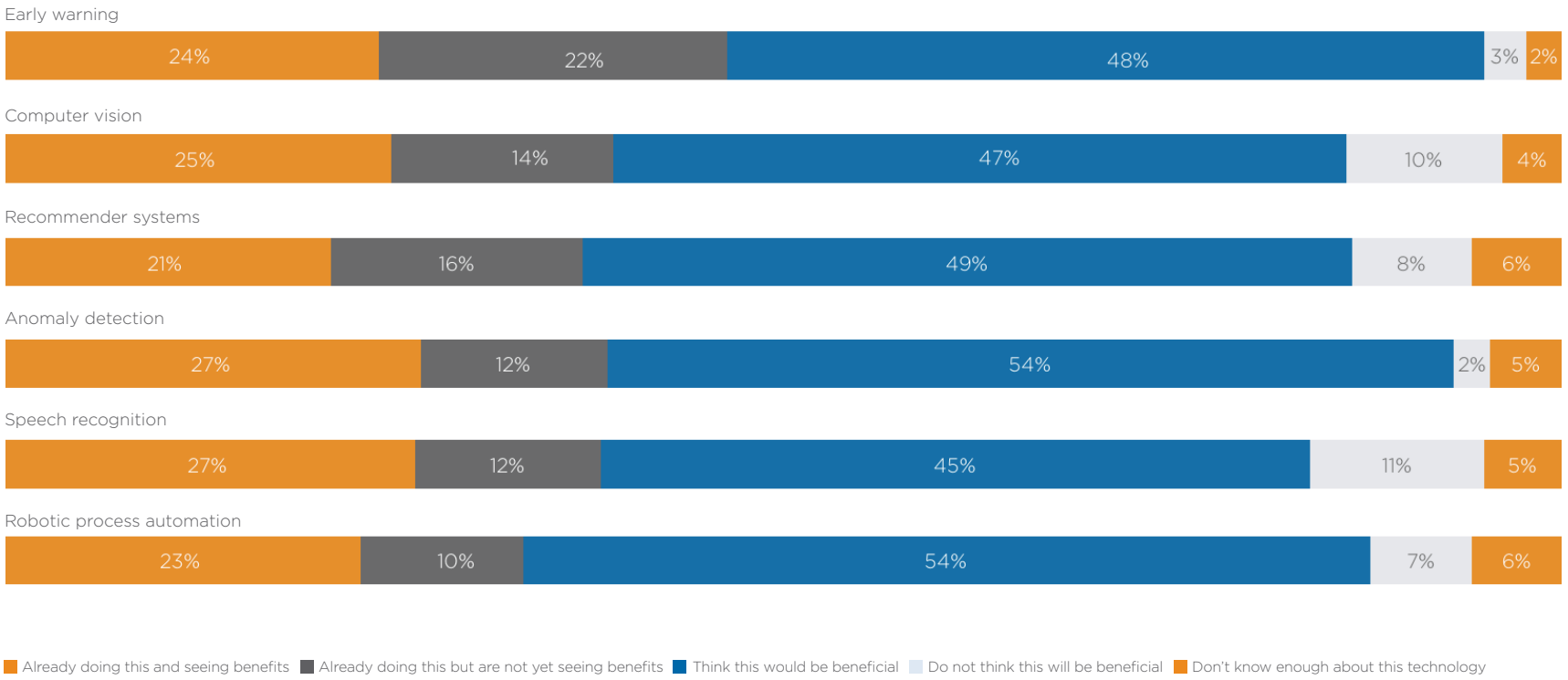


Figure 15: Analysis of the usage and perceived benefits of the above AI analytic techniques for respondents' organizations, asked to all respondents (260)

AI CAPABILITIES IN BUSINESS

As is the story for AI analytic techniques, the majority of organizations are seeing benefits or expect to see benefits from multiple AI capabilities in business. Intelligent workflow and decision automation, data engineering, and analytic operations are perceived to have the highest benefits.

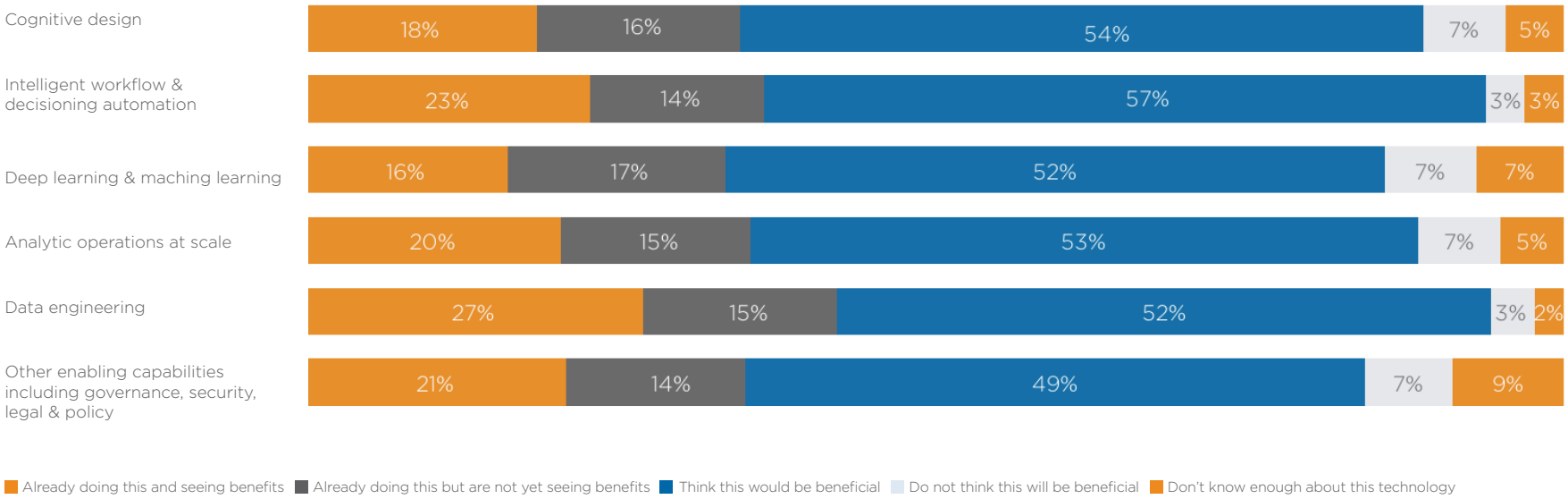


Figure 16: Analysis of the usage and perceived benefits of the above AI capabilities for respondents' organizations, asked to all respondents (260)

THE FUTURE OF HUMANS AND MACHINES

While AI is a growing trend, it is not perceived to be a growing threat by business leaders, who don't believe it will replace workers by 2030. Only 21 percent of respondents claim that AI will replace humans for most enterprise tasks in their organization. Respondents from the Americas are significantly less likely to report AI is poised to replace workers versus those from APAC.

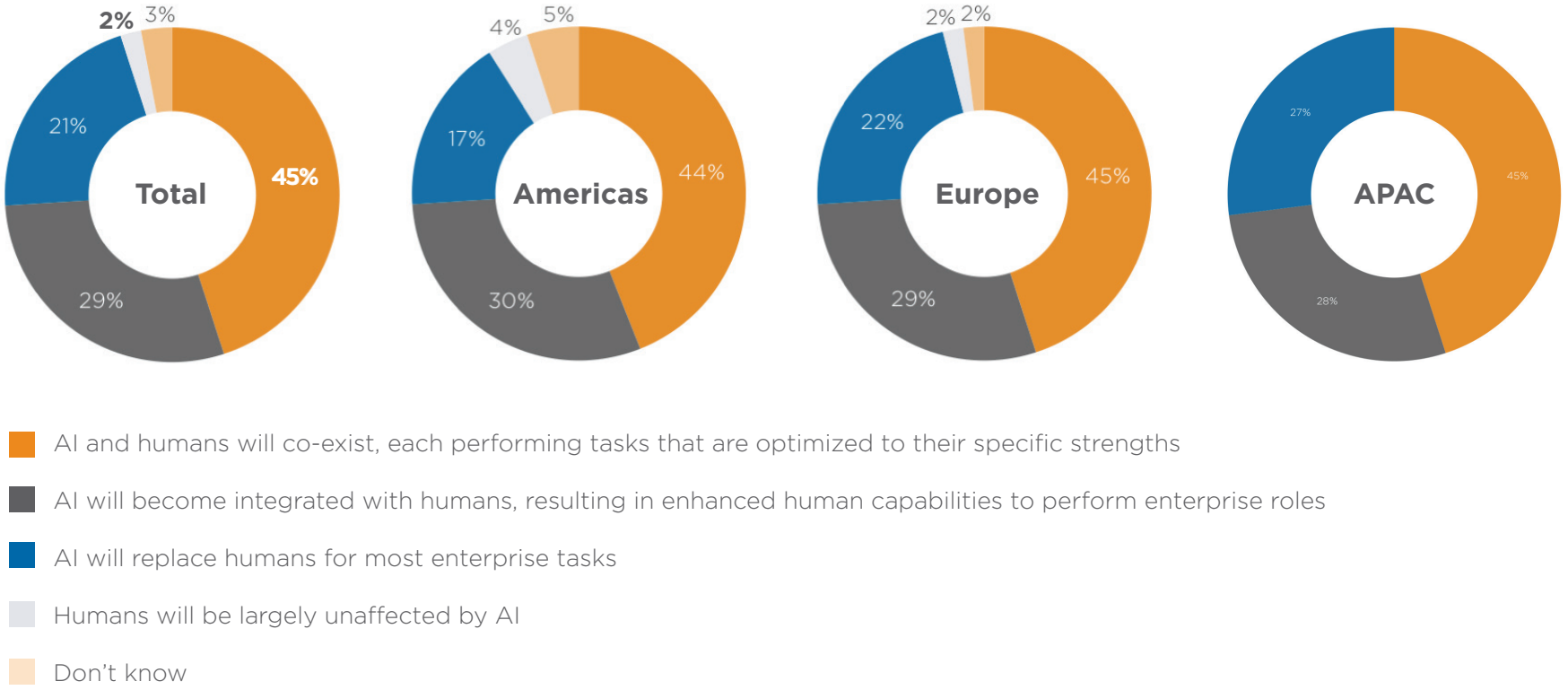


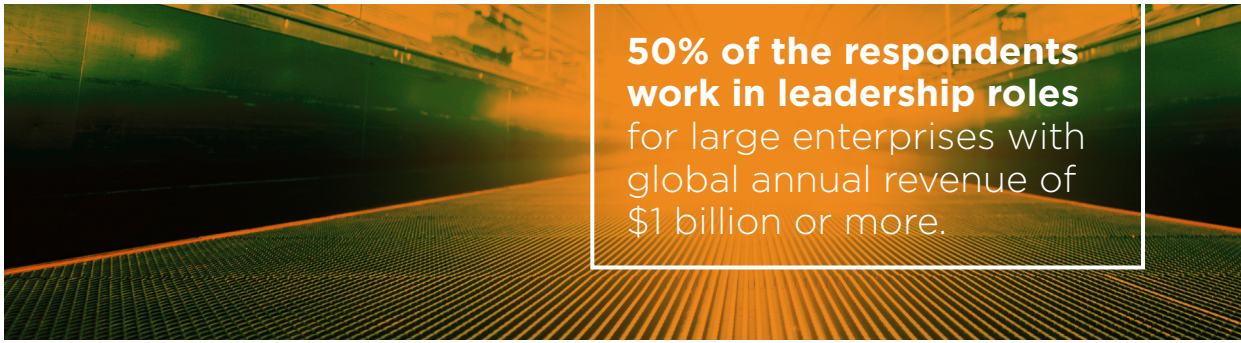
Figure 17: "By the year 2030, what do you think is the most likely scenario when it comes to human-machine collaboration for your organization?" split by respondent region. Asked to all respondents (260)

METHODOLOGY

This survey report is based on research conducted by Vanson Bourne, an independent specialist in market research for the technology sector, on behalf of Teradata, through an online survey conducted throughout July 2017. It covered 260 interviews that were evenly split between senior IT and business decision-makers VP-level or higher in the Americas, Europe and Asia-Pacific regions who work for companies with a global annual revenue of $50 million or more — 50 percent of the respondents work in leadership roles for large enterprises with global annual revenue of $1 billion or more. All respondents were qualified using a rigorous multi-level screening process to ensure that only suitable candidates were given the opportunity to participate.

Respondents worked across various industries, including technology and telecommunications (18 percent); manufacturing and production (17 percent); retail, distribution and transport (15 percent); financial services (15 percent); business and professional services (9 percent); public sector (7 percent); private health care and services (5 percent); and other commercial sectors (14 percent).

For more information on Vanson Bourne, visit www.vansonbourne.com.



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