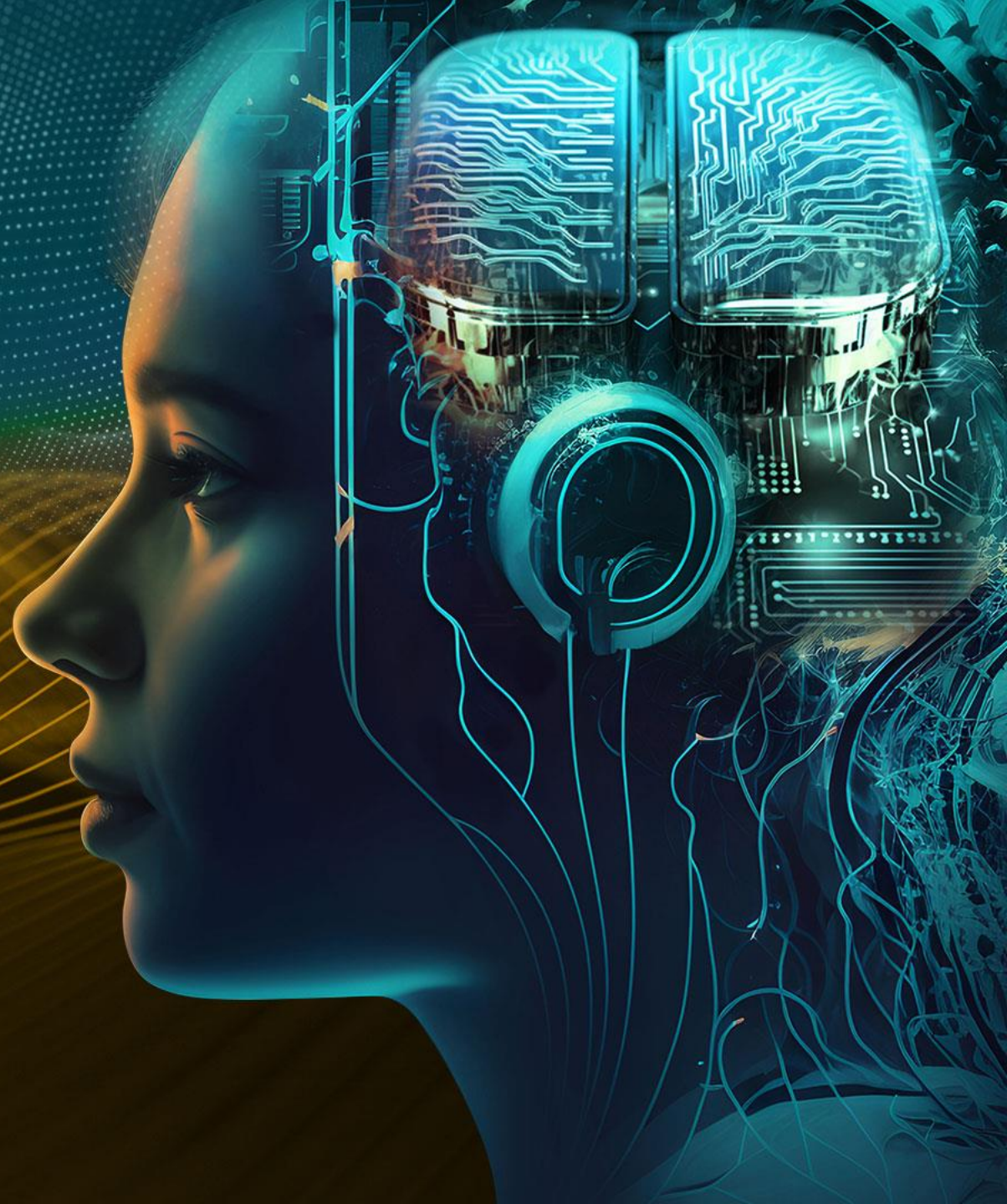


What CTOs Think

Navigating the path
to the AI enterprise

September 2024

AKKODIS



- About the research
- Foreword from our President
- Key findings
- Recommendations
- Appendix

About the Research



Akkodis' 'What CTOs think' is based on the Adecco Group's Business Leaders research, which investigates the changing world of work from the executive perspective. This report focuses on CTOs and their unique views with respect to digital transformation, AI and digital workforce strategies.

This study surveyed **2,000** C-suite business leaders, including **509** CTOs, across **18** industries and nine countries.

The survey, conducted in collaboration with Oxford Economics, was conducted October to December 2023. Countries were selected to ensure coverage across global regions, with sample populations by country representative of respective industries.

The survey has a 95% confidence interval level. For more detail on the demographic breakdown, please see the Appendix.



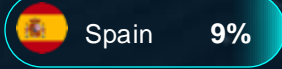
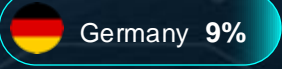
30%

North America



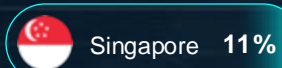
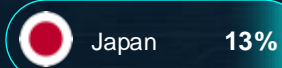
36%

Europe



34%

APAC



Foreword from
our President

Foreword from our President

Navigating the path to the AI enterprise

The Chief Technology Officer (CTO) is no longer just a technical expert. As new technologies disrupt every aspect of the business model, the role has evolved into one of the most strategic positions within an organization, crucial for aligning technology initiatives with the broader business vision. At Akkodis, we love technology, and we bring deep knowledge in accompanying our clients on the road of their digital and green transition with Smart Industry solutions and tech talent.

With our research partner, we conducted a survey of 2,000 leaders (over 500 of them CTOs) across nine countries. In this report, Akkodis takes a deep-dive to better understand what CTOs think relative to their C-suite peers. While examining CTOs across key industries, we observed interesting nuances. As the pace of innovation accelerates, CTOs are tackling new challenges, such as acquiring cutting-edge knowledge of emerging and disruptive technologies like AI, navigating evolving regulatory landscapes, and addressing growing tech skills gaps within their workforce. Among these significant challenges, our research highlights the critical importance of securing organization-wide buy-in.

This research uncovered several areas that CTOs perceive as barriers to digital transformation and found that many CTOs view their organization's leaders as not having a clear understanding of the disruption that lies ahead. For example, key decisions will need to be made about how AI is integrated into an organization and its impact on the workforce. The research shows that CTOs aren't always aligned with their C-suite colleagues on these challenges.

For me, it is the combination of talent and technology that drives real transformational change. This research sheds light on several opportunities for alignment in both of these areas. CTOs in every industry must actively work across organizational silos to build comprehensive, organization-wide support. Equally critical is for the rest of the C-suite to leverage CTOs' knowledge and expertise. Cross-functional collaboration, starting at the top, is essential to succeed in a smarter and more sustainable future.

Dr. Jan Gupta
President, Akkodis



Key
Findings

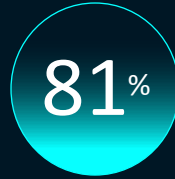
What CTOs Think

Key Findings

Digital transformation tops the C-suite agenda



see digital transformation as top priority

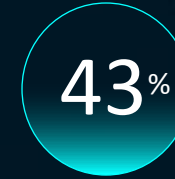


are planning to spend \$10M in next 5 years

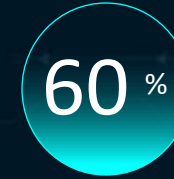


will be spent in Manufacturing & Operations

Uncertainty and inaction hold back digital transformation



cite "selecting the right technology" as a key barrier to digital transformation

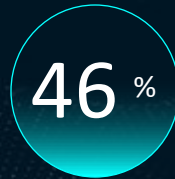


are not convinced that their leaders are ready for AI

CTOs need to collaborate to deliver the AI enterprise



are confident in their company's AI integration strategy

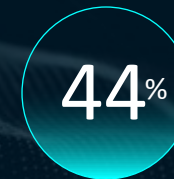


say their companies deliver formal training to upskill/reskill in AI

There is an urgent need for digital workforce strategies



digital skills rank top in demand in next 5 years

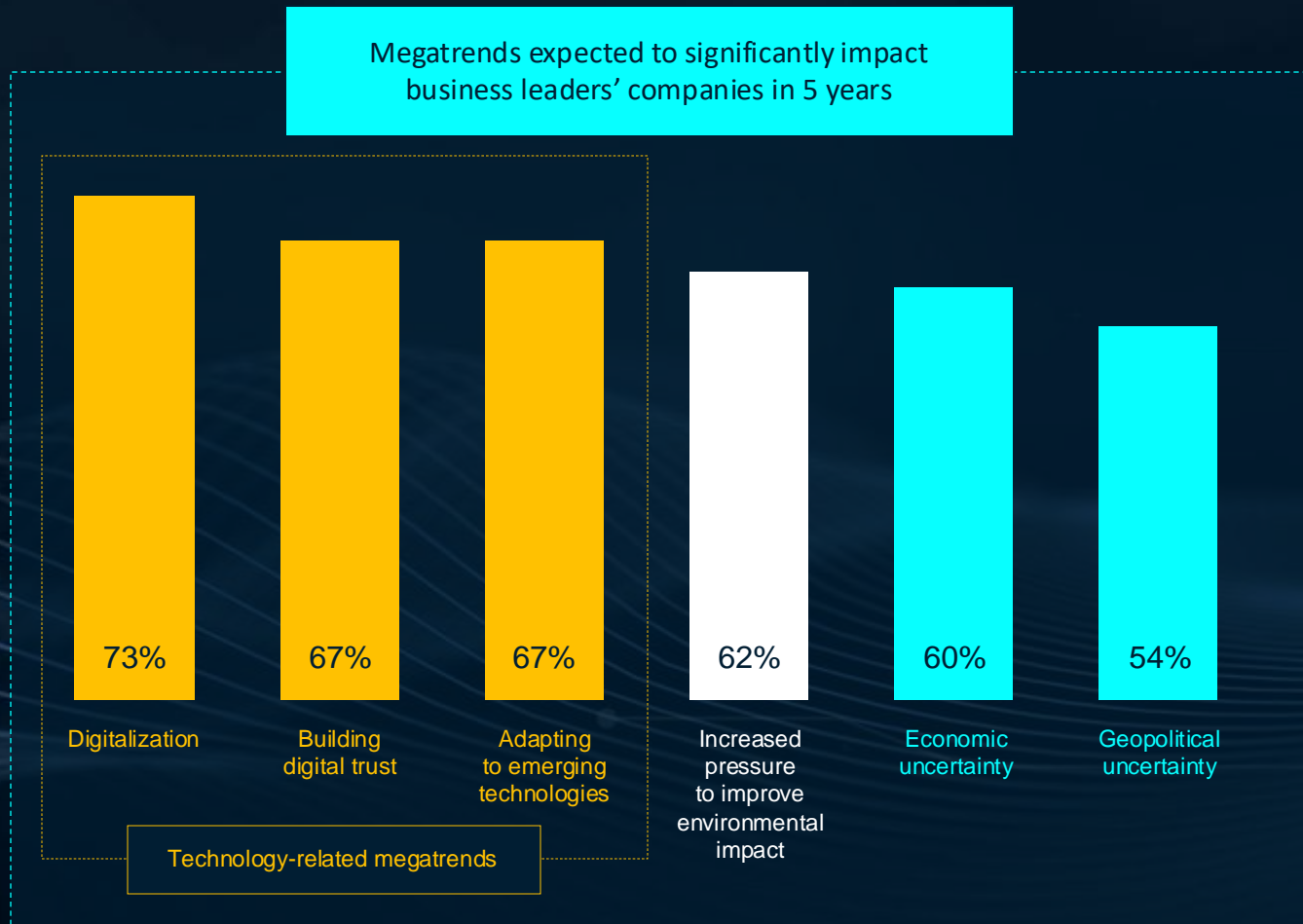


believe in building this talent through reskilling

Digital Transformation Tops the C-suite Agenda, Again.

A new wave of digitalization is challenging business leaders, with new technologies and related issues, such as digital trust, presenting important corporate hurdles and opportunities. Digital transformation once again tops management priority by a distance. Historically, technology has most often been applied to automate existing processes to gain efficiencies. This time around a different approach will be needed, as opportunities are spread broadly, to include innovation, talent management and growth. How leaders respond with effective digital transformation strategies, with the CTO playing an important role, will be critical to their competitive success.

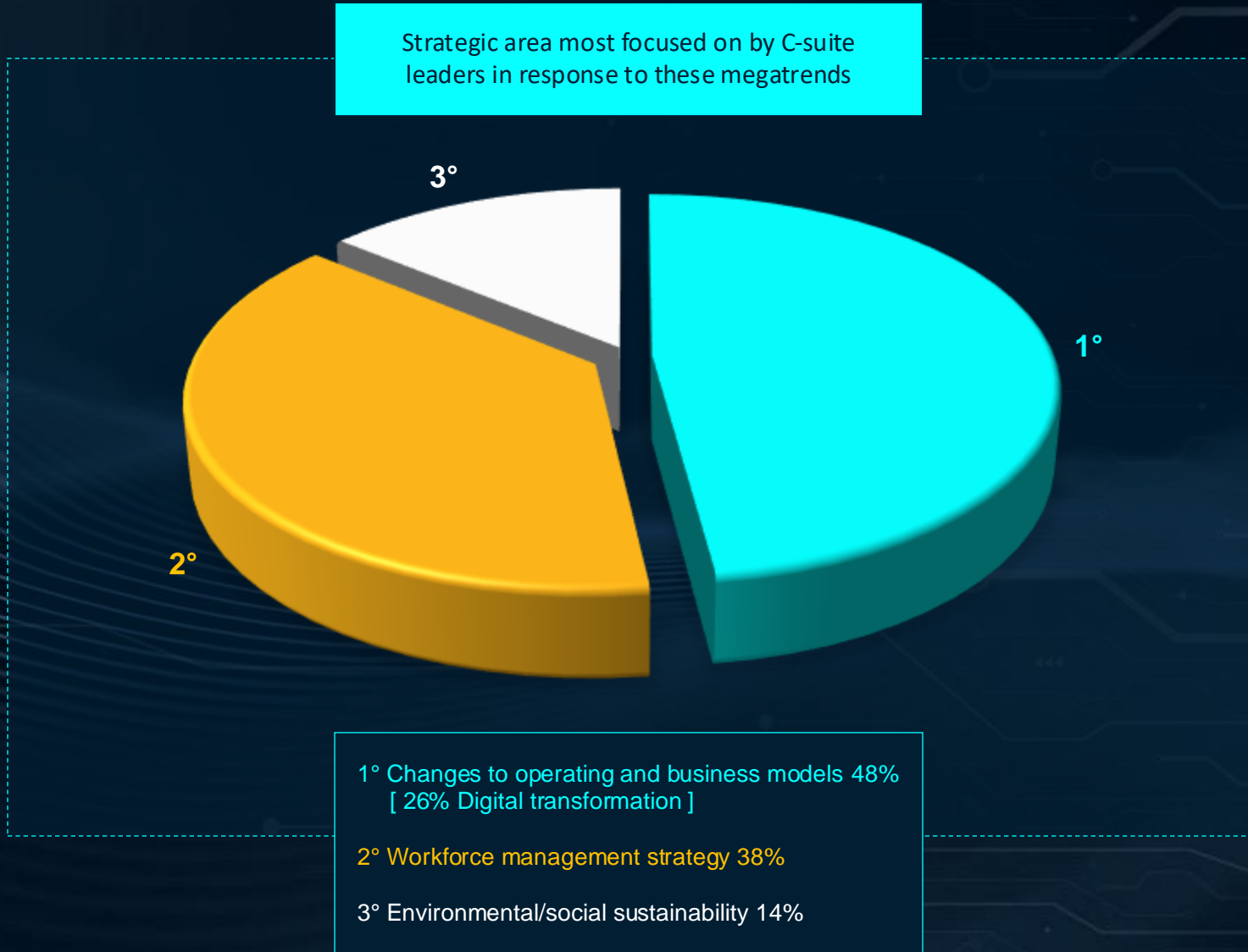
A New Wave of Digitalization is Challenging the C-suite



- Business leaders identify digitalization as the number one megatrend they expect will significantly impact their businesses in the next five years; the top three megatrends are all technology related.
- Leaders recognize that technology will have a major impact on their workforce and business model, presenting both a challenge and a significant business opportunity.

Digital Transformation Stands Out as a Top C-suite Priority

- Once again, digital transformation is the top management priority by a distance, selected by 26% of business leaders (followed by upskilling and developing the workforce with 18%).
- Digital transformation is not a fixed concept – emerging technologies present new challenges and opportunities, creating uncertainty and tension within the C-suite. As the requirement for new approaches dawns, the CTO emerges as a key player.



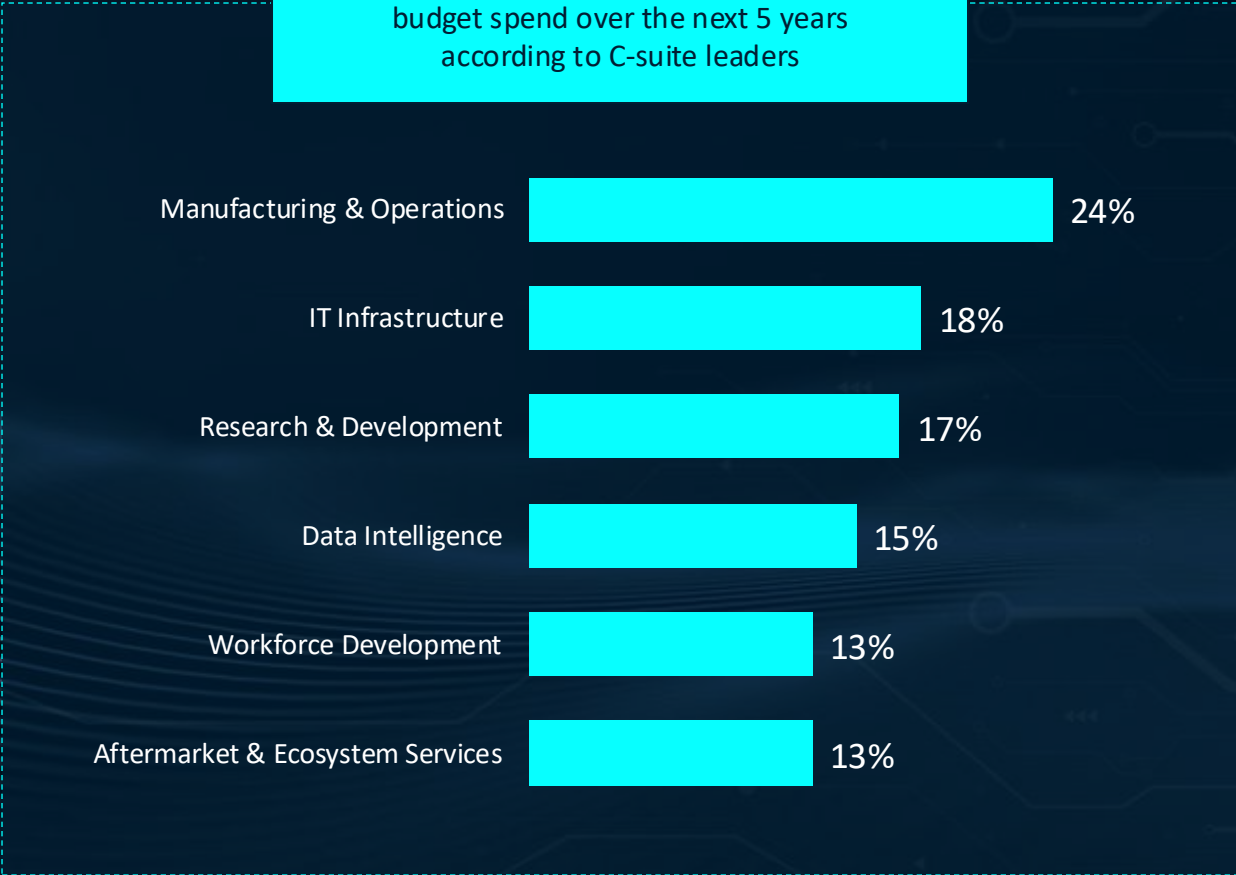
Investments in Digital Transformation are Enterprise-Wide

- Companies are investing in digital transformation, with over 4 in 5 business leaders saying their companies will invest more than \$10 million over the next five years.
- These leaders expect to spread investment widely across the enterprise. Manufacturing & operations is set to draw the most, worth nearly a quarter of their budgets. That said, none of the areas represent less than 13% of their expected spend.

81%

C-suite leaders planning to spend \$10m on digital transformation in next 5 years

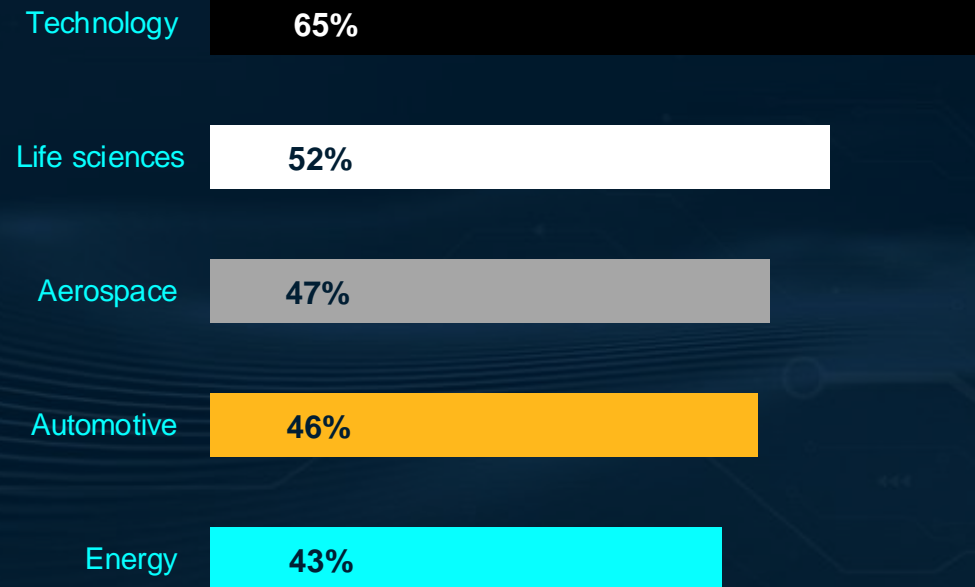
Expected percentage of digital transformation budget spend over the next 5 years according to C-suite leaders



CTOs Recognize There is a Long Transformation Path Ahead

- Digital transformation is an ever-evolving concept, difficult to fully complete as new technology constantly emerges.
- Across industries, CTOs report moderate progress, many under halfway and all recognizing there is still much progress to come.
- Different progress across industries reflects the strategic importance of the latest technologies, their resources and in-house capabilities. Technology and Life Sciences are highly data and technology intensive industries, with highly technically skilled workforces. Digital transformation is important for Energy firms, but they also face competing strategic challenges on the energy transition and need for infrastructure investment.

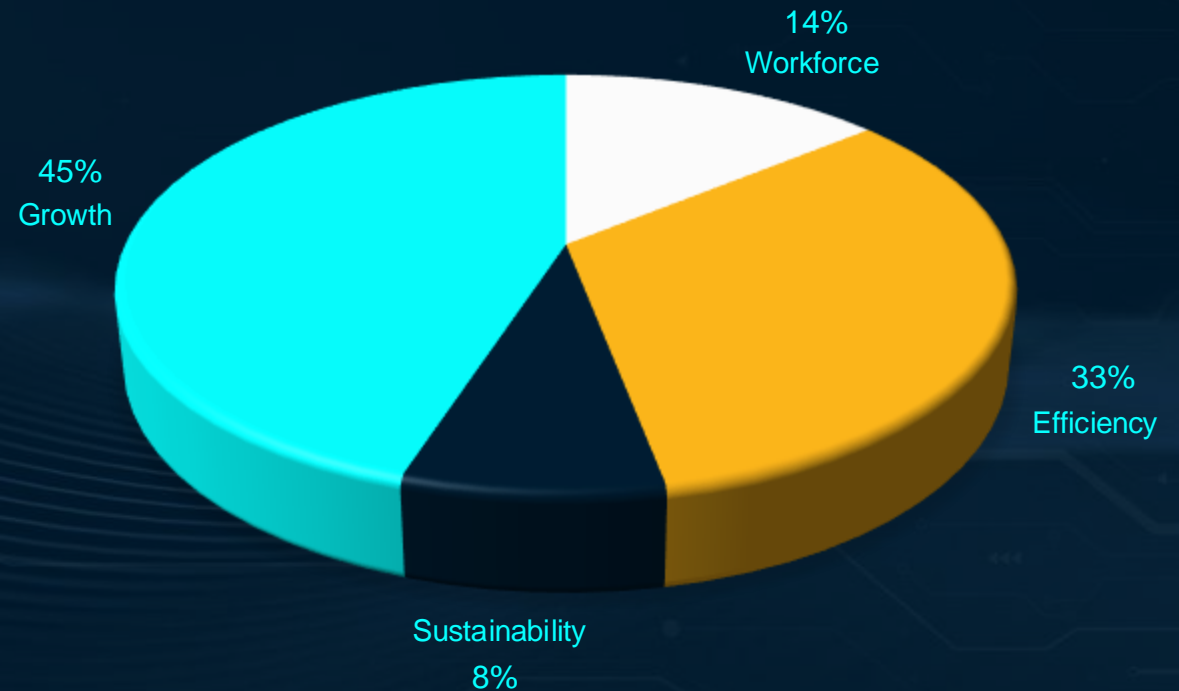
Progress made in digital transformation according to CTOs, by industry



Opportunities are Spread Broadly, Beyond Automation

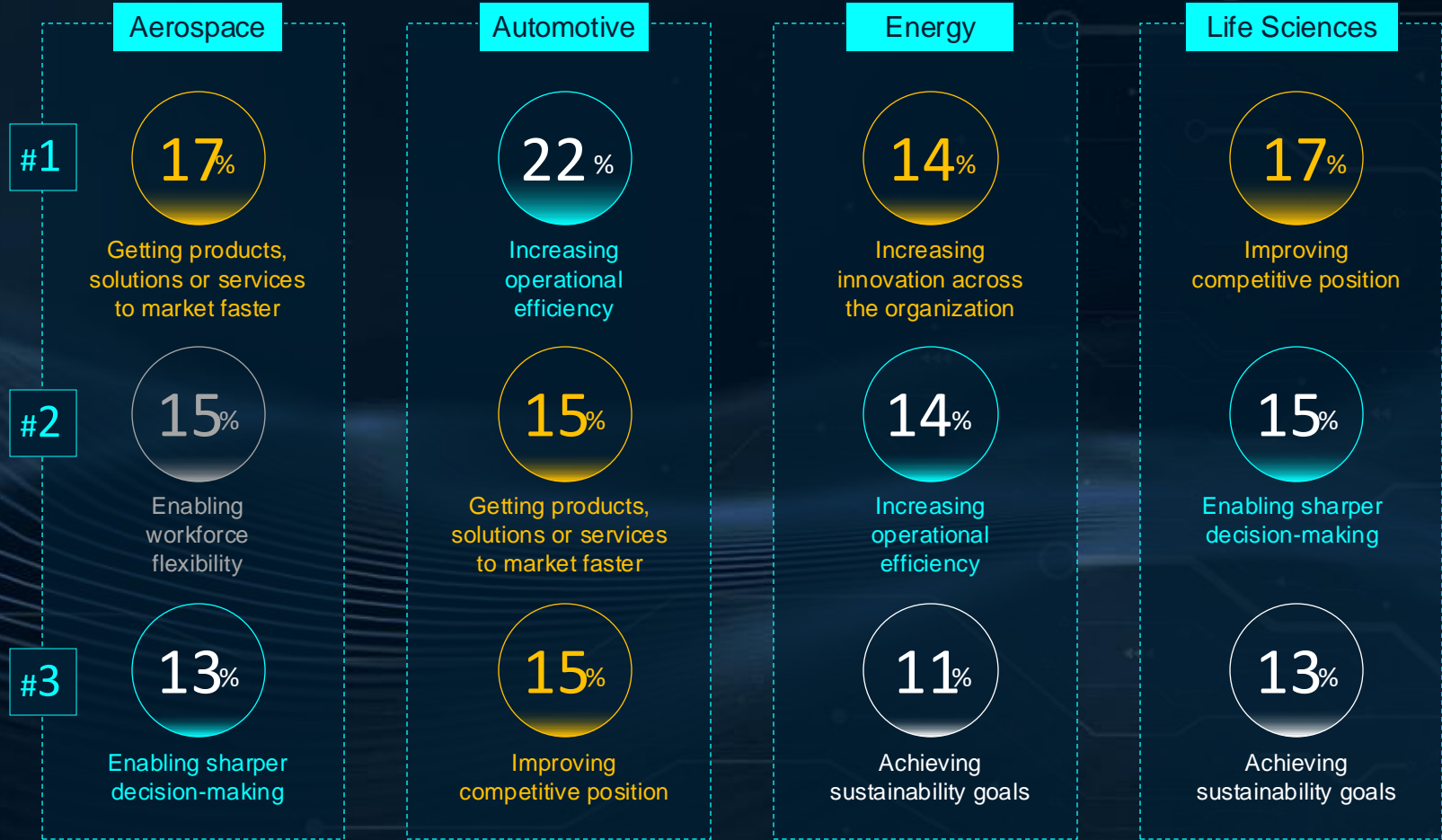
- Previous waves of digital transformation centred largely on leveraging automation to drive efficiencies. This wave is different, characterized by an increased focus on catalysing business growth.
- CTOs indicate that digital transformation is business-critical – improving competitive positioning, increasing innovation, getting products to market faster, and growing market share.
- How leaders respond with effective digital transformation strategies will be critical to their competitive success.

Top digital transformation benefit according to CTOs



Digital Transformation Benefits by Industry, According to CTOs

- CTOs across industries recognize different main benefits of their digital transformation strategies across workforce, efficiency, growth, and sustainability.
- Efficiency stands apart as a top benefit for 22% of automotive respondents, though two growth opportunities follow, each with 15%, highlighting both getting products to market faster and improving competitive position.
- Innovation and sustainability rank higher in the minds of CTOs in the Energy industry, widely influenced by the climate imperative to transform legacy operations.



Workforce
 Growth
 Sustainability
 Efficiency

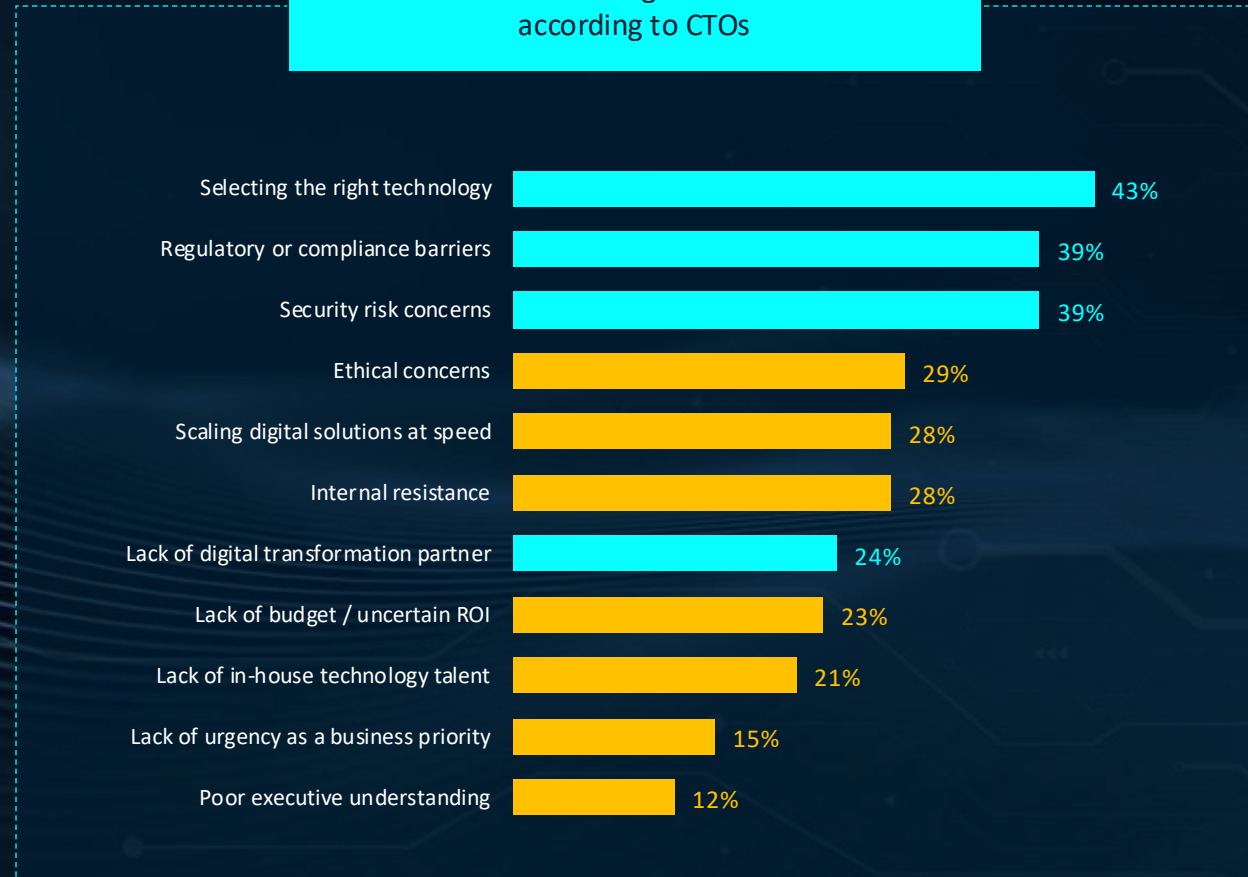
Uncertainty and Inaction Hold Back Digital Transformation

CTOs have bold plans for investing in emerging technologies across the enterprise. However, uncertainty paralysis is holding them back. Challenges include uncertainty around technology and regulatory evolution and securing organization-wide buy-in to the changes needed. AI is expected to be a game changer for their companies, but it is at such an early stage of adoption that uncertainty is inevitable. Many CTOs believe their organizations lack the key leadership skills needed.

The Path is Unclear, with Many Internal and External Uncertainties

- Although the imperative for organizations' digital transformation is clear, CTOs are largely held back by uncertainty paralysis.
- There are major uncertainties at such an early stage in the adoption cycle. External barriers rank highest, including regulation and compliance and security risk concerns.
- Commitment will be required at all levels of the enterprise – from the C-suite to prioritize transformation and address ethical concerns, and at the operating level to adapt to changes in working practices.

Current barriers to digital transformation according to CTOs

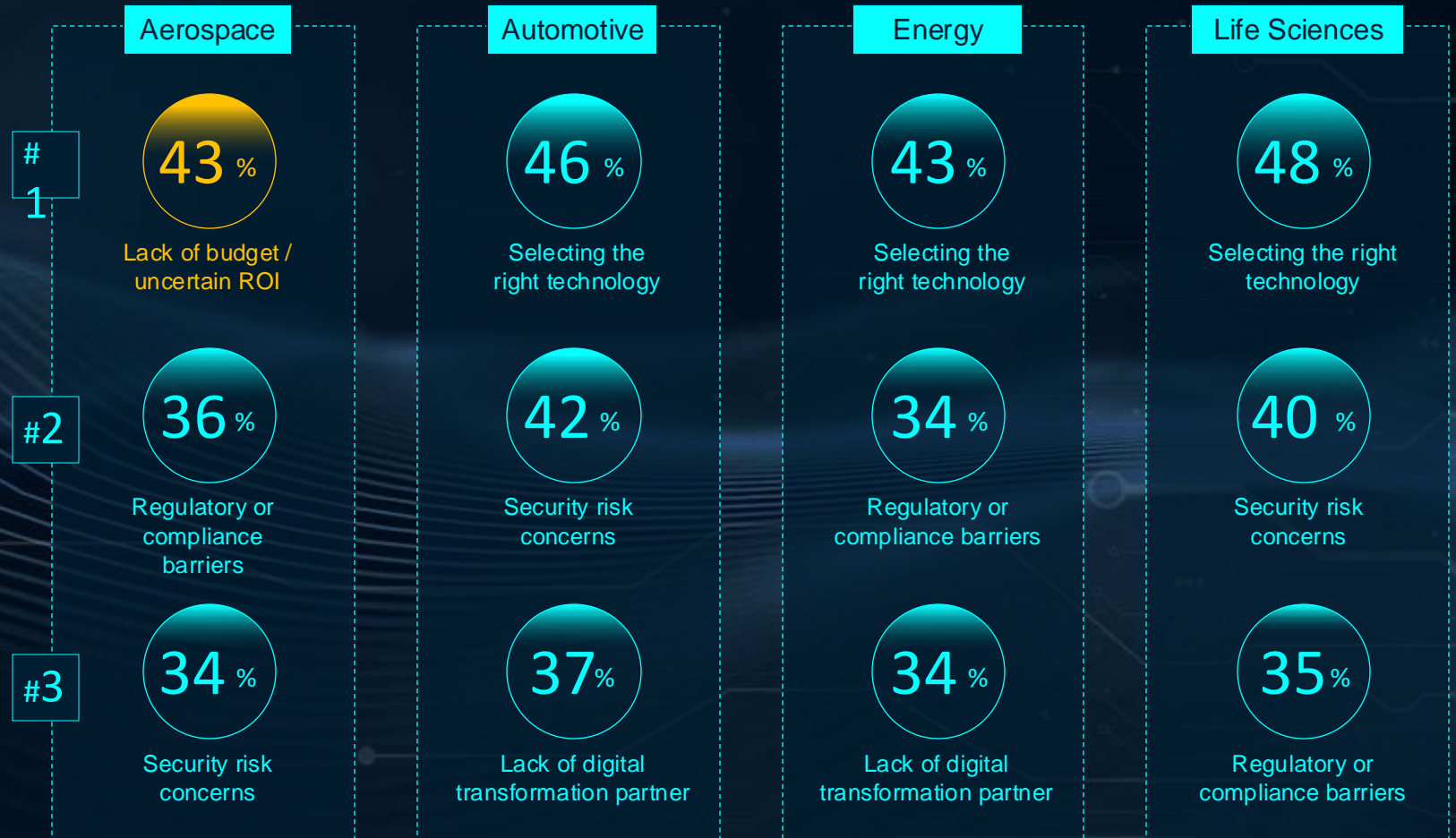


● External ● Internal

CTOs Across Industries Recognize the Greatest Barrier is Selecting the Right Solutions as New Tech Rapidly Evolves

Top 3 barriers to digital transformation by industry according to CTOs

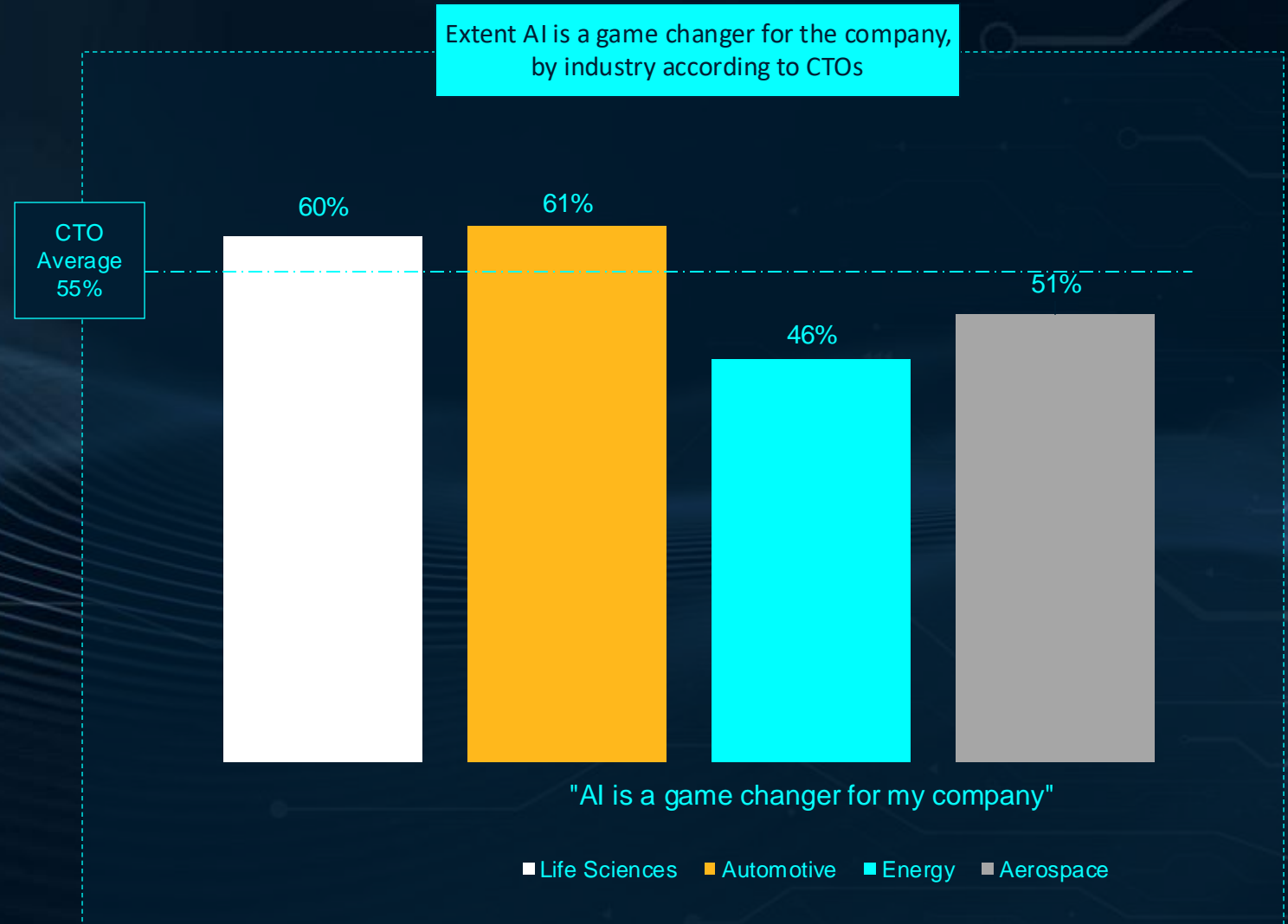
- Across different sectors, CTOs largely find the same three external barriers the most challenging: selecting the right technologies, security risk concerns, and regulatory or compliance barriers.
- However, Aerospace CTOs rank budget limitations or investment case uncertainty as their greatest barrier, as they face particularly substantial upfront investment to implement and long development cycles, which means ROI is realized over an extended period.



● External ● Internal

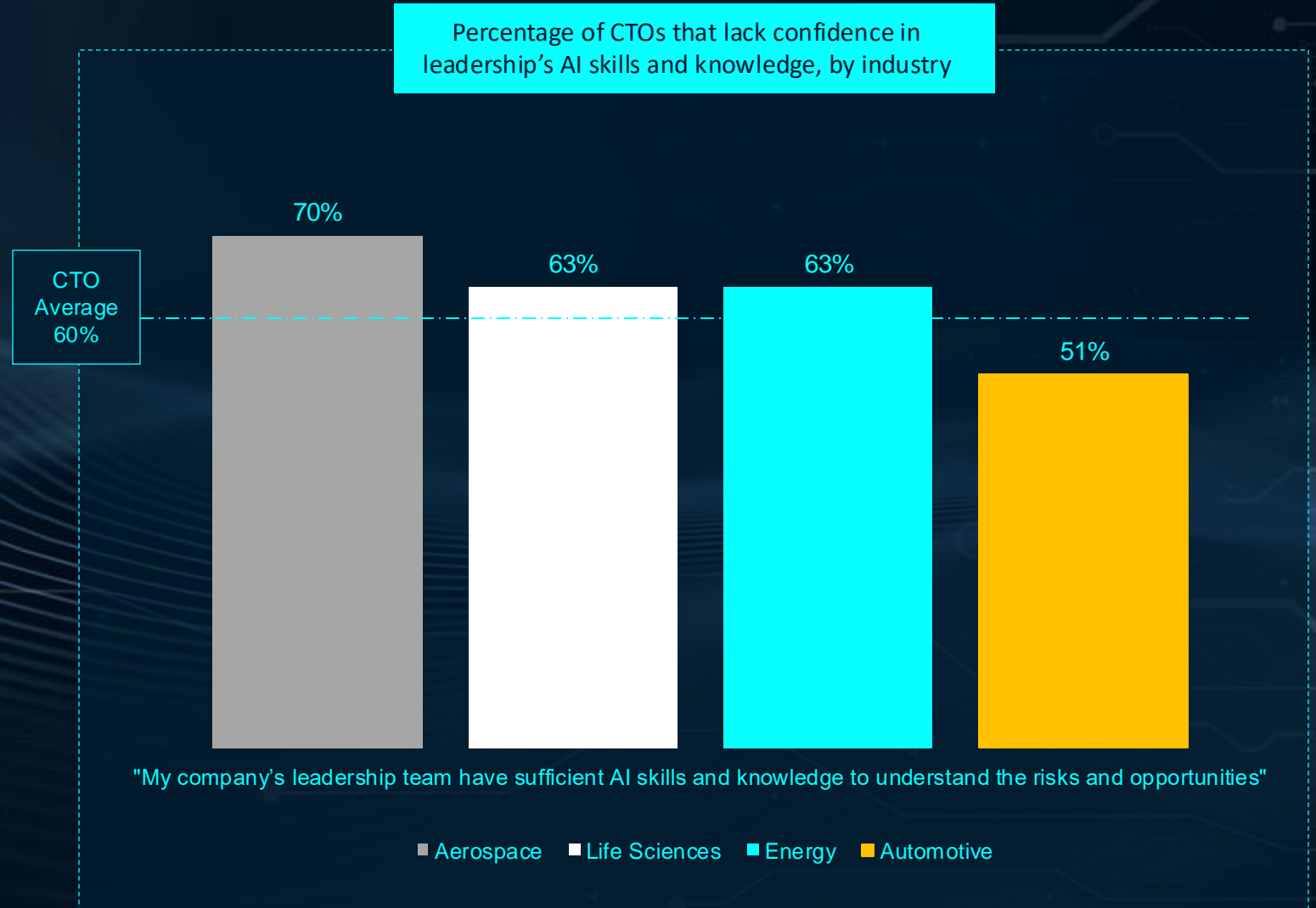
The Jury is Still out on How AI Will Change the Game

- AI's disruptive potential varies across industries; although the majority see AI as revolutionary for their company – a large number for such a bold statement – it is still early days for the technology, particularly with recent advances in Gen AI.
- As a result, businesses are still trying to identify the extent of AI's role in future business strategies, particularly in the Energy and Aerospace industries where CTOs are less certain.



CTOs Lack Confidence in Leaders' AI Skills

- 60% of CTOs are not convinced that their leaders are ready for AI. Skill gaps within the C-suite may trickle down to impact readiness across the wider workforce.
- This gap is particularly stark in the Aerospace industry, with seven in 10 CTOs lack confidence in their leaders' AI skills. This may reflect the scale of challenge facing the sector or the limited talent pool in a concentrated sector.
- While this is understandable as the technology is still nascent, leaders need to adapt quickly to seize the opportunity, set investment priorities, and develop an implementation roadmap.

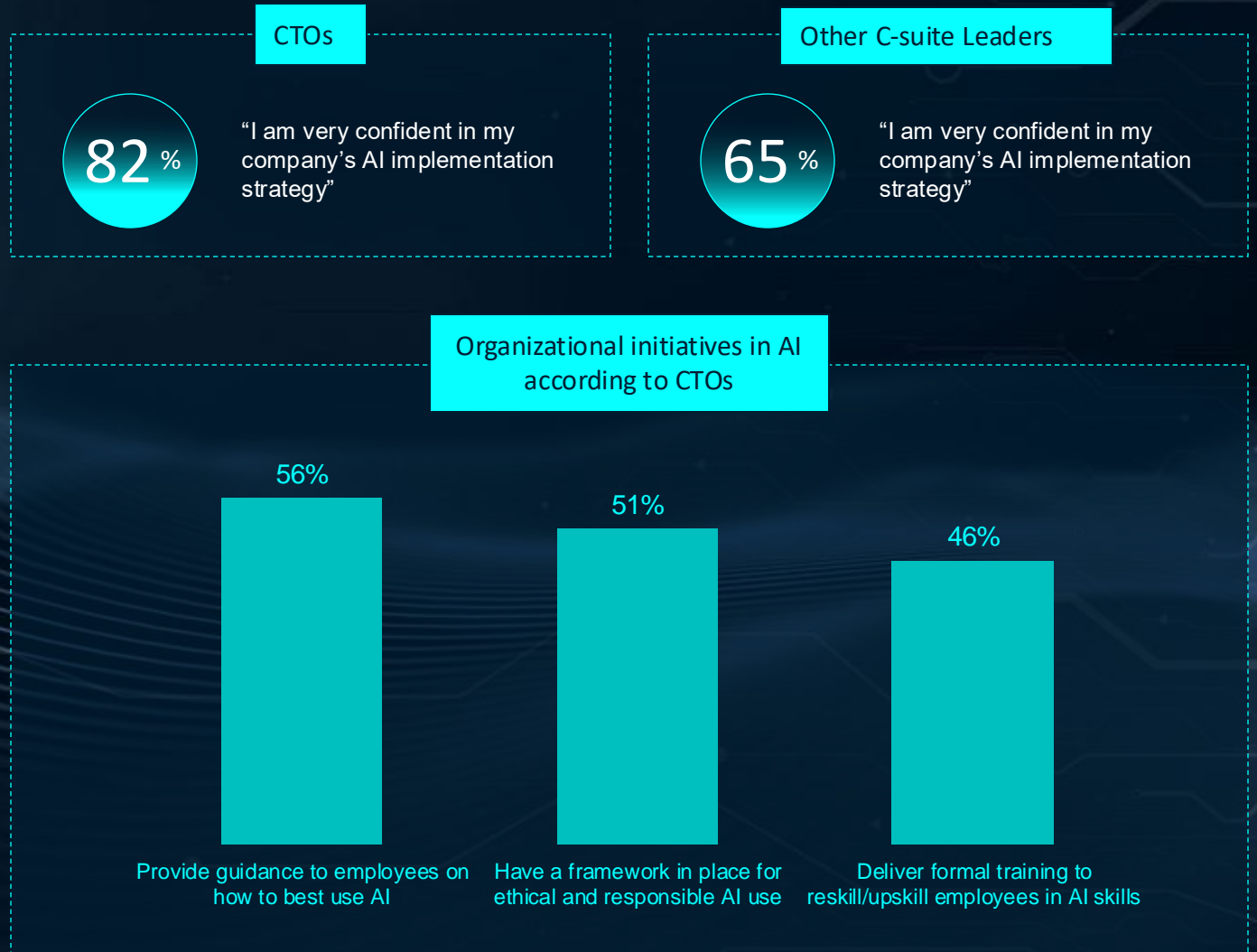


CTOs Need to Collaborate to Deliver the AI Enterprise

Driven by this uncertainty, there is a disconnect between ambition and implementation. Though seemingly confident in their strategies, further progress is needed to build the process foundations required. Important decisions will need to be made about how AI is applied to the organization and the impact it will have on the workforce. CTOs are not always aligned with C-suite colleagues on these issues. New technologies will disrupt all aspects of the business model to some degree. CTOs will need to work across departmental silos to build enterprise-wide buy-in to the extent of transformation.

CTOs are Assured in Their AI Implementation Strategies, but the Required Foundations for Adoption Lag

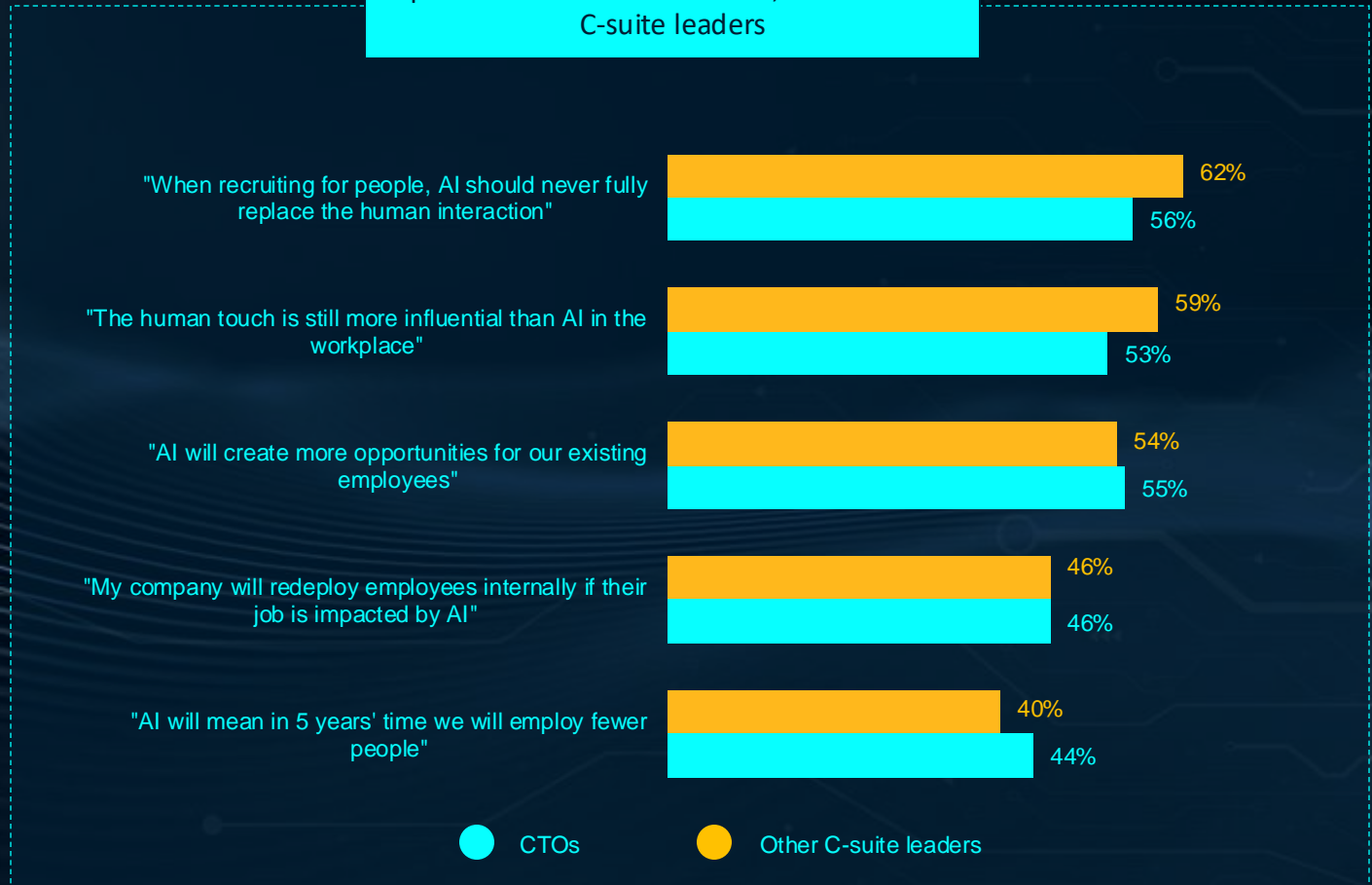
- Driven by this uncertainty, there is a disconnect between ambition and implementation.
- While the vast majority of CTOs are confident in their company's AI strategy, only two in three others in the C-suite say the same.
- That said, further progress is required to build the process foundations needed: just over half of CTOs' companies (56%) provide guidance to employees about how to use AI at work, 46% deliver formal training and 51% have a framework in place for using AI ethically and responsibly.



On Workforce Issues, CTOs will Need to Collaborate Closely with the Leadership Team

- Important decisions will need to be made about how AI is applied to the organization and the impact it will have on the workforce.
- CTOs are not always aligned with their C-suite peers on these issues. These peers are more likely to believe that AI shouldn't replace human interaction in recruitment, and that human touch is still more influential than AI in the workplace – CTOs are less sure. More CTOs also believe that they will employ fewer people in five years' time.

Implications of AI on workforce, CTOs vs. other C-suite leaders



CTOs will Need to Work Across Departmental Silos

- New technology will disrupt all aspects of the business model to some degree. A third of CTOs (34%) expect emerging technologies, including generative AI and extended reality, to affect all parts of their business model.
- CTOs will need to work across departmental silos to build enterprise-wide buy-in to the same extent and pace as transformation.

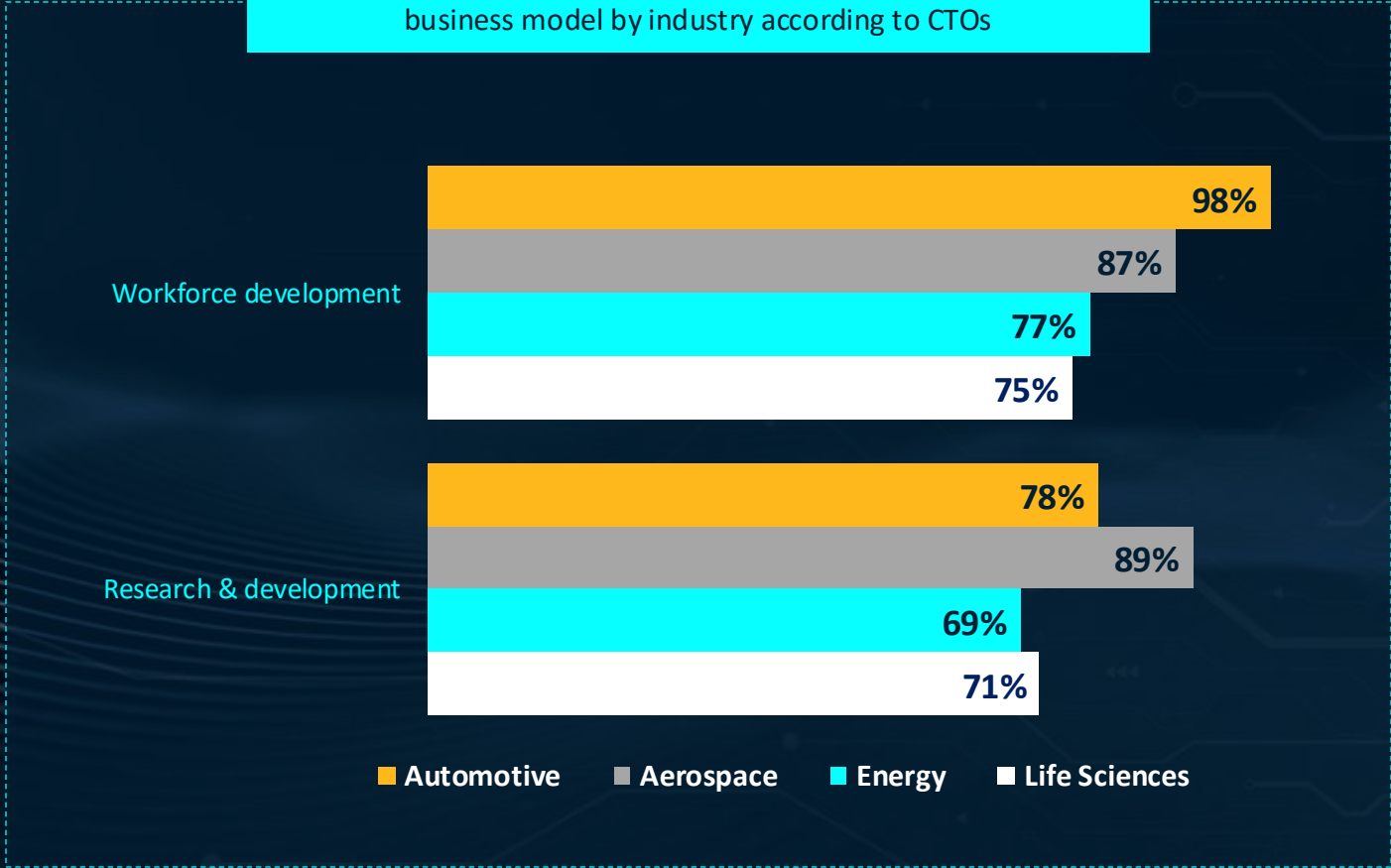
Likely disruptive impact of new technology on different parts of business model according to CTOs



Disruptive Effect of New Technology on Operations will Vary by Sector

- CTOs report varying likely impacts of new technology to their organizations' workforce development and R&D.
- The Automotive and Aerospace industries, with large product development and manufacturing operations, anticipate a greater impact. In contrast, fewer CTOs expect disruption in the Life Sciences and Energy sectors, both highly regulated, requiring rigorous testing and compliance with safety standards.

Likely disruptive impact of new technology on different parts of business model by industry according to CTOs



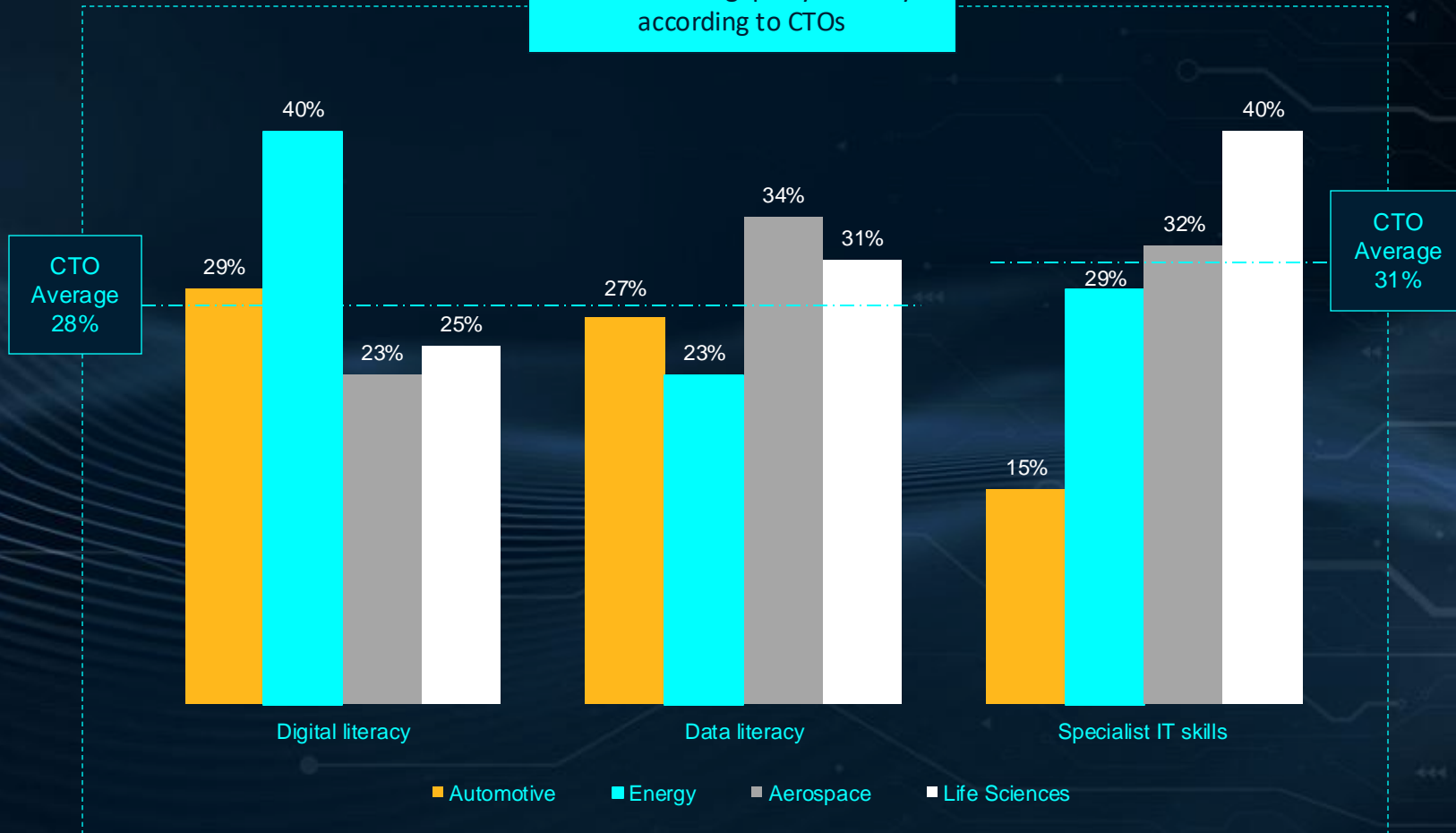
There is an Urgent Need for Digital Workforce Strategies

CTOs identify critical digital skills gaps and expect higher demand for digital skills, leading to rising wages for technical staff. There is a need to balance build vs. buy approaches to securing talent, with CTOs bolder than CEOs on upskilling. Longer term, AI will play a positive role in workforce strategies.

CTOs Identify Critical Gaps Across Digital Skills

- CTOs report moderate skills shortages at this early stage of the current wave of digital transformation, though 40% of Life Sciences CTOs report shortages of specialist IT skills and 40% of Energy CTOs signal shortages in digital literacy skills.
- The skills shortage in key areas is likely to increase as digital transformation gathers pace, with CTOs expecting skills gaps to translate into wage increases.

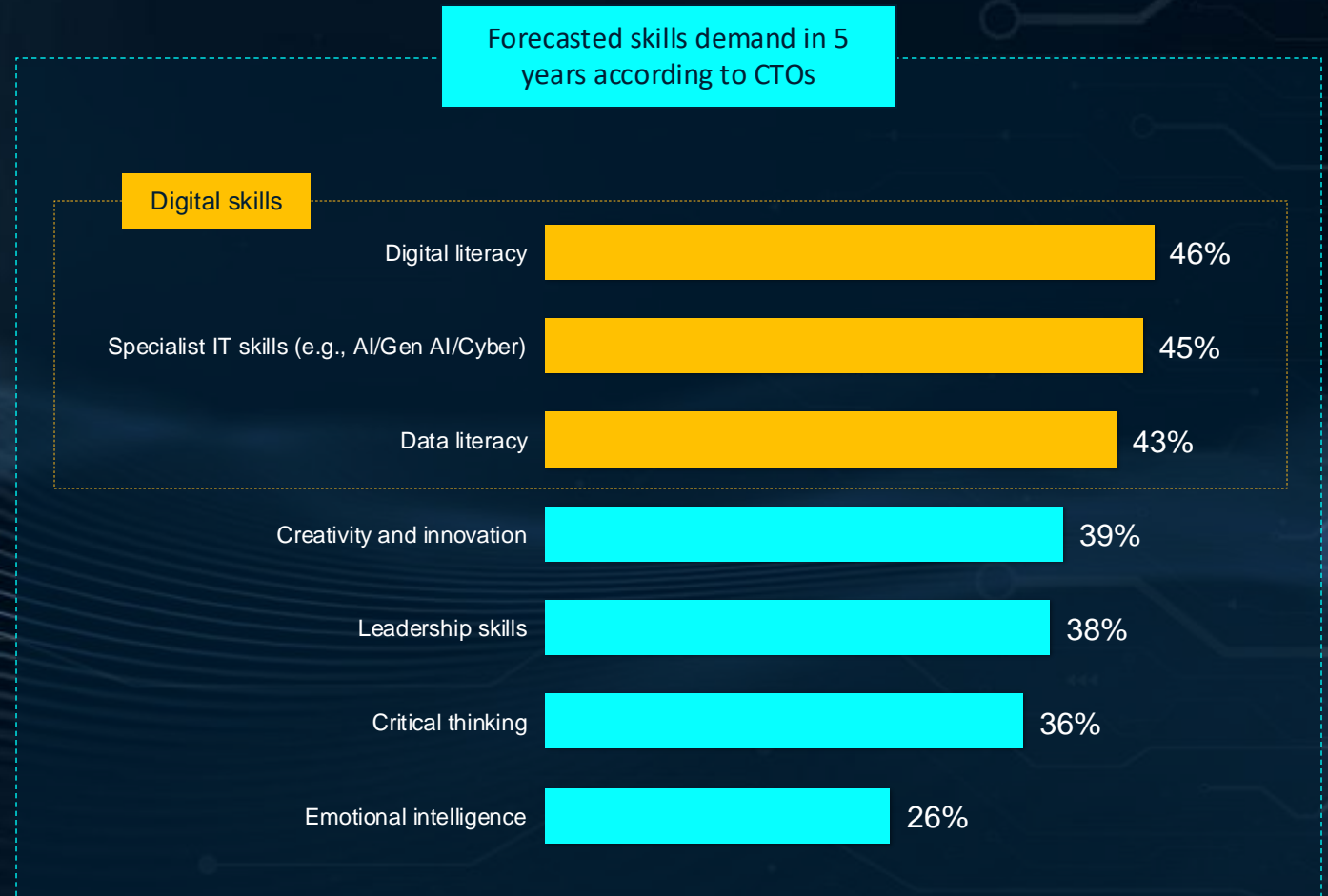
Current skills gaps by industry according to CTOs



71% CTOs expect salary increases for AI-related roles in the next 12 months

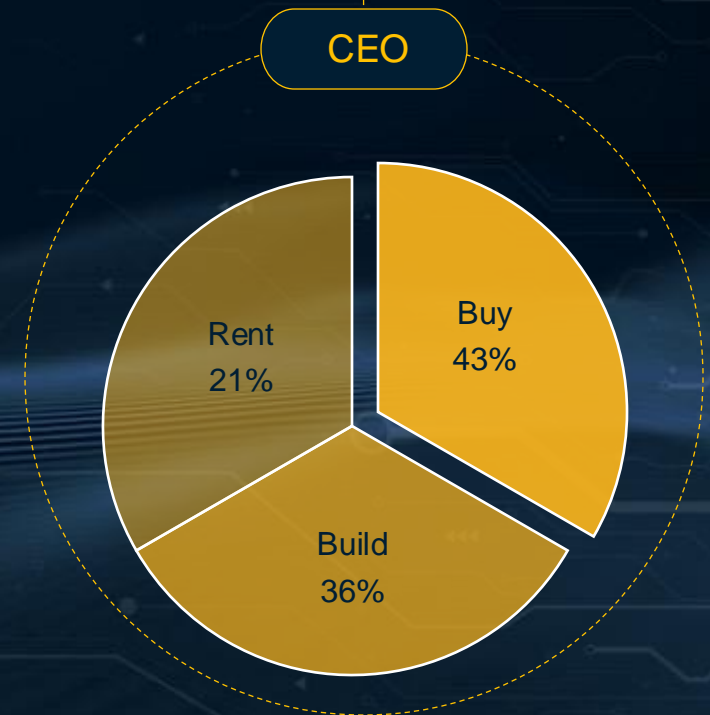
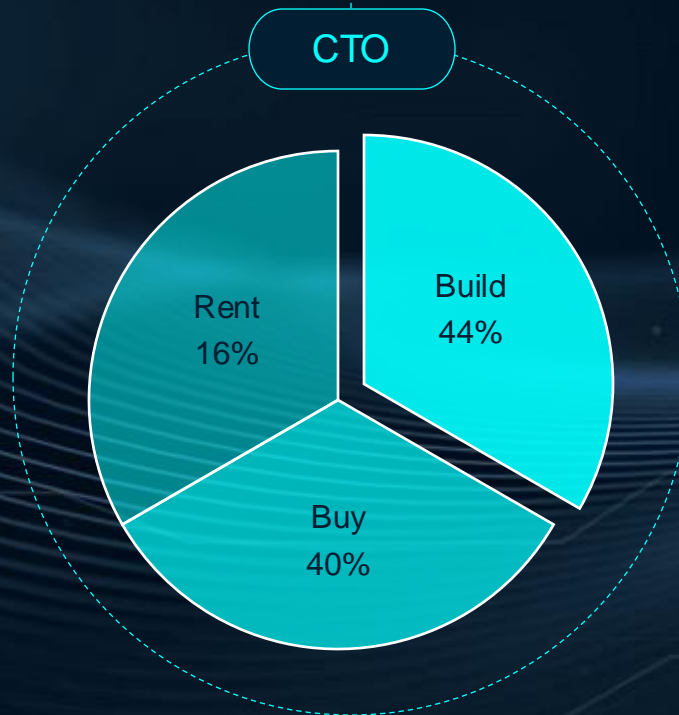
CTOs Expect Highest Demand for Digital Skills

- Digital literacy, specialist IT skills, and data literacy rank in the top three for expected skills demand in five years' time.
- Digital and data literacy skills apply broadly across the organization, requiring upskilling and development programs to build skills within existing teams, whilst specialist IT skills are likely concentrated within the IT department.
- CTOs will need a balance of technical and communication/ business skills, including creativity and innovation, leadership, critical thinking and emotional intelligence.



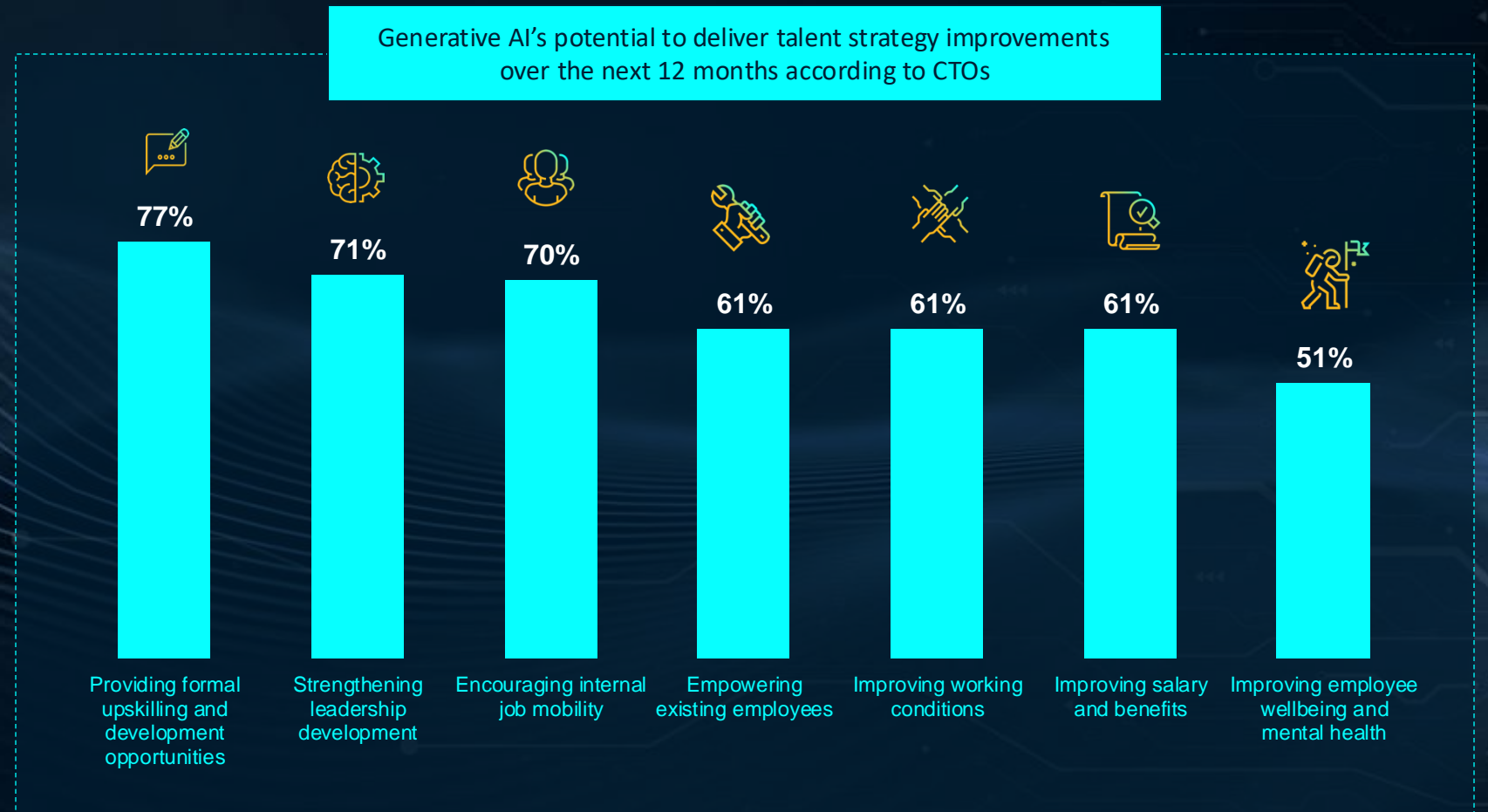
Approaches to filling digital literacy skills gaps, CTO vs. CEO

- There is a need to balance build vs. buy approaches to securing talent.
- When it comes to filling digital literacy skills gaps, CTOs largely plan on building tech talent more than CEOs, who sway more toward buying or renting.
- CTOs are bold when it comes to building, investing efforts in reskilling. Meanwhile, CEOs are asking CTOs to seek more consulting partnerships (rent). This, coupled with a greater propensity to buy talent, demonstrates the greater desire among CEOs to collaborate with other firms.



CTOs Expect Generative AI to Play a Critical Role in Talent Strategy

- CTOs share the view that generative AI will play a positive role in workforce strategies in the coming year. They expect that AI will affect talent across the employee journey, impacting all levels of the organization.
- Generative AI may have a critical role to play, but organizations will need to carefully consider how they roll out the technology in an ethical way.



Recommendations

Recommendations for the C-suite

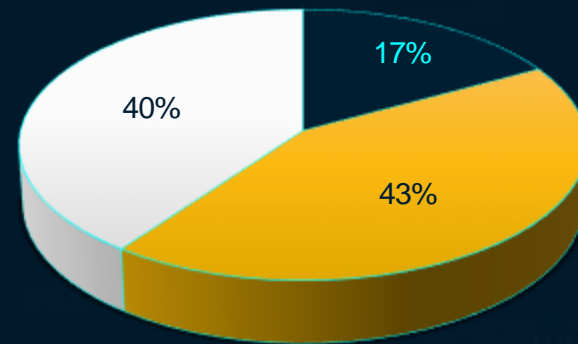
- Strive to be agile, to keep pace with the rapid evolution of emerging technologies: with a flexible operating model, a culture of experimentation and the ability to pivot, and implement new technology at speed.
- Cut through uncertainty paralysis with a clear digital transformation strategy. The strategy should be based on a thorough evaluation of the opportunities and challenges presented by new technology, balancing quick efficiency gains alongside potential larger gains through operating and business-model redesign. Back the strategy with a commitment to invest.
- Build firm foundations to get the organization AI-ready, including sound data, technology infrastructure, and the accompanying processes (e.g., ethical frameworks, privacy, and security).
- Reskill for the next wave of digitalization – with new, adaptable skill sets. Implement upskilling and reskilling schemes to develop staff in-house and create new talent pools.
- Tackle the talent gap at leadership and operating levels, particularly in areas of rapid disruptive innovation such as AI. Generative AI itself can be an effective accelerator in preparing and upskilling the workforce.
- Collaborate across the C-suite to manage an enterprise-wide transformation. The CTO will play a key role, providing a source of expertise and guidance for other members of the C-suite.

Appendix

Industries

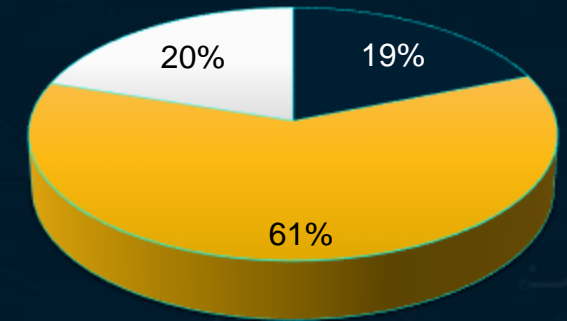
- Aerospace - 9%
- Automotive - 8%
- Clean Tech - 9%
- Defence - 7%
- E-commerce - 3%
- Energy - 7%
- FMCG - 3%
- Healthcare - 9%
- Life Sciences - 9%
- Logistics - 1%
- Manufacturing - 2%
- Pharmaceuticals - 3%
- Retail and consumer goods - 3%
- Supply chain - 2%
- Technology - 12%
- Transportation - 8%
- Utilities - 4%

Location



□ North America ■ Europe ■ APAC

Revenue



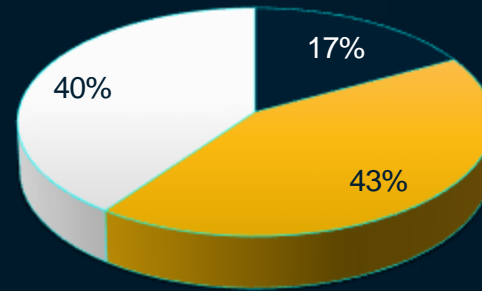
□ Below \$500 million to \$1 billion
■ \$1 billion to \$15 billion
■ \$15 billion to \$30 billion and above

C-suite Demographics

Industries

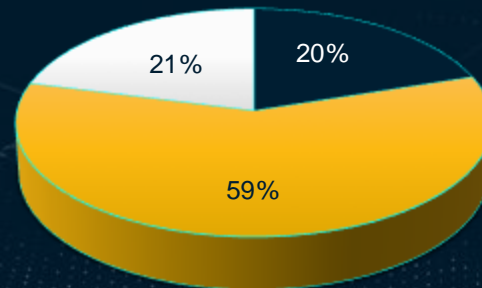
- Aerospace - 8%
- Automotive - 5%
- Clean Tech - 7%
- Defence - 7%
- E-commerce - 4%
- Energy - 6%
- FMCG - 4%
- Healthcare - 6%
- Life Sciences - 6%
- Logistics - 3%
- Manufacturing - 3%
- Mobility - 3%
- Pharmaceuticals - 4%
- Retail and consumer goods - 5%
- Supply chain - 4%
- Technology - 15%
- Transportation - 5%
- Utilities - 5%

Location



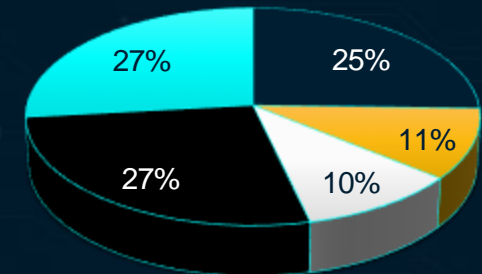
□ North America ■ Europe ■ APAC

Revenue



□ Below \$500 million to \$1 billion
 ■ \$1 billion to \$15 billion
 ■ \$15 billion to \$30 billion and above

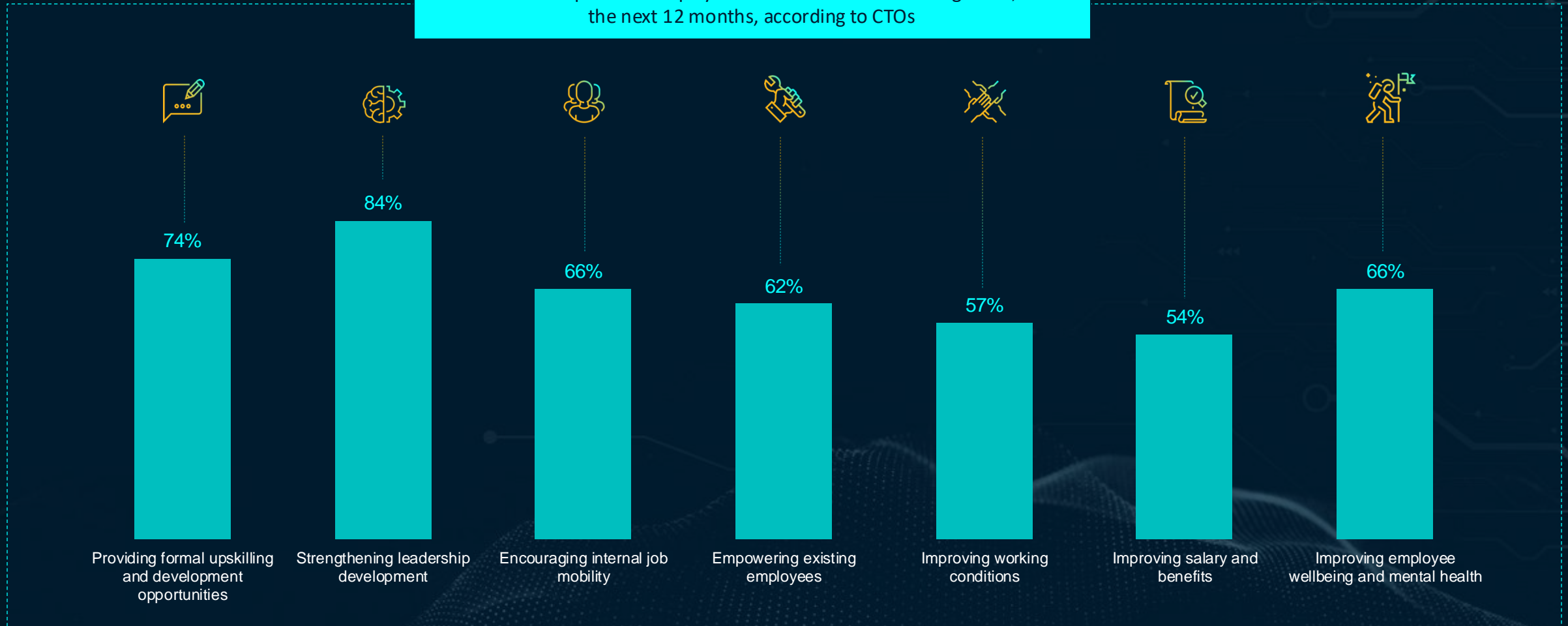
Role



□ CTO (including CDO) ■ CFO
 ■ COO □ CEO
 ■ CHRO

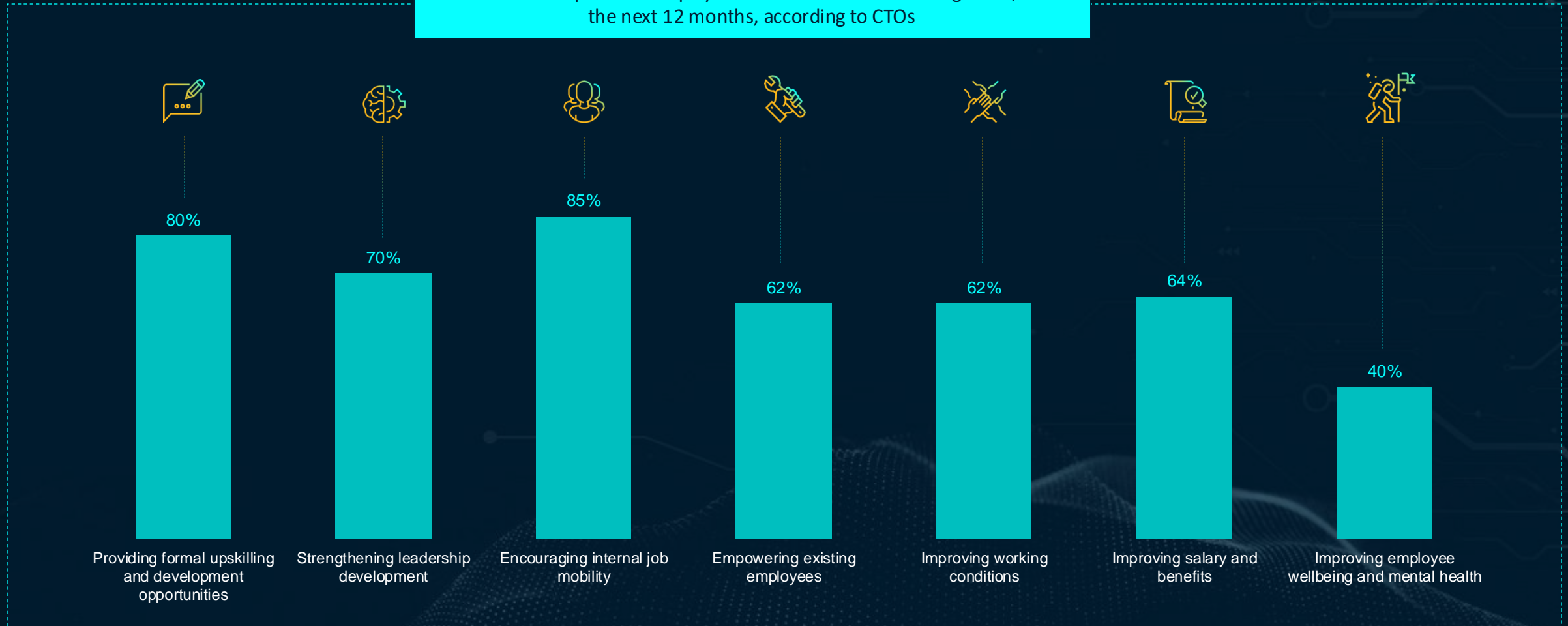
Generative AI's Potential Role is Talent Strategy - Aerospace

Generative AI's potential to play a critical role in the following areas, over the next 12 months, according to CTOs

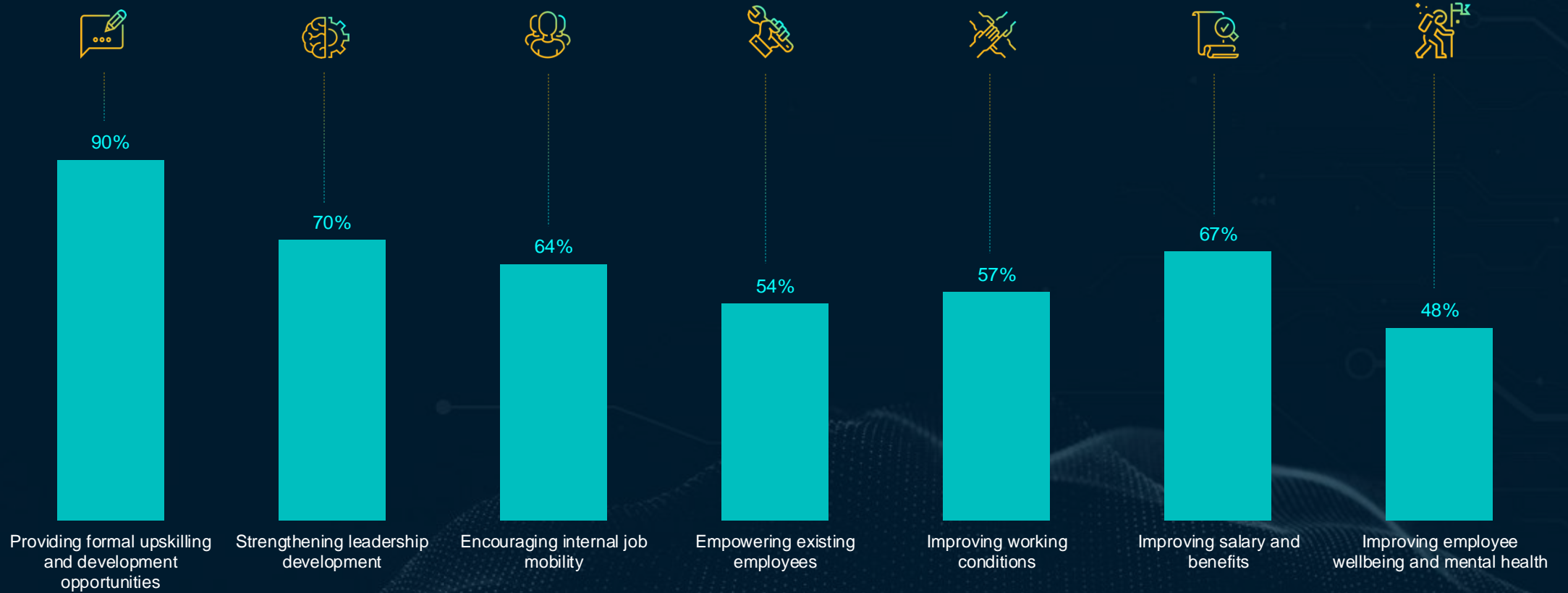


Generative AI's Potential Role is Talent Strategy - Automotive

Generative AI's potential to play a critical role in the following areas, over the next 12 months, according to CTOs



Generative AI's potential to play a critical role in the following areas, over the next 12 months, according to CTOs



Generative AI's potential to play a critical role in the following areas over the next 12 months according to CTOs

