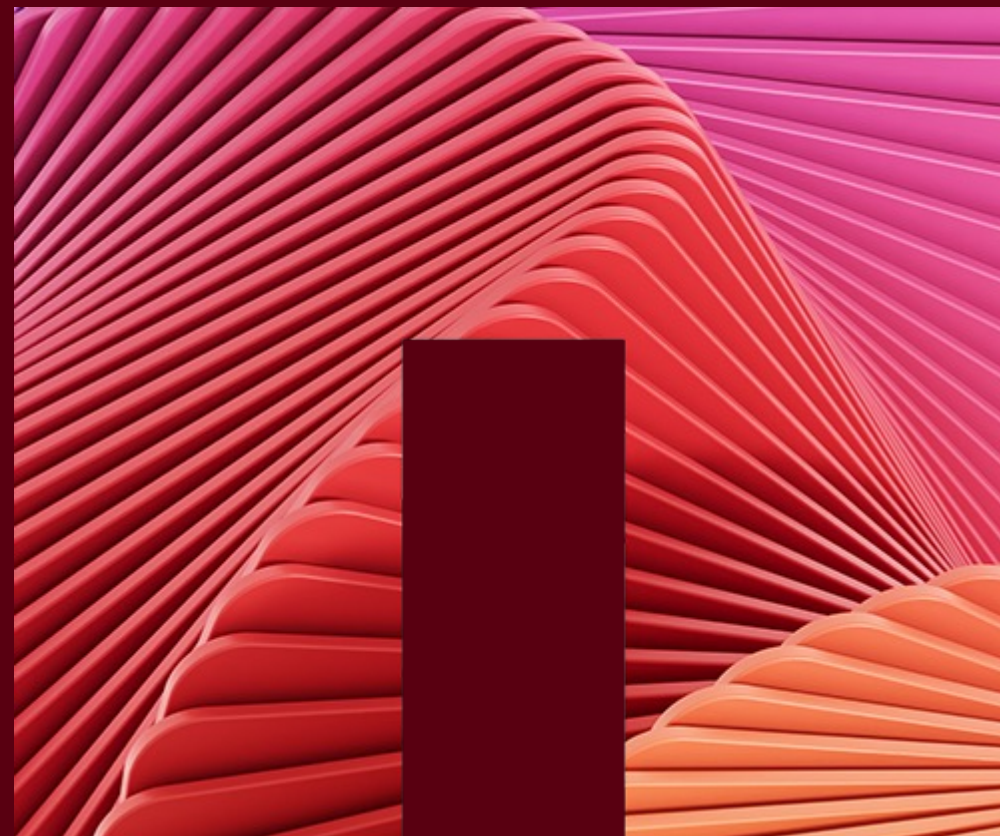


2024 CLOUD COMPLEXITY REPORT: THE AI DIVIDE

APRIL 2024



“The rise of AI is ushering in a new disrupt-or-die era. Data-ready enterprises that connect and unify broad structured and unstructured data sets into an intelligent data infrastructure are best positioned to win in the age of AI.”

Gabie Boko, Chief Marketing Officer at NetApp

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EXECUTIVE SUMMARY

The AI Divide

The rise of AI is creating a new disrupt or die era and the world is starting to divide into AI leaders and AI laggards.

There is already a clear divide between AI-leading countries and AI-lagging countries. Sixty percent of companies in AI-leading countries (India, Singapore, UK, USA) have either committed to AI projects that are already up and running or are in pilot. In AI-lagging countries (Spain, Australia/New Zealand, Germany, Japan) that average is only 36%, and Japan trails at a mere 17%.

There is also a clear divide between AI-leading and AI-lagging industries. It's no surprise that the Technology sector is leading in innovation and AI – with the most AI projects either in pilot or up and running (70%), but Banking & Financial Services and Manufacturing are also AI leaders with 55% and 50% of AI projects either in pilot or up and running, respectively. While Healthcare is at 38% and Media & Entertainment is only at 25%, both are starting to fall behind.

The same is true for large companies versus smaller ones. Sixty-two percent of companies with more than 250 employees have AI projects either in pilot or up and running versus 36% for companies with less than 250 employees. Additionally, data scientists and data engineers are embracing AI faster than the C-Suite.

However, there is hope for the laggards. AI-lagging geographies, industries and companies can still catch up to AI leaders – but they'll need to act fast. AI-laggards with IT environments already optimized for AI (with unified data storage) will be able to adopt AI quicker, while those with siloed data environments have more barriers to overcome.

IT costs and security are the two biggest challenges in the AI era, but they will not impede AI progress. Instead, AI leaders will scale back, cut other IT operations or reallocate costs from other parts of the business to fund AI. Leaders will also increase their cloud operations (CloudOps), data security and AI investments throughout 2024.

Finally, whether you're an AI leader or an AI laggard, the report confirmed five key areas equally critical to AI success:

- | | | |
|---------------------------------------|--|---|
| 1 Rich, connected and accessible data | 3 The right AI partners | 5 Visibility and control over CloudOps and cost |
| 2 An AI-trained workforce | 4 Access to high performance compute and storage | |

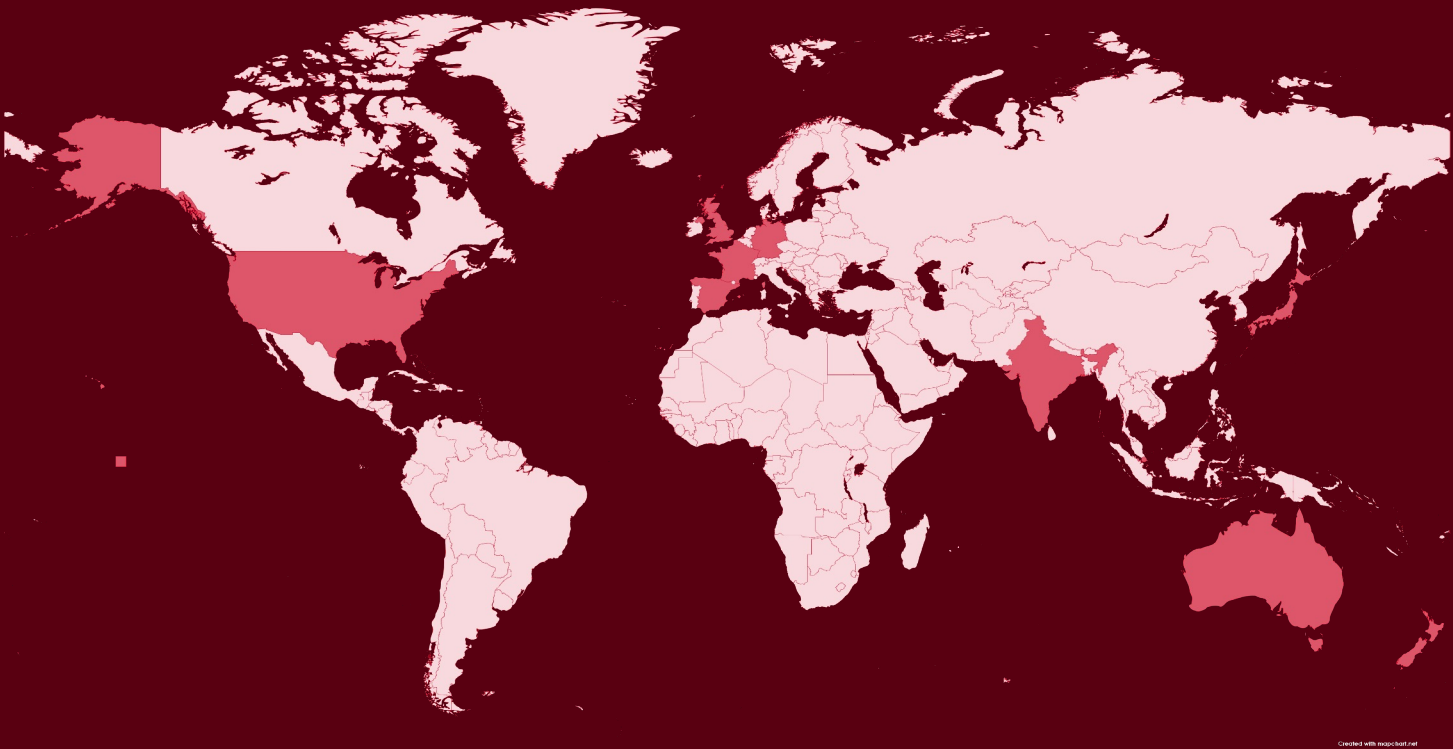
ABOUT THE REPORT

The second annual NetApp Cloud Complexity Report explores how technology decision makers around the globe are navigating and deploying AI at scale. This new chapter provides insights into the progress, readiness, challenges, and momentum of the past year, and the critical role of data management for AI success.



RESEARCH METHODOLOGY

In March 2024, NetApp partnered with Savanta to conduct a quantitative research study of 1,300+ tech and data executives at businesses in 10 markets: US, EMEA (UK, France, Germany, Spain) and APAC (Australia/New Zealand, India, Singapore, Japan). At the time of completion, all participants held positions that were classified as “director-level and above” and worked across IT, IT infrastructure, cloud infrastructure, data science, and data engineering departments.



Included Roles

- IT
- IT Infrastructure
- Cloud Infrastructure
- Data Engineering

Included Verticals

- Technology
- Financial Services
- Manufacturing
- Healthcare
- Media & Entertainment

Included Titles

- CIO
- CTO
- SRE
- ITOps
- Storage Admins
- DevOps/CloudOps
- Cloud Architects
- Data Scientists
- Data Engineers

CLOUD COMPLEXITY REPORT: THE AI DIVIDE OVERVIEW

CHAPTER 1 PROGRESS

There is a significant divide between AI leaders and AI laggards

60%

of technology executives in AI-leading countries have projects up and running or in motion, compared to only 36% in AI-lagging countries

CHAPTER 2 READINESS

AI laggards with AI ready IT environments need to get in the AI game and those without need to urgently innovate

42%

of companies in AI-lagging countries have optimized IT environments for AI and are AI ready – including Germany (67%) and Spain (59%)

CHAPTER 3 CHALLENGES

IT costs and security emerge as top challenges but won't impede AI progress

40%

of large companies say AI projects have already increased IT costs

CHAPTER 4 MOMENTUM

Cloud investments in 2024 and beyond will address security concerns, automate cloud operations and support AI initiatives

52%

of companies globally will launch AI-driven cloud deployments in 2030 – up 58% from 2024

CHAPTER 1:

PROGRESS

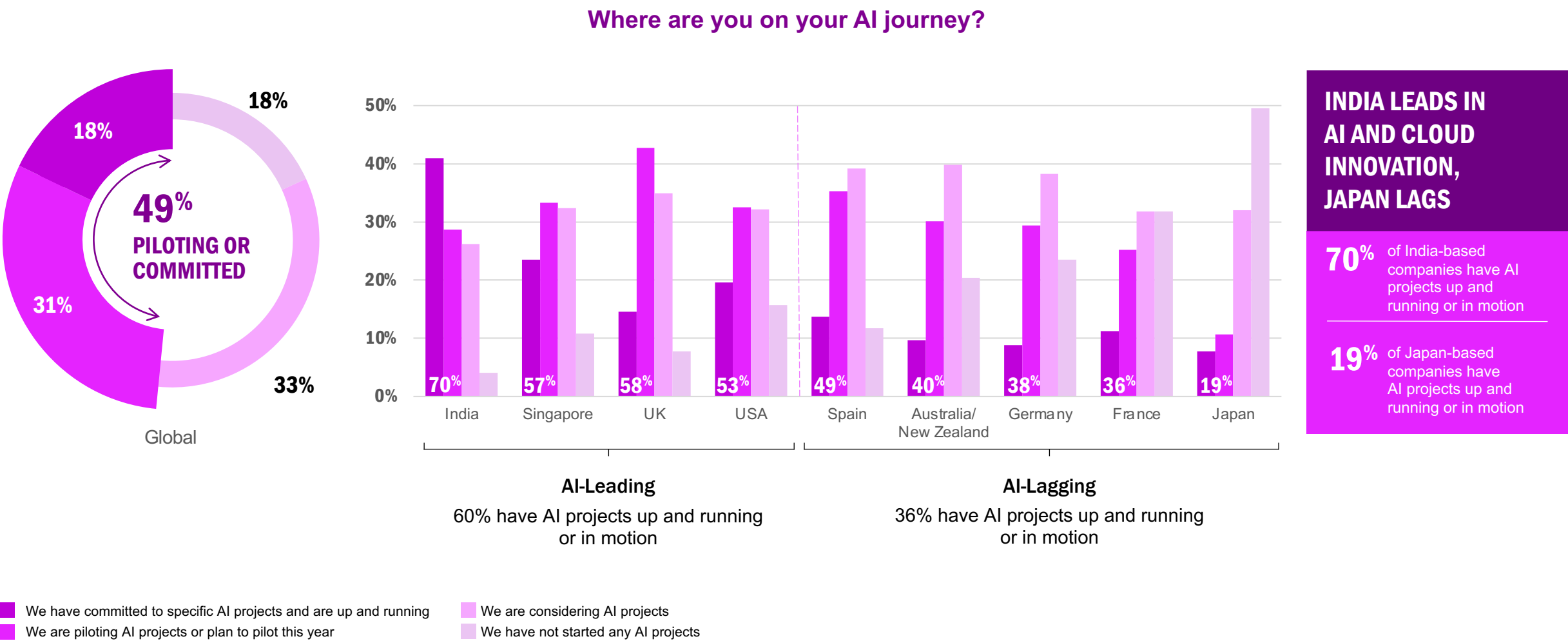
THE WORLD IS DIVIDING INTO AI LEADERS AND AI LAGGARDS

60%

of companies in AI-leading countries have projects up and running or in motion, compared to only 36% in AI-lagging countries

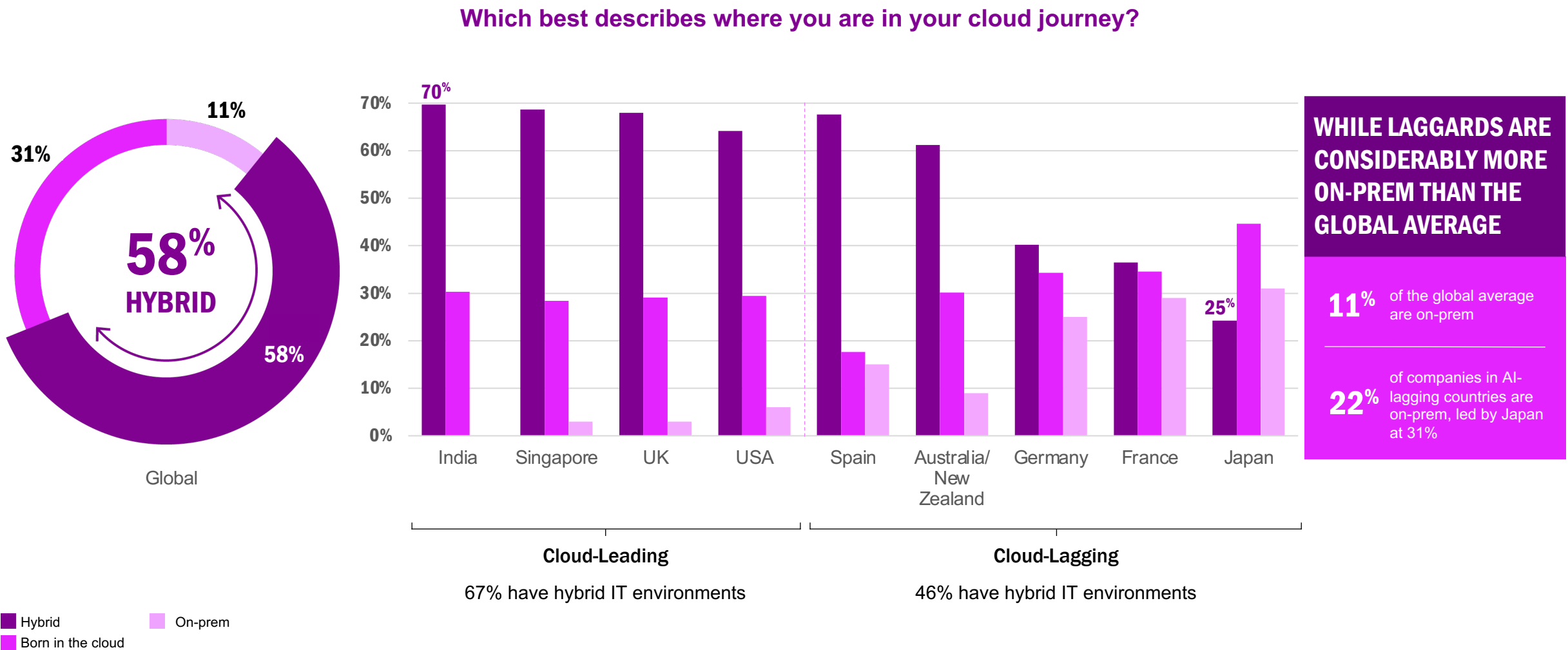
THERE IS A SIGNIFICANT GAP BETWEEN AI LEADING AND AI LAGGING COUNTRIES

India, Singapore, UK, and USA have more AI projects up and running or in motion than the global average of 49%



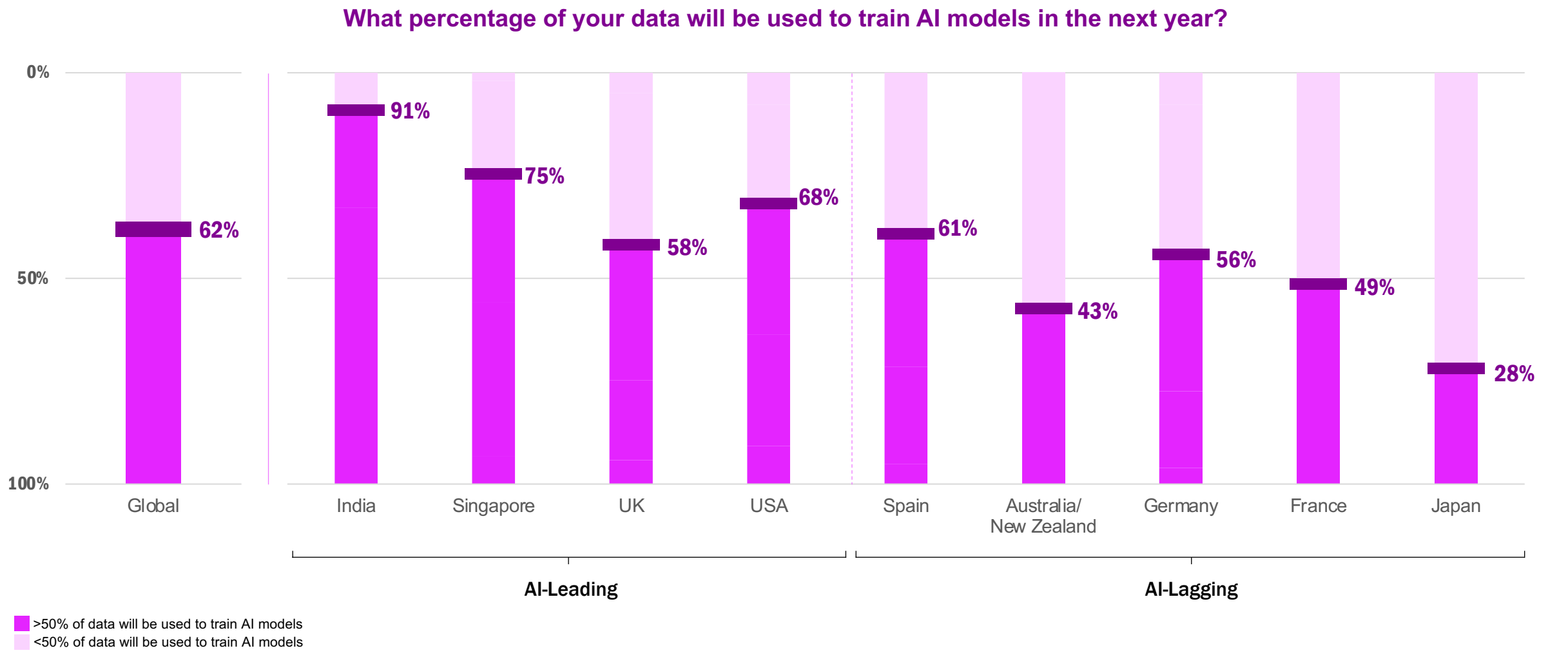
AI-LEADING COUNTRIES ARE ALL IN ON HYBRID CLOUD

Hybrid IT environments are best positioned for AI: Globally, 58% are hybrid with India leading (70%) and Japan lagging (25%)



AI LEADERS ARE MORE LIKELY TO USE A MAJORITY OF THEIR DATA TO TRAIN AI MODELS

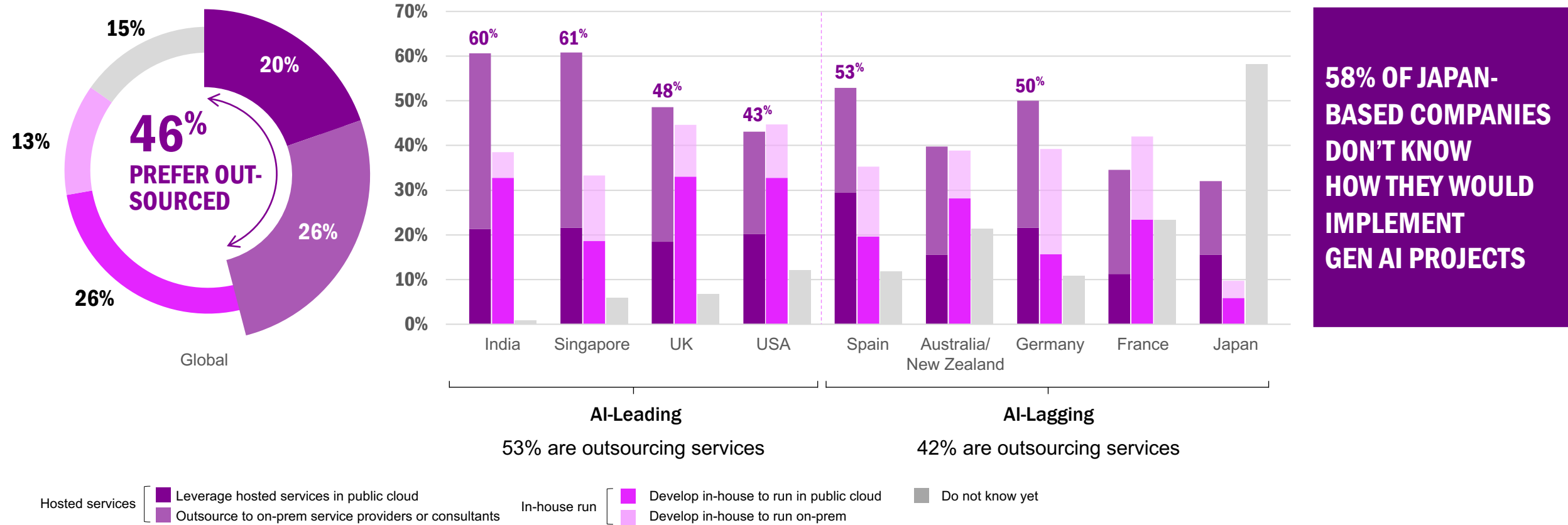
Ninety-one percent of India-based companies will use half or more of their data to train AI models in 2024, compared to only 28% of Japan-based companies



OUTSOURCED SERVICES ARE PREFERRED OVER IN-HOUSE FOR GEN AI

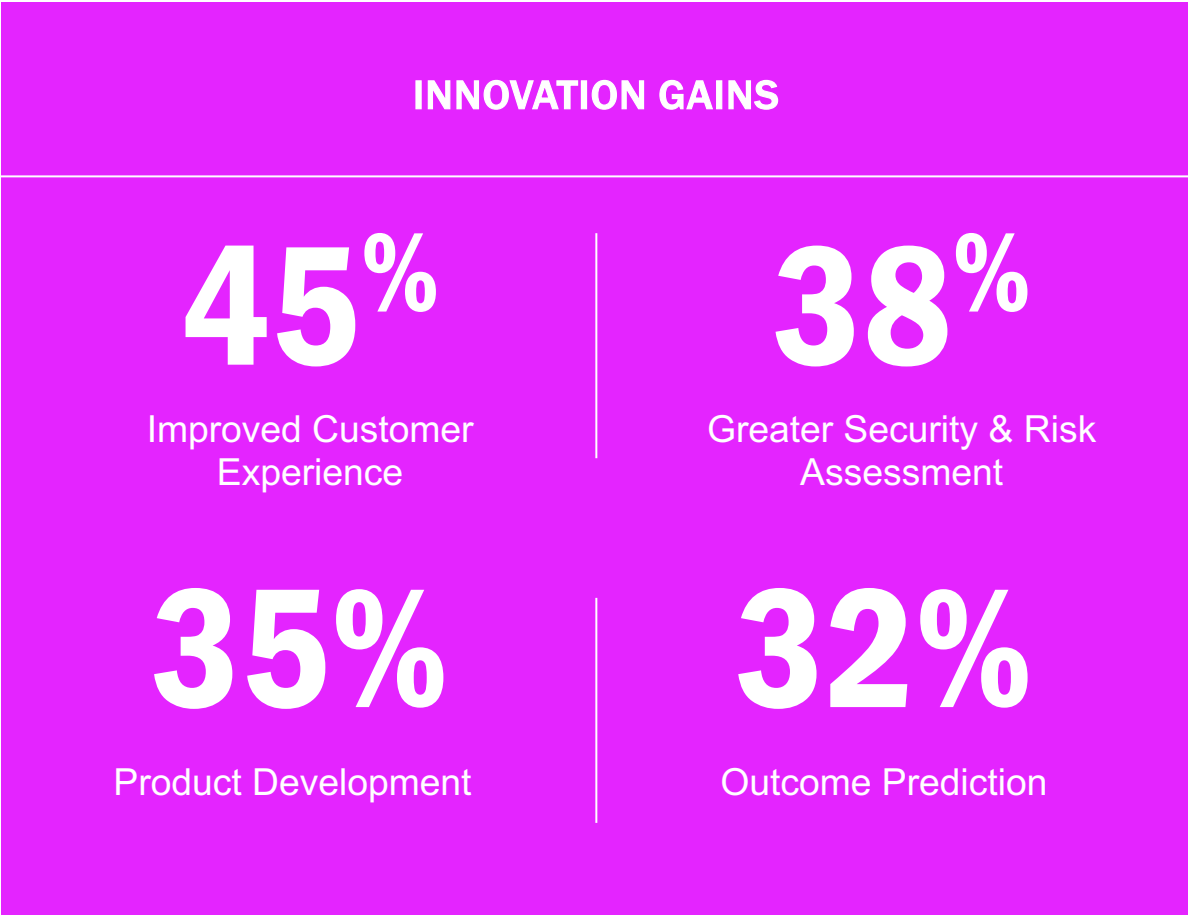
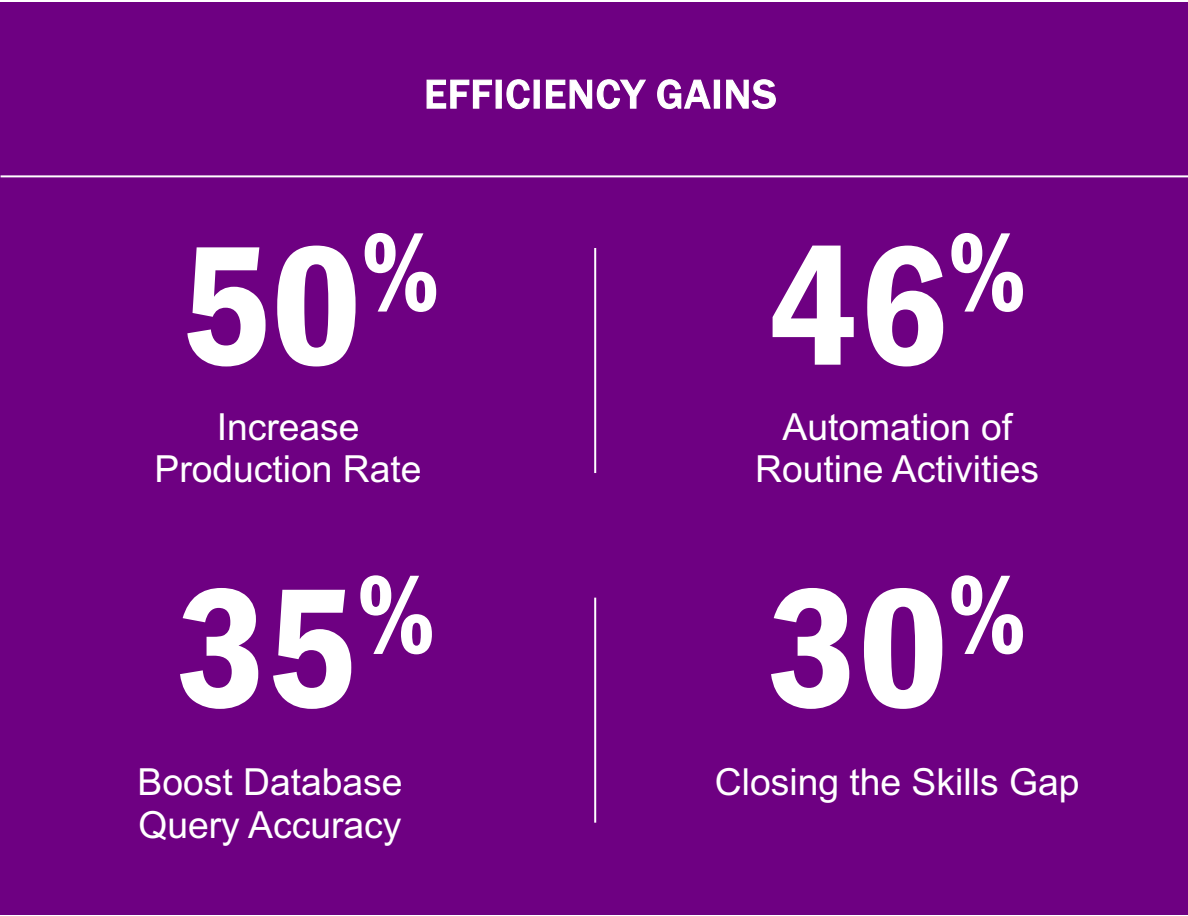
AI-leading countries including India (60%), Singapore (61%), UK (48%) and USA (43%) are outsourcing services for Gen AI projects, along with AI-ready countries like Spain (53%) and Germany (50%)

What is your organization’s preference in how they would implement their Gen AI projects?



TOP GLOBAL BENEFITS OF USING ARTIFICIAL INTELLIGENCE IN YOUR ORGANIZATION

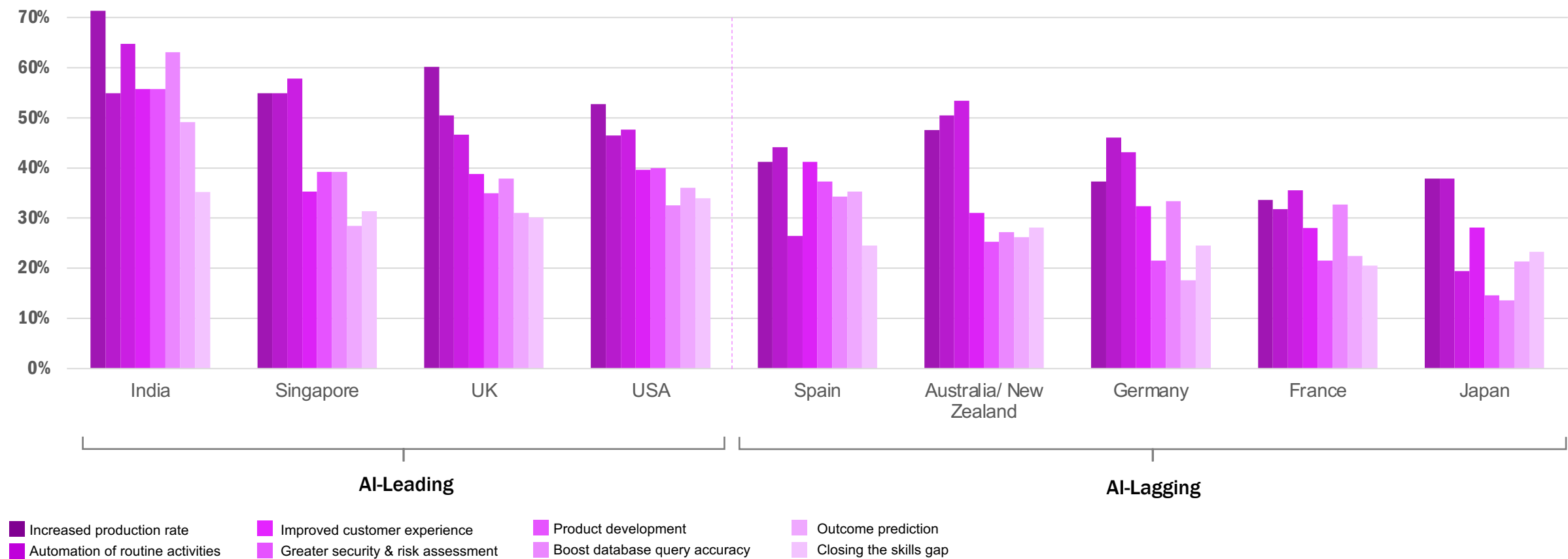
What are the top benefits of using AI in your organization?



AI LEADERS SEE SIGNIFICANTLY MORE BUSINESS BENEFITS THAN AI LAGGARDS

Top AI benefits globally are increased production rate, automation of routine activities, and improved customer experience

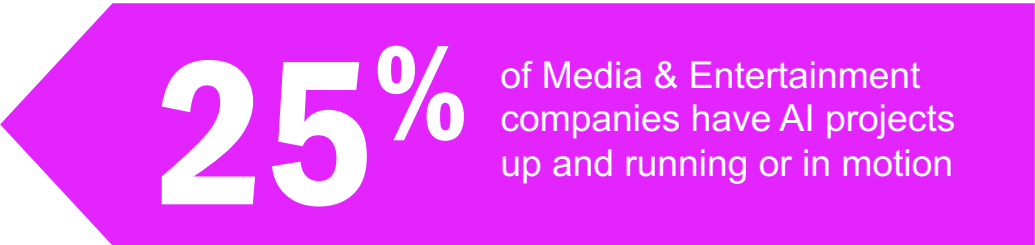
What are the top benefits of using AI in your organization?



INDUSTRIES ARE ALSO DIVIDING INTO AI LEADERS AND AI LAGGARDS

Where are you on your AI journey?

LEADER: Banking & Finance

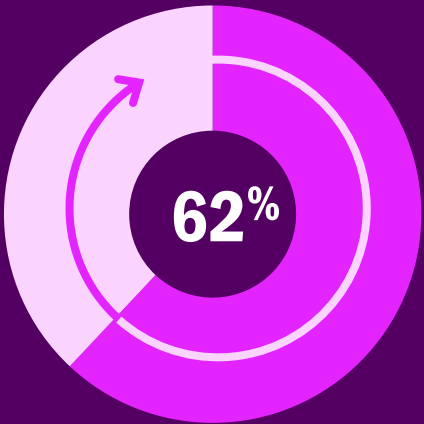


LAGGARD: Media & Entertainment

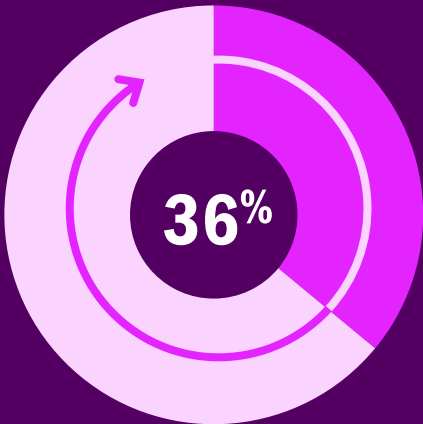
AND LARGER COMPANIES ARE MOVING FASTER ON AI THAN SMALLER ONES

Where are you on your AI journey?

Over 250 Employees



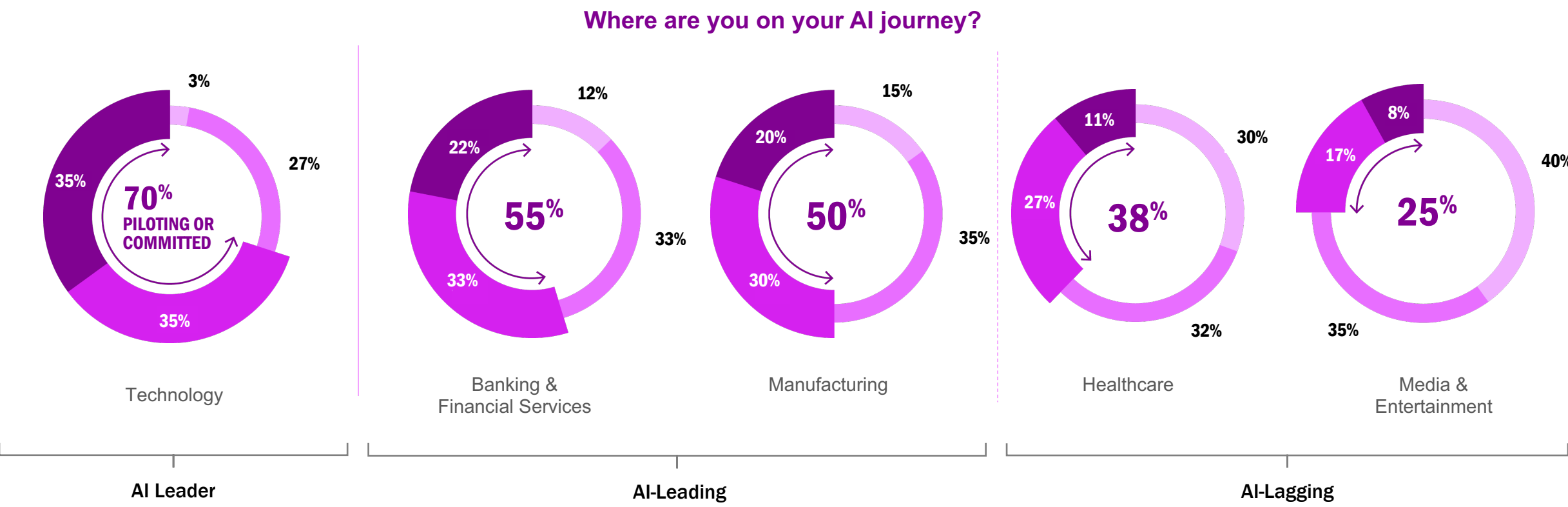
Under 250 Employees



- We have AI projects either up and running or in motion
- We have not started or are still considering AI projects

THERE IS A SIGNIFICANT DIVIDE BETWEEN AI-LEADING AND AI-LAGGING INDUSTRIES

Only 25% of Media & Entertainment companies have AI projects either up and running or in motion compared to 55% of Banking & Finance companies and 50% of Manufacturing companies

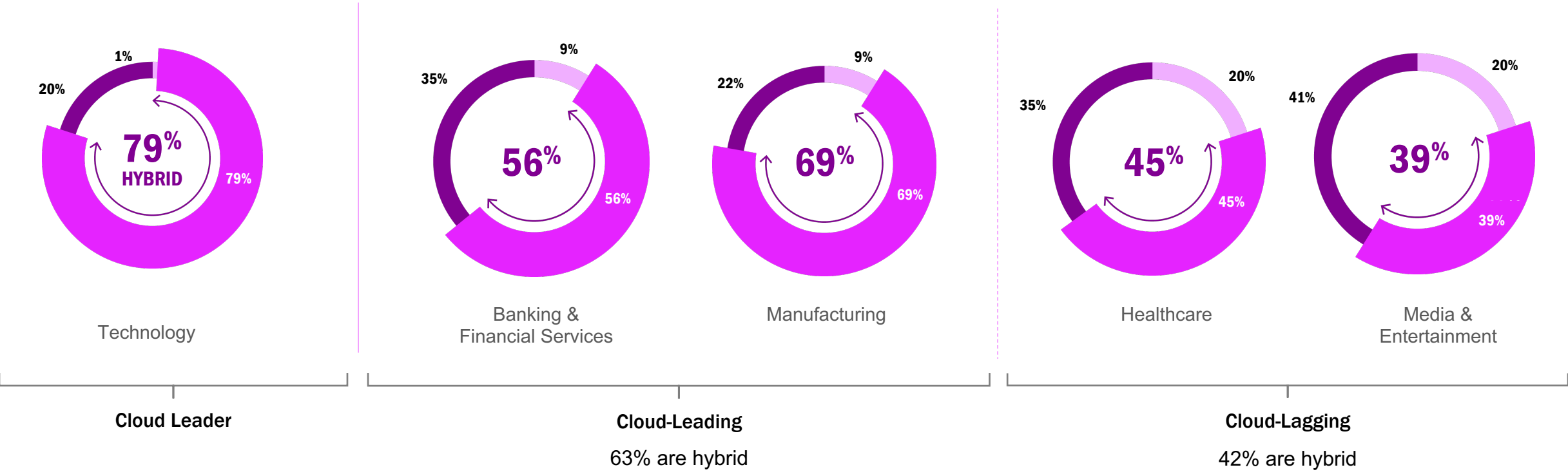


- We have committed to specific AI projects and are up and running
- We are considering AI projects
- We are piloting AI projects or plan to pilot this year
- We have not started on any AI projects

TECHNOLOGY COMPANIES ARE ALMOST 2X MORE HYBRID THAN LAGGING INDUSTRIES

Seventy-nine percent of Technology companies are hybrid, compared to only 42% on average of those in Healthcare and Media & Entertainment

Which best describes where you are in your cloud journey?



On-prem Born in the cloud Hybrid

THE AI DIVIDE IS CREATING A BUSINESS GAP BETWEEN INDUSTRIES

Technology experiences more business benefits from AI than Media & Entertainment

What are the top benefits of using AI in your organization?

EFFICIENCY GAINS

INCREASE PRODUCTION RATE

69%

Technology

40%

Media & Entertainment

INNOVATION GAINS

IMPROVED CUSTOMER EXPERIENCE

52%

Technology

35%

Media & Entertainment

AUTOMATION OF ROUTINE ACTIVITIES

56%

Technology

44%

Media & Entertainment

OUTCOME PREDICTION

48%

Technology

27%

Media & Entertainment

LARGER COMPANIES EXPERIENCE MORE BUSINESS BENEFITS FROM AI THAN SMALLER COMPANIES

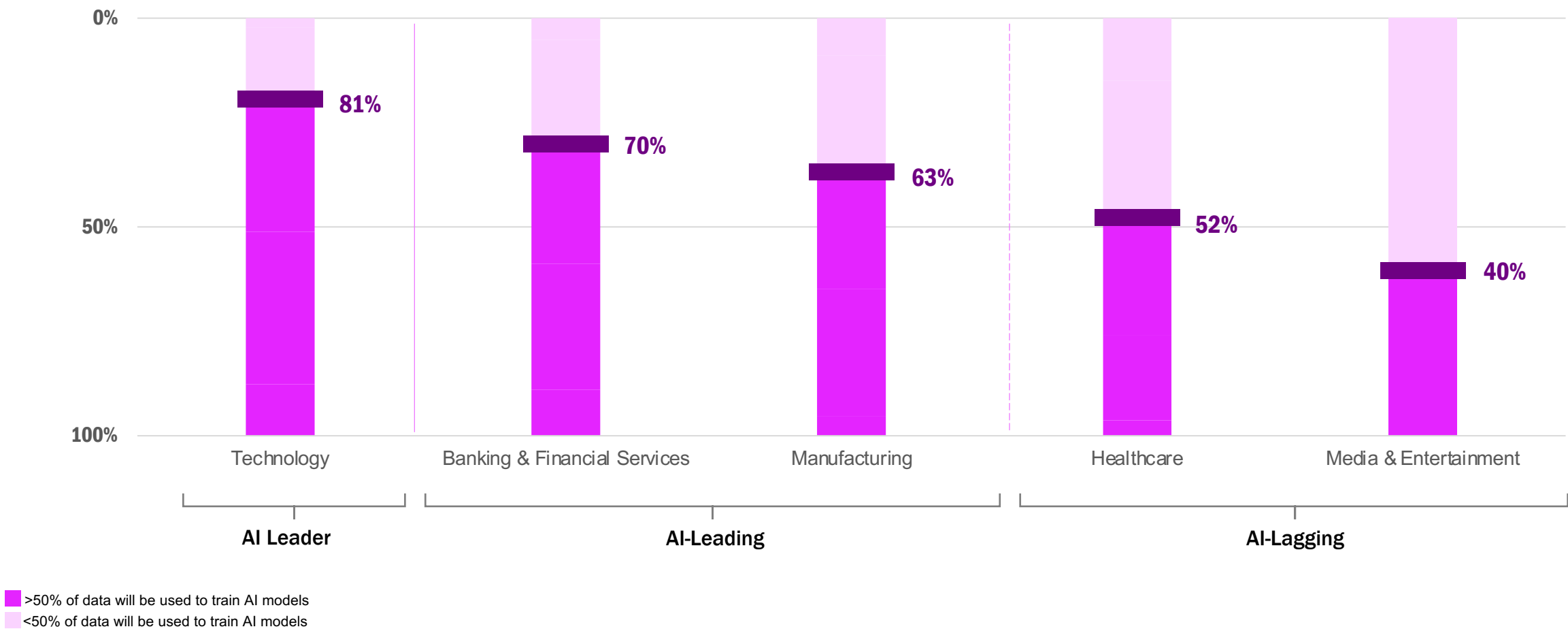
What are the top benefits of using AI in your organization?



AI LEADERS WILL USE A MAJORITY OF THEIR DATA TO TRAIN AI MODELS

Eighty-one percent of Technology companies will use 50% or more of their data to train AI models in the next year, compared to only 52% of Healthcare companies and 40% of Media & Entertainment companies

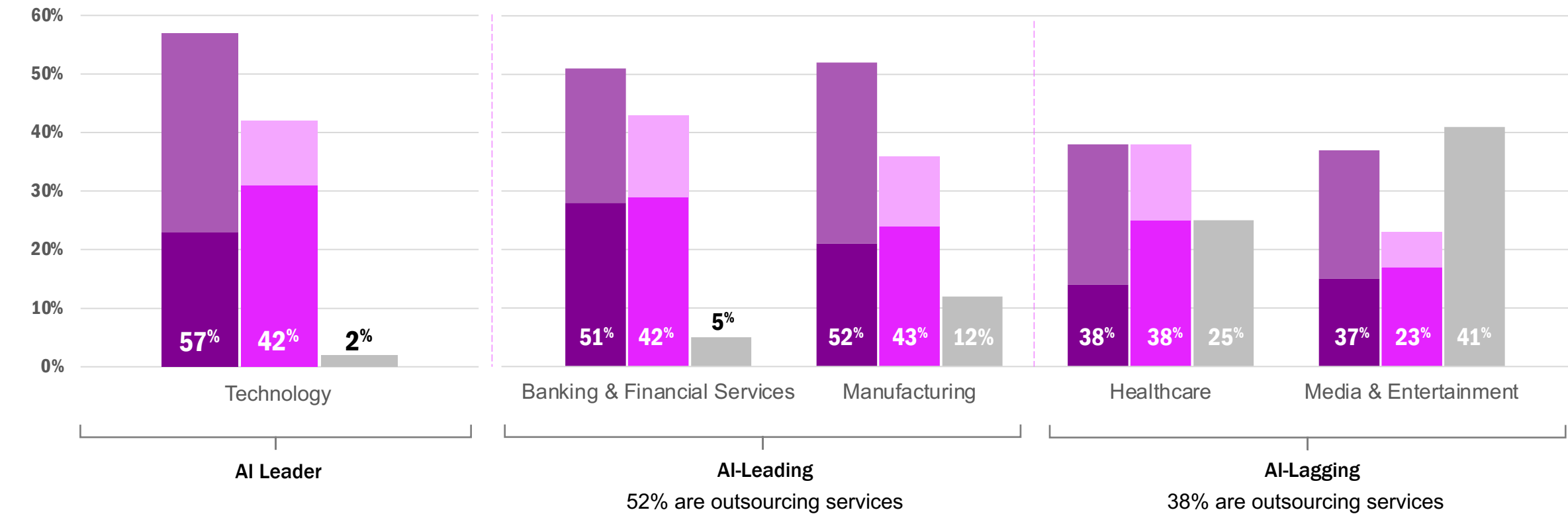
What percentage of your data will be used to train AI models in the next year?



41% OF MEDIA & ENTERTAINMENT COMPANIES DO NOT KNOW HOW THEY WILL IMPLEMENT GEN AI

Every other industry noted outsourced and hosted services are preferred for Gen AI project implementation over in-house

What is your organization’s preference in how they would implement their Gen AI projects?



Hosted services [■ Leverage hosted services in public cloud ■ Outsource to on-prem service providers or consultants] In-house run [■ Develop in-house to run in public cloud ■ Develop in-house to run on-prem] ■ Do not know yet

CHAPTER 2:

READINESS

THERE IS HOPE FOR THE LAGGARDS

Despite not getting in on AI yet, companies in some AI-lagging countries have optimized IT environments for AI – a critical step toward AI readiness

42%

of companies in AI-lagging countries have optimized IT environments for AI and are AI ready

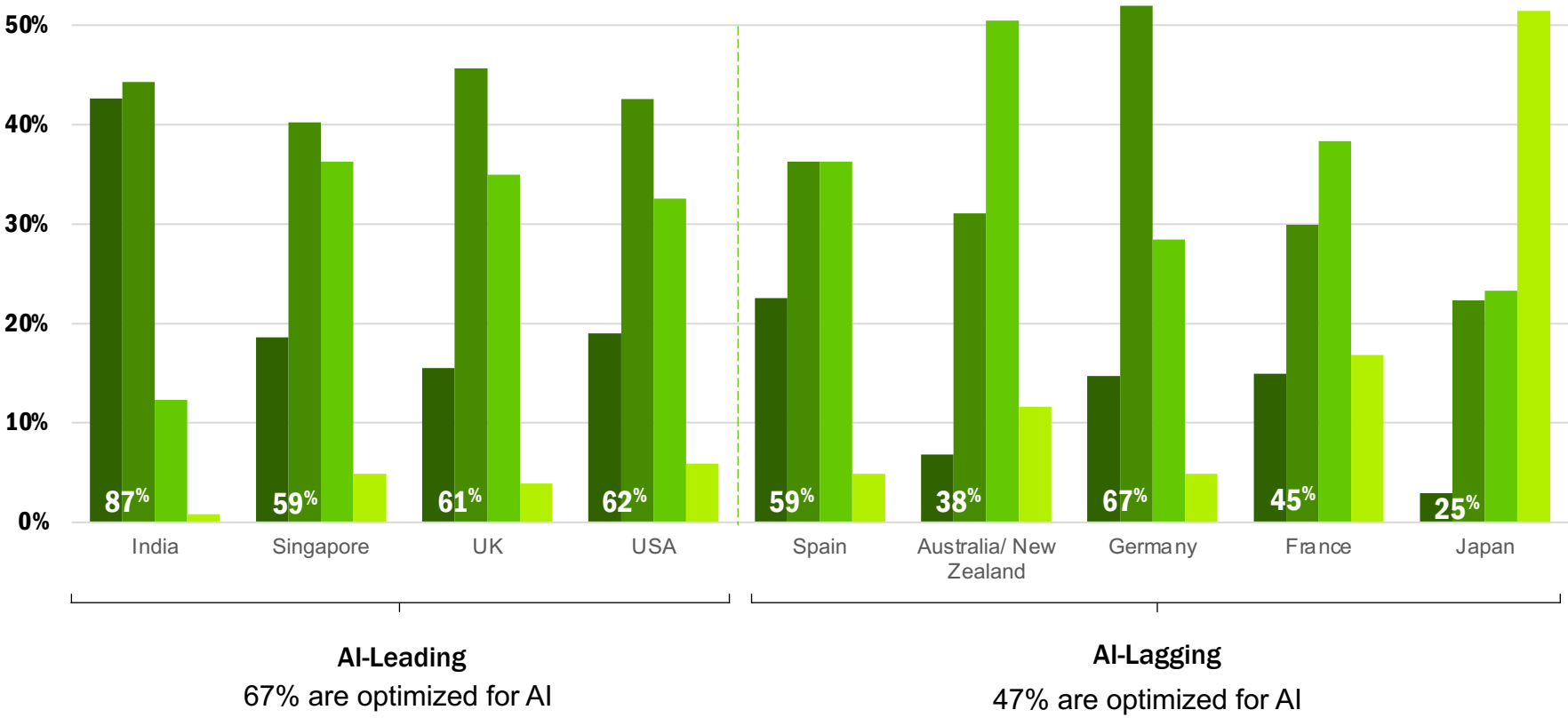
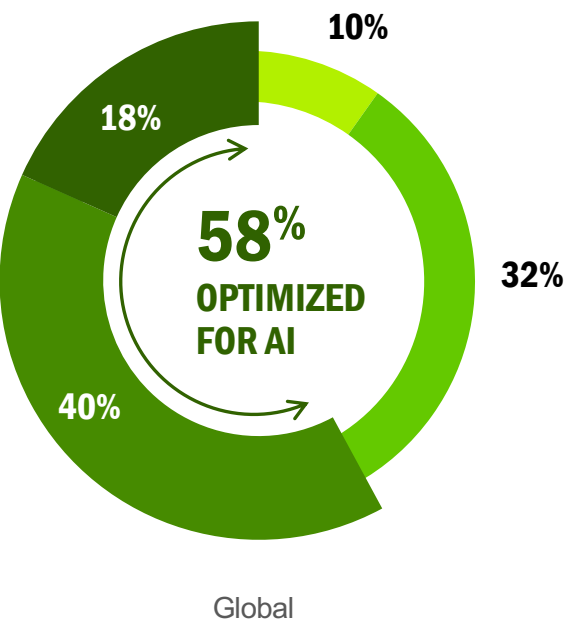
“AI is only as good as the data that fuels it. Both the AI leaders and AI laggards show us that in the prevailing hybrid IT environment, the more unified and reliable your data, the more likely your AI initiatives are to be successful.”

Pravjit Tiwana, General Manager and Senior Vice President of Cloud Storage at NetApp

SOME AI-LAGGING COUNTRIES ARE ACTUALLY OPTIMIZED FOR AI

Fifty-nine percent or more of AI-leading countries have optimized IT environments for AI, and some AI-lagging countries also have AI-ready IT environments: Germany (67%) and Spain (59%)

How ready is your overall data infrastructure and management across every IT environment to optimize the impact of AI?

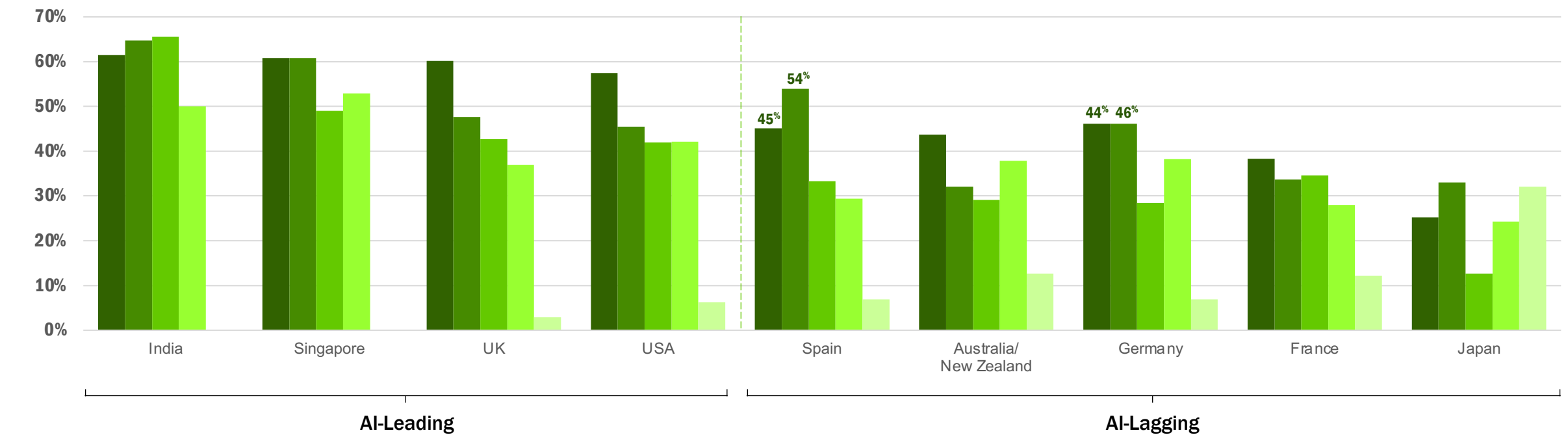


- We're 100% ready: Our data is fully accessible and unified
- Very ready: Our data is mostly accessible and unified
- Somewhat ready: Some of our data is unified but we have existing silos
- Not ready at all: Our data is siloed across different IT environments and regions

SOME AI-LAGGING COUNTRIES BENEFIT FROM UNIFIED DATA STORAGE

Some AI-lagging countries benefit from easier data sharing (45% in Spain and 44% in Germany) and increased visibility (54% in Spain and 46% in Germany) across IT environments

Which of the following benefits of unified data storage would be most helpful within your IT environment?

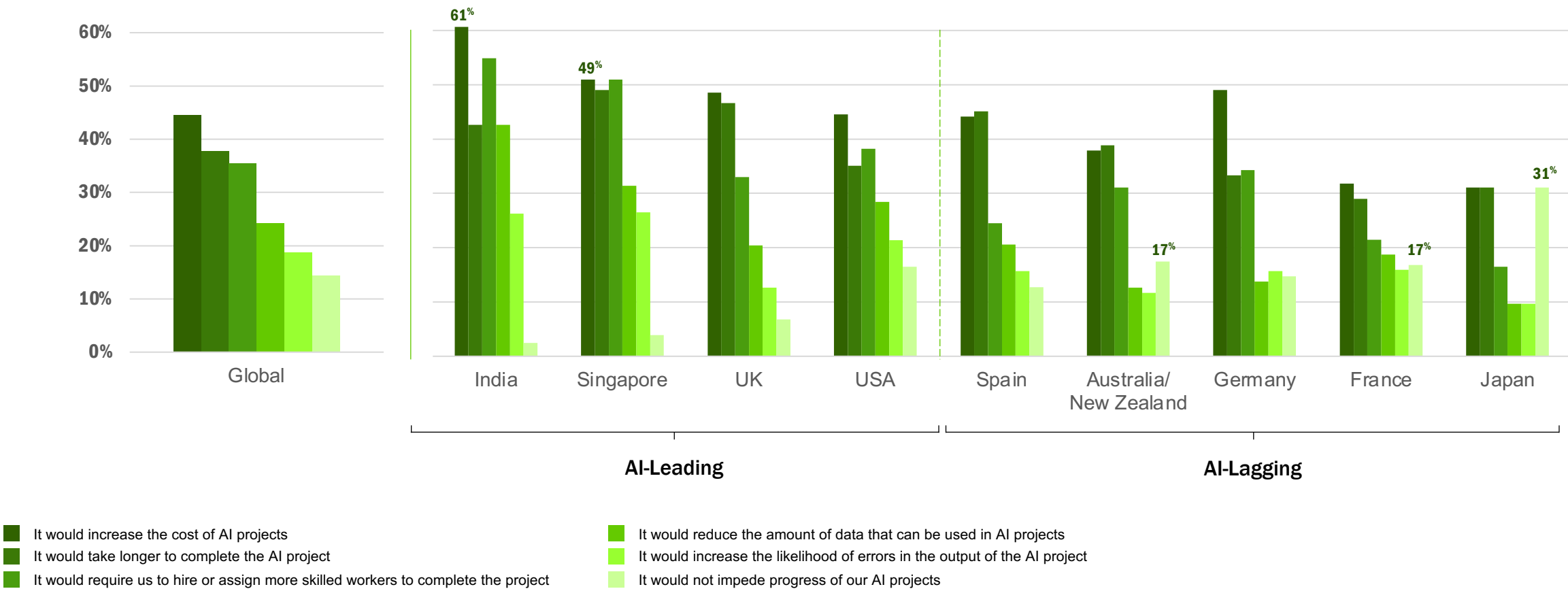


- Easier data sharing between cloud environments and on-premises systems
- Increased visibility into your organization's data
- Easier integrations with the largest cloud providers
- Simplified control and management of data with the same tools and operating system, wherever the data lives
- None of these would be helpful in my current IT environment

AI LAGGARDS WITH DATA SILOS RISK FALLING FURTHER BEHIND

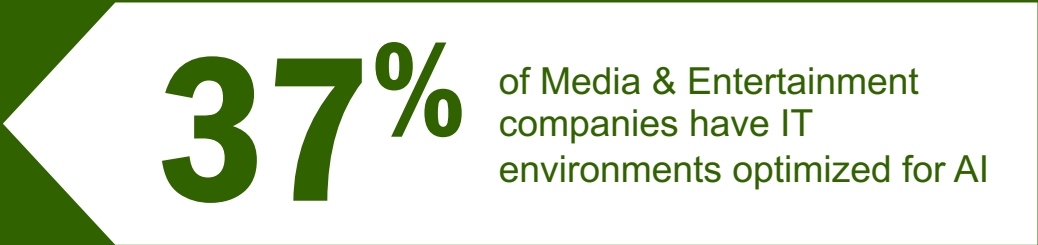
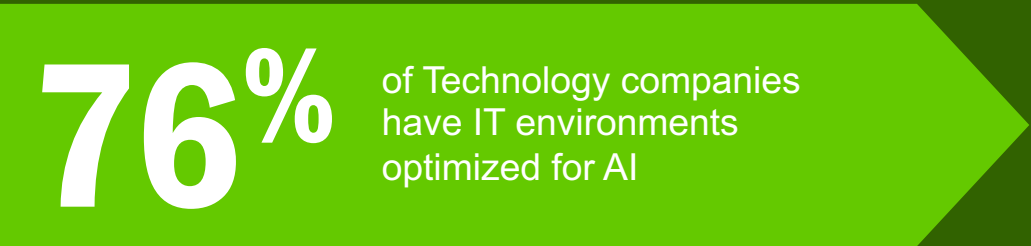
AI leaders see having separate data silos as impeding AI progress: including increased cost (India, 61%) and increased time (Singapore, 49%), while laggards do not believe data silos will impede AI projects

How would having separate data silos in your IT environment impede progress for your AI projects?



MEDIA & ENTERTAINMENT COMPANIES ARE NOT OPTIMIZED FOR AI

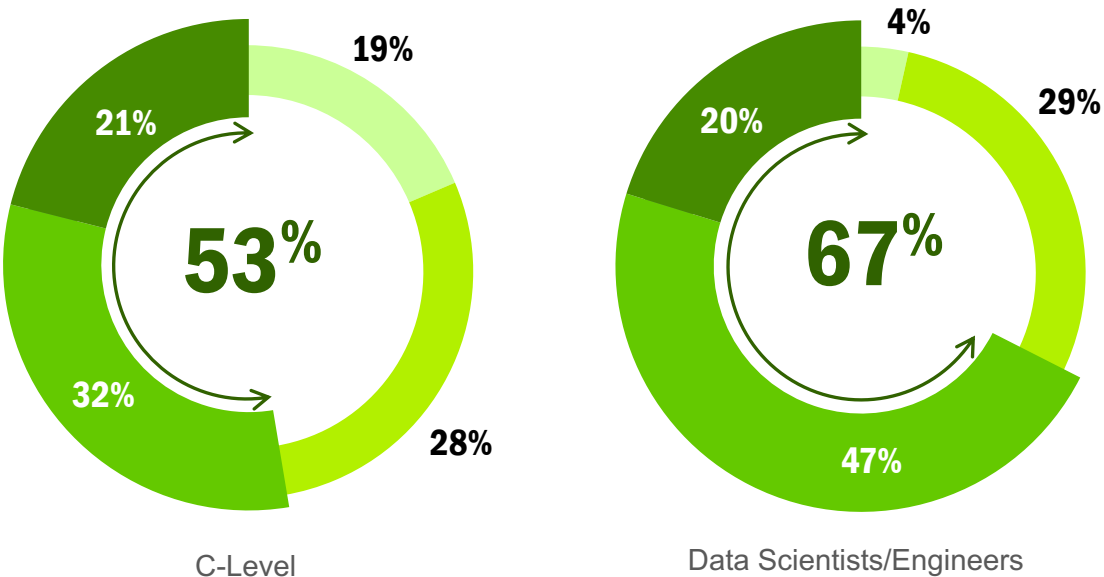
LEADER: Technology



LAGGARD: Media & Entertainment

DATA SCIENTISTS/ENGINEERS FEEL MORE AI READY THAN THE C-SUITE

How ready is your overall data infrastructure and management across every IT environment to optimize the impact of AI?

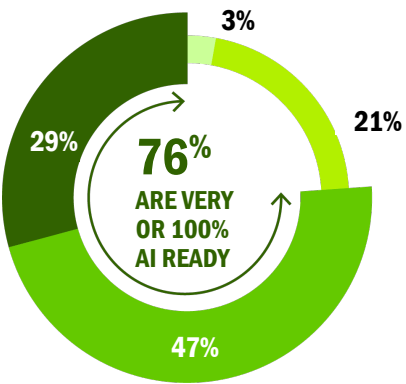


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BANKING & FINANCE COMPANIES ARE ALMOST AS AI READY AS TECHNOLOGY

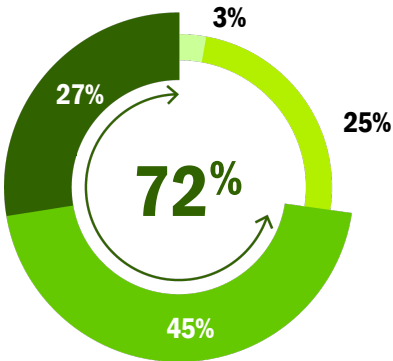
While only 37% of Media & Entertainment companies have data infrastructure and management optimized for AI

How ready is your overall data infrastructure and management across every IT environment to optimize the impact of AI?



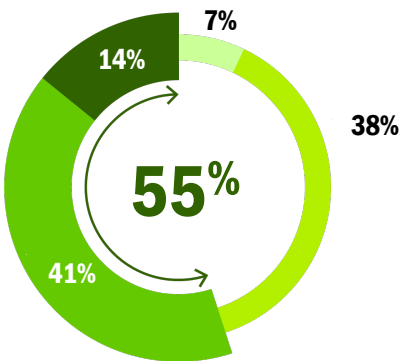
Technology

AI Leader

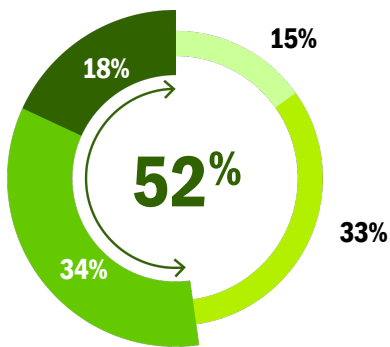


Banking &
Financial Services

AI-Leading

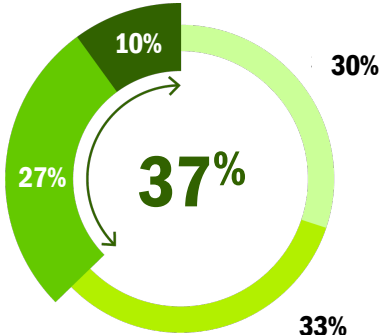


Manufacturing



Healthcare

AI-Lagging



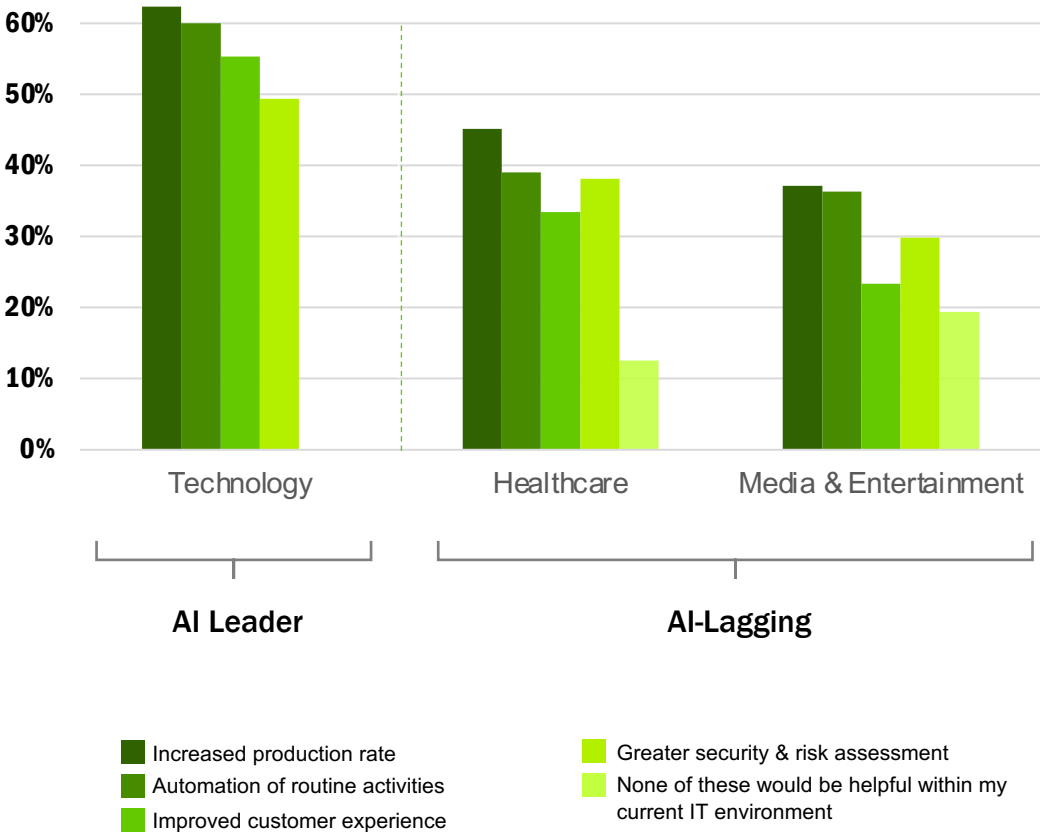
Media &
Entertainment

- We're 100% ready: Our data is fully accessible and unified
- Somewhat ready: Some of our data is unified but we have existing silos
- Very ready: Our data is mostly accessible and unified
- Not ready at all: Our data is siloed across different IT environments and regions

AI-LAGGING INDUSTRIES URGENTLY NEED TO UNIFY THEIR DATA TO GET IN ON AI

Healthcare and Media & Entertainment find significantly fewer benefits from unified data storage than Technology

Which of the following benefits of unified data storage would be most helpful within your IT environment?



CHAPTER 3:

CHALLENGES

AI IS INCREASING IT COSTS

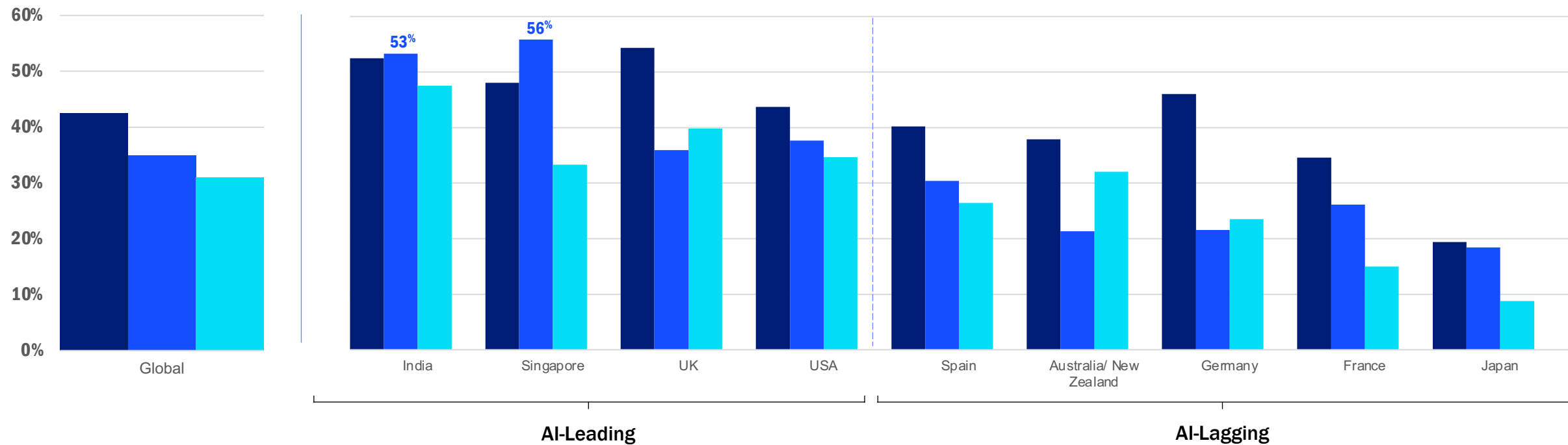
40%

of large companies and
42% of AI-leading industries
say AI projects have already
increased IT costs

BUT COMPANIES ARE FINDING WAYS TO FUND AI ANYWAY

53% of India-based companies and 56% of Singapore-based companies are more likely to scale back or cut other parts of IT operations to make room for AI projects

What impact will AI projects have on your organization's IT costs?



- We plan to seek efficiencies and/or discounts to make room for the added IT costs of AI projects
- We plan to scale back or cut other parts of IT operations to make room for AI projects within our budget
- We are re-allocating funds from other areas of the business to account for AI project costs

CLOUD AND AI LEADERS HAVE SIGNIFICANTLY INCREASED CLOUDOPS AND DATA STORAGE BUDGETS IN THE LAST YEAR

65% of Technology companies have significantly increased IT budgets for CloudOps in the last year

LEADER: Banking & Finance

49%

of Banking & Financial Services companies noted a significant increase in data storage budgets

23%

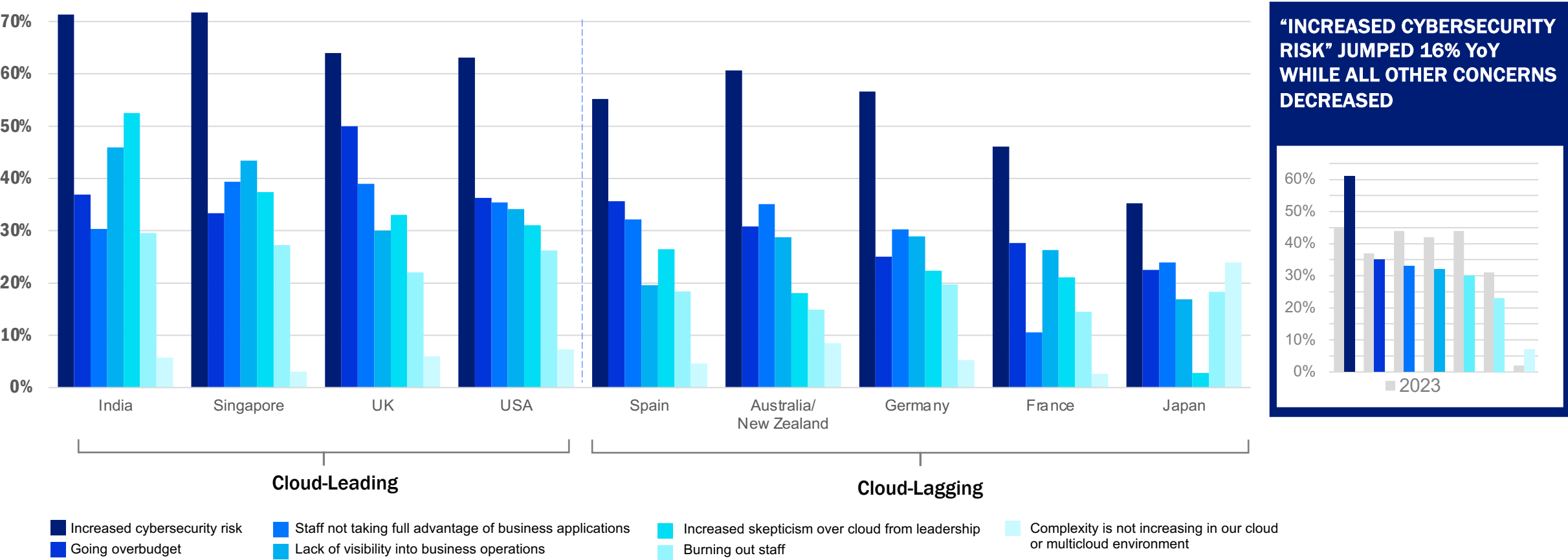
of Media & Entertainment companies noted a significant increase in data storage budgets

LAGGARD: Media & Entertainment

CYBERSECURITY IS A GROWING CONCERN IN EVERY COUNTRY

Globally, Cloud leaders and laggards see cybersecurity and cost as the top business impacts of managing cloud complexity

What are the top business impacts of managing the increasing complexity of data across cloud or multicloud environments?



CYBERSECURITY RISK IS THE LEADING CLOUD COMPLEXITY CONCERN ACROSS INDUSTRIES FOR LEADERS AND LAGGARDS

LEADER: Technology

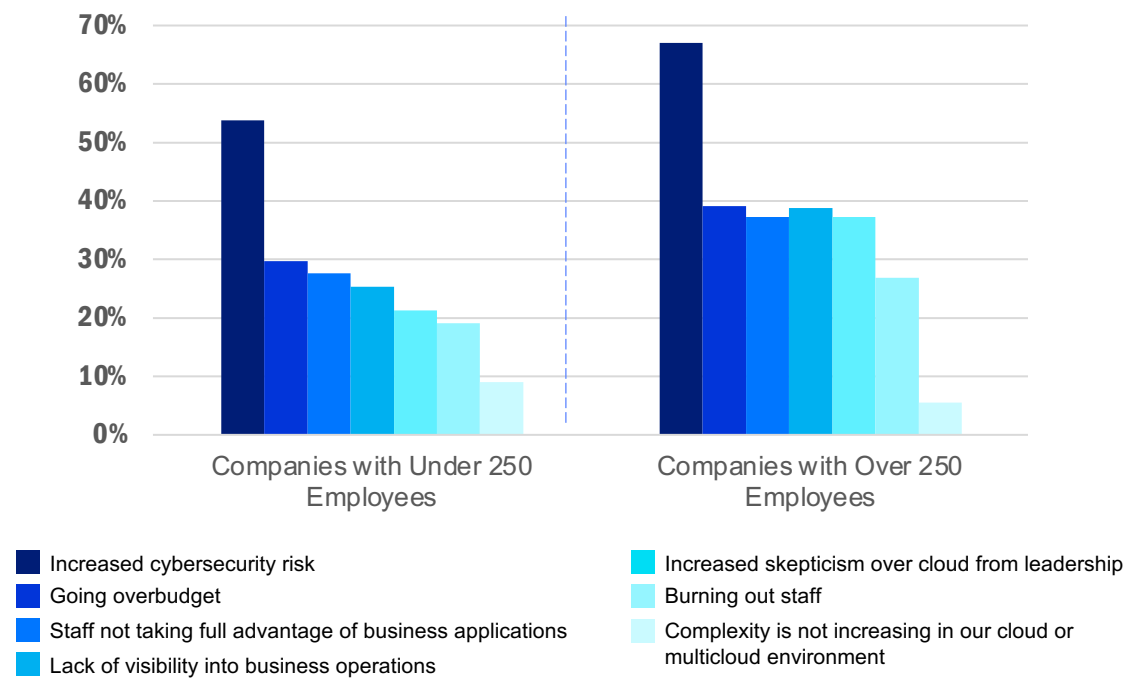
70% of Technology companies ranked increased cybersecurity risk as the top business impact of increasing data complexity in the cloud

39% of Media & Entertainment companies ranked increased cybersecurity risk as the top business impact of increasing data complexity in the cloud

LAGGARD: Media & Entertainment

LARGER COMPANIES RANKED SECURITY HIGHER THAN SMALLER COMPANIES

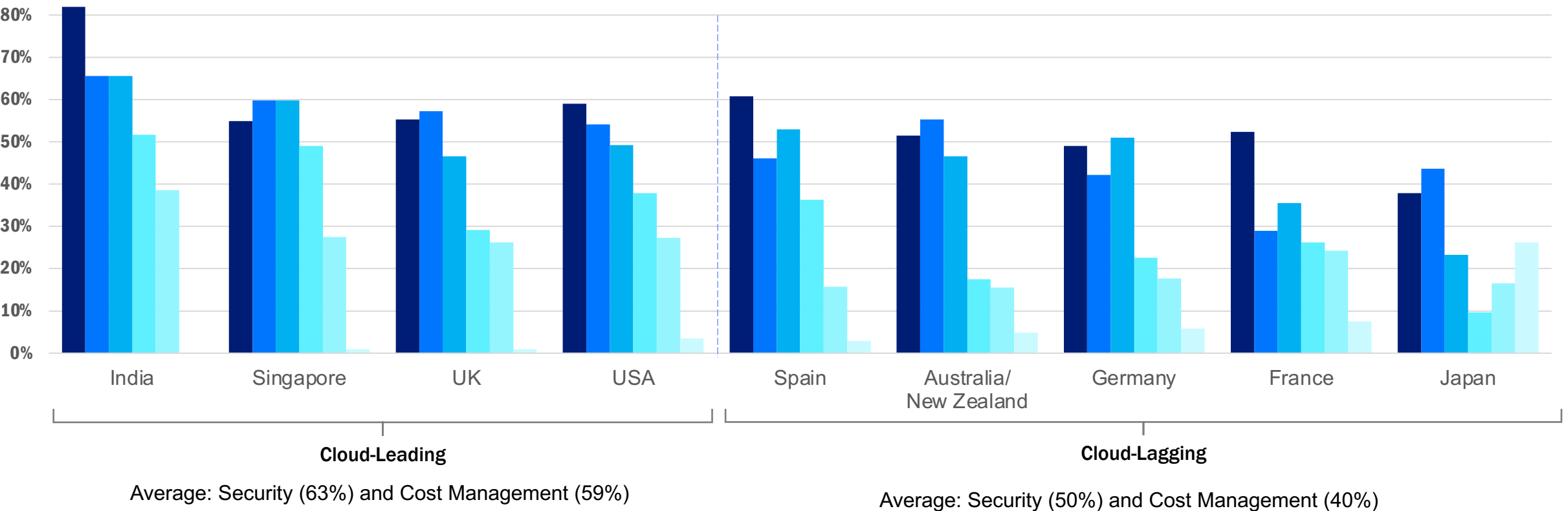
What are the top business impacts of managing the increasing complexity of data across cloud or multicloud environments?



COST AND SECURITY ARE THE TOP TWO AREAS FOR CLOUD IMPROVEMENT IN 2024

In Cloud-leading countries, security is 63% and cost management is 59% versus in Cloud-lagging countries security is 50% and cost management is 40%

Which of the following areas of your company’s public cloud use would your company like to improve for 2024?

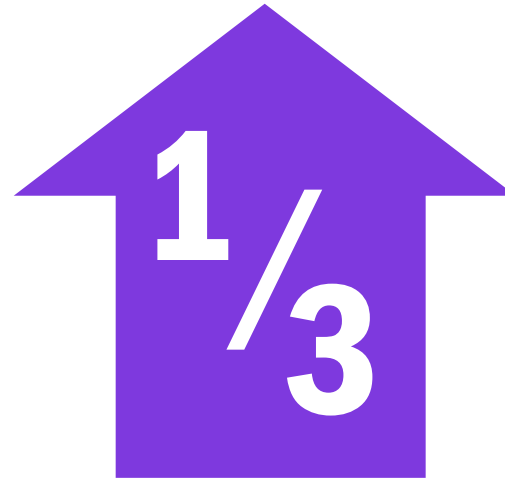


- Security
- Cost management
- Automation of processes
- Resource inventory and utilization
- Regulatory compliance and governance
- None of these

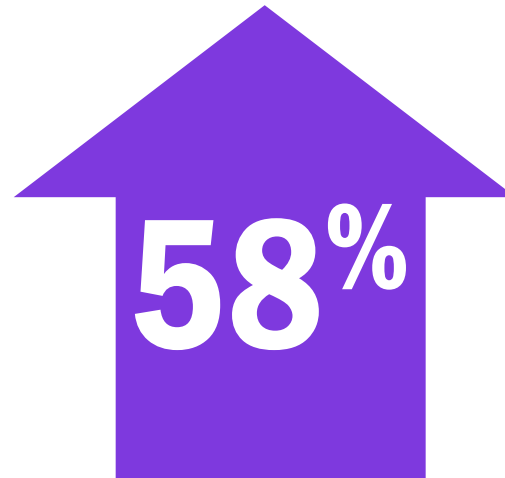
CHAPTER 4:

MOMENTUM

AI-DRIVEN CLOUD DEPLOYMENTS ARE SIGNIFICANTLY INCREASING



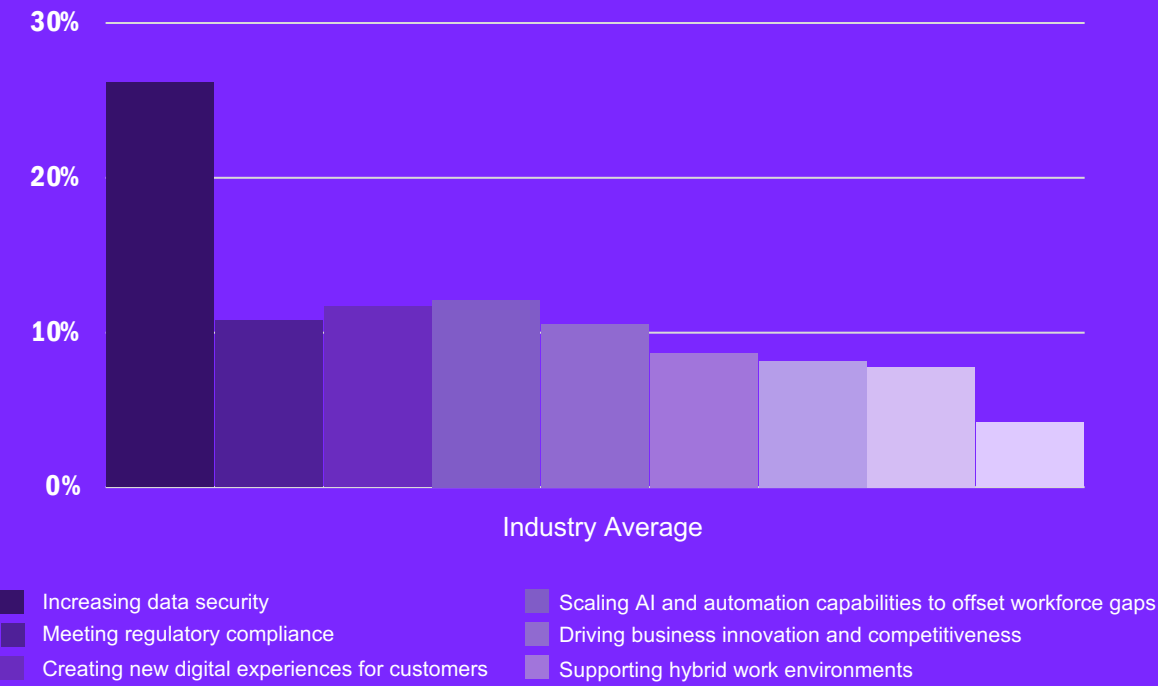
of companies will launch half or more AI-driven cloud deployments in 2024, and more than half will launch 50%+ by 2030



of AI-driven cloud deployments will increase from 2024 to 2030

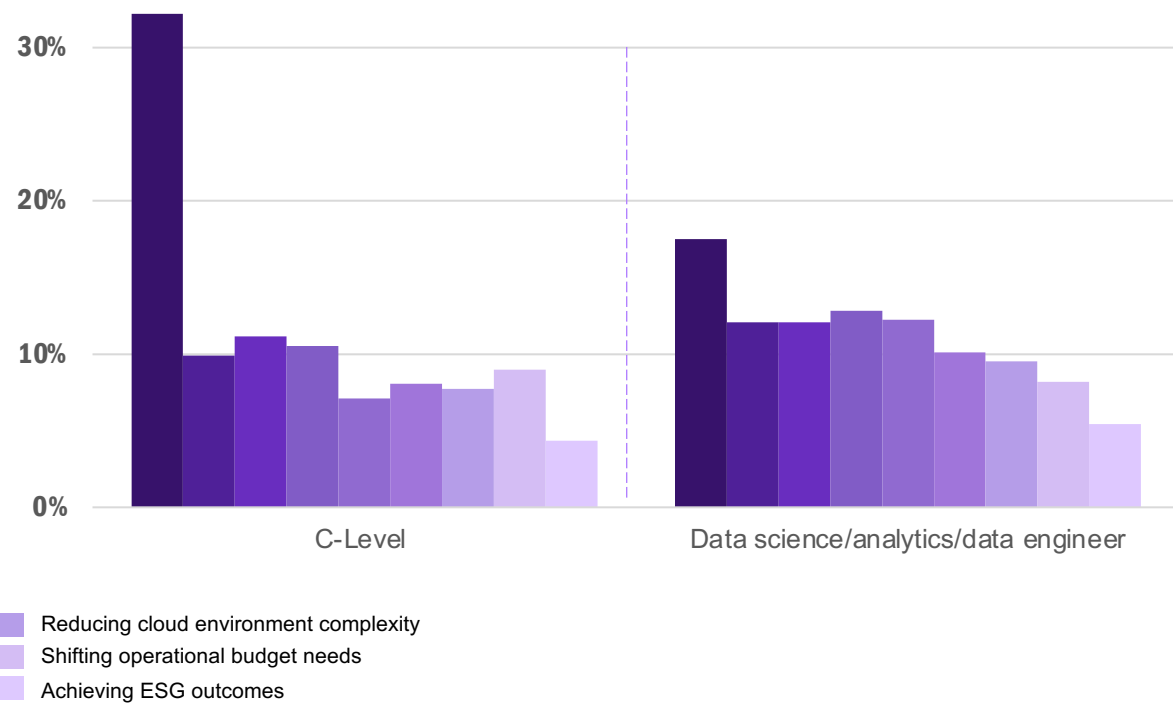
INCREASING SECURITY IS THE TOP PRIORITY ACROSS INDUSTRIES FOR LEADERS AND LAGGARDS

Please rank the top 3 business needs most likely to drive cloud investment decisions in 2024



THE C-SUITE RANKED SECURITY MORE THAN 3X HIGHER THAN ANY OTHER BUSINESS NEED DRIVING 2024 CLOUD INVESTMENTS

Please rank the top 3 business needs most likely to drive cloud investment decisions in 2024



DATA SECURITY DRIVES 2024 INVESTMENTS, ESG DECLINED MOST GLOBALLY

Increasing data security jumped 76% globally from 33% in 2023 to 58% in 2024 as an investment driver, while achieving ESG outcomes dropped 48% globally from 33% in 2023 to 17% in 2024

| Business needs most likely to drive cloud investment decisions | Global | | United States (n=500) | | EMEA (n=400) | | APAC (n=400) | |
|---|--------|------|--------------------------|------|-----------------|------|-----------------|------|
| | 2023 | 2024 | 2023 | 2024 | 2023 | 2024 | 2023 | 2024 |
| Increasing data security | 33% | 58%↑ | 29% | 58%↑ | 36% | 60%↑ | 37% | 58%↑ |
| Driving business innovation and competitiveness | 35% | 39%↑ | 34% | 39%↑ | 37% | 41%↑ | 35% | 38%↑ |
| Achieving ESG outcomes | 33% | 17%↓ | 33% | 20%↓ | 30% | 17%↓ | 35% | 17%↓ |
| Meeting regulatory compliance | 33% | 32%↓ | 37% | 30%↓ | 28% | 39%↑ | 34% | 29%↓ |
| Shifting operational budget needs | 32% | 27%↓ | 34% | 27%↓ | 33% | 24%↓ | 30% | 30%— |
| Scaling AI and automation capabilities to offset workforce gaps | 39% | 36%↓ | 36% | 34%↓ | 43% | 36%↓ | 38% | 39%↑ |
| Creating new digital experiences for customers | 34% | 34%— | 35% | 35%— | 33% | 30%↓ | 34% | 40%↑ |
| Reducing cloud environment complexity | 31% | 27%↓ | 30% | 28%↓ | 33% | 27%↓ | 31% | 30%↓ |
| Supporting hybrid work environments | 30% | 30%— | 32% | 31%↓ | 29% | 31%↑ | 29% | 28%↓ |

AI LEADERS ARE INCREASING CLOUDOPS AUTOMATION AT A FASTER RATE THAN AI LAGGARDS, FURTHER INCREASING THE GAP

LEADER: India

94% of India-based companies are automating their CloudOps in 2024

22% of Japan-based companies are automating their CloudOps in 2024

LAGGARD: Japan

LEADER: Technology

92% of Technology companies are automating their CloudOps in 2024

44% of Media & Entertainment companies are automating their CloudOps in 2024

LAGGARD: Media & Entertainment

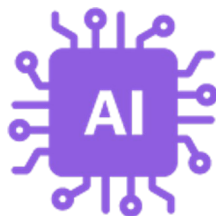
WHETHER YOU'RE AN AI LEADER OR LAGGARD, THE REPORT CONFIRMED FIVE KEY AREAS CRITICAL TO SUCCESS

How critical do you see each to achieving business success with AI?



Critical/ Very Critical: **74%**

**Rich, connected
accessible data**



Critical/ Very Critical: **71%**

**An AI-trained
workforce**



Critical/ Very Critical: **70%**

The right AI partners



Critical/ Very Critical: **69%**

**Access to high
performance compute
and storage**



Critical/ Very Critical: **69%**

**Visibility and control
over CloudOps and
cost**