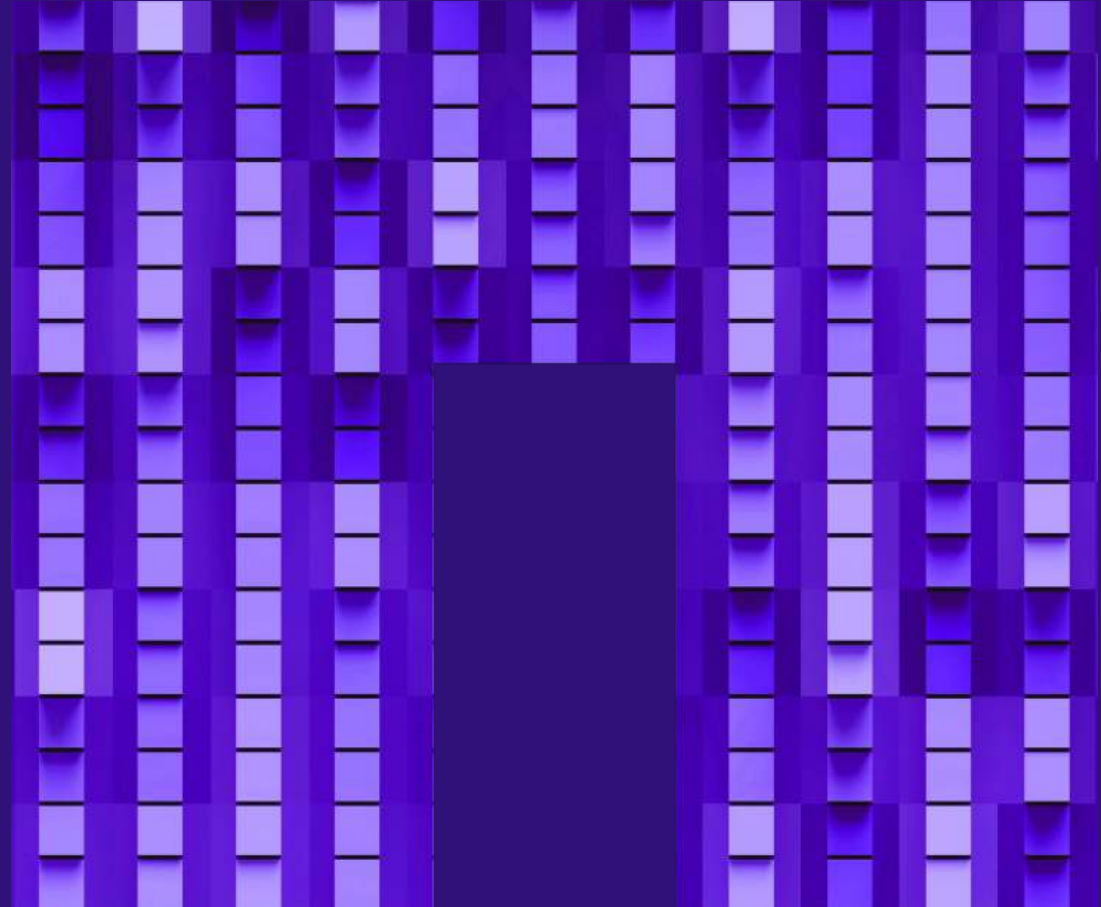


**2024 DATA  
COMPLEXITY REPORT**

**2025: AI'S  
MAKE OR BREAK  
MOMENT**



# FOREWORD

**2025 will be a make or break year for AI to achieve world changing outcomes – in some cases for better, in some for worse. In an effort to surpass competition, global business leaders and organizations will make remarkable investments to fully optimize their data for AI in 2025.**

**From AI talent to data management and infrastructure, all eyes will be on technology teams to deliver exceptional return on investment. But as AI scales, so too will security threats and sustainability challenges. Companies will be under incredible pressure as they aim to strike the critical balance between AI transformation, security and sustainability.**

**The NetApp 2024 Data Complexity Report is a global view into how AI will impact organizations in 2025. The report offers insights to help businesses leverage AI's potential, while navigating the complexities and risks that accompany this transformative technology.**

## AI'S MAKE OR BREAK MOMENT OVERVIEW

### CHAPTER 1

#### AI Investment: Will AI Break the Bank?

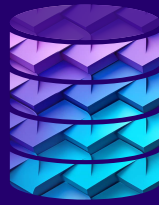


**40%**

of global tech executives believe that unprecedented investment in AI and data management will be required in 2025

### CHAPTER 2

#### Data Silos: Will Siloed Data Impede AI Success?



**79%**

of global tech executives believe unifying data is essential or very important for achieving top AI outcomes in 2025

### CHAPTER 3

#### Data Security: Will Cyber Threats Scale Along with AI?



**41%**

of global tech executives predict security threats will significantly increase due to advancement in AI

### CHAPTER 4

#### Data Sustainability: Is AI Putting the Planet at Risk?



**34%**

of global tech executives say AI adoption will drive major shifts in corporate sustainability processes

## CHAPTER 1

# AI INVESTMENT: WILL AI BREAK THE BANK?





“

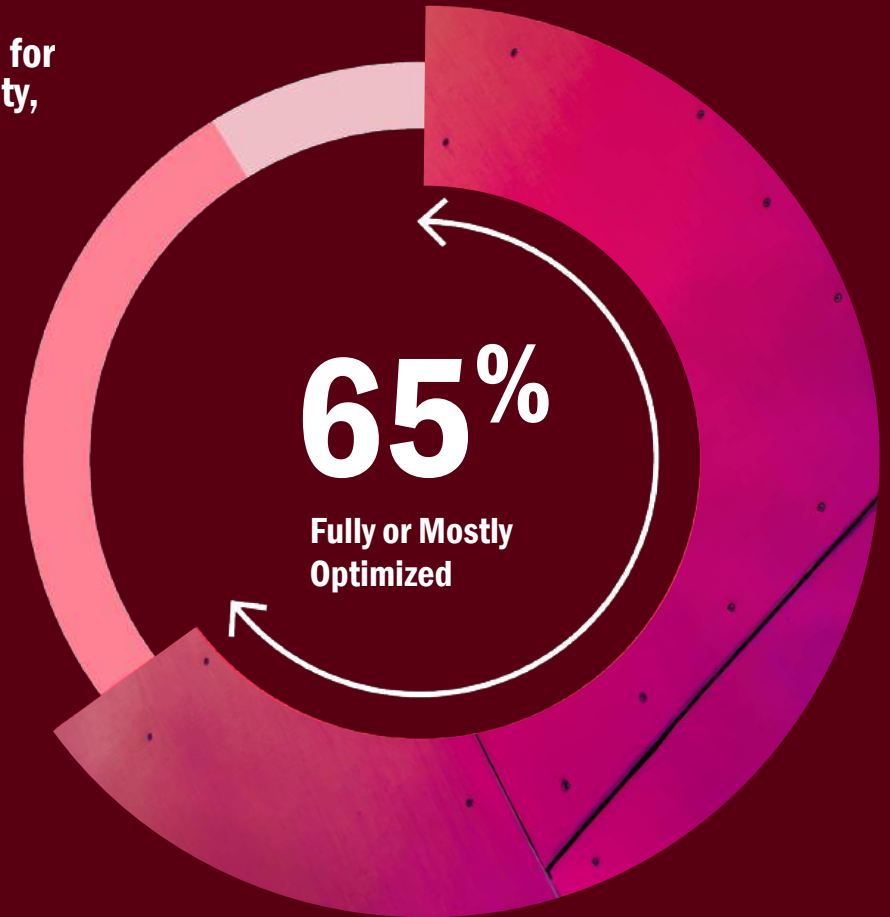
**2025 is shaping up to be a defining year for AI. Businesses are making significant AI investments to drive innovation and efficiency, but these efforts will only succeed if global tech executives can address the mounting challenges of data complexity, security and sustainability. Intelligent data infrastructure, with unified data storage at its core, will be key to unlocking AI's potential.”**

**Gabie Boko, Chief Marketing Officer at NetApp**

# 2 IN 3 COMPANIES ACROSS THE GLOBE SEE THEIR DATA AS FULLY OR MOSTLY OPTIMIZED FOR AI

## Only 9% see their data as not optimized, with 26% saying it's somewhat optimized

How optimized is your business's data for AI in terms of connectivity, accessibility, relevance, security, and compliance?



**DESPITE BEING  
OPTIMIZED  
FOR AI, 2025  
WILL REQUIRE  
UNPRECEDENTED  
INVESTMENT  
IN AI AND DATA  
MANAGEMENT**



**40% of global  
tech executives  
believe that  
**unprecedented**  
investment in AI and  
data management will  
be required  
for their companies  
in 2025**

**EVEN COMPANIES  
THAT SEE  
THEMSELVES  
AS CURRENTLY  
OPTIMIZED FOR AI  
ANTICIPATE  
UNPRECEDENTED  
2025 INVESTMENT**

**38% of companies currently optimized for AI  
anticipate unprecedented investment in 2025,  
compared to 43% of those not optimized for AI**

**38%** Anticipate  
unprecedented  
investment



**65% currently optimized**  
Companies that see themselves as fully or mostly optimized

**43%** Anticipate  
unprecedented  
investment



**35% not optimized**  
Companies that see themselves as somewhat or  
not optimized for AI



# THERE IS A CLEAR GLOBAL DIVIDE BETWEEN AI LEADING AND AI LAGGING COUNTRIES

Countries with data fully or mostly optimized for AI:

## Leaders

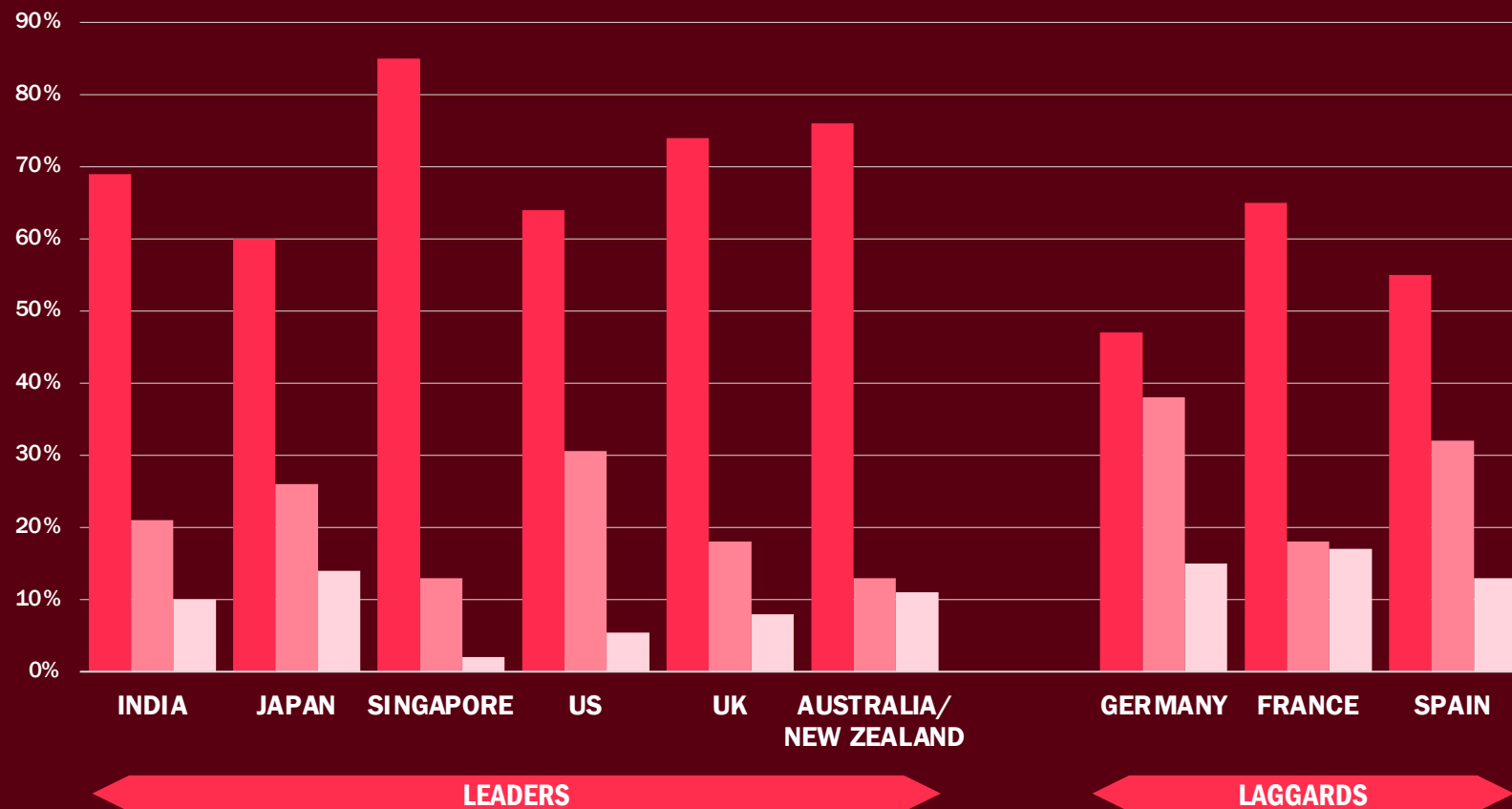
<b>India</b> 69%	<b>Japan</b> 60%	<b>Singapore</b> 85%
<b>US</b> 64%	<b>UK</b> 74%	<b>Australia/NZ</b> 76%

## Laggards

<b>France</b> 65%	<b>Germany</b> 47%	<b>Spain</b> 55%
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## AI leading countries have fully or mostly optimized their data to make AI effective or competitive

How optimized is your business's data for AI in terms of connectivity, accessibility, relevance, security, and compliance?

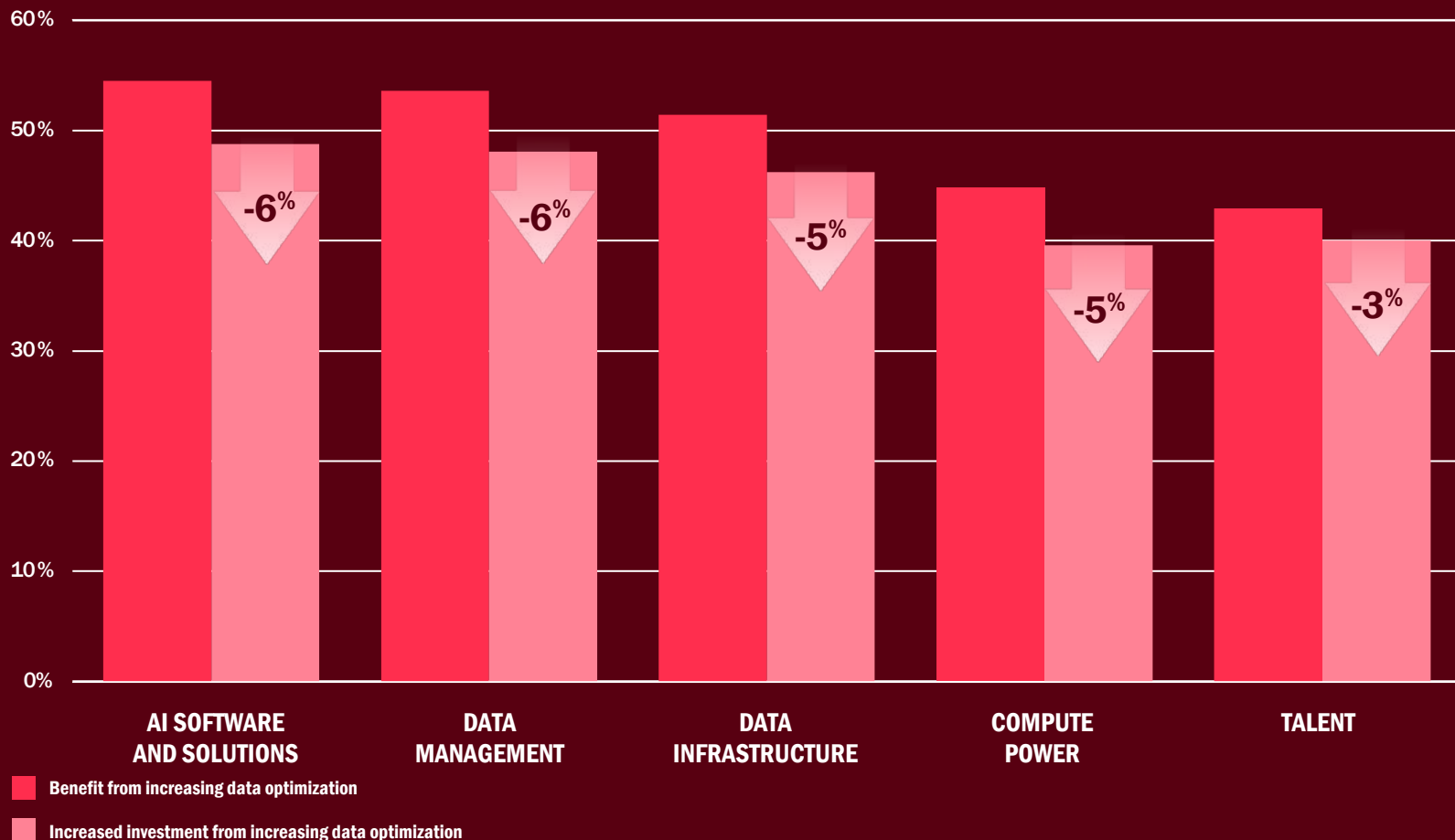


**GLOBAL TECH EXECUTIVES INDICATED INCREASING DATA OPTIMIZATION BENEFITS OTHER IT INVESTMENTS, OUTWEIGHING THE NEED FOR INCREASED INVESTMENT**

## AI software, data management solutions and compute power see the greatest benefit from data optimization

Which of the following AI investments do you believe would benefit from increased data optimization?

Which of the following AI investments do you believe will see an increase as a result of investing more in data optimization?



## CHAPTER 2

# DATA SILOS: WILL YOUR DATA IMPEDE AI SUCCESS?





“

**The success of AI hinges on how well an organization can harness its data. Unfortunately, data silos often act as barriers, preventing businesses from accessing the full potential of their information. Breaking down these silos is critical to driving AI outcomes.”**

**Sandeep Singh, Senior Vice President & General Manager  
of Enterprise Storage at NetApp**

# DATA UNIFICATION IS SEEN AS CRITICAL TO AI OUTCOMES



**79% believe unifying data is essential or very important for achieving top AI outcomes in 2025**

# 88% OF COMPANIES WHOSE DATA IS OPTIMIZED FOR AI CONSIDER UNIFIED DATA IMPORTANT

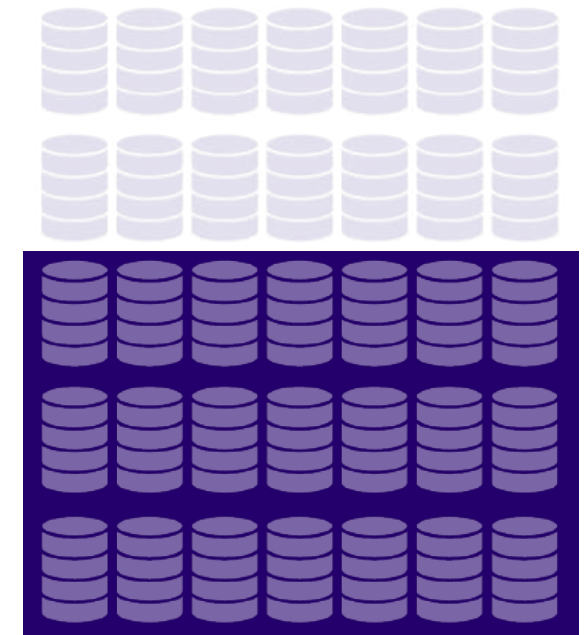
versus only 61% of companies that are somewhat or not at all optimized

**88%** Consider unifying data as important



**65% Currently Optimized**  
Companies who see themselves as fully or mostly optimized

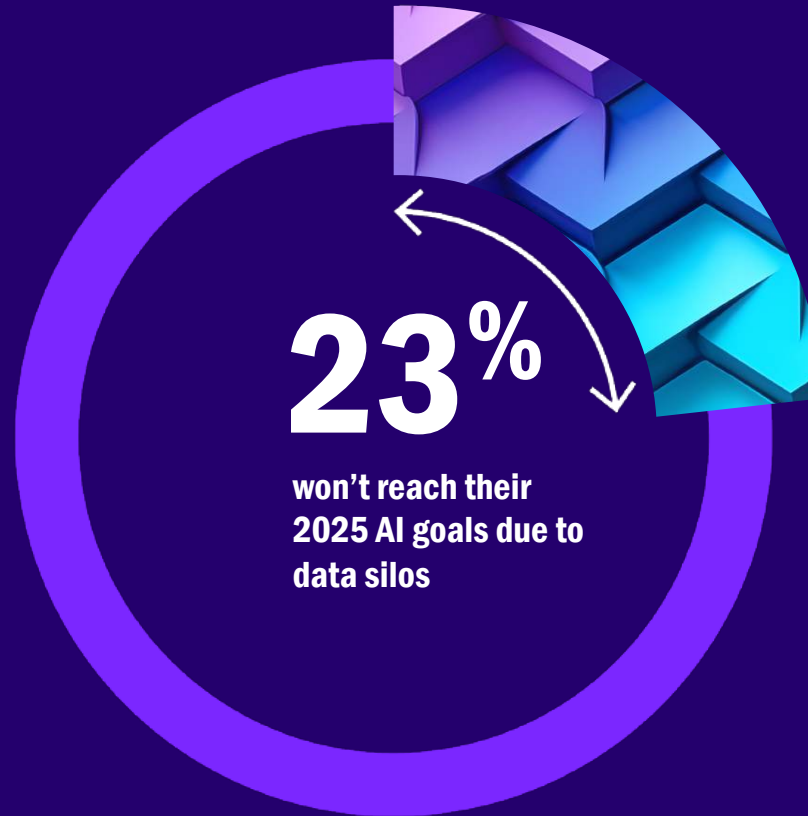
**61%** Consider unifying data as important



**35% Not Optimized**  
Companies who see themselves as somewhat or not optimized for AI

# COMPANIES THAT PRIORITIZE UNIFYING DATA ARE MORE LIKELY TO REACH THEIR AI GOALS IN 2025

Only 23% of companies that prioritize unifying data say they won't reach their goals, vs 30% of companies that don't prioritize unifying data



Companies that prioritize  
unifying data (79%)

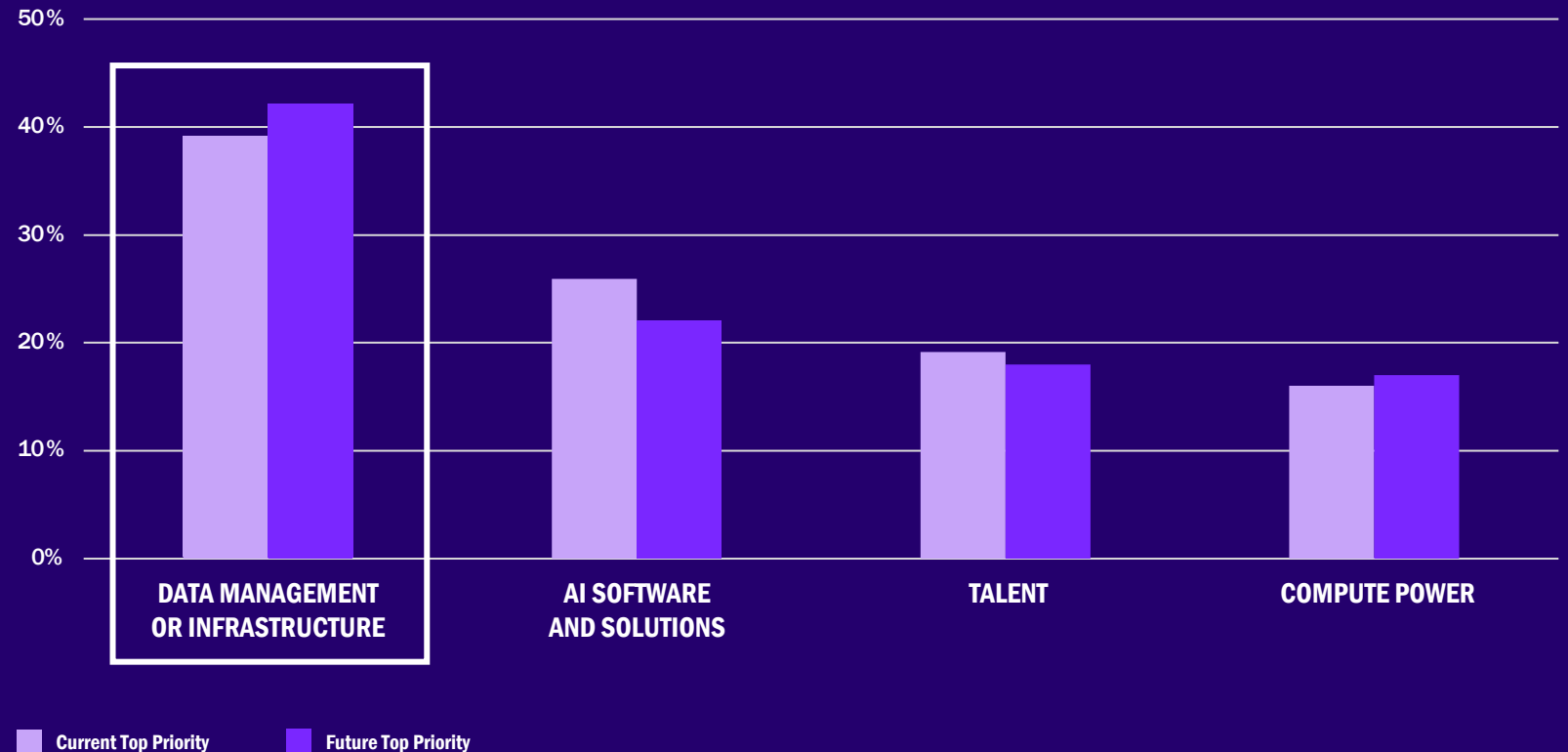


Companies that don't prioritize  
unifying data (21%)

# INVESTING IN DATA IS THE TOP PRIORITY FOR COMPANIES TO ACHIEVE AI SUPERIORITY AND COMPETITIVE ADVANTAGE

## Tech executives prioritize data management or infrastructure 2X as much as other AI-related investments - and that priority is growing in the future

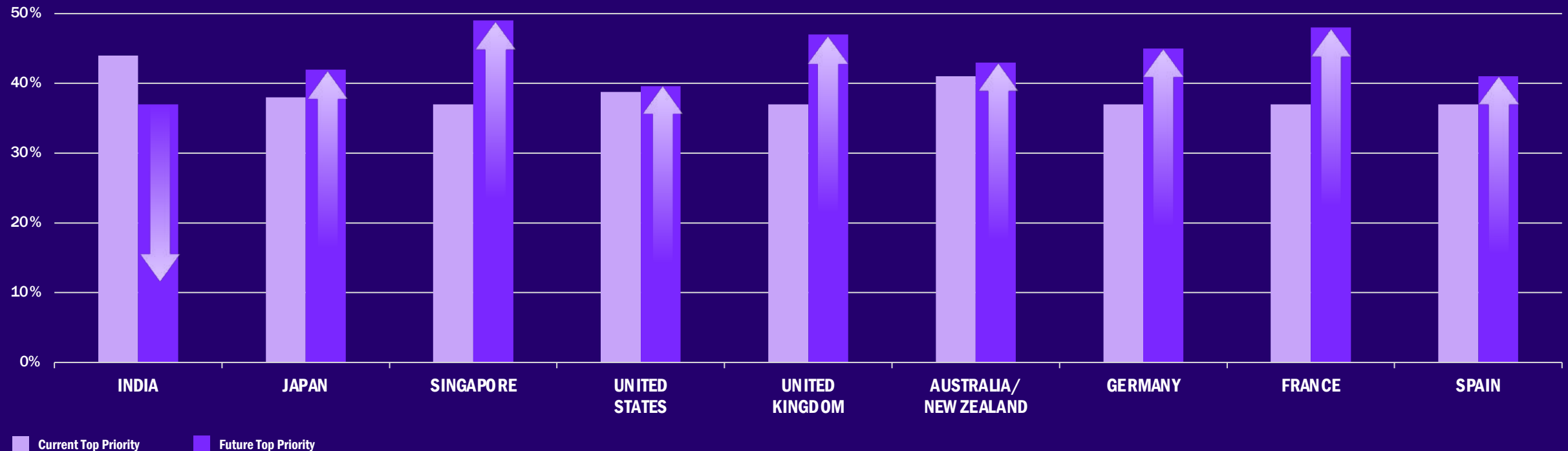
What is your top priority in terms of current and future investment toward achieving AI superiority and/or a competitive advantage?





# EVERY COUNTRY IS INCREASING THEIR DATA MANAGEMENT OR INFRASTRUCTURE INVESTMENTS EXCEPT INDIA, REFLECTING INDIA'S PREVIOUS INVESTMENTS, LEADING OTHER COUNTRIES IN AI ADOPTION\*

Percentage of tech executives who see data management or infrastructure as their top priority in terms of current and future investment toward achieving AI superiority and/or competitive advantage



## CHAPTER 3

# DATA SECURITY: WILL CYBER THREATS SCALE ALONG WITH AI?





“

**In 2025, organizations need confidence that their security posture will scale alongside AI. The best way to maintain data privacy and security in the face of growing threats is with an intelligent data infrastructure that integrates built-in security capabilities.”**

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

**TECH EXECUTIVES  
ANTICIPATE AI  
ADOPTION WILL  
BRING A  
SIGNIFICANT  
INCREASE IN  
SECURITY THREATS  
IN 2025**

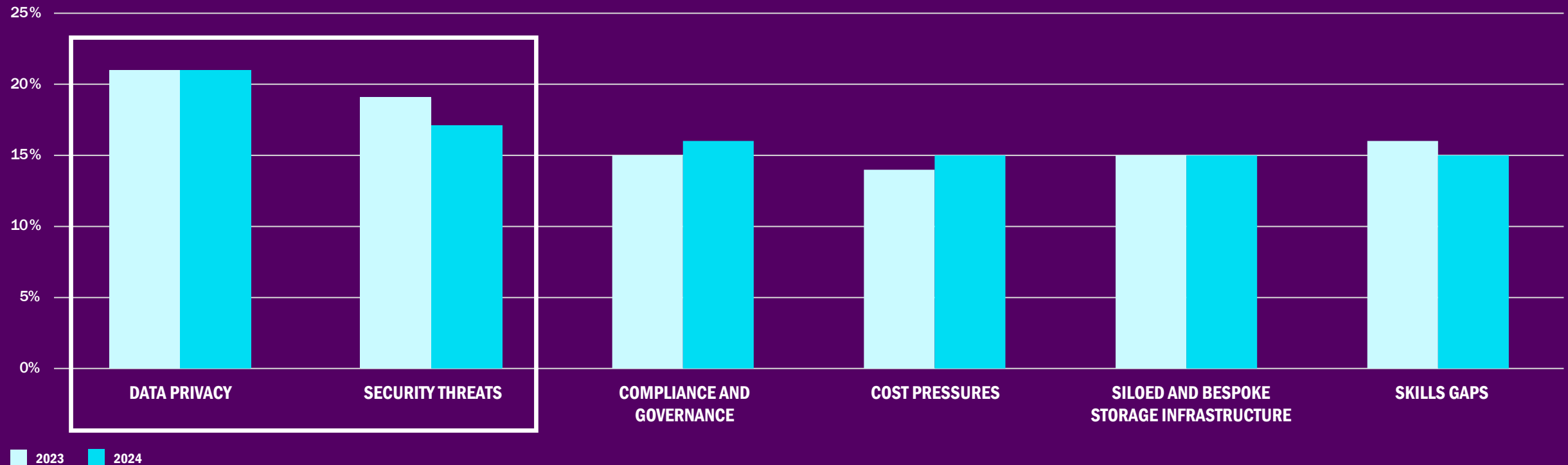


**41% of global tech executives predict security threats will **significantly** increase due to advancement in AI**

# DATA PRIVACY AND SECURITY THREATS ARE SEEN AS THE TOP COMPLEXITY CONCERNS IN BOTH 2023 AND 2024

Data privacy (21%) is the top cause of complexity, followed by security threats (17%) and compliance (16%), with cost, siloed data, and skills gaps each at 15%

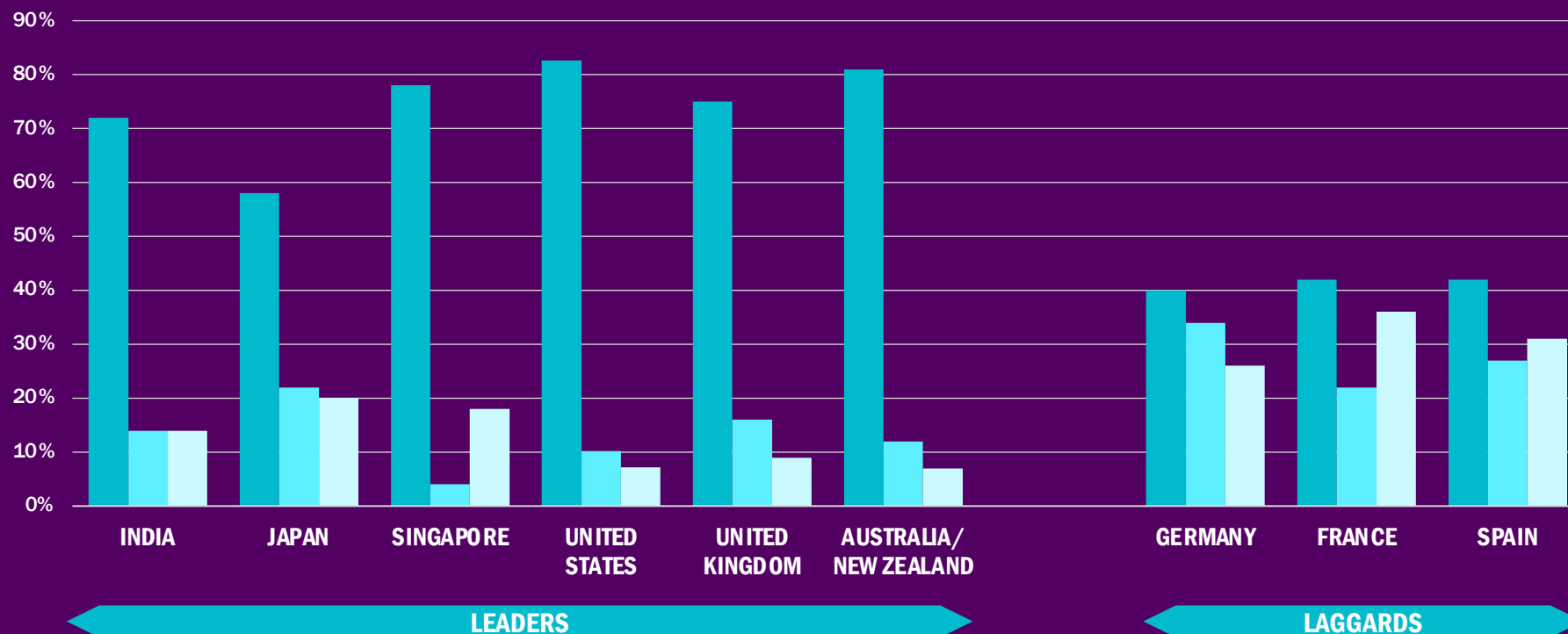
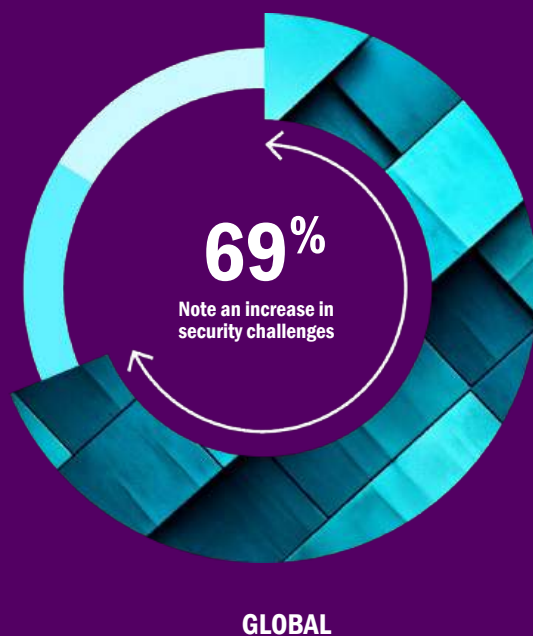
What is the top ranked cause of complexity in your data storage infrastructure?



# AI ADOPTION HAS ESCALATED SECURITY RISKS GLOBALLY, WITH LEADERS FACING FAR MORE SECURITY CHALLENGES THAN LAGGARDS

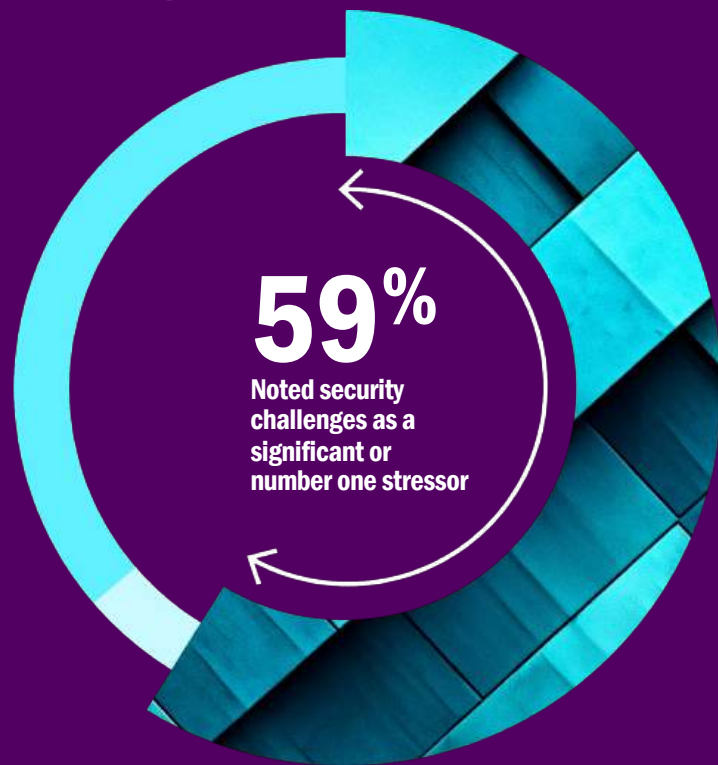
AI leading countries are almost 2X as likely to see increased security challenges compared to AI lagging countries

Has the rise in AI adoption led to an increase or decrease in security challenges for your business?



■ Increase ■ Net Neutral ■ Decrease

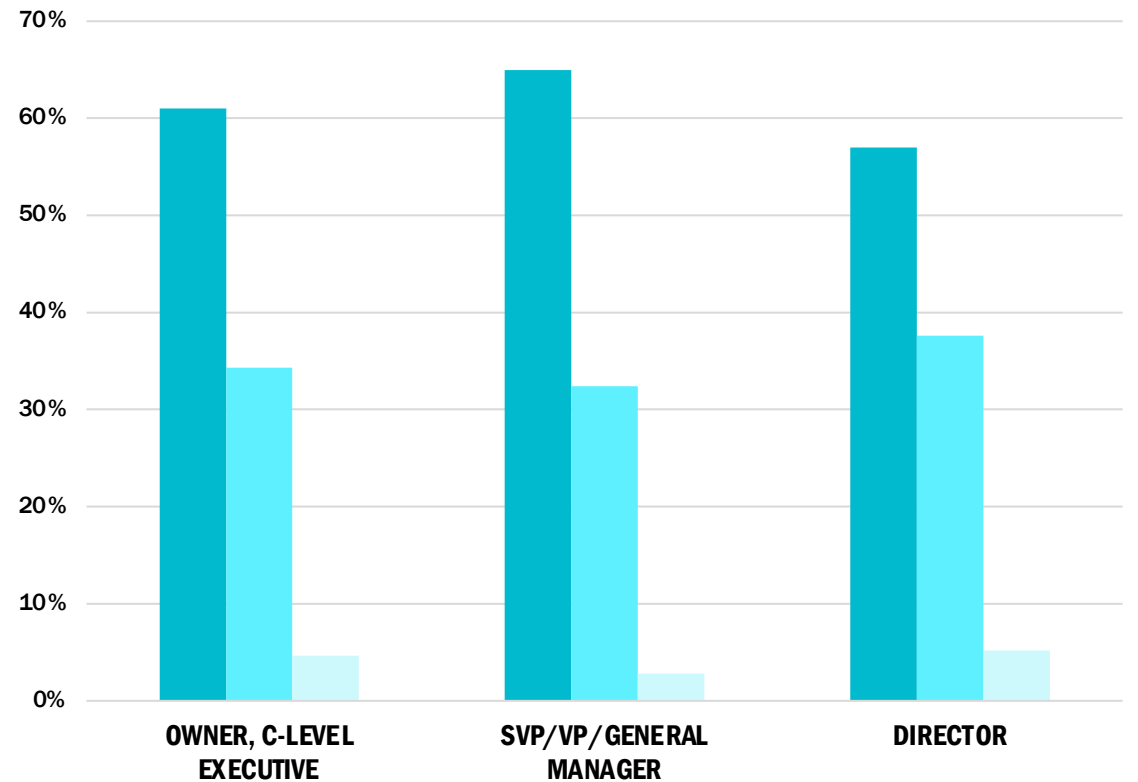
# AI-DRIVEN SECURITY CHALLENGES ARE A TOP GLOBAL STRESSOR FOR TECH EXECUTIVES



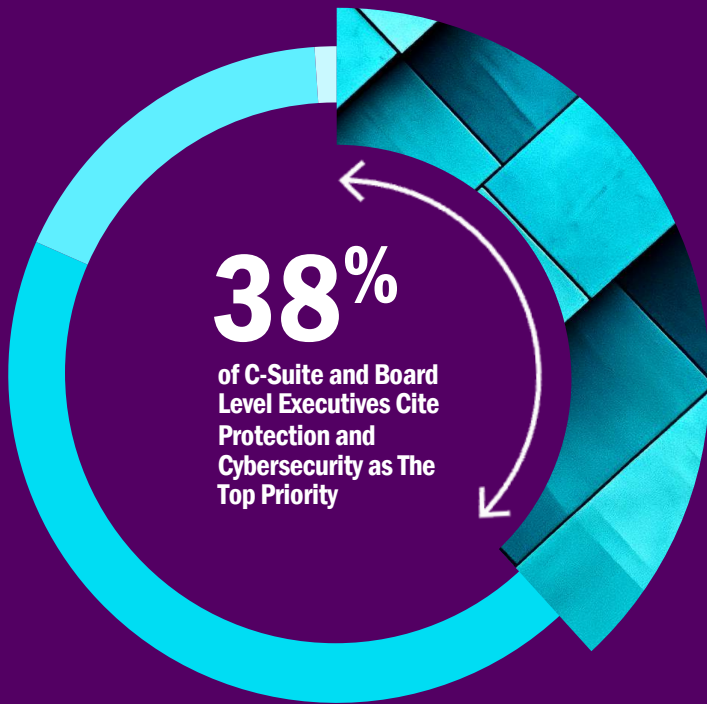
■ Number one stressor or significant stressor
 ■ Predictable challenge
 ■ None

## Security challenges from AI adoption are stressing executives at every level

What is the stress impact of security challenges due to AI adoption on IT professionals?



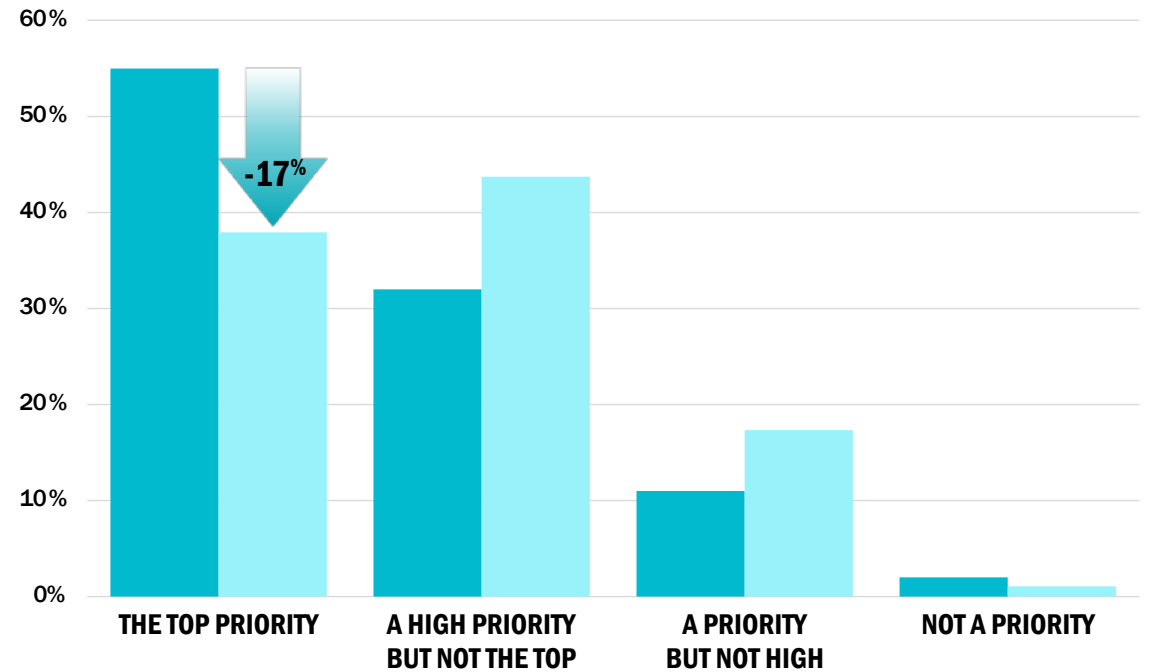
# RANSOMWARE PROTECTION AND CYBERSECURITY REMAIN A GLOBAL PRIORITY FOR BOARD AND C-SUITE EXECUTIVES



■ The Top Priority   
 ■ A High Priority But Not The Top   
 ■ A Priority But Not High   
 ■ Not A Priority

**But there are signs that security measures are working: cybersecurity as "the top priority" is down 17% since 2023**

How much is ransomware protection/cybersecurity prioritized at the c-suite and board-level at your company?



■ 2023   
 ■ 2024



## CHAPTER 4

# DATA SUSTAINABILITY: IS AI PUTTING THE PLANET AT RISK?





“

**AI's transformative potential will significantly impact corporate sustainability processes. To scale effectively, companies must prioritize the right partners who are committed to sustainable practices and can help offset AI-related emissions.”**

**Nicola Acutt, Chief Sustainability Officer & Vice President of ESG at NetApp**

# INCREASED DATA MANAGEMENT DUE TO RISING AI DEMANDS COULD CREATE A TIPPING POINT FOR SUSTAINABILITY EFFORTS

## Corporate Sustainability Processes



34% of global tech executives say AI adoption will drive **major** shifts in corporate sustainability processes

## Government Energy Policies and Investment

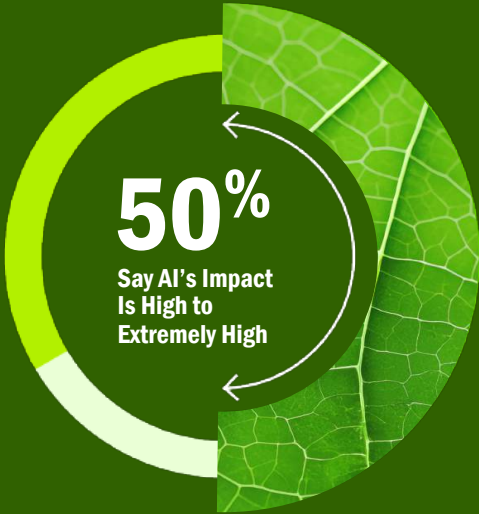


33% of global tech executives say AI adoption will drive **new** government energy policies and investment

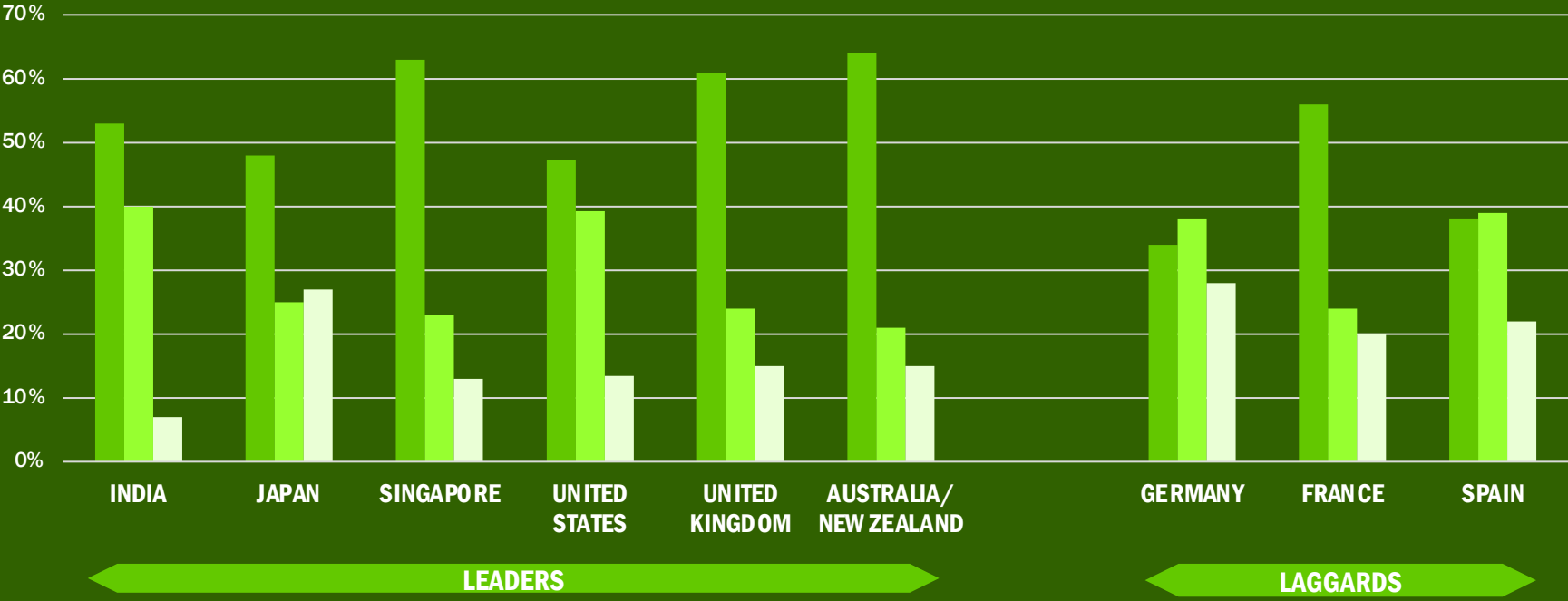
# THE RISE OF AI HAS A HIGH OR EXTREMELY HIGH IMPACT ON COMPANIES' CARBON FOOTPRINTS

AI leading countries see greater sustainability impact than AI lagging countries due to higher AI adoption

What is the impact of increased data and computation due to the rise of AI on your company's sustainability initiatives (e.g. carbon footprint)?



GLOBAL

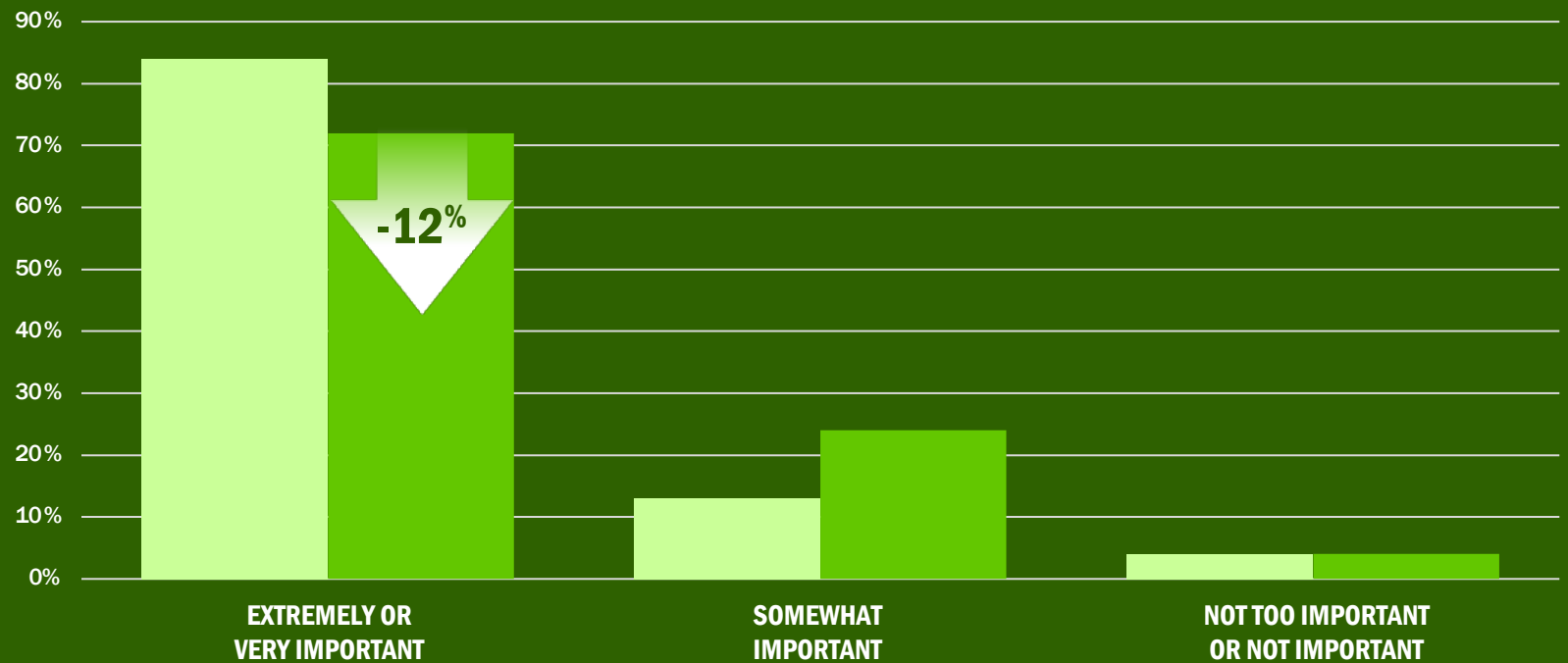


High or Extremely High    Somewhat High    Low or Zero

# WHILE REDUCING CARBON FOOTPRINT REMAINS A TOP PRIORITY GLOBALLY, ITS IMPORTANCE DECLINED YEAR OVER YEAR

## 72% of tech execs across the globe said decreasing carbon footprint is extremely or very important – a 12% decrease from 2023

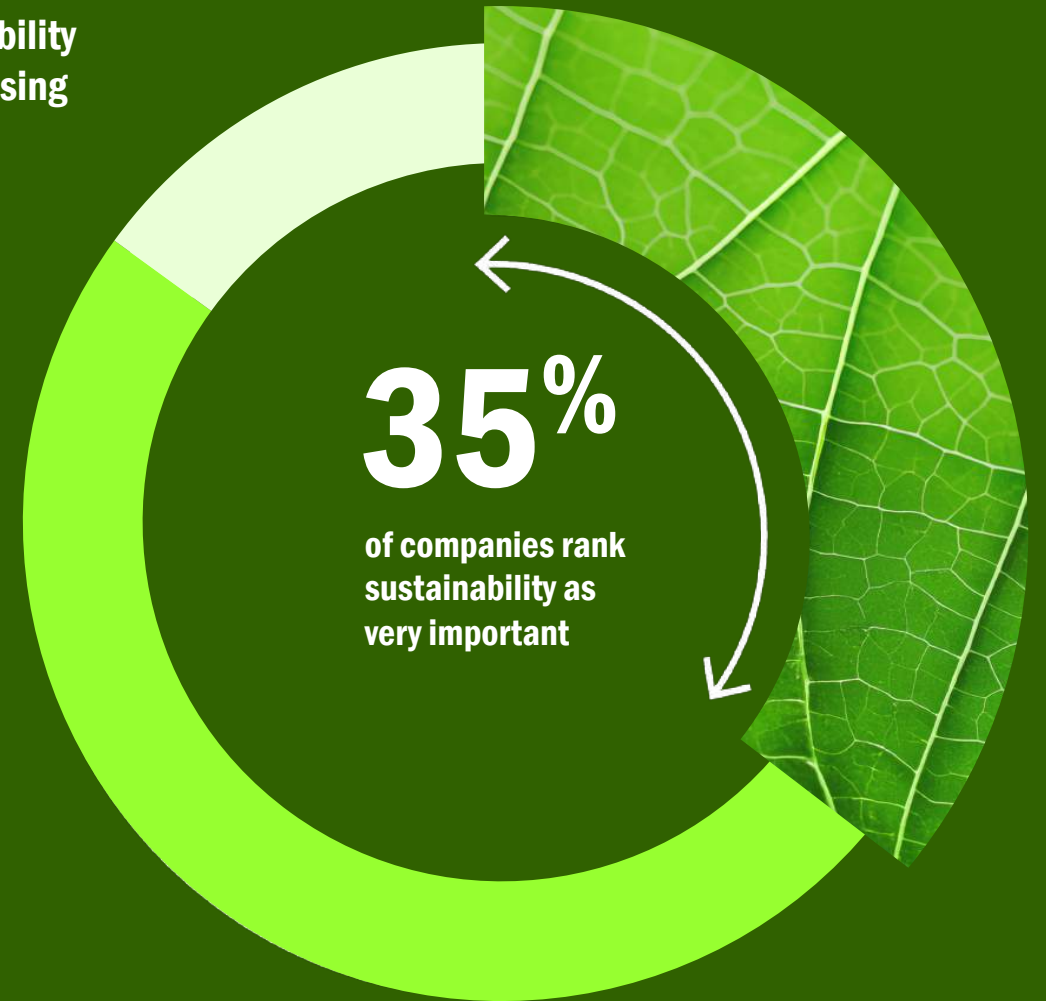
How important is it for your company to decrease its carbon footprint as part of its sustainability measures?



# GLOBALLY, SUSTAINABILITY IS SEEN AS AN IMPORTANT FACTOR IN FLASH STORAGE DECISIONS

## 35% of companies rank sustainability as very important when choosing a flash storage vendor

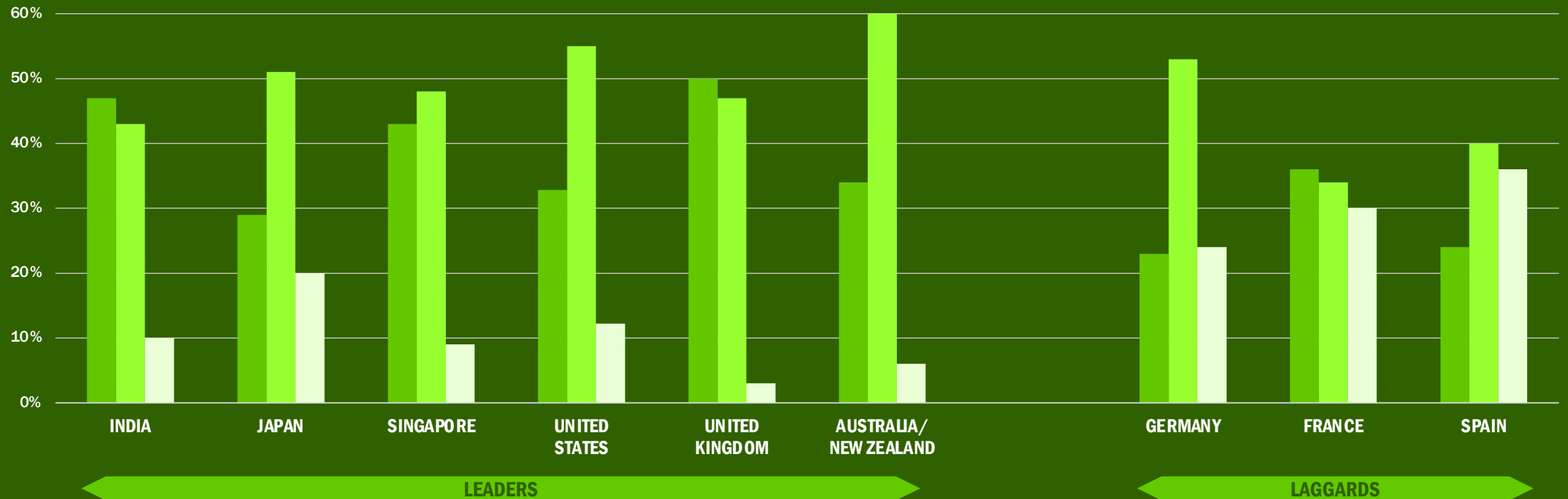
Where do you rank sustainability of their products when choosing a flash storage vendor?



# AI LEADING COUNTRIES ARE MORE LIKELY TO PRIORITIZE SUSTAINABILITY WHEN CHOOSING A FLASH STORAGE VENDOR

On average, nearly 30% of lagging countries say sustainability is only a little bit important, which is double the global average (15%)

Where do you rank sustainability of their products when choosing a flash storage vendor?



# NETAPP DATA COMPLEXITY REPORT

## KEY TAKEAWAYS

### AI INVESTMENT

**2025 will require unprecedented investment in AI and data management**

**40%** believe that unprecedented investment in AI and data management will be required for their companies in 2025

**2 in 3** companies across the globe see their data as fully or mostly optimized for AI

**38%** of companies currently optimized for AI anticipate unprecedented investment in 2025, compared to 43% of those not optimized for AI

### DATA SILOS

**Data unification is seen as critical to AI outcomes**

**79%** believe unifying data is essential or very important for achieving top AI outcomes in 2025

**88%** of companies whose data is optimized for AI consider unifying data important versus only 61% of companies that are somewhat or not at all optimized

Investing in data is the **top** priority to achieve AI superiority and competitive advantage.

### DATA SECURITY

**AI adoption will bring a significant increase in security threats in 2025**

**41%** predict security threats will significantly increase due to advancements in AI

AI leading countries are almost **2x** as likely to see increased security challenges compared to AI lagging countries

Security challenges are a **top** global stressor, as a result of AI

But cybersecurity is down **17%** as the top priority since 2023

### DATA SUSTAINABILITY

**Rising AI demands could create a tipping point for sustainability efforts**

**50%** say the rise of AI has a high or extremely high impact on companies' carbon footprints

**34%** say AI adoption will drive major shifts in corporate sustainability processes

**33%** say AI adoption will drive new government energy policies and investment

But there was a **12%** decline in reducing carbon footprint as a top priority

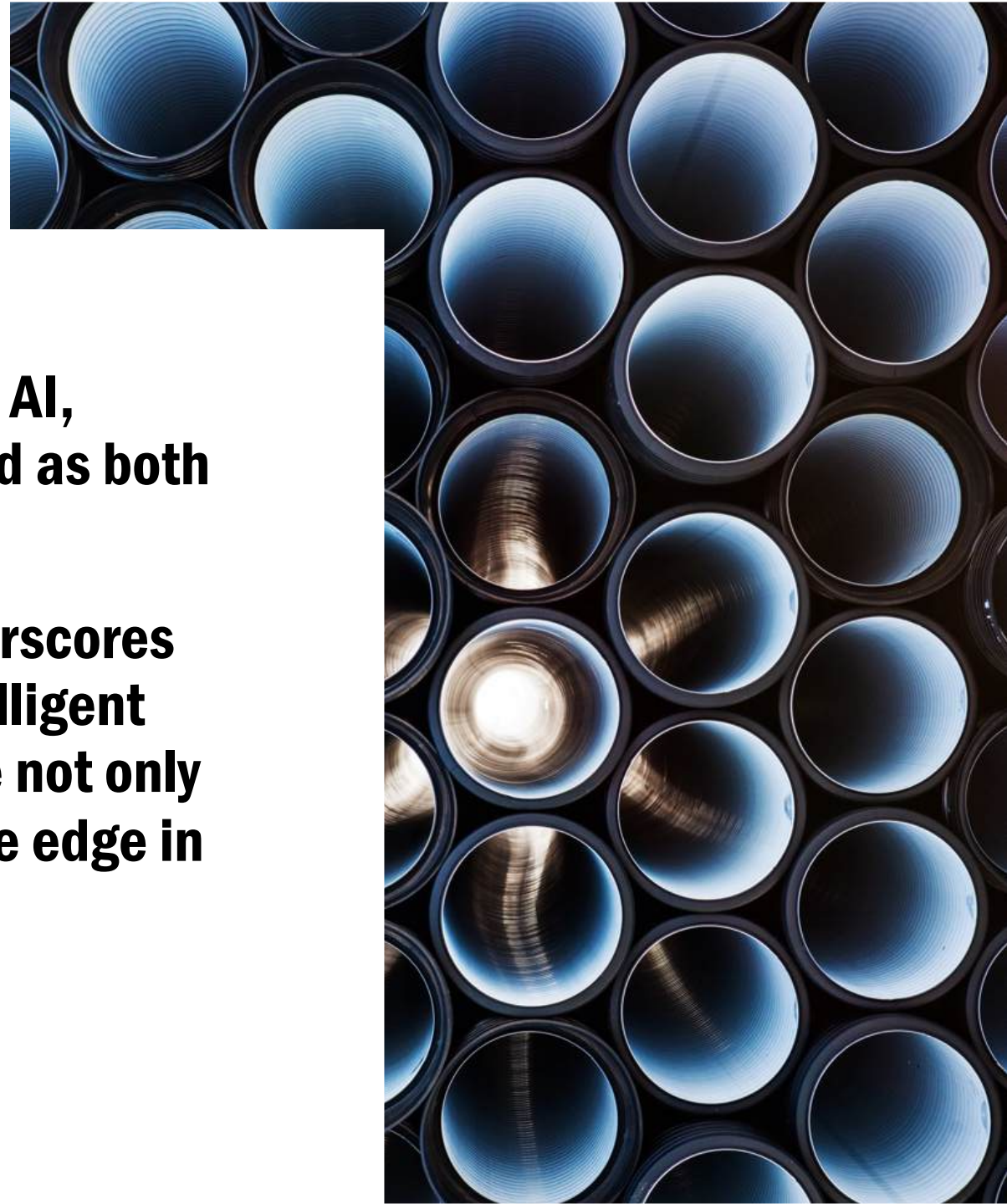


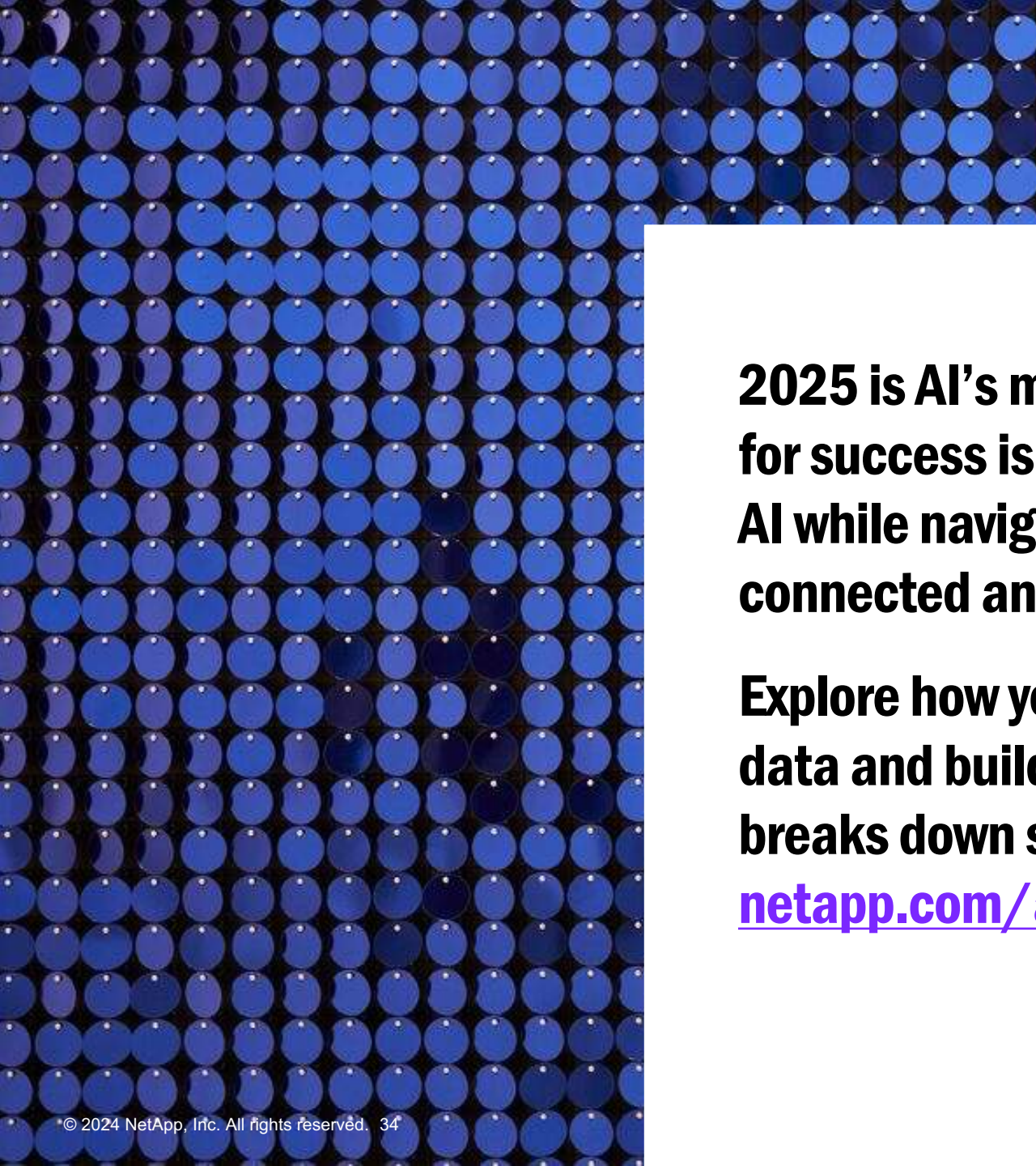


**As organizations accelerate their adoption of AI, the complexity of managing data has emerged as both a challenge and an opportunity.**

**NetApp's 2024 Data Complexity Report underscores a critical shift: businesses that embrace intelligent data infrastructure and prioritize security are not only future-proofing but also gaining a competitive edge in the AI era.** ””

**Steve McDowell, Chief Analyst and Founder at NAND Research**



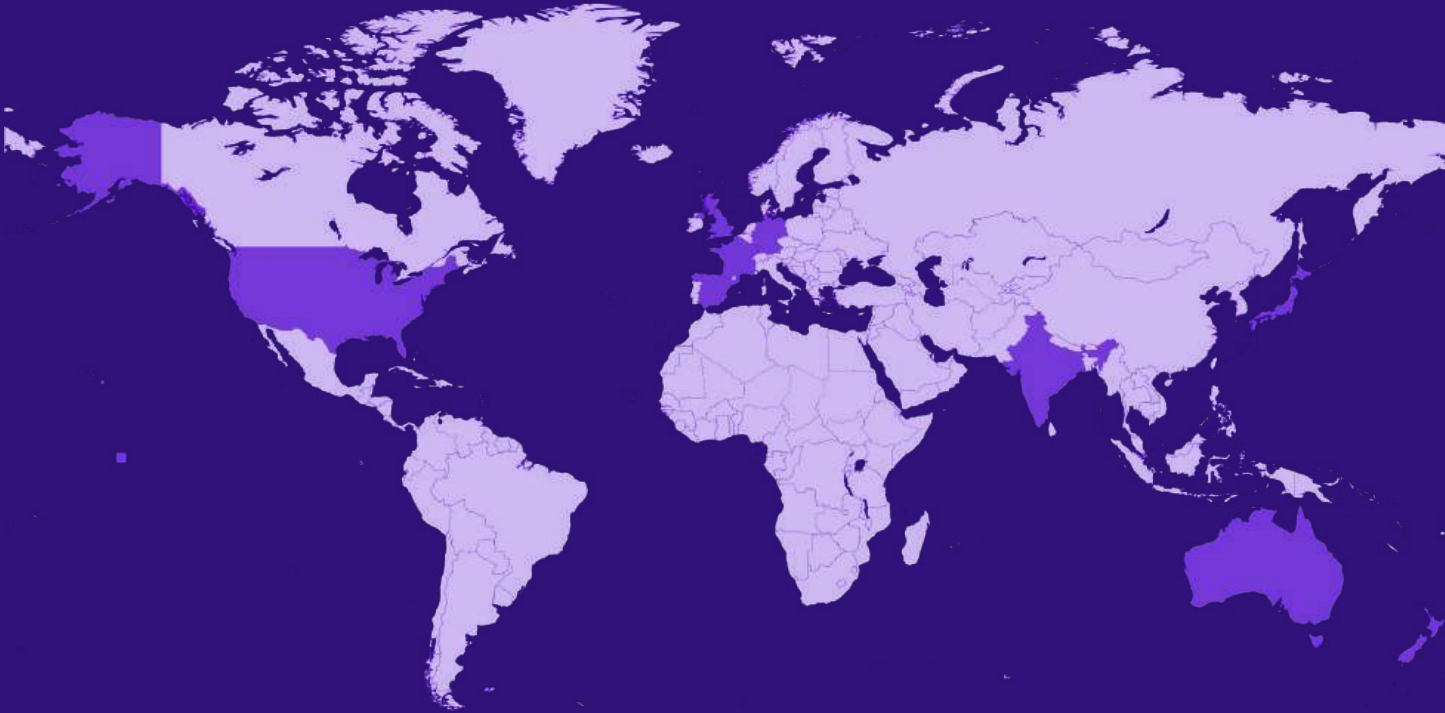


**2025 is AI's make or break moment, and the foundation for success is your data. To unlock the full potential of AI while navigating its challenges, your data must be connected and optimized.**

**Explore how you can take a unified approach to AI data and build an intelligent data infrastructure that breaks down silos and simplifies management at [netapp.com/artificial-intelligence](https://netapp.com/artificial-intelligence).**

# RESEARCH METHODOLOGY

In November 2024, NetApp partnered with Wakefield Research to conduct a quantitative research study of 1,300 tech and data executives at businesses in 9 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 Titles

CIO  
CTO  
SRE  
ITOps  
Storage Admins

## Included Verticals

Technology  
Financial Services  
Manufacturing  
Healthcare  
Media &  
Entertainment

DevOps/CloudOps  
Cloud Architects Data  
Scientists Data  
Engineers