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REPORT

Data Integration and AI-Readiness Report

How are businesses implementing AI into their data architecture in 2025?

Contents

Introduction

AI is no longer the future of data integration – it's already the present. To keep pace in today's competitive business landscape, organizations need to evolve their data architecture and adapt to AI-assisted processes.

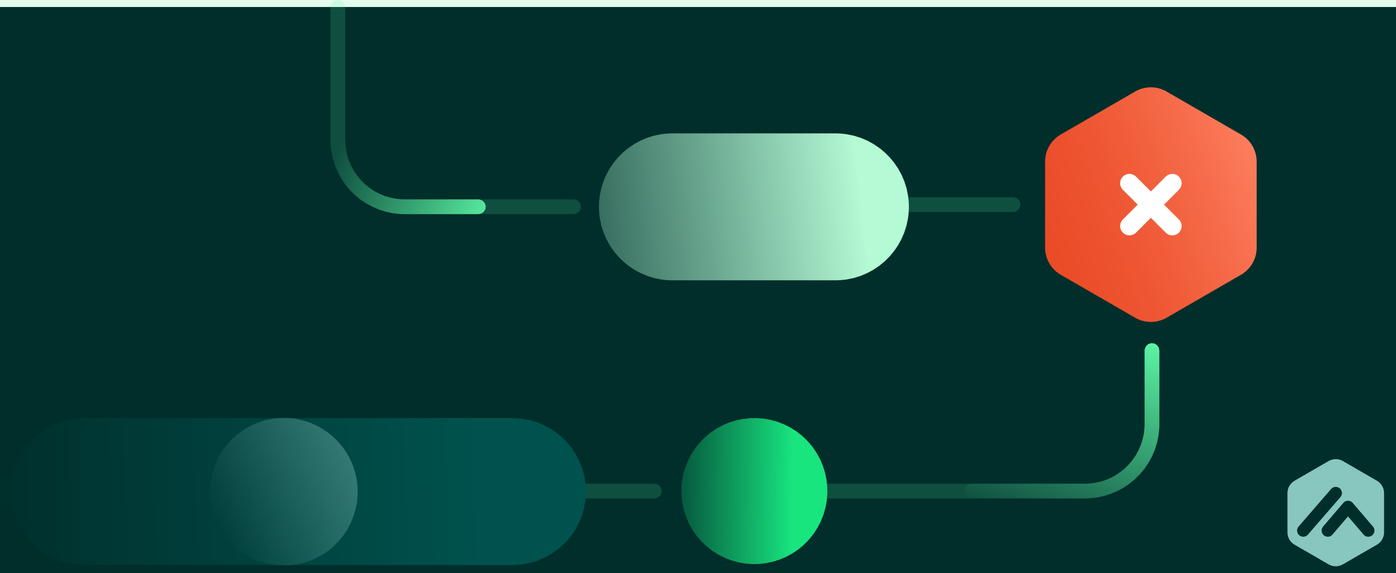
But AI can't be effective without solid data foundations. Business leaders must ensure the fundamentals are in place before they're able to create a successful AI implementation plan.

This data integration and AI-readiness pulse survey identifies where data teams currently are in this journey, considering the challenges and potential benefits they'll meet along the way.

Without clean, reliable data to act as a unified source of truth, organizations will struggle to extract the accurate insights needed to inform critical business decisions.

As you'll see in the survey results over the next few pages, the transformative power of AI is no longer up for debate. Whether implemented in pipelines to democratize data engineering, or leveraged in creative use cases to increase productivity and enhance customer experience, AI-driven solutions are both vital and urgent.

Across the board, data leaders and data users alike are near unanimous that a lack of high-quality data is today's biggest factor impacting the ability to build and manage effective data pipelines.



Summary

For this report, Matillion surveyed 307 data decision-makers and data user titles, based across the UK and the US. In order to paint a comprehensive picture of the current state of data integration, the topics covered ranged from data engineering practices to readiness for AI integration.

The findings highlight that the majority of organizations face significant challenges when building and maintaining data pipelines.

The main challenges include:

Concerns about data quality

Compatibility or integration issues with other tools

Problems with debugging and monitoring

Three key themes emerged, providing valuable insight into the leading pain points suffered by enterprise data leaders and their teams:

01 Traditional hand-coded solutions drain time and money

02 Complexity, scalability and compatibility remain challenging

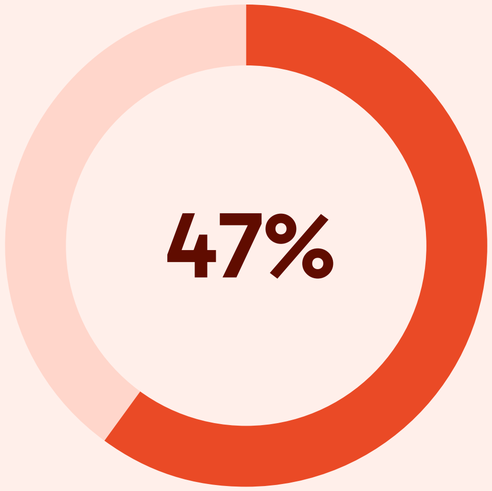
03 Overcoming barriers to AI adoption for business value

Let's explore further...

01

Traditional hand-coded solutions drain time and money

01



Almost half the organizations surveyed reported that this reliance on a key member of the data team affected their ability to scale and /or maintain hand-coded pipelines.

On average data teams rely on hand-coded solutions 60% of the time. This reliance on hand-coding causes several common obstacles, primarily a dependence on the skillset of specific individuals.

In fact, a third of organizations (33%) reported that the challenges faced as a result of hand-coding (specifically repetitive development or change management of pipelines) were a barrier to meeting wider business demands.

With their hands tied up carrying out repetitive manual tasks, highly-skilled team members are less able to deliver input on value-driving, innovative initiatives. Productivity across the entire business suffers, as delays to insights and analysis also hold back decision making.

Hand-coding is fast becoming a significant investment that often yields diminishing returns and creates substantial operational bottlenecks. Dependency on specific team members makes the organization vulnerable to turnover, difficult to scale, and less able to respond quickly to emerging business needs. Almost half of respondents (44%) reported that long development cycles were a drain on resources.

Other common obstacles associated with hand coding included:

41%

Difficulty troubleshooting issues

Teams spend excessive time identifying and fixing problems in hand-coded solutions

39%

Maintenance overhead

Keeping hand-coded systems running smoothly requires constant attention and resources

30%

Lack of scalability

Hand-coded solutions often struggle to grow alongside business needs

40%

of organizations admitted they were limited by the lack of automation capabilities within their current solutions.

Automation is a cornerstone of modern data integration, since businesses benefit greatly from self-service capabilities, and automated deployment without the need for multiple manual interventions.

Find out how Matillion's automation functionally saved data engineers 60% of time

01

In recognition of the productivity increase that automation offers,

a third of businesses reported plans to improve processes by automating workflows over the next 12 months.

The negative impact of a reliance on hand-coded solutions leaves enterprise businesses with little other option than to transition to more automated, modern data integration platforms. The complexity of maintaining legacy solutions, combined with their impact on resource allocation and scaling capabilities has an obvious effect on overall business agility and responsiveness. Organizations that fail to address these challenges risk falling behind in an increasingly data-dependent business landscape.

Read more: 10 reasons to adopt no-code visual ETL solutions

02

Complexity, scalability and compatibility remain challenging

02

Managing data pipelines continues to present significant challenges for organizations, with an overwhelming

This complexity doesn’t exist in isolation – it directly impacts productivity by forcing data teams to dedicate valuable time and resources to building and maintaining these pipelines, rather than focusing on delivering greater value to the business via innovation and strategic initiatives.

The scale of this productivity drain is substantial.

64% of organizations reported that their data teams spent more than 50% of their time working on repetitive or manual tasks.

This significant misallocation of skilled resources is holding back progress. Rather than increasing staff (and increasing the overheads associated with that), organizations need to identify data integration solutions that empower their current teams to work more efficiently.

Scalability emerges as another critical concern,

89%

of organizations noting issues with their current data engineering platform’s ability to scale pipelines to meet data processing needs.

Alongside scalability concerns,

8 out of 10 organizations revealed they struggle with compatibility and integration between their existing tools.

Organizations are all too often hindered by working across disparate systems that fail to operate together efficiently. Point solutions target specialized needs, but often fail to offer the comprehensive functionality of integrated platforms.

Serveral key challenges are holding organizations back:

More than half

of organizations struggle to meet business demands due to poor-quality data

42%

face ongoing challenges with maintenance and data ops processes

36%

of organizations report resource bottlenecks tied to insufficient staffing or tooling

02

Current approaches to data pipeline management are creating a perfect storm of complexity that threatens to overwhelm data teams and limit business potential. As data volumes grow and business requirements become more complex, these challenges force organizations to either accept reduced performance, or invest in costly workarounds. Many find themselves unable to handle larger datasets, support additional users, or add new data sources without significant re-engineering efforts. Technical debt accumulates over time, making it increasingly difficult to respond to new business opportunities or competitive threats.

Find out how to streamline your data movement

03

Overcoming Barriers to AI Adoption for Business Value

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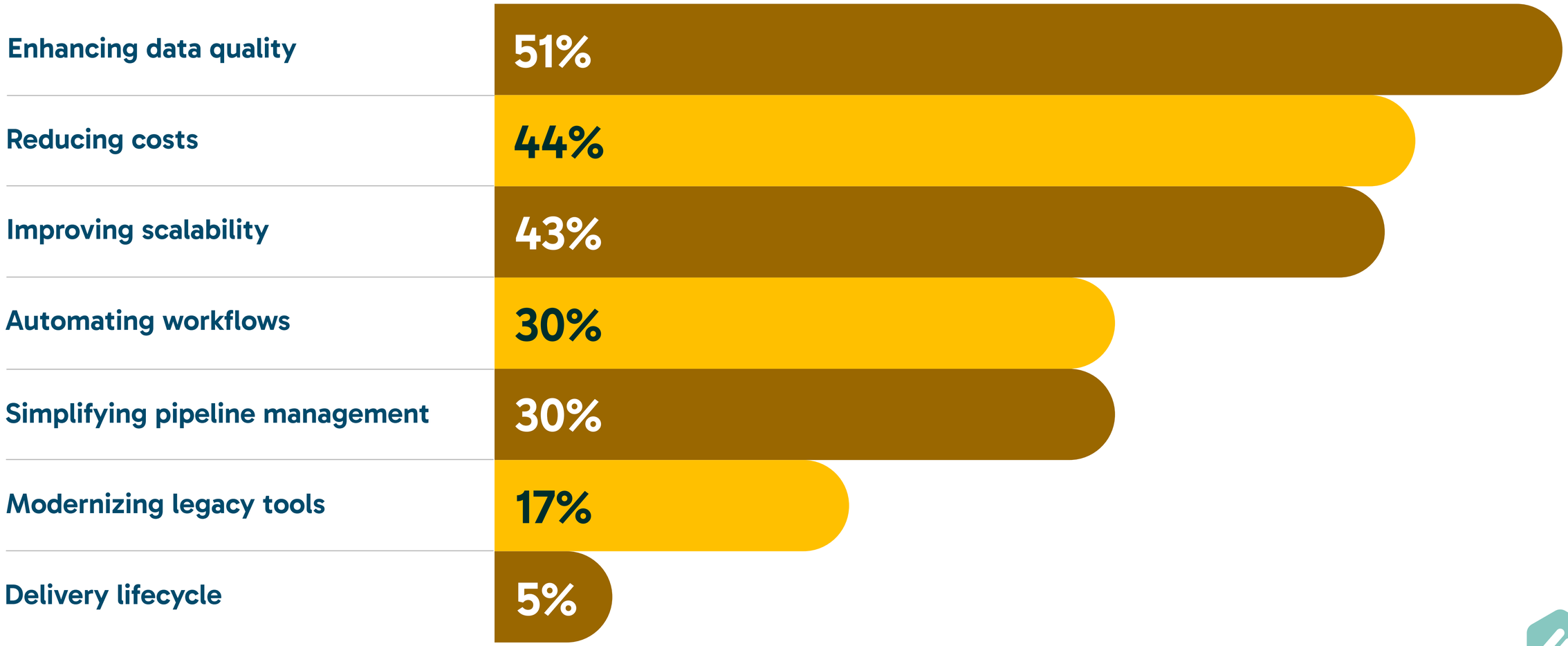
When questioned about top priorities for the next 12 months, AI emerged as a dominant focus area for organizations. The data reveals several key priorities:



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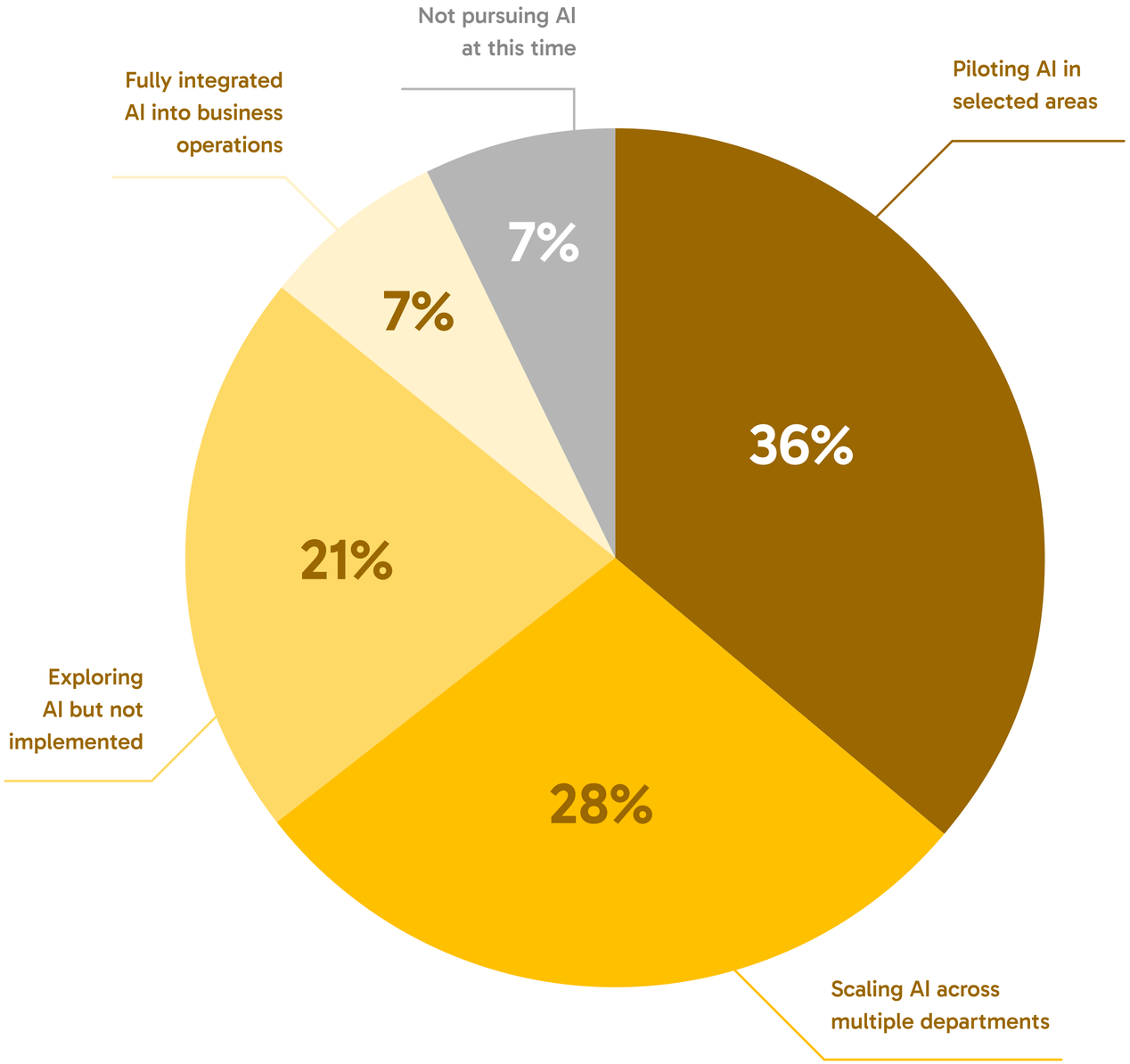
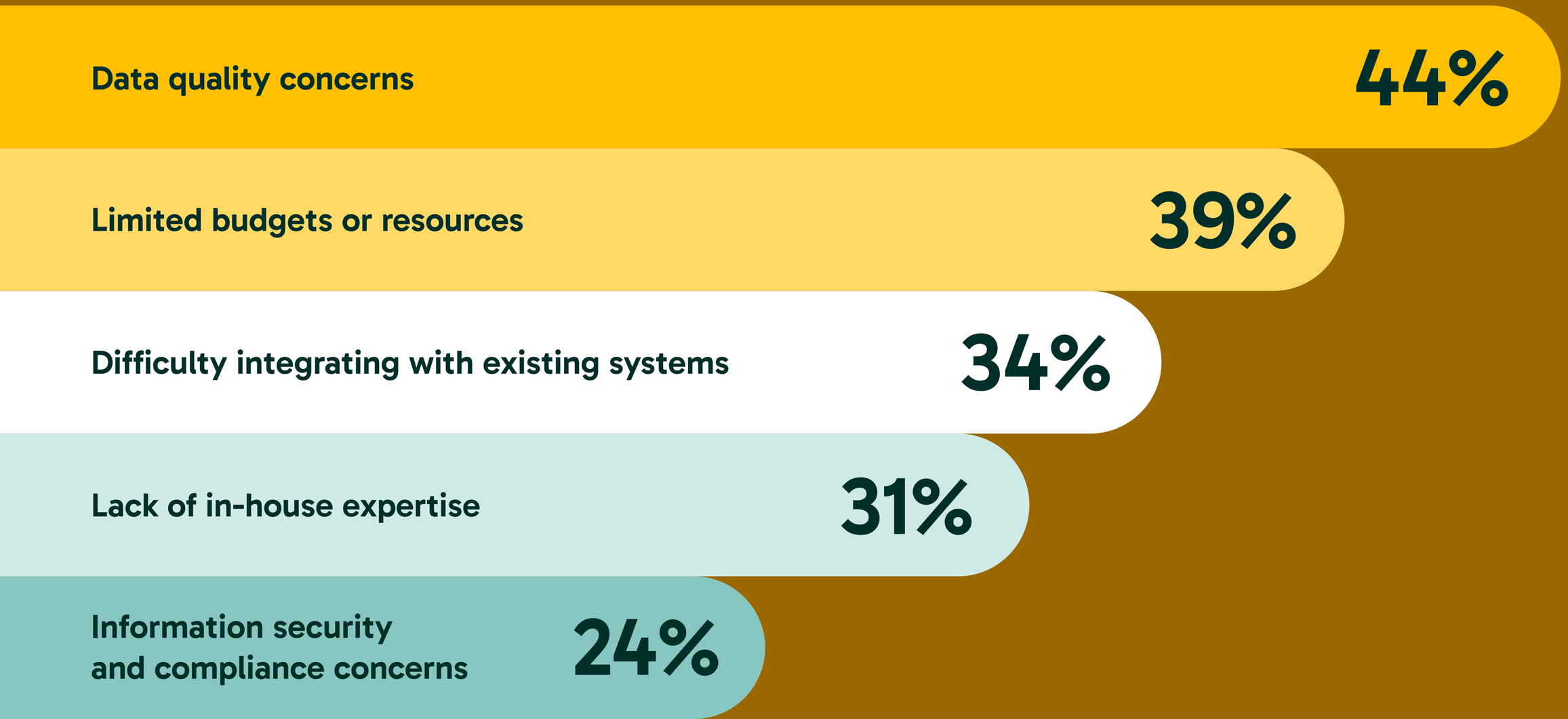


There is widespread belief in AI's potential, with **73% of respondents declaring medium-high confidence in its ability to aid progress.**

However, current adoption levels tell a different story. **Only 7% of respondents have AI solutions in production,** while **28% of respondents are scaling AI operations** across their business.

36% are still in the early stages of piloting AI-driven solutions. A fifth of organizations have yet to implement AI data initiatives but are exploring options, while only 7% reported not pursuing AI at this time.

Five prevailing issues emerged as barriers to AI adoption:



03

The presence of AI offers opportunities to optimize across several organizational areas, with use cases growing daily.

Of respondents highlighted AI-enhanced decision-making through better insights

In terms of current implementation, surveyed businesses report using AI within data teams for code generation

Of organizations identified potential for automating repetitive tasks and reducing errors

Are using AI to automate processes

AI has demonstrated potential to add value by streamlining processes and increasing efficiencies, while helping businesses gain access to better, more actionable insights. The growth in use cases suggests that organizations are finding new ways to leverage AI capabilities, despite the challenges of implementation.

The emergence of data integration platforms with built-in AI capabilities promises to transform how organizations handle their data operations. By automating complex tasks and dramatically reducing the technical expertise required to build and maintain data pipelines, these advanced solutions will be crucial in helping future-proof organizations.

See more considerations for implementing AI

04

Looking ahead

04

The journey has only just begun.

Realising AI's potential to go beyond data integration is merely an assertion of intent. The real challenge lies in equipping data teams with the infrastructure and processes to embrace and adapt to ever-growing AI capabilities.

04

Staying one step ahead means building data architecture that consistently looks to the future. By implementing code-optional, AI-powered solutions, data-driven decision making is democratized, so the whole organization can work more intelligently.

Above all, the quality and accuracy of data will remain paramount. This foundation of reliable data enables organizations to extract valuable insights and actionable outcomes, driving innovation. As AI evolves, it will empower organizations to harness the full potential of their data, creating a more agile and informed, data-driven workforce ready to tackle the business challenges that lie ahead.

Methodology

This survey was conducted in partnership with Perspectus Global in January 2025. Respondents included 307 data decision-makers and data user titles, based across the UK and the US.

The interviews were conducted online and were undertaken using a rigorous multi-level screening process to ensure that only suitable candidates were given the opportunity to participate. Unless otherwise indicated, the results discussed are based on the total sample.

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About Perspectus Global

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About Matillion

Matillion helps teams get data business ready, faster — accelerating time-to-value and increasing the impact data can have.

Thousands of enterprises including Cisco, DocuSign, EDF, Slack, and Western Union trust Matillion to load, transform, sync and orchestrate their data for a wide range of use cases from insights and operational analytics, to data science, machine learning and AI.

Native integration with popular cloud data platforms lets data teams at every skill level automate management, refinement, and data delivery for every data integration need.

Prepare for an AI-driven future by seeing Matillion for yourself.

Book a demo today