CONFLUENT | **syncopate**
get to the point

2024 Data Streaming Report

Breaking Down the Barriers to Business Agility & Innovation

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Thoughts from Psyncopate

Data streaming is highly valuable for customers as it enables real-time data processing, analysis, and decision-making. Some key benefits include:

- Real-time insights: Data streaming allows customers to receive and process data as it is generated. This includes data in legacy applications that can now be leveraged for real-time predictive analytics.

- Enhanced customer experiences: By analyzing streaming data, customers can gain insights into user behavior, preferences, and trends in real-time, helping them personalize services and offerings to better meet customer needs.

- Improved operational efficiency: Data streaming can help optimize processes in the supply chain, real-time offers or issue resolution. Detecting issues or anomalies as they occur, and respond proactively, in real-time.

- Faster time to action: With data streaming, you can act on data quickly and with automation, enhancing profitability opportunities, addressing challenges, and staying ahead of the competition.

~ TONY GIANG

FOUNDER AND PRINCIPAL TECHNOLOGY STRATEGIST

PSYNCOPATE

Executive Summary

In today's dynamic business landscape, responsiveness is key to success.

And tapping into continuously streaming data–wherever it lives—is fundamental to this constant pursuit of organizational agility. Why? Simply because it's this real-time data that can unveil what your customers crave, how your business operates, and what's on the horizon—so you can act on it quickly and efficiently.

Relying on slow, incomplete, incorrect, out-of-date, and ungoverned data, doesn't really cut it anymore.

Findings from our 2024 Data Streaming Report: **"Breaking Down the Barriers to Business Agility & Innovation"**—where we tap into insights from 4,110 IT leaders—underpin how this growing need for real-time means organizations are actively prioritizing data streaming investments. 51% of surveyed IT leaders cite data streaming as a top strategic priority for IT investments in 2024 compared to 44% in 2023. What's more, 68% expect the use of this technology to continue to grow over the next two years.

The survey also reveals how 79% of IT leaders cite data streaming platforms (DSPs) as pivotal to realizing business agility, 63% cite DSPs as an accelerator for AI adoption, and 93% cite DSPs as the key to overcoming pervasive obstacles like data silos. By incorporating a range of capabilities, including stream processing and data governance, DSPs enable instant access to reliable data—unlocking endless use cases and value for the business.

Dive into the report to explore the impressive ROI potential of data streaming (41% of IT leaders report an ROI of 5x or more)—and learn how you can harness the power of DSPs to drive transformation and operate at the speed of modern business.

"

Data streaming technology has become a key enabler of innovation, driving real-time experiences for our 100 million customers today, including more personalization and fraud mitigation. You can think about the volume of the transactions that are going through - streaming billions of transactions daily... Confluent [helps in] solving for many of those use cases."

~ NISHA PALIWAL

MANAGING VICE PRESIDENT OF ENTERPRISE DATA TECHNOLOGY

CAPITAL ONE

"

Data streaming is crucial to driving digital transformation at L'Oréal, which in turn helps us increase agility to meet our consumers' rapidly changing needs for innovation and personalization. In a world where we envision having data at our fingertips, data streaming helps set our data in motion by facilitating real-time data flows between our systems and applications."

~ SINDHU PRASANNA

EVENT-DRIVEN ARCHITECTURE LEAD

L'OREAL

A Look at This Year's Data Streaming Maturity Curve

Based on our observations, the typical data streaming journey for an organization starts with evaluation or pre-production activity (Level 1) and matures up a curve, ending with data streaming broadly embedded across the enterprise (Level 5).

This year, we specifically looked at how those with more pervasive, enterprise-wide data streaming deployments are realizing stronger return on investments (ROI) and business benefits, including delivering rich customer experiences and improving cybersecurity.

1%

Data streaming is a strategic enabler with all qualities of Level 4, plus streams managed as a product

Level 5

10%

Several deployments in production for critical systems with data reuse and integrations across business units

Level 4

58%

Deployments in production for a few critical systems with data and usage siloed across teams

Level 3

23%

Projects identified and deployed for noncritical application

Level 2

8%

Experiments in pre-production

Level 1

Explore our section on Key Finding 2 to see how many organizations are seeing 5x to 10x ROI: **64%** in Level 4 compared to **56%** in Level 3. There, we also zoom in on the four specific areas—including driving responsive operations and AI innovation—where benefits increase remarkably with each stage of maturity.

KEY FINDING 1

Data Streaming Platforms Fuel Responsive Businesses and AI Adoption

RESPONSIVENESS IN BUSINESS is about being adaptive, quick, and versatile. This includes keeping up with technological advances and harnessing them to drive business benefits.

Our findings reveal that 51% of IT leaders cite data streaming platforms (DSPs) as enabling their organizations to be truly nimble—by providing real-time visibility into operations and customer interactions—and 63% say DSPs extensively or significantly fuel AI progress—by building the real-time data foundation needed to propel such initiatives.

But before delving deeper, let's first define a **data streaming platform: It's a software platform that empowers businesses to stream, process, connect, and govern real-time data streams**—making your data trustworthy and reusable at the source, so you can drive agility and innovation.

"

At Allianz, we are modernizing our core insurance system by replacing legacy technologies and migrating over 75% of our applications into the cloud. Data streaming plays a crucial role in this modernization process. A data streaming platform like Confluent allows Allianz to quickly react, respond, and adapt to ever-changing data in real time, which is key to driving exceptional customer experience, competitive differentiation, and revenue growth."

~ BRUNO FONTOURA COSTA

HEAD OF GLOBAL INTEGRATION SERVICES AND ARCHITECTURE

ALLIANZ TECHNOLOGY

Driver of Business Agility and Visibility

Data streaming platforms are essential catalysts for success, enabling businesses to achieve their top-of-mind priorities—including gaining business visibility and agility—by unlocking the full value of their data.

From driving innovation to maximizing cost-effectiveness, DSPs help organizations to stay competitive and thrive by enabling them to quickly detect and respond to emerging risks and opportunities in the current environment.

While 88% of respondents cite continuous and up-to-date business visibility as an extensive or significant priority, 80% see DSPs as a key or important enabler in achieving that visibility. 84% cite management or control of operational costs as an extensive or significant priority, with 76% citing DSPs as enabling that cost-effectiveness.

How much do the following matter to your organization?

Continuous and up-to-date business visibility

| 44% | 44% | 11% |

Joined-up visibility across the business

| 38% | 50% | 11% |

Rapid detection and management of risks

| 46% | 39% | 14% |

Ability to model and predict business outcomes

| 37% | 47% | 14% |

Ability to adapt easily and quickly to change

| 41% | 43% | 15% |

Time to market for new products and services

| 34% | 44% | 18% |

Management/control of operational costs

| 40% | 44% | 14% |

How much do you see DSP technology enabling the following?

Continuous and up-to-date business visibility

| 36% | 44% | 18% |

Joined-up visibility across the business

| 38% | 47% | 14% |

Rapid detection and management of risks

| 41% | 39% | 19% |

Ability to model and predict business outcomes

| 34% | 45% | 19% |

Ability to adapt easily and quickly to change

| 36% | 43% | 19% |

Time to market for new products and services

| 28% | 45% | 22% |

Management/control of operational costs

| 33% | 43% | 22% |
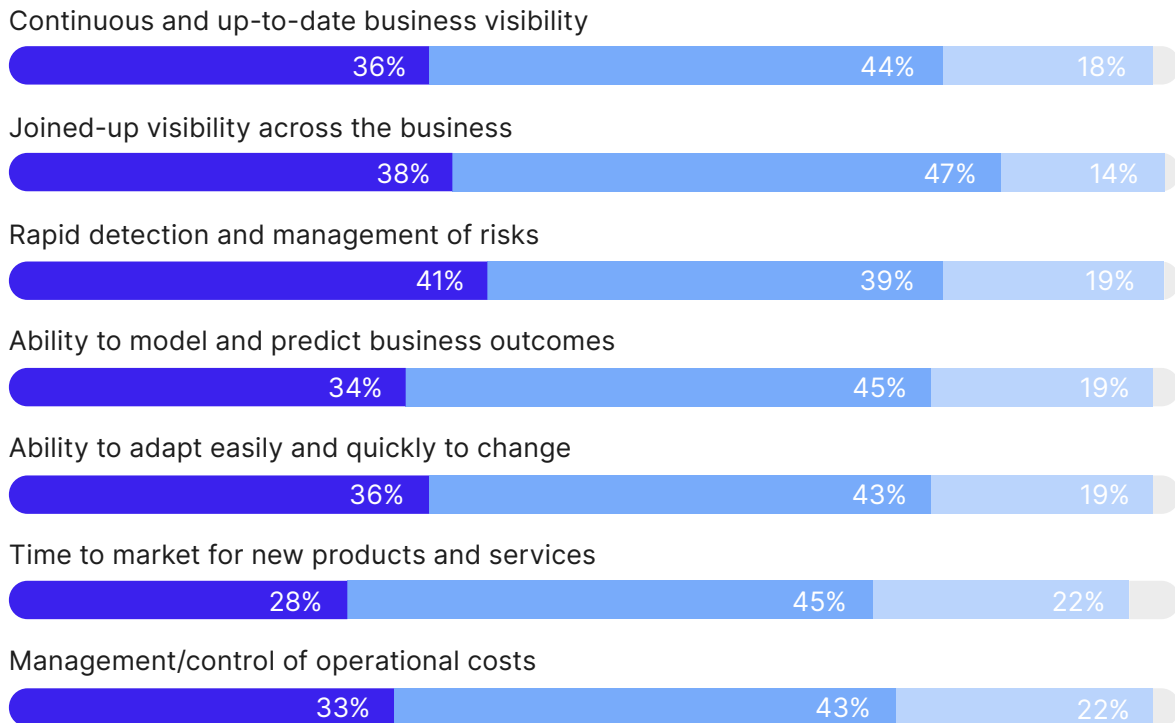
● Extensively   ● Significantly   ● Moderately   ● Not that much / Unsure

The Golden Ticket to Fast-Tracking AI Adoption

Your AI is only as good as the data you feed it. And data streaming platforms have emerged as a key enabler for AI adoption—allowing businesses to tap into continuously enriched, trustworthy, and contextualized data for quickly scaling and building real-time AI applications.

As more organizations look to leverage AI/ML for unlocking competitive advantages by driving innovation and optimizing processes—DSPs enable the democratization of AI/ML for a broader range of use cases.

95% of IT leaders see DSPs helping or possibly helping with broadening access to different data sources to contextualize models. This is followed by 93% citing DSPs ensuring their data meets appropriate quality standards and 90% saying DSPs keep track of data fed into models for governance purposes.
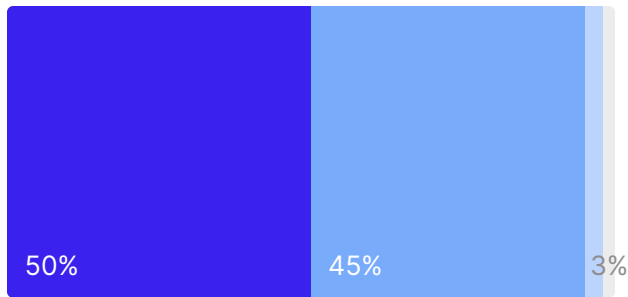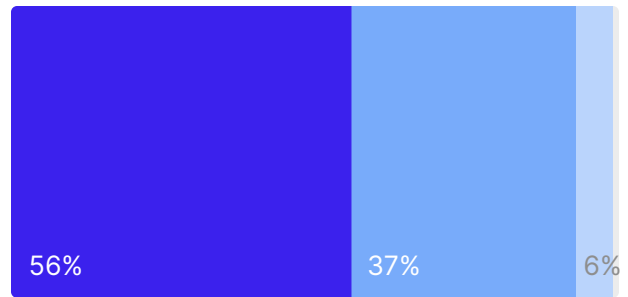
63%
said "Yes" to 3 or more benefits

95%
said "Yes" to at least one benefit

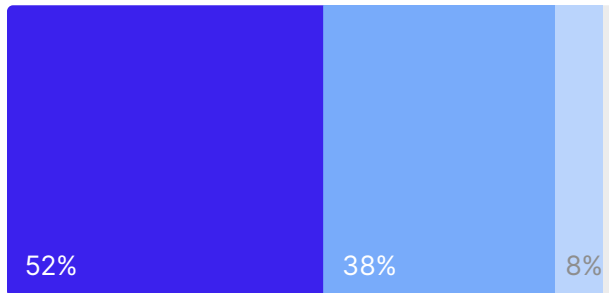# In what ways does a DSP ease the path to enterprise-level AI/ML adoption?

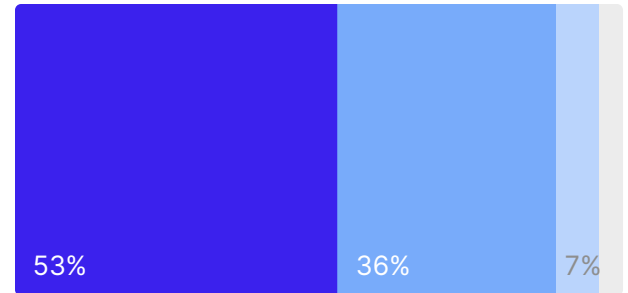**Broadening access to different data sources to contextualize models**

50%	45%	3%

Ensuring that data ingested meets appropriate quality standards

56%	37%	6%

Keeping track of data fed into models for governance purposes

52%	38%	8%

Keeping AI models up-to-date with fresh, validated data streams

53%	36%	7%

Injecting fresh/real-time contextual data into AI prompts/requests

48%	41%	7%
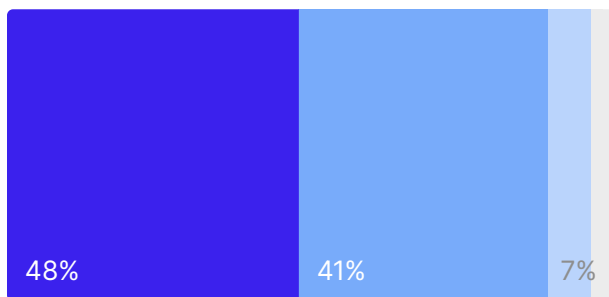
Generally democratizing the use of AI/ML across the business

42%	46%	8%
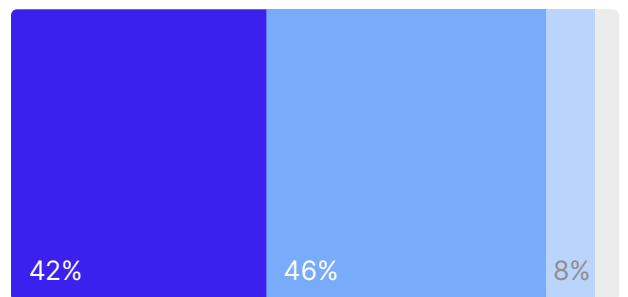
● Extensively   ● Significantly   ● Moderately   ● Not that much / Unsure

Traits That Turbocharge Your Business

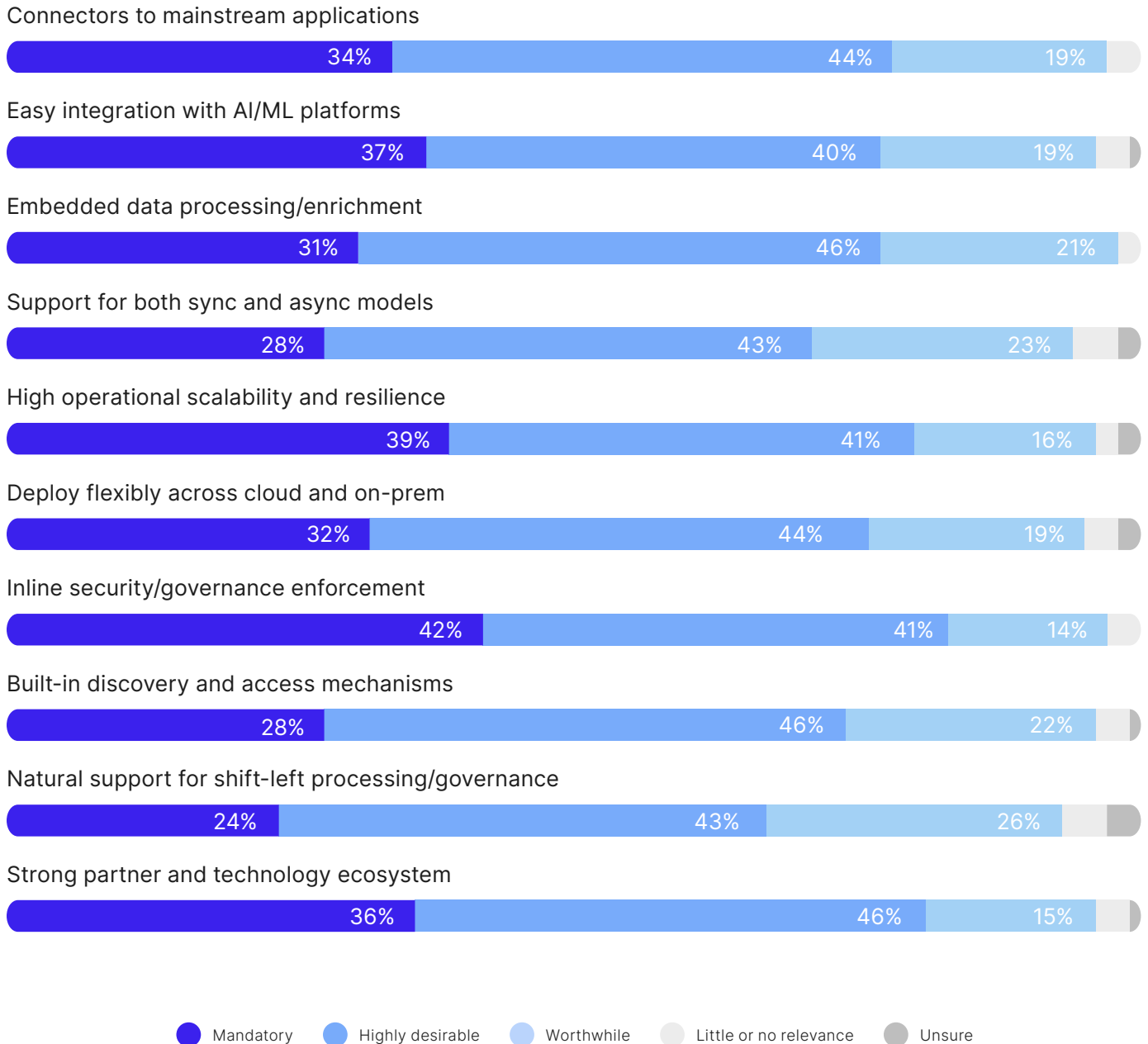But what makes for a good data streaming platform? The short answer is comprehensive functionality. This includes the ability to provide seamless connectivity, powerful stream processing, scalable and reliable data delivery, and robust governance capabilities—so businesses can make the most of their data and unlock business value.

The survey results confirm the importance of several platform features: 83% of respondents cite governance as mandatory or highly desirable, followed by 80% citing high operational scalability and resilience, 78% citing connectors to mainstream applications, and 77% citing embedded data processing/enrichment capabilities.

But businesses are also looking beyond core functionality—81% cite strong partner and technology ecosystem as a key consideration when choosing DSPs.

When considering a DSP, how would you rate these capabilities?

Connectors to mainstream applications

| 34% | 44% | 19% |

Easy integration with AI/ML platforms

| 37% | 40% | 19% |

Embedded data processing/enrichment

| 31% | 46% | 21% |

Support for both sync and async models

| 28% | 43% | 23% |

High operational scalability and resilience

| 39% | 41% | 16% |

Deploy flexibly across cloud and on-prem

| 32% | 44% | 19% |

Inline security/governance enforcement

| 42% | 41% | 14% |

Built-in discovery and access mechanisms

| 28% | 46% | 22% |

Natural support for shift-left processing/governance

| 24% | 43% | 26% |

Strong partner and technology ecosystem

| 36% | 46% | 15% |

● Mandatory   ● Highly desirable   ● Worthwhile   ● Little or no relevance   ● Unsure

ACTIONABLE ADVICE

The Time Is Now

The first step to unlocking the maximum value from your data is ensuring it is trustworthy, discoverable, reusable, and governable. Plus, the uptick in AI projects, especially generative AI, means getting ready access to reliable data has become more important than ever.

WE SUGGEST YOU:

1   Develop a comprehensive data strategy that outlines business objectives and how data streaming can support them.

2   Assess your data landscape—this includes identifying current challenges and needs.

3   Continue to foster a data-driven culture—this includes offering educational opportunities and building a leadership team that prioritizes data initiatives.

As your enterprise consolidates data streaming initiatives, invest in company-wide stream processing services and governance technologies to generate better ROI with improved data reuse.
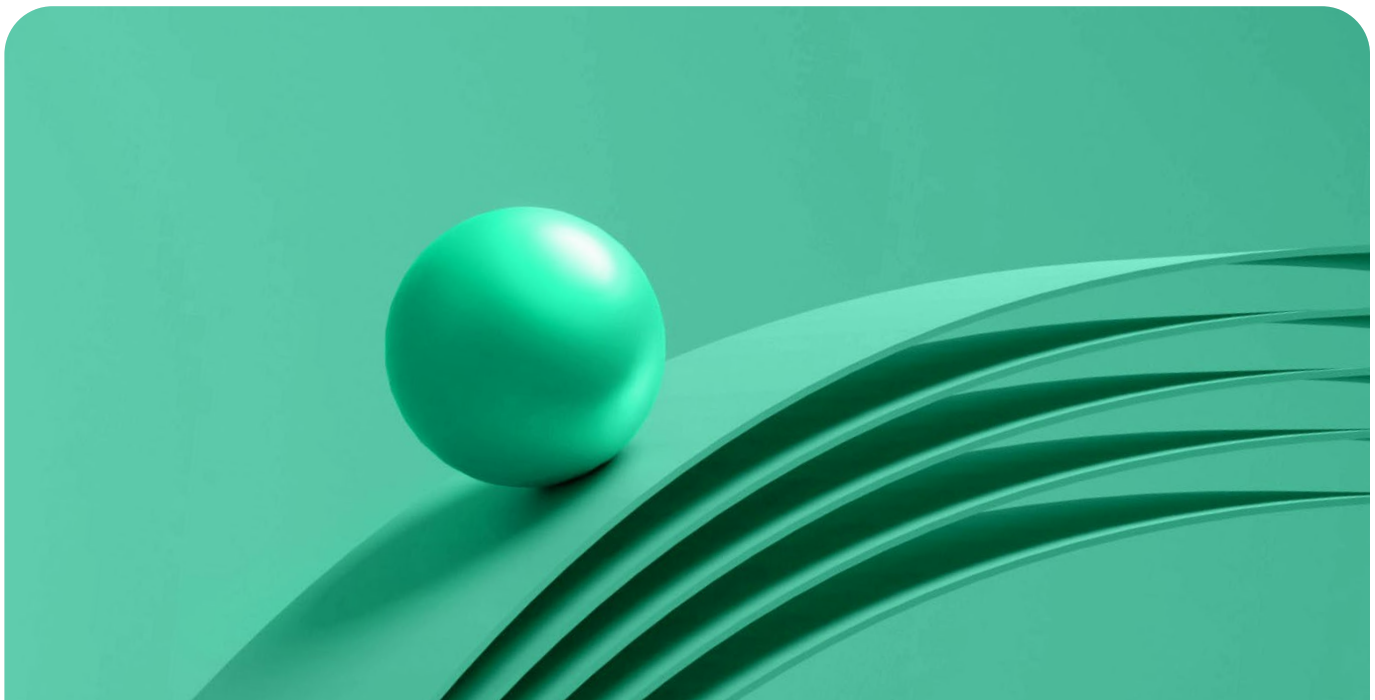
KEY FINDING 2

Data Streaming ROI & Investments Soar Higher

AS BUSINESSES LEARN TO DO MORE WITH LESS, proving tech investment ROI has become even more critical. This ensures they are achieving value, despite limited resources.

84% of IT leaders cite 2x to 10x return on data streaming investments—and 41% cite an ROI of 5x or more—as it continues to drive significant benefits across a wide range of business functions and industries.

41% **of IT leaders cite an ROI of 5x or more on their data streaming investments**

"

Data streaming helps us power key use cases—including real-time data warehousing for real-time analytics and adaptive bitrate streaming—where we can use real-time data to make timely decisions and deliver better experiences for our users. Ultimately, it makes us more profitable, so data streaming is extremely critical to our business and has a huge impact."

~ BABAK BASHIRI
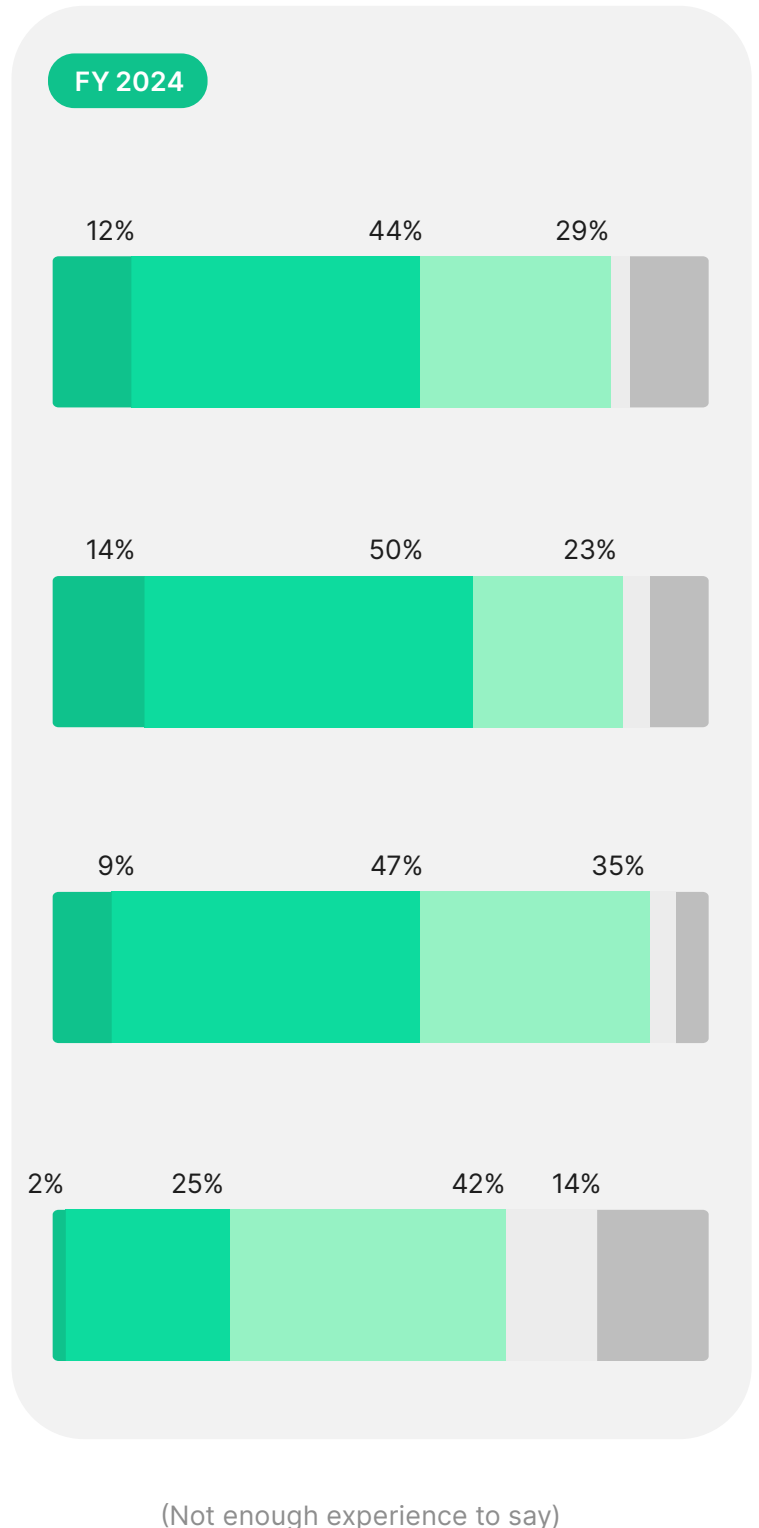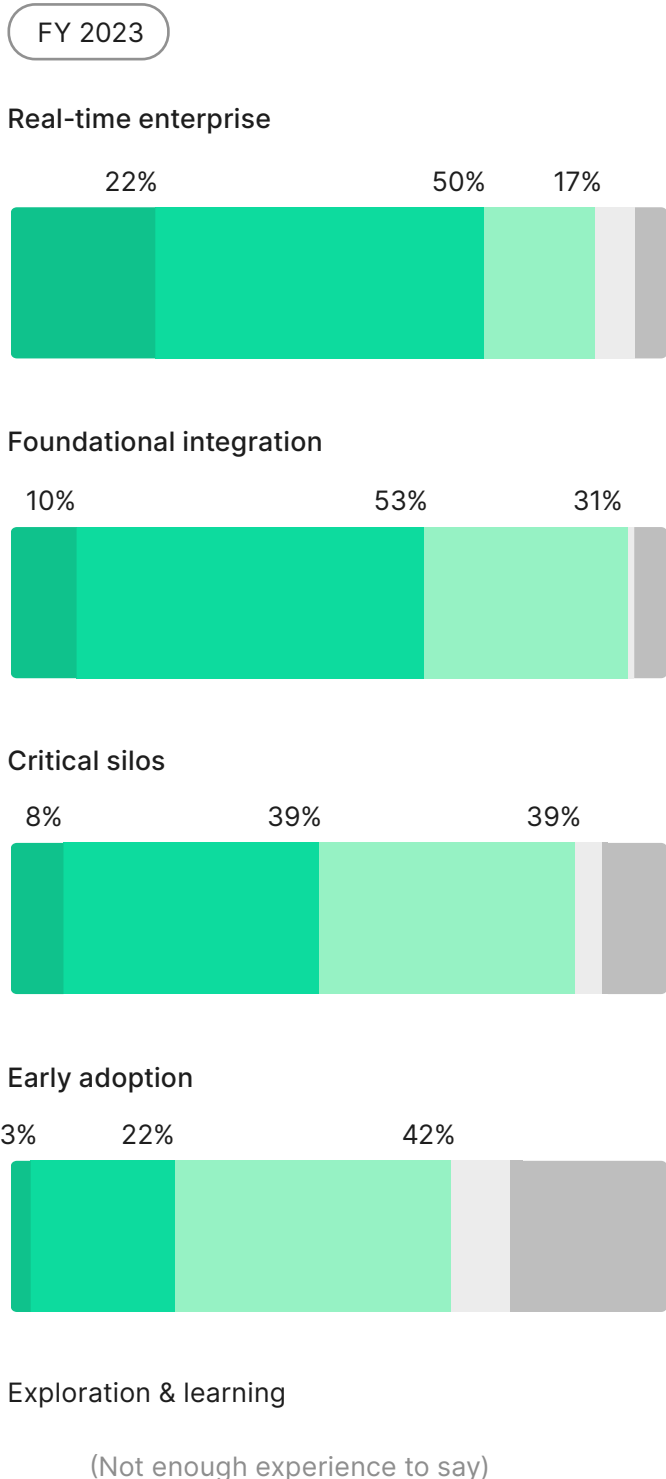
DIRECTOR OF DATA ENGINEERING

VIMEO

With Greater Maturity Comes Higher ROI

Our survey findings reveal a clear correlation between data streaming maturity and the achievement of higher levels of return on investment. As organizations progress through stages of maturity, the proportion achieving significant ROI increases dramatically.

Today, 64% of IT leaders that have reached Level 4 say their companies are achieving or anticipating 5x to 10x ROI, compared to 56% of those in Level 3. Last year, these numbers were 63% for Level 4 and 47% for Level 3.

But even companies at earlier stages in the maturity curve see excellent results with data streaming: 67% of those in Level 2 say they are achieving or anticipating 2x to 5x return, compared to 64% in 2023.

How much do you see a data streaming platform enabling the following?

FY 2023

FY 2024

Real-time enterprise

22%	50%	17%

12%	44%	29%

Foundational integration

10%	53%	31%

14%	50%	23%

Critical silos

8%	39%	39%

9%	47%	35%

Early adoption

3%	22%	42%

2%	25%	42%	14%

Exploration & learning

(Not enough experience to say)   (Not enough experience to say)

● 10X return (or more)   ● 5X return (or more)   ● 2X return (or more)   ○ 1X (or more)   ● Less than 1X / Not measurable / Unsure

Delivering Multifaceted Business & Tech Benefits

The strategic value and importance of data streaming is reflected in the breadth and depth of benefits companies are reporting across all industries—ranging from transforming customer experience to driving innovation with AI/ML.

96% of respondents cite achieving or expecting significant benefits from their data streaming activities when it comes to creating responsive customer experiences, followed by 95% citing improving cybersecurity and enabling data-driven operations, and 90% citing enabling product and service innovation around AI/ML.

Plus, the benefits increase markedly with each stage of maturity. For example, 87% in Level 4 realize significant data streaming benefits for creating customer experiences compared to 72% in Level 3.

Have you gained significant benefits from data streaming in these areas?

Creating rich and responsive customer experiences

| 68% | 28% |

Improving cybersecurity and digital risk management

| 65% | 30% |

Enabling more effective IT monitoring and management

| 63% | 31% |

Enabling more data-driven operational decisions within the business

| 61% | 34% |

Increased observability across the entire business for executives

| 59% | 33% |

Improved collaboration and alignment between analysts and developers

| 58% | 36% |

Enabling you to offer new and different products and services (to customers)

| 57% | 35% |

Driving automation and responsiveness of internal processes

| 57% | 36% |

Increased senior level appetite/enthusiasm for real time visibility

| 55% | 36% |

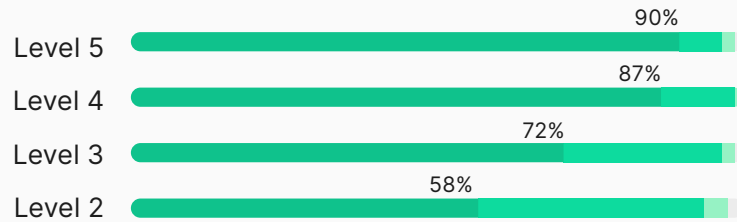Enabling product/service innovation around AI/ML in particular

| 51% | 39% |

Reduced time to market for new products and services

| 49% | 38% |

● Yes ● No but expecting ● Not expecting ● Unsure / NA

Achieved or anticipated benefits in key areas by maturity level

Creating rich and responsive customer experiences

Level 5	90%
Level 4	87%
Level 3	72%
Level 2	58%

Driving automation and responsiveness of internal processes

Level 5	88%
Level 4	69%
Level 3	57%
Level 2	53%

Enabling product/ service innovation around AI/ML

Level 5	68%
Level 4	72%
Level 3	51%
Level 2	45%
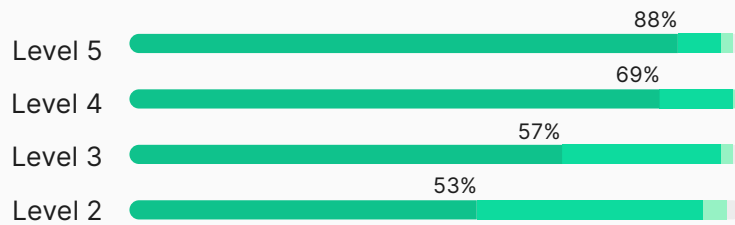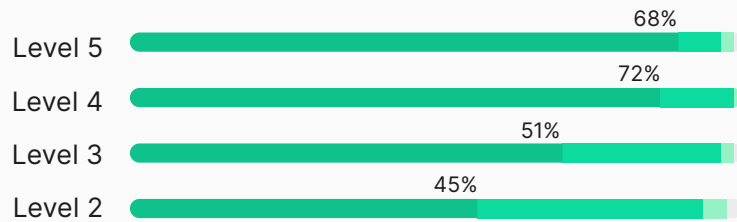
Enabling more data-driven operational business decisions

Level 5	86%
Level 4	78%
Level 3	60%
Level 2	58%
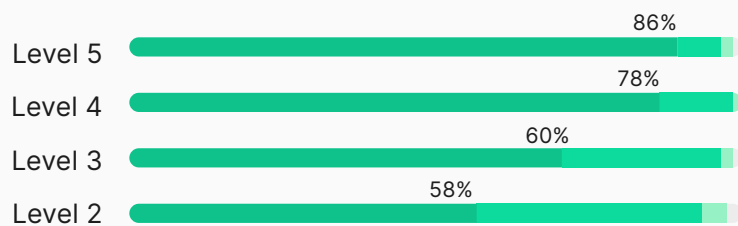
Yes   No but expecting   Not expecting   Unsure / NA

A Strategic Priority for IT Investments

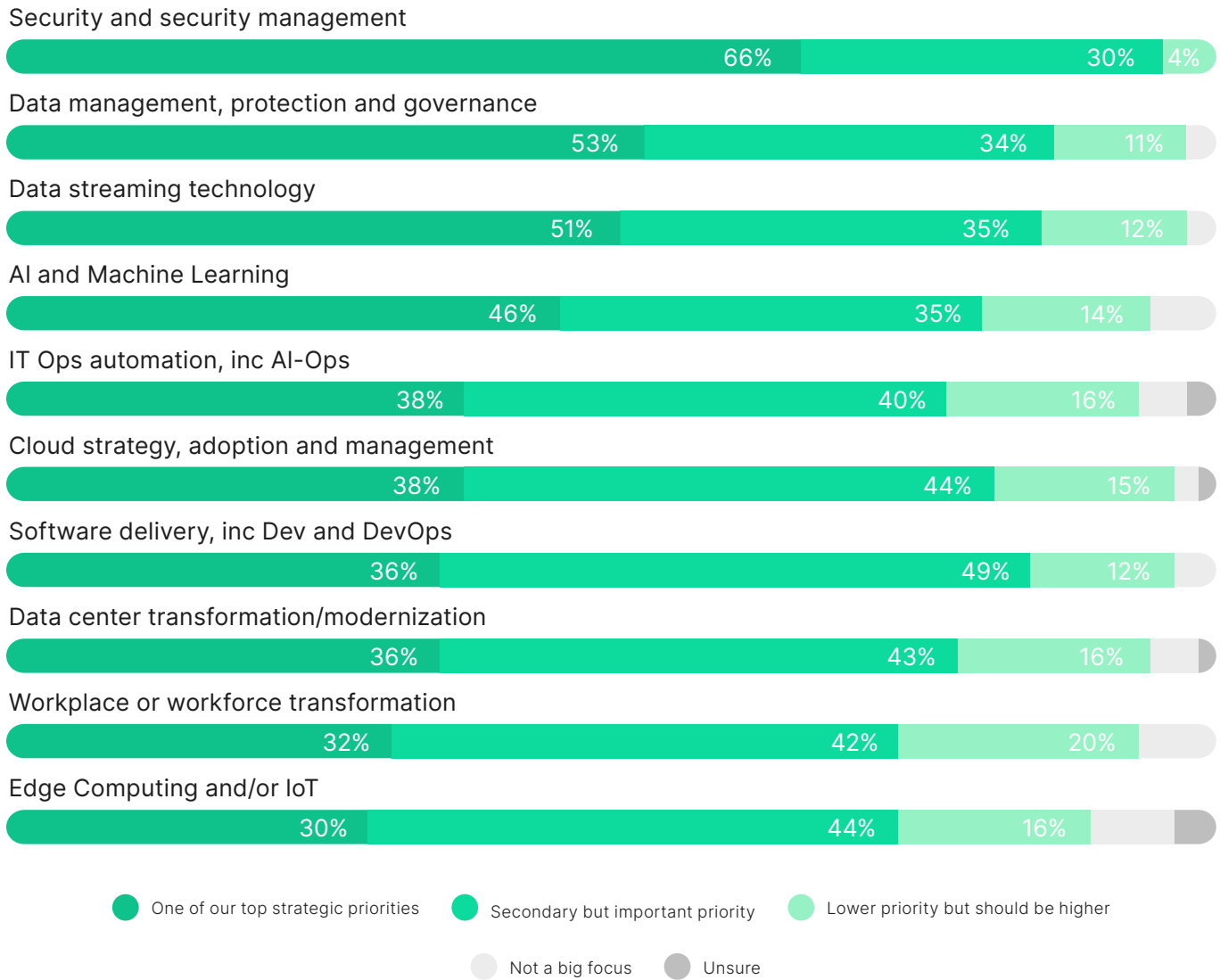Our survey results show data streaming has been firmly established as a core component of the modern technology stack and will continue to be a key investment focus area for organizations in the coming year and beyond.

While, with the rise in cyberattacks, security continues to be one of the top strategic priorities or an important priority for IT investments (96%)—it's followed by investments in data governance (87%), data streaming (86%), and AI and ML (81%).

As more organizations leverage real-time data to drive competitive advantage, our findings show a general uptick in investments around more intelligent and real-time capabilities. 74% say investments in GenAI will trend up over the coming two years, followed by data streaming (68%).

How does investment in the following fit into your 2024 agenda?

Security and security management

| 66% | 30% | 4% |

Data management, protection and governance

| 53% | 34% | 11% |

Data streaming technology

| 51% | 35% | 12% |

AI and Machine Learning

| 46% | 35% | 14% |

IT Ops automation, inc AI-Ops

| 38% | 40% | 16% |

Cloud strategy, adoption and management

| 38% | 44% | 15% |

Software delivery, inc Dev and DevOps

| 36% | 49% | 12% |

Data center transformation/modernization

| 36% | 43% | 16% |

Workplace or workforce transformation

| 32% | 42% | 20% |

Edge Computing and/or IoT

| 30% | 44% | 16% |

● One of our top strategic priorities ● Secondary but important priority ● Lower priority but should be higher

● Not a big focus ● Unsure

How will the following technologies trend up or down over the next two years?

Emerging Generative AI technologies

| 74% | 5% |

Data streaming and continuous flowing of data

| 68% | 5% |

Data warehouses containing pre-processed data

| 59% | 6% |

Custom point-to-point application integration

| 54% | 8% |

Traditional batch-based data pipeline and ETL tools

| 37% | 18% |

● Trending up ● Trending down ● No change / Unsure
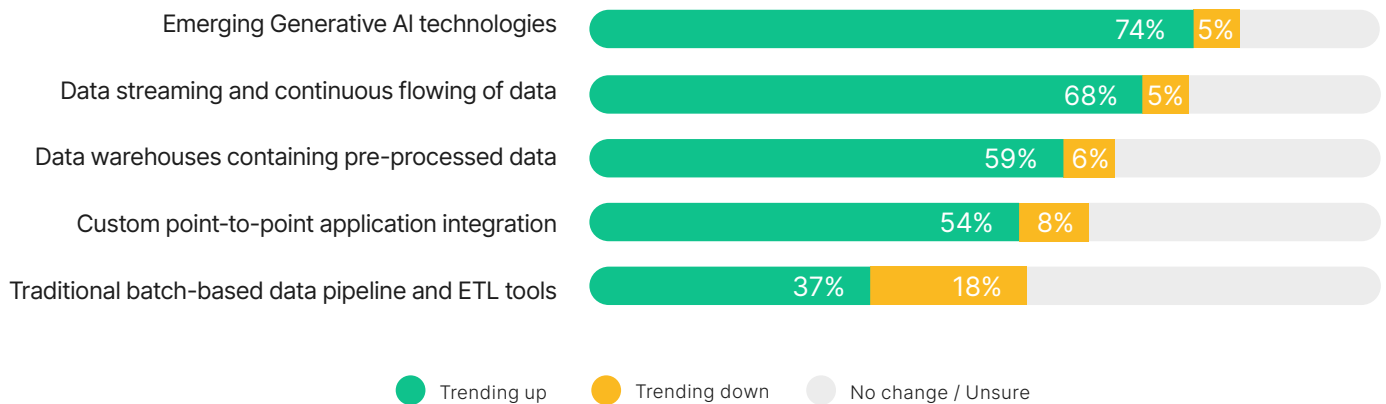
ACTIONABLE ADVICE

Secure C-Suite Buy-In

The positive correlation between data streaming maturity and significant business returns underscores the importance of a long-term, strategic view of data streaming investments. It also highlights the value of advancing beyond initial, siloed use cases to a more integrated approach that leverages data streaming across the enterprise.

1 Start with securing C-suite engagement and sponsorship. Write a short business case that articulates both quantitative and qualitative benefits. Ensure you highlight how the technology can help save operational costs, drive innovation, and mitigate risks.

2 Qualitative benefits include the breadth of use cases and solutions it can unlock. For inferring quantitative value, start with showcasing how simplifying and accelerating new use case development results in shorter time-to-market.
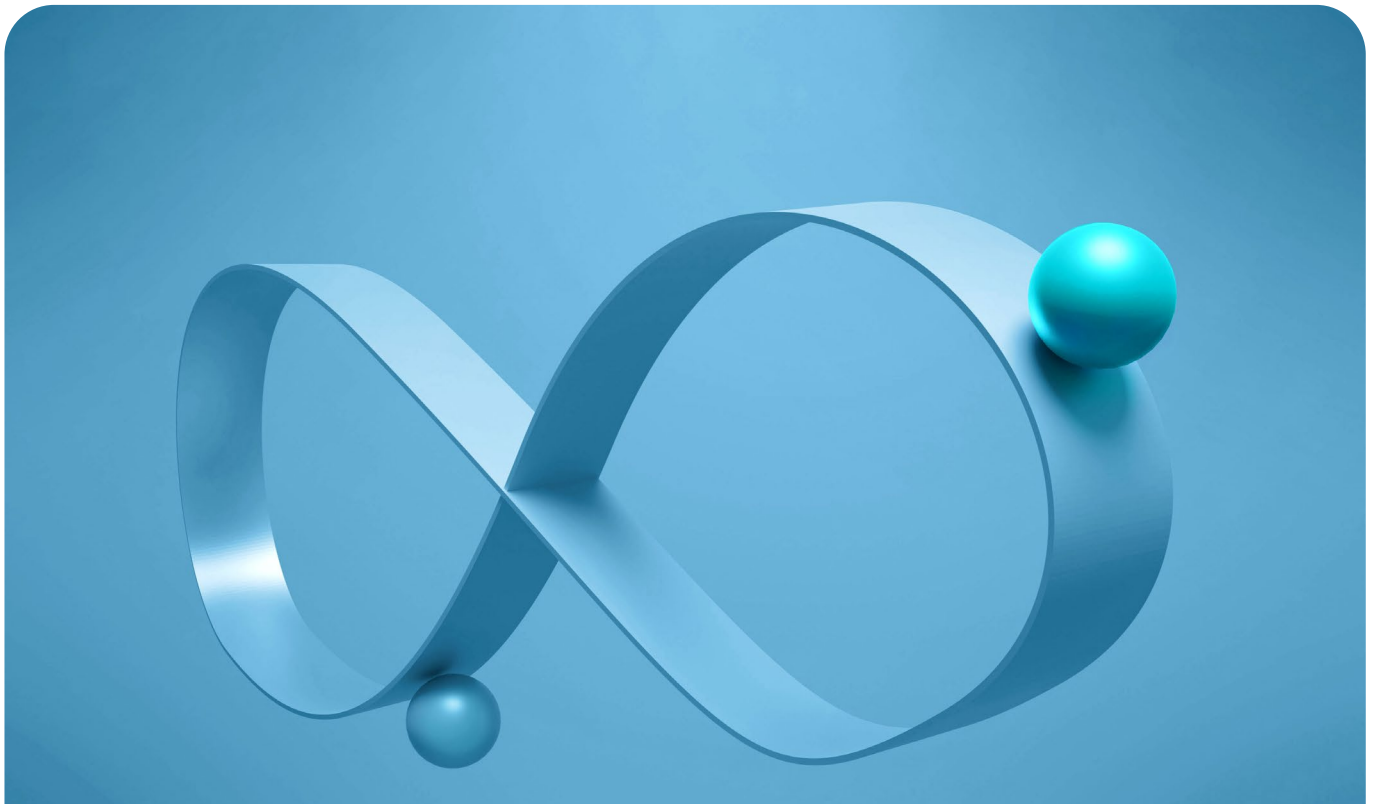
KEY FINDING 3

Data Streaming Platforms Power Business Value With Data Products

FORWARD-THINKING ORGANIZATIONS are rethinking ways to broaden and simplify data access and reuse—to unlock the full value of their data. A big step forward in that direction? Embracing product thinking for data.

91% IT leaders are banking on data streaming platforms to drive their data goals. Additionally, 72% cite significant benefits from embracing a data product approach.

"

Everything we do is in real time because batch processing is an old way of thinking. The longer your data waits, the less value it has. So, as data comes through, you need to be able to act on it, or enrich it quickly. Confluent enables this for us."

~ RAJAY RAI

CHIEF INFORMATION OFFICER

TRUST BANK

Unlocking the Data Treasure Chest

Designed to help businesses maximize the value of their data assets in a systematic and sustainable way, data products are trustworthy datasets purpose-built for easy sharing and reuse.

For example, in financial services you might use data streams for accounts and payments to build a fraud detection system and then reuse that exact same data product to build a customer payment notification system for a banking application.

In fact, our findings reveal that 81% of respondents strongly agree or agree that managing data streams as products further enhances stream reuse potential.

75% of IT leaders also cite that decoupling of data producers and data consumers, which data streaming platforms do, enables easier reuse of data streams.

How much do you agree or disagree with these statements?

Real-time flows of data streams promote consistency and a more accurate and joined-up business view

| 43% | 40% | 14% | 2% |
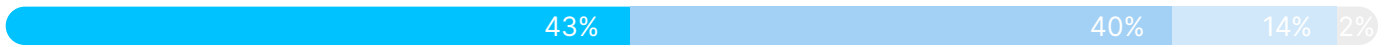
The decoupling of data producers and data consumers enables easier reuse of data streams

| 27% | 48% | 20% | 2% |

Defining and managing data streams as 'products' further enhances stream reuse potential

| 32% | 49% | 16% | 2% |

● Strongly agree   ● Agree   ● Neutral   ● Disagree / Strongly Disagree / Unsure

How important do you see DSP technology to achieving your data and information related goals?

● Critical

● Important

● Useful

● Limited or no value / Unsure

9% Useful

36% Critical
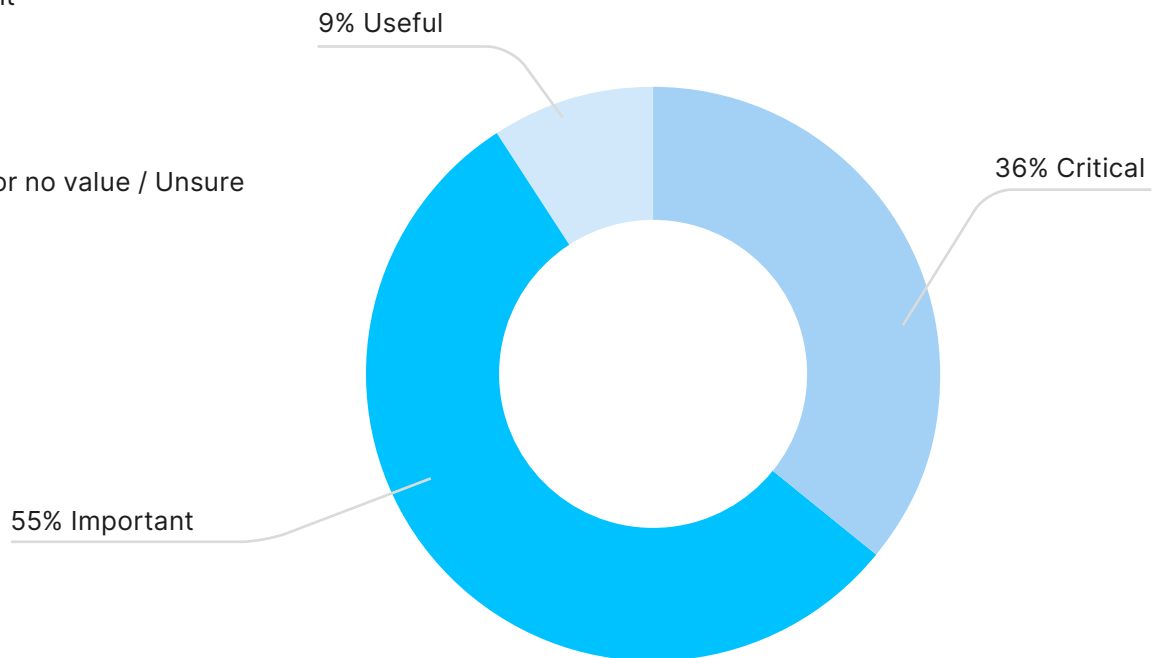
55% Important

Tapping Into the Potential of Data Products

Data drives some of today's most important business use cases. By eliminating the data mess created by point-to-point connections, data products enable instant access to reliable and trustworthy data. The result? It helps businesses solve new problems, unlock endless use cases, and drive agility.

Respondents highlight several key benefits of data products, including more confident data sharing across business units and new opportunities for innovation and value creation through easier data discovery and reuse.

98% of respondents cite data products as compelling or worthwhile in enabling more confident data sharing across business units, followed by more meaningful cost allocation or charging based on usage metrics (91%), and more robust risk management (90%).

How would you rate the benefits of data products?

Enabling more confident data sharing across business units

| 52% | 46% | 3% |

Promoting a focus on business goals rather than technology

| 39% | 50% | 11% | 1% |

Fostering a culture of viewing data as shared enterprise assets

| 40% | 46% | 13% | 1% |

Establishing foundations for secure external data exchange

| 44% | 44% | 11% | 1% |

Enabling innovation through easier discovery and repurposing of data

| 46% | 44% | 10% | 1% |
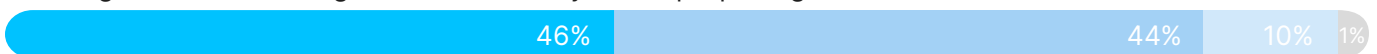
Improving agility through increased decoupling and abstraction

| 40% | 47% | 10% | 1% |

More robust risk management from embedded policy enforcement

| 47% | 43% | 8% | 1% |

More meaningful cost allocation/charging based on usage metrics

| 42% | 49% | 8% | 1% |
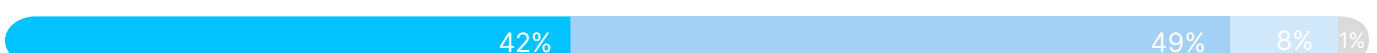
● Compelling   ● Worthwhile   ● Minimal   ● Unsure

51%
responded "Compelling"
for 4 or more benefits

72%
responded "Compelling"
for 3 or more benefits

96%
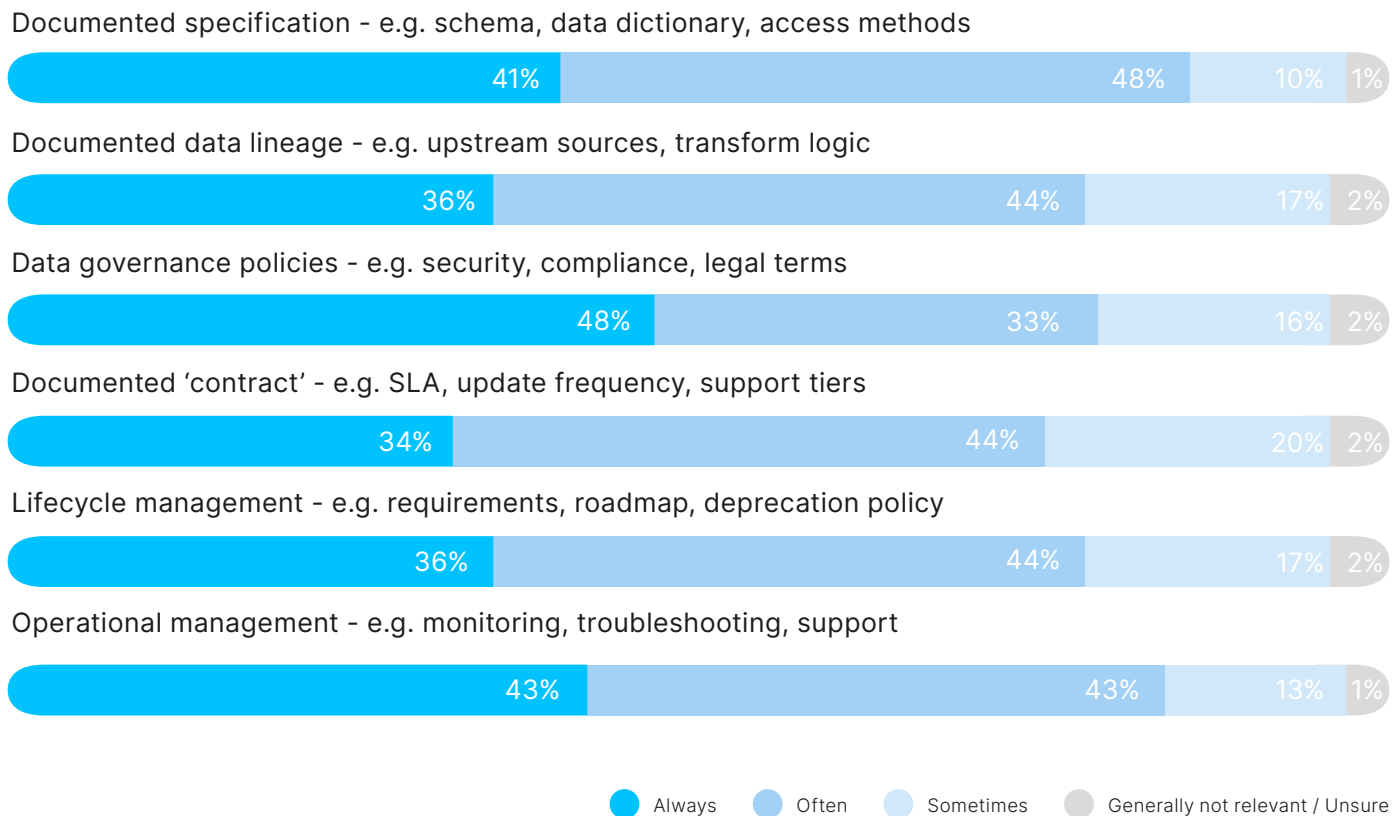responded "Compelling"
for at least one benefit

The Anatomy of a Good Data Product

While the rationale for data products is clear, how do we know when a data product is well-designed?

Our survey results highlight several key elements, including data lineage and well-defined governance policies, that need to be incorporated into the design and delivery of data products. This ensures organizations can create more robust, reliable, and valuable data assets that drive better business outcomes.

89% of organizations cite clear data specifications including schema as always or often important when publishing data streams as data products, followed by 86% citing operational management, and 81% citing data governance policies.

Are the following important when publishing streams as data products?

Documented specification - e.g. schema, data dictionary, access methods

| 41% | 48% | 10% | 1% |

Documented data lineage - e.g. upstream sources, transform logic

| 36% | 44% | 17% | 2% |

Data governance policies - e.g. security, compliance, legal terms

| 48% | 33% | 16% | 2% |

Documented 'contract' - e.g. SLA, update frequency, support tiers

| 34% | 44% | 20% | 2% |

Lifecycle management - e.g. requirements, roadmap, deprecation policy

| 36% | 44% | 17% | 2% |

Operational management - e.g. monitoring, troubleshooting, support

| 43% | 43% | 13% | 1% |

● Always   ● Often   ● Sometimes   ● Generally not relevant / Unsure

ACTIONABLE ADVICE

Drive Data Product Adoption

Embracing a systematic approach to data products adoption can drive significant incremental value to businesses. While it may seem daunting, it can be mobilized with the following framework:

1 — Prioritize mission-critical use cases that matter to your organization—those that drive innovation, reduce costs, mitigate risks or enhance customer experience.

2 — Identify relevant data inputs for critical consumption patterns, group them by data types and /or domains and map them to source systems.

3 — Determine if a combination of data assets can be reused to drive value across multiple use cases and functional areas by converting them into a data product.

4 — Evaluate if the data needed for those use cases are readily available, timely, trustworthy, and of high quality, among other things, to migrate them to data streaming.

Engage your business and functional areas from the get go. As you scale adoption, ensure you have standards and best practices in place to drive success with data products.
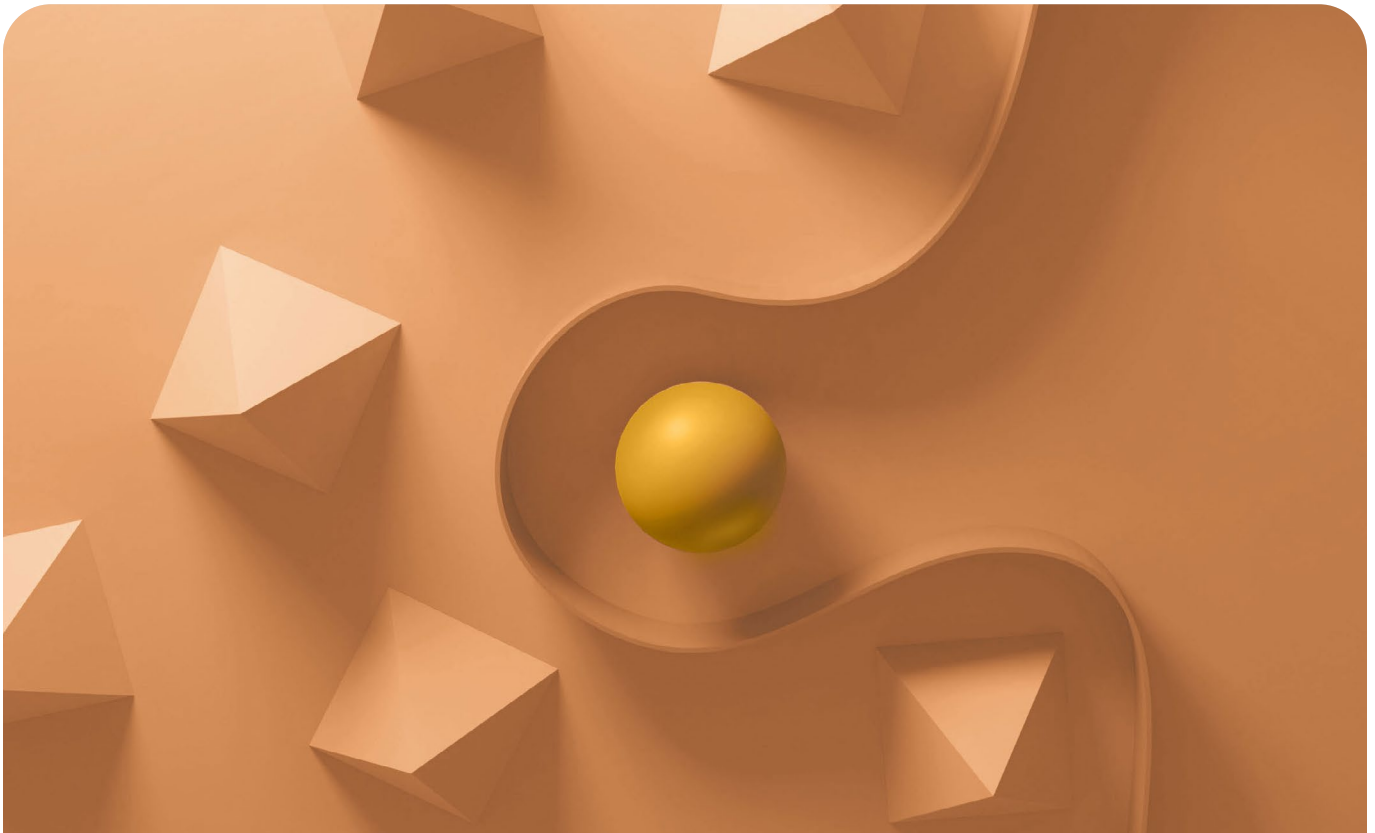
KEY FINDING 4

Data Challenges Loom, but a Path Forward Exists

DATA IS THE CROWN JEWEL of modern businesses. But several speed bumps get in the way of driving business success with data.

76% of IT leaders cite five or more data-related challenges impacting their organizations, including siloed data and governance-related challenges.

The good news? 94% cite five or more areas where data streaming platforms can help combat these challenges in most and many situations.

> "
>
> Like a lot of high-performing orgs, NASA is constantly reevaluating its tech stack. A self-organized Kafka community of practice emerged among teams managing around 15 different projects. Our engineers and architects were all sharing the struggles and lessons learned from adopting data streaming in their missions. We knew real-time streaming was something we needed to invest in and quickly started looking into bringing Confluent Cloud on as an enterprise service so we could offer it more broadly across the organization."

~ JOE FOSTER

CLOUD COMPUTING PROGRAM MANAGER

NASA

Mind the Gap: Top Hurdles

Having access to the right data at the right time is crucial to gaining timely insights into market trends and customer needs—insights that ultimately drive the business agility that's key to long-term, strategic success.

However, most organizations still face multiple data hurdles that get in the way of timely decision-making. 66% cite inconsistency of data sources as a major issue or frequent challenge, followed by 65% citing uncertain timeliness or quality, and 64% citing data spread across separate silos.

Plus, while data governance is a business imperative for safely scaling and sharing data across the organization—60% of respondents highlight governance-related disjoints as another major or frequent challenge.

76%
cite 5 or
more challenges

98%
cite at least
one challenge

How much are these a challenge for you?

Data spread across separate silos

| 12% | 52% | 35% |

Inconsistency of data sources

| 21% | 45% | 32% |

Fragmented ownership of data

| 19% | 44% | 36% |

Unwillingness of owners to share

| 18% | 40% | 39% |

Governance related disjoints

| 17% | 43% | 38% |

Discovering the data that exists

| 16% | 43% | 40% |

Accessing the data that exists

| 15% | 40% | 44% |

Uncertain timeliness or quality

| 18% | 47% | 33% |

Data is too often out-of-date

| 18% | 44% | 36% |

Uncertain data lineage

| 17% | 43% | 36% |

● Major issue for us   ● Frequent challenge   ● Generally not a problem   ● N/A (not yet active with AI/ML) / Unsure

AI Rush Reveals Hidden Hurdles

Getting access to the right data has become even more critical with the onslaught of AI, especially generative AI.

But as more companies ramp up adoption, additional data challenges are cropping up—including those driven by a lack of in-house AI expertise. In fact, 70% of respondents cite three or more challenges that get in the way when it comes to scaling AI/ML initiatives.

65% of respondents cite a lack of AI-related skills as a major issue or frequent challenge, followed by 64% citing challenges around data lineage and data fragmentation, and 63% citing insufficient infrastructure for real-time data processing.
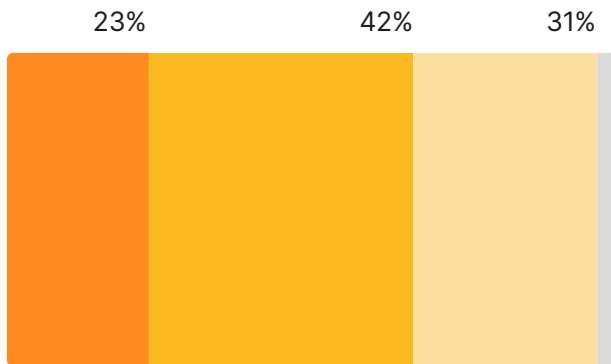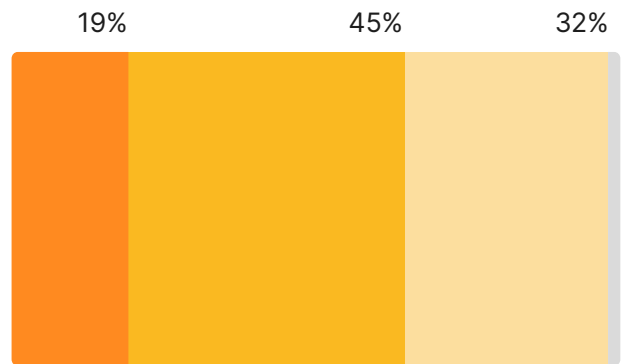
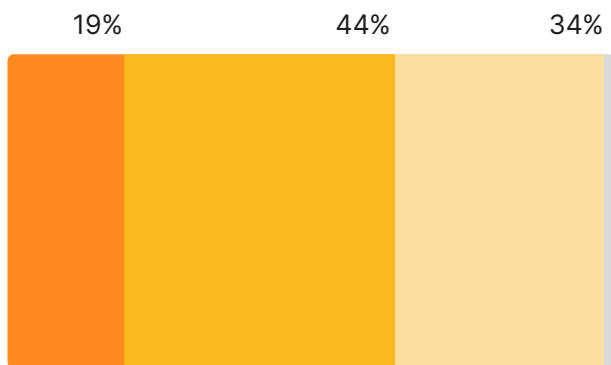**70%**
cite 3 or
more challenges

97%
cite at least
one challenge

How much of these are a challenge for you when it comes to accelerating AI/ML adoption?

23%   42%   31%

Insufficient skills and expertise in managing AI projects and workflows

19%   45%   32%

Ambiguity surrounding data lineage, timeliness, and quality assurance

19%   44%   34%

Limited ability to seamlessly integrate new data sources

19%   45%   33%
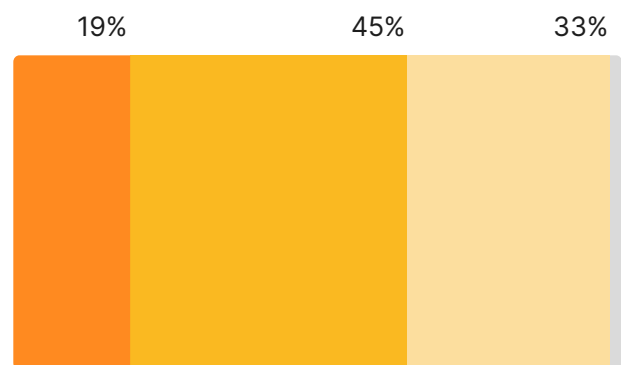
Fragmented ownership of data across disparate systems

13%   50%   33%
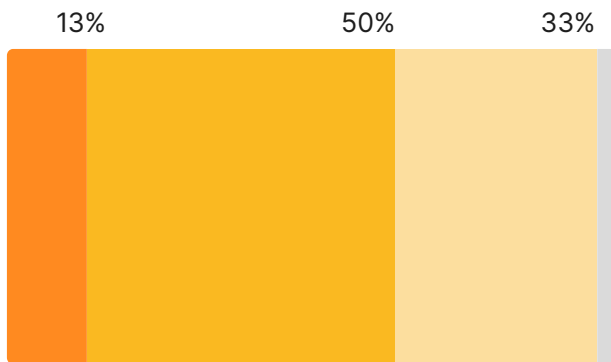
Insufficient infrastructure for real-time data processing

- Major issue for us
- Frequent challenge
- Generally not a problem
- N/A (not yet active with AI/ML) / Unsure

Paving the Path to Success

Tackling data challenges head-on is crucial for maximizing business success in a data-driven world.

Our findings confirm, data streaming platforms help organizations address many of these pervasive challenges that hinder real-time, data-driven operations. DSPs ensure data is available in real-time, everywhere it's needed—so businesses can focus on accelerating innovation instead of navigating the maze of point-to-point connections.

A whopping 93% respondents say a data streaming platform helps them break down data silos in most and many situations, followed by 88% citing help with accessing the data that exists, 86% citing help with discovering existing data, and 84% citing help with addressing governance-related disjoints.

To what degree can a DSP help mitigate these issues?

Data spread across separate silos

| 43% | 50% | 6% |

Inconsistency of data sources

| 34% | 45% | 19% |

Fragmented ownership of data

| 36% | 48% | 15% |

Unwillingness of owners to share

| 26% | 42% | 28% |

Governance related disjoints

| 32% | 52% | 14% |

Discovering the data that exists

| 40% | 46% | 13% |

Accessing the data that exists

| 44% | 44% | 12% |

Uncertain timeliness or quality

| 28% | 49% | 20% |

Data is too often out-of-date

| 28% | 44% | 26% |

Uncertain data lineage

| 28% | 46% | 22% |

● In most situations   ● In many situations   ● Rarely   ● Unsure

ACTIONABLE ADVICE

Rise Above Data Hurdles

Ensure you are investing in data tools that solve business problems. Niche tools can appear interesting but integrating them remains a challenge.

WE SUGGEST YOU:

1 Enforce governance at data production. Reestablishing trustworthiness later is almost always harder.

2 Ensure data producers create data structures with consumption patterns in mind. This means building data streams that are biased toward composability with other streams rather than producing bespoke data tailored to a niche use case.

3 Make data discoverable to encourage reuse rather than recreation. Otherwise, different teams are almost certain to make different assumptions in how they model and transform data even for similar purposes, which can impact critical business functions like decision making and risk management.

Level Up Your Data Streaming Game

As you advance your data streaming journey, it's important to keep in mind that technology is not a silver bullet. Having the right foundation in place ensures you are driving the desired business benefits with data streaming.

Here's a checklist to help propel your data streaming initiatives:

☐ **Start with securing buy-in:** It is impossible to successfully implement and ramp-up adoption of any new technology, without the full buy-in of key stakeholders who care enough to drive change.

☐ **Highlight current situation vs. target state:** This will help you create your roadmap to achieving an enterprise-wide data streaming platform that allows for managing data as a product.

☐ **Outline required capabilities:** This includes budget, and a focus on building awareness, skills, and expertise—along with change management to drive increased adoption.

☐ **Chart metrics and ROI:** As you move up the data streaming curve, determine what will be measured to test success and track cost savings and opportunities along the way.

☐ **Showcase proof-points:** Show where this has been done before and the value it has delivered.

Use Confluent and Psyncopate to your Advantage

By taking these steps with Confluent and Psyncopate, you can unlock the full potential of data streaming to drive informed decision-making, enhance customer experiences, and drive business growth:

- Assess your organization's current data processing capabilities and identify areas where data streaming can add value.

- Analyze your outline your streaming data needs, including data sources, frequency, volume, and desired outcomes.

- Create a tailored data streaming strategy that outlines your goals, key performance indicators, and implementation plan to ensure successful integration.

1 [Learn how](#) we seamlessly capture legacy app data and deliver it to Confluent.

2 [Learn how](#) we can help you start with Flink for your data processing needs.

3 [Learn more](#) about our partnership with Confluent.
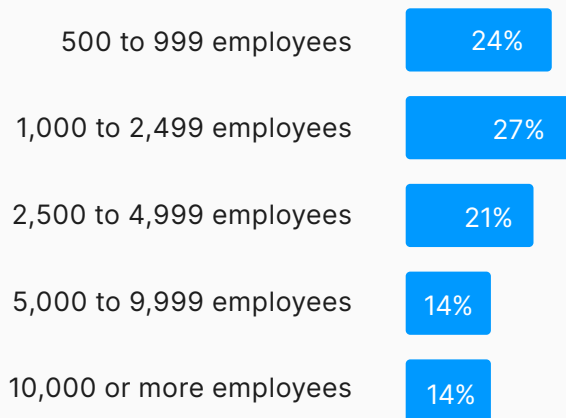
2024 Data Streaming Report

Methodology

Research sample size: For the third installment of our annual Data Streaming Report, we teamed up with Freeform Dynamics and Radma Research to gather responses from 4,110 IT leaders familiar with data streaming, varying from little to significant experience.

Respondents: Survey respondents hold various strategic and leadership positions, including C-suite, directors, vice-presidents, managers, senior contributors, and senior consultants, in companies with 500 or more employees.
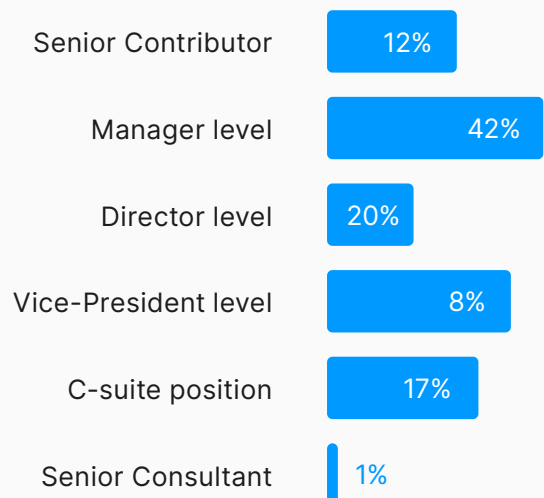
Industries at a glance: Respondents represent a variety of industries, including technology, financial services, government/public sector, manufacturing, healthcare, media/entertainment, non-profit, professional services, research/education, retail, transportation/logistics, travel/hospitality, and utilities/telecom.

Geographical distribution: The pool of respondents spans 12 different countries, including the United States, Canada, Australia, France, Germany, India, Indonesia, Japan, Singapore, Spain, the United Arab Emirates, and the United Kingdom.

By organization size

500 to 999 employees	24%
1,000 to 2,499 employees	27%
2,500 to 4,999 employees	21%
5,000 to 9,999 employees	14%
10,000 or more employees	14%

By job level

Senior Contributor	12%
Manager level	42%
Director level	20%
Vice-President level	8%
C-suite position	17%
Senior Consultant	1%

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By industry

Financial Services	13%
Gov/Public Sector	9%
Construction	5%
Healthcare	6%
Manufacturing	11%
Media and/or Entertainment	2%
Non-profit/Charity	1%
Professional services	6%
Research/Education	3%
Retail and/or wholesale	11%
Technology	24%
Transport/Logistics	5%
Travel/Hospitality	2%
Utilities/Telecom	3%
Other	1%

By geography

Australia	7%
Canada	12%
France	8%
Germany	8%
India	12%
Indonesia	5%
Japan	6%
Singapore	4%
Spain	7%
UAE	4%
United Kingdom	12%
United States of America	15%