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ANALYST BRIEF

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Time and data wait for no one — and no organization. Businesses must respond to changes and make decisions in real time. A managed, cloud-native platform can help capture the data flow and analyze it, securely and successfully.

Why Real-Time Streaming Technology Is Critical to Innovation and Gaining a Competitive Advantage

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Introduction

Every second of every day, businesses and consumers create and consume new data. We live and operate in a data-driven world where everything is happening *now*. People buy things in real time, banking happens in real time, goods are shipped in real time, and bad players try to access your data in real time.

Real-time data (i.e., what is happening *now*) is critical for competing and succeeding today. The goal is to integrate the freshest streaming and time series data into your intelligence strategy. Timely and informed data should drive decision making at every level, benefiting both internal and external customers.

The events of the past two years have taught us that companies that can adapt quickly with cloud-native, digital transformation investments have an advantage. Delays in action can put the business at risk, while proactive and adaptable data-driven decisions protect the business and drive innovation.

AT A GLANCE

WHAT'S IMPORTANT

Business runs in real time, and companies must adapt and respond as market forces and changes occur. IDC research shows that companies want to use real-time streaming data use cases to innovate and gain a competitive advantage in today's digital economy. Fully managed, cloud-native technologies help companies scale not only their clusters but also the development of use cases throughout the organization, helping them break data out of departmental silos and spreading insights across the enterprise.

Enterprise intelligence means making decisions based on data and employing the most current data available across the entire organization. A strong data culture not only has the freshest data and the better analysis but also delivers insights at scale, continuously learning and adapting faster than competitors.

Thanks to widespread cloud usage, today's real-time technology empowers that delivery of insights at scale, and the strategic use of streaming data throughout the business aligns with higher levels of digital maturity. Organizations are breaking real-time data out of its silos and implementing a streaming data strategy across departments and throughout the enterprise.

In IDC's 2021 *Streaming Data Pipeline Survey,* companies reported that industry innovation is a top business case for future streaming data projects. Companies want to use fresh data to build their enterprise intelligence, from both an operational standpoint and an analytics standpoint. But in IDC's 2021 *Future of Intelligence Survey,* less than 15% of

respondents said that they had the needed enterprise intelligence–related skills to meet their goals. So, with the data- and analytics-related skills shortage and the ever-expanding number of use cases, companies across all verticals report challenges with real-time streaming, especially the ability to scale their streaming data clusters. Open source Apache Kafka enables real-time streaming and real-time decision making but can be burdensome to operate.

Over 70% of companies have indicated that they plan on using managed services for their future streaming data projects.

To meet these challenges, more companies are looking to fully managed, cloud-native solutions for help with real-time data. Over 70% of companies have indicated that they plan on using managed services for their future streaming data projects. Managed solutions that offer dynamic, low-latency scaling allow companies to innovate and bring their use cases from conception to production much more quickly, without compromising on security or data trust. Cloud-native streaming technologies that enable hybrid and multicloud environments are attractive, especially for the resilient enterprise that wants to deliver insights at scale within the entire organization as well as its external network of customers and partners.

Definitions

IDC defines the streaming data pipeline as the continuous movement — import or export — of data in a high-performance system. In real time, the pipeline connects to and receives event streaming data from trigger event sources such as change data capture (CDC), databases, sensors/Internet of Things (IoT) devices, mobile devices, log files, transactions, online interactions, or messages. The pipeline can then deliver the data to processing, streaming integration, streaming analytics, or a static repository. Speed/throughput and scalability are imperative performance metrics for the streaming data pipeline.

IDC's Future of Intelligence practice defines enterprise intelligence as an organization's capabilities across four pillars:

- Synthesis of information
- Delivery of insights at scale
- Capacity to learn
- Having a strong data culture

These pillars are driven by a technology foundation, processes, and people that result in positive business outcomes.

Benefits

Streaming data use cases exist across all industries, from manufacturing to financial services and retail to healthcare. Today, about 44% of North American enterprises are processing streaming data as part of their overall DataOps solutions. They are using streaming technology that allows for real-time or near-real-time decision automation and decision support. Running a business in real time demands a shift from thinking about *storage and batch* to instead thinking about *processing and flow*.

We need to see the signals in the data as they happen. Streaming technology can help analyze or visualize data on an event-driven basis, monitor systems or supply chains, populate real-time dashboards, improve customer experience to boost customer retention, or build real-time applications.

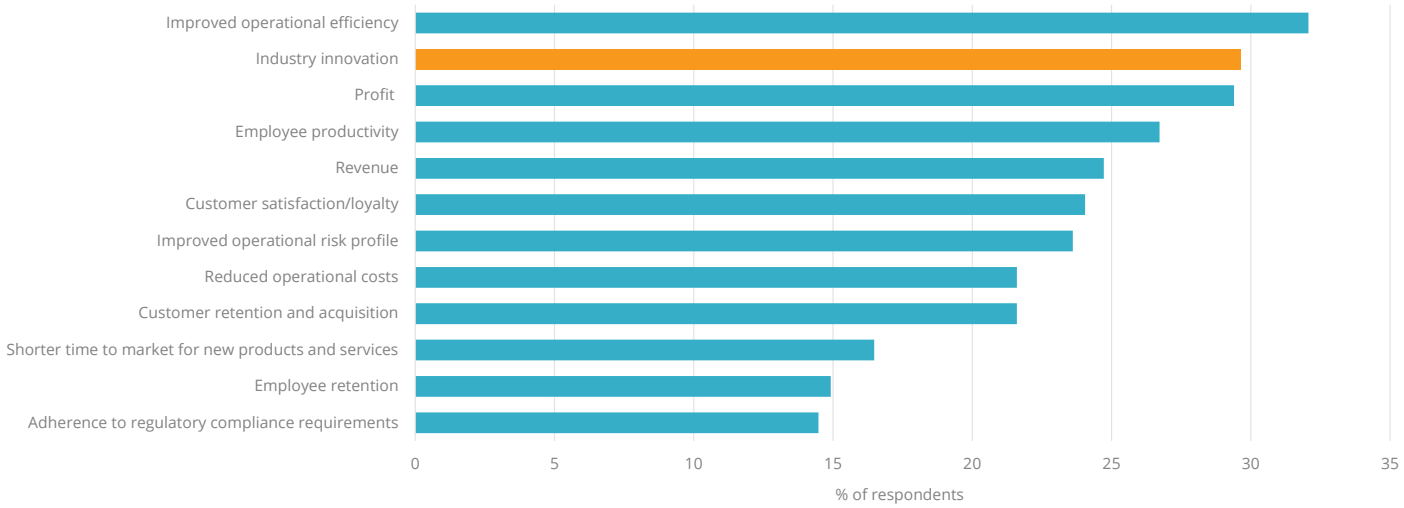
Imagine a financial institution, for example, that employs streaming and time series data for fraud detection, customer experience, and real-time marketing. Real-time security monitoring probably started the institution's streaming journey, but then success and strategy helped expand use cases across different lines of business, including marketing and customer experience. Real-time data streaming not only helps the bank operationally; it also helps the bank innovate and drive new forms of revenue.

Or consider the example of a healthcare company whose hospital system is populating its analytics tools with a mix of historical/batch and streaming data from patient and room IoT telemetry monitors. With that single source of truth, the company is improving patient care and outcomes, optimizing nurse scheduling, removing redundant tasks for frontline workers, and boosting employee morale.

These are examples of using streaming data to innovate and drive insights at scale. Real-time data allows for innovation that helps businesses differentiate and disrupt. The demand for these benefits is shown in Figure 1.

FIGURE 1: ***Companies Want to Innovate with Streaming Data***

Q ***What is the business case for making the investment for new streaming data capabilities in the next 12–18 months?***



n = 626

Source: IDC's Streaming Data Pipeline Survey, December 2021

Considerations

IDC data shows that companies are spending more on IT that boosts innovation than on maintenance. The C-suite and senior leaders are tracking strategic moves and innovation investments rather than well-worn use cases. And they report a high level of understanding of the benefits of incorporating streaming and time series data into the broader data strategy. But it is the job of IT and operations to implement that strategy, and streaming architecture and technologies can be complex.

When companies are faced with the complexities of running and scaling open source solutions, a managed solution becomes attractive. In fact, IT not only has to scale its streaming clusters but also must scale its full-time, internal resources around a myriad of projects. IDC data shows that when companies abandon their streaming projects, it's typically because the projects took too long to implement or that they were too difficult to maintain once in production. A fully managed solution can save streaming use cases.

The primary consideration when partnering with a technology vendor for data streaming is security. Security drives many IT mandates around data. It is well-tracked and of high value within the enterprise, and when it comes to mission-critical workloads, trust and control are paramount. Using a trusted partner for your real-time data can alleviate governance concerns, especially those around various cloud infrastructures, data access, monitoring, and disaster recovery.

Key Trends

- **New technology platforms that can handle the complexity of real-time data to enable more driven business decisions.** The amount of accessible data grows exponentially. Greater diversity, distribution, and volume of data — especially data coming in from real-time streams — require technology that does not compromise accuracy or latency as large data sets are ingested, organized, and visualized for key decision makers or processes.
- **The exploding number of streaming data use cases being adopted.** Companies that are currently investing in streaming data projects have plans to invest in more use cases. According to IDC data, 80% of companies that are using streaming and time series data plan to research or invest in new use cases in the coming months.
- **Growing need for streaming data technologies and platforms given increasing skills shortage.** Organizations will continue to face a significant shortage of skills related to streaming and times series data and overall enterprise intelligence. Organizations will not be able to meet demand for these skills in-house.
- **Growing demand for more managed services.** Companies are showing a strong desire to move to more managed solutions that can include security, better cost controls, and more automated scalability — both expansion and contraction of resources — and that allow more streaming and real-time projects to be added with fewer manual interventions once in production. Managed solutions can offer prescriptive tools and predefined scripts and connectors that can democratize access to real-time data and help boost insights across the business.
- **Cloud-native solutions that help companies innovate and deploy real-time projects at scale, securely.** The data feeds that are populating streaming pipelines likely come from a variety of sources. Building streaming applications on secure cloud-native architecture can dynamically scale clusters, automating one of the most difficult parts of data streaming. It can also speed time to full production as well as build internal trust about the project. IDC survey data shows that security capabilities are the number 1 factor when choosing a commercial streaming data partner.

Conclusion

The amount of data we create and consume is growing, and the movement of data is only getting faster. More than 6.6 billion data-creating devices are adding more and more data, every single second, into the global datasphere.

But time and data wait for no one — and no organization. Businesses need to respond to changes and make decisions in real time. A managed, cloud-native platform can help businesses capture data flows and analyze them, securely and successfully. It can also help organizations innovate faster by removing the need to manage the infrastructure or delay a use case implementation because developers are spread thin and focused on other projects.

Intelligent enterprises will harness technology to break the bottlenecks. They will consider leveraging and partnering with cloud-native technology suppliers that help them achieve their strategic goals, including weaving streaming data into their historical processes, meaning without compromising on security or mission-critical workloads. With the right partner, real-time automation and automated decision making based on timely analytics are possible. And there is no greater advocate for implementing real-time streams into the architecture than a successful use case that is driving a tangible business benefit. Managed platforms can help spread that success, breaking down silos, removing friction between systems, and helping organizations innovate and achieve insights at scale, enterprisewide.

About the Analyst

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Amy Machado is a Research Manager for IDC's Streaming Data Pipeline coverage, advising clients on the growing market opportunity and its technology trends. Ms. Machado's research tracks and analyzes the market for streaming data movement, integration, management, and analytics software, which is developed and deployed to drive real-time business solutions.

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About Confluent

Confluent solves one of the most important problems for businesses today: unlocking new value from data. As data sources and data volume grows constantly, it's essential to make that data work for your company so you can exceed business goals and stay ahead of the competition. Confluent's complete data streaming platform lets you connect your apps and data systems with real-time data storage, management, and processing (https://www.confluent.io/solutions/). With Confluent, you can create data pipelines and turn data events into outcomes, build intelligent apps, and empower any team to act on data instantly. Confluent's founders invented Kafka, then rearchitected it for the cloud, so it's able to work across any cloud and on-premises resources to establish a central data layer. Confluent's customers have found success across industries with use cases ranging from fraud detection and predictive analytics to customer 360 views and gaming telemetry.

See how Judo Bank adopted data streaming and created a data foundation to better serve customers.

IDC Custom Solutions

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