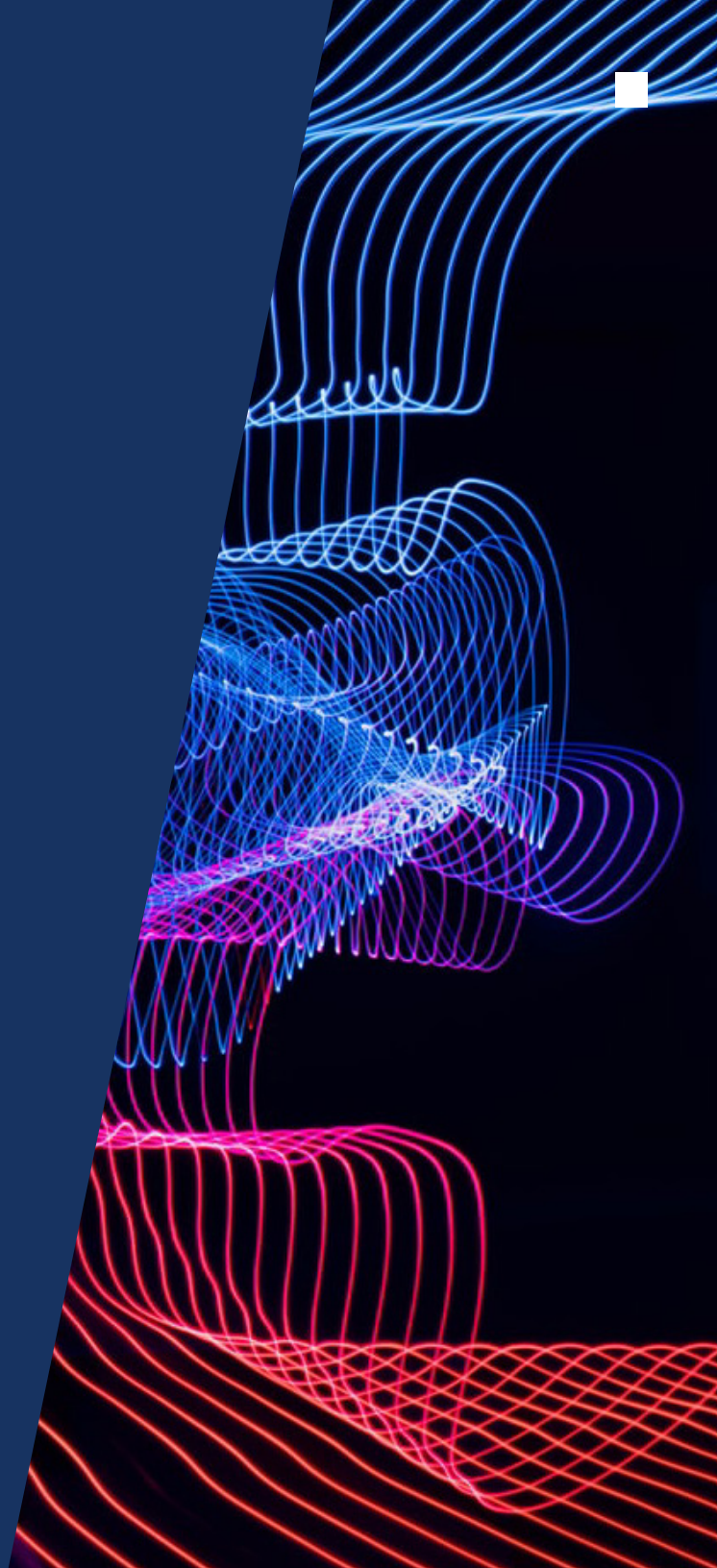
CONFLUENT

Organizing for Enterprise Event Streaming

The New Central Nervous System of Business



Like many big retail companies, Walmart had in place disconnected systems for point-of-sale (POS) transactions, inventory management, supply chain operations, pricing, and their new customer 360° databases. Each of those systems generated plenty of data every single day, but that data was siloed from team to team, which limited how it could be used.

Now, with Apache Kafka® as an event streaming backbone, the retail giant has near-real-time inventory systems and sophisticated use cases around fulfillment, security and fraud, customer website interaction, and more. Event streaming connected all the data to create many integration points across the entire organization, and the flow of data now feeds the business, enabling Walmart to offer exceptional customer experience.

Today, using Walmart's app, a parent can place a grocery order while at their child's soccer game, then pull up to the curb at the store on the way home, where an associate loads their hatchback. Kafka enables this process from beginning to end, facilitating the customer's interaction with the app, capturing the user's behavioral data, and managing the data that flows into the management system through to actual fulfillment. Walmart processes 11 billion events a day in Kafka.

Walmart is a $500 billion in revenue company, so every second is worth millions of dollars. Kafka and Confluent are the backbone of our digital omnichannel transformation and success.

— VP of Walmart Cloud

Read Walmart's Real-Time Inventory System Powered by Apache Kafka ▸

In this ebook, learn how all kinds of enterprise businesses are solving fundamental problems and enacting true transformation via event streaming. You may already have event streaming in your organization to some degree. Perhaps you're using Kafka here and there to solve particular use cases. But to truly realize the power of event streaming requires a new operating model that can deliver much higher value to customers and stakeholders.

Read on to learn about the adoption curve of event streaming and how to gain momentum and effect change within your organization.

The ramp-up to event streaming with strategic intent

The hardest sell in the world was the first telephone.

— Old adage

The event streaming adoption journey is typically not via a big bang deployment; it's a series of small revelations. Initial event streaming initiatives tend to be developer led. Technology like Kafka is employed when a team or a line of business has specific challenges in moving data around at scale. This might solve an immediate problem, but the holistic business impact of an event streaming platform isn't always clear at this early stage.

Typically, use cases start to multiply throughout organizations as teams realize that event streaming is an ideal way to solve a myriad of business problems associated with working with real-time data, at scale, in a highly efficient and resilient way. As more and more use cases emerge, event streaming gains momentum among both IT teams and lines of business.

Organizations adopting event streaming typically follow a particular maturity curve. From "early interest" to integration of event streaming as the central nervous system of an organization, there are **five stages to streaming platform** adoption that look something like this.

Organizations might move through stages 1 to 3 organically. In these early stages, event streaming often remains a tactical solution. Strategic intent comes when various disparate projects, or siloed organizations, start to connect, which happens around stage 4. This is where Metcalfe's law, aka the network effect, kicks in.

The 5 stages of event streaming adoption

Metcalfe's Law

AKA "THE NETWORK EFFECT"

Communication networks increase in value in proportion to the number of users.

Metcalfe's law is a critical one in the digital-centric business world. It drives the business models of valuable social networks such as Facebook and Twitter. It even explains the staggering proliferation of the World Wide Web in the first place. In a nutshell: the more users, the more valuable the network.

Today, Metcalfe's law can also be used to describe the business value of event streaming to enterprise-grade companies beyond the digital native. When more events are published to an event streaming platform, the number of subscribers might increase. The more subscribers, the more publishers—in turn driving more subscribers. In fact, when used as an enterprise-wide platform, event streaming can truly act as the central nervous system of a business.

There's massive business value inherent in event streaming, but to realize this value, you have to be assertive, driving adoption beyond the organic stages of adoption and into stage 4. A new operating model may be required at this point in order to leverage event streaming to its full capability and truly transform the business.

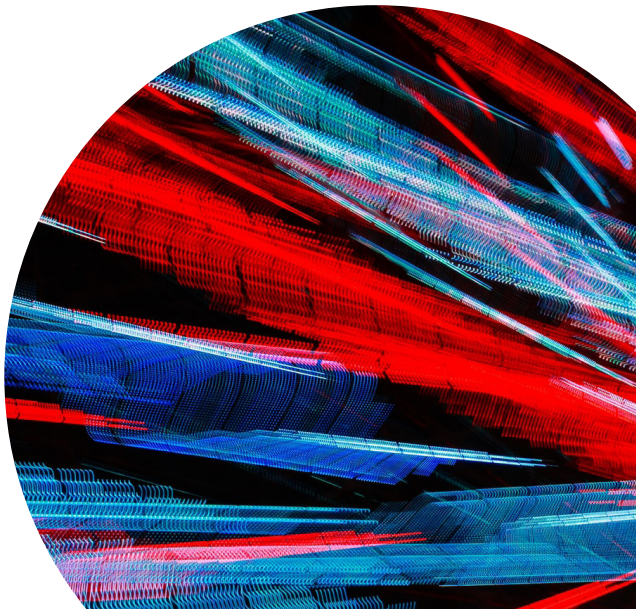
An operating model is simply a way to describe how an organization operates in order to deliver optimal value to its customers. It refers to how people and teams are organized to support enterprise-wide event streaming capability—how decisions, including investment decisions, are aligned to business objectives. Strategic operating models don't happen by accident. Most organizations need to consider complementary process changes.

Steps 3 to 4: The critical transition

In stages 1 to 3 of the adoption journey we see new event streams across individual production use cases, data processing is moved from batch to real time, and building for scale is made possible. Typically these stages are developer-led initiatives, with budgets arising from specific projects. We likely do not need to consider a wider impact to operating models in these stages.

In the jump from stages 3 to 4 we see lines of business connect use cases, which requires previously disconnected projects and teams to sync up. A platform-central team may be required, with more central budgeting, decisions, training, and skills, as well as a focus on enterprise-wide standards. This is where the operating model conversation really kicks in.

As an organization's approach to event streaming grows and matures, the focus shifts from improving IT and infrastructure to how event streaming drives business value, including creating better customer experiences. This is only really achieved once real-time events are shared across an enterprise.



The leap to contextual, event-driven applications

One of the benefits of climbing the event streaming adoption curve is the ability to deliver contextual, event-driven applications. By this we mean the capability to leverage multiple, diverse sources of data to create intelligent, real-time applications that can mix past events (historical data, or context) with current events. By connecting data points, event streaming can significantly enhance the customer experience. Taking into consideration events of the past, applications can be built based on insight into what is happening right now and what might happen next.

When you combine these events, you can provide personalized, targeted, contextual information in real time. It's the difference between providing a cab driver's location (a simple event) with an ETA (mixing the event with other contextual data, such as traffic conditions and the driver's previous behavior). If an enterprise wants to understand its customer, it needs to connect all diverse datasets in order to deliver contextual, event-driven experiences.

The interest of business decision-makers is often piqued when they realize that event streaming platforms, when integrated fully, can allow real-time response to customer events and provide a much stronger end-user experience. Again, as new business units write and subscribe to the enterprise-wide platform, we see Metcalfe's law in action, driving the business value of the platform higher and higher.

An **automotive maker** wants to track consumer behavior from interest (pre-sales) to purchase (sales) to driver activity (post-sales). This is made possible with a connected car and an event streaming platform. Now, the automotive maker has a customer 360° profile from pre-sales to post-sales through maintenance and renewals, increasing the likelihood of creating a brand customer for life.

A **finance institution** has traditionally been organized into siloed divisions: personal banking, credit card customers, insurance, business accounts, etc. Each has its own backend systems and data silos. By sharing data, the finance institution can offer an omnichannel customer experience and drive customer loyalty.

A **retailer**, previously handling its online and brick-and-mortar businesses as two independent units, has multiple stock and inventory systems. By integrating the systems with an event streaming platform, the retailer can enable a stronger supply chain, better stock management, elevated customer experience, and overall profitability.

1

Hire talent with the required skills and vision

Talented digital champions can see beyond standalone efforts to set the long-term vision for event streaming. The opposite can also be true, of course. People who claim to know and understand Kafka sometimes view it merely as a data pipeline. This perception can potentially impede progress and stymie business value.

The talent you hire must possess the grand vision for enterprise-wide event streaming. Ensure your data architects and infrastructure leads understand the full strategic impact of this domain. You want your best resources focused on building business differentiation capability. They need to be supported by a leading-edge data stack that delivers access to real-time events across the enterprise, and mix this with contextual data. This is not about setting up and managing Kafka clusters that create short-term solutions. This is about the fundamental strategic advantage that the core data infrastructure can help deliver.

Given Metcalfe's law, most companies today could benefit from connecting data and teams in ways they weren't connected before. Yet, it's quite typical for companies to get stuck making the leap from stage 3 to 4. This is because a new operating model, often with a central shared service for event streaming, may be required to deliver this capability.

For many companies already using Kafka, the shift to a truly integrated event streaming platform is held up less by technology than by people and processes. Of course, the "people challenge" is a common theme in all kinds of broad transformations. When McKinsey & Co. surveyed chief information and technology officers across 52 enterprises, they found talent gaps and change management complications to be two of the top three challenges.

To make the leap from stage 3 to stage 4 on the event streaming adoption journey, and chart a course for a new organization, or new operating model, we have four best practices we recommend.

The companies with the highest returns on their technology investments did more than just buy technology; they invested in organizational capital to become digital organizations.

— Erik Brynjolfsson and Adam Saunders in Wired for Innovation: How Information Technology Is Reshaping the Economy

2

Seek executive sponsorship—then focus on the people and organizational elements

Most organizations begin their Kafka experience with a bottom-up, self-managed model. At first, getting talented personnel in place is key to making it work. As organizations move along the maturity curve, they must ensure the teams are supported by people with the vision for moving from stage 3 to stage 4—connecting the platform across multiple lines of business. To reach level-4 maturity, enterprises must connect lines of business and teams that were not previously fully connected. This isn't a technical challenge so much as a *people or operating model problem to solve*.

This type of activity typically requires executive buy-in. Executives must clearly understand the size of the prize—they must appreciate the business value at stake. This may require some form of business case or outline of the value potential. Historically, projects with a clear business case and executive sponsorship stand a much greater chance of success. Transitioning from level 3 to level 4 of the event streaming maturity curve is no different.

The operational burden of managing Kafka at scale

Every company is unique, and within a company, different teams might have different setup and operational requirements for Kafka. At Confluent, we've seen teams new to Kafka and those with nearly a decade of experience. We've seen companies with teams of two or three people dedicated to setting up and managing Kafka and others with teams of 75 or more.

There's no right or wrong approach or team size when you begin to use Kafka. But as you move along the maturity curve of event streaming, it's important to have an objective so you're maximizing your team for efficiency. This can mean centralizing an event streaming platform team. Sometimes, however, we see valid reasons to have multiple event streaming platforms within an organization. There are obvious advantages to business application teams remaining embedded in the business unit, accountable for delivering business impact.

Regardless, it's critical to have a management layer that supports basic service components, because as organizations progress on the event streaming journey, stakeholders need guidance around how to set up services and teams.

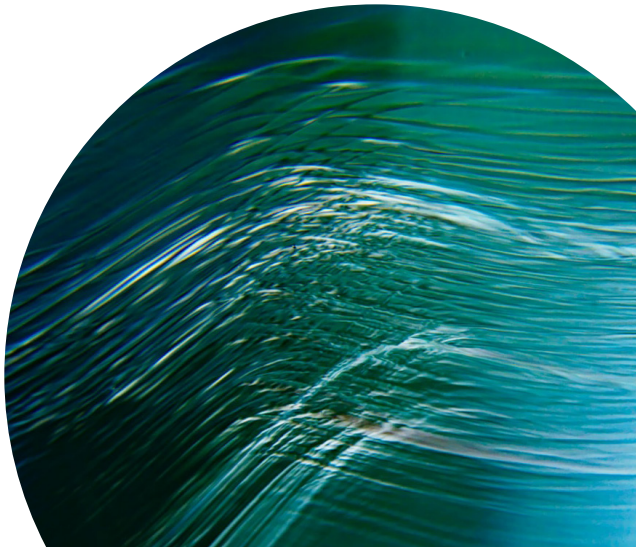
Confluent can relieve a lot of the setup and operational burden of event streaming with our fully managed service, **Confluent Cloud**. Whether you bring in experts like Confluent to help you manage your event streaming, you still need to think about your strategy and overall operating model—how to organize to get the most value out of the platform.

3

Develop an operating model that supports a cross-enterprise data platform

As use cases expand, functions like finance, inventory management, supply chain, and customer service must begin to share not only data but also ways of working and interacting with the event streaming platform. Silos within your organization will hinder your ability to cross-work. In stage 3, project teams often have different ways of working, or even different versions of the same technology. Stage 4 requires standardization. This is where we typically see the introduction of a central shared service, or center of excellence (CoE), for event streaming.

With centralization comes efficiencies and economies of scale. This also enables business units to coordinate closely with one another through the service. Successful organizations update their operating models, processes, and ways of working, from people to governance. Coordination across lines of business is the key element to success. There's no substitute for thinking an operating model through fully and aligning it to your specific organizational setup and business value proposition. Don't underestimate the work involved in changing how teams operate—including potentially changing their reporting lines. In our experience, the payoff is well worth the effort. Often, there is an immediate rationalization benefit in merging teams alone.



4

Ensure successful cross-working and early service components

Finally, there have to be centralized processes around support, infrastructure setup, monitoring, change management, and more. As event streaming becomes centralized, we often see the additional implementation of data governance models that rely on metadata and data lineage, as well as data schemas and new requirements around choreography. Occasionally, we see organizations look to implement internal charge-back or cross-charge mechanisms for the event streaming platform. Confluent can help here.

Addressing people and operating model challenges with Confluent Cloud

As you're reviewing your event streaming strategy and considering each of the recommendations above, it's worth reflecting on the service you want to build. The cloud has become a critical component of delivering an enterprise-wide event streaming platform. We built Confluent Cloud to help address some of the *people challenges* in setting up and operating an event streaming platform: hiring, training, retaining (and paying!) your top talent.

You want your most valued technical resources focused on building your core mission-critical business applications. That's what will differentiate you as a business, not building and supporting Kafka clusters. Our aim is to provide a leading-edge managed service that takes these tasks away from our customers and puts them on us.

This year, we launched **Project Metamorphosis** with the aim of making it dramatically easier for any organization to use event streaming to unlock new business, exceed customer expectations, and drive massive operational efficiencies. It includes characteristics such as:

Elastic scaling: Enabling organizations to quickly scale Kafka to keep mission-critical apps running with no lag or downtime and without over-provisioning expensive resources

Cost-effective: Keeping the costs of running Kafka low and your best people focused on critical projects, driving competitive advantage and revenue

Infinite: Supporting efficient scaling of Kafka storage to make sure you can retain as much data as you need without pre-provisioning storage you don't use

Everywhere: Ensuring your Kafka infrastructure is flexible enough to adapt to your changing cloud requirements

Global: Distributed real-time events across the globe, accessible from anywhere

As you're increasing event streaming maturity and considering the team, operating model, sponsorship, and overall ways of working, also consider how you want your event streaming to be delivered.

The ultimate flywheel of adoption

The introduction of an event streaming platform which acts as a central nervous system managed by a central shared service or platform team is an indicator that the enterprise is entering the final stage of adoption: level 5. If done right, things often accelerate quickly from stage 4 to 5. The more business use cases that are added, the more events there are, the more powerful the platform becomes. In some large enterprises, we've seen the addition of over 30 new applications leveraging Confluent Platform in just a matter of weeks.

At this point in the journey, enterprise users reach the true enterprise platform business model and realize competitive advantages in terms of:

- → Enabling new ways of working and new business models
- → Delivering more effective and efficient services, such as improved customer experience
- → Reducing costs and helping manage or mitigate risk

At stage 5, an event streaming platform becomes ubiquitous and contextual event-driven applications become the enterprise standard. Here, the business has largely developed into a real-time digital business, responsive to customers and able to create business outcomes in ways never before possible.

If you'd like to talk to a Business Value Consultant, **contact us** today.

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ABOUT CONFLUENT

Confluent, founded by the original creators of Apache Kafka®, pioneered the enterprise-ready event streaming platform. With Confluent, organizations benefit from the first event streaming platform built for the enterprise with the ease of use, scalability, security, and flexibility required by the most discerning global companies to run their business in real time. Companies leading their respective industries have realized success with this new platform paradigm to transform their architectures to streaming from batch processing, spanning on-premises and multi-cloud environments. Confluent is headquartered in Mountain View and London, with offices globally.

To learn more, please visit
www.confluent.io

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www.confluent.io/download