

Journey to a Real-Time Enterprise

Neha Narkhede,
Co-founder/CTO at Confluent,
Co-Creator Apache Kafka



Infrastructure Technology



Adoption in Silicon Valley

intuit.

 Square

NETFLIX

 Dropbox

GoPro

stripe

 airbnb

coursera



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Adoption in the Enterprise



Fortune 500's are using Apache Kafka™



Travel Companies



Global Banks



Insurance



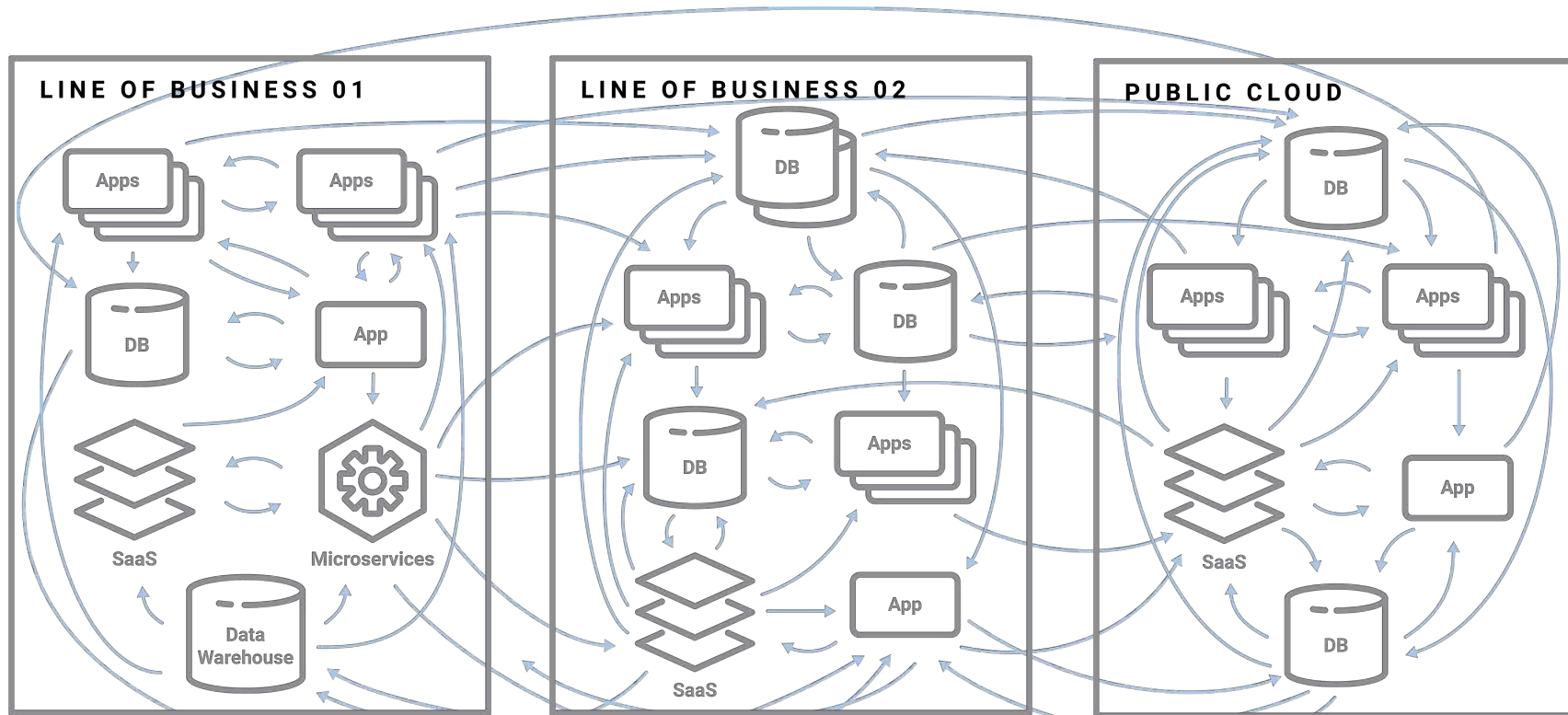
Telecom



Emergence of the Streaming Platform



Pre-Streaming

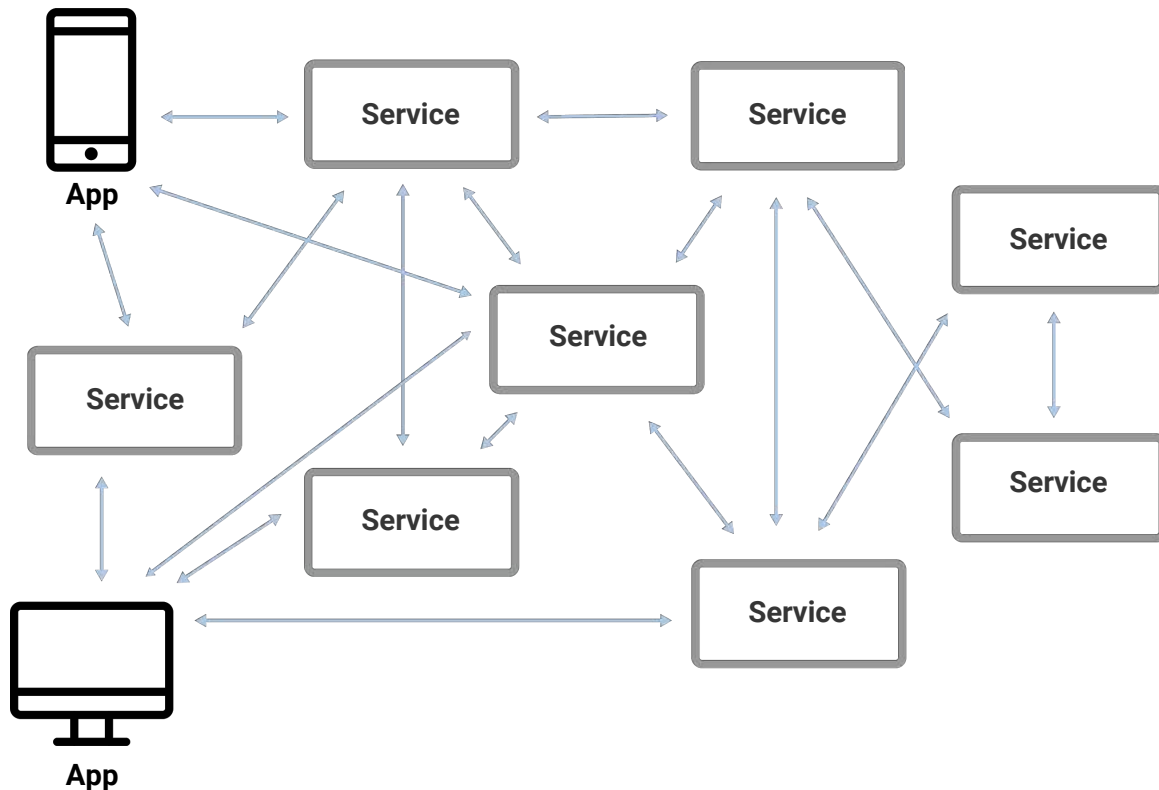


Request-Response Applications

Deterministic

Rigid

Tight coupling

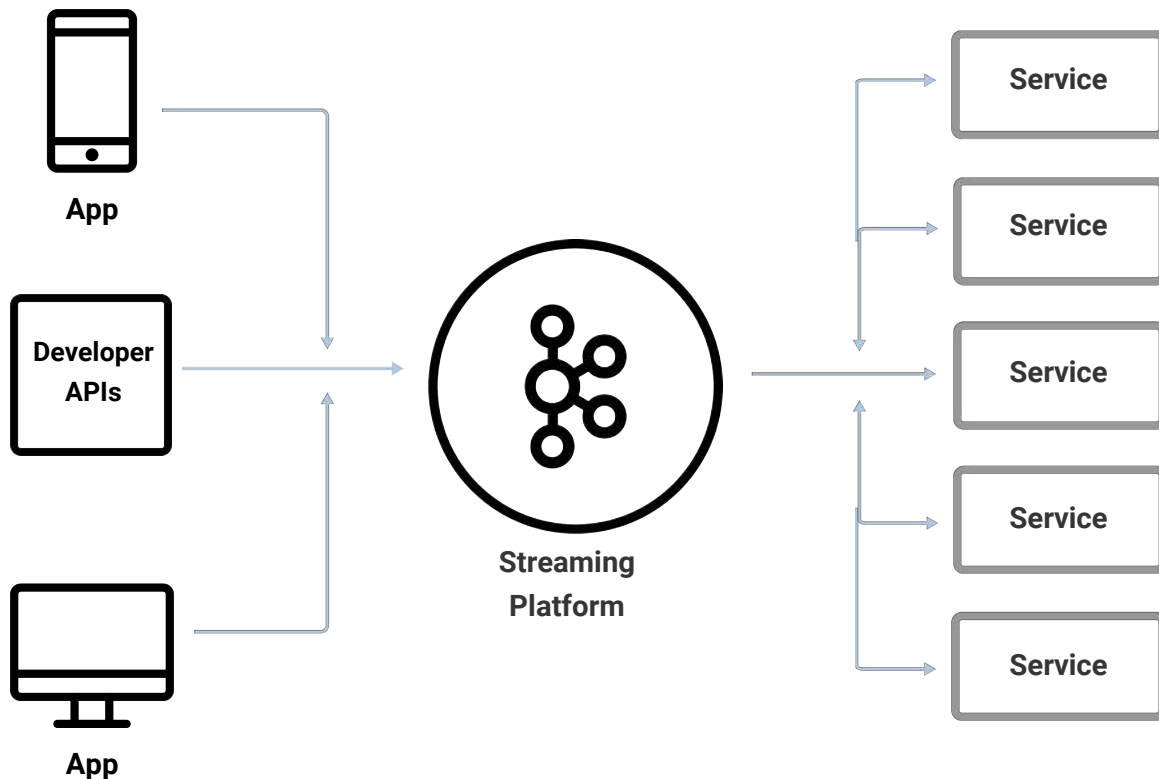


Event-Driven Applications

Responsive

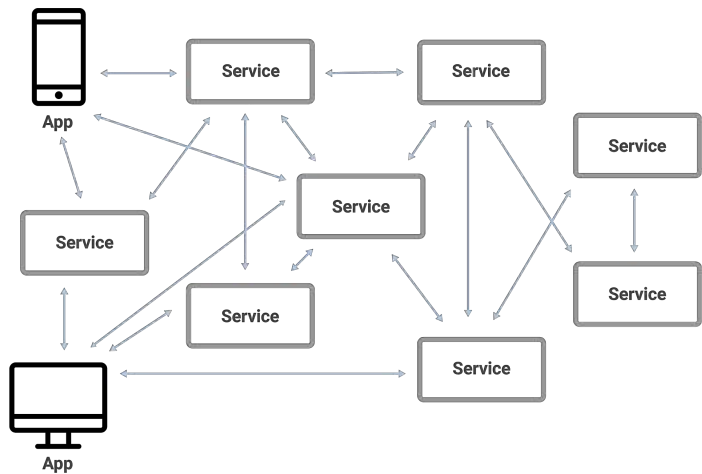
Flexible

Extensible

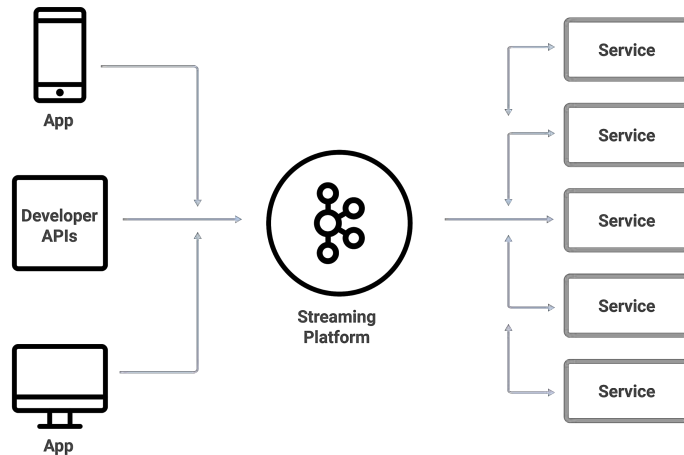


Pre-Streaming -> Event-Driven

Request-Response



Event-Driven



Why Didn't It Work Before?

Past Solutions Are Insufficient



Message-Oriented Middleware

- No persistence
- Single point of failure
- Not fault tolerant
- Cannot order messages
- Cannot process messaging in flight
- Order of magnitude lower throughput
- No "Replay" functionality



EAI & ESBs

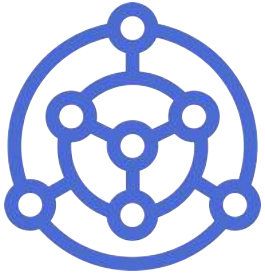
- Not event-oriented
- Fragile and bespoke
- Weak transformation capabilities



ETL

- Often slow, batch oriented, and non-scalable
- Point-to-point not publish subscribe
- Not a true infrastructure platform

The World has Changed



Internet of
Things



Microservices

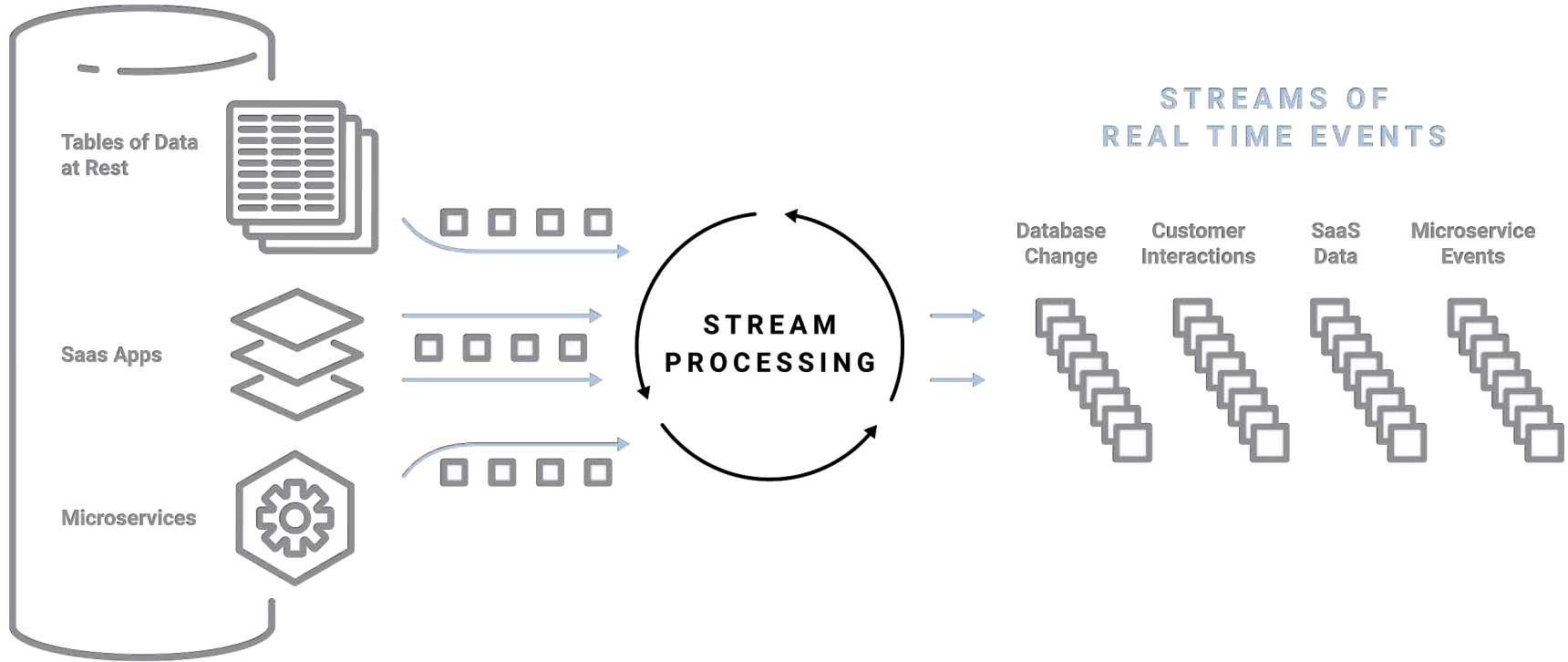


Mobile



Machine
Learning

What's Needed? Event Centric Thinking



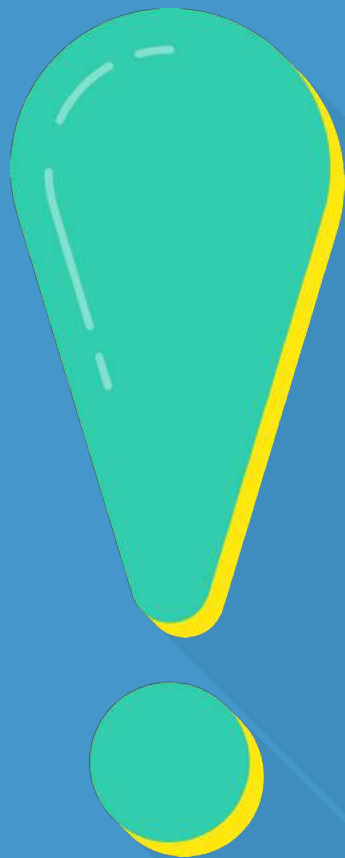
Events

What is an event?



Events

SOMETHING HAPPENED



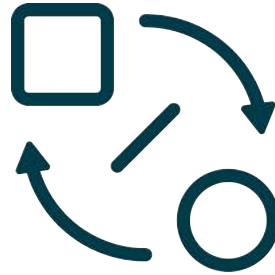
Events



A Sale



An Invoice

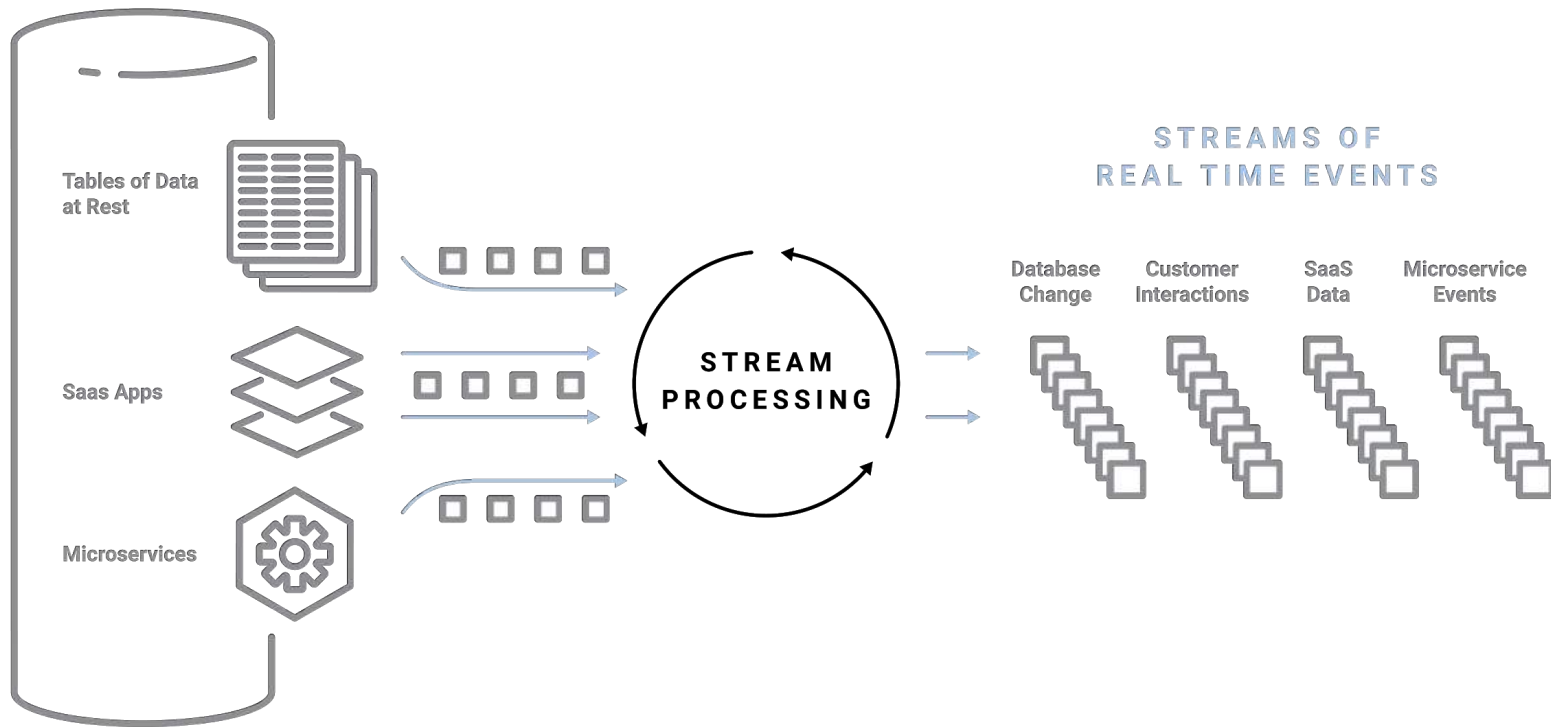


A Trade



A Customer
Experience

All Your Data is Streams of Events



An aerial view of a city skyline, likely Toronto, featuring the CN Tower and various skyscrapers. Overlaid on the image are several concentric, glowing blue and white circles and arcs, suggesting a network or data flow. A solid white horizontal line is positioned at the top of the frame.

What is a Company?

A business is a series of events and reacting to those events.

Event-Driven Government

Norwegian Work and Welfare Administration

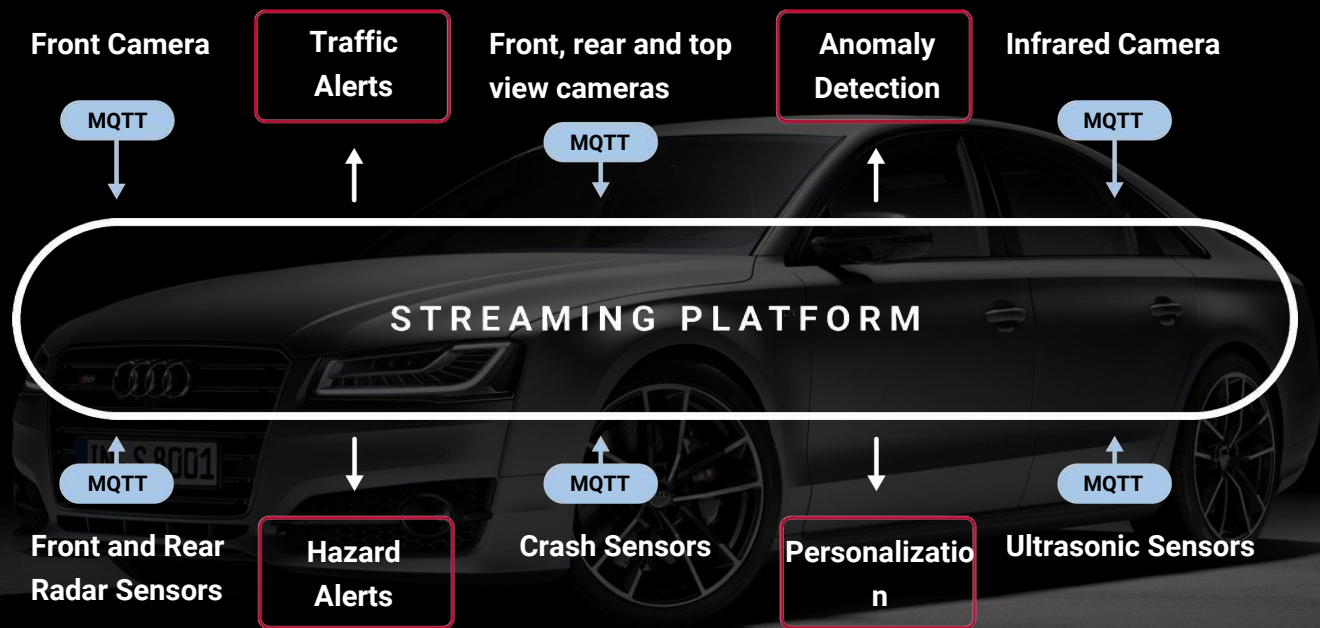


Life is a Stream of Events

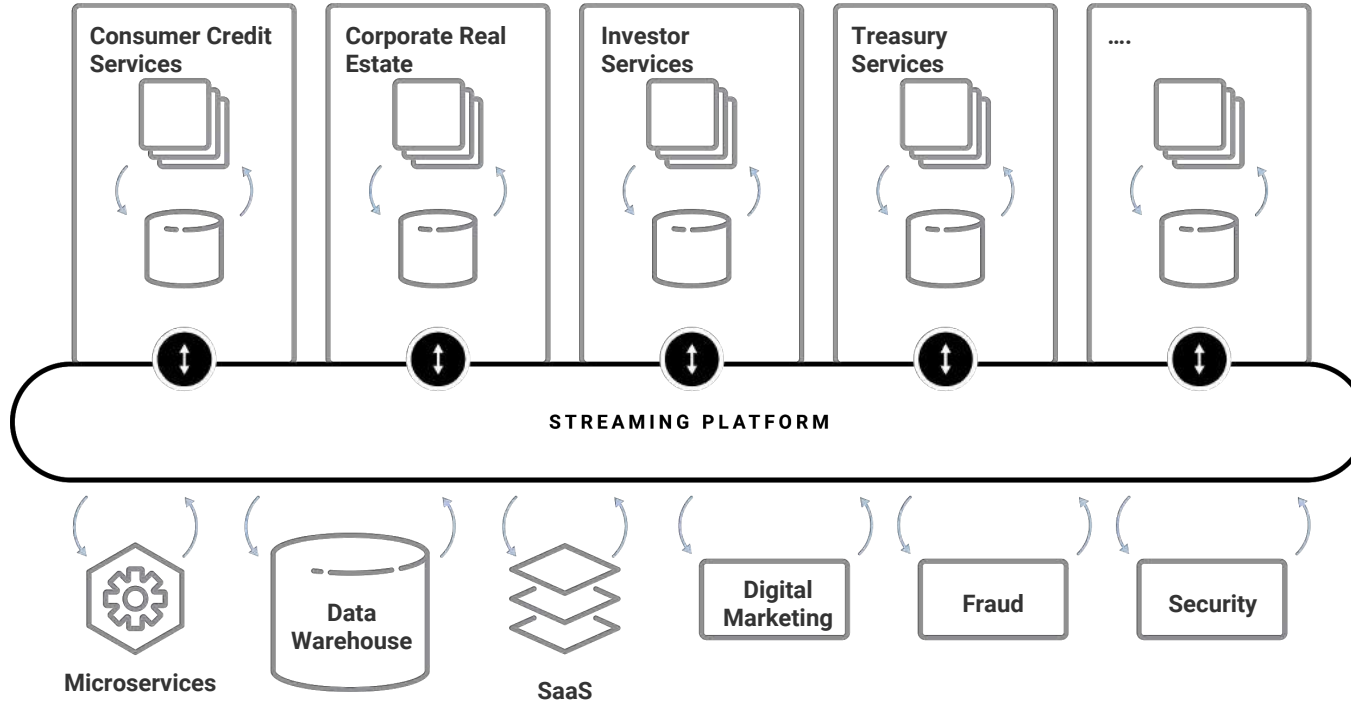
5.2 Million Citizens



The Future of the Automotive Industry is a Real Time Data Cluster



Royal Bank of Canada Event-Driven Banking

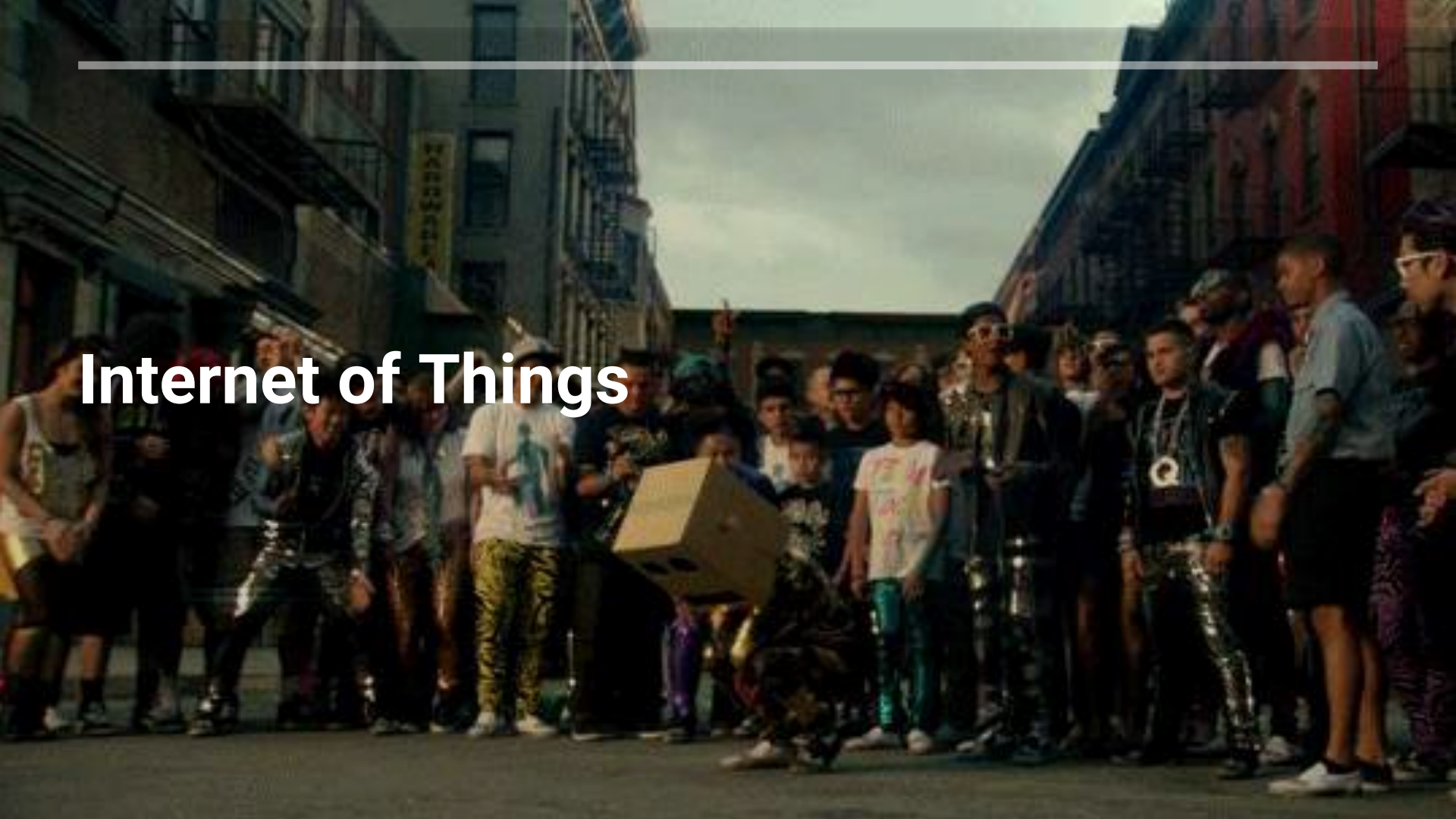


30+ Use-cases

50+ apps

10+ different lines
of businesses

Internet of Things

A large crowd of people is gathered in a city street, possibly during a protest or a public demonstration. The crowd is diverse in age and appearance, with many individuals wearing casual clothing like t-shirts and jeans. Some people are holding up cardboard boxes, and one person in the center is holding a large, light-colored box. The street is lined with multi-story buildings, and the sky is overcast. The text "Internet of Things" is overlaid in white, bold, sans-serif font on the left side of the image.

A close-up, black and white photograph of a banknote, likely a Euro, featuring a prominent watermark of a stylized eye. The watermark is composed of concentric, wavy lines that form the shape of an eye, looking towards the right. The background of the note is a dense, fine-lined pattern. The word "Banking" is overlaid in white, bold, sans-serif font on the left side of the image.

Banking

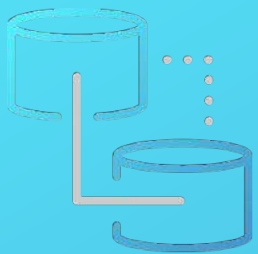


Retail

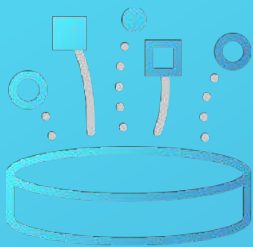
What is a Streaming Platform?

The Streaming Platform

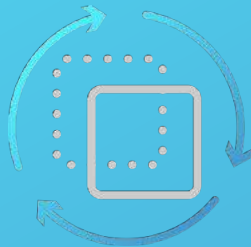
Technical Capabilities



Publish & Subscribe



Store



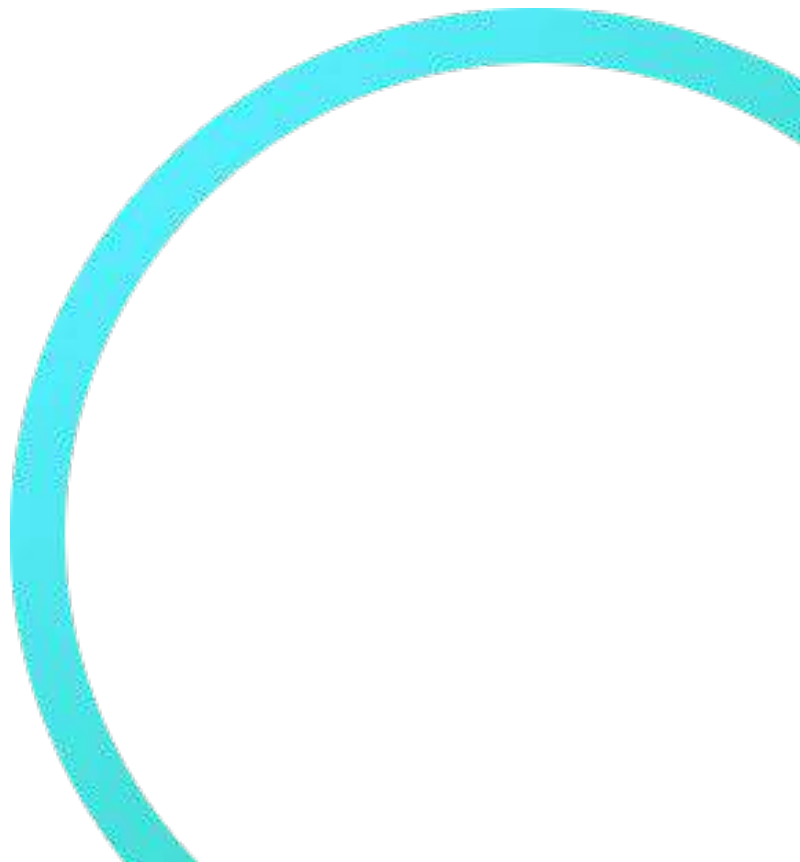
Process

Three Lenses



Lens 01

Messaging done right.



Lens 01

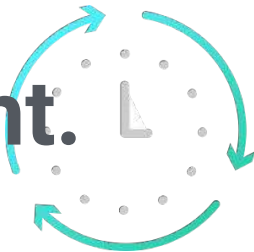
Way More Than Message Queue



Scalability



True Storage

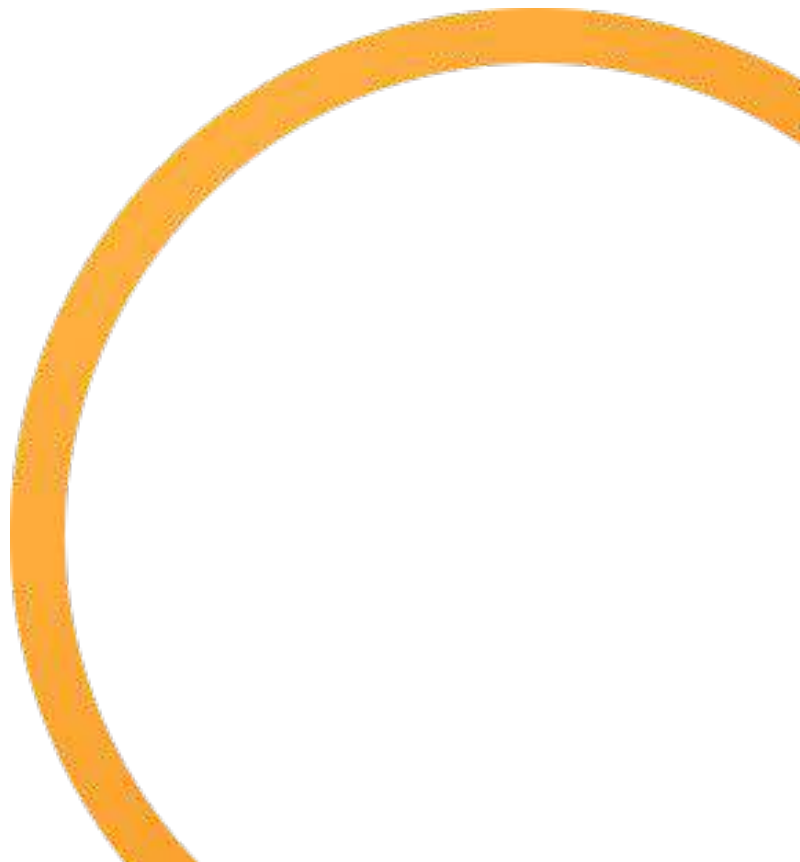


Real-time
Processing

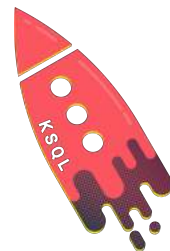
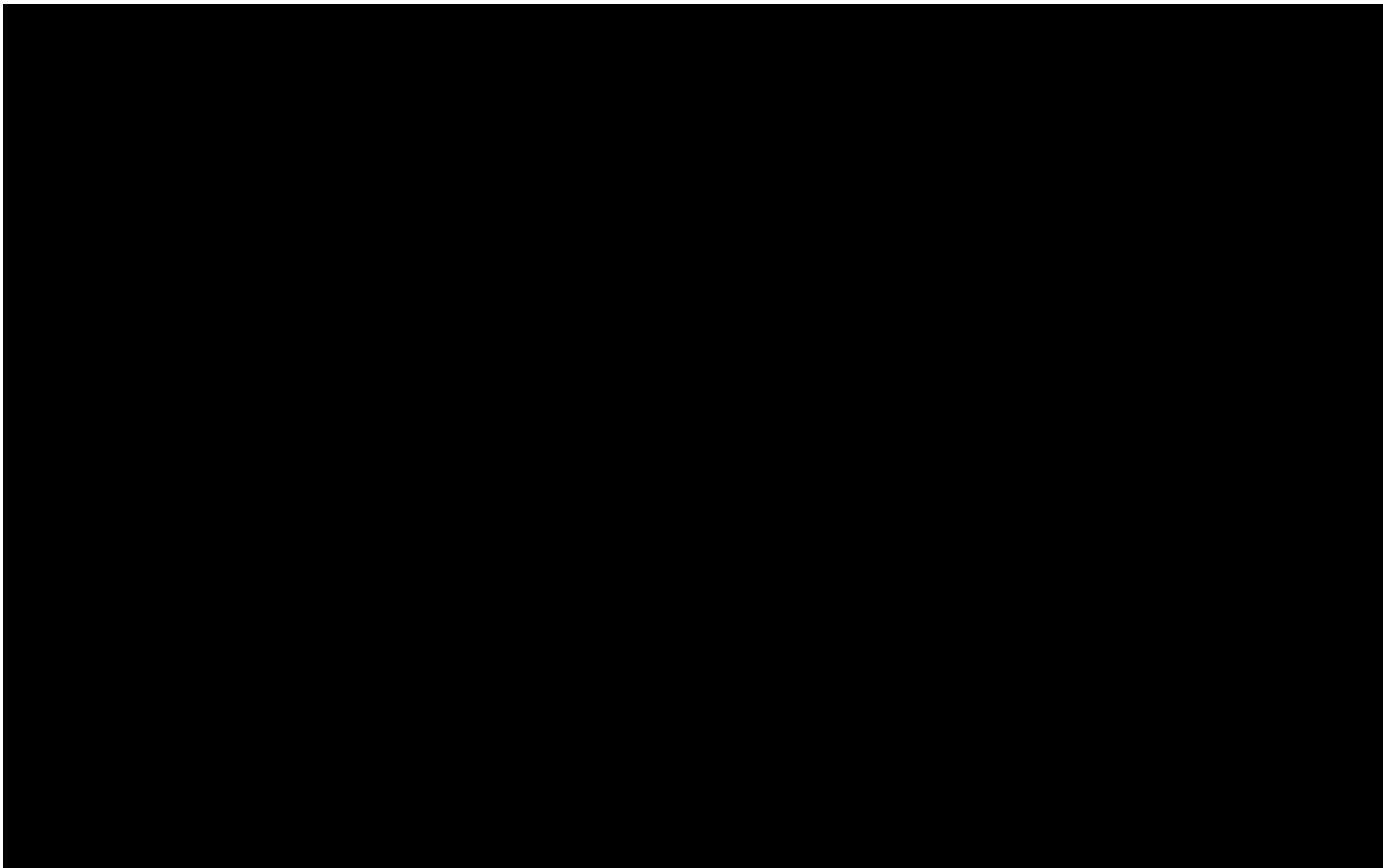
Messaging done right.

Lens 02

Hadoop made fast.



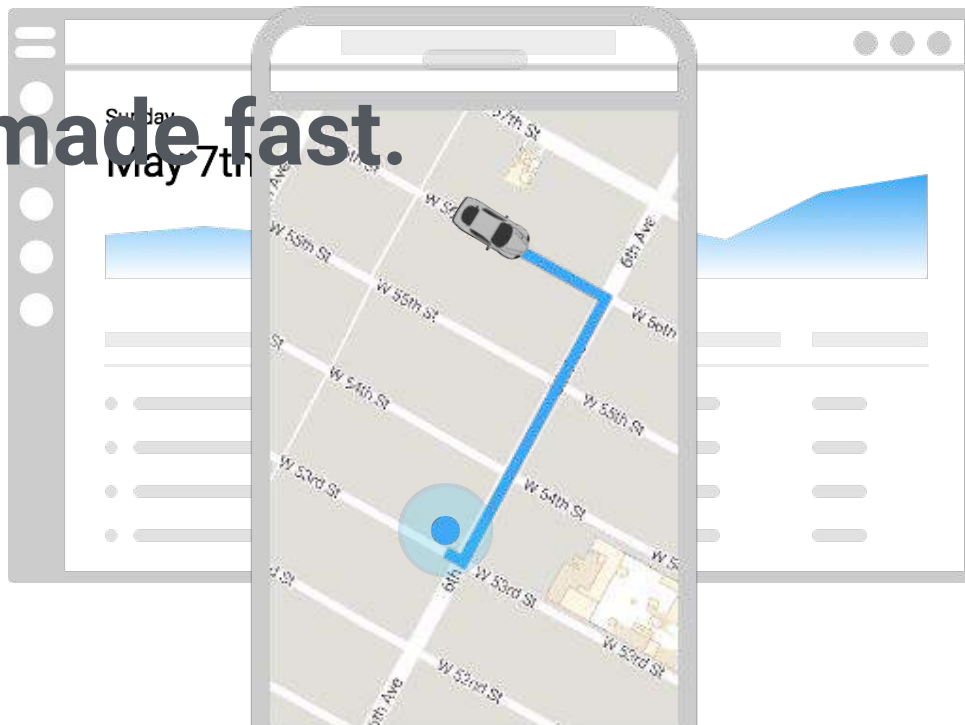
Stream Processing



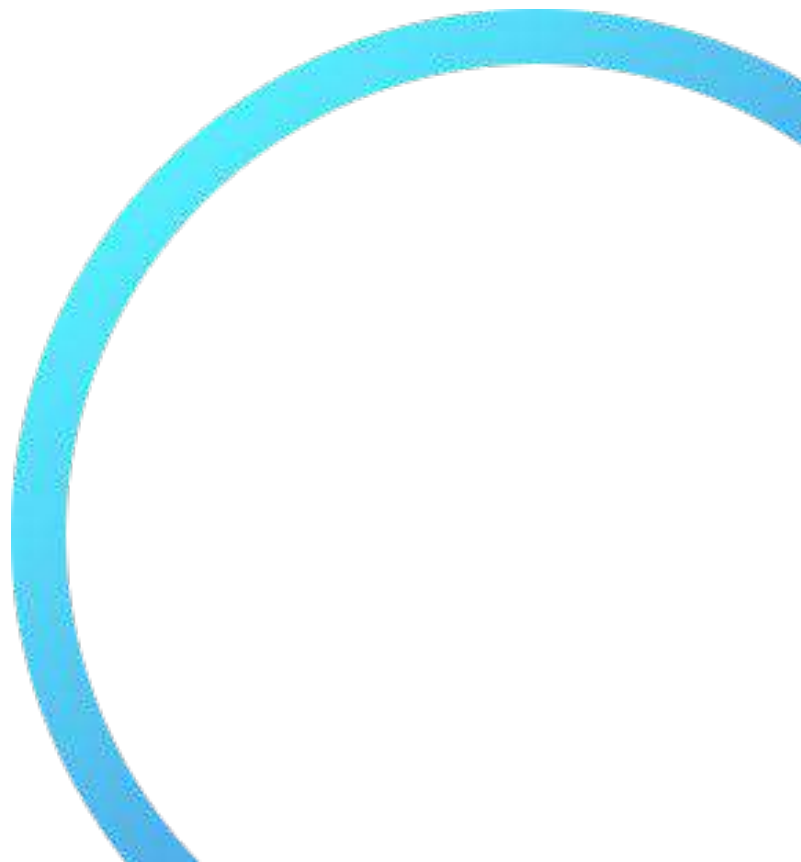
Applications are different



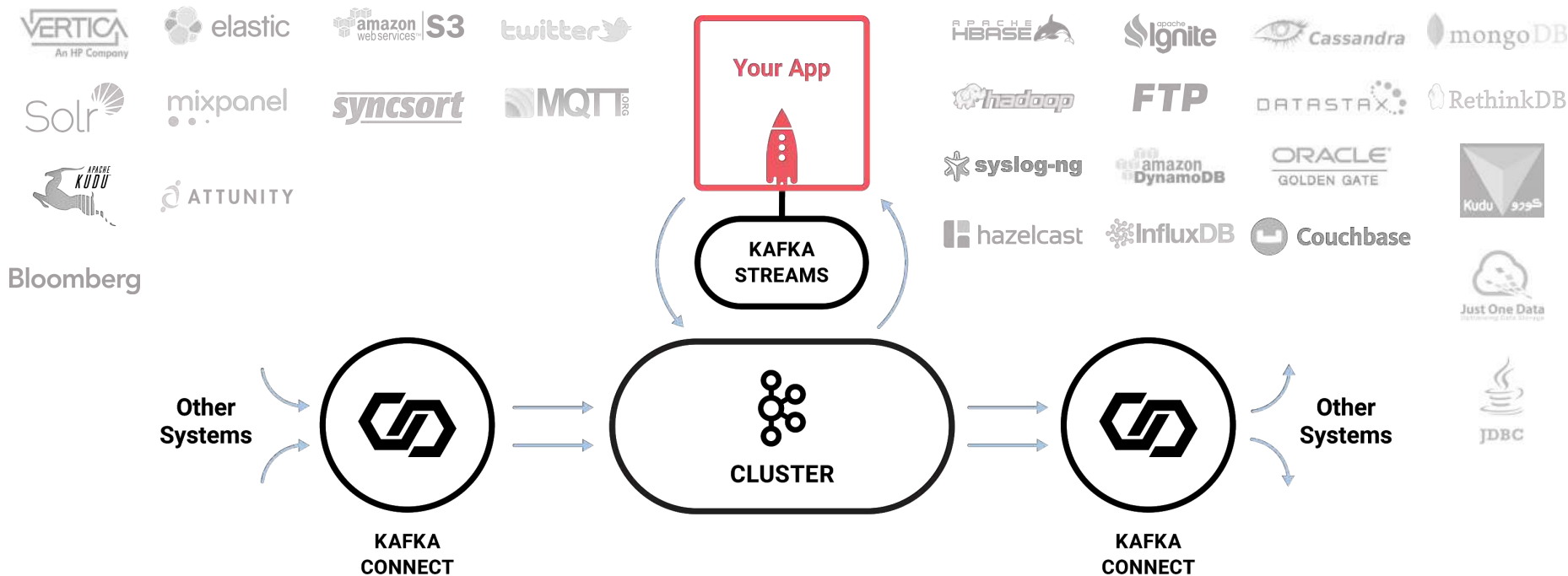
Hadoop made fast.



ETL and Data Integration as a platform.

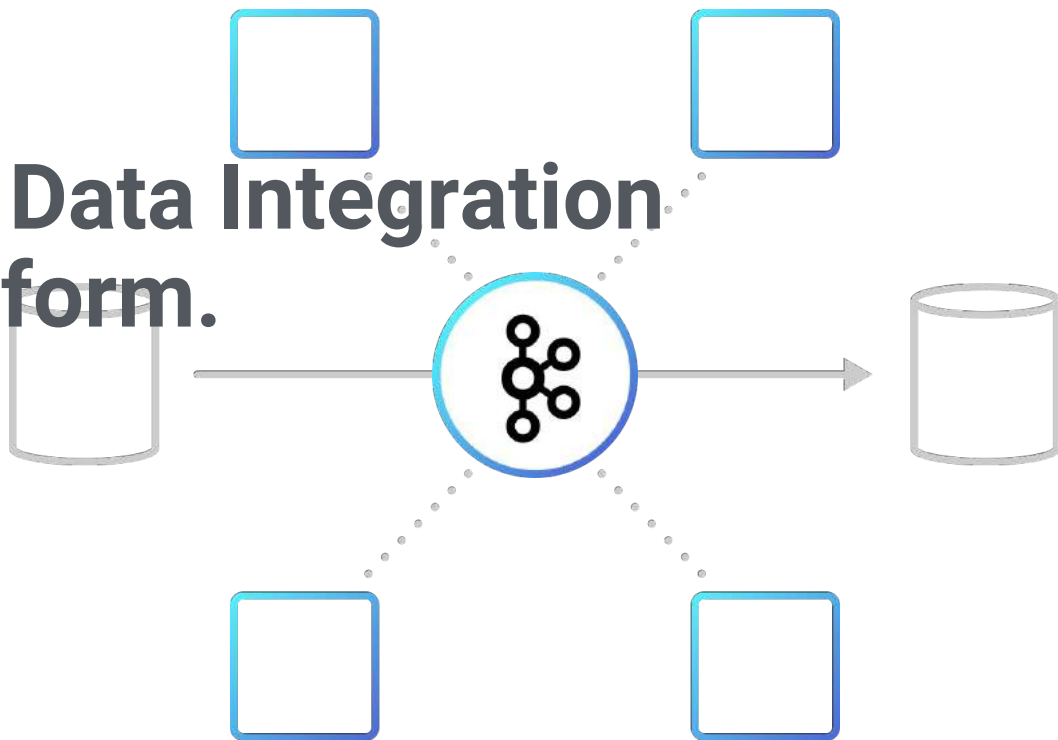


Scalable Streaming Data Pipelines

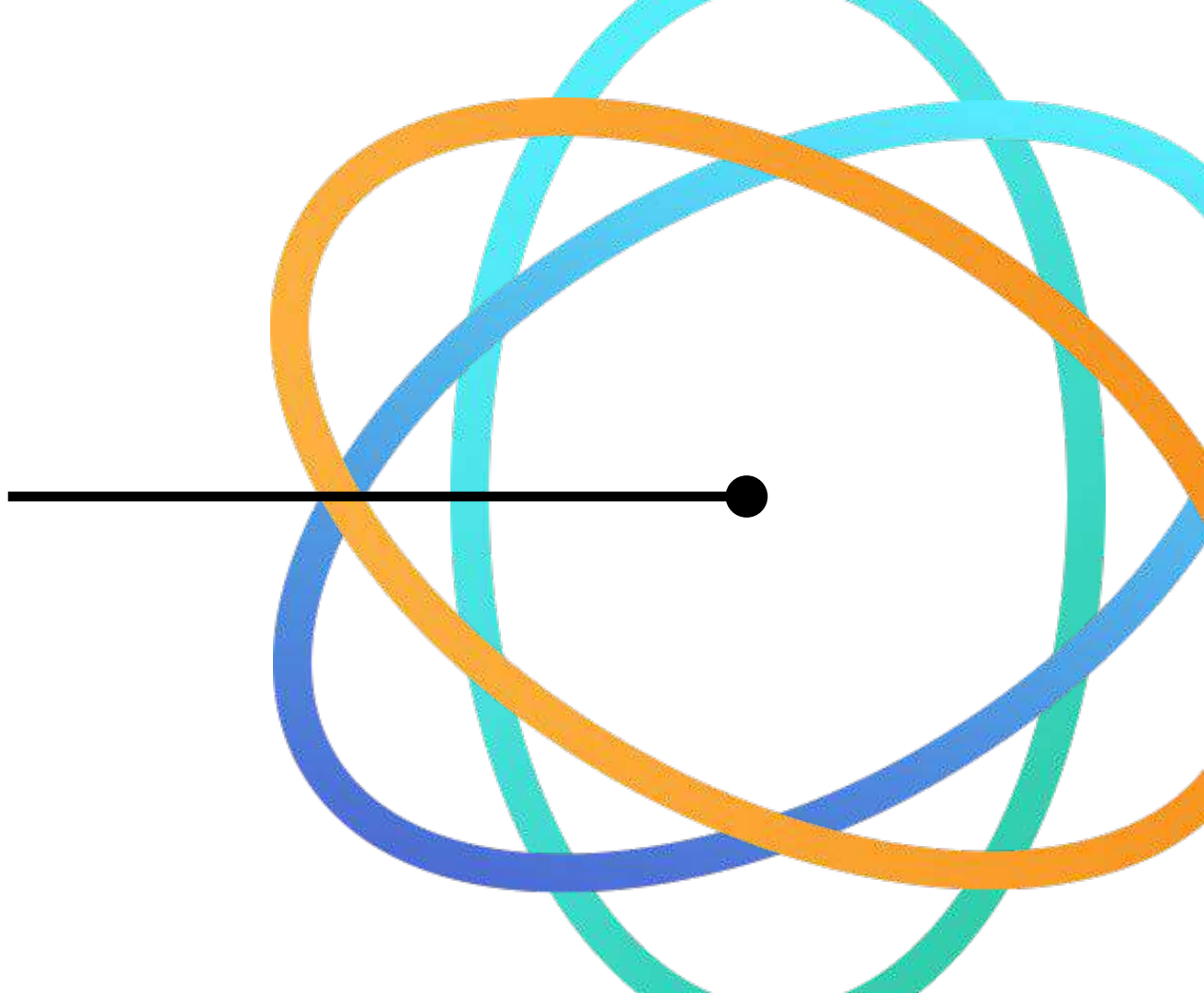


Stream Processing is for more than data pipelines

**ETL and Data Integration
as a platform.**



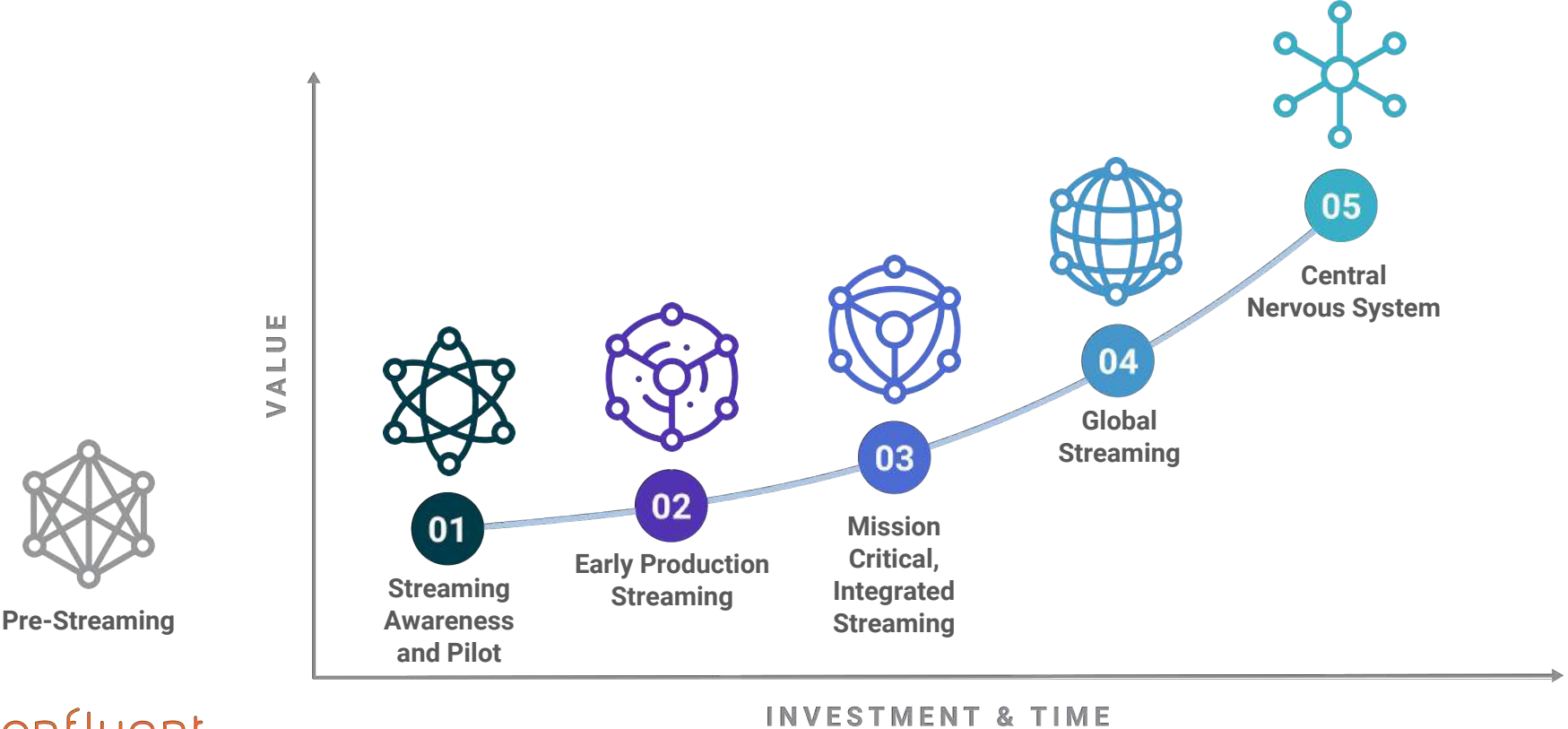
**Streaming
Platform**



Journey to an Event-Driven Enterprise



Streaming Adoption Journey



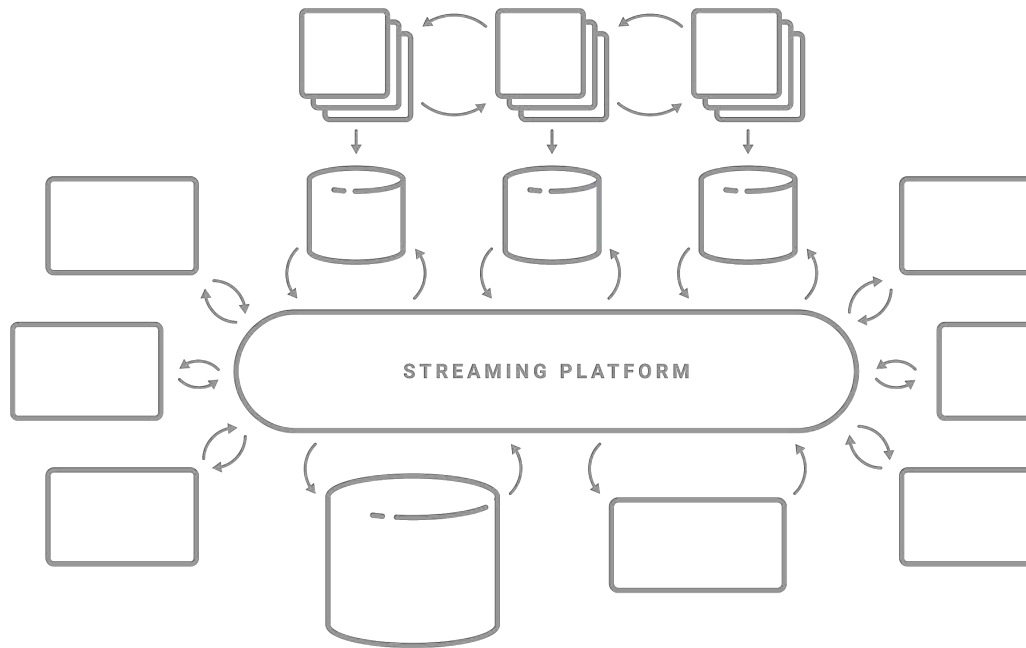


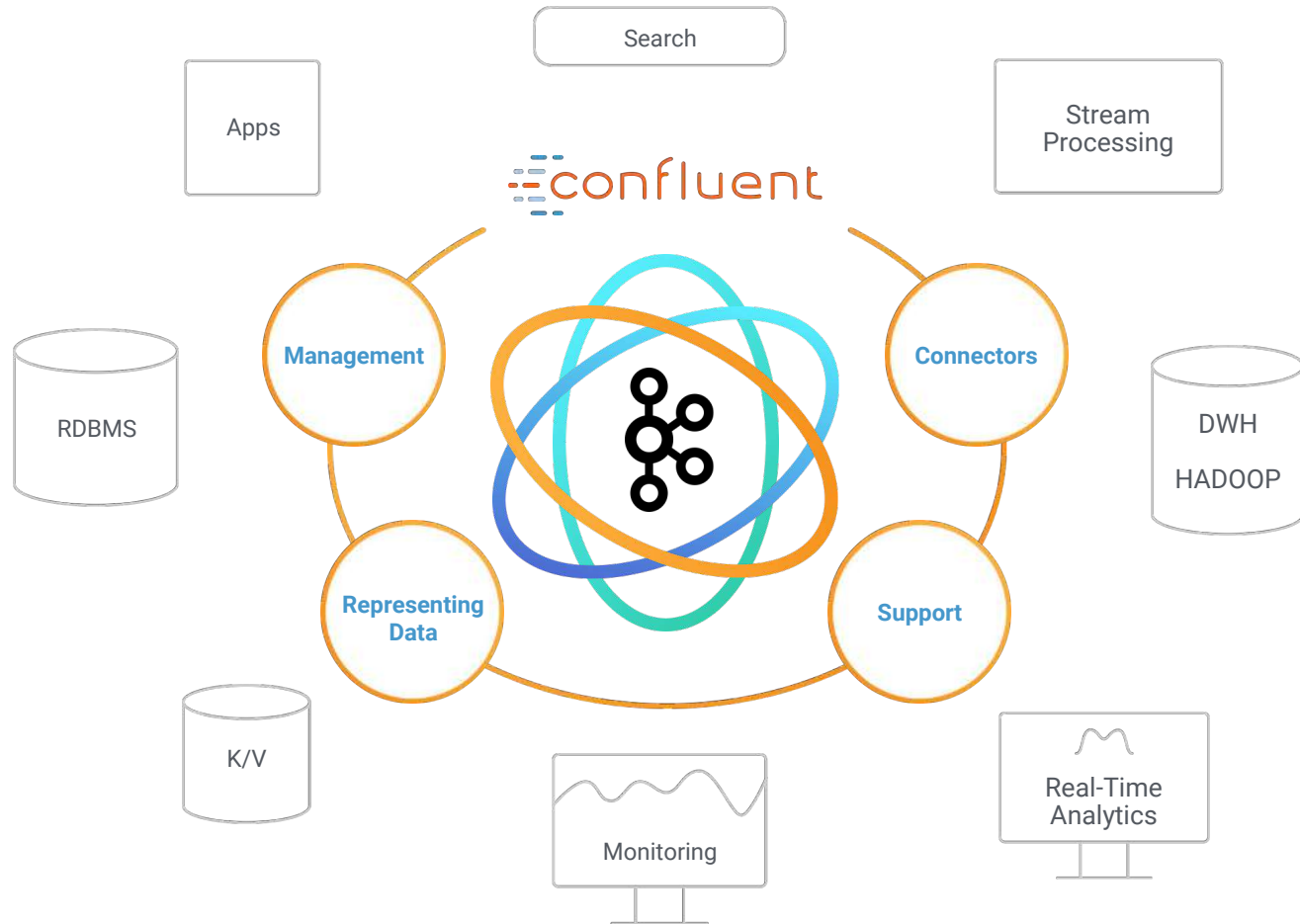
What does the Event-Driven
Architecture look like in its
end state?

An Event-Driven Enterprise

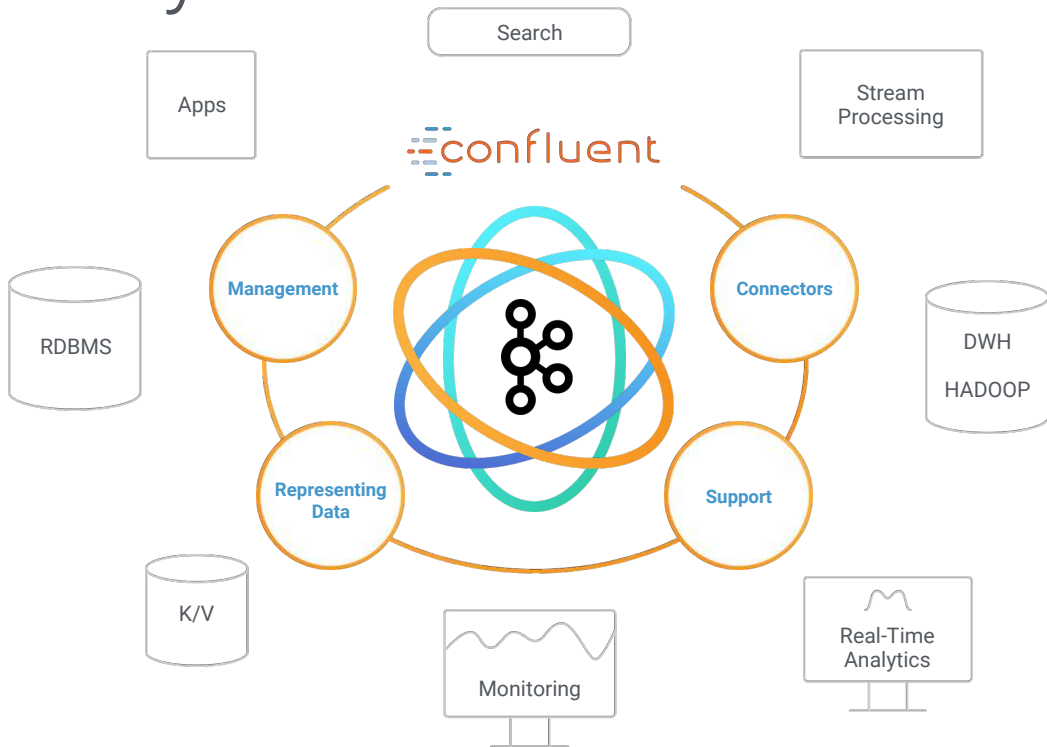
What are the possibilities?

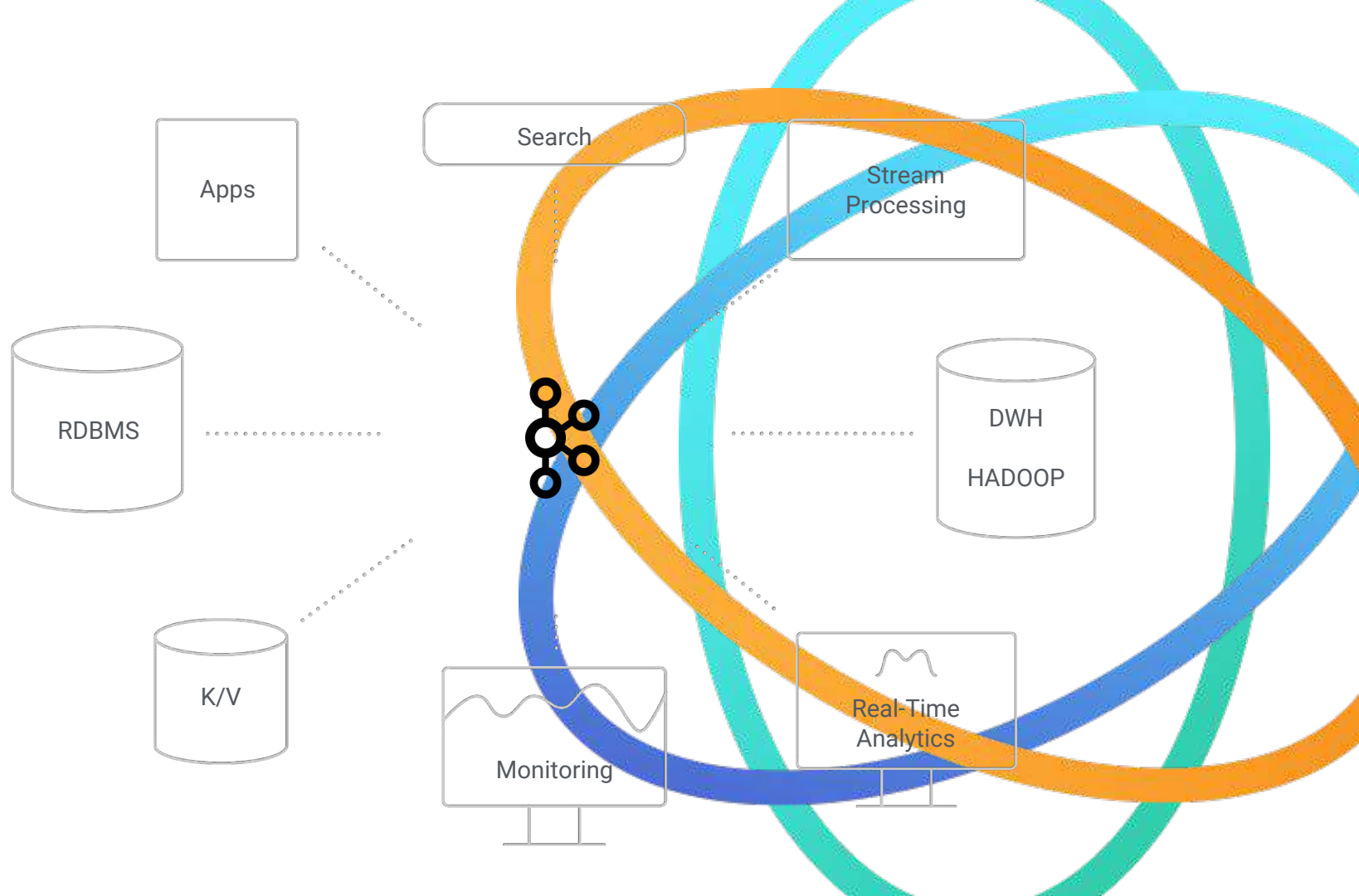
- Everything is an event
- Available instantly to all applications in a company
- Ability to query data as it arrives vs when it is too late
- Simplifying the data architecture by deploying a single platform





An open streaming platform around Kafka and it's ecosystem





Thank You

