



The Digital Bloodstream: Architecting the Autonomous Business



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Confluent delivers a dynamically adaptable
business operation that
Sustainably incorporates AI at scale and
enables the Autonomous Business...

Key Business Challenges of our time...



**Maximising the value
of Mass Digitalisation**



**Automation and the
use of AI at scale**



**Accelerating the pace
of Business and
IT change**



**Sustainability and
controlling the
cost of compute**

Old Truth

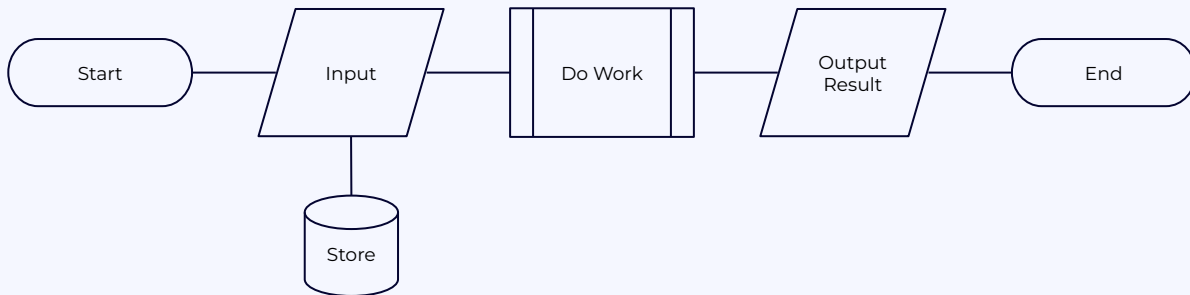
IT exists to enable the business to operate more efficiently... to automate business processes and make data available to improve decision making...



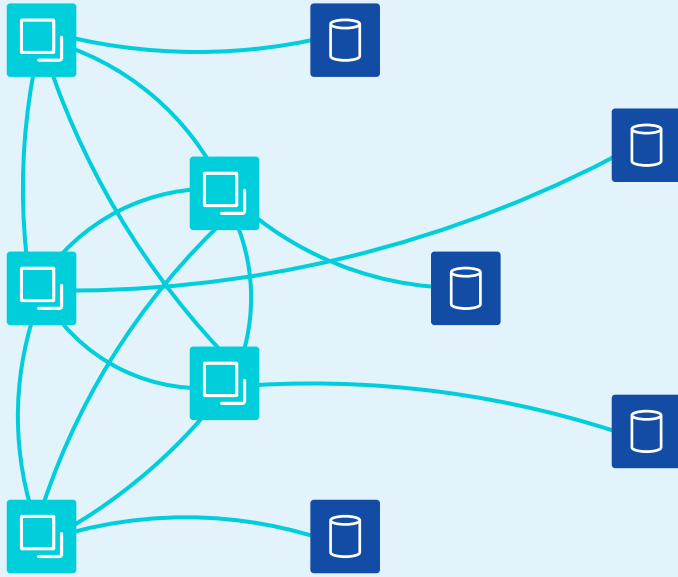
Software topology... since the dawn of IT...



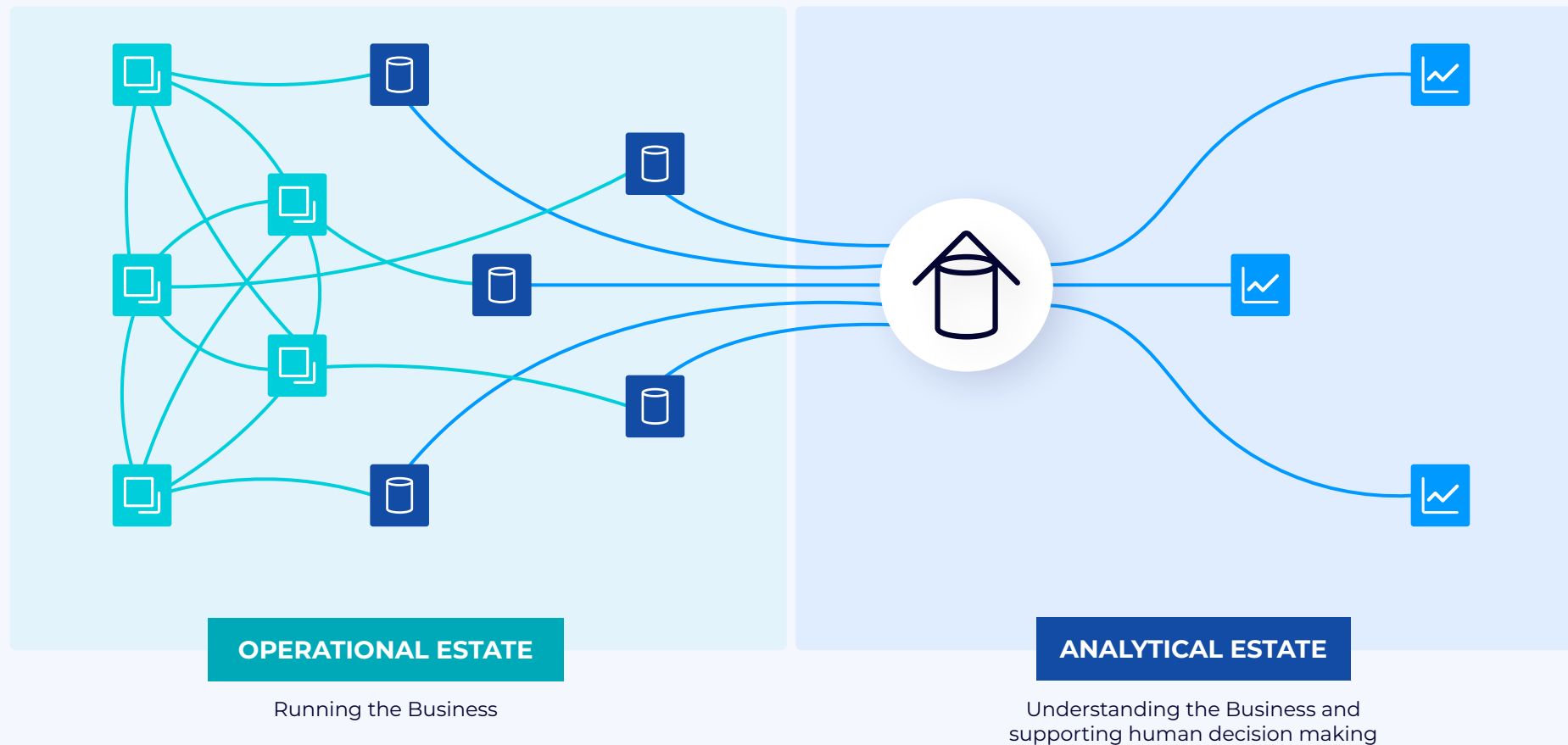
Process Primacy: Find a business process... and automate it...



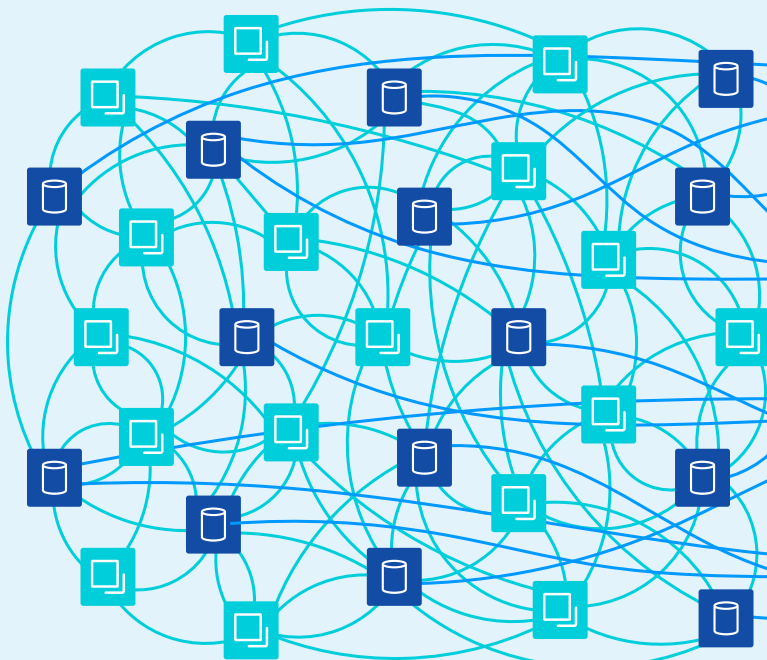
...we started delivering applications to automate the business...



...and then we wanted more sophisticated reporting...

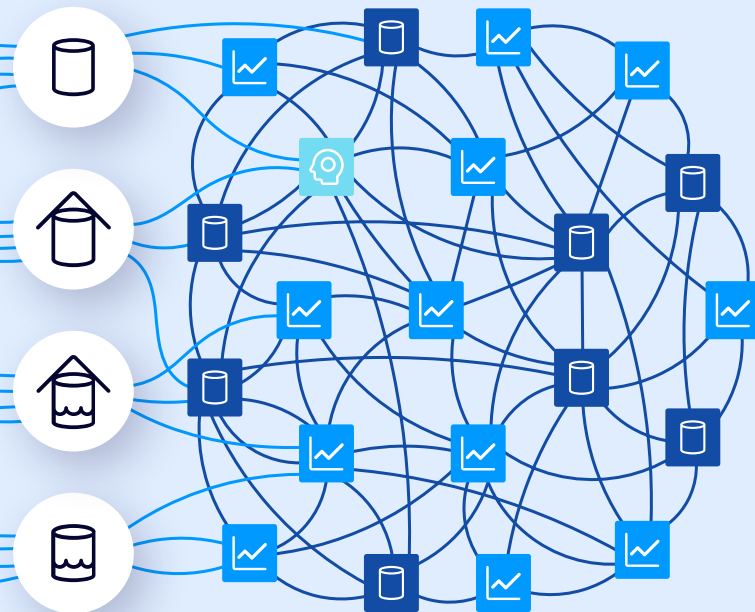


Over time, the inevitable happens... IT Complexity Escalates...



OPERATIONAL ESTATE

Running the Business



ANALYTICAL ESTATE

Understanding the Business and
supporting human decision making



... creating incredible complexity, fragility &
Massive impedance to change

New Truth

IT is the cornerstone of every business operation.

Mass digitalisation transforms the role of data and IT in every business... it unlocks an opportunity for an unprecedented level of performance improvement, intelligent automation and innovation exploitation with AI as the catalyst driving acceleration...

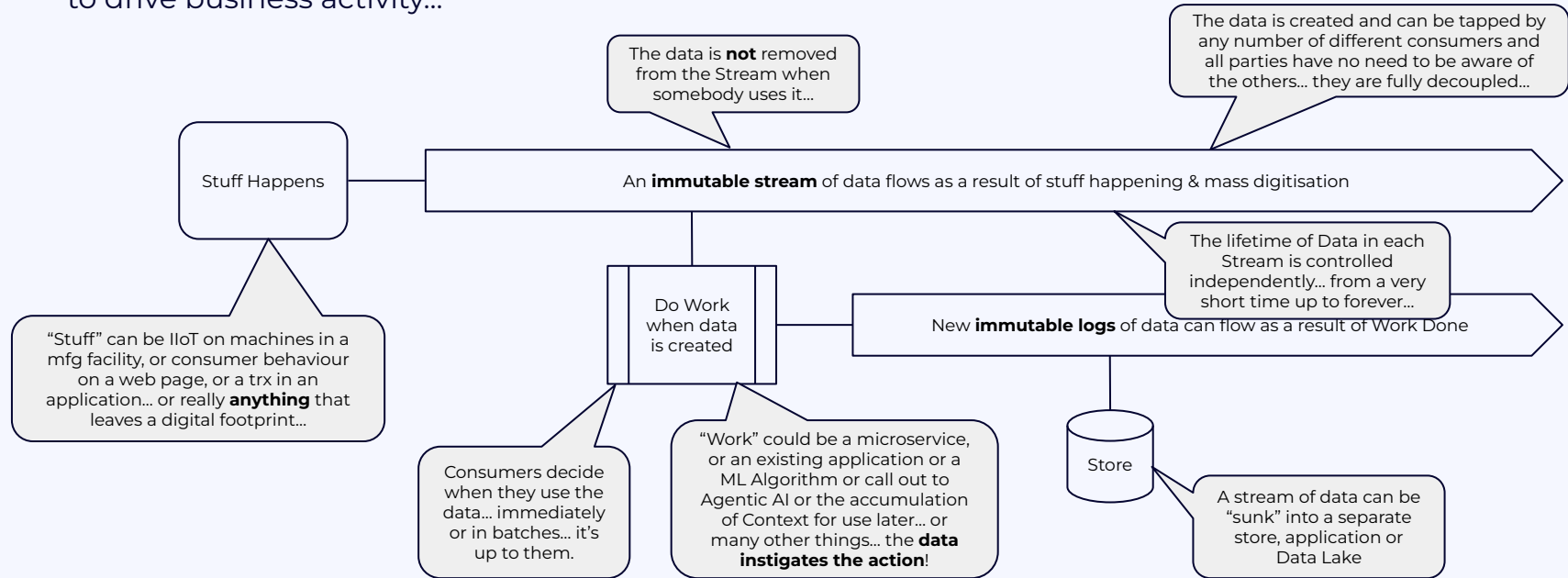
...but it does require some new thinking about IT Architecture...



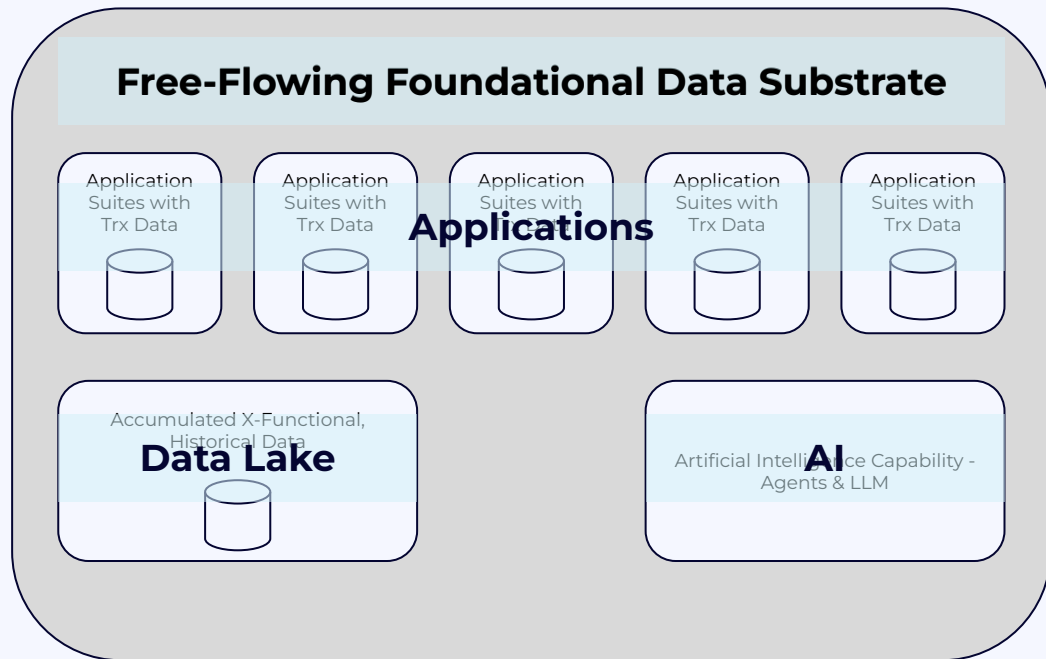
New Software topology...



Data Primacy: First, liberate the data to flow freely, then make it discoverable to be tapped into and to drive business activity...



4 key components of modern IT Architecture...



Key Objectives:

1. Reduce estate complexity and accelerate change
2. Capitalise on all data, immediately on creation
3. Enable the creation of data itself to drive action
4. Maximise the investment and value in application suites and their transactional execution & data
5. Train AI Agents in all manor of tasks and enable them to collaborate (MCP & A2A)
6. Sustainably insert AI into every aspect of the business operation at scale
7. Contain compute - architect to minimise total compute / cost and maximise sustainability

The Digital Bloodstream

600 million years of evolution have delivered the Bloodstream... an optimised, decoupled architecture that enables rapid adaptation...

...and the Confluent DSP does the same for your business...



Key Business Challenges of our time...



Maximising the value of Mass Digitalisation

- Connect and Collect any and all data across the mass digital estate
- Integrate with existing applications
- 30% faster Digital Transformation with Standardised Data Schemas
- 70% - 80% reduction in Data latency



Automation and the use of AI at scale

- Machine learning and Agentic AI right in the Data Stream
- A2A and MCP Protocols to connect with other Agents and AI
- 50% improvement in Data Quality with Governable Data Schemas



Accelerating the pace of Business and IT change

- 90% reduction in the time to deliver new business use cases
- Greater than 95% reduction in integration complexity
- 60% reduction in system wide failure
- 40% - 50% faster integration time compared to point-to-point



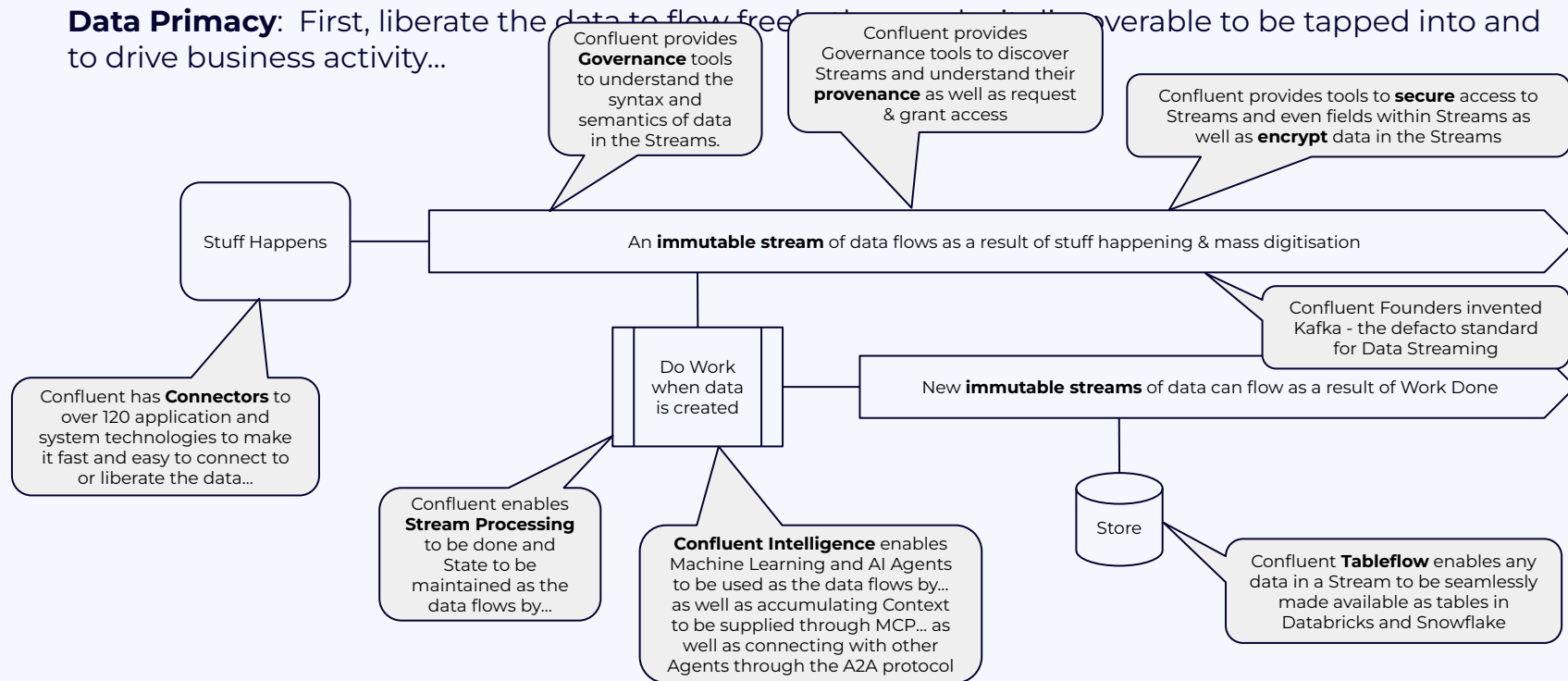
Sustainability and controlling the cost of compute

- Do once, use many architecture - especially important with AI
- Shift to incremental algorithms
- 20% - 30% reduction in overall IT operational costs

Confluent DSP - Delivering the New Software topology...

Data drives Process

Data Primacy: First, liberate the data to flow freely & be discoverable to be tapped into and to drive business activity...





The capabilities that Confluent Provides...

Fully Dynamic, AI driven, Automated Business Operation

Drive the business from Data, its creation and decoupled consumption and deliver a fully dynamic business operation
Drive Productivity up and costs down. Seamlessly integrate with existing Process Engines (e.g. SAP)
Accelerate business change, deliver inline AI & Automation at scale.
Simplify the IT Estate and improve Sustainability through total compute optimisation

Confluent Data Streaming Platform

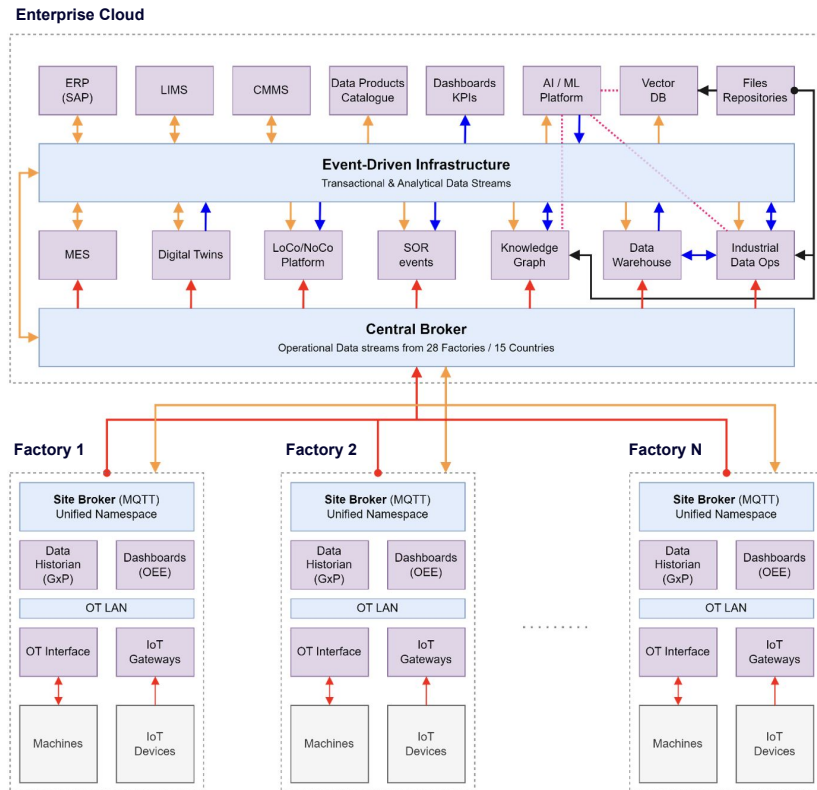
FAIR Business Data / Business Adaptability / Sustainability - Full Digital

Industrialise Kafka and layer on important Enterprise Capabilities like RBAC, Data Encryption, Data Provenance, Data Governance, Stream Process Execution (Flink), Artificial Intelligence, Connections (source and sink), as well as deployment options and retention

Kafka

Foundational technology that drives the architectural transformation... highly scalable, open source standard for capturing flows of data in realtime... transforming a Process First IT Architecture into a Data First IT Architecture

Smart Manufacturing Architecture



LEGEND

- **SOR:** System of Record
- **LoCo/NoCo:** Low Code / No Code
- **MES:** Manufacturing Execution System
- **LIMS:** Laboratory Information Management System
- **CMMS:** Computerized Maintenance Management System

Operational Data: This is the raw, real-time data coming directly from the OT systems.

- Sensor readings: Temperature, pressure, flow rate, vibration, etc.
- Inventory levels: Quantities of raw materials, work-in-progress, finished goods.
- Machine states: Running, stopped, idle, error modes.
- Process parameters: Setpoints, control variables, alarm conditions.
- Position data: Location of AGVs (Automated Guided Vehicles), robotic arms, etc.

Transactional Data: Data capturing discrete events, changes, or "transactions" in the manufacturing or control environment.

- Workflow logs: Electronic Batch Records (EBRs) indicating each production step (blending, granulation, compression, coating, packaging), with timestamps.
- Maintenance records
- Compliance & Quality Audits: Digital signatures for batch release or QA approvals. Deviations or non-conformance reports, including CAPA (Corrective and Preventive Actions).

Analytical Data:

- KPIs: Overall Equipment Effectiveness (OEE), production yield, energy consumption, etc.
- Business performance metrics: Units produced, downtime, cost per unit.
- Forecasting data: Predictive maintenance needs, production output projections.



How does Confluent DSP help?

- Confluent DSP delivers a real-time Digital Bloodstream
- Every component and application can contribute to and take from the bloodstream
- All of the data in the bloodstream is governable, discoverable and accessible (FAIR)
- Data in the Bloodstream can also be consumed as Iceberg & Delta Lake Tables
- As the data flows, AI can be seamlessly incorporated
 - to evaluate balance and make decisions
 - to observe and act in the event of discrepancy
 - to accrue context that can be supplied to an external agent or LLM

Balance can be achieved across the whole Manufacturing Process

Automation can be incorporated

Communication can be instigated

Productivity improved

Costs removed

