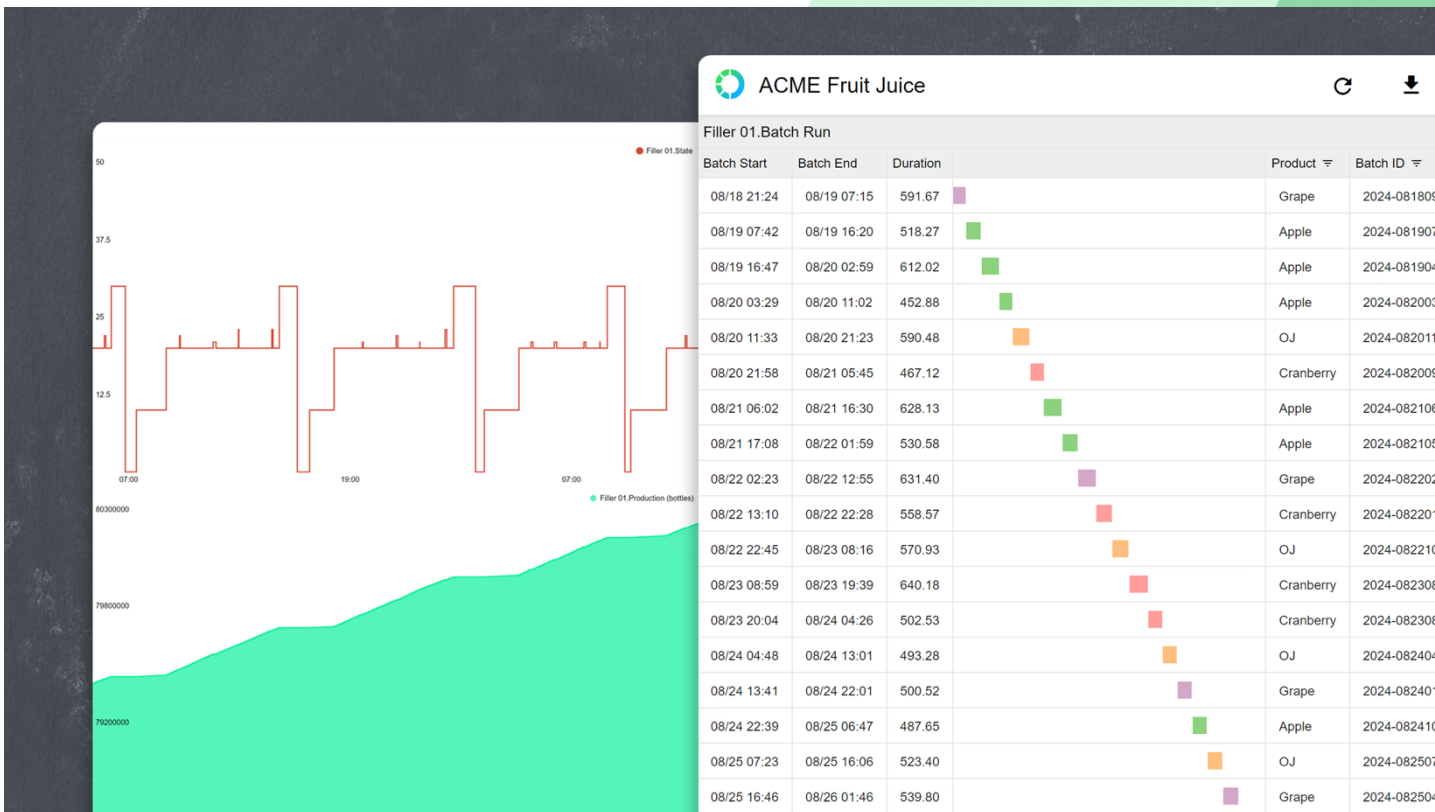


INFORMATION MANAGEMENT IN MODERN MANUFACTURING

A Five Step Approach for Transforming Data Into Actionable Information



Actionable Information Is Paramount

Is data the new oil? The answer is yes, but not for the reasons you might think. Oil in its raw form is a liability, not an asset. It only becomes valuable after it has been responsibly extracted, collected, refined, passed quality standards, and distributed. Data is no different. In its raw format, data is useless. But once it has been normalized, cleansed, treated, aggregated, validated, and distributed, it becomes the driving force behind informed decision-making.

Manufacturers have long focused on data management—securely collecting and storing raw data across their operations. However, they have often neglected information management; the critical process of transforming raw data into usable information and distributing it to people and systems. The current approach to transforming data is often distributed across various applications, data stores, and departments. This fragmentation creates significant challenges in governing both data and engineering processes, ultimately resulting in the duplication of untrustworthy work, heavily reliant on custom code, with no scalability and the absence of a unified framework for information governance.

Flow Software addresses these challenges by offering a pre-configured solution for managing and executing the transformation of data into information upon a common framework. By simplifying this process, Flow ensures that information management is edge-driven, adds value to operations, and supports both bottom-up and top-down collaboration through a library of templated work.

VISION

To drive informed decision-making and operational excellence across manufacturing enterprises.

MISSION

Creating innovative software that elevates others, is a joy to use, and informs better decision making.

CORE VALUES

Elevate Others + Find Your Joy + Show Some Grit + Stay Curious + Own It

Our Approach

Flow Software leverages the principles of the Unified Analytics Framework (UAF) to provide a robust solution for managing and executing the transformation of raw data into actionable information. Flow's process is structured around five key steps:

1

Model

Flow begins by providing an information model that unifies various underlying data sources. This model defines key events and metrics, the distribution of information and governance rules, providing the foundation for consistent data transformation.

2

Connect

Flow connects to multiple data sources, ensuring normalized data is accessible from across the organization, reducing silos.

3

Transform

This step involves cleansing, contextualizing, and aggregating raw data, executed by Flow's engines according to the rules held in the information model. All new information is then stored in Flow's database.

4

Visualize

Flow offers decision support tools through browser-based visualization, reporting, and dashboards, making information accessible and actionable.

5

Bridge

Flow enables the automatic distribution of contextualized information to other systems and data warehouses, ensuring data availability for decision-making and advanced analytics.

Step One: Model

Unifying Data Sources

Flow's information model decouples, abstracts, templatizes, and structures data from various underlying sources, creating a unified and consistent information architecture. It provides a meaningful, standardized way to reference data, regardless of its origin, making it accessible and usable across the enterprise without requiring users to understand the complexities of the data sources.

By decoupling data from its source (e.g., Historians, SQL Databases), Flow allows users to interact with data through standardized names rather than complex queries or tag names. This abstraction means that operators, team leaders, and managers can access critical information without needing to know where it comes from or how it was derived—simplifying decision-making and increasing efficiency.

The model's templatization ensures consistency across multiple sites, where the same metric name can represent different data sources, making it easier to standardize processes and share insights across the organization. Furthermore, the structured yet flexible nature of the model allows it to be built using various frameworks like ISA95 or custom asset models, ensuring it aligns with the specific needs of the organization while maintaining flexibility for future adjustments. The model also unifies multiple underlying namespaces into one persistent, secure model, laying the foundation for building scalable, value-added IT applications that drive business growth.

By leveraging templates within the model, as well as allowing for a centrally governed template library, the Flow Information Model becomes a key point of governance for how a business chooses to define and manage the process of transforming data into information.



Step Two: Connect

Seamless Data Integration

Flow Software connects seamlessly with a wide array of data sources, including industrial historians, IoT platforms, SQL/NoSQL databases, and real-time systems, without replicating the underlying data. This connectivity allows for scalable, real-time data integration while leveraging existing infrastructure investments.

By centralizing and referencing data rather than duplicating it, Flow ensures efficient, scalable access to information. This approach preserves the integrity of existing systems, facilitates fast data retrieval, and supports comprehensive analytics across the enterprise, all while enabling manual data entry and data categorization through user-friendly Flow Forms.

Step Three: Transform

Enriching Data with Context

Flow Software's transformation pipeline is designed to enrich data by adding critical context and by performing a wide array of calculations, storing the results in the Flow Database. This pipeline contextualizes data by standardizing time into meaningful slices and dynamically attributing additional context based on event triggers. Flow's robust calculation services clean, aggregate, and transform data in near real-time, applying complex algorithms across multiple data streams simultaneously. Additionally, Flow's ability to rerun, and version, calculations based on data changes ensures that all information remains accurate, up-to-date, and trustworthy.

By applying time and model contexts, Flow ensures that every data point is enriched and ready for in-depth analysis. The transformation process enables users to perform complex calculations, future value projections, primary and secondary aggregations, moving window calculations, and expression-based evaluations, all while blending data from multiple sources in near real-time.

This unification of data silos and the ability to seamlessly rerun and version calculations provides unparalleled confidence in the accuracy and reliability of the information. The result is a powerful, industry-proven system that transforms raw data into actionable insights, driving better decision-making and operational efficiency across the enterprise.

Step Five: Bridge

Connecting Information Across Systems

Flow Software acts as a bridge, seamlessly connecting the information within the Flow Database, as well as the underlying operational technology (OT) and IoT data streams with enterprise applications. It exposes a robust REST API for easy integration and on demand queries, as well as providing a service to automatically publish information on schedule or trigger to other systems using industry-standard protocols, enabling the sharing of analytics-ready information across platforms.

This capability allows for near real-time data transfer to various systems, including data lakes and warehouses, SQL databases, MQTT brokers, Kafka streams, cloud services, asset management, ERP, machine learning platforms, and business intelligence tools. This ensures that your information is readily accessible where it's needed most.

Flow's information bridge supports multi-site operations by enabling each location to publish data to a central Flow system, providing fleet-wide insights for benchmarking, logistics planning, and efficiency comparisons. Flow's openness and flexibility make it an invaluable tool for ensuring that all parts of the organization are aligned and informed, driving better decision-making and operational efficiency on a global scale.

Real World Impact

● Coca Cola Beverages Africa

Challenge: CCBA needed to bridge the gap between their operational technology (OT) and IT systems to generate analytics-ready information across production facilities, including the monitoring of utility consumption and downtime.

Solution: Flow Software was implemented to standardize and contextualize data across more than thirty of CCBA's operations, enabling real-time insights and improving decision-making processes.

Benefits: CCBA achieved significant improvements in operational efficiency by leveraging Flow to provide a single source of truth, reducing downtime, and optimizing production processes.

● Exxaro

Challenge: Exxaro, South Africa's largest coal mining company, faced difficulties in managing and analyzing vast amounts of data across its operations, with over twenty different siloed data sources.

Solution: Flow Software integrated and contextualized data from various mining operations databases, providing a unified platform for real-time data analysis and reporting.

Benefits: Exxaro improved resource management, productivity, and decision-making through streamlined data management and enhanced analytics accuracy.

● AB InBev

Challenge: AB InBev required a scalable solution to streamline vertical data integration across its global operations, particularly focusing on improving the consistency and accessibility of data across multiple sites.

Solution: Flow's tiered approach was employed to integrate and standardize data across AB InBev's production facilities, nearly forty in total, ensuring that data from all sites could be seamlessly aggregated and analyzed at the corporate level.

Benefits: The implementation of Flow resulted in enhanced data consistency, improved decision-making capabilities, and better alignment of production practices across AB InBev's global operations, leading to more efficient processes and significant cost savings.

Define Your Information Strategy

Across all five steps Flow Software has demonstrated how a unified approach to data management can turn raw data into actionable insights that drive better decision-making and operational efficiency, at enterprise scale. From creating a standardized information model and seamlessly integrating data sources, to transforming and visualizing data in real-time, Flow ensures that your data projects are aligned, governed, and scalable.

Every new data project undertaken without this unified framework is a missed opportunity, leading to orphaned work, less governance, and diminished value. The urgency to adopt the right strategy is now. This is not about overhauling your entire system but about making a strategic shift that will grow and evolve over time, ensuring long-term success.

FLOW SOFTWARE

Next Steps

Book a demo with Flow Software, or one of their partners, to see how their solutions can transform your data projects into a unified, governed, and actionable source of insight. Don't let your next data project be another missed opportunity—take the first step toward better information management today.

Schedule your demo or learn more about the solution at:
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