The background features a complex financial visualization with multiple overlapping line graphs and bar charts. The color palette is primarily blue and orange. Numerical values are scattered across the chart, including 89.635, 632.33, 12.569, 2.33, 89.635, 632.33, 12.569, 0.635, 0.3320, and 9.334. The text is centered in a white box on an orange background.

INFOSYS REALTIME STREAMS

Extract business value
in real-time from data
in motion

Infosys®
Navigate your next

Why real time insights?

Enterprises are being bombarded with an overwhelming volume of data generated from sensors, machines, tracking devices, banking and trading data, smart phones, social media contents and other Internet of Things (IoT).

Merely, amassing this humongous volume of complex data and generating some insights does not reflect the

business realities. Organizations cannot use yesterday's, often dormant, data to predict tomorrow's possibilities with a mysterious today at hand. A contemporary view of business positions, market risks, monetization opportunities, capabilities to predict and incubate future solutions, and vision to renew business models are the key to business agility.



Industry challenges

The direction in which the enterprises are moving towards and the need of the hour is to have an engine to decipher strategic value from data-in-motion, in a fashion very similar to how traditional analytics tools operate on data-at-rest. The emerging IoT is also fueling this demand and race is on to enable enterprises to do event processing/analysis against massive volumes of data streaming into the organizations at extremely high velocity.

The inherent challenge is in the complexities around:

- A wide verity of technologies, tools and

configurations which are very new to the industry.

- Need of top class workforce having in depth and end-to-end understanding of all the technologies involved.
- Bottlenecks in achieving the performance bench marks and the capabilities to customize.
- Capability challenges with existing technologies present in the organization

What will be an apt solution?

Real Time Streaming Analytics involves knowing and acting upon events

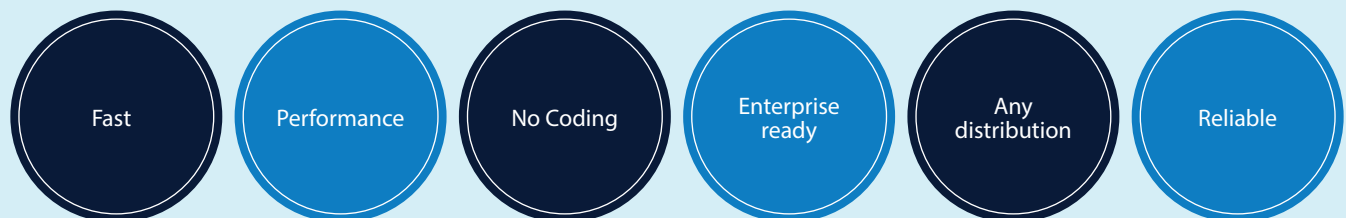
happening in our businesses at any given moment. Data that loses its value results in additional costs such as operational, administrative, business risks, opportunity cost, reputation damage, potential legal actions, reduction in productivity, inability to make informed decisions; all at the cost of the organizations' competitive edge.

So, it's important for the enterprises to select a solution / platform that will provide a proven – pre-integrated – performance tuned software stack coupled with ease of use, reliable and the flexibility to protect the enterprise from rapid technology changes.



Why Infosys Realtime Streams?

In order to cater to the industry need considering all challenges in current technologies, from our past experiences in the real time streaming implementations, we have developed 'Infosys Realtime Streams', a real-time streaming framework with an intention to make this whole process of real time streaming & processing a "More Simpler – More Productive – More Insightful" one.



Infosys Realtime Streams offers intuitive and guided UI for the end to end process, be it configuration to visualization or performance tuning.

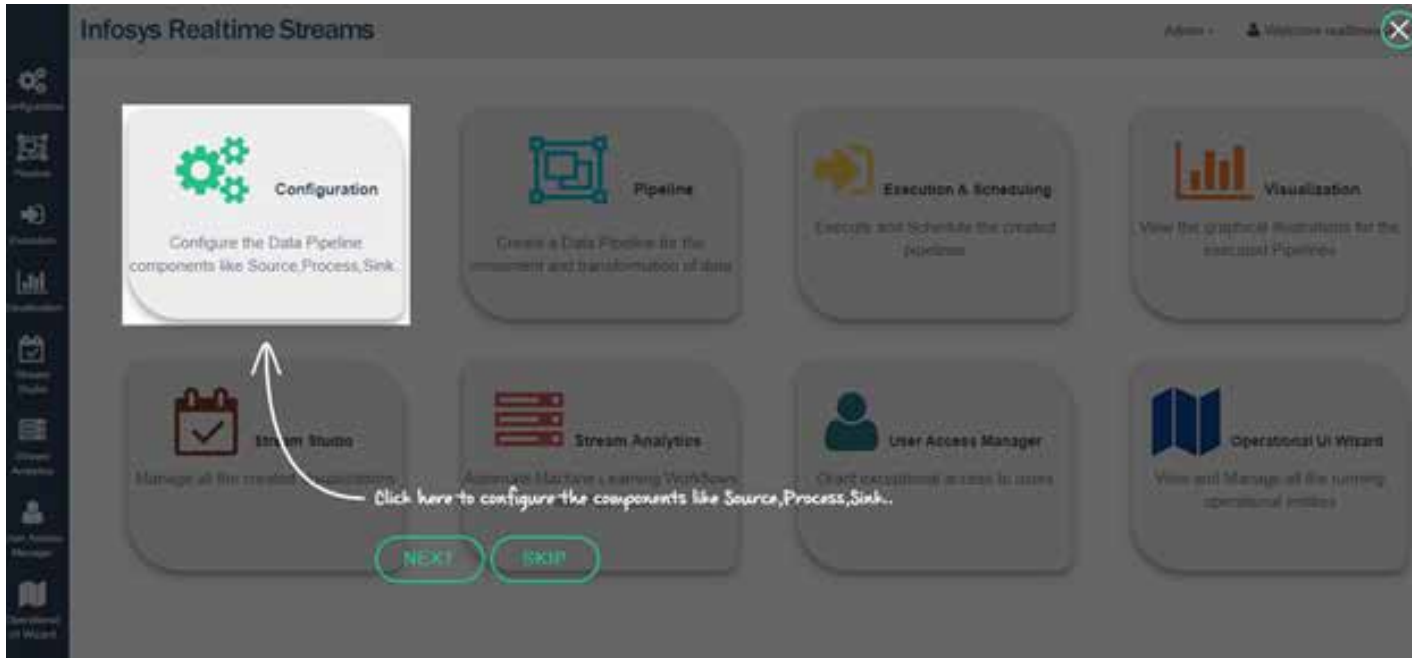


Figure: Guided UI of Infosys Realtime Streams

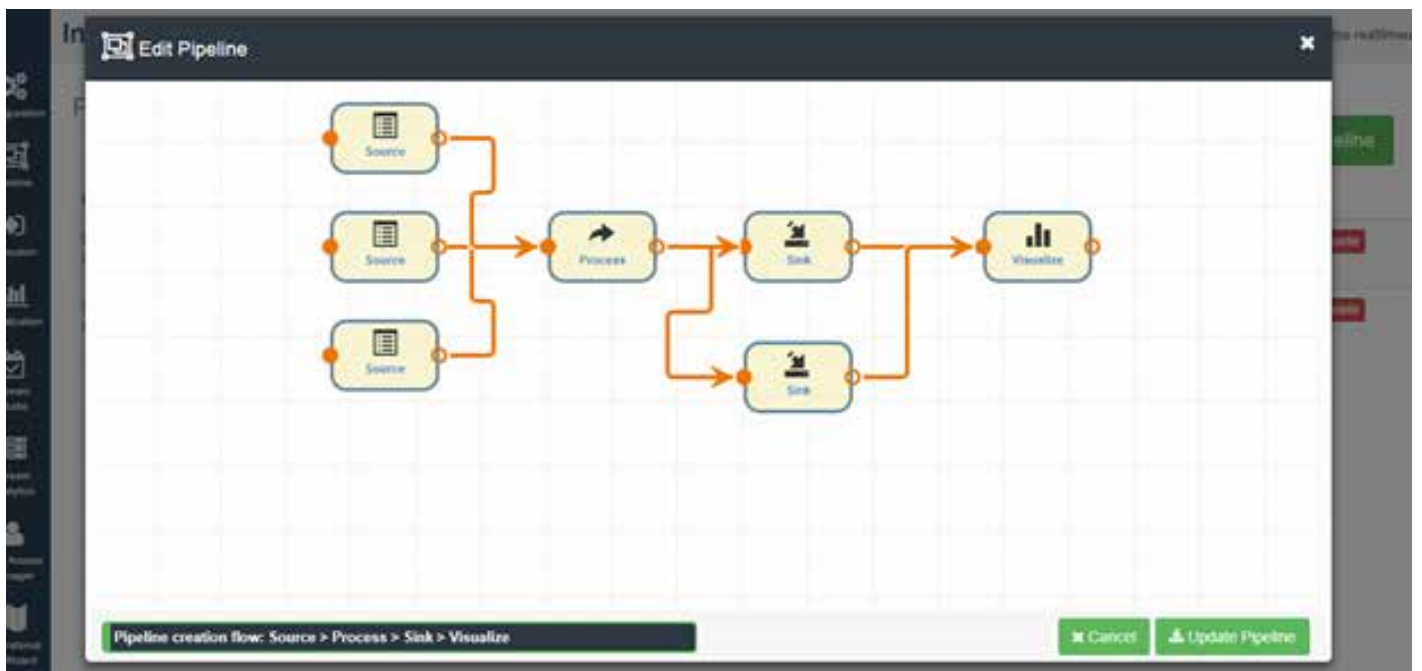


Figure: Infosys Realtime Streams pipeline creation screen.



Key Features and Business Benefits

Infosys Realtime Streams is bringing a host of benefits and advantages over custom development of a solution for real-time data consumption, processing, analytics and visualization. A few are mentioned below:

1. Visual code free interface for configuration and rapid pipeline creation. Includes advanced parameters for performance tuning made available on intuitive web based UI. Saves up to 10% Effort in tuning.
2. Live Schema Mapping (Auto-Metadata discovery)
3. Multi-source and multi-sink capability.
4. Quick Technology Feasibility assessment and Stack Finalization. Saves up to 25% consulting and designing effort.
5. Secured privileged access
6. Plug and play visualization: Customized persona based business portal for reporting and visualization dashboard. Reduces up to 50% of effort in visualization integration and portal development.
7. Operational UI Wizard for application monitoring.
8. Enterprise readiness and multi-tenant environment support. Gain of 20% effort saving in Software Configuration Management. Scalable and flexibility to implement on any distribution (Hortonworks, Cloudera, MAPR, Infosys NIA)
9. Cost effective, short term for ROI and needs minimum Big Data expertise for adaptation. 50% effort saving in testing and real-time pipeline development.
10. Open source component stack.



Architecture

Highly decouple architecture built fully on open source components, integrated and orchestrated with custom developed code for high flexibility and performance. Major capabilities include RT ingestion and processing modules, Machine Learning libraries and out of box support for multi-source and multi-sink. Application has plug play visualization module for RT visualization. Highly scalable and can run on variety of distribution and deployment options.

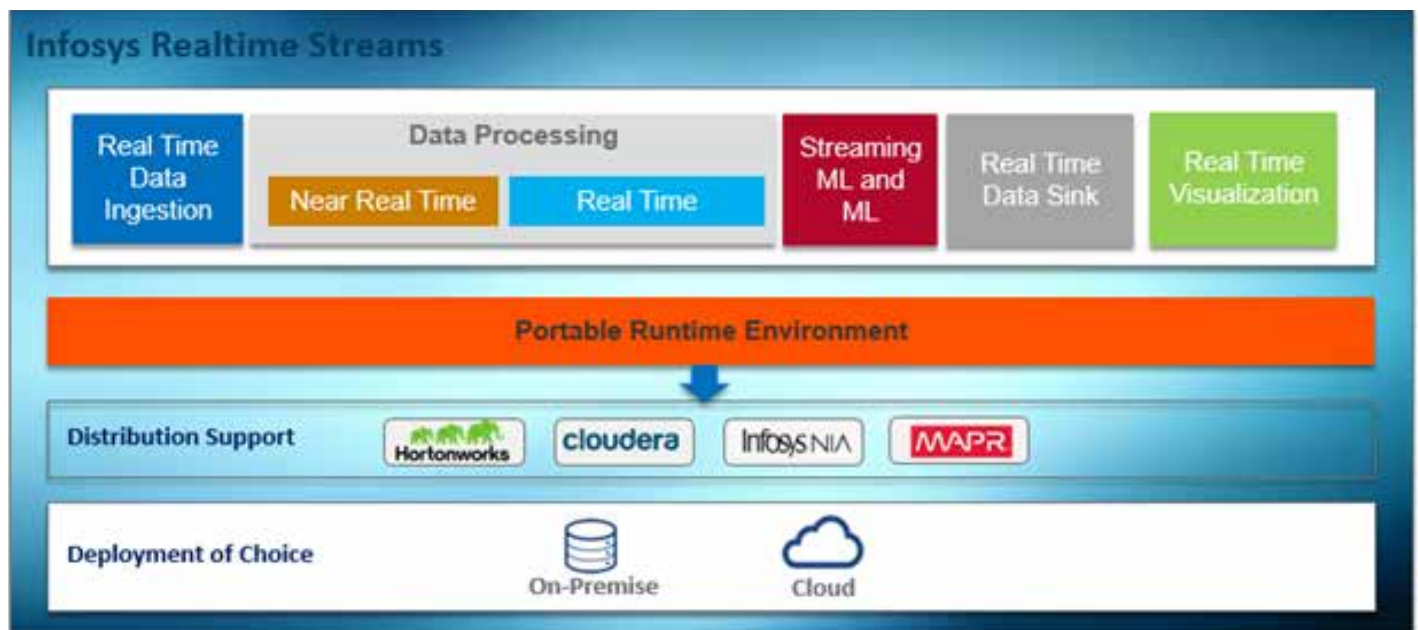


Figure: Component architecture of Infosys Realtime Streams.

Data Flow

Infosys Realtime Streams' data flow starts from the basic heterogeneous ingestion module. It is also having the capability of auto meta data discovery to identify the schema at run time which in turn used

inside the processing modules for doing complex transformation or business logics. The processed data can be saved in the live data marts for further analysis at the consumption layers. It also supports the

capability of in-memory support during the course of processing and Machine Learning capabilities on the live data.

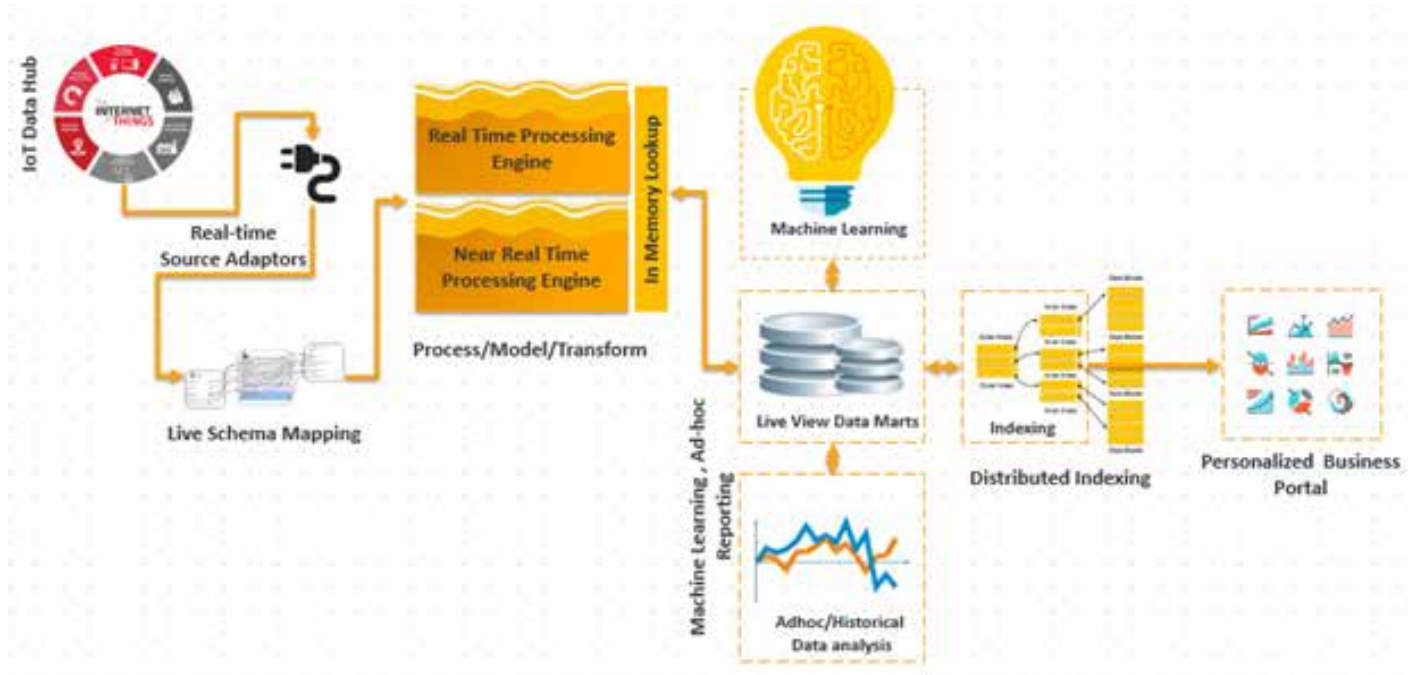


Figure: Data flow of Infosys Realtime Streams.



Value Proposition

Capability	Savings against Custom Development	Remarks
Technology Feasibility assessment and Stack Finalization	Saves consulting and designing effort of 20 to 25%	<ul style="list-style-type: none"> • Uses pre integrated technology components and evaluate performance on multiple combinations of it • Do performance benchmarking, evaluate execution throughput, Technology integration compatibility with real or sample set of data most appropriate to business use case and many more
Quick turnaround time in building real-time business use case	50% effort saving in testing and real-time pipeline development	<ul style="list-style-type: none"> • Intelligent Visual Code Free Interface for building streaming pipelines • Heterogeneous prebuilt real-time ingestion adapters • Template based code development • Automatic Meta data discovery and live Schema mapping from Sources • Multiple real time processing engines • Variety of data sinking options and multi distribution support
Enterprise readiness and multi-tenant environment support	Gain of 20% effort saving in SCM	<ul style="list-style-type: none"> • Portable code management • Easily configurable code migration and multi environment and tenant supporting capability
Performance tuning of various real time components	Saves 10% Effort in Tuning	<ul style="list-style-type: none"> • UI based performance tuning options on the go with pipelines against complex and manual tuning methodologies
Plug and play visualization	Reduce 50% of effort in the Visualization Integration and saves 60% of effort in Portal development	<ul style="list-style-type: none"> • Quick Persona based portal development and dashboard integrations • Portal Publishing and privileged user access • Helps report rationalization and reduce user licenses



Use Cases

A few use cases on how organizations that act on “live-insights” enjoy a competitive edge over sheer “insights-driven” organizations. Some real-life project examples that inspired Infosys Realtime Streams.



1. Real-time P&L Dashboard

Only those enterprises which keep a constant eye on real-time business events can influence margins.

Infosys has built real-time P&L dashboards for a large global financial company for forecasting the future tactical or operational direction. The data was mined in an agile manner, using immediate ingestion-on-occurrence P&L line items from diverse cost and profit centers.

2. Call Data Record real time reconciliation

An effective revenue assurance system must identify risks of revenue leakage in advance; to warrant near-zero revenue losses.

Infosys had developed a solution to stream CDR data in real time against the existing EOD Batch processed data for a large global telco. Data from various asynchronous sources like Billing systems, network plugins were ingested, parsed, transformed and reconciled. Non-reconciled data were stored in-memory for real-time reporting and hence, predict potential losses for instant course correction.



3. Credit & Debit card authorization analysis

Real Time Credit and Debit Card Authorization Analysis helps financial institutions detect and control fraud. When the data is accurate, it completely eliminates the transactions which cause revenue leakage.

Infosys had developed a solution for a European financial major to detect fraud and money laundering transactions.

4. Sorter Scan message real-time processing

Only those companies with timely and accurate parcel deliveries sustain in the commoditized postal industry.

Infosys had developed a solution for a leading postal organization with visual dashboards that refresh every 5 secs based on updated scan data. Dashboards are used to monitor and addresses parcels sorting inaccuracies, check throughput of the scan machines and identifying the anomalies in advance for quick and timely response.



5. Location Based Personalized Advertising

Geo fencing and location based advertising provides an appealing revenue stream; however only few global retailers are incubating it.

Infosys has developed real-time streaming solutions for top global retailer to track the location of the customer, their devices and interests to appraise store floor at that particular location with upsell or cross sell strategies to provide customer with personalized mobile alerts, discounts and offerings.

6. Connected Cars

Connected cars can help manufacturers provide new-age car-care services to customers by predicting potential breakdowns, spotting potholes and recommending fastest routes.

For a global automobile manufacturer who was the first to introduce online market place for cars, Infosys has developed the industry pioneer solution at the backend which enables the cars to connect effectively and make sense of the information which otherwise seems to be irrelevant.



For more information, contact askus@infosys.com



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