



Streaming SQL in the Real World



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Stream vs Table

- Table
 - Aggregation of updates is referred to as a table
 - Data at rest!
- Stream
 - The observation of changes to the table over time is referred to as a stream
 - Streams are more or less data in motion

Stream Processing vs Batch Processing

- Batch processing vs stream processing is very relevant in terms of data processing.
- But there is a major difference
 - **Batch Processing** deals with non-continuous data
 - **Stream processing** deals with continuous data

Batch Processing - Complaints!

- No partial answers
- Hardware requirements
- Limited “ad-hoc”/ “ability change” capabilities
- All or nothing

Streaming SQL

- “Streaming SQL” refers to languages that enable users to write SQL-like queries for streaming data without having to write code.

Business Perspective

- To make better decisions
 - Operational and business monitoring
- Effectively communicate information
 - Visualization – Alerting mechanisms
- Offer new value propositions
 - Insight driven products and services

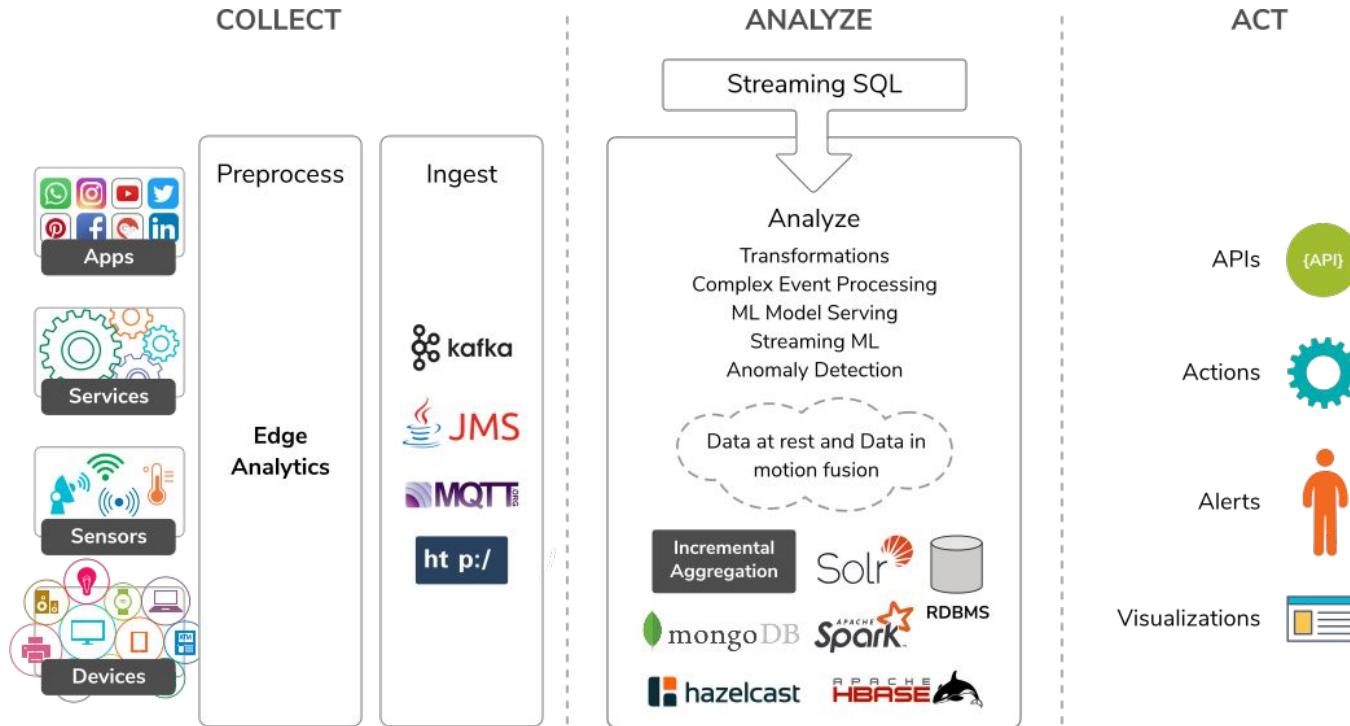
Solution Perspective

- Non-intrusive integration
 - Pull data from heterogeneous data sources and analyze
 - Push results to existing flows with no interruptions
- Intrusive integration
 - Receive input from multiple flows, systems and sources of data
 - Push results to existing flows and systems

Product Perspective

- Interoperability in receiving data to analyze
 - Multiple protocols and formats
 - Pre-process before analyzing
- Interoperability in communicating results
 - Multiple protocols and formats
- Interoperability in data analysis
 - Integration with existing metadata and models
 - Extend with new analysis capabilities

Reference Architecture

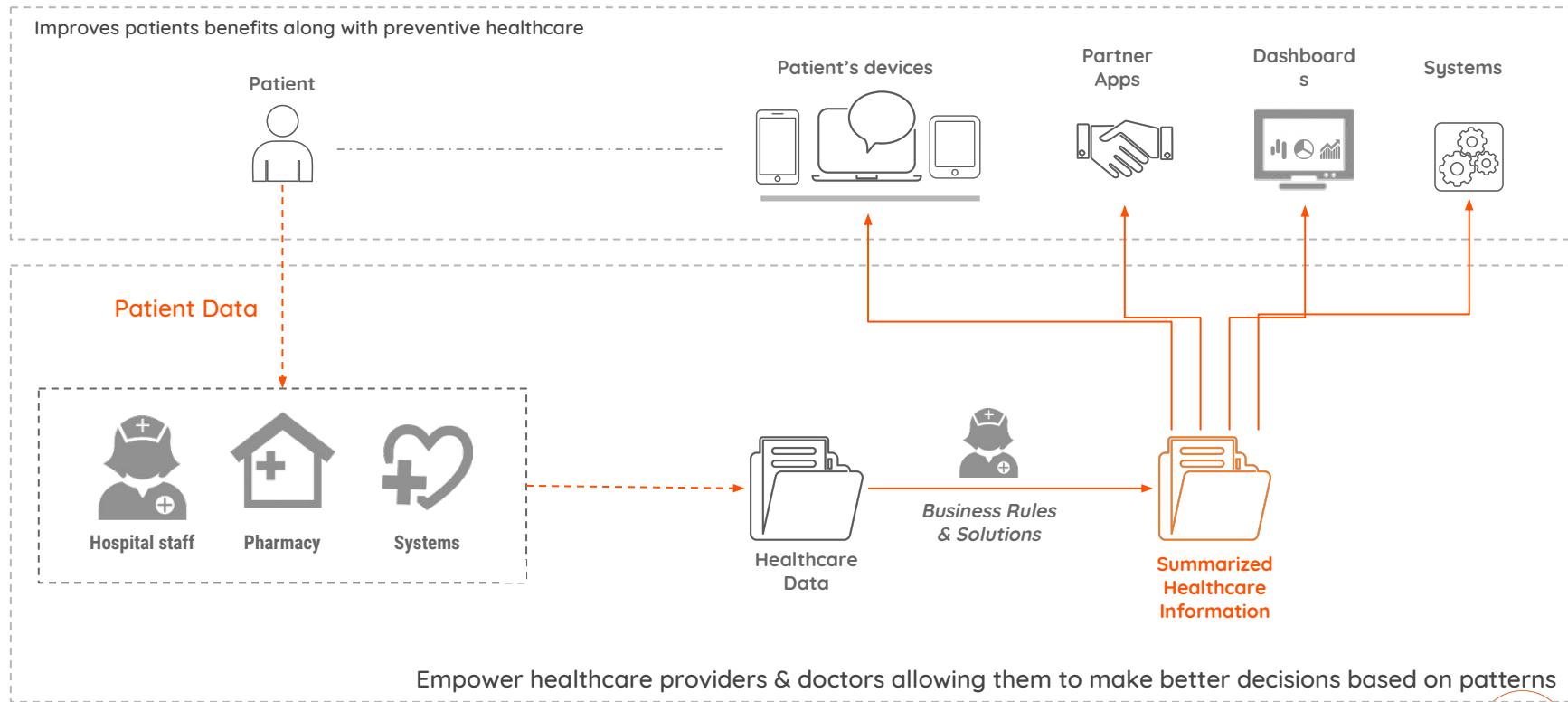


Healthcare



Business Architecture

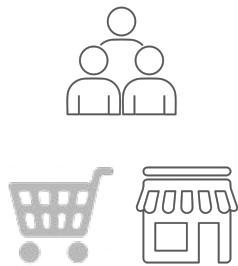
Improves patients benefits along with preventive healthcare



Retail



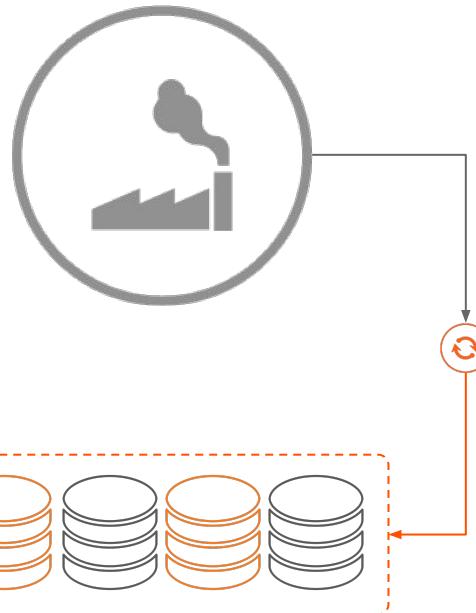
Business Architecture



Customers, supermarkets and restaurants place orders regularly using their laptops, phones, tablets, etc.



These orders are continuously recorded at a database, and with time it will be possible to identify trends and relationships between the products ordered by each consumer.



With time it will be possible to predict what the consumer orders, and you will be able to prompt/remind the consumer on items they may have forgotten to order

Aviation



Finance



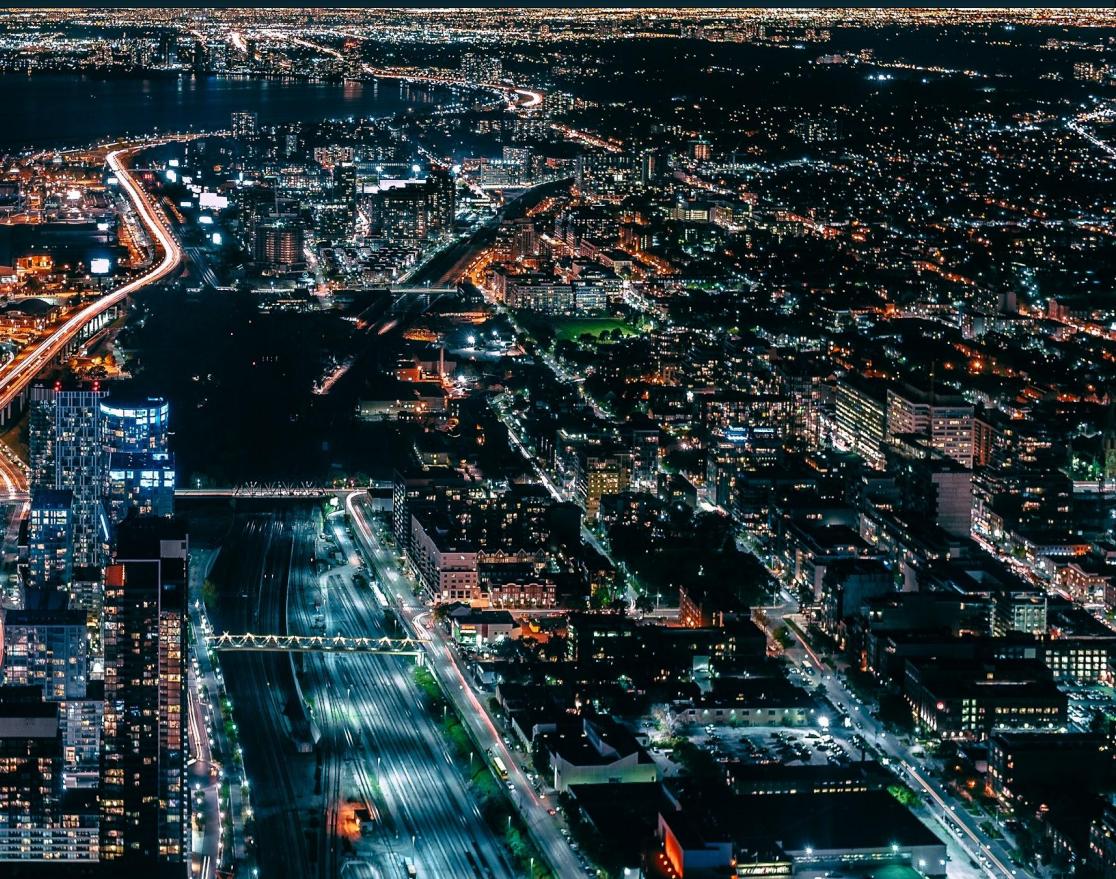
Rideshare



Traffic



Smart Cities



Transports



Telecommunication



Streaming is Everywhere



A Few Challenges with Streaming SQL

- Transactional issues
- Model issues
- Optimization - Memory issues
- Operational complexity - Tricky deployments
- Too many components



THANK YOU

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