MAQ Software

Microsoft Fabric – Real Time Intelligence

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Microsoft Fabric
Featured Partner

Microsoft Power BI
Partner of the Year 2021

snowflake
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Agenda

1. Microsoft Fabric Real Time Insights (RTI) Overview
2. Problem Statement
3. Solution Architecture and Highlights
4. RTI Demo
5. Q&A

Reference

There is a rapidly growing set of use cases that need ‘real-time’ speeds, generating decisions and actions at least 20 times faster than the blink of an eye.”

Link: Forbes “Understanding AI and ML in the real-time economy,” February 2024

Industry use cases

Automotive

- Connected fleet applications
- Autonomous Driving
- Manufacturing + R&D

Manufacturing

- Improving Quality and Throughput
- Predictive Maintenance
- Inventory Prediction

Logistics

- Delivery tracking and routing
- Warehouse management
- Supply & demand operations

Finance & Insurance

- Finance Automation
- Fraud Detection
- Operational Efficiency

Energy & Utilities

- Station monitoring, energy leakage detection
- Equipment Maintenance & Monitoring
- Failure Monitoring

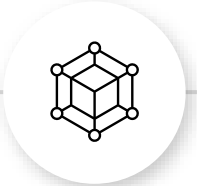
Retail

- Inventory tracking
- Promotions and buying experiences
- Supply chain management

Challenges

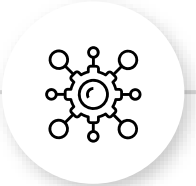
High Throughput

- Real-time data can come in large volumes, requiring systems that can handle high data ingestion rates without lag or failure.
- Data must be processed instantly or with minimal delay to ensure timely decision-making



Data Quality

- Data sources may be noisy, incomplete, or subject to errors
- Ensuring data is accurate and consistent as it streams in continuously can be difficult



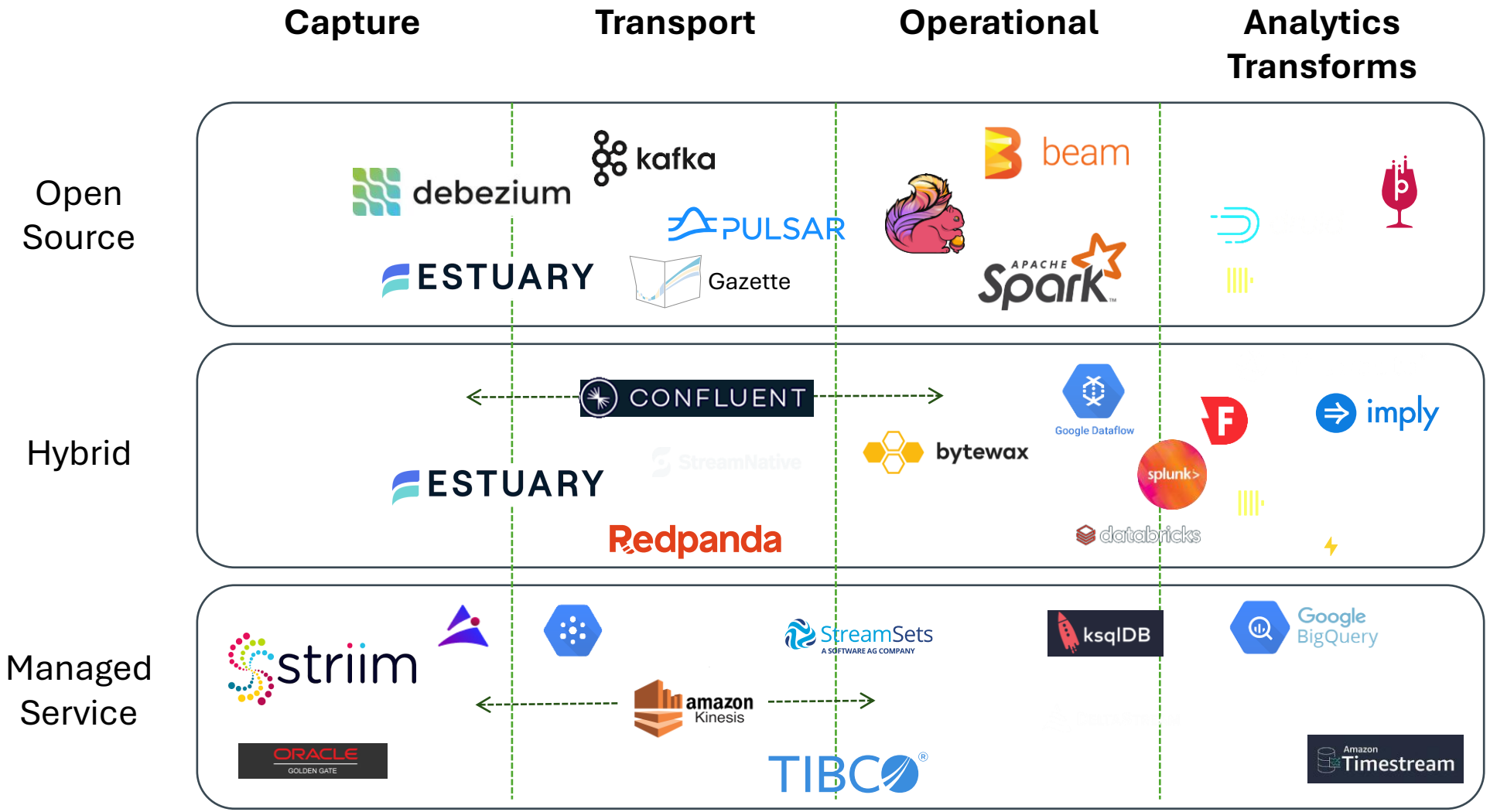
Technology analysis

- Complicated to choose from array of customized technologies and variety of data formats.
- Best fit platform from infra and operational cost perspective

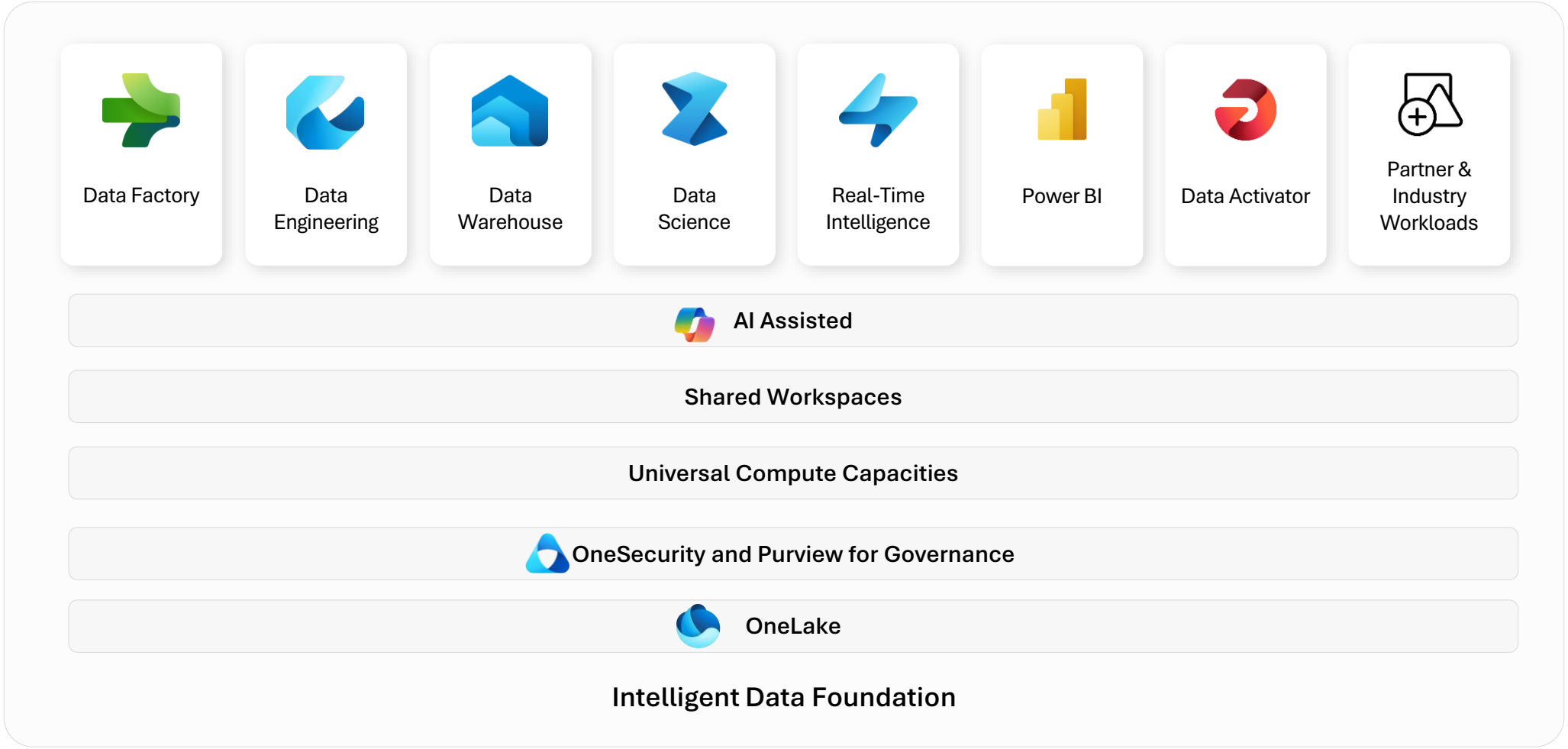
Generate Real-time insights

Difficult to monitor and analyze data in motion.

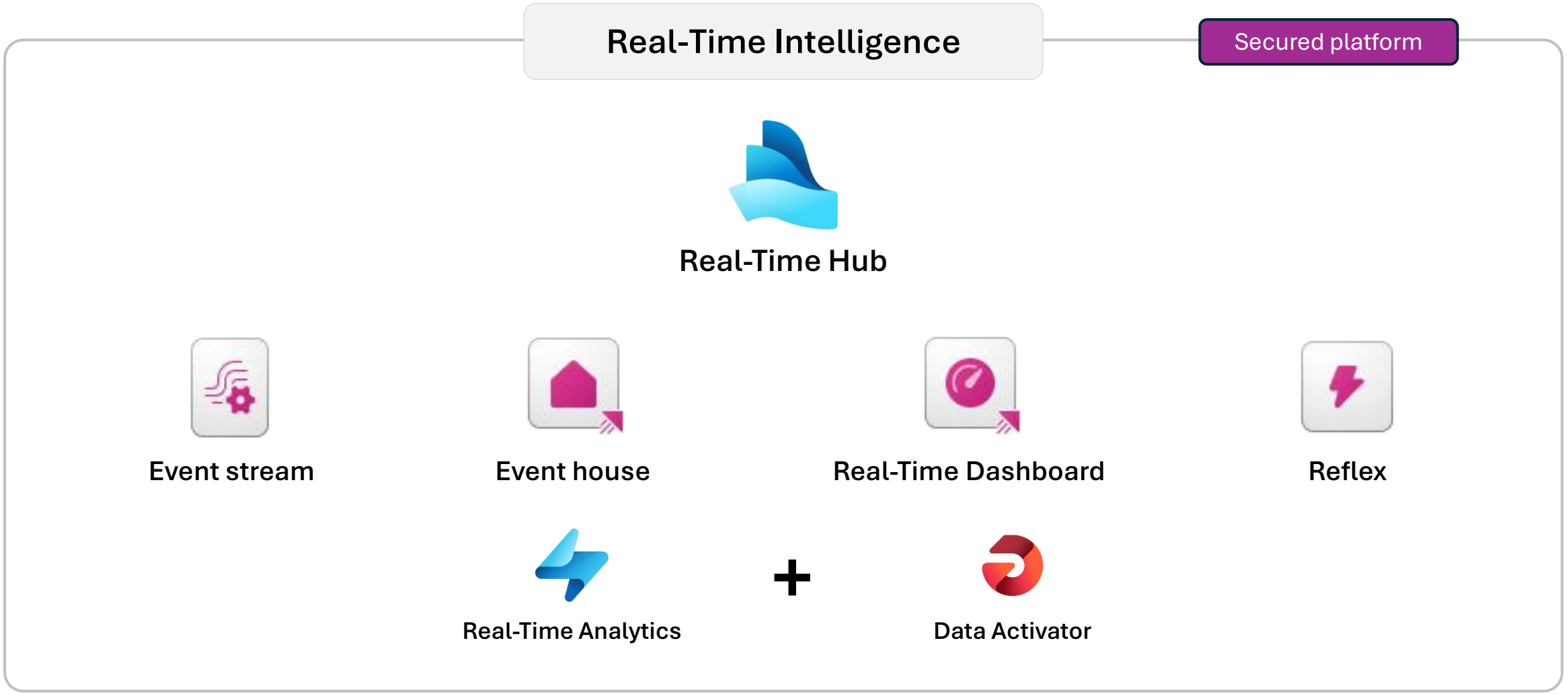
Fragmented landscape for real-time data



Microsoft Fabric Offering



Real-Time Intelligence



Problem Statement

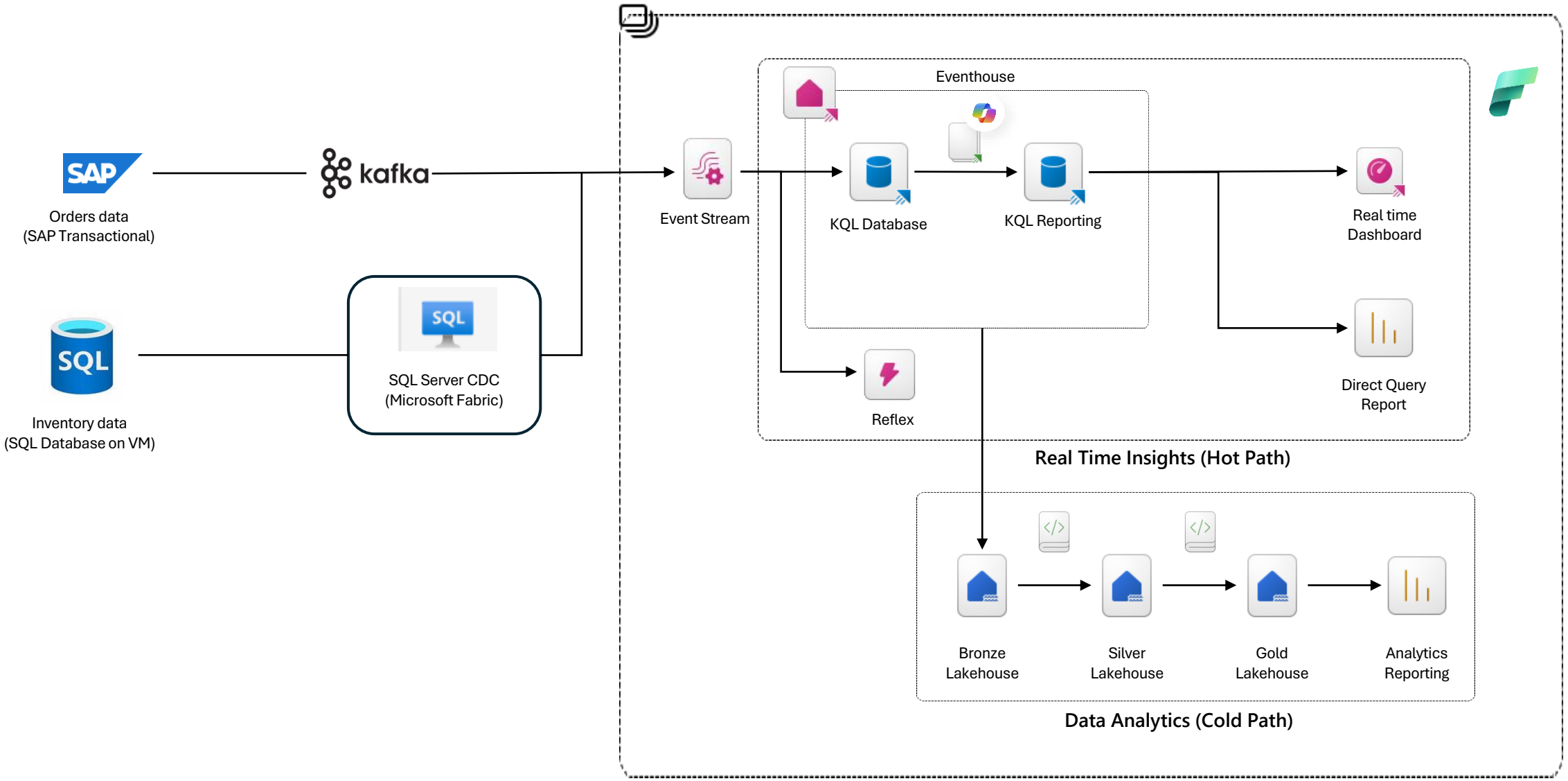
John, is an operations manager of a Global FMCG company Contoso, overseeing a team of warehouse agents responsible for tracking and managing inventory across various warehouses. They have multiple transactional data sources managed on cloud/on-prem providing data feeds around Orders and Inventories.

John and his agents need real-time analytics and immediate notifications for any inventory nearing out-of-stock levels.

Challenges

- Data Integration
- Data Quality
- Latency and Delays
- Cost and resources

Solution Architecture



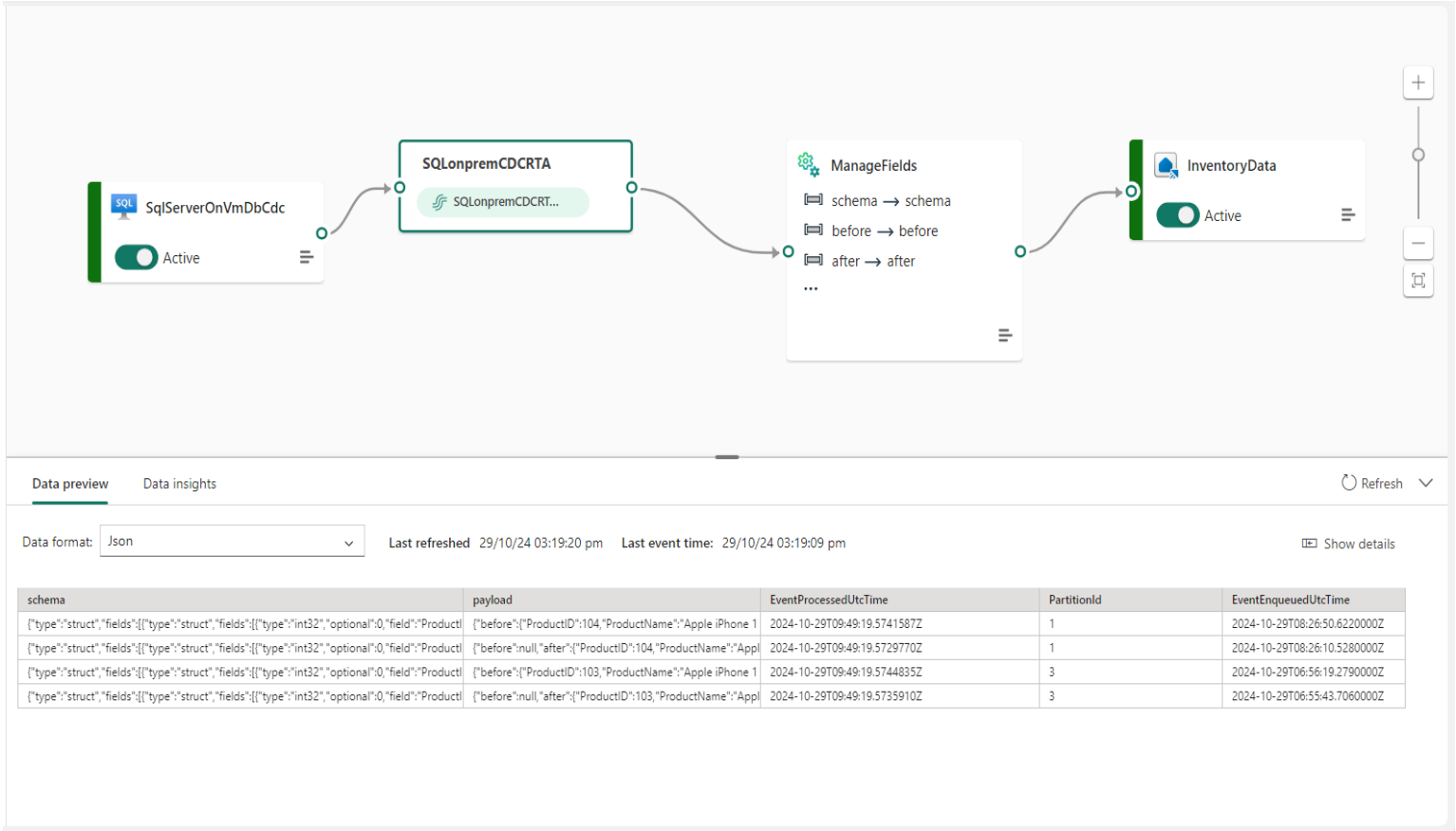
Ingest & process all event sources

Analyze data event streams

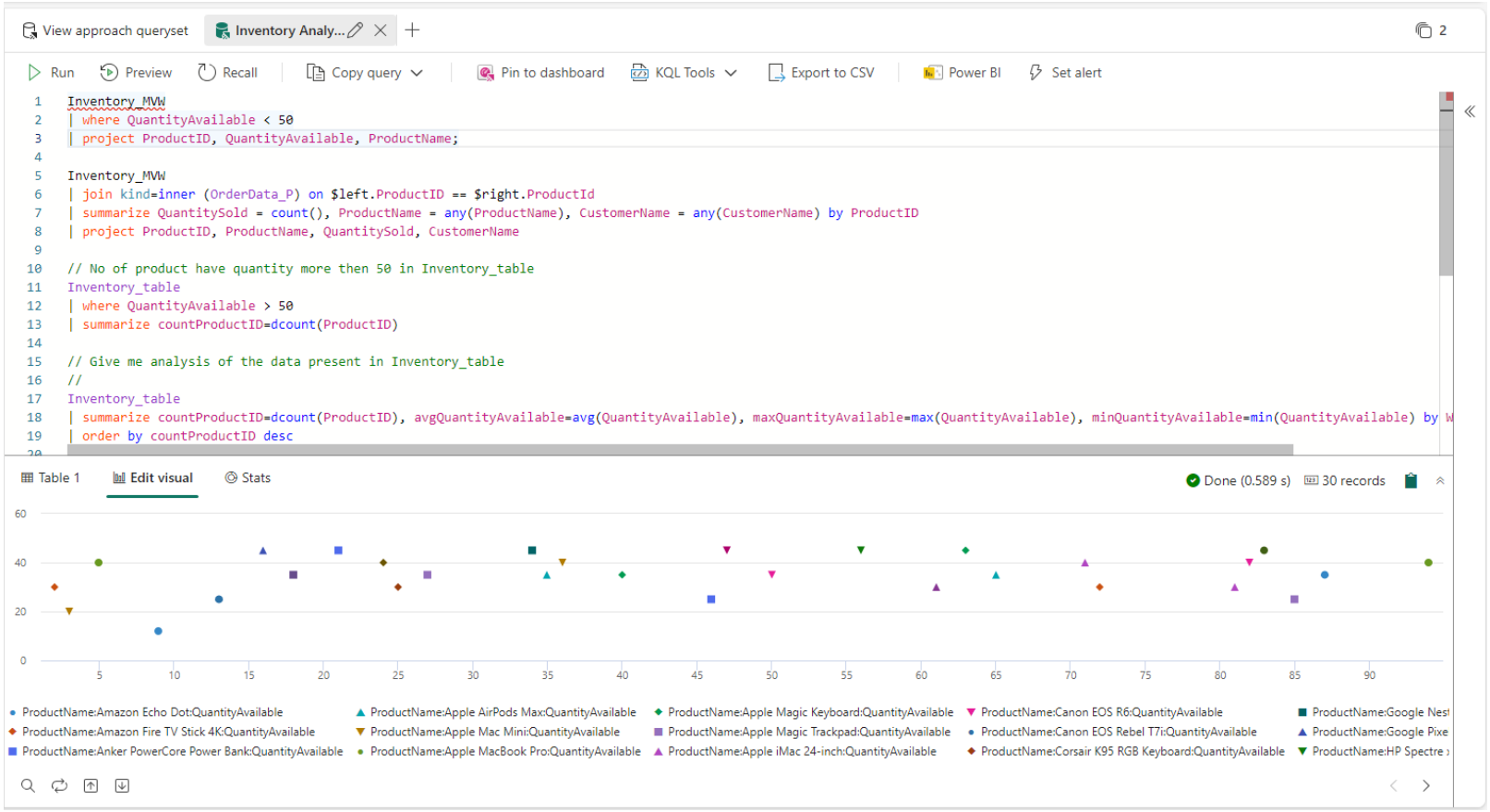
Act quickly on top of data

Analyze data in Power BI

- Capture, transform and route event data without writing code.
- Access out-of-the-box connectors for streaming and event data sources.
- Process data and enrich real-time events.

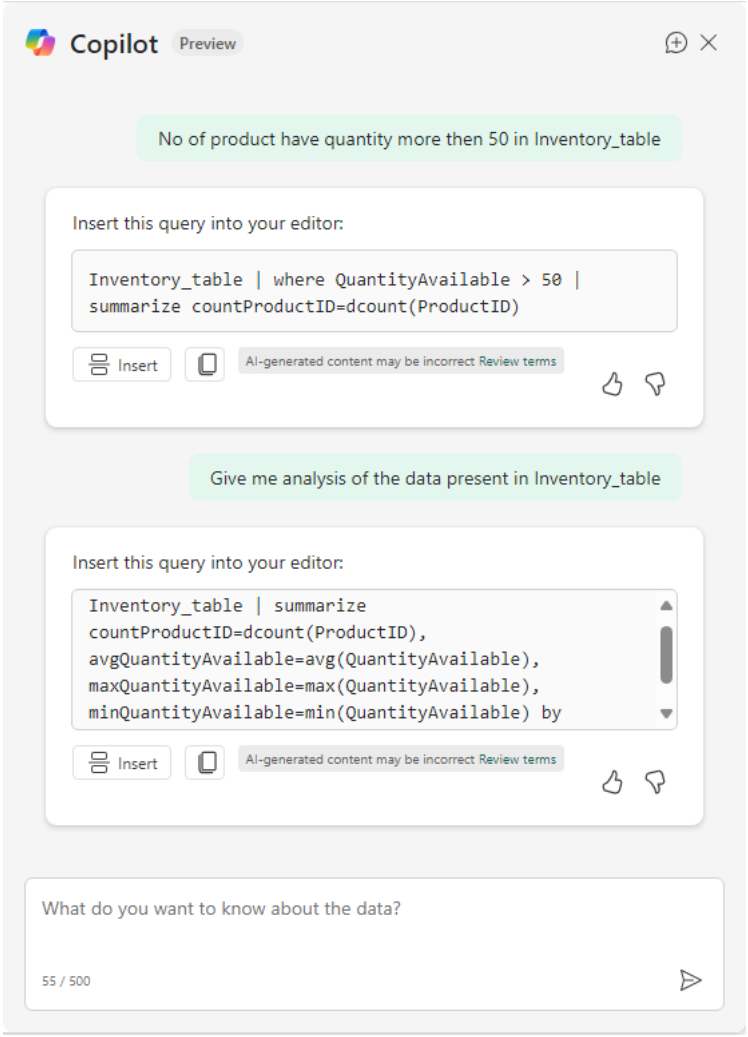


- Use event houses to handle and analyze large volumes of real-time data streams.
- Monitor and manage multiple databases at once
- Create KQL databases and querysets to run, view, and customize queries directly on raw data.

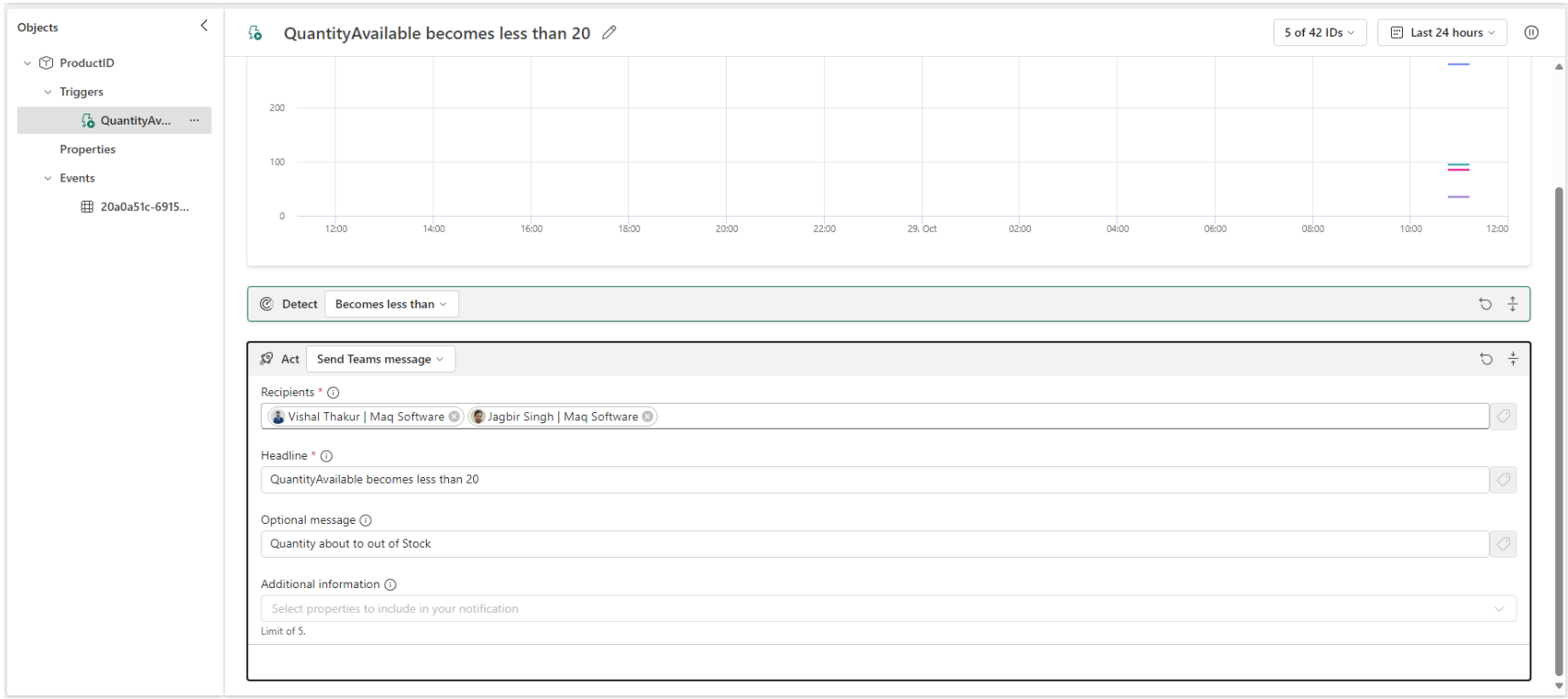


Copilot Integration

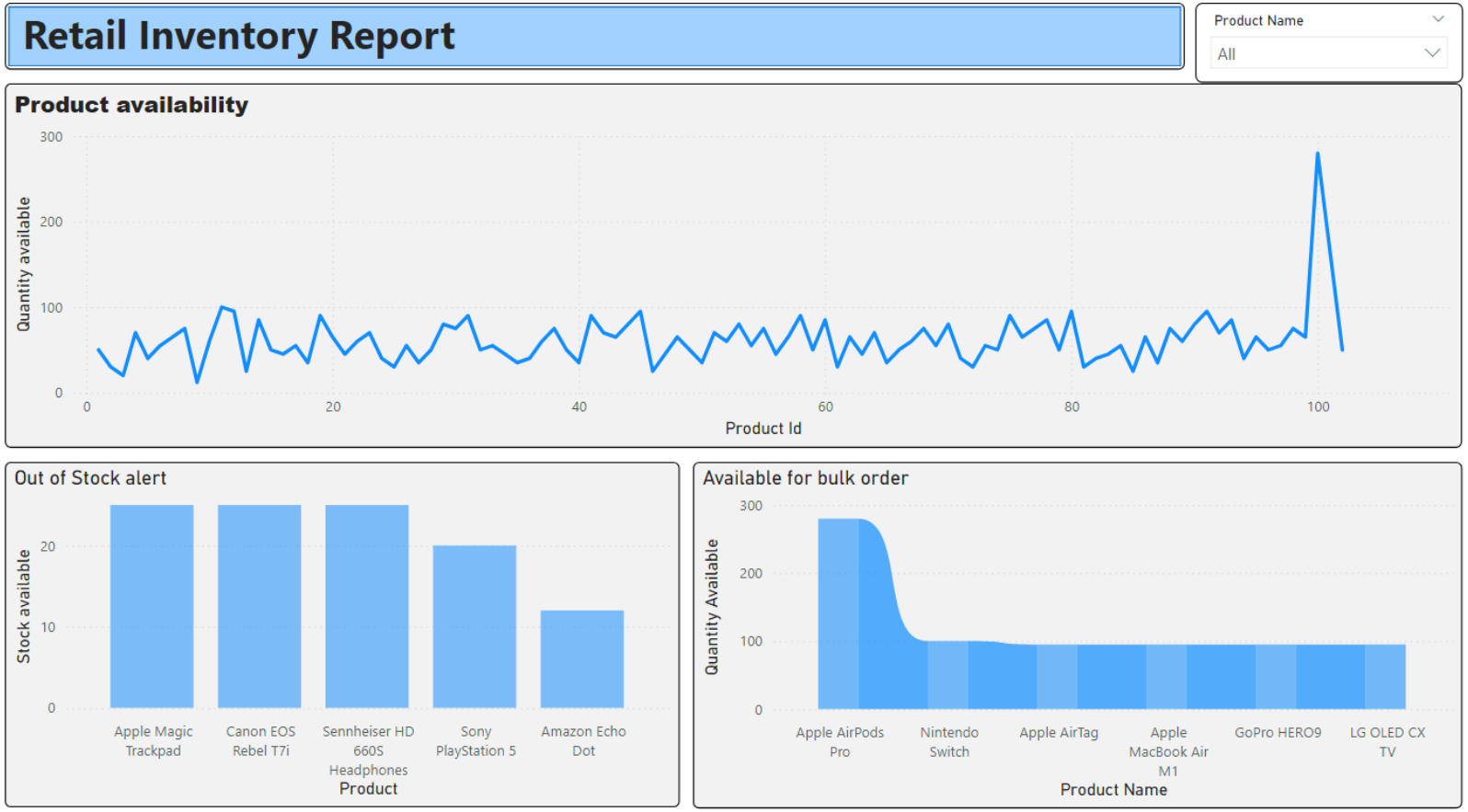
- Generate KQL queries on streaming data.
- Analyze data using Copilots and perform transformations like column addition/removal.



- Automatically take actions when patterns are detected in data.
- Drive actions on a per instance state that evolves over time.



- Report on data and metrics in real-time.
- Automatically refresh report data.



Microsoft Fabric RTI Transformation

From	To
Fragmented, fragile tech stack	One, unified SaaS solution
Advanced skillsets required	Accessible data and analytics tools
Faster batch data processing	Real-time stream processing
Scaling and management effort	Capacity scaling
Multiple data copies	One data copy for streaming and analytics

Upcoming Webinars

Register Here!

Discover how AI can enhance productivity and transform your data strategy on the Fabric platform using GenAI offerings.

Contact Us

For an envisioning session, an MVP, or an actual migration, reach out to us at sales@maqsoftware.com.

2-Hour Briefing

Obtain a clear and insightful understanding through a comprehensive overview of Microsoft Fabric's capabilities.

1 Day Envisioning Session

Clear understanding of product capabilities and identify scope of pilot implementation with a brief on potential solution setup.

4-Week Assessment

Explore the possibilities of Microsoft Fabric with a 4-week assessment, optimizing your business processes.

Accelerated 8-Week Pilot Implementation

Accelerate your Microsoft Fabric implementation with an 8-week pilot, improving efficiency.

How was the session?

Your feedback matters—please take a moment to fill out the feedback form.

Discussion

CDC Data consumption vs Mirroring

	On-Prem Ingestion	SQL CDC enablement	SQL Mirroring
Database Setup	Direct ingestion from existing database	Enable CDC on the source SQL database	Migrate database to Azure SQL
Dependencies & Implications	For delta processing, we need timestamp and soft delete on source	Additional load on the SQL server to track data changes	Any application using the SQL layer will need to migrate to Azure SQL
Implementation	Gateway to connect to SQL. Pipeline to ingest the data based on timestamp	Gateway to connect to SQL. Pipeline to ingest the data based on LSN	Mirroring enabled on Azure SQL to get the data into Fabric mirrored database and consumed via Notebooks
Cost	Fabric CUs charged	Fabric CUs charged	Replication is free
Data processing	Timestamp based	LSN based	Need to implement entire data comparison across data versions in delta