



KX INSIGHTS.
HOW **REAL-TIME DATA**
ANALYTICS DELIVERS
BUSINESS VALUE TO
CAPITAL MARKETS



OVERVIEW

Delivering Value to Capital Markets in Real-Time

Constant connectivity and business digitization have supercharged data growth, and it's not showing signs of slowing down. Meanwhile, the window of opportunity to act on data-driven insights is continuously narrowing, and the ability to make faster, better-informed business decisions has become a competitive imperative.

The new KX Insights platform is:

Built for the Modern Data Ecosystem



Unified for Richer Analytics at Speed and Scale



Proven to Deliver Fast ROI



The financial services sector must move from 'big data' to 'fast data' to drive in-the-moment decisions - it's not good enough to rely on business intelligence derived solely from data sitting in silos across the organization.

Extracting valuable insights to drive real-time decisions is difficult. Data comes in multiple formats and resides in various locations. It may have gaps, duplicates, or inconsistencies, and sources may change, making it hard for quants and other data scientists to utilize it effectively. To identify meaningful business value, real-time streaming data must be captured and analyzed instantaneously and - critically - enriched with context from historical data.

That's why leading financial institutions turn to KX Insights.

Legacy data systems can't keep pace with evolving decision-making needs, so when speed, scale, and reliability matter, many of the world's leading financial institutions

rely on KX. We have built and tested our technology and reputation in the most demanding data environments - not only from Wall Street but also in factories of the future, smart cities, and Formula 1™.

KX Insights is the integrated data management and streaming analytics platform for real-time decision-making that is easy to adopt on-premise, in the cloud, and at the edge. Our unified platform brings the proven power of KX to an organization's data resources, whether they are developers, data scientists, or business analysts. And KX Insights enables quants and developers to work with the tools they already know, like Python and SQL. At the same time, the platform takes care of the complexities of scaling, security, archiving, and failover in the background. An intuitive front-end empowers users to create data-driven solutions by simplifying how the data is accessed and processed, resulting in a speed-to-business-value you can measure in minutes, seconds, or even microseconds.



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Built for the Modern Data Ecosystem



KX Insights is built to make your data analytics easy, fast, and intuitive.

Designed for the modern data ecosystem, KX Insights scales and deploys everywhere you need it – from the public cloud to hybrid cloud, on-premises, and at the edge. No matter how complex your infrastructure is, a single environment and unified logins enable quick results. By leveraging open standards, developers and quants can focus on business outcomes rather than grapple with infrastructure challenges.

Flexible Deployment

For ease of deployment, portability, and resilience, KX Insights runs seamlessly and identically on leading cloud providers, such as AWS, Azure, and GCP; private clouds using trusted technologies like Docker, Terraform, Kubernetes, and Helm; on-prem when the cloud isn't an option or specific security, or control measures apply; and edge devices for those embracing hybrid architectures or circumstances where processing must remain local.

Easy Adoption

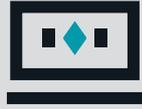
KX Insights accelerates adoption, reduces development overhead, and extends the value of previous investments by making it easy for developers to use their technology of choice. Quants and developers can embed KX directly to utilize existing Python code, libraries, and machine learning workflows. ANSI SQL connectivity allows users to continue working with their existing ETL, data management functionality, and BI tools.

Extensive Interoperability

KX Insights simplify integration with other technologies and provides connectivity to multiple programming languages, retaining and extending the value of existing investments and skillsets.



Connectors to 100's of other technologies, including S3, Postgres, and Kafka, along with REST and OpenAPI interfaces, reduce risk and accelerate development cycles. Interfaces to third-party languages including Python, R, MatLab, C/C++, and Java allow your developers to further accelerate the delivery of new models, algos and trading insights by reusing existing libraries, functionality, and alternative data sets.



Unified for Richer Analytics at Scale and Speed



As a single software stack, KX Insights reduces the total cost of ownership by making deployment easier, minimizing hardware requirements, and simplifying maintenance.

KX Insights provides full life-cycle data ingestion, analytics, enrichment, and storage to streamline data management for faster business insights and includes tools for data exploration, visualization, integration, and querying access data sets – both real-time for immediacy and historical for context.

Microservices and Management

To enable non-developers to import, transform and visualize new datasets and share results without the need to develop complex mechanisms, KX Insights delivers units of functionality as self-contained microservices that can be easily orchestrated into applications.

Data management services cover the following:

- In-memory Complex Event Processing and query optimization across both streaming market data and historical data
- Data capture, logging, and timestamping
- Gateway access and query routing for distributed processing and load balancing

- Data compression and persistence
- Data tiering, aging, archiving, and migration
- Query, transform, share and present live data insights.

Advanced Analytics for Context

An intuitive user interface supports data pipelines for defining ingestion, transformation, analytics, ML models, and storage that can be reused across multiple environments.

The interface enables data scientists to easily load, transform, query, and visualize massive datasets. Combining streaming and historical data in one platform enables trend analysis that adds context to real-time insights - presented via the integrated dashboards visualization layer.



Integrated Security and Monitoring

KX Insights utilizes cloud-based technologies and containerization for integrated security, resilience, and failover.

Dynamic scalability ensures continuity of performance even under high volume, extreme processing conditions, and high-availability cluster configurations with node-level quorum capabilities provide resilience in the face of network failures in non-cloud environments.

Monitoring capabilities, dashboards, and alerts ensure day-to-day operations run smoothly and on schedule, and KX Insights implements security best practices, including single sign-on user authentication and role-based access control.



Proven to Deliver Fast ROI



Forrester's Total Economic Impact™ of KX insights showed more than **80% reduction of the burden for data manipulation and analysis** - by enabling a reduction of the time required to ingest and manipulate the millions of data points generated by IoT and edge devices into a form usable for data scientists. Overall, the study demonstrates that KX insights can deliver **315% ROI across 3 years, with payback in less than 6 months.**

Faster time to Market

KX Insights enables developers to concentrate on business functionality rather than infrastructure. The platform boasts an intuitive UI and integration with cloud-native technologies that make it easy to deploy, use, and integrate with other technologies.

Your dev team can continue to work with familiar tools and technologies to accelerate development cycles that can now harness the power of real-time analytics. At the same time, the Insights front-end simplifies how data scientists select the data sources they want to access, the transformations they want to make, and the analytics they want to be

performed. Throughout, the 'behind-the-scenes' complexities of sourcing, routing, writedown, distribution, scaling, and failover are all taken care of by the platform.

'**Industry Accelerators**'* will provide out-of-the-box capabilities specifically for Telco, Manufacturing, Automotive, Utilities, and Finance, enabling faster delivery of solutions and faster time to insights.

Unmatched Performance

KX Insights is built on top of our own high-performance time-series database designed for rapid analytics on large-scale datasets in motion and at rest.



The columnar design of KX means it offers greater speed and efficiency than typical relational databases, and its native support for time-series operations significantly improves both the speed and performance of queries, aggregation, and data analysis.

Benchmarks testify to KX's high performance.

- It is consistently selected by hardware vendors undergoing independent Securities Trading Analysis Center (STAC) M3 tests – delivering world-record-setting performance.
- It performs over 47x faster than its nearest competitor in the Yahoo Streaming Benchmark.
- It ranked fastest in the DBOps Benchmark in 17 categories.

*Product in development



Who Uses KX Insights?



Built for the Modern Data Ecosystem



Unified for Richer Analytics at Scale and Speed



Enables Faster ROI

KX Insights is an integrated data management and streaming analytics platform for real-time decision-making, which can accelerate the speed to business value for:

- Organizations with a need to leverage cloud technologies and data sources.
- Development teams who need a high-performance time-series streaming and historical analytics platform that is highly available and cost-effective, easy-to-use, adopt, and integrate with.
- Data scientists, data engineers, and analysts who need ever-better processing tools that operate within the cloud and on-premise ecosystem.

Typical Financial Markets Use-Case:

Realtime and historical market data analytics and transaction data capture form:

- **Quant data science** – trading models, market micro-structure research and analysis
- **Surveillance and compliance** activities
- **Execution** - Pre-Trade, intra-trade, and post-trade analytics.
- **Risk management**



Typical Industry Use Cases:

Delivering analytics and insights on-premise, in the cloud, and at the edge, enriching real-time with historical context for continual optimization.

- **Manufacturing** – supporting smart-factory optimization from IoT sensor data
- **Automotive** – At the edge analytics for connected cars, and telemetry for FI®
- **Telco** – Network optimization to improve performance and lower latency at the edge
- **Utility** – Accelerate data analysis from tens of millions of sensors and devices



Organization: **ADSS**
Geography: **Global**
Industry: **Financial Services**

ADSS leverages KX real-time data platform to accelerate its transformational growth strategy.

OVERVIEW

Founded in 2010, Abu Dhabi-based ADSS is one of the largest trading platforms by volume in the Middle East, offering more than 2,700 financial instruments across a wide range of CFDS including currencies, indices, commodities and other financial asset classes. ADSS' commitment to delivering the highest quality products within a robust culture of risk and compliance has made it a trusted partner for institutional, private and retail clients around the world. To support its recently launched transformational growth strategy and offer its clients greater access to liquidity and a broader range of financial instruments, ADSS is making significant investments in partnering with top tier technology providers to develop proprietary data processes and multi-asset trading platforms.

THE CHALLENGE

The ever-present challenge for ADSS is to ensure confidence in its data and that insights can be acted on in the shortest possible time frame. With markets operating in microseconds, ADSS is constantly gathering and analysing data to deliver better customer service, drive enhanced outcomes for clients, increase operational efficiency and ensure regulatory compliance. To deliver the best possible outcomes, real-time data is compared with historic data for in-the-moment-analysis, with those insights being made available to colleagues across the ADSS business, not just the Quant teams.

“We price more than 2,700 different instruments, which translates to roughly 1 billion market data ticks per day. To react quickly to unexpected market events, we need real-time analysis on vast amounts of both in-flight and historic data. . **KX enables us to make better informed business decisions in real-time, improve customer service with both clients and business partners and to be more data driven across our entire business.** We see KX as an important, strategic partner for ADSS as we continue to our transformation into a data-centric business..”

Chris Dale, Co-Head Quantitative Trading, ADSS

WHY KX

As a leader in real-time data analytics, KX was selected for its performance and scalability, interoperability with existing systems and programming languages in use across ADSS, such as Python, C++, Java and SQL, and its suitability for a range of critical use cases. Built on the world’s fastest time series database (kdb+), KX is designed to handle massive amounts of data, no matter the format or location, unlike many data warehouse solutions that struggle to deliver insights in the time frames demanded by the financial services sector. Additionally, KX’s powerful visualisation and dashboard capabilities are critical in helping ADSS deliver against its stated goal to democratise access to data across its entire business.

KX also enables comprehensive algorithmic risk management capabilities that have enabled ADSS to better automate and standardise its risk management processes through enhanced speed of execution.



Many finance practitioners move from or to motorsports because of the rigorous quantitative and time-dependent nature of the two industries, so we have included a non-finance example which we hope inspires.

Example Case Study BWT Alpine F1® Team

BWT Alpine F1® Team is all about speed and data. When winning is measured in fractions of a second, making split-second decisions gives the team a real competitive advantage. In its historical iterations, BWT Alpine F1 Team has competed in Formula 1 since 1977, starting over 400 Grands Prix, winning 35 races, and claiming world championship titles in 2005 and 2006.

For several years, the team has utilized KX across the entire organization, in France for the power unit and in the UK for chassis and transmission, capturing and analyzing data across driver simulators, wind-tunnels, dynos, telemetry instruments, and sensors.

KX has become BWT Alpine F1 Team’s data science platform of choice, helping spot and react to problems before they happen, and identify opportunities to increase performance - in milliseconds.



“We burst a lot of data, billions of data points. We have hundreds of sensors in the cars. That’s a real challenge to manage all that data, to capture it, to store it, and to give immediate access to the engineers. Thanks to our partnership with KX, now these engineers can take decisions in milliseconds.”



Sergio Rodriguez Vaamonde,
Data Science & Engineering Manager at BWT
Alpine F1® Team

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