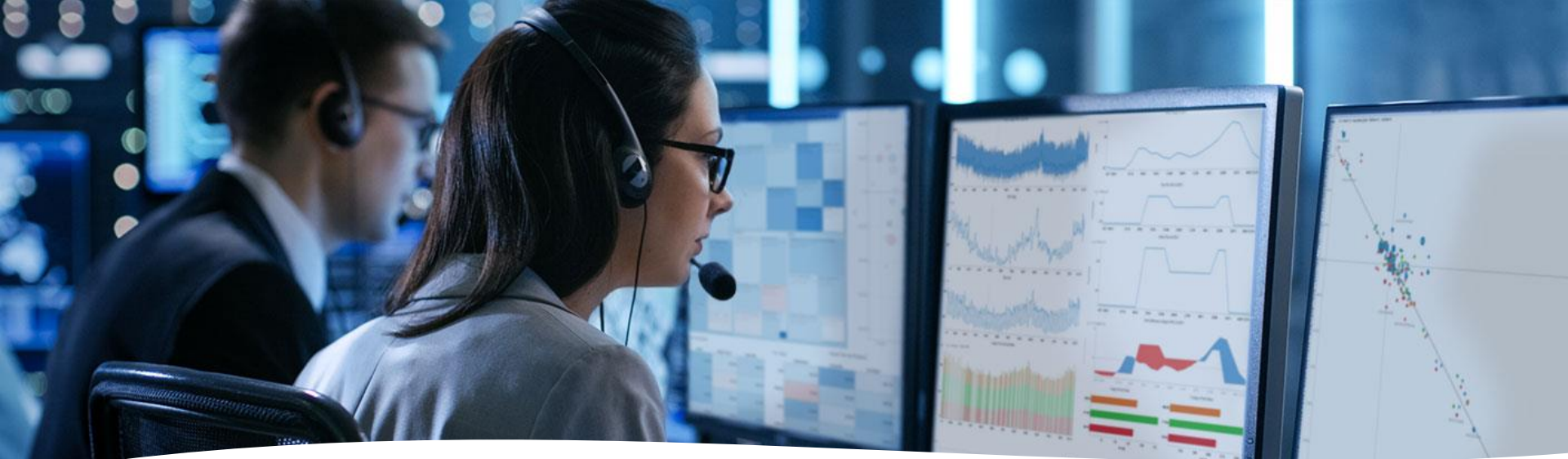


금융권 eFX 플랫폼을 위한 글로벌 banking 동적 BI 솔루션 사례

츠요시 이노야마 / 알테어 수석 기술 디렉터



Agenda

- My Profile
- RapidMiner Platform
- Product History
- Product Architecture
- Common use case at Global Banks – eFX Platform
- Japanese Major Banks' use case
- Summary

알테어 소개

1985

미국 미시간주
트로이 본사 설립

13,000+

13,000개 이상
글로벌 고객사

\$572M

FY22 기준

74 offices

전 세계 27개국
74개 지사

3,000+

엔지니어, 데이터 과학자
IT 전문 인력 72%

150+

알테어 제품과
알테어 파트너사 제품

* 2001 한국 지사 설립

* 2017 나스닥 상장 (NASDAQ: ALTR)

전 세계 13,000개 이상 다양한 산업 고객 보유

자동차	항공	금융	반도체 & 전자	에너지	건설 & 토목
정부 & 방위	중공업	산업재	생명과학 & 제약	교육	화학

* 세계 주요 투자 은행 20개 중 17곳 포함 4,000여개 이상 금융조직에서 사용 경험



Ty Inoyama

Senior Technical Director
Data Analytics APAC
Altair

My Profile

- **30+** years Technical experiences in Financial IT market in New York and Tokyo at
 - ▣ Global Market Data providers (Thomson Reuters, Bloomberg, S&P Global)
 - ▣ Merrill Lynch, now Bank of America
 - ▣ US startups to establish APAC operations (Vhayu, OneTick)
- Big Data (timeseries data), Fast Data (CEP – Complex Event Processing), Machine Readable News with Sentiments analysis, Data Analytics and Enterprise Data Management
- Managed various high-profile migration and cloud projects at Global Japanese financial institutions.

Altair RapidMiner Platform

Advanced Analytics

Analytics Modernization



Altair Monarch

Unique data extraction and ETL

Extract data from PDFs and text files, as well as big data and other structured sources



Altair AI Studio (RapidMiner)

End-to-end, cloud-ready platform

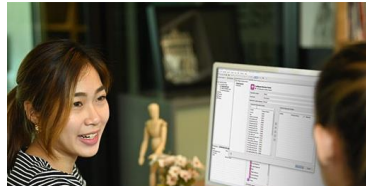
Scale data science with a unified, end-to-end platform for anyone in your organization



Altair Panopticon

Real-time streaming and visualization

Build sub-second streaming, batch, and BI data applications all in the same tool, without coding



Altair SLC

Native SAS Language Engine

Run SAS language programs, models, and workflows without any third-party software





Panopticon - History

- Started as a subsidiary of Swedish online brokage in 1999 and spun off as separate entity in 2002.
- Technology framework built for capital markets front office supporting streaming real-time data sources. Timestamp precisions supports in seconds. Now milliseconds and nanoseconds.
- Solution partnership with Thomson Reuters to visualize data and trade signals from Complex Event Processing (Fast Data) and Timeseries database (Big Data) for quants research and algo trading applications.
- Customers like JPMorgan Chase, Citi, Citadel, BlackRock, Jefferies and Barclays for their real-time trading and risk applications
- In 2013, Datawatch Corporation acquired Panopticon Software AB
- In 2018, Altair Engineering Inc acquired Datawatch Corporation to establish Data Analytics business, now a part of Altair RapidMinder Platform

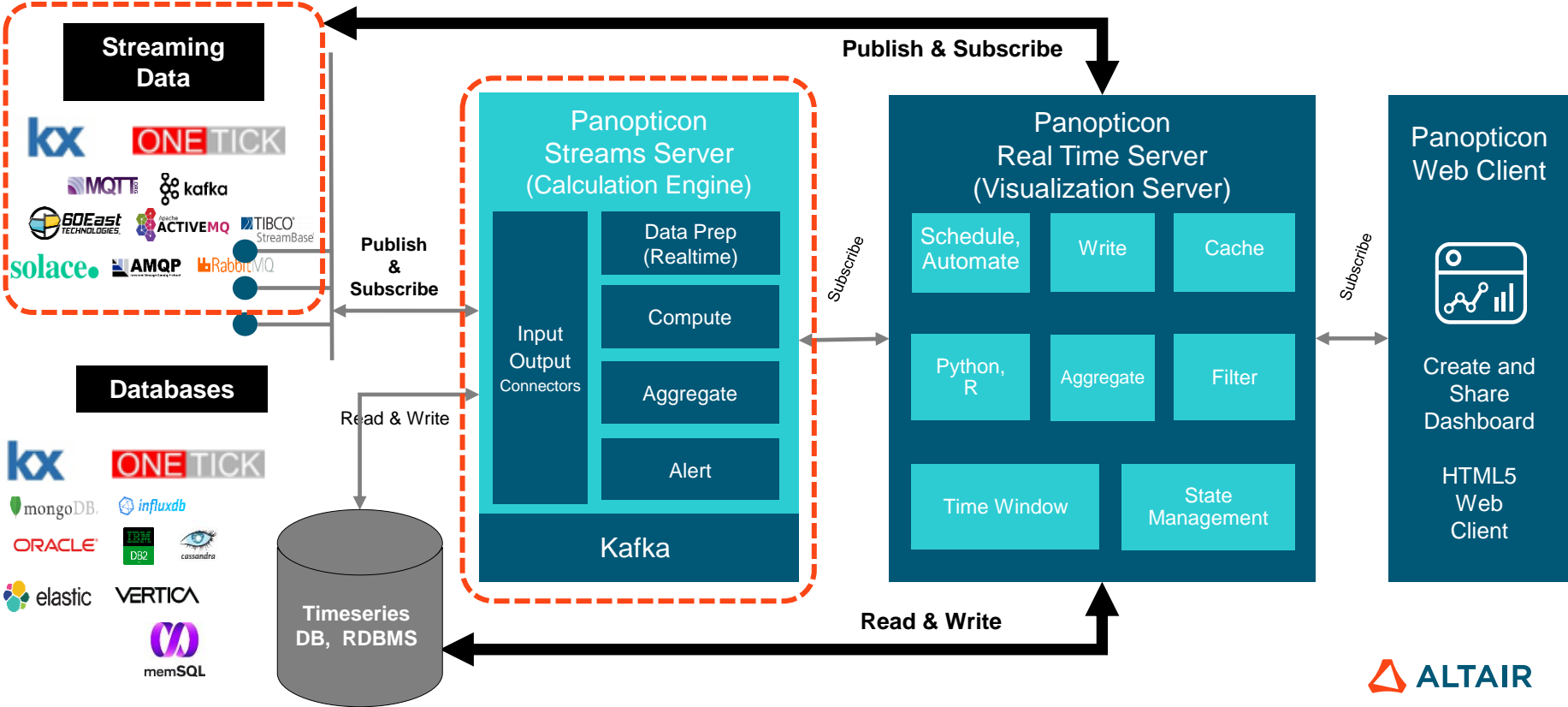
Panopticon built for Capital Markets supporting with speed and size of markets.



Panopticon – Advantages

- Supports Streaming data sources with **native APIs**. Especially for common Calculation Engines and Messaging Platforms in Capital Markets like Kx, OneTick, Solace and Kafka.
- Capital Markets front office use cases and required features are:
 - Order Management 
 - Pricing Techniques 
 - Customized Algorithmic Trading 
 - Flexibility and Scalability UI 
 - ❑ **Join** Streaming and static data sources with no codes – Maximize the existing data storage and assets
 - ❑ **Conflate** High speed streaming data contents at connector level into time window for humans – Reduce high-cost of development and maintenance of Calculation Engines for monitoring
 - ❑ Action to trigger Python and external API to **control** data contents and data schema in data sources – Build front end UI for Calculation Engines

Panopticon – Advantage for Streaming Data Processing



Panopticon Common Use Cases – eFX Platform

- eFX Platform: electronic FX trading, risk management and analytics in Forex.
- Common Complex Event Processing Engines are **Kx** and **OneTick**: offer feature-rich customizable FX trading, analytics, algo and surveillance modules to augment an existing FX trading infrastructure
- UI/Dashboard requires interactive visualization tool to customize pricing, hedging, alpha and order routing strategies in real time, and also requires a full suite of real-time pre and post trade analytics UIs and reports enable users to have data-driven conversations with their clients.

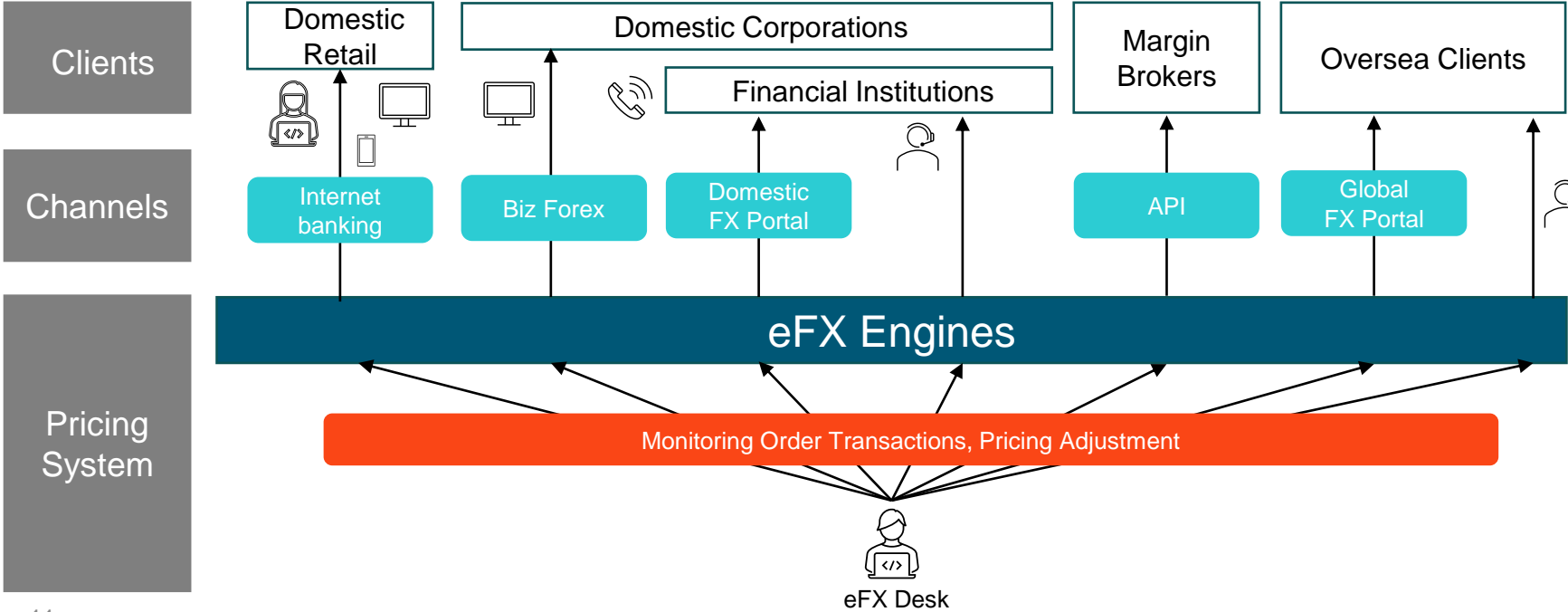
Reasons for **Panopticon** to be chosen

- ❑ Purpose of Common engines is for high performance computing in in-memory timeseries database. Cost of license and developers are considered in high end compared to other type of solutions.
- ❑ Flexibility for joint multiple data sources including Streaming and RDBMS, other static data sources

Best of Breed for Engines and UI/Dashboards

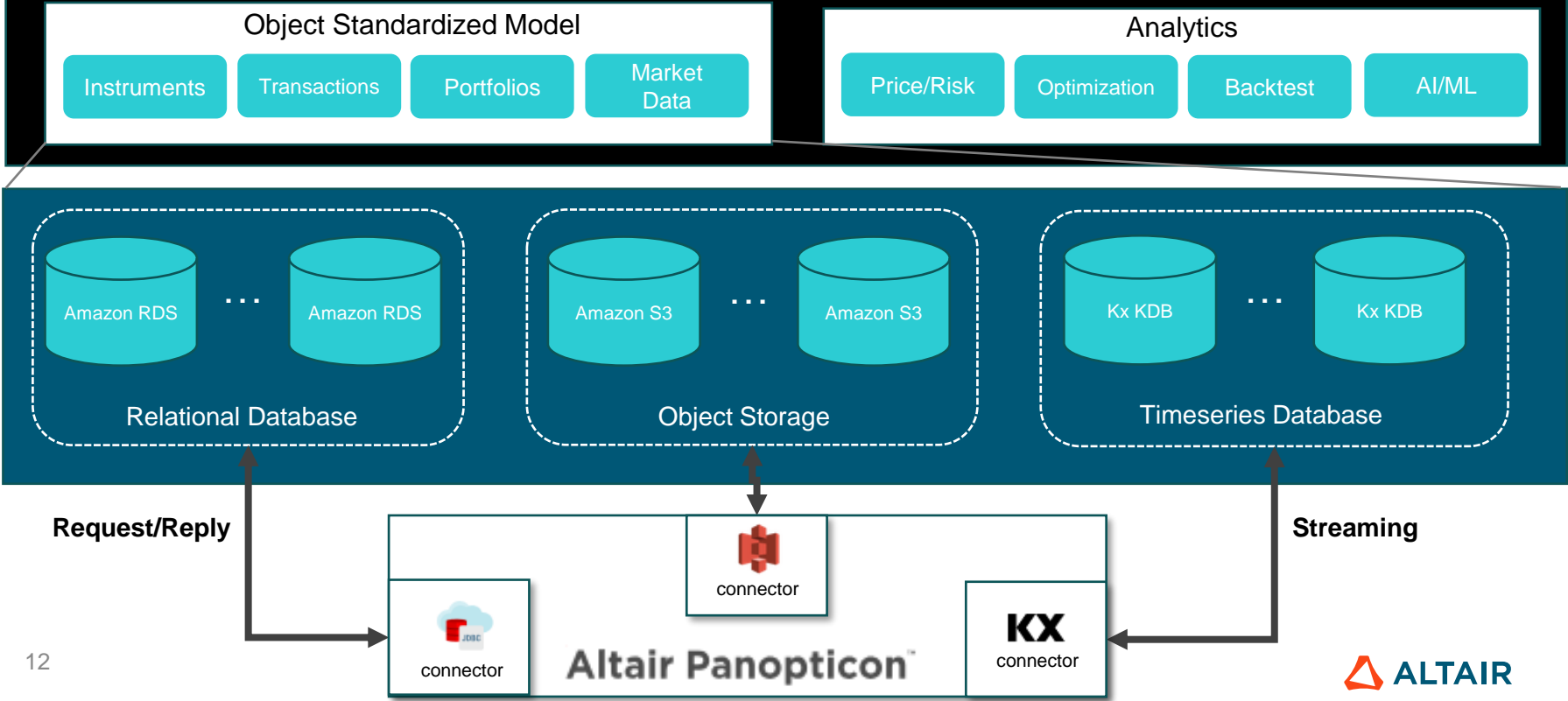
Japanese Major Banks Use Cases – eFX Platform

FX Order Transactions Flow with eFX Platform



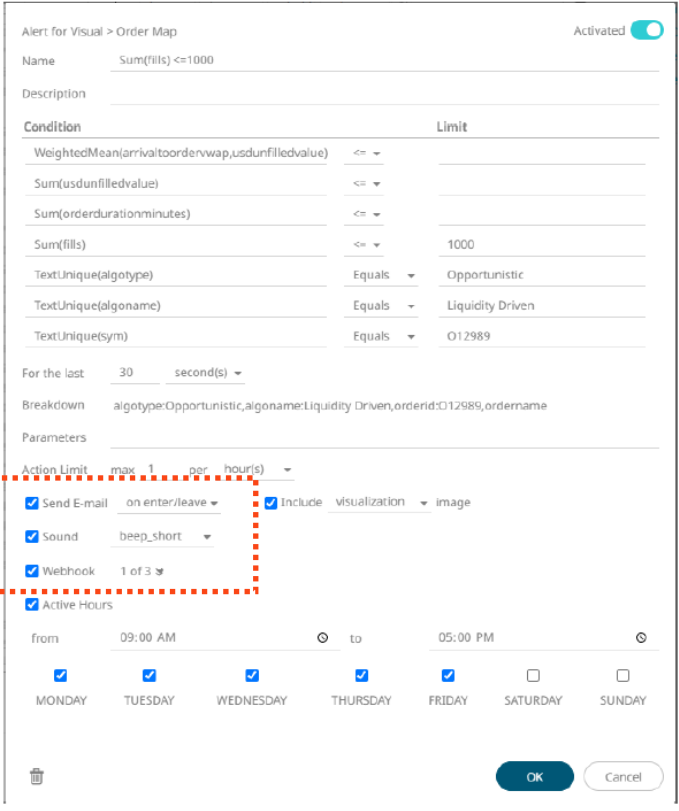
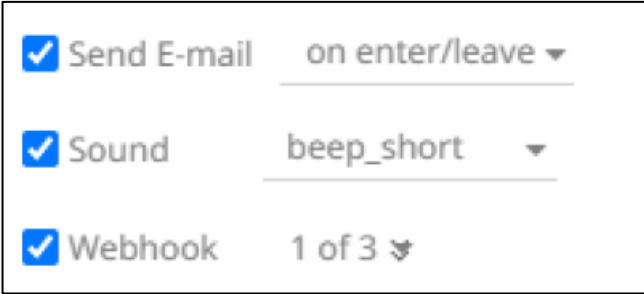
Japanese Major Banks Use Cases – eFX Platform

Common Data Components



Japanese Major Banks use cases – Enhancement to Improve Workflow

- Proactively add new features based on Customers feedback into next release or roadmaps as much as possible – **Alerts and Sounds by Alert** are examples from Japanese Customers not to miss any alerts or and irregular behaviors in eFX transactions.
- Data table toolkits are in roadmap to migrate individual data tables into Data Library to share data connections by many dashboard developers.



Summary

- **Flexibility and Scalability**
 - Self service to build Streaming and Interactive dashboard
 - HTML5 client to iframe external component into single dashboard
 - Single Sign On and High Availability configuration is supported
 - No database maintenance for the product and maximize the existing data platform and assets
- **Low TCO with Concurrent User License**
 - Financial benefit of Unique License model RapidMiner platform to maximize all RapidMiner platform capabilities into your workflow

FRICITIONLESS

AI FOR EVERY PERSON
AND EVERY ENTERPRISE



▲ ALTAIR RAPIDMINER
더 알아보기 / 데모신청



다양한 프로그래밍
언어 통합 가능
(SAS Language, 파이썬, R, SQL)



노코드/로우코드/
오토ML/MLOps 지원



실시간 시각화 지원

▲ ALTAIR

Appendix : Altair Panopticon

Altair® Panopticon™ - 실시간 데이터를 이용한 직관적인 의사결정

빠르게 변화하는 방대한 양의 데이터 처리 및 시각화



어떤 데이터라도 시각화

실시간 스트리밍 데이터를 시각화하고 나노 초(nano second) 단위의 시계열 데이터를 처리



어떤 데이터 소스라도 연결

미들웨어나 사용자의 코딩 필요 없이 일반적인 모든 실시간 스트리밍, 시계열, SQL 및 빅 데이터 소스에 직접 액세스.



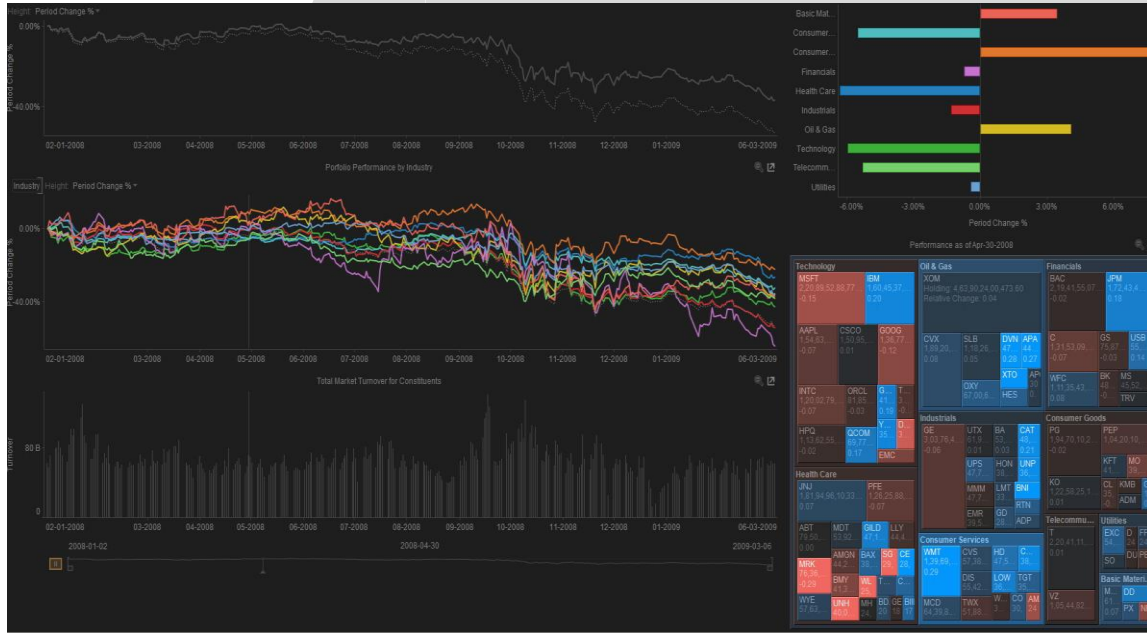
Drag-and-Drop 인터페이스

변화하는 비즈니스 요구 사항에 신속하게 대응하고 위험과 비용을 절감하며 새로운 어플리케이션과 대시보드를 신속하게 구현 가능.



다양한 분야에서 다양한 활용

프론트 오피스 - 나노초 단위 시계열 모니터링, 실시간 의사결정 거래지원
 미들 오피스 - 시장의 다양한 환경 모니터링, 복잡한 연계 분석을 통한 실시간 리스크 알림
 백오피스 - 각종 컴플라이언스를 뒷받침할 수 있는 다양한 이상 탐지



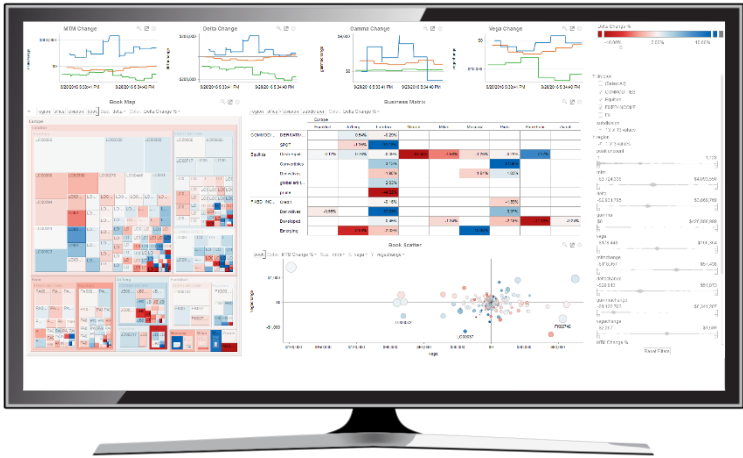
실시간 의사결정을 위한 Intelligence Platform

Streaming Analytics Dashboards 예시



Real-Time Transaction Cost Analysis and P&L

This dashboard is designed to enable traders, quants and sales to monitor best execution and analyze profit and loss of trading activity as well as transaction costs in real time. This enables them to respond immediately to market events and threats to customer order flow execution and firm profitability during the trading day.



Risk Sensitivity Monitoring & Analysis

Risk Analysts use visual analytics like this to monitor how much risk the firm is taking on at any given time at the office, desk, and individual trader levels. They can set alerts to notify them when risk exceeds pre-determined thresholds, and use the visuals and filter to identify the causes of any anomalies in a few seconds.