

BRIEFING NOTE

NICE ACTIMIZE'S SURVEIL-X

IMPROVING SURVEILLANCE EFFECTIVENESS WITH CLOUD AND ADVANCED ANALYTICS

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This is an authorized reprint of a Celent report. The reprint was prepared for NICE Actimize, but the content has not been changed.

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WHY IT MATTERS

Surveillance operations at capital markets firms are undergoing a sea of change driven by growing regulatory pressure, proliferation of trading venues and asset classes, and an explosion in the data universe especially involving communication data. Celent [discussed](#) the need for combining trade and communication surveillance and leveraging advanced analytics such as artificial intelligence (AI) and machine learning (ML) to respond to these challenges.

Despite significant interest among capital markets firms to achieve holistic surveillance, progress has been limited so far. This is because of siloed operations, fragmented data and technology architecture, and lack of a unified solution supporting different types of surveillance and case management. It has proved to be difficult to integrate market, trading, and communication data, and seamlessly migrate from existing fragmented technology architecture to a unified approach in surveillance.

NICE Actimize, an expert provider of surveillance technology solutions to capital markets firms, has launched a cloud-native platform called SURVEIL-X to overcome these challenges. In SURVEIL-X, it has brought together all surveillance components — markets and communication surveillance, market data, and case management — and powered it with advanced analytics, and visualization and trade reconstruction capabilities.

A unified and component-based surveillance solution should help capital markets firms gradually move toward the goal of achieving holistic surveillance because it does not require them to rip and replace existing solutions, but offers them the opportunity to replace one component at a time. An included managed data services can further help in integrating operations across asset classes or business lines. Use of AI and machine learning can improve detection efficiency and reveal previously unknown suspicious behavior, while a centralized case management with advanced visualization capabilities helps in faster trade reconstruction and investigation, thereby improving efficiency and effectiveness of surveillance operations.

Use of the cloud offers better cost and scalability advantages; it also makes it easier to migrate to a holistic surveillance approach in a gradual manner through incremental transformation. Adoption of cloud in capital markets is growing, but the adoption journey has progressed at different speed for different banks mainly due to concerns about data security, privacy, and operational risk. Therefore, the option to gradually move toward cloud-based holistic surveillance should be appealing to financial institutions because this approach is less disruptive.

Context

NICE Actimize launched the SURVEIL-X solution in September 2019, and recently briefed Celent about the solution's key features and roadmap. We spoke to Steve LoGalbo, Director, Communication Surveillance Product Management.

Company and Solution Overview

According to the company profile on Celent's [VendorMatch](#),

“NICE Actimize is the largest and broadest provider of financial crime, risk and compliance solutions for regional and global financial institutions, as well as government regulators. Consistently ranked as number one in the space, NICE Actimize experts apply innovative technology to protect institutions and safeguard consumers and investors assets by identifying financial crime, preventing fraud and providing regulatory compliance. The company provides real-time, cross-channel fraud prevention, anti-money laundering detection, and trading surveillance solutions that address such concerns as payment fraud, cybercrime, sanctions monitoring, market abuse, customer due diligence and insider trading.”

As part of its suite of compliance solutions, NICE Actimize has been offering trade and communication surveillance solutions as well as case management and analytics for some time. In SURVEIL-X, it has brought together all the surveillance components, powered them with advanced analytics including artificial intelligence and machine learning, and added new visualization and trade reconstruction capabilities.

KEY BRIEFING TAKEAWAYS

Cloud-Native Holistic Surveillance Platform Powered by Market Data and Advanced Analytics

The SURVEIL-X solution is intended for detecting risky behavior stemming from trading in all major asset classes. It complies with major global regulations including MiFID II, Dodd-Frank, and Regulation Best Interest. There are three key aspects of the SURVEIL-X solution: holistic surveillance capabilities, support for data and advanced analytics, and its cloud-native feature.

Holistic Surveillance Capabilities

SURVEIL-X provides coverage across trading, markets, and communication surveillance.

- Markets surveillance is part of SURVEIL-X and monitors trades across the full trade lifecycle with order and execution-based models. It covers a range of risky behavior such as market abuse, fair dealings, high frequency trading, Dodd Frank swaps surveillance, benchmark monitoring, and so on.
- SURVEIL-X also supports communication surveillance capabilities with the ability to monitor more than a dozen communication types including electronic and voice communication. Monitoring capabilities leverage Natural Language Understanding (NLU) techniques, and its models are tuned specifically for the financial market context; this helps it identify context in communication information in multiple languages. SURVEIL-X supports analysis of over two dozen languages, and it can also support voice-to-text conversion of communication data.
- Furthermore, SURVEIL-X can monitor connected actions across sources (e.g., including trade and communication data) and generate a single alert with all the applicable data.
- Integrated within SURVEIL-X is the NICE Actimize Risk Case Manager (ActOne) that supports centralized and web-based case management, trade reconstruction including interactive market replay, and visual alerting and story-telling. The visual analysis of alerts and cases can incorporate information from a range of sources and is intended to expedite the investigation process.

Data and Advanced Analytics

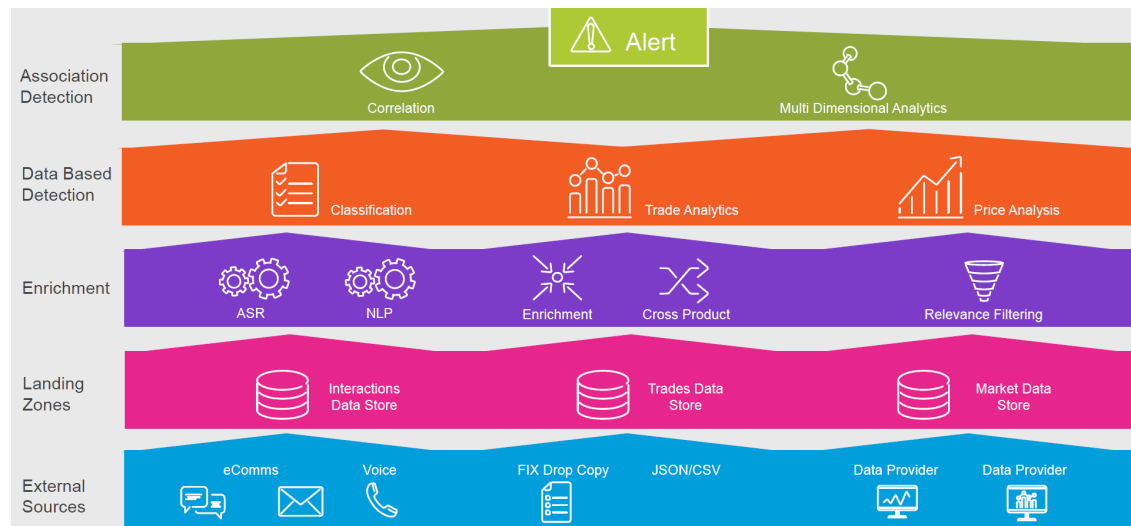
There are two key aspects in which SURVEIL-X leverages multi-dimensional data.

- It includes a market data service that connects to over 180 real time data sources including level 2 data on over-the-counter and exchange trades instruments, news sentiment, and rating and benchmark data.
- Furthermore, the platform can ingest, clean, standardize, enrich, and integrate several types of data for analysis such as trades, order, and execution; electronic communication such as email, chats, social media; voice conversations including voice-to-text conversion; and additional data or documents such as HR data, compensation information, and so on.

The SURVEIL-X solution comes with over 150 out-of-the-box analytical models including traditional rules-based models as well as new AI- and machine learning-powered models. AI models leverage anomaly detection, smart classification, advanced speech and behavioral analytics, and Natural Language Processing (NLP) capabilities. AI-powered multi-dimensional analytics can correlate and analyze communications, trading data, and other data sources to improve detection accuracy and detect previously unknown suspicious activities. Furthermore, AI and intelligent automation capabilities are embedded in the case manager to gather all the information related to an alert or case, and display the full story detailing an alert or a case.

According to NICE Actimize, the use of these analytics capabilities can reduce false positives by up to 70% in trade surveillance, more than 90% in communication surveillance, and reduce investigation time by up to 70% while reconstructing trades in minutes.

Figure 1: SURVEIL-X Logical Flow Diagram



Source: NICE Actimize

Public Cloud Deployment

SURVEIL-X is a public cloud-native solution deployed over Amazon Web Services where the solution is hosted and managed by NICE Actimize with separate instances used for every client. The use of public cloud drives down the total cost of ownership by significantly reducing infrastructure, operational, support, and training costs. Furthermore, it expedites implementation time and makes the upgrade process simpler and faster; this can allow users to respond to internal and external regulatory changes in a flexible and agile manner.

The cloud-based platform also comes with a self-development tool box enabling user financial institutions to address bespoke analytics requirements such as customizing or optimizing existing models, developing new models, and building alert visualization and distribution rules, enabling them to address firm-specific policies and business requirements without relying on the vendor. Additionally, users can leverage NICE Actimize's X-Sight Marketplace, which is an ecosystem of third party regtech solutions and is intended to enable financial institutions to easily discover and integrate new compliance solutions.

Opportunity and Focus Areas

The target audience for SURVEIL-X is buy and sell side firms, wealth management firms, insurance companies, crypto exchanges, and regulators. Multiple large global financial services organizations have already signed up for SURVEIL-X, and NICE Actimize is currently in discussions with others for using the solution in the near term.

- Large and global institutions with high-volume and complex operations should find the advanced and multi-dimensional analytical capabilities combining trade and communication surveillance as well as the self-development capabilities particularly attractive.
- Small and midsize players as well as users implementing best-in-class surveillance solutions for the first time (such as buy side or new exchanges) should find a low-cost, integrated solution and ease of implementation and maintenance over the public cloud appealing.
- SURVEIL-X provides existing users of NICE Actimize's surveillance solutions, most of whom have on-premise installations, a path to move to the cloud through gradual and

component-wise upgrades, incrementally combine different components (such as multiple asset classes, trade and communication, etc.), and it thus offers them a path to achieve a truly holistic approach in surveillance. This approach should be operationally and financially easier and less risky compared to large-scale replacement and transformation programs spanning asset classes and business lines.

For furthering product development, NICE Actimize's plans with SURVEIL-X include enhancing its advanced analytical capabilities by adding more out-of-the-box machine learning techniques beyond the currently used random forest, isolation forest, and K-Nearest Neighbors algorithms. Similarly, to support its market expansion in the Asia-Pacific region, the company is developing new models to analyze communication in non-English and non-European languages. Other product enhancement plans include adding dashboards and visualization capabilities to include new data fields in its graphs to make visual story-telling more detailed and powerful.

Considerations for Adoption

As Celent has discussed in several reports,¹ we expect both cloud and advanced analytics will play a critical role in capital markets operations. Industry participants and regulators are currently undergoing an educational journey in figuring out a smooth and resilient way for facilitating wider adoption of these new technologies.

Model governance, explainability, and auditability are critical considerations for using AI and machine learning. Despite encouragement from the leading regulators about their use in surveillance, a consensus is yet to emerge on these critical aspects in the industry. This is making some firms take a wait and watch approach and slowing the adoption of AI-powered solutions. Large banks and their vendor partners are playing an important role whereby they are working on pilots, engaging and sharing results with regulators, and thus building a level of awareness and comfort among participants in the ecosystem. More needs to be done in this regard to expedite wider adoption.

Data security and privacy continue to be important considerations in the adoption of cloud. While most financial institutions acknowledge that public cloud providers are better positioned to invest in and improve the security aspects than individual financial institutions, the risks of control failure are still making some firms reluctant to adopt the public cloud, especially in sensitive and highly regulated aspects of their operations. However, the significant cost benefits and growing adoption of industry-wide standards and frameworks (e.g., in encryption, service-level agreements, etc.) should ease such concerns.

In surveillance, these developments should drive the adoption of cloud-based and integrated solutions powered by advanced analytics, thereby helping financial institutions realize their goal of achieving truly holistic surveillance. The fact that the Financial Industry Regulatory Authority (FINRA) — the supervisory agency overseeing broker-dealers' and exchanges' operations in the US — is using both the public cloud and AI to monitor the markets can further help market participants reevaluate the options and reshape market practices.

¹ *A New Era in Capital Markets Surveillance: As Far as the AI Can See.*

<https://www.celent.com/insights/224571664>

Rearchitecting the Capital Markets: The Cloud Cometh. <https://www.celent.com/insights/796410496>

The Cloud Comes of Age in Capital Markets: All Clear for More Cloud.

<https://www.celent.com/insights/538566740>

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