Security & Risk Management

**SPARK Matrix™: Trade Surveillance and Monitoring, 2021**

Market Insights, Competitive Evaluation, and Vendor Rankings

November 2021
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Executive Overview

This research service includes a detailed analysis of global trade surveillance and monitoring market dynamics, major trends, vendor landscape, and competitive positioning analysis. The study provides competition analysis and ranking of the leading trade surveillance and monitoring vendors in the form of SPARK Matrix. This research provides strategic information for technology vendors to better understand the market supporting their growth strategies and for users to evaluate different vendors capabilities, competitive differentiation, and its market position.

Key Research Findings

Followings are the key research findings:

Technology Trends

Trade Surveillance and Monitoring vendors are increasingly embracing sophisticated technology innovations powered by advanced technologies, including artificial intelligence (AI), machine learning (ML), robotics process automation (RPA), natural language processing (NLP), and advanced behavioral analytics to minimize false positives, automate tasks & workflows, enhance regulatory compliance, and risk management, and improve overall operational efficiency of trade.

Key Market Drivers and Trends:

- Financial crime and compliance vendors are increasingly leveraging automation, machine learning, and AI in automating repetitive tasks and manual processes to improve process efficiency, resource utilization, and productivity. Automation and AI can significantly improve organizations' efficiencies in detecting and mitigating risks.

- Financial crime and compliance management platforms are leveraging automation and AI to provide data-driven insights and integrate data from multiple sources to drive actionable intelligence in detecting, analyzing, investigating, and resolving a large volume of alerts and cases. It may also assist analysts in selecting the appropriate analytics models to be used specifically for various use cases. By automating manual, repetitive tasks in various investigation processes and providing data-driven insights, it can significantly improve analyst's productivity to triage a large volume of alerts.

- Driven by the continued complexities of the regulatory environment, organizations are expected to continue to face challenges in meeting the ever-increasing compliance requirements. Therefore, financial organizations are
currently replacing their legacy technologies and evaluating advanced trade surveillance and market compliance solutions to implement proactive surveillance strategies and improve their compliance infrastructure.

♦ The sudden lockdown imposed due to the COVID-19 outbreak led to governments around the globe cutting their growth targets, which severely impacted the stock market, leading to high price volatility and reduced trading activities. Moreover, the shift to the remote work environment due to the pandemic has led to a rise in market abuse and undetected compliance risk. As a result, the trade surveillance and monitoring vendors are integrating their platforms with financial markets data and infrastructure providers to help companies to cope up with changing market dynamics, new compliance risks and save them from financial losses and penalties imposed by regulatory bodies.

♦ The primary drivers for the adoption of trade surveillance and monitoring solution include innovation around advanced analytics, automation, and cognitive technologies for effective proactive surveillance; product enhancements by leading vendors to provide holistic surveillance technologies are improving market penetration against in-house built solutions, growing adoption of the cloud-based solution; ever-increasing pressure from global regulatory agencies.

**Competition Dynamics & Trends:**

NICE Actimize, Altair Panopticon, BAE Systems, LSEG, LIST, Eventus Systems, Nasdaq, Intellect Design Arena, Bloomberg L.P., and MCO (MyComplianceOffice) are amongst the top performers and technology leaders in the 2021 SPARK Matrix analysis of the global trade surveillance and monitoring market. These companies provide comprehensive functional capabilities and customer value proposition to provide a holistic solution for proactive surveillance and regulatory compliance.

The study includes analysis of other major vendors, including ACA, OneTick (OneMarketData), Quantexa, and SteelEye.
Market Overview and Technology Trends

Quadrant Knowledge Solutions defines Trade Surveillance and Monitoring as:

“Trade Surveillance and Monitoring solutions identify and prevent abusive trading practices by monitoring market manipulation, fraud and illicit trading behaviour. Trade surveillance and monitoring solutions should cover all asset classes and geographies to identify threat from any trading transaction. It protects organization from reputational risk and losses from penalty and fraud while ensuring regulatory compliance.”

Trade surveillance and monitoring solutions offer capabilities for pre-trade, post-trade, & market surveillance, along with identifying market abuse practices and trade violations. Trade surveillance activities include a complete analysis of the order book, investigation of complete audit trails of orders and trades, and analysis of cross-market cross-asset trades. It helps in mitigating illegal trade practices, safeguarding organizations from losses from frauds and penalties, enhancing consumer trust and ensuring regulatory compliance.

Financial markets have been experiencing a major evolution since the last decade. Banks and financial organizations have experienced failures and enormous losses by rogue traders, owing which regulations and trade surveillance is on a surge. Trading regulations, such as Reg BI, MAR, MiFID II, Dodd-Frank, Code of Conduct, along with guidelines from regulatory agencies, including CFTC, SEC, FINRA and ESMA, as well as other national regulations in various regions are increasing to detect trading activities that sabotage public confidence in the markets. The rising thrust on financial markets to comply with these regulations is the primary driving force for robust and accurate trade monitoring systems.

As expectations by regulators for trade surveillance is increasing, financial organizations are relentlessly attempting to eradicate breaches of policies leading to unlawful trading activities. In recent times, trading practices globally is adhering to a broader range of global regulations, embracing cross-asset class and cross-market trade surveillance measures for identifying market abuse, behavioral patterns, and non-compliant activities. Trade surveillance and monitoring solutions identify trading rule violations or unlawful trading practices in the trading landscape. With the benefits of transparency, efficacy, and oversight in capital markets, trade surveillance and monitoring solutions are getting increasingly popular amongst both buy-side and sellside firms in the trading market. Trade surveillance and monitoring solutions focus on restraining market manipulation and market abuse, which causes reputational damage to firms. Regulators emphasize to enhance market transparency and boost investor’s confidence through these solutions. The solution focusses on both pre-trade surveillance and post-trade surveillance. Pre-trade surveillance helps to authenticate
Trade instructions, assuring trading thresholds are never breached and block trades being performed on restricted instruments. Whereas post-trade surveillance can track for front-running, suitability, best-execution, and regulatory transaction reporting.

Trade surveillance & monitoring solutions offer comprehensive market surveillance, including cross-market, equity market and OTC traded derivates surveillance; and identifies market abuse practices and trade violations, such as wash trades, portfolio pumping, insider trading, rogue trading, and others. A robust trade surveillance solution should offer capabilities for accessing complete historical & real-time data, big data analytics and extensive business rule engine, efficient workflow management through customizable dashboards and robust reporting capability. Furthermore, trade surveillance focuses on detecting anomalies in trading activities, behavioral pattern analysis and streamlines case management. Trade surveillance & monitoring solutions monitor trading activities and generate alerts based on suspicious transactions, thereby enhancing agility and efficacy of financial institutions.

Following are the key capabilities of a Trade Surveillance and Monitoring solution:

- **Real-Time Data Integration**: A trade surveillance & monitoring solution enables data integration from a variety of sources. It offers optimum integration of in-house data and external trading data. It supports both structured and unstructured data across trade, market, written & voice communications, third parties, and various other sources. The solution should integrate historical transaction data and manage large datasets from multiple sources, store essential data in-memory, and survey across asset classes and geographies. A trade surveillance and monitoring solution provides real-time decisioning and detection of trading patterns across asset classes and markets.

- **Cross-Asset, Cross-Market Surveillance**: A trade surveillance & monitoring solution provides robust and consistent surveillance coverage across numerous trading venues, markets, asset classes, and jurisdictions. It meets regulatory mandates, handles risk, and drives trading efficiencies in any market across the globe, prevents sophisticated trade abuse, helps maximize revenue, and safeguards reputational damage across the multi-venue and multi-asset classes.

- **Advanced Analytics**: A trade monitoring solution uses advanced analytics to detect anomalous behavior, enable risk-based discovery, support cross-asset class & cross-market surveillance, facilitate effective trade reconstruction, and such others. Some of the advanced analytics tools used by trade surveillance & monitoring solutions are predictive analytics, sentiment analytics, big data analytics, real-time streaming analytics, behavioral analytics, entity & network analytics, and such others.
♦ **Trade Regulatory Compliance**: Numerous global and country-specific compliance frameworks, including Reg BI, MAR, MiFID II, Dodd-Frank, Code of Conduct, and such others, are pushing financial institutions to have a robust surveillance system in place to meet market abuse guidelines. Trade surveillance & monitoring solution offers the capability to effectively meet global trade regulations and avoid hefty fines. A trade surveillance solution monitors a broad range of products (cross-asset class & cross-market) to identify non-compliant activities/behavior.

♦ **Dynamic Workflow Engine**: Trade surveillance models need to be dynamic to keep abreast with the changing trading landscape. They need to be reviewed and improved continuously. A trade surveillance and monitoring solution offers a dynamic workflow engine for improved integration, agility, and responsiveness in trade surveillance activities.

♦ **Investigation & Case Management**: A trade surveillance & monitoring solution offers robust and fully integrated configurable case management capability. The solution leverages advanced analytics for in-depth investigation of alerts and trading scenarios. It provides a centralized interface to seamlessly capture alerts and data, modify trade surveillance operations, and carry out investigations through advanced analytics and automation. The interface also allows the user to perform other activities like enabling defined compliance workflows, maintaining a comprehensive audit trail investigation and documentation, managing alert processing and escalation, effectively detecting false positives, and efficiently managing regulatory risk across the trading domain.

♦ **Abuse Detection**: A trade monitoring solution uses advanced analytics to detect anomalous behavior, enable risk-based discovery, support cross-asset class & cross-market surveillance, and facilitate effective trade reconstruction. The solution uses advanced analytics tools such as predictive analytics, sentiment analytics, big data analytics, real-time streaming analytics, behavioral analytics, entity & network analytics, and such others. In addition, some vendors offer machine learning-powered abuse detection to enable enhanced real-time fraud detection. Leading vendors are also offering self-learning ML models to keep up with the changing market and trade dynamics.
Growing Importance of a Holistic Surveillance Solution with Integrated Markets and Communications Surveillance

Electronic communication is a significant part of the trading activity comprising of email, instant messenger, text, and voice. Electronic communication surveillance uncovers malicious trading behavior, such as insider trading, rogue trading, and other such behavior. Electronic communication monitoring is critical for mitigating conduct, financial, and reputational risks. Therefore, leading vendors continue to incorporate and improve e-communication surveillance capabilities leveraging contextual analytics, behavioral analytics, and advanced predictive analytics.

Although most buy-side and sell-side firms maintain separate communication monitoring systems; these systems provide greater efficacy and depth of coverage of data from omnichannel sources when integrated with trade monitoring systems. Integrated communication and trade surveillance results in better and quicker investigations by bringing together trade, written, voice, and video communications data. However, a standalone solution for communication and market surveillance adds to significant operational inefficiency with manual operations for data collection, correlation, visualization, investigation, and analysis. Therefore, an increasing number of trade surveillance and monitoring vendors are striving to offer holistic trade surveillance and monitoring solution with integrated communication surveillance capability. This holistic solution brings together market, communication, and other surveillance data in a single place and performs AI-powered analytics to offer integrated visualization and provide intelligent alerts with minimum false positives.

Trade Regulations And Compliance Requirements Are Becoming Increasingly Complex

Shifting trade patterns and increasing regulations have intensified the compliance burden on capital firms, hedge funds, and conventional asset managers. Historically, only sell-side firms used trade surveillance solutions. However, buy-side firms are increasingly focusing on adopting advanced trade surveillance and monitoring solutions in recent times with several revised regulations in financial instruments, such as Reg BI, MiFID II, MAR, and Dodd-Frank. Furthermore, guidelines from regulatory agencies, such as CFTC, SEC, FINRA in the US and ESMA, FCA & other regulators in the European economies are further driving the adoption of trade surveillance solutions by the financial institutions. While compliance with the trade regulations helps in protection from trading risks, safeguarding reputation, restoring the investors’ trust, and sustaining the business, non-compliance means a higher risk of market abuse, huge penalties, negative publicity, and disadvantages.

Adoption Of Cloud-Based Trade Surveillance Deployment Is Expected To Grow Significantly
Most of the large enterprise companies from various industries are moving towards a cloud-first strategy for the deployment of enterprise software and business systems. However, cloud-based solutions are still in the emerging stage as most of the large banking organizations still prefer on-prem deployment. Growing complexities of global and regional regulations, data security, and privacy issues also continue to impact the adoption of cloud-first strategies by large financial service organizations. However, driven by the advancements in security technologies and the growing confidence in cloud-based platforms, the scenario is gradually shifting. Global financial service organizations are increasingly gaining confidence in cloud security and are moving towards cloud-based deployments.

Cloud-based deployment offers a significant advantage in terms of scalability and cost-effectiveness. Additionally, cloud vendors ensure that user organizations always have access to the latest version of the solution with regular updates, maintenance, and support services. Further, small, and mid-sized businesses often lack resources in deploying cutting-edge technologies and are associated with the same sets of operational challenges as large organizations. Thereby, SMB organizations usually prefer cloud-based deployments to cut their operational costs and fulfill all their unmet needs with a low monthly/yearly charge.

**Increasing Demand For Intraday Liquidity Management And Real-Time Reporting**

Intraday liquidity monitoring and management is increasingly becoming crucial in recent market behavior. As a result, firms may be required to shift from submissively measuring ebbs to managing and maximizing intraday liquidity usage. Financial organizations should adopt intraday liquidity management, real-time reporting, and risk management solutions to fulfill payment and settlement obligations in a timely manner and enable seamless payment functioning and settlement processes. Managing liquidity offers benefits such as ensuring accurate intraday forecasting with real-time data points, the early outset of analytics activities using real-time data, constant monitoring of net cumulative cash flow across the day, capturing real-time data connected to all sources, and boosting overall operational efficiency.

**Increasing Demand For 360-Degree Trade Surveillance**

Driven by complex regulatory compliances and increasing instances of trade malpractices, vendors are offering holistic trade surveillance & monitoring solutions with 360-degree surveillance. These solutions monitor & analyze transactions, communications, and behavioral patterns to provide enhanced & comprehensive investigation. The 360-degree approach to trade surveillance & monitoring improves true positives, decreases efforts needed to process false positives, and better identify patterns for trade surveillance. Demand for robust trade surveillance solutions that gather data from myriad channels such as trade and order data, social networking sites data, voice communications, and behavioral data is increasing.
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rapidly. 360-degree surveillance offers analytical insights into data captured in real-time from market activity, sentiments, and trading behavior at multiple touchpoints in the client lifecycle.

**Migration From Reactive Surveillance To An Integrated Model Combining Investigative, Reactive, And Proactive Surveillance**

While most organizations are currently using a reactive approach to trade surveillance with post-trade controls, there is increasing traction for proactive systems. With a proactive approach, firms can identify new profiles and risk indicators before market abuse occurs. The proactive system leverages advanced data mining techniques and unsupervised machine learning. Organizations are leaning towards an integrated model, with capabilities for investigative, reactive, and proactive surveillance. Merging real-time data and proactive surveillance with advanced analytics will identify suspicious behavior patterns of individual and collective tendencies prior to incidence.
**Competitive Landscape and Analysis**

Quadrant Knowledge Solutions conducted an in-depth analysis of trade surveillance and monitoring vendors by evaluating their products, market presence, and customer value proposition. The evaluation is based on primary research with expert interviews, analysis of use cases, and Quadrant's internal analysis of the overall market. This study includes an analysis of key vendors, including Abel Noser Solutions, ACA, Altair Panopticon, b-next, BAE Systems, Bloomberg L.P., Eventus Systems, Features Analytics, GMEX Group, Intellect Design Arena, LIST, LSEG (London Stock Exchange Group), MCO (MyComplianceOffice), Nasdaq, NICE Actimize, OneTick (OneMarketData), Quantexa, S3, Scila, SteelEye, Trillium Surveyor.

NICE Actimize, BAE Systems, Altair, LSEG, LIST, Eventus Systems, Nasdaq, Intellect Design Arena, Bloomberg L.P, and MCO are the top performers and technology leaders in the global trade surveillance and monitoring market. These companies provide a sophisticated and comprehensive trade surveillance technology platform to address a variety of trade surveillance use cases.

**NICE Actimize** offers a holistic trade compliance platform titled Surveil-X that analyzes and correlates all trade-related data, detects all forms of risky behavior, and ensures regulatory compliance. The platform also offers comprehensive surveillance for all the regulatory requirements and can connect to, ingest, and analyze data from numerous real-time data sources, including all forms of communications.

**BAE Systems** offers a platform titled NetReveal, which protects from financial crime and provides risk management and fraud detection and prevention across banking, financial markets, and insurance domains. Its advanced analytics engine provides effective detection of anomalous behavior and is instrumental in positive/negative detection and false positive reduction.

**Altair** offers a streaming analytics platform titled Panopticon that enables traders to build, modify, and deploy customized trading surveillance applications based on their business-specific requirements. They can connect to virtually any data source, including big data sources, SQL and NoSQL databases, and message queues. The platform also allows users to develop complex programs and design visual user interfaces that provide insights to make fully informed decisions based on massive amounts of data.

**LSEG** provides a multi-asset, multi-market, out-of-the-box robust surveillance platform titled Millennium Surveillance that offers powerful analytical tools to analyze and report suspicious behavior for improving the efficiency of market abuse investigations. It is scalable, flexible, highly adaptable to rules, and enables swift compliance with
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regulatory changes on any trading platform. The platform supports real-time and offline analysis features, with simple market replay and robust reporting capabilities.

LIST provides a multi-compliance solution titled LookOut for trade and market surveillance, regulatory reporting, and business analysis. The solution has been specially designed for both buy-side and sell-side investment firms and trading venues. The solution complies with European Trading regulations and those of North America, Canada, and APAC, including MAD/MAR, MiFID/MiFIR, SFTR, and more. LookOut’s module titled FX Global Code extends its data-centric surveillance system support to the foreign exchange domain.

Eventus Systems offers a multi-asset class trade surveillance solution titled Validus that combines surveillance, market risk, algo monitoring, and AML/transaction monitoring to increase the efficiency of regulatory operations. This solution is offered for traditional and digital assets with comprehensive capabilities, including OOTB integrations to suit organization-specific requirements.

Nasdaq, through its trade surveillance solutions suite, offers a flagship SaaS-hosted solution titled Nasdaq Trade Surveillance that provides holistic surveillance with an industry benchmark for real-time and T+1 transactions, cross-market, cross-asset classes to detect, investigate, and mitigate market abuse.

Intellect Design Arena, through its flagship brokerage solution CaptialAlpha, a multi-exchange, multi-asset, multi-channel, multi-currency, multilingual integrated platform, offers contextual and real-time trading supported by online market rates and news, comprehensive AI-based analytics, and research. CaptialAlpha provides holistic surveillance across levels and asset classes, including exchange-traded and distributed, trade surveillance with the market and compliance monitors for retail and institutional investors, and adjustment capability of risk rules, risk limits, exposure rules, and margin rules depending on the investor trading pattern and exposures. Capital Alpha also provides real-time pre- and post-trade risk management.

Bloomberg L.P., through its integrated compliance and surveillance solution offering titled Bloomberg Vault, enables organizations to capture, control, archive, reconstruct, and analyze their e-communication, trade, and voice data across the entire trading life cycle in real-time or historical basis. The premium enterprise offering provides control owners with governance tools and resources to oversee users, groups, and policies.

MCO (MyComplianceOffice) offers compliance management software that enables companies around the world to reduce their risk of misconduct. MCO’s trade surveillance software provides an automated solution to monitor investment activities across an organization. The solution is an integrated platform that enables organizations to run a wide variety of monitoring rules on trades, positions, accounts,
funds, portfolios, clients, and households across a range of financial products for various compliance topics such as market manipulation, insider trading, and product suitability where the data is made available.

**Abel Noser Solutions** offers three TCA (Transaction Cost Analysis) products for pre-trade, real-time, and post-trade titled **Trade Compass, Trade Pulse, and Trade-Zoom**, respectively. The product suite provides organizations with the information to predict trading costs before trade, analytics to immediately access results of real-time trading to manage and react to trading costs and evaluate trading performance post trade by evaluating time-specific data including historic data to understand trading costs.

**ACA**’s abuse surveillance solution **ComplianceAlpha** (formerly Decryptex) offers automated, in-depth trade surveillance to help organizations identify Items of Interest (IOI) and non-compliant trading and investment activity.

**b-next**’s capital markets compliance (CMC) suite protects organizations from the threat of market abuse, thus preventing reputational damage. The module titled CMC: Market Abuse is a powerful automated surveillance module that monitors attempted market abuse and market manipulation. The module titled CMC: Insider Compliance monitors proprietary, customer, and staff trading, allowing the compliance team to get an extensive view of all trading activities of the organization.

**Features Analytics** offers an AI-driven Trade Surveillance solution titled **eyeDES** that detects and explains any market abuse across asset classes, which significantly reduces false positives by issuing only high-quality alerts and reduces the risk of penalties by detecting all known scenarios as well as emerging patterns. The solution is configurable to detect cases at any granular level, including trader, trading desk, account, warehouse, and beneficial owner. It evolves with the market dynamics and volatility and supports both deployment options including cloud, and on-prem.

**GMEX Group** offers integrated end-to-end exchange trading platforms, including both RFQ and exchange matching engines underpinning business growth across multiple asset classes. GMEX group also offers locally deployed as well as managed post-trade solutions globally.

**OneTick (OneMarketData)** offers a trade surveillance solution that offers smart features to enable trading supervisors and compliance teams to identify, investigate, and make decisions on anomalies. The solution is built on OneTick’s proprietary database and stream processing platform and delivers robust, configurable built-in alerts to support brokers in identifying quote stuffing, layering and spoofing, wash trading, marking the close.
Quantexa’s anti-money laundering solution for capital markets uses context to offer a holistic view of the customers and counterparties by connecting data from various data sources to identify new and emerging risks swiftly and more accurately, connect to networks to find and understand their trading patterns, the companies they associate with, and generates contextual alerts to issue faster and higher quality alert reviews to identify high-risk relationships that deviate from normal behavior.

S3’s Trade Surveillance Suite (TSS) facilitates monitoring for a broad range of restricted behaviors across multi-asset classes, including market manipulation and other trade-based violations without compromising on regulatory obligations. The S3 TSS monitors trade activity automatically for a variety of restricted activities, including layering, spoofing, marking the close, wash sales.

Scila offers a turnkey market surveillance solution titled Scila Surveillance for exchanges, trading participants, and regulators who seek to apply modern technology seamlessly for early detection of market abuse to presentable evidence. The solution covers all asset classes and market models and is deployed to many organizations globally.

SteelEye’s Trade Surveillance solution integrates the trade and order data of any asset class on a single platform, aggregating it with market data, news, and social media sources to present back meaningful data. The company offers a range of intelligent trade surveillance tools, covering a broad range of market abuse activities and behaviors to proactively monitor, prevent and mitigate market abuse risk. The trade surveillance solution enables to underpin risk detection, improve oversight, and demonstrate compliance continuously while requiring fewer resources and saving costs.

Trillium offers a trade surveillance platform titled Surveyor that generates alerts using full depth-of-book market data, which helps to detect market manipulation and reduce false positives. The workflow functionality significantly reduces the time required to communicate and close issues. The platform’s accurate filters catch critical market manipulations, including spoofing and layering, marking the close, wash trades, and more. The clear and accurate interface minimizes the risk of errors while analyzing compliance data.
Key Competitive Factors and Technology Differentiators

The following are the key competitive factors and differentiators for the evaluation of trade surveillance & monitoring Solutions and vendors. While most of the trade surveillance & monitoring solutions may provide all the core functionalities, the breadth and depth of functionalities may differ by different vendors’ offerings. Driven by increasing competition, vendors are increasingly looking at improving their technology capabilities and overall value proposition to remain competitive. Some of the key differentiators include:

- **The Sophistication of Technology Capabilities:** Users should evaluate trade surveillance and monitoring solution that offers comprehensive capabilities, data ingestion from internal and external sources, user and entity behavior analytics, automated trade reconstruction, comprehensive visualization, real-time anomaly detection, integrated case management, advanced modeling and rule-engine, scalability and uptime, an open technology architecture, and such other features. Additionally, vendor’s customer value proposition may differ in terms of ease of deployment, ease of use, price/performance ratio, support for a broad range of market and communication surveillance use cases, global support services, and such others. In addition, the rapidly growing digitalization in trade is causing various vendors to use emerging technologies, including AI, ML, RPA, behavioral modeling, and NLP, to augment their trade surveillance and monitoring solutions to perform sophisticated tasks with intelligence. Factors such as legacy technology, siloed operations, rising regulatory requirements, and complexity of in-house and outsourced solutions are leading to an intricate web of technology architecture that is driving the need for smarter trade surveillance & monitoring solutions. Augmenting RPA along with AI and ML technologies can seamlessly integrate technology, work systems, and people to help capture information from numerous sources, conduct advanced investigations with large datasets, issue intelligent alerts, automate rule-based, indicative tasks, and enables many types of bots such as task bots, IQ bots, basic chatbots, and more. Technologies such as behavioral analytics and NLP further help interpret text-heavy communications & intent and pre-empt trading abuse. Most of the vendors, including Nasdaq, Nice Actimize, Altair Panopticon, FIS Protegent and Intellect Design Arena, have implemented these technologies and are continuing to invest heavily on further enhancing their platform with automation, ML, behavioral analytics, AI and NLP technologies.

- **Comprehensive Data Integration Capability:** Vendors’ capability to provide comprehensive data integration is essential in improving the performance of analytics engine and machine learning models. Few vendors may support data
ingestion just from out-of-the-box transactional data, account information, basic customer profiles, limited communication channels, and such others. In such instances, organizations are required to invest significant efforts in acquiring data from additional sources. Trade surveillance and monitoring platform should support comprehensive capability to integrate a large volume of data in multiple formats and from contextual data sources across all transaction, reference, behavioral, communication, and external sources.

- **Custom Model Development and Deployment**: Typically, global financial organizations have internal data science teams and often prefer to utilize their in-house developed machine learning models. However, few vendors may force the organization’s internal data scientist team to work with the vendor’s proprietary machine learning models, language, tools, and libraries. Additionally, organizations may be required to use vendors’ professional services for implementation and customization on models to suit specific use cases. Organizations often incur additional costs and delay in overall implementation. Trade surveillance and monitoring platform should support an open system framework and facilitate easy imports of third-party models built using any language, platform, and library. Leading vendors also support custom model development, testing, and deployment capability for a variety of trade surveillance and monitoring use cases.

- **Integrated Communication Surveillance**: Firms are now integrating e-communication surveillance with their trade surveillance and monitoring solution as compared to earlier times when they used to offer standalone communication surveillance systems. Communication surveillance monitors and analyzes all voice and written communication made by the trader to detect behavioral patterns. Communication surveillance gathers all forms of communication data, such as email, messages, text, voice, and others. Integrated communication surveillance ensures comprehensive investigation, reduces false positives, and helps improve compliance. With increasing risk in the trade landscape and granular regulations being enforced, communication surveillance integrated with comprehensive trade monitoring systems is becoming a key differentiator to vendor solutions. Communication monitoring can be more crucial for buy-side firms to prevent insider trading.

- **Technology Vision and Roadmap**: Financial crime and risk management market is continuously experiencing constant evolution. The rapid technological progress and regulatory advancements have created important changes in the trade and security market framework, owing to which advanced financial crime and compliance technology has become one of the key decisions in most firms’ technology investment roadmaps. Trade surveillance and monitoring solution providers are continuously improving their technology
value proposition in terms of providing a holistic surveillance solution with comprehensive data integration, sophisticated analytics suite powered by advanced analytics and machine learning, custom model development, robust investigation and case management, advanced visualization tools, incorporation of workflow and process automation, and such others. Organizations should carefully evaluate vendors’ existing technology capabilities along with their technology vision and roadmap to improve overall satisfaction and customer ownership experience for long-term success.

♦ **Vendor's Expertise and Domain Knowledge**: Organizations should evaluate vendors’ expertise and domain knowledge in understanding their unique business problems, use case, and industry-specific requirements. Organizations are advised to conduct a comprehensive evaluation of different trade surveillance solutions and vendors before making a purchasing decision. Users should employ a weighted analysis of the several factors critical to their specific organization's use cases and industry-specific requirements. Users should also look for trade surveillance and monitoring solution with a history of successful large-scale deployments and carefully analyze the existing case studies of those deployments. This should form the basis to prepare best-practice for trade surveillance and monitoring solution deployments.
**SPARK Matrix™: Strategic Performance Assessment and Ranking**

Quadrant Knowledge Solutions’ SPARK Matrix provides a snapshot of the market positioning of the key market participants. SPARK Matrix provides a visual representation of market participants and provides strategic insights on how each supplier ranks related to their competitors, concerning various performance parameters based on the category of technology excellence and customer impact. Quadrant’s Competitive Landscape Analysis is a useful planning guide for strategic decision makings, such as finding M&A prospects, partnership, geographical expansion, portfolio expansion.

Each market participant is analyzed against several parameters of Technology Excellence and Customer Impact. In each of the parameters (see charts), an index is assigned to each supplier from 1 (lowest) to 10 (highest). These ratings are designated to each market participant based on the research findings. Based on the individual participant ratings, X and Y coordinate values are calculated. These coordinates are finally used to make SPARK Matrix.

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<thead>
<tr>
<th>Technology Excellence</th>
<th>Weightage</th>
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<tbody>
<tr>
<td>Sophistication of Technology</td>
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<tr>
<td>Competitive Differentiation Strategy</td>
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<tr>
<td>Application Diversity</td>
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<tr>
<td>Scalability</td>
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<tr>
<td>Integration &amp; Interoperability</td>
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<tr>
<td>Vision &amp; Roadmap</td>
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<table>
<thead>
<tr>
<th>Customer Impact</th>
<th>Weightage</th>
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<td>Product Strategy &amp; Performance</td>
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<tr>
<td>Market Presence</td>
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<td>Proven Record</td>
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<tr>
<td>Ease of Deployment &amp; Use</td>
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<tr>
<td>Customer Service Excellence</td>
<td>15%</td>
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<tr>
<td>Unique Value Proposition</td>
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**Evaluation Criteria: Technology Excellence**

- **The Sophistication of Technology**: The ability to provide comprehensive functional capabilities and product features, technology innovations, product/platform architecture.

- **Competitive Differentiation Strategy**: The ability to differentiate from competitors through functional capabilities and/or innovations and/or GTM strategy, customer value proposition.

- **Application Diversity**: The ability to demonstrate product deployment for a range of industry verticals and/or multiple use cases.
Scalability: The ability to demonstrate that the solution supports enterprise-grade scalability along with customer case examples.

Integration & Interoperability: The ability to offer product and technology platforms supporting integration with multiple best-of-breed technologies, providing out-of-the-box integrations, and open API support and services.

Vision & Roadmap: Evaluation of the vendor’s product strategy and roadmap with the analysis of key planned enhancements to offer superior products/technology and improve the customer ownership experience.

Evaluation Criteria: Customer Impact


Market Presence: The ability to demonstrate revenue, client base, and market growth along with a presence in various geographical regions and industry verticals.

Proven Record: Evaluation of the existing client base from SMB, mid-market and large enterprise segment, growth rate, and analysis of the customer case studies.

Ease of Deployment & Use: The ability to provide superior deployment experience to clients supporting flexible deployment or demonstrate superior purchase, implementation, and usage experience. Additionally, vendors’ products are analyzed to offer a user-friendly UI and ownership experience.

Customer Service Excellence: The ability to demonstrate vendors capability to provide a range of professional services from consulting, training, and support. Additionally, the company’s service partner strategy or system integration capability across geographical regions is also considered.

Unique Value Proposition: The ability to demonstrate unique differentiators driven by ongoing industry trends, industry convergence, technology innovation, and such others.
Figure: 2021 SPARK Matrix™
(Strategic Performance Assessment and Ranking)
Trade Surveillance and Monitoring Market
Vendor Profiles

Following are the profiles of the leading trade surveillance and monitoring solution vendors with a global impact. The following vendor profiles are written based on the information provided by the vendor's executives as part of the research process. The Quadrant research team has also referred to the company's website, whitepapers, blogs, and other sources for writing the profile. A detailed vendor profile and analysis of all the vendors, along with various competitive scenarios, are available as a custom research deliverable to our clients. Users are advised to directly speak to respective vendors for a more comprehensive understanding of their technology capabilities. Users are advised to consult Quadrant Knowledge Solutions before making any purchase decisions regarding trade surveillance and monitoring technology and vendor selection based on research findings included in this research service.
NICE Actimize

URL: https://www.niceactimize.com/

Founded in 1999 and headquartered in Hoboken, New Jersey, NICE Actimize is a provider of financial crime, risk, and compliance management solutions for global financial services organizations. NICE Actimize offers fraud prevention, anti-money laundering, market abuse, client suitability, and conduct surveillance solutions as part of its integrated financial crime and compliance portfolio. The company offers a holistic trade compliance platform titled SURVEIL-X Holistic Conduct Surveillance Suite that analyzes and correlates all trade-related data, detects all forms of risky behavior, and ensures regulatory compliance. SURVEIL-X offers comprehensive surveillance coverage, real-time data integration from various data sources and communications, AI-Powered analytic techniques, complete trade regulatory compliance and case management, and alerting and story.

The SURVEIL-X platform provides comprehensive surveillance coverage for all regulatory needs. It analyzes and correlates all data into a single alert for more accurate and comprehensive risk detection. It can connect to, ingest, and analyze data from real-time sources that include traditional market information, behavioral data derived from analytics, and all forms of communications. It provides comprehensive coverage through over 150 out-of-the-box models covering 25 asset classes and monitoring nine communication types from any source archive.

SURVEIL-X’s AI-powered analytic techniques, which include machine learning, anomaly detection, smart classification, Natural Language Processing, advanced speech and behavioral analytics, and more work together to significantly reduce the false positives by helping in analyzing, understanding, and revealing the meaning of conversations. The platform enables users to leverage unsupervised machine learning for anomaly detection and address the previously undetected suspicious behaviors, optimize analytics to strengthen detection and accelerate innovation, develop bespoke analytic models, alert visualization, and distribution rules to address the unique policies and business requirements.

SURVEIL-X can uncover all forms of risky behavior to insulate firms from fines and reputational damage while ensuring complete compliance with current and future regulations. SURVEIL-X offers risk coverage for buy and sell-side firms, insurance companies, crypto exchanges and more, by enabling accurate detection and rapid, thorough investigation of market abuse, inappropriate sales practices, conduct risk, and undetectable compliance risks. The company also offers ActimizeWatch Compliance, a managed analytics service that improves the firm’s agility, detection accuracy, and compliance effectiveness. ActimizeWatch offers model optimization services to ensure analytics models are up to date, ensuring detection accuracy for Markets, Communications, Suitability, and Conduct surveillance solutions.
The SURVEIL-X platform suite also includes ActOne, a fully integrated, web-based case manager with workflow capability for efficient alert management, investigation, and audit trail by leveraging intelligent automation, entity-centric triage, and comprehensive visualization of activities and relationships between entities, alerts, and cases.

SURVEIL-X’s data-rich alerting capabilities offer insights related to market movements, market events, trading patterns, and conversations. It offers communication records of employee and client discussions across channels, leverages ML and NLP to understand and classify conversation, and thereby closes compliance gaps along with links to related market data, news, communications, HR data, compensation information, etc. Additionally, the company offers SURVEIL-X Behavior (formerly SURVEIL-X Conduct), an employee monitoring solution that combines behavioral science with multi-factor detection to proactively identify risks. The solutions leverage the SURVEIL-X holistic conduct surveillance platform to perform multi-factor detection using trading data, employee communications, sentiment analysis, and employee information (compensation, attendance, access to network).

The platform’s story visualization capability enables users to gain insights on impacts of trades at the microsecond level, streamline case management and investigations with process-driven workflows and reconstruct trade timelines up significantly faster with automated trade reconstruction. Trade Reconstruction offers a simplified reconstruction of a trade by aggregating, analysing, and acting on all trade-related data and communications. SURVEIL-X Sales Practices and Suitability detects a wide range of prohibited sales practices, thereby minimizing risk, improving productivity, and enforcing compliance.

**Analyst Perspectives**

Following is the analysis of NICE Actimize’s capabilities in the Trade Surveillance & Monitoring solutions market:

- NICE Actimize’s SURVEIL-X Holistic Conduct Surveillance Suite offers holistic trade surveillance through a fully managed, secure, and compliant cloud platform with capabilities for extensive market data feed integration, wide analytics coverage via OOTB models and self-service analytics, and automated Trade Reconstruction. SURVEIL-X analyses all trade, communications, and other surveillance data and uses AI-powered analytics and advanced machine learning to produce precise alerts and help organizations significantly reduce false positives. With integrated case management and powerful visualizations, surveillance analysts can maximize their efficiency and better detect conduct risks.

- Some of the key differentiators of the SURVEIL-X platform include Self Service Analytics Development, AI-enabled True Holistic Surveillance to produce more precise alerts with integrated visualization, simplified data integrations with over 150+ data feeds, and easy integration and data ingestion with third-party data, employee risk scores based on customizable behavioral risk factors, and most preferred case management tool.
Recently, NICE Actimize augmented its SURVEIL-X Holistic Conduct and Trade Surveillance solution by adding improved surveillance and risk detection capabilities, updated cloud architecture for greater scalability, and more powerful AI and Natural Language Processing (NLP) applications to help FIs tackle growing regulatory pressures, market volatility, hybrid work environments and adoption of new communication channels, all potentially leading to employee misconduct. The renewed SURVEIL-X platform also features bolstered coverage for buy-side and insurance sectors, new self-development capabilities, and support for Microsoft Teams.

In terms of geographical presence, NICE Actimize has a major presence in the US, EMEA, and APAC. The company supports a variety of financial customers from the sell-side and buy-side. The major verticals for NICE Actimize include investment banking, global banks, wealth management, asset management, insurance, cryptocurrency, utilities, and brokerage sectors. NICE Actimize supports various use cases, including ensuring compliance with suitability regulations in the cloud, reduction in false positives, coverage for a broad range of asset classes from equities, SURVEIL-X for wealth surveillance, strong and repeatable compliance process and monitoring voice and electronic communications, automated compliance with suitability regulations and more. Its customers recognize NICE for its unified and holistic surveillance capabilities, communication surveillance, case management capabilities, ability to meet unique business requirements, and ease of deployment.

NICE Actimize’s roadmap for SURVEIL-X includes continuing to build upon the focus areas for coverage, intelligent investigations, and precise detection. The company’s trade compliance coverage will continue to address those requirements through continued investment in AI and customer-enabled, self-development tools for both traditional and ML-based models. The company plans to continue to invest in automation by leveraging AI and learning from its expert users via their feedback and use of the application and sharing that learning across its customer base via federated learning. NICE Actimize is also planning various enhancements across some of its key focus areas, including holistic cloud platform, self-service, full regulatory coverage, automated trade reconstruction, employee conduct, compliant archive, analytics marketplace, data intelligence, and predictive surveillance.
BAE Systems

URL: https://baesystems.com

Founded in 1999 and headquartered in Falls Church, Virginia, USA, BAE Systems, Inc. is the U.S. subsidiary of BAE Systems plc. The company delivers a full range of products and services for air, land, and naval forces, as well as advanced electronics, security, information technology solutions, and customer support services. The company protects against financial crime and provides risk management and fraud detection and prevention across banking, financial markets, and insurance via the NetReveal Platform. NetReveal platform’s key capabilities and features include centralized 360-degree customer view, data aggregation across multiple data sources, case management, alerts and dashboarding, KRI console and simulator (parameter and calibration), watch list manager, configurable workflow, audit trail support, integrated analysis of data extensions, market replay, visualizations and heatmap, repeat pattern detection, behavioral detection, and advanced analytics & machine learning.

The platform provides a centralized 360-degree customer view by covering all aspects of compliance and fraud by consolidating related alerts, evidence, and financial metrics. This central investigation source presents investigators with a single combined alert related to a customer or entity. The solution incorporates risk, compliance, fraud typologies, and advanced analytics from market abuse and manipulation through a fraud pattern recognition solution. It aggregates multiple data sources and identifies risks from seemingly unrelated data and relationships. It enables efficiencies across compliance, risk, and fraud by working, managing, and reporting cases through a single enterprise investigation management (EIM) tool, which is a part of financial crime, fraud, and trade surveillance solutions.

The NetReveal EIM case management tool is used across all banking divisions and geographies as a unified case management system. It provides transaction monitoring, contextual monitoring, social network analysis, advanced analytics, machine learning (supervised and unsupervised), and enterprise investigation management. It can be used to investigate, analyze, and report across multiple typologies for compliance and fraud operations. The solution is configurable and facilitates the roll-up of alerts for entity-specific or order, trade, event, and lifecycle components. The platform enables users to create and customize dashboards easily. Its white box detection engine allows authorized users to develop their own detection scenarios or duplicate existing scenarios and establish inclusions, exclusions, or profile any field for thresholds, weightings, and standard deviations.

The platform’s key risk indicators (KRI) console and simulator allows authorized users to calibrate and manage parameters, weightings, thresholds, temporal strategies, and peer group analysis and develop models to compare the results against data sets, both current and historical, in a simulation environment. NetReveal’s watch list management enables
real-time identification of restricted instruments, issuers, or monitored entities and supports all standard lists as well as customers’ own lists. Inclusion and exclusion events and lists can be added or customized by authorized users or supervisors. The platform’s workflows are configurable to suit customers’ business processes and risk appetite. It also supports multi-layer investigator levels. It provides in-depth audit trails and configurations for appropriate authorized administration users or supervisors. Additionally, all types of data extensions can be incorporated as required, and examples include voice and electronic communications and news and sentiment analysis.

NetReveal’s orders and trade analysis and search engines provide full lifecycle replay and a full historical replay of events. Its cross-filter analysis allows interactive visualization and drilldowns of orders and trades from years to mins secs. As part of EIM, the cross-filter analysis tools provide graphical visualizations, heatmaps, timelines, weighted volume, or value analysis. Additionally, word analysis and other lifecycle component visualizations are available as required. An advanced analytics platform incorporated into NetReveal solutions can help provide advanced graphical visualizations, including 3D modeling. NetReveal’s detection scenarios and key risk indicators include repeat pattern detection such as unusual concentrations, significant weighted volume against market venue or value, or other data fields. Using base currency equivalents as well as original currency valuations are easily comparable, filtered, searchable, and sortable together with risk score and priorities of whether orders, trades, or transactions or entities are alerted currently or previously.

NetReveal’s reporting command and control tool and cross filter analysis dashboards enable users to configure their own MI reports and analysis. It provides entities such as employee behavior analysis and trade behavior analysis and alerting. The latter allows alerts to be hibernated but are still tracked for audit purposes and other statistical analysis. Its advanced analytics platform (AAP) enables “Citizen Data Scientists” with business knowledge and does not require in-depth data science expertise to utilize machine learning and advanced analytics with data interrogation.

**Analyst Perspectives**

Following is the analysis of BAE Systems’ capabilities in the trade surveillance & monitoring solutions market:

- **BAE System provides NetReveal Enterprise Investigation Management (EIM), a platform that spans the entire financial crime, risk, fraud, and compliance functions. It is an open and flexible case management platform that efficiently organizes data inputs (including third-party data) and prioritizes and centralizes alerts and incidents into one enterprise-wide investigation platform to help manage investigations. Driven by advanced analytics, NetReveal can effectively detect anomalous behavior with effective positive/negative detection and false positive reduction. NetReveal supports fuzzy matching, machine learning, behavioral rules, and graph analytics and provides full flexibility to modify detection to match the businesses’ risk needs.**
The platform’s key differentiating factors include integrated risk management, data science practice, enterprise investigation management, and client self-service employment.

♦ Concerning geographical presence, BAE Systems has the strongest presence in Europe, followed by APAC. The major use cases of BAE Systems’ trade surveillance & monitoring solution are fraud risk pattern recognition/unauthorized trading, AML for capital markets, market abuse and manipulation, supervised and unsupervised machine learning, advanced analytics and machine learning, order and trade analysis and MI reporting, and white box scenario detection.

♦ The key challenge for BAE Systems is competition from the emerging vendors that offer innovative technology solutions and some well-established trade surveillance vendors. However, with its sophisticated technology platform, comprehensive functional capabilities, robust roadmap, and high customer value proposition demonstrated by compelling customer references, BAE Systems is well-positioned to maintain and grow its market share in the trade surveillance & monitoring market.

♦ Concerning roadmap, BAE Systems is focusing on investing in cloud-native technologies, networking analytics, advanced analytics, unsupervised and supervised machine learning, and behavioral ecosystem.
**Altair**

URL: [https://altair.com](https://altair.com)

Founded in 1985 and headquartered in Troy, USA, Altair is a provider of software & cloud solutions in the areas of simulation, high-performance computing (HPC), and artificial intelligence. Altair provides the Panopticon Streaming Analytics platform to enable traders to build customized trading surveillance applications based on their business-specific requirements. Panopticon requires no coding to connect to data sources and develop event processing applications. It also allows the building of analytical dashboards with a drag-and-drop user interface. The platform’s key capabilities and features include enabling users to visualize real-time streaming data, connecting to, or leveraging all data sources, and proactive alerts. Other key features include enterprise-class data exploration and reporting and code-free development.

Altair Panopticon accepts, processes, and visualizes trading data with nanosecond accuracy from message buses such as Solace, AMPQ, ActiveMQ, Kafka, and RabbitMQ. Panopticon’s capabilities enable organizations to process and visualize large volumes of data quickly so that decision-makers can react to changing conditions as they occur.

Panopticon offers native data connectors for a huge variety of sources. It connects directly to specialized in-memory, columnar databases optimized for storing high-velocity time-series data, including Kx kdb+, OneTick, InfluxDB, and Vertica. The Altair visual analytics software includes native connectors for virtually any data source, from big data repositories and real-time streaming sources to SQL and NoSQL databases and flat files. Panopticon also enables users to program proactive alerts based on anomalies derived from complex calculations using streaming "live" data and historical reference data. The platform allows users to quickly set up new alerts and specify whether the designated users will receive alerts on their screens, via email, and/or with sounds. It also allows users to define proactive alerts using data from streaming data sources, including CEP engines, real-time message queues, and/or historical trading data stored in virtually any kind of database. Additionally, users can select which users will receive each alert, so only the people who are authorized to take corrective action will be notified.

The platform allows users to understand the structure, interrelationships, causal links, and outliers in their data. It offers a comprehensive view of the operations and allows users to develop and share dashboards and reporting screens securely throughout the enterprise.

The platform enables users to build analytical dashboards and stream processing applications with a point-and-click user interface. It allows users to respond quickly to
changing business requirements, reduce risk and cost, and deploy new applications and dashboards quickly.

The platform allows users to create smart dashboards and generate charts automatically based on data source keywords. Users can visualize complex datasets using automatic machine learning and predictive models, including “best fit” or “bring-your-own” models, without leaving the user interface.

**Analyst Perspectives**

Following is the analysis of Altair’s capabilities in the trade surveillance and monitoring market:

- Panopticon offers comprehensive data visualization and streaming analytics that help business users, analysts, and engineers to build, modify, and deploy sophisticated data visualization and stream processing applications with a drag-and-drop interface; connect to virtually any data source, including big data sources, SQL and NoSQL databases; message queues; develop complex event processing programs, and design visual user interfaces that provide the insights they need to make informed decisions based on massive amounts of data.

- Panopticon Streaming Analytics platform’s key differentiators include code-free customizable development, real-time data visualization, Kafka-enabled stream processing applications, capability to embed advanced visual analytics in any application, native data connectivity, and real-time message queues.

- Concerning geographical presence, Altair has a major presence in the Americas, Europe, and APAC. The major use cases for Altair’s trade surveillance solution include flow/hit ratio by monitoring and trend analysis of RFQ trading activity, real-time and historic transaction cost analysis (TCA), spread analysis, basket trading, liquidity and spreads which is a microstructure analysis of RFQ markets, market microstructure, trader performance.

- Altair faces competition from emerging and well-established trade surveillance and monitoring platform providers. However, with its comprehensive visualization capabilities, robust roadmap, and strong customer value proposition demonstrated by compelling customer references, Altair is well-positioned to maintain and grow its share in the trade surveillance & monitoring market.

- Concerning roadmap, Altair is focusing on clustering, performance, and the introduction of the multitenancy cloud-hosted version of the product to enable sales to smaller companies in the hedge funds business with limited IT resources. The company is working towards adding and optimizing more multi-layered data visualization, integrating more data and applications, third-party visualization components, pluggable end-user-designed data transformation, and high-level low-code data modeling. Further, Altair will add new functionality to the stream processing engine to enable shorter development cycles; add
more data connectors; and improve load balancing, multi-server capabilities, and simple deployment. For the proactive alerting feature, Altair is looking to add workflow management and detailed reporting/tracking of raised alerts.
London Stock Exchange Group (LSEG)

URL: https://lseg.com

Founded over 300 years ago and headquartered in London, UK, LSEG is a global financial markets infrastructure and data provider. LSEG acquired Refinitiv, a provider of data about financial markets and infrastructure, in 2021 to provide comprehensive financial data and analytics to its customers. LSEG offers solutions right from trading, market surveillance to wealth solutions and more. LSEG Technology, a fully owned subsidiary of LSEG, offers a trade surveillance platform titled Millennium Surveillance. The multi-asset, multi-market, out-of-the-box robust surveillance platform, focused on improving the efficiency of market abuse investigations, offers comprehensive capabilities such as real-time surveillance, alert configuration, integrated business analytics, self-serviceability, interactive dashboards, multi-asset class support, data visualization, and data analytics.

The Millennium Surveillance platform offers real-time alerting and investigation capabilities that identify market abuse and manipulation attempts for immediate action to maintain orderly markets. The platform leverages machine learning technologies to offer ML-based anomaly and outlier detection to help calibrate alert parameters. The platform also offers a standard pattern miner functionality that mines historical data to find missed market manipulations and provides continuous calibration of missed parameters. It also offers python and Scala languages for easy alert configuration.

The platform allows users to leverage preferred data visualization and analytics tools to increase the scope of alert investigation. It also enables users to create interactive dashboards that combine surveillance data with external data and provide a complete view of the order to reduce false positives, detect manipulations and insider trading behaviors. The platform’s self-serviceability capability enables user-defined alerts, reports, and dashboards to leverage and extend surveillance features. It offers interactive dashboards derived via user preferred data visualization tools with an option to drill down to granular data. The platform also offers an alerts ingestion gateway that can ingest alerts and warnings from external systems to optimize alert workflow and management efficiencies.

Millennium Surveillance provides extensive support for multiple asset classes including equity, fixed income, currencies, commodities, and derivatives. It consolidates data from multiple markets/asset classes within the limits of a single instance.

Analyst Perspectives

Following is the analysis of LSEG’s capabilities in the Trade Surveillance & Monitoring solutions market:

- LSEG offers a trade surveillance platform titled Millennium Surveillance that supports multiple markets/assets on a single platform. It leverages a distributed process architecture, where logical units of a large system are broken down into small manageable
processes deployed on off-the-shelf servers and high bandwidth networks. The Millennium Surveillance platform’s data analytics framework provides a rich environment that allows the same dataset required for trade surveillance functions to be utilized for a multiplicity of new business use cases, thus optimizing the infrastructure, and sharing the costs across business units.

- Millennium Surveillance is a part of the integrated Millennium Trading product suite that includes Millennium Exchange, Millennium SOR, and Millennium market Data offerings to offer a fully integrated solution to address the trade execution requirements. Millennium Surveillance platform’s key differentiators include its data analytics framework, collaboration, and self-serviceability for alerts configuration.

- Concerning geographical presence, LSEG has a presence in EMEA and APAC. The major use cases of LSEG’s trade surveillance & monitoring solution include compliance/self-regulation, market replay, visualization tools, reporting, configurability, and multi-asset.

- Owing to the fragmented trade surveillance solutions market scenario, several small and large vendors are competing in terms of technology excellence to offer competitive solutions by leveraging ML technologies. LSEG faces competition from the emerging vendors offering innovative trade surveillance solutions as well as well-established trade surveillance vendors. However, with its sophisticated technology platform, comprehensive functional capabilities, and strong industry expertise, LSEG is well-positioned to maintain and grow its market share in the trade surveillance & monitoring market.
LIST

URL: https://list-group.com

Founded in 1985 and headquartered in Pisa, Italy, List is a financial technology solutions and services provider to the global trading market, global trading community, including trading venues, market makers, brokers, asset managers, risk managers and compliance officers. The company provides a multi-compliance solution titled LookOut for trade and market surveillance, regulatory reporting and business analysis specially designed for investment firms for both buy-side and sell-side and Trading Venues. LookOut through its module titled FX Global Code also extends its datacentric surveillance system support to the foreign exchange domain. LookOut solution offers comprehensive capabilities including data quality management, surveillance engine, case management, and data analysis.

List’s LookOut solution provides data quality management capability which offers easy data ingestion from a variety of sources and data quality enforcement are crucial parameters to ensure regulatory-compliant record keeping, effective surveillance and accurate reporting. LookOut’s robust data management engine functions in real-time or in batches, integrates and correlates data from a variety of sources, performs pre-ingestion checks including correct and consistent data and monitors full data feeds and quality assurance process, and sends alerts for unexpected behaviors.

The solution offers a sophisticated cross-product pattern recognition surveillance engine capability which analyzes orders, trades, quotes, market data in public, and news in near real-time or in batches to effectively detect market manipulation and insider trading behaviors. Further, it manages best execution policies, market making and trading obligations and monitors market integrity. The digital detection agents investigate both trading data and operator’s behavior to ensure increased efficiencies and reduced false positives. The users can initiate surveillance runs using what-if analysis and threshold validation.

LookOut solution’s web-based case management system leverages process automated algorithms and Natural Language Processing (NLP) which simplifies and accelerates the investigation process. The extensive dashboard correlates and gathers data required for investigation. The user navigates through this data using powerful tabular and graphical data navigation tools.

The LookOut solution’s data analysis capability embeds a robust no-SQL data analysis engine which can process a large number of data records in seconds, allowing data engineers to develop comprehensive dashboards and graphical analysis tools. Moreover, LookOut data warehouse on this system leverages informational content which is effectively used by organizations to implement custom analysis, data mining and monitoring dashboards. The solution supports both deployment models including cloud and on-premises.
List’s FX Global Code module extends support of the surveillance system to the foreign exchange domain. It offers detection of insider dealing patterns, market manipulation patterns, and specific FX global code patterns.

**Analyst Perspectives**

Following is the analysis of List’s capabilities in the Trade Surveillance & Monitoring solutions market:

- List offers a data-centric multi-asset, multi-compliance trade surveillance system titled LookOut, for record keeping, market surveillance, regulatory reporting and business analytics. It is specially designed as a robust, reliable yet flexible, fast in data collection, storage, retrieval and analysis system for buy-side, sell-side firms, and trading venues.

- The solution is efficient and highly scalable as it processes huge amount of data while complying with MiFID II requirements. It leverages high scalability and fault tolerance using Cassandra Hadoop noSQL database system for its historical storage backend. The solution complies with European regulations and similar requirements globally including MAD/MAR, MiFID/MiFIR, SFTR, Dodd-Frank.

- List’s differentiators are its pattern recognition surveillance engine in which organizations can autonomously setup/tweak patterns thresholds and launch run during the day as well as setup and run specific production scenarios. The comprehensive dashboards accessible during case analysis provide a holistic view of trading data and related market data to organizations in the form of charts and tables.

- List has a strong presence in Europe, followed by North America and APAC. The company supports various use cases including broker monitoring its clients for market manipulation on listed instruments such as equity, bonds and more, asset manager monitoring its portfolio managers and traders for insider dealing frauds or price manipulation, dealer and banks monitoring their proprietary trading desks for manipulation, service bureau offering surveillance to their network and, exchange surveillance.

- From the perspective of the challenges in surveillance space, increasing efficiency of the solution and continuously improving it by finding new techniques and approaches in identifying market abuses more accurately, thus reducing false positives. Rising data cost is another challenge. However, with the robust product strategy and roadmap, the company is well on track on overcoming these challenges in the near future.

- From the product roadmap perspective, List will continue to focus on adoption of innovative technologies, evolving and updating pattern detection, and product usability. The company will continue to invest in new machine learning and AI algorithms to improve insider trading detection pattern and alerting. The company is further working towards a near real-time data monitoring tool to oversee data ingestion and to improve user experience.
Eventus

URL: https://eventussystems.com

Founded in 2014 and headquartered in Austin, Texas, Eventus Systems is a global provider of trade surveillance, market risk, and transaction monitoring solution for multiple asset class. The company provides Validus platform for trade surveillance and market risk management. The platform offers solution for trade surveillance, market risk, algo monitoring and AML/transaction monitoring.

Eventus’s trade surveillance solution offers comprehensive coverage across a variety of market manipulation strategy, including Reg NMS/order marking, intermarket sweep orders (ISOs), spoofing, layering, wash trading, momentum ignition, and others. The solution offers numerous out-of-the-box integrations to suit specific organization’s requirements. The platform includes integrated alerting, investigation, and remediation functionalities to effectively minimize market abuse and risks. Additionally, it leverages machine learning and robotic process automation effectively manage a large volume of alerts and their remediation. The platform streamlines account data integrations through full-featured APIs and helps organizations in data reconciliation collected through multiple counterparties and platforms.

Eventus’s Validus market risk solution provides an integrated view and ensures compliance of the financial risk controls in every pre-trade and trading systems including OMS, EMS, etc. The solution offers validation checks which determine that all systems are functioning properly. Further, it captures violations that are missed by other systems and allows to add additional set of risk limits which are beyond the organizations’ pre-trade systems. Additionally, the solution integrates alerting, investigation, and remediation and offers flexible reporting capabilities to reduce risk, increase organizations confidence, meets regulatory compliance, and improves efficiency to quickly solve the issues.

Eventus’s Validus algo monitoring solution offers real-time trading algorithms performance monitoring across multiple customizable parameters including volume, frequency of orders, cancels, fills, and more. The solution generates actionable alerts within five seconds after a parameter breach and supports “kill switch functionality” by rapidly identifying which algo is responsible for breach. Additionally, the solution provides a sandbox environment for in-depth algo testing and integrates alerting, investigation, and remediation to reduce risk, and prevent interruptions of proper functioning algos. Further, it supports MiFID’s Regulatory Technical Standard (RTS 6) requirements for immediate remedial action when alert is generated, increases the documentation efficiency of testing results, and ensures compliance with regulations including Market Abuse Regulation (MAR).

Eventus’s Validus anti-money laundering and transaction monitoring solution is specifically customized for broker-dealers and market centers that offers real-time transactions monitoring to empower quick detection of suspicious behavior. It smoothly integrates into
both KYC and deposit/withdrawal platforms to detect suspicious transactions. The solution includes robust detection tools and a full trade life cycle viewer having time and sales data integrated with order-level data and a market visualizer to display order-level data covered with market data. Additionally, the solution includes a comprehensive reporting solution which is customizable using Python and augments statistic package with capabilities such as trader and account profiling.

**Analyst Perspectives**

Following is the analysis of Eventus System’s capabilities in the Trade Surveillance & Monitoring solutions market:

- Eventus offers a holistic trade surveillance and market risk solution portfolio addressing regulatory, operational, financial, and technology risks into a single platform. The company has successfully served several large, high-volume trading firms meeting their scalability requirements. Eventus differentiators is often attributed to its ability to offer real-time analytics and multi-party reconciliation to run analytics and reporting with reconciled data from multiple counterparties and platforms.

- The company is well recognized to offer ease of deployment, ease of use, along with ease of configuration and customization to suit organization-specific requirements. The company has successfully served a variety of organizations, including some of the complex and high-volume use case environments.

- The Validus platform offers seamless connectivity to over hundreds of markets and data sources to improve the performance of trade surveillance and monitoring functions. With several out-of-the-box APIs and ability to offer custom integration, the platform offers robust interoperability experience across various systems.

- The company has a strong presence in the North America region and is currently expanding across several geographical locations. The company covers a variety of organizations including, surveillance for market abuse and fraud, stay compliant with global regulation, fulfill regulatory requirements to do business (e.g., crypto exchanges in the APAC region), management reporting, behavioral analytics and signaling, and risk and position monitoring.

- From the challenges perspective, a majority of the Eventus customers are from the NA region. The company is required to move faster in leveraging the growth opportunities across EU, MEA and Asia Pacific region. The company may also face challenges in competing with its larger, well-established competitors with integrated solutions for fraud, AML, and trade surveillance solution. From the technology perspective, the company may need improvements in communication surveillance, especially for integrating emerging digital channels. However, with the robust product strategy and roadmap, the company is well on track on overcoming above challenges in the near future.
From a product roadmap perspective, the company is constantly expanding its partner ecosystem, improving integration and interoperability and built-in connectors for a range of systems and data sources. The company is also enhancing its data integration capabilities and abuse detection capabilities to further augment its trade surveillance and monitoring performance. The company is further strengthening the platforms, including improving digital asset transaction monitoring, developing, and testing traders’ profiles and enhancing insider trading, AML, and statistical functionality.
Nasdaq

URL: https://www.nasdaq.com

Nasdaq, founded and headquartered in New York, is a global provider of market and trade surveillance technology in financial markets and one of the largest electronic exchanges. Nasdaq through its surveillance solutions suite, offers a flagship SaaS hosted solution Nasdaq Trade Surveillance, which provides end-to-end business services that provides holistic surveillance across all asset classes to detect, investigate and mitigate market abuse. Nasdaq offers comprehensive capabilities such as data sourcing and capturing, alerting and management, data visualization and reporting, behavior risk, and market replay.

Nasdaq Trade Surveillance’s data sourcing and capturing capability provides data to firms for monitoring to detect malicious trading activity through effective, targeted, and transparent logical alerts. The solution’s alerting and management capability uses advanced machine learning for alert generation and launch of other intelligent investigations to expand the coverage of holistic integration of communications surveillance alerts. The management capability provides efficient handling and processing of system alerts and outputs.

Nasdaq Trade Surveillance’s data visualization and reporting capability leverages surveillance visualizations and reporting using BI tools for deeper interrogation of alerts and trading with timely access to trading data. It generates advanced dashboards to give a more in-depth view of data. The solution’s behavior risk capability facilitates interrogating trading and compliance data to support investigation by identifying behavior patterns and further explore data deeply to flag trader or account behavior risk. The solution’s market replay capability enables to recreate the order book of any instrument at any time to view buy and sell interaction for providing the examination of order flow essential to address order book. The solution supports multiple deployment models such as SaaS, cloud, or on-premises.

**Analyst Perspectives**

Following is the analysis of Nasdaq’s capabilities in the Trade Surveillance & Monitoring solutions market:

- Nasdaq’s Trade Surveillance is a hosted SaaS based solution and an industry benchmark for real-time and T+1 transactions in cross-market, amongst cross-asset surveillance platforms. The platform with its advanced technology of machine learning powers surveillance and compliance for many marketplaces, regulators, and participants globally to detect trading patterns. It provides a consolidated view of market across multiple venues and asset classes in a single snapshot.

- Nasdaq Trade Surveillance allows firms to detect, investigate and document a broad range of market abuse behaviors supported by tailored alerts, including insider trading, manipulation, order handling rules, market maker, watch/restricted list trading and unusual pricing and many more and ensures that trading activity complies with regulatory
mandates and potential gaming or abuse is not left undetected across multiple marketplaces or asset classes by putting robust controls across all places where business is conducted.

- The major differentiators of Nasdaq are being an exchange, it sources the entire trade data of the order book required for investigation through its hosted model and customized data feeds which greatly reduces the infrastructure cost. The solution provides a wide coverage of market abuse behaviors with advanced visualization which includes order book depth and performance driven behavioral analytics to gain insights for investigation. Nasdaq Trade Surveillance’s rapid deployment model enables complete surveillance monitoring within 2-3 weeks of engagement.

- In terms of geographical presence, Nasdaq has strongest presence in North America region and Europe and has fair presence in other regions globally.

- The primary challenges for Nasdaq Trade Surveillance solution are sourcing, capturing, and maintaining trade and market data for analysis, translating regulatory guidelines into trading alerts for identifying market abuse, analyzing, and managing alerts for proper review and escalation and ensuring new methods evaluation and implementation for proper surveillance and compliance function. However, Nasdaq, with its sophisticated technology platform, comprehensive functional capabilities, robust roadmap, and high customer value proposition demonstrated by compelling customer references, is well-positioned to maintain and grow its market share in the trade surveillance & monitoring market.

- In terms of roadmap, Nasdaq is focusing on further development of core trade surveillance functionalities and improving product development strategy to continue maintaining its global reach in the market.
SPARK Matrix™: Trade Surveillance and Monitoring, 2021

**Intellect Design Arena**

URL: [https://intellectdesign.com](https://intellectdesign.com)

Founded in 2014 and headquartered in Chennai, India, Intellect Design Arena is a provider of financial technology to banking, insurance, and other financial services. Intellect Design Arena provides contextual and real-time trading aided by online market rates and news, comprehensive and AI-based analytics, and research through its flagship brokerage solution, Capital Alpha, which is a multi-exchange, multi-asset, multi-channel, multi-currency, multilingual integrated platform. The platform offers comprehensive trade surveillance capabilities, including omnichannel trading, risk management, fully integrated back office, research & analytics, dashboarding, advanced analytics, and dynamic workflow management.

Capital Alpha is an enterprise brokerage solution that consists of an integrated front-to-back “Broker-In-A-Box” solution, which provides contextual trading backed by research and analytics. Capital Alpha provides holistic surveillance across levels and asset classes. It offers omnichannel access to trade and market information and supports trading in multiple asset classes across markets. It enables surveillance across asset classes, including exchange-traded and distributed, trade surveillance with the market and compliance monitors for retail and institutional investors, and adjustment capability of risk rules, risk limits, exposure rules, and margin rules, depending on the investor trading pattern and exposures. Capital Alpha also provides real-time pre- and post-trade risk management.

Capital Alpha offers a fully integrated back office with comprehensive coverage for post-trade processing, ready adapters, flexible & template-driven fees & commission module, a three-level general ledger, and over 100 pre-built reports, including regulatory & client communications. The Capital Alpha research module helps users in making investment decisions based on contextual & real-time market news, charts, and analytics through a user-friendly dashboard. Capital Alpha analytics provide data-driven insights for improved decision-making. It incorporates AI-based Sentiment Analysis that enables actionable insights from unstructured data. The platform’s in-built tools provide better alpha generation, such as industry dashboard; sector performance dashboard for easy access to news, research, and events; technical analysis along with sentiment calculator; and real-time generation of analysis data which can be extracted into excel or any other BI tool for research purposes. The suite includes AI-based sentiment analysis, natural language processing (NLP) based bots to assist investors, research-based awareness, and real-time dashboards for monitoring trades and delivering insights. Capital Alpha’s advanced analytics offer AI-driven sentiment analysis to gain actionable insights from unstructured data, which helps in the investment decision process.

Capital Alpha offers a complete workflow for the planning, monitoring, and mitigation of risks. Planning is performed through a robust rule-driven engine with multiple levels of configuration and rules set by risk stakeholders. Monitoring is done in both real-time and
through batch processing. Mitigation of risk is accomplished in real-time using the system’s features of price alerts, bulk order cancellation, and bulk square-off of open positions. Capital Alpha supports multiple real-time technologies like Multiplex ITXR, low latency trading, real-time market data, multiple markets, colocation/proximity hosting, and fix gateway. The technology flexibility is further enhanced through out-of-the-box connectors/integrators such as exchange adapters (FIX and Proprietary), payment gateways, FIX (MPN and Bloomberg), and market information data providers (FAST, ITCH, and Matriks). Additionally, the solution also supports SOAP, RESTful API, Web Services, and Files, etc. The product offers flexible deployment options of on-premises to cloud-based, supporting single tenant or multi-tenant, as a managed service offering combining IaaS and SaaS through a hosted infrastructure or as a SaaS offering through a stock exchange private cloud.

**Analyst Perspectives**

Following is the analysis of Intellect Design Arena’s capabilities in the trade surveillance & monitoring solutions market:

- **Capital Alpha** provides an omnichannel trading experience for the investor through contextual trading, backed by research and analytics. It ensures compliance through real-time and integrated pre- and post-trade risk management and increases the efficiency of operations through a comprehensive back office, combining clearing & settlements, fees & commissions, corporate actions, reports, and interfaces to market entities. The platform enables brokerage houses to scale up their business by supporting both domestic and cross-border trading for retail and institutional clients. Capital Alpha’s capabilities encompass the entire workflow of planning, monitoring, and mitigating risks via precise surveillance on three different levels: Broker Firm Level, Investor Level, and Asset-Class Level.

- **Capital Alpha’s** modular and decoupled nature of architecture enables brokerages to easily deploy part of the solution on a requirement basis with API-based interfaces to existing IT systems. The major differentiators of Intellect Design Arena include integration of order and risk management with the back office on a real-time basis to avoid imbalance and unnecessary data, low latency order routing and colocation ready for faster order execution, and omnichannel access to end-users. The solution also offers a framework for regulatory compliance for member firms and internal compliance for investors with the member firm. Additionally, it provides the facility to adjust risk limits, risk rules, margin rules, and exposure rules based on the investor trading pattern.

- **Concerning geographically,** Intellect Design Arena has a strong presence in the APAC region. From an industry vertical perspective, retail brokerage houses in the regions of Colombo, Bangladesh, Philippines, Malaysia, Thailand, and Istanbul form a majority of the customers, followed by stock exchanges. Capital Alpha supports various use cases, including latency optimization, integrated front, mid, and back-office functions, real-time risk monitoring, omnichannel access, and an online bank/depository interface.
Intellect Design Arena faces competition from well-established players offering a broad range of fraud and risk management solutions. The company may face a challenge in expanding beyond the APAC region due to the dominance of other well-established players. However, with its comprehensive functional capabilities, robust roadmap, and high customer value proposition demonstrated by compelling customer references, Intellect Design Arena is well-positioned to maintain and grow its market share in the trade surveillance & monitoring market.

Concerning roadmap, Intellect Design Arena is focusing on further automation by applying robotic process automation (RPA) to manual processes and adding more decision support tools based on trading behavior patterns. Furthermore, Intellect Design Arena is focusing on leveraging advanced AI and machine learning to integrate market monitoring, trade surveillance, and sentiment analysis for improving in taking better investment decisions.
Bloomberg L.P.

URL: https://bloomberg.com

Bloomberg, founded in 1981 and headquartered in New York, is a global provider of financial data and business news, data, and analytics. Bloomberg offers an integrated compliance and surveillance solution Bloomberg Vault that enables firms to capture, control, archive, reconstruct, and analyse their e-communication, trade, and voice data across the entire trading life cycle on a real time or historic basis. Bloomberg Vault offers capabilities including data capture and aggregation, archive and administer compliance-related data, immutable storage and retention, administration and entitlements, E-communication surveillance, E-discovery and case management, and trade archive and reconstruction.

Bloomberg Vault can collect, and aggregate primary sources of Bloomberg originated, and corporate data needed for supervision and surveillance programs. Bloomberg Vault is fully integrated with Bloomberg Terminal communication channels and can capture data such as Message (MSG), Instant Bloomberg (IB), NOTE and more, in real time. It can capture and archive structured and unstructured communication data from corporate email, messaging, social media, and chat platforms (e.g., MSFT Teams, Skype for Business, Reuters, WhatsApp, etc.). Bloomberg Vault captures pre-trade and trade execution data from Bloomberg’s own trading systems (TOMS, AIM, etc.). In addition, most third-party order management systems are supported through FIX, FIXML and Bloomberg CSV formats. Voice recordings and metadata are captured in Bloomberg Vault through strategic partnerships with industry voice recorders in various voice channels (traditional phone systems, mobile phones, turrets, VoIP, etc.)

Bloomberg Vault’s premium archival solution delivers immutable storage (i.e., write once, read-many or “WORM”) across business-critical data types (communications, trade, voice). Organizations can select their own data retention periods to ensure data is stored on WORM for the period required by their regulators.

The Bloomberg Vault premium offering provides control owners with governance tools and resources to oversee users, groups, and policies. It enables users to review access and change users’ enablement scope across products and services, create and maintain surveillance groups, apply real-time and preventative policies to users and organize controls by jurisdiction across a firm.

Bloomberg’s Vault Surveillance generates alerts across both Bloomberg and non-Bloomberg datasets to surface potential risks and threats. It allows users to apply more than 40+ out-of-the-box surveillance policies to Bloomberg messages and chats and in near-real time to corporate communications in real time. It enables users to customize policies to reduce false positives and help meet regulatory requirements, corporate compliance and
data security needs. The platform offers configurable review hierarchies, escalation workflows and robust reporting that create an efficient compliance environment.

Bloomberg’s Search and Export applications allow premium users to conduct recurring procedure-based searches, compliance ad hoc searches and deep-dive reviews/investigations. It allows users to streamline e-discovery workflows throughout early case assessment with investigation, collection and reporting tools. It also enables users to export data in various formats for additional analytics, litigation and/or regulatory needs. Users can utilize case management to organize and track user-based searches and tasks. Additionally, it offers downloadable audit reports available for every search to help reconcile.

Bloomberg’s Trade Archive allows premium users to view trade records from multiple order management systems in a single consolidated view. Users can trace a trade through its life cycle, right from initial quote to order creation and all updates to the order, following the routes of that order and its subsequent fills or executions. The Trade Archive solution can be paired with Bloomberg Vault’s premium communications storage solution to help with trade reconstruction.

**Analyst Perspectives**

Following is the analysis of Bloomberg’s capabilities in the Trade Surveillance & Monitoring solutions market:

- **Bloomberg Vault** is an integrated compliance and surveillance solution designed to help global financial services firms meet their regulatory obligations and business standards to firms, enabling them to manage the end-to-end compliance workflow. The platform benefits the organizations by helping them integrate various data sets, monitor Bloomberg data in real time, mitigate regulatory risk like market abuse and misconduct and streamline workflows.

- Bloomberg Vault’s key differentiators include proprietary multifactor biometric authentication to offer advanced security, access to dedicated 24/7 global account management and support teams to help with onboarding and training, flexibility to set up permissions, groups and policies tailored to supervisory and regulatory framework and robust infrastructure that supports a huge number of Terminal users.

- In terms of geographical presence, Bloomberg has strongest presence in North America region and is present in other regions globally.

- The primary challenges for Bloomberg are from the established vendors and emerging vendors. However, Bloomberg, with its sophisticated technology platform, comprehensive functional capabilities, robust roadmap, and high customer value proposition demonstrated by compelling customer references, is well-positioned to maintain and grow its market share in the trade surveillance & monitoring market.
MCO (MyComplianceOffice)

URL: www.mycomplianceoffice.com

Founded in 2005 and headquartered in Dublin, MyComplianceOffice (MCO) provides compliance management software that enables companies around the world to reduce their risk of misconduct. MCO’s trade surveillance software provides an automated solution to monitor investment activities across an organization. MCO’s solution is a single integrated platform that allows a firm to run a wide variety of monitoring rules on trades, positions, accounts, funds, portfolios, clients, and households across a range of financial products for various compliance topics such as market manipulation, insider trading, and product suitability where the data is made available. The key capabilities of the platform include a single integrated system, comprehensive out-of-the-box rule set, comprehensive case management, managing restricted list and watch list surveillance, global security master with links to the issuer, and Trade Surveillance Manager rule set.

The MyComplianceOffice platform enables organizations to conduct broad range of surveillance of both the trades of their clients and simultaneously conduct surveillance of the trades of the organization’s employees. The solution provides an extensive rules engine that is run on the clients trading and the employees’ trading activities in accordance with the firm’s transaction surveillance requirements. The market data available in the security master and the externally sourced data is compared with the trading activities to identify anomalies and generates alerts for the identified discrepancies. The rules engine is flexible as it links rules together to generate alerts for a new story or price spike.

The solution offers a comprehensive case management capability that enables users to investigate potential issues and also document results in a fully auditable workflow. It generates alerts for rule breaks to flag trading issues. This includes market abuse to check for rogue practices, suitability of the client and sales practices to uncover instances of churning, account anomalies, and unusual trading patterns. The solution helps manage restricted and watch list surveillance, ensuring that the firm’s trading activity does not clash with the firm’s restricted list on a post-trade basis. This enables the client to post-trade review their firm’s trading & holding activity against the restricted and watch lists, provided the list is maintained within MCO or fed daily into MCO.

MCO’s solution also provides a solution to manage material non-public information (MNPI). The multiple functions in capital market firms, such as equity research, sales & trading, investment banking, wealth management, etc., requires managing the flow of MNPI and controlling the access to MNPI.

MCO’s Trade Surveillance Manager rule set can run in conjunction with other key data in MCO involving employee activities, control room, third parties in addition to the external data that MCO has in its company and security master. Data can also be captured from other systems into the MCO, and the rules can be expanded to incorporate data such as
global news services, market data, client research, etc. MCO can ingest data through nightly feeds or APIs. Similarly, data can also be extracted from the MCO to the client’s internal system via scheduled feeds or APIs for additional analysis. MCO’s solution supports cloud-based single or multi-tenant deployment options.

**Analyst Perspectives**

Following is the analysis of MCO’s capabilities in the trade surveillance & monitoring solutions market:

- MyComplianceOffice’s robust trade surveillance software solution, through its comprehensive trade surveillance framework, enables organizations to monitor anti-money laundering (AML) and security trading in accounts, portfolios, and funds. The key differentiators of MCO’s trade surveillance software include a single integrated system that can comprise employee activities and third-party relationship data, strong integration capabilities, flexible workflow, and a standardized rule library.

- In terms of geographical presence, MCO has a strong presence in North America, followed by Europe and APAC. MCO supports various use cases, including watch & restricted list surveillance, insider trading, suitability, portfolio rules, and market abuse.

- MCO faces competition from emerging vendors offering innovative technology solutions, along with some well-established trade surveillance vendors catering to trade surveillance & monitoring needs. The biggest challenge for implementing trade surveillance is trying to bring the data set together and effectively run the rules engine by using analytics tools. However, with its sophisticated technology platform, comprehensive functional capabilities, robust roadmap, and high customer value proposition demonstrated by compelling customer references, MCO is well-positioned to maintain and grow its market share in the trade surveillance & monitoring market.

- With respect to the roadmap, MCO is focusing on adding rules based on client’s requirements, enhancing advanced analytics and visualization capabilities. Furthermore, the company will be focusing on pattern-based data analysis by using advanced ML and behavioral analytics.
Research Methodologies

Quadrant Knowledge Solutions uses a comprehensive approach to conduct global market outlook research for various technologies. Quadrant's research approach provides our analysts with the most effective framework to identify market and technology trends and helps in formulating meaningful growth strategies for our clients. All the sections of our research report are prepared with a considerable amount of time and thought process before moving on to the next step. Following is a brief description of the major sections of our research methodologies.

Secondary Research

Following are the major sources of information for conducting secondary research:

Quadrant’s Internal Database

Quadrant Knowledge Solutions maintains a proprietary database in several technology marketplaces. This database provides our analyst with an adequate foundation to kick-start the research project. This database includes information from the following sources:

- Annual reports and other financial reports
- Industry participant lists
- Published secondary data on companies and their products
- Database of market sizes and forecast data for different market segments
- Major market and technology trends
Literature Research

Quadrant Knowledge Solutions leverages on several magazine subscriptions and other publications that cover a wide range of subjects related to technology research. We also use the extensive library of directories and Journals on various technology domains. Our analysts use blog posts, whitepapers, case studies, and other literature published by major technology vendors, online experts, and industry news publications.

Inputs from Industry Participants

Quadrant analysts collect relevant documents such as whitepapers, brochures, case studies, price lists, datasheet, and other reports from all major industry participants.

Primary Research

Quadrant analysts use a two-step process for conducting primary research that helps us in capturing meaningful and most accurate market information. Below is the two-step process of our primary research:

**Market Estimation:** Based on the top-down and bottom-up approach, our analyst analyses all industry participants to estimate their business in the technology market for various market segments. We also seek information and verification of client business performance as part of our primary research interviews or through a detailed market questionnaire. The Quadrant research team conducts a detailed analysis of the comments and inputs provided by the industry participants.

**Client Interview:** Quadrant analyst team conducts a detailed telephonic interview of all major industry participants to get their perspectives of the current and future market dynamics. Our analyst also gets their first-hand experience with the vendor’s product demo to understand their technology capabilities, user experience, product features, and other aspects. Based on the requirements, Quadrant analysts interview with more than one person from each of the market participants to verify the accuracy of the information provided. We typically engage with client personnel in one of the following functions:

- Strategic Marketing Management
- Product Management
- Product Planning
- Planning & Strategy
Feedback from Channel Partners and End Users

Quadrant research team research with various sales channel partners, including distributors, system integrators, and consultants to understand the detailed perspective of the market. Our analysts also get feedback from end-users from multiple industries and geographical regions to understand key issues, technology trends, and supplier capabilities in the technology market.

Data Analysis: Market Forecast & Competition Analysis

Quadrant's analysts' team gathers all the necessary information from secondary research and primary research to a computer database. These databases are then analyzed, verified, and cross-tabulated in numerous ways to get the right picture of the overall market and its segments. After analyzing all the market data, industry trends, market trends, technology trends, and key issues, we prepare preliminary market forecasts. This preliminary market forecast is tested against several market scenarios, economic scenario, industry trends, and economic dynamics. Finally, the analyst team arrives at the most accurate forecast scenario for the overall market and its segments.

In addition to market forecasts, our team conducts a detailed review of industry participants to prepare competitive landscape and market positioning analysis for the overall market as well as for various market segments.

SPARK Matrix: Strategic Performance Assessment and Ranking

Quadrant Knowledge Solutions' SPARK Matrix provides a snapshot of the market positioning of the key market participants. SPARK Matrix representation provides a visual representation of market participants and provides strategic insights on how each supplier ranks in comparison to their competitors, concerning various performance parameters based on the category of technology excellence and customer impact.

Final Report Preparation

After finalization of market analysis and forecasts, our analyst prepares necessary graphs, charts, and table to get further insights and preparation of the final research report. Our final research report includes information including market forecast; competitive analysis; major market & technology trends; market drivers; vendor profiles.