The Trade Surveillance Revolution: Shifting Compliance and Cutting-Edge Technology

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Executive Summary

Eventus commissioned Datos Insights to study evolving surveillance strategies across asset classes, regulatory and operational challenges, and the adoption of artificial intelligence (AI) and real-time analytics based on interviews with 20 large global sell-side firms. Additionally, the study explores strategic initiatives aimed at developing next-generation trade surveillance capabilities.
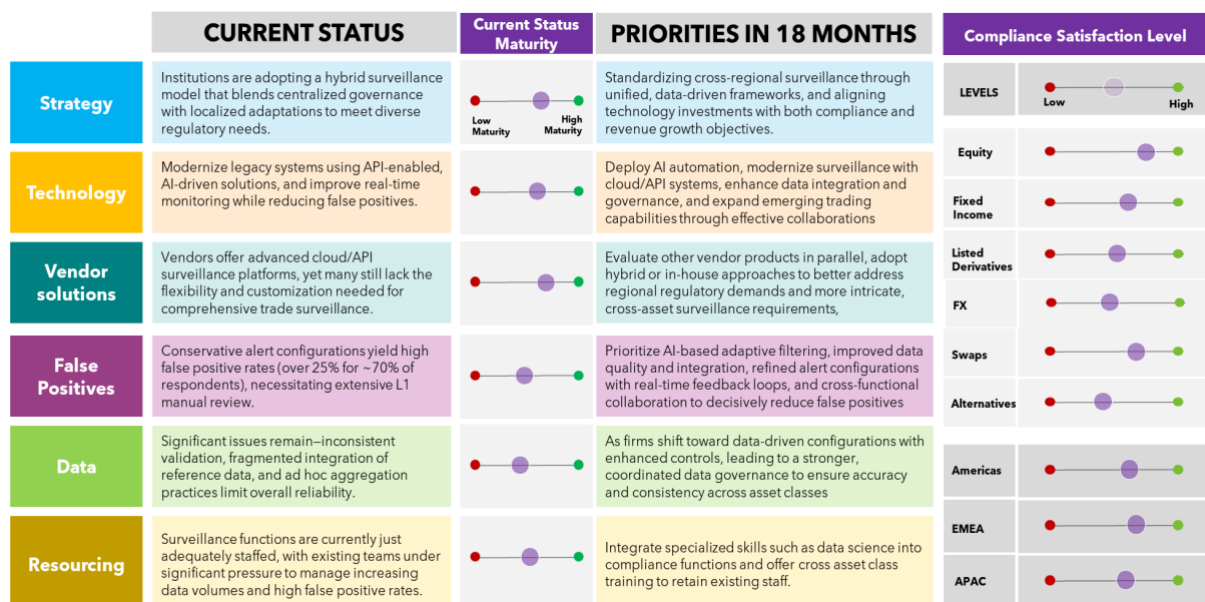
The key findings from the study are categorized as:

- Current issues and future initiatives

- Key metrics

- Top strategic imperatives for surveillance leaders

- Industry voices from the study

Current issues and future initiatives

The current issues and future initiatives in trade and market risk surveillance are as follows (Figure 1):

Figure 1: Current Status and Future Initiatives

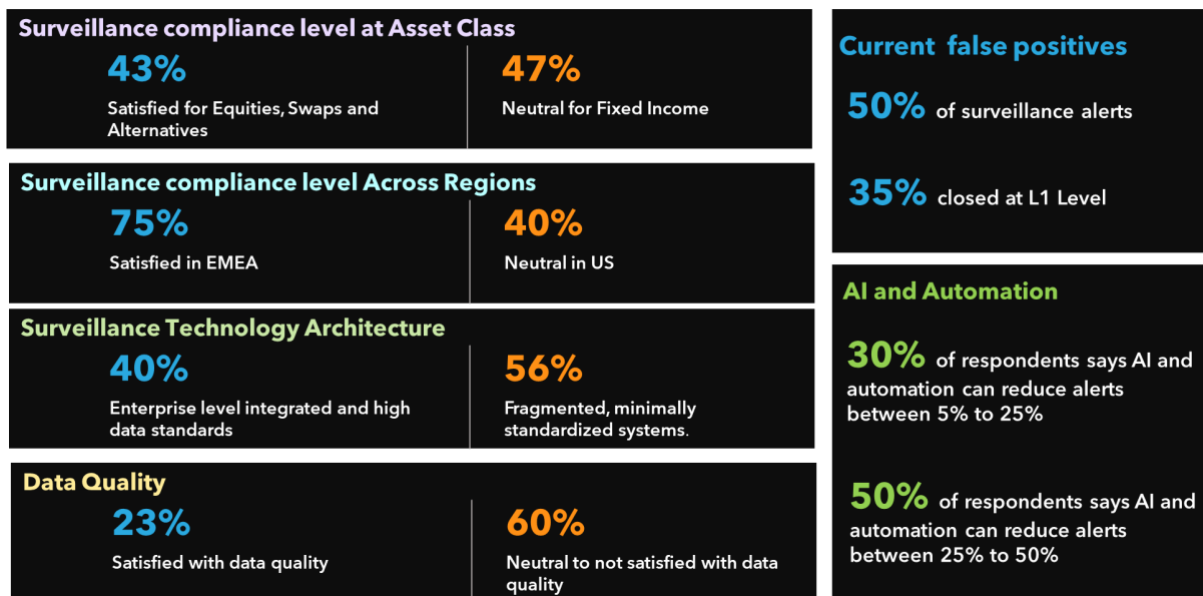|	CURRENT STATUS	Current Status Maturity	PRIORITIES IN 18 MONTHS	Compliance Satisfaction Level		
Strategy	Institutions are adopting a hybrid surveillance model that blends centralized governance with localized adaptations to meet diverse regulatory needs.		Standardizing cross-regional surveillance through unified, data-driven frameworks, and aligning technology investments with both compliance and revenue growth objectives.	LEVELS	Low	High
Technology	Modernize legacy systems using API-enabled, AI-driven solutions, and improve real-time monitoring while reducing false positives.		Deploy AI automation, modernize surveillance with cloud/API systems, enhance data integration and governance, and expand emerging trading capabilities through effective collaborations	Equity		
				Fixed Income		
Vendor solutions	Vendors offer advanced cloud/API surveillance platforms, yet many still lack the flexibility and customization needed for comprehensive trade surveillance.		Evaluate other vendor products in parallel, adopt hybrid or in-house approaches to better address regional regulatory demands and more intricate, cross-asset surveillance requirements,	Listed Derivatives		
				FX		
False Positives	Conservative alert configurations yield high false positive rates (over 25% for ~70% of respondents), necessitating extensive L1 manual review.		Prioritize AI-based adaptive filtering, improved data quality and integration, refined alert configurations with real-time feedback loops, and cross-functional collaboration to decisively reduce false positives	Swaps		
				Alternatives		
Data	Significant issues remain–inconsistent validation, fragmented integration of reference data, and ad hoc aggregation practices limit overall reliability.		As firms shift toward data-driven configurations with enhanced controls, leading to a stronger, coordinated data governance to ensure accuracy and consistency across asset classes	Americas		
				EMEA		
Resourcing	Surveillance functions are currently just adequately staffed, with existing teams under significant pressure to manage increasing data volumes and high false positive rates.		Integrate specialized skills such as data science into compliance functions and offer cross asset class training to retain existing staff.	APAC		

Source: Datos Insights Global Study of Market Surveillance Executives, Q2 2025

- **Current issues:** Industry challenges include growing data complexity and volume, difficulty in integration across disparate systems, data integrity issues, high false positives and noise, and evolving regulatory and market requirements.

- **Future initiatives:** Firms are focused on standardizing cross-regional surveillance via unified data-driven frameworks and aligning technology investments (e.g., AI) with both compliance and revenue objectives.

Key Metrics

The key metrics from the study are as follows (Figure 2):

Figure 2: Key Metrics from Study

Surveillance compliance level at Asset Class	
43% Satisfied for Equities, Swaps and Alternatives	**47%** Neutral for Fixed Income

Surveillance compliance level Across Regions	
75% Satisfied in EMEA	**40%** Neutral in US

Surveillance Technology Architecture	
40% Enterprise level integrated and high data standards	**56%** Fragmented, minimally standardized systems.

Data Quality	
23% Satisfied with data quality	**60%** Neutral to not satisfied with data quality

Current false positives

50% of surveillance alerts

35% closed at L1 Level

AI and Automation

30% of respondents says AI and automation can reduce alerts between 5% to 25%

50% of respondents says AI and automation can reduce alerts between 25% to 50%

Source: Datos Insights Global Study of Market Surveillance Executives, Q2 2025

- **Surveillance satisfaction with equities, swaps, and alternatives:** 43% of respondents are satisfied with surveillance compliance levels for equities, swaps, and alternatives.

- **The integrity of alerts remains an issue:** 50% of surveillance alerts are false positives.

- **The industry faces challenges in technology infrastructure:** 56% of respondents indicate that they work with fragmented, minimally standardized systems.

- **Data quality is one of the more pressing issues:** 60% of respondents stated that they are neutral to not satisfied with data quality.

- **High hopes for the role of AI in surveillance:** 50% of respondents indicated AI and automation can reduce false alerts by 25% to 50%.

Top Strategic Imperatives for Surveillance Leaders

The top strategic imperatives for surveillance leaders are as follows (Figure 3):

Figure 3: Top Strategic Initiatives

		Impact
Regional	Optimize regional surveillance by tailoring systems to meet local regulatory requirements and market dynamics through targeted assessments and localized enhancements	Very High
Asset class	Enhance asset-specific oversight by developing integrated frameworks designed to capture the unique nuances across equities, fixed income, derivatives, and emerging asset classes and expand to cross asset class alerts	Very High
Vendor Solutions	Conduct a comprehensive evaluation of build vs. buy options to balance the benefits of customized in-house solutions against the scalability and cost-effectiveness of vendor platforms	High
Resourcing	Strengthen compliance team by hiring data scientist, train compliance members with data driven analytical tools, and cross-department collaboration to bridge existing capacity gaps.	Very High
Data Quality	Implement robust data governance practices, leverage data scientists and advanced validation tools to create new insight with accurate and reliable real-time information.	High
Functionality Demand	Since one size cannot fit all, demand exists for cross asset class alerts, market replay and use of advanced analytics	High
Approach to AI	Leverage AI for selective models and creating new data insights by combining reference data and alerts from e-communication surveillance and provide transparency in the AI process to compliance	Medium
Future of surveillance	Invest strategically in emerging technologies and long-term innovation roadmaps to continuously evolve surveillance methodologies and secure a competitive market edge.	High

Source: Datos Insights Global Study of Market Surveillance Executives, Q2 2025

- **Regional emphasis:** Optimizing regional surveillance capabilities to meet local regulatory requirements and market dynamics effectively.

- **Asset class focus**: Enhance asset-class-specific oversight by developing integrated frameworks designed to capture unique nuances across multi-asset financial instruments.

- **Data-centricity:** Continued shift toward data-driven configurations with enhanced controls and coordinated data governance to ensure accuracy and consistency.

- **Leveraging technology:** Finding the right balance between build and buy implementation options to meet scalability and cost challenges and leveraging the

latest available technology, such as AI, to develop selective models and create new insights and filters.

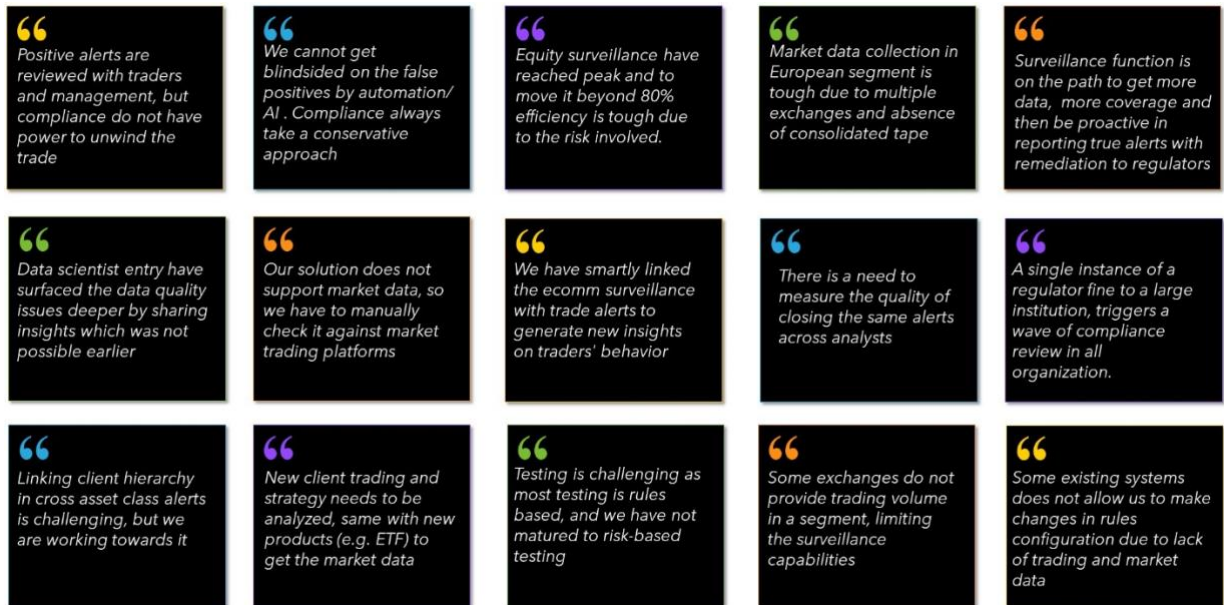## Industry voices from the study

- The industry voices from the study are as follows (Firms frequently mention challenges dealing with false positives.

- Respondents highlighted the difficulty of acquiring consistent market data across different regions and markets.

- Enhancements in capturing information from e-communication and leveraging AI and automation are helping firms gain new insights into trading behavior.

Figure 4):

- Firms frequently mention challenges dealing with false positives.

- Respondents highlighted the difficulty of acquiring consistent market data across different regions and markets.

- Enhancements in capturing information from e-communication and leveraging AI and automation are helping firms gain new insights into trading behavior.

Figure 4: Industry Voices from Study

" Positive alerts are reviewed with traders and management, but compliance do not have power to unwind the trade	" We cannot get blindsided on the false positives by automation/ AI . Compliance always take a conservative approach	" Equity surveillance have reached peak and to move it beyond 80% efficiency is tough due to the risk involved.	" Market data collection in European segment is tough due to multiple exchanges and absence of consolidated tape	" Surveillance function is on the path to get more data, more coverage and then be proactive in reporting true alerts with remediation to regulators
" Data scientist entry have surfaced the data quality issues deeper by sharing insights which was not possible earlier	" Our solution does not support market data, so we have to manually check it against market trading platforms	" We have smartly linked the ecomm surveillance with trade alerts to generate new insights on traders' behavior	" There is a need to measure the quality of closing the same alerts across analysts	" A single instance of a regulator fine to a large institution, triggers a wave of compliance review in all organization.
" Linking client hierarchy in cross asset class alerts is challenging, but we are working towards it	" New client trading and strategy needs to be analyzed, same with new products (e.g. ETF) to get the market data	" Testing is challenging as most testing is rules based, and we have not matured to risk-based testing	" Some exchanges do not provide trading volume in a segment, limiting the surveillance capabilities	" Some existing systems does not allow us to make changes in rules configuration due to lack of trading and market data

Source: Datos Insights Global Study of Market Surveillance Executives, Q2 2025

Introduction

Driven by expanding complexity in financial instruments, exponential growth in data volume, the accelerating pace of market manipulation, and advancement in technology, trade surveillance and market risk management have become mission-critical for financial institutions. Failure to comply with surveillance activities can lead to serious consequences, including financial penalties for the firm, job loss for individuals involved, and even criminal prosecution. Faced with constant regulatory scrutiny, firms must identify and mitigate risks, comply with ever-changing global regulations, and continuously enhance surveillance capabilities to detect and prevent market abuse.

Those firms committed to modernizing their surveillance capabilities will be best positioned to maintain compliance, mitigate risk, and gain a competitive edge in the coming years. This study is designed to foster better understanding of data complexity in conducting surveillance, the adoption of AI, the maturation of surveillance capability, and scalability across major financial institutions.

Methodology

This report is based on a Datos Insights study driven by detailed discussions with senior executives of trade/market surveillance, compliance, and technology from 20 leading global sell-side financial institutions (Figure 5).

Figure 5: Location of Responding Firms

Source: Datos Insights Global Study of 20 Trade and Market Surveillance Executives, Q2 2025
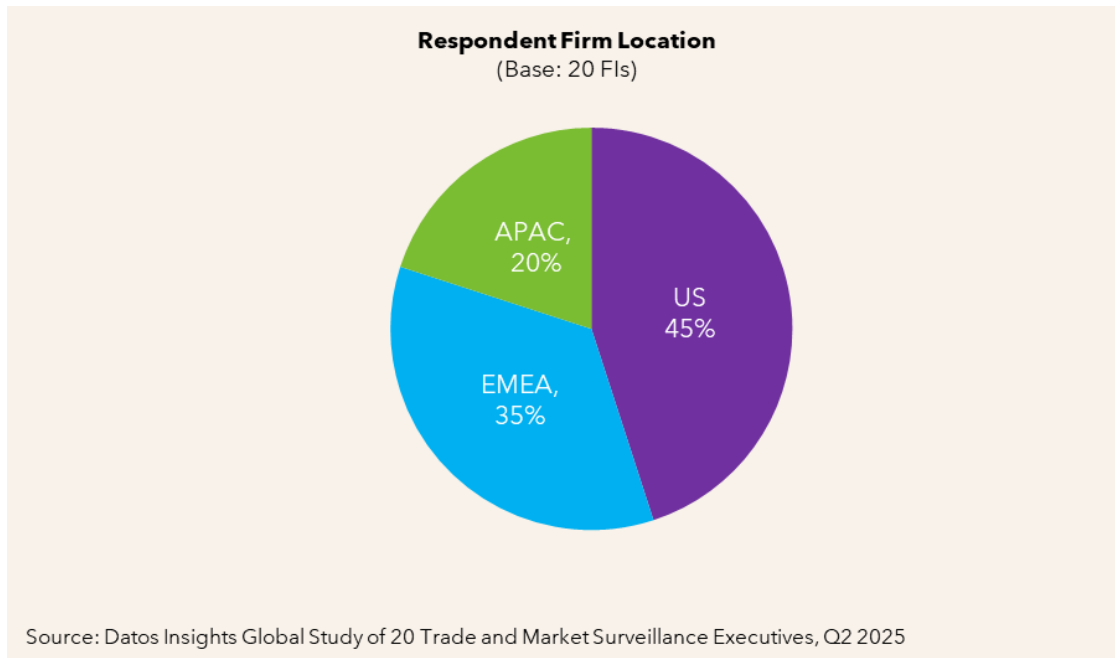
The study focused on the following:

- Evolving trade surveillance strategies across asset classes, regions, and technical architectures.

- Primary regulatory and operational challenges.

- Adoption of AI and real-time analytics.

- Strategic initiatives to develop next-generation trade surveillance capabilities.

Challenges and Initiatives

This section highlights the key challenges that the industry is facing related to trade and market surveillance and provides insights into strategic initiatives that global sell-side institutions are actively implementing.

Challenges in Surveillance

Market participants are currently grappling with a combination of internal and external challenges that make it difficult to develop and manage an efficient and comprehensive surveillance framework.

- **Equity asset class nearing saturation:** Trade surveillance systems were initially designed for monitoring equity assets. Over time, these systems have reached near-optimal efficiency in equity surveillance. However, rather than being limited by technology, the greater concern is the high risk of disrupting well-established processes. Because equities see the highest volume of activity among asset classes, making changes to equity trade surveillance systems involves heavy regression testing.

- **Completeness of surveillance data:** It is challenging for compliance to confirm the completeness of data availability on a continuous basis within surveillance systems due to large data sets, linkage to client and securities master reference data and data transformations logic. The validation of data completeness becomes more critical to reduce false alerts, particularly during market volatility and operational resiliency validations.

- **High data volume and complexity:** Trade surveillance systems must process vast amounts of data from multiple sources (e.g., order management systems, market data feeds, and execution records) in real time. This data is often complex and comes in various formats, making timely processing and analysis a significant challenge.

- **Integration across disparate systems:** Financial institutions operate with a mix of legacy and modern systems. Integrating trade data from these sources into a coherent surveillance framework can be difficult, especially when dealing with different standards, communication protocols (e.g., lack of API connectivity), and regional differences.

- **Data quality and integrity issues:** Inaccurate timestamps, misaligned or missing data, and partial execution records can undermine the effectiveness of surveillance. Ensuring

clean and complete data is critical for accurate detection of suspicious trading patterns, yet it remains a persistent issue.

- **High false positives and noise:** Surveillance systems often generate a large number of alerts, many of which can be false positives. Analyzing the false positives to identify genuinely suspicious activities not only burdens compliance teams but also can lead to alert fatigue, potentially causing important signals to be overlooked.

- **Evolving regulatory and market requirements:** Trade surveillance is subject to rapidly evolving regulations and market conditions. Keeping systems up to date with the latest legal requirements, as well as adapting models to new trading strategies, such as digital assets and new asset classes, is an ongoing challenge for institutions.

Initiatives in Surveillance

Faced with the above challenges, many global sell-side firms are engaged in various initiatives designed to strengthen their ability to comply with the surveillance program mandate and stay ahead of changes in regulatory requirements.

Holistic Surveillance Enhancements

These initiatives span from remediation of regulatory fines to enriching data quality, indicating a comprehensive approach to surveillance that addresses both compliance inconsistencies and the need for complete, traceable data across systems.

- **Surveillance remediation program:** This involves completing the remediation task based on a designated fine levied by a regulator and showing consistent treatment of the same alerts in different regions.

- **Strategic transitions:** There is a strategic dependency move from legacy systems toward in-house or hybrid platforms with integrated data connectors that support fixed income, foreign exchange (FX), and other asset classes.

Emphasis on Data-Driven Methods

Initiatives such as "data over rules" and sourcing new types of data (e.g., client reference, trading P&L), highlight a strategic shift from traditional rule-based systems toward more data-informed, analytics-driven surveillance frameworks.

- **Data quality programs:** Enriching alerts with additional information and data lineage and data completeness reconciliation with source systems.

- **Data over rules:** Data-driven surveillance over rules-driven surveillance.

- **Data metrics:** Generating new insights by combining alerts with e-communication.

Integration and Adaptability

These projects focus on new venues and products, as well as cross-product alerts. They reflect a growing need to adapt surveillance capabilities to evolving trading strategies and expanding market coverage, including digital assets and electronic trading.

- **New venues:** Updating configurations to source required data.

- **New products:** Enhancing current capabilities to support new products and trading strategies.

- **Pre-trade compliance:** Enhancing pre-trade compliance to match the rise in electronic fixed income trading.

- **Cross-product alerts:** Configuring cross-product alerts for selected assets.

- **More trading hours:** Analyzing the impact of 24-hour trading on the venues, such as fewer players in the off-market and impact on the bid-ask price due to low liquidity.

Technology and Automation Adoption

The deployment of modern tools around Generative AI (GenAI) and enhanced case management, alongside other scalability efforts such as cloud adoption, underscores the market's commitment to automating processes, improving alert commentary, and reducing manual interventions.

- **Increase scenario categories:** Configuring additional scenarios, as current surveillance systems support only basic scenarios such as wash trades.

- **Leverage vendor platforms:** Functionalities offered by vendor products can be used to increase surveillance coverage for new products, new asset classes, and new models.

- **Source new data:** Sourcing client, business, and trading mandates and P&L data for surveillance.

- **Explore AI tools:** Exploring the business case for AI and deploying AI tools for selective areas such as rogue trading or increasing the capability in text required for case management.
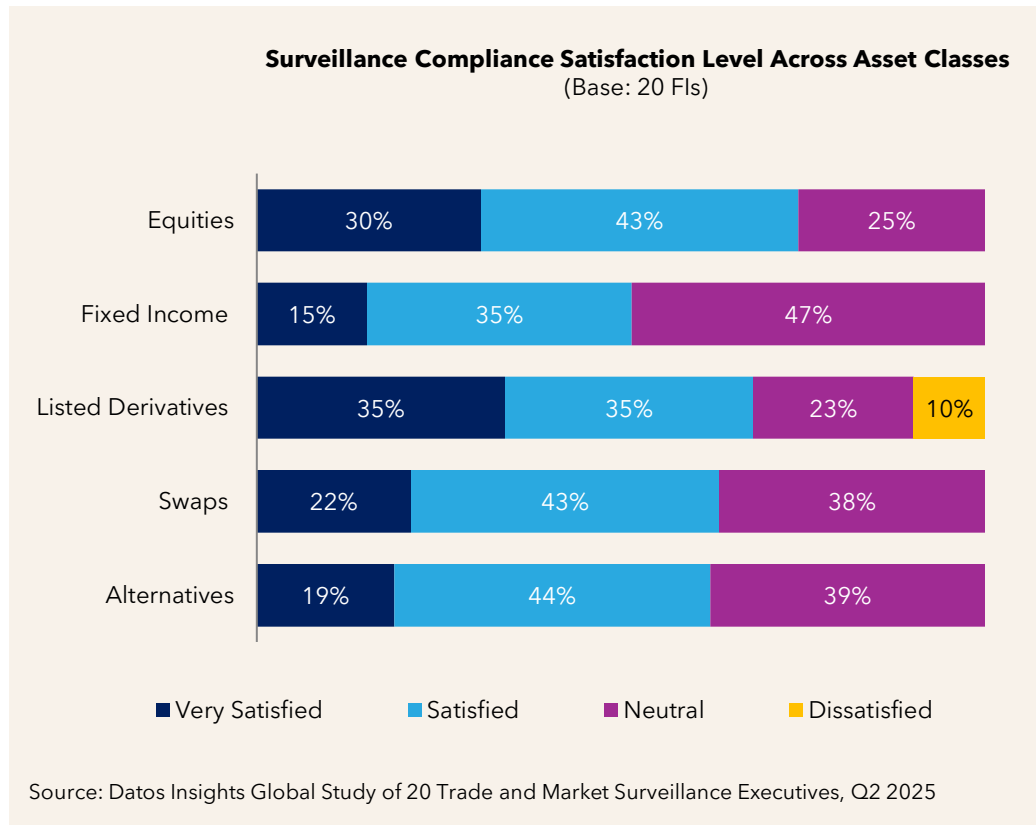
Continuous Improvement and Quality Assurance

Programs such as impact analysis of extended trading hours and identification of corresponding deficiencies suggest an ongoing effort to calibrate and refine surveillance models over time, ensuring continued effectiveness in the face of changing market conditions and operational challenges.

- **Identify the deficiencies:** Creating a book of work to resolve deficiencies identified in production data, such as a lack of flexibility in the model to move the threshold for specific scenarios and variance in the time it takes to close the same alerts among different individuals.

- **Quality assurance:** Automating testing coverage and test cases to focus on core defects.

Surveillance Compliance Across Asset Classes

Respondents indicate different satisfaction levels depending on the specific asset class they are managing (Figure 6).

Figure 6: Compliance Satisfaction Level Across Asset Classes

Surveillance Compliance Satisfaction Level Across Asset Classes
(Base: 20 FIs)

Asset Class	Very Satisfied	Satisfied	Neutral	Dissatisfied
Equities	30%	43%	25%	
Fixed Income	15%	35%	47%	
Listed Derivatives	35%	35%	23%	10%
Swaps	22%	43%	38%	
Alternatives	19%	44%	39%	

■ Very Satisfied ■ Satisfied ■ Neutral ■ Dissatisfied

Source: Datos Insights Global Study of 20 Trade and Market Surveillance Executives, Q2 2025

Equities:

- High satisfaction rates largely because surveillance started with the equity asset class – existing systems have proved efficient during market volatility.

- However, challenges remain due to the volume of data required to conduct surveillance and the excessive cost and risk associated with replacing surveillance systems.

Fixed Income:

- Half of respondents mentioned neutral satisfaction rates due to the increase in electronic trading and trading workflows.

- This finding signals challenges in fixed income trade monitoring, especially in the Europe, Middle East and Africa (EMEA) and Asia-Pacific (APAC) regions. This is magnified by the absence of centralized reporting structures (e.g., FINRA TRACE in the U.S.) for fixed income.

Listed Derivatives:

- 30% of respondents said they were neutral to dissatisfied with their confidence in surveillance.

- When listed derivatives exchanges roll out new products, lag is observed in configuring additional market data.

- Respondents cited the absence of a correlated cross-product margining system, with equities and fixed income as additional challenges.

Swaps and Other Asset Classes:

- Almost half of respondents mentioned a positive satisfaction level due to the limited number of institutional market participants and low volume of transaction activity.

- However, challenges remain in obtaining pricing data, especially due to firms' internal cut-offs for pricing certain trades (such as FX trades), a lack of market data availability for alternatives, and high notional trades that cannot be unwound without a significant cost.

Figure 7 provides key takeaways related to surveillance compliance levels across different asset classes.

Figure 7: Key Takeaways Regarding Surveillance Compliance Level Across Asset Classes
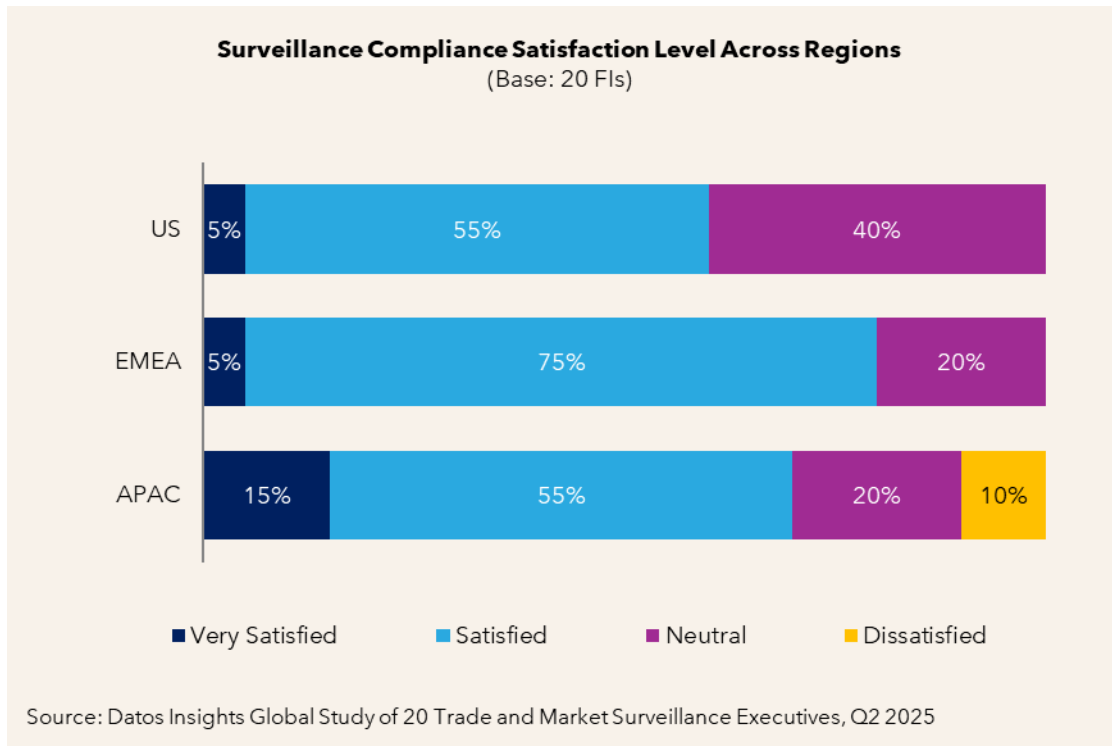
Takeaways:

Optimizing Surveillance for Market-Specific Challenges: Equity surveillance systems need scalable upgrades, fixed income markets require better trade visibility in decentralized environments, and listed derivatives demand faster integration of new products and correlated risk detection across asset classes.

Enhancing Data Governance & Institutional Oversight: Firms must refine market and pricing data for fixed income, listed derivatives, swaps and alternative assets, strengthen compliance mechanisms in regions lacking centralized reporting, and tailor fraud detection models to institutional trading behaviors for better risk mitigation.

Source: Datos Insights Global Study of Market Surveillance Executives, Q2 2025

Surveillance Compliance Across Regions

Like the feedback on asset classes, respondents reported diverse levels of satisfaction with surveillance compliance depending on their regions (Figure 8).

Figure 8: Compliance Satisfaction Level Across Regions

Surveillance Compliance Satisfaction Level Across Regions
(Base: 20 FIs)

Region	Very Satisfied	Satisfied	Neutral	Dissatisfied
US	5%	55%	40%	
EMEA	5%	75%	20%	
APAC	15%	55%	20%	10%

Source: Datos Insights Global Study of 20 Trade and Market Surveillance Executives, Q2 2025

- **In the U.S.,** 60% of respondents were satisfied with their compliance level, while 40% of respondents reported neutral views. This reflects uncertainty or variability in effectiveness across firms.

- **In EMEA,** 80% of respondents expressed confidence in current surveillance tools and adaptability. However, the compliance level is often driven by local jurisdiction. Significant improvements are needed in cross-jurisdiction surveillance complexity.

- **In APAC**, 15% of respondents were very satisfied, while 30% were neutral to dissatisfied with their compliance level. This divide suggests significant variation among local markets, ranging from relatively stable regulatory frameworks with effective implementation to ineffective regulatory oversight and surveillance programs in certain regions.

Figure 9 provides key takeaways related to surveillance compliance levels across different regions.

Figure 9: Key Takeaways Regarding Surveillance Compliance Level Across Regions

Takeaways:

Challenges in Surveillance: Regulatory complexity, conservative compliance approaches, and high data volumes create operational inefficiencies and cross-jurisdiction surveillance challenges, hindering compliance adaptability.

One Size Cannot Fit All: Due to regional variations in surveillance regulations, the global trade booking model requires the same trade to be processed differently across jurisdictions to meet local compliance standards, making duplication an unavoidable cost in ensuring regulatory adherence while maintaining operational flexibility.

Source: Datos Insights Global Study of Market Surveillance Executives, Q2 2025
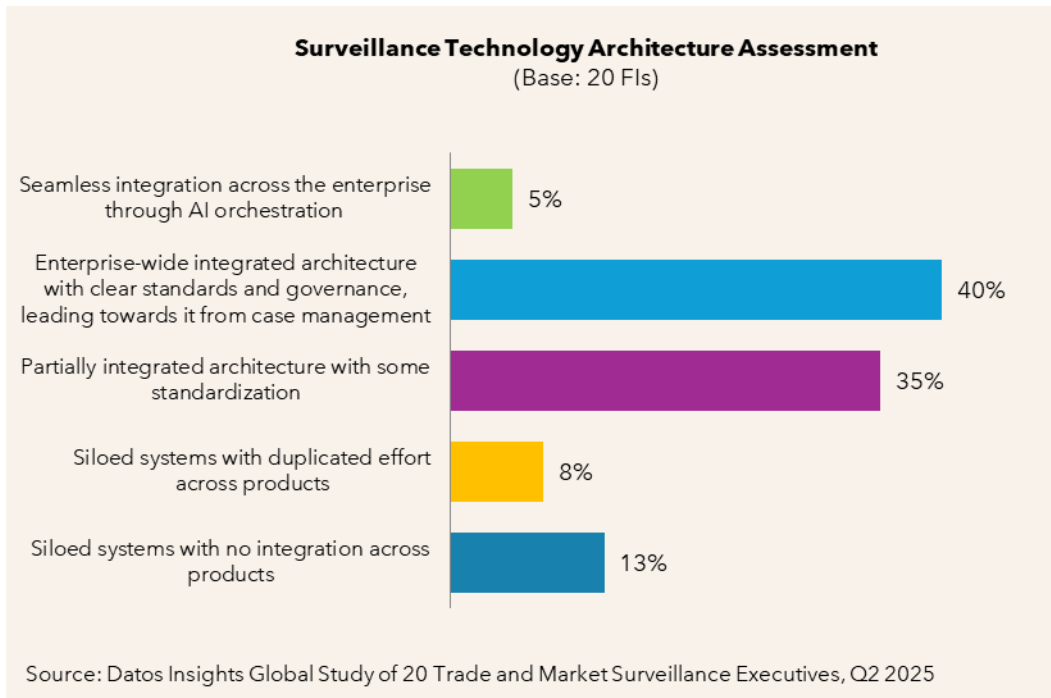
Surveillance Technology and Data Challenges

This section analyzes the challenges associated with technology architecture and data quality, including management of false positives.

Surveillance Technology Architecture

While firms aim to establish enterprise-wide integrated surveillance with strong governance, practical implementation is often segmented by asset class and legal entity due to jurisdictional requirements and operational complexities. This fragmented approach results in varied surveillance models across regions, requiring tailored compliance measures while maintaining overarching governance standards.

Based on the study, 40% of the global investment banks have adopted enterprise-wide integrated surveillance architecture, ensuring clear standards and governance for case management, improving efficiency, and reducing duplication. In addition, 35% of respondents favored partial integration, as a significant portion still operates with siloed surveillance systems to meet local jurisdiction mandates while aiming toward more alignment on data standardization (Figure 10).

Figure 10: Surveillance Technology Architecture Assessment

Surveillance Technology Architecture Assessment
(Base: 20 FIs)

- Seamless integration across the enterprise through AI orchestration: 5%
- Enterprise-wide integrated architecture with clear standards and governance, leading towards it from case management: 40%
- Partially integrated architecture with some standardization: 35%
- Siloed systems with duplicated effort across products: 8%
- Siloed systems with no integration across products: 13%

Source: Datos Insights Global Study of 20 Trade and Market Surveillance Executives, Q2 2025

Institutions venturing into new asset classes such as alternatives and cryptocurrency have adopted standalone systems, as there is demand for stabilizing asset-class-specific surveillance before embracing enterprise adoption. Figure 11 provides key takeaways related to surveillance technology architecture.

Figure 11: Key Takeaways on Surveillance Technology

Takeaways:

Hybrid Architecture Approach: Global banks tend to adopt a hybrid surveillance architecture, balancing centralized governance with localized implementation to meet jurisdiction-specific compliance needs while maintaining global standards.

Rationalize Data Sourcing: Institutions are rationalizing their approach to data by relying on surveillance solutions as a one-stop integration point to source market data, order management systems, execution management systems, clients, and securities reference data.

Duplication as a Compliance Cost: Regulatory requirements across regions often lead to duplicated surveillance efforts, increasing costs and operational complexity, but ensuring adherence to differing market structures.
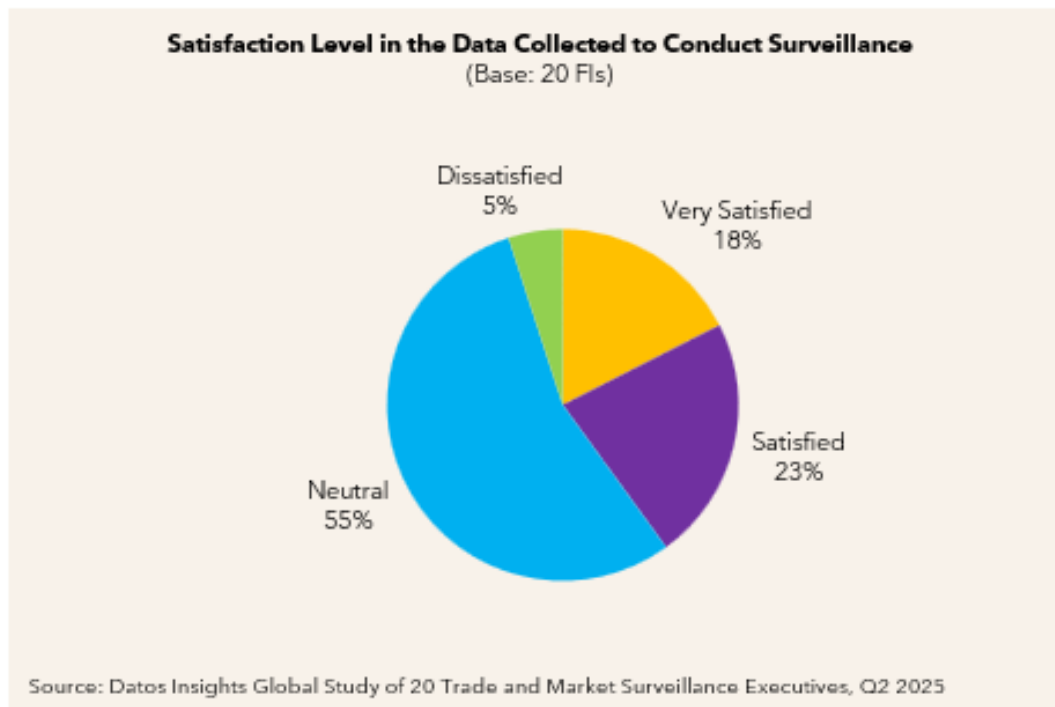
Shift to Data-Driven Architecture: Moving from rule-based systems to data-driven surveillance enhances accuracy, reduces false positives, and allows firms to optimize detection across asset classes and jurisdictions more effectively.

Source: Datos Insights Global Study of Market Surveillance Executives, Q2 2025

Issues with Data Quality

Across regions and asset classes, concerns related to data integrity are always top-of-mind. Respondents often identified them as the most important issues to address to ensure robust surveillance capability (Figure 12).

Figure 12: Satisfaction Level in Collected Data

Satisfaction Level in the Data Collected to Conduct Surveillance
(Base: 20 FIs)

Dissatisfied 5%
Very Satisfied 18%
Satisfied 23%
Neutral 55%

Source: Datos Insights Global Study of 20 Trade and Market Surveillance Executives, Q2 2025

- **Neutral sentiment dominates the perception of surveillance data:** With 55% of respondents expressing neutrality, firms are uncertain about the reliability of collected data, signaling a need for stronger data validation and integration mechanisms.

- **Moderate satisfaction, but not universal trust:** While 40% of respondents were satisfied or very satisfied, the remaining majority were either neutral or dissatisfied, indicating gaps in consistency, completeness, or usability of surveillance data across markets.

- **Data quality:** Although a substantial portion of data collection is automated, the challenge lies in sequencing it effectively for processing, transformation, and surveillance readiness. Reference data — such as client and securities tagging for pre- and post-trade compliance — is often managed in an ad hoc manner, creating inconsistencies. Any modification to reference data can significantly impact trade

surveillance, highlighting the need for structured data governance to maintain accuracy and compliance (Figure 13).

Figure 13: Examples of Data Quality Issues

Pricing & Currency Errors: Discrepancies in price references and base currency definitions create inconsistencies in risk assessments.

- Incorrect price reference in surveillance systems compared to timestamps in fixed-income execution systems.
- Inconsistent trade currency pair representations, affecting threshold definitions at the cross-currency (CCY) level and conversions.
- Valuation change in currency pair making large-value trades harder to identify.
- Incorrect ISIN mapping for over-the-counter (OTC) derivatives.
- Null values in pricing data, where small price variations in rate products significantly impact surveillance due to large notional values.
- FX base currency definition errors, leading to confusion in trade evaluations.
- OTC equity reference data inaccuracies, resulting in reliance on stale pricing.
- Lack of market benchmarking, limiting comparative analysis capabilities.
- Calibration challenges in Key Risk Indicator (KRI) rules, requiring frequent alignment of front-office system changes with surveillance platforms.

System Integration & Processing Issues: Failures in file processing and system misalignment hinder effective surveillance operations.

- Incorrect sequencing of OTC derivatives, impacting regulatory reporting accuracy.
- Cancel-correct and outburst cancel processes, leading to surveillance gaps.
- Block trade reporting limitations, where fund allocation is unknown, affecting wash trade detection.
- File processing failures, where inaccessible files (e.g., password changes) hinder surveillance operations.

Trade Execution & Order Matching - Incorrect sequencing and trade direction errors disrupt market surveillance, leading to flawed trade flow analysis.

- Executions received in incorrect sequence, impacting trade flow analysis.
- Incorrect trade direction reported, affecting market surveillance accuracy.
- Partial executions received, leading to incomplete audit trails.
- Getting full order book – top and bottom.
- Trade-to-order linkage inconsistencies, where trading activity across multiple platforms fails to align at the execution level.
- Tagging execution for give-up, even when give-up details are unavailable on the execution date.
- Crypto spot market data delays, where underlying assets may not be as relevant as they are in listed derivatives markets.
- Adding new crypto exchanges, presents integration challenges as traders seek broader trading venues.

Timestamp & Synchronization Challenges: Misalignment of timestamps across systems impacts surveillance accuracy, particularly in detecting wash trades.

- Date-time stamping errors, reflecting incorrect time zones.
- Rolling up timestamps to milliseconds instead of microseconds, causing inaccurate wash trade alerts.
- Clock synchronization issues across global banking systems, leading to false positives or missed true positives.
- Fixed-income trade booking/ surveillance systems not able to support precise millisecond timestamps.

Source: Datos Insights Global Study of Market Surveillance Executives, Q2 2025

Figure 14 provides key takeaways related to how firms are tackling data quality issues.

Figure 14: Key Takeaways on Data Quality Issues

Takeaways:

Need for Improved Data Reliability: There is a clear opportunity to enhance data validation and integration processes to build stronger confidence in surveillance accuracy. The data processing layer needs stronger controls to alert data readiness to conduct surveillance.

Confidence at Aggregate Level: Good data quality starts with the individual data element, but it must be aligned with other data elements. This is especially true in alternative asset classes and for block trades, where the counterparties are not known.
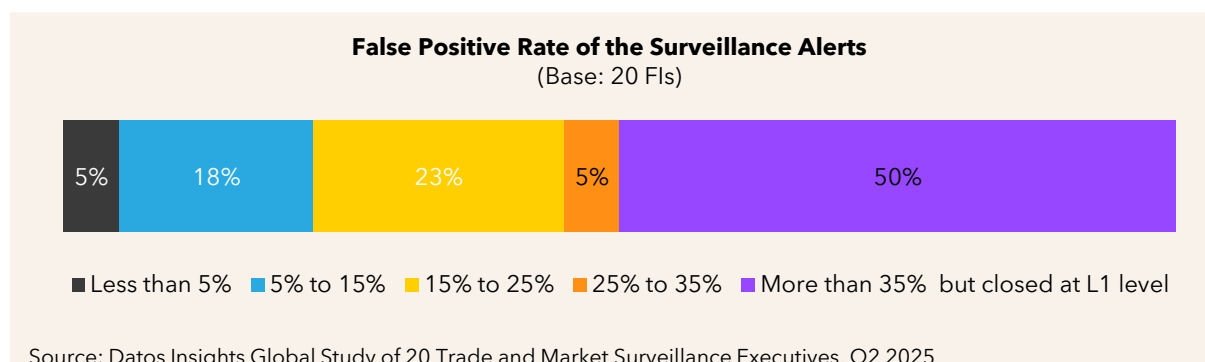
Data-Driven Configuration: Firms are shifting toward data-driven compliance instead of relying solely on rule-based approaches, emphasizing automated model updates based on real-time data patterns. This transition reduces the dependency on static rule configurations, allowing surveillance frameworks to adapt dynamically to evolving market conditions.

Support from Data Quality Group: The data scientist within the data quality group is looking at the surveillance data to generate insights across surveillance activities.

Source: Datos Insights Global Study of Market Surveillance Executives, Q2 2025

False Positives

One of the most difficult data issues is managing false positives. For the most part, global sell-side compliance departments have adopted a conservative approach. Compliance does not want to get blindsided on false positives by reducing the configuration parameters or tolerance levels of the alerts. Thus, 55% of respondents have a false positive rate of more than 25% (Figure 15).

Figure 15: False Positive Rates of Surveillance Alerts

False Positive Rate of the Surveillance Alerts
(Base: 20 FIs)

5%	18%	23%	5%	50%

■ Less than 5%   ■ 5% to 15%   ■ 15% to 25%   ■ 25% to 35%   ■ More than 35% but closed at L1 level

Source: Datos Insights Global Study of 20 Trade and Market Surveillance Executives, Q2 2025

- **L1 support plays a key role in triaging and managing high alert volumes:** A majority of these alerts are closed by L1 staff members located in support-operating model functions in locations such as India, so that escalated alerts can be investigated immediately.

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- **Exchanges launching new products:** As exchanges launch new products, especially in the listed derivatives market, firms have adopted a conservative approach to alerts to catch the bad actors.

High false positive rates due to high tolerance for alerts protect against market volatility. Case in point: the heightened volatility in the spring of this year, which was felt globally and across asset classes. 70% of respondents believe that more than 25% of false positives can be reduced by AI adoption (Figure 16).

Figure 16: Percentage of Alerts Reduced by Using Automation/Machine Learning

Percentages of Alerts can be Reduced Potentially by Using Automation/Machine Learning
(Base: 20 FIs)

10%	10%	50%	30%

■ More than 75%　■ 50% to 75%　■ 25% to 50%　■ 5% to 25%

Source: Datos Insights Global Study of 20 Trade and Market Surveillance Executives, Q2 2025
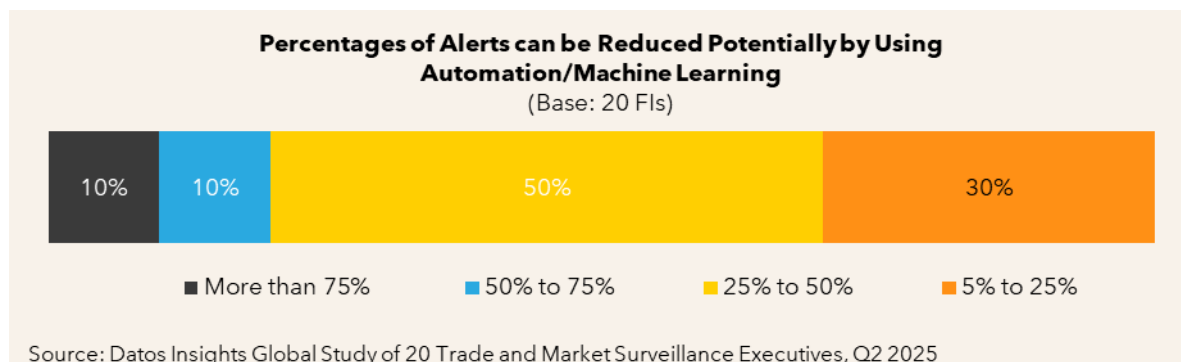
Based on the discussions, the following are live use cases of AI adoption to reduce false positives:

- A large investment bank went live with machine learning to detect rogue trading and was able to reduce false positives by 80%.

- Firms are analyzing alert calibration and moving toward parameters linked to specific markets, volatile conditions, and longer-term client activity, leading to reduction in false positives.

Figure 17 provides key takeaways related to addressing false positives.

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Figure 17: Key Takeaways on False Positives

Takeaways:

AI-Driven Adaptive Filtering for Surveillance Optimization: To reduce false positives and improve detection accuracy, firms should integrate machine learning-driven adaptive filtering mechanisms into surveillance workflows. By analyzing historical alert patterns and refining detection thresholds dynamically, AI can help eliminate low-value alerts early in the process, preventing unnecessary Level 1 case reviews and enhancing operational efficiency.

"Trust but Verify" Approach: Compliance members want control over the reduction of false positives through AI adoption, including via a control panel to view the alerts suggested to be closed by AI for transparency and validation.

Source: Datos Insights Global Study of Market Surveillance Executives, Q2 2025

Case Management Workflow Optimization

In addition to false positives, case management challenges are one of the more difficult areas to address due to the predominance of manual workflows and inherent limitations of legacy case management systems.

Figure 18: Challenges and Potential Solutions in Case Management

Challenges in Case Management and Surveillance	Potential Solutions
• Lack of API integration in legacy systems • Manual documentation and workflow processes • Scalability issues with RPA for case management • Inconsistent quality assurance and sampling • Limited AI adoption for commentary and alert analysis	• Implement API-based case management systems • Automate documentation and case grading • Enhance RPA scalability with AI and cloud solutions • Develop independent QA sampling frameworks • Expand AI and LLM utilization for analysts

Source: Datos Insights Global Study of Market Surveillance Executives, Q2 2025

Challenges in Case Management

- **Lack of API integration in legacy systems:** Legacy case management systems do not support API connectivity, limiting automation and data exchange with surveillance tools.

- **Manual documentation and workflow processes:** Documentation uploads, grading, and commentary writing remain highly manual, increasing inefficiency and operational risk.

- **Scalability issues with robotic process automation (RPA) for case management:** RPA helps populate case management tools, but it lacks the necessary scalability to cope as external systems expand.

- **Inconsistent QA and sampling:** No independent QA process exists to systematically review case accuracy and effectiveness.

- **Early-stage AI adoption for commentary and alert analysis:** AI-driven commentary enhancements and alert ingestion are being explored, but there is no perfect model to fully automate analysis while maintaining control effectiveness.

Potential Solutions

- **Implement API-based case management systems:** Transition to platforms that allow API connectivity, enabling seamless integration with external surveillance and compliance tools.

- **Automate documentation and case grading:** Introduce AI-driven tools to auto-generate case commentary, standardize grading processes, and reduce manual workload.

- **Enhance RPA scalability with AI and cloud solutions:** Supplement RPA with AI-powered workflows and cloud-based case management solutions to improve scalability and adaptability.

- **Develop independent QA sampling frameworks:** Establish dedicated quality assurance protocols to systematically assess case management effectiveness and reduce operational inconsistencies.

- **Expand AI and large language model (LLM) utilization for analysts:** Leverage LLMs to assist analysts with interpreting alerts across languages, contextualizing cases, and streamlining manual reviews.

Figure 19 provides key takeaways related to how firms are attempting to optimize case management workflow.

Figure 19: Key Takeaways on Case Management Workflow Optimization

Takeaways:

Optimizing Case Management Requires Strategic AI Integration: AI and automation can significantly reduce manual workload in surveillance case management, but scalable solutions must balance efficiency with oversight. Firms should focus on API-enabled systems, enhanced automation, and leveraging LLMs to streamline processes without compromising compliance integrity.

Workforce Enablement and Operational Alignment are Essential: Surveillance operations must continuously adapt to talent challenges and workflow inefficiencies. Investing in structured QA frameworks, cross-functional collaboration, and training programs ensures analysts can manage complex cases effectively while maintaining accurate risk assessments.

Source: Datos Insights Global Study of Market Surveillance Executives, Q2 2025

Future Workforce Considerations

One of the most overlooked areas related to trade surveillance is the acquisition and development of talent.

- **Evolution of surveillance talent:** Surveillance is not traditionally an entry-level career. It has evolved from compliance professionals to include ex-traders looking to move away from trading pressures. Talent acquisition has now expanded beyond compliance and front-office roles to incorporate IT specialists, data scientists, and even behavioral scientists to enhance risk detection strategies.

- **Team size:** Some large banks maintain teams exceeding 100 employees focused on processing alerts across regions, systems, and asset classes to support overall surveillance functions. Out of these 100-member teams, the core trade and market surveillance function is supported by an operations team of approximately 50 people. However, some institutions have opted to build regional teams of 10 members per region.

- **Shifting skill requirements:** Compliance professionals are upskilling in technology, leveraging tools like Python for predictive analytics and integrating past vendor software experience to enhance surveillance capabilities. The technical proficiency requirement is growing beyond regulatory expertise. Advanced Excel capabilities are also helping to enrich operational efficiency.

- **Impact from operating model:** The fact that firms are considering shifting L2 compliance roles back to L1 front-office surveillance highlights an ongoing debate on where surveillance responsibilities should reside for maximum efficiency.

- **Training:** Surveillance solutions are constantly updated for functional and technical capabilities. Thus, training programs from solution providers have become an excellent resource to increase team capabilities.

- **Attracting talent:** Surveillance roles require specialized expertise, making recruitment and retention difficult. Firms are incentivizing via learning across asset classes and surveillance models while leveraging user interface improvements to attract top talent. Meanwhile, surveillance model risk management has emerged as a growing field, creating demand for specialized talent.

- **Capacity balancing:** Recent market volatility led to a temporary gap in surveillance alert monitoring. However, firms with trained professionals in cross-asset class surveillance and compliance solutions were able to swiftly reallocate resources to address the short-term surge in demand.

Figure 20 provides key takeaways related to building out and managing the compliance workforce.

Figure 20: Key Takeaways on Compliance Workforce

Takeaways:

Talent Development and Retention Strategies: Organizations can strengthen surveillance expertise and cross-asset knowledge by investing in mentorship programs and structured career pathways for professionals transitioning from front-office and compliance roles.

Strategic Use of Technology and Automation: Expanding AI-driven analytics and integrating data science capabilities enhances predictive surveillance and risk management without compromising operational oversight.

Source: Datos Insights Global Study of Market Surveillance Executives, Q2 2025

Development of a Surveillance Program and Strategy - Approach Considerations

Based on the industry's challenges and progress to date, Datos Insights has identified logical considerations and priorities in the development of a surveillance strategy and program. These factors are categorized by their priority level – high, medium, and low (Figure 21).

Figure 21: Logical Considerations and Priorities in the Development of Surveillance Strategy

High

- **Multi-Asset and Global Coverage**
- **Regional Regulatory Discrepancies**
- **Unified Alert and Case Management**
- **Integration with Enterprise Risk Management**.
- **Less Reliance on Business Processing Outsourcing Vendors**
- **Key Performance Indicators**

Medium

- **Robust Data Governance**
- **Infrastructure and Global Standardization Efforts**
- **Reliance on Vendor Products**
- **Direct Sourcing of Market Data**
- **Adoption of Advanced Automation Technologies**
- **Adaptability to Complex Market Data**
- **Cloud Adoption**

Low

- **Consolidation Through Acquisitions**
- **Data Monetization Initiatives**

Source: Datos Insights Global Study of Market Surveillance Executives, Q2 2025

High Level of Consideration

The following are surveillance approaches and efforts that Datos Insights has identified as worthy of a high level of consideration as they define the various surveillance operating models.

- **Multi-asset and global coverage:** This strategy addresses surveillance across multiple asset classes — including digital assets, equities, and fixed income — with global coverage and region-specific systems to help mitigate risks during market volatility or outages. Surveillance for OTC derivatives, commodities, and crypto trading poses unique challenges due to incomplete market/price data and fragmented surveillance infrastructures.

- **Regional regulatory discrepancies:** Differences in accepted data standards, such as those between the U.S., the EU, and other regions, pose challenges in calibrating models and maintaining consistent alert outputs across different jurisdictions. Segregating surveillance teams across regions and systems helps to derisk surveillance in case of volatility and outage.

- **Unified alert and case management:** A "follow-the-sun" approach can be employed for alert screening, with tools that monitor alert aging and quality assurance performance, aiming to streamline case management across different regions.

- **Integration with enterprise risk management:** Trade surveillance has evolved as part of a broader risk management framework that includes three lines of defense:

    - **First line of defense:** Business and operations

    - **Second line of defense:** Risk and compliance

    - **Third line of defense:** Internal audit

    These lines of defense ensure accountability from business units to compliance and audit functions.

- **Less reliance on business processing outsourcing vendors:** Surveillance technology is primarily implemented through vendor platforms. However, the daily operational functions remain in-house due to their sensitive nature and are not outsourced to external entities.

- **Key performance indicators:** In this approach, firms track the surveillance function across key metrics such as desk, asset class, entity, region, product, number of positive alerts, number of false alerts, number of open alerts, standard deviation between the data, data quality metrics, volume of trade processed, number of files processed, time taken to process files and system support on the trading patterns by the trader (Figure 22).

Figure 22: KPIs for Surveillance Function

True Positive Alert Volume	Alert Resolution	True and False Positive Rate	Compliance Metrics
Number of Alerts Generated: Total number of alerts **Alert Type Distribution:** Breakdown of alerts by type (e.g., asset class, region, desk, entity, type - insider trading, market manipulation).	**Number of Alerts Resolved:** Total number of alerts resolved within the day. **Average Resolution Time:** Average time taken to resolve an alert. **Pattern:** Time taken to close the same type alert by various analysts	**Number of False Positives:** Total number of alerts identified as false positives. **False Positive Rate:** Percentage of false positives out of total alerts generated. **Alert Type Distribution:** Breakdown of alerts by type- asset class, region, desk, entity	**Regulatory Breaches Detected:** Number of regulatory breaches detected. **Compliance Rate:** Percentage of trades compliant with regulations. **Compliance Rate:** Breakdown by asset class, region, entities **Remediation Sustainability:** Track sustainability of the remediation
Trade and User Volume Analysis	**System Performance**	**Data Quality**	**Documentation/ Reporting**
Total Trade Volume: Total volume of trades monitored. **Suspicious Trade Volume:** Volume of trades flagged as suspicious. **Number of Users Monitored:** Total number of users whose trading activities are monitored. **Suspicious User Activity:** Number of users flagged for suspicious activities.	**System Uptime:** Percentage of time the surveillance system is operational. **Processing Speed:** Average time taken to process and analyse trades **File processing:** # of Files processed, # of Records processed n the file, # of records not loaded, # of Records filtered	**Data Accuracy:** Accuracy of the data used for surveillance. **Data Completeness:** Completeness of the data used for surveillance. **Data Quality issues by source system:** # of data quality issues traced to source system	**Number of Reports Generated:** Total number of reports generated for regulatory bodies. **Report Accuracy:** Accuracy of the reports generated.
Training and Awareness	**Number of Cross Alerts**	**Configurations**	**Users Monitored**
Number of Training Sessions Conducted: Total number of training sessions conducted for staff. **Staff Awareness Level:** Percentage of staff aware of compliance and surveillance protocols.	# of alerts generated in communication surveillance linked to trade surveillance alerts - by desk, region, asset class	# of models changed # of new models set up # of models without any alerts Age wise tracking	Total number of users whose trading activities are monitored. Number of users flagged for suspicious activities.

Source: Datos Insights Global Study of Market Surveillance Executives, Q2 2025

Medium Level of Consideration

The following are surveillance approaches and efforts that Datos Insights has identified as worthy of a medium level of consideration as they define implementation activities.

- **Robust data governance:** This strategy emphasizes aligning business needs with surveillance data requirements through enhanced data governance practices, ensuring that once collected, data is effectively managed and meets regulatory demands.

- **Infrastructure and global standardization efforts:** Efforts are underway to create a unified data repository (with connections to platforms for fixed income and FX), streamline reporting via integrated connectors, and standardize surveillance across

global hubs such as London and Paris, as well as in-house platforms for improved consistency.

- **Reliance on vendor products:** The vendor community continues to offer surveillance technology platforms with the latest technological advancements, including cloud deployment, API-based integration, and a pricing structure that may be difficult for firms to match when building in-house.

- **Direct sourcing of market data:** Firms employ tools to source market and trading data directly from exchanges to improve accuracy, in contrast with previous methods that relied on order management systems. Data standardization across regions remains a challenge.

- **Adoption of advanced automation technologies:** Firms are currently exploring RPA and AI, including LLMs and GenAI, to automate alert commentary and predictive analytics. However, scalability across diverse external systems is still a work in progress.

- **Adaptability to complex market data:** Surveillance models are being tailored to accommodate the dynamic nature of market data, including issues like order books updates, spoofing, wash trading, and other market manipulations.

- **Cloud adoption:** Addressing cloud security concerns takes precedence over general cloud adoption. The primary focus is on mitigating risks associated with exposing sensitive trading information to cloud-specific vulnerabilities, such as unauthorized access, data breaches, and compliance challenges across jurisdictions – factors that ultimately drive secure cloud adoption.

Low Level of Consideration

The following are surveillance approaches and efforts that Datos Insights has identified as worthy of a low level of consideration as they are derived following the implementation of the surveillance and technology operating model.

- **Consolidation through acquisitions:** Recent acquisitions are driving system consolidation, streamlining the integration of voice-broking trades and electronic orders, though challenges remain in aggregating complete order book data and achieving real-time market insights.
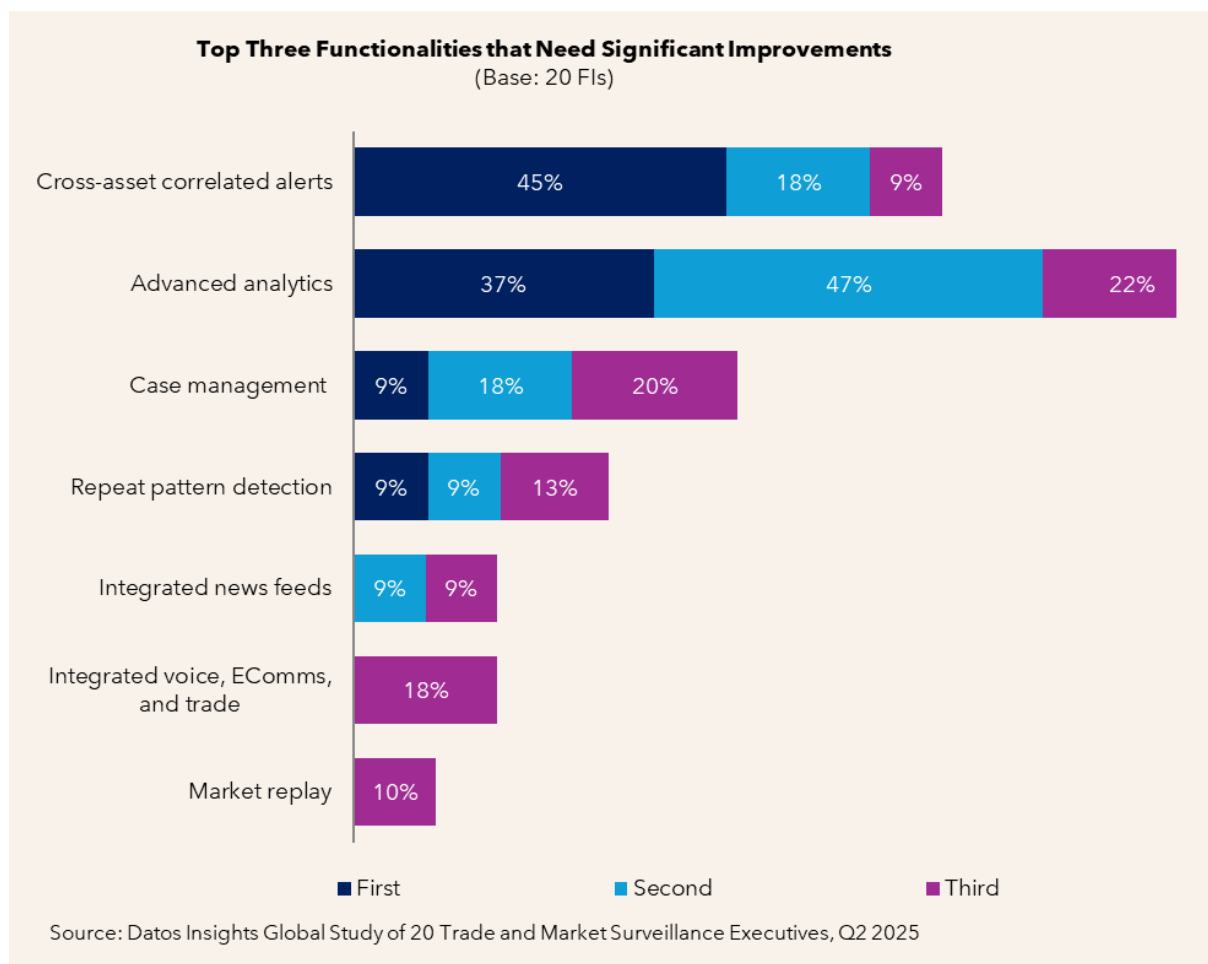
- **Data monetization initiatives:** Firms are leveraging extensive order and market data, including order sizes and trade details, for advanced analytics and potential data monetization, which can support efforts to detect market abuse.

Future-Proofing Surveillance Solutions

Identifying Areas of Improvement

Respondents identified cross-asset correlated alerts, advanced analytics, and case management as the top three areas for improvement as they consider building out and managing next-generation trade and market surveillance platforms (Figure 23).

Figure 23: Functional Areas for Improvement

Top Three Functionalities that Need Significant Improvements
(Base: 20 FIs)

Functionality	First	Second	Third
Cross-asset correlated alerts	45%	18%	9%
Advanced analytics	37%	47%	22%
Case management	9%	18%	20%
Repeat pattern detection	9%	9%	13%
Integrated news feeds		9%	9%
Integrated voice, EComms, and trade			18%
Market replay		10%	

Source: Datos Insights Global Study of 20 Trade and Market Surveillance Executives, Q2 2025

- **Cross-asset correlation is a priority:** With the highest ranking (45% first choice), firms recognize that linking surveillance across multiple asset classes (e.g., equity and listed
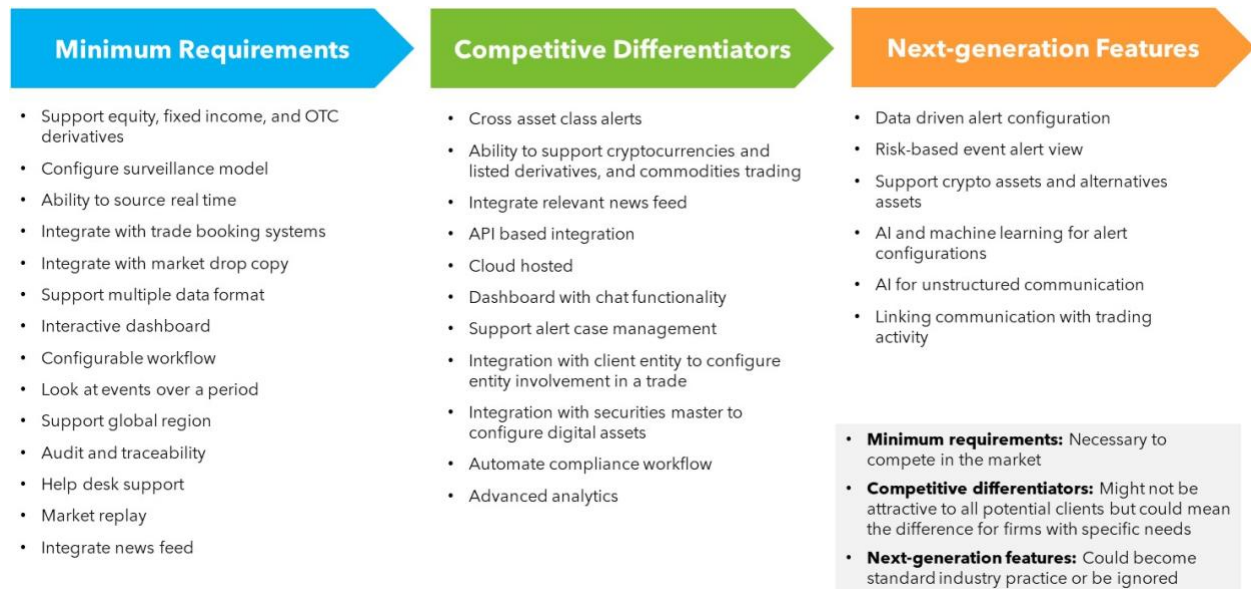
derivatives, swaps and fixed income, equity and equity derivatives, FX and crypto) is essential for detecting complex trading strategies and potential misconduct.

- **Advanced analytics are key to improving oversight:** High rankings across all categories indicate a strong demand for deeper analytical capabilities, such as pattern recognition and predictive surveillance models, to enhance risk detection.

- **Case management needs improved workflow and AI adoption:** The workflow for rule positive alerts is manual and managed in a firmwide case management system.

- **Repeat pattern detection:** Automation minimizes manual efforts to identify recurring patterns associated with market abuse. Effective detection of manipulative behaviors – such as layering, spoofing, and wash trading – across multiple transactions and asset classes relies on high-quality data for accuracy and initiative-taking intervention.

- **Integrated news feed:** Firms are applying advanced automation methods to tag the relevant news feed based on current trading activity.

- **Integrated communication surveillance:** While voice and e-communication integration are flagged as a priority, firms still struggle to fully integrate these sources into actionable trade surveillance insights, limiting holistic market oversight. Some institutions have integrated the alerts output from communication surveillance into trade surveillance to trace alerts to a trader, desk, region, or asset class.

- **Market replay:** Though less of a priority among respondents, select firms wish to automate market replay for alternatives, swaps, and FX market.

Figure 24 provides a comprehensive list of functional requirements that respondents highlighted for current needs and next-generation platforms.

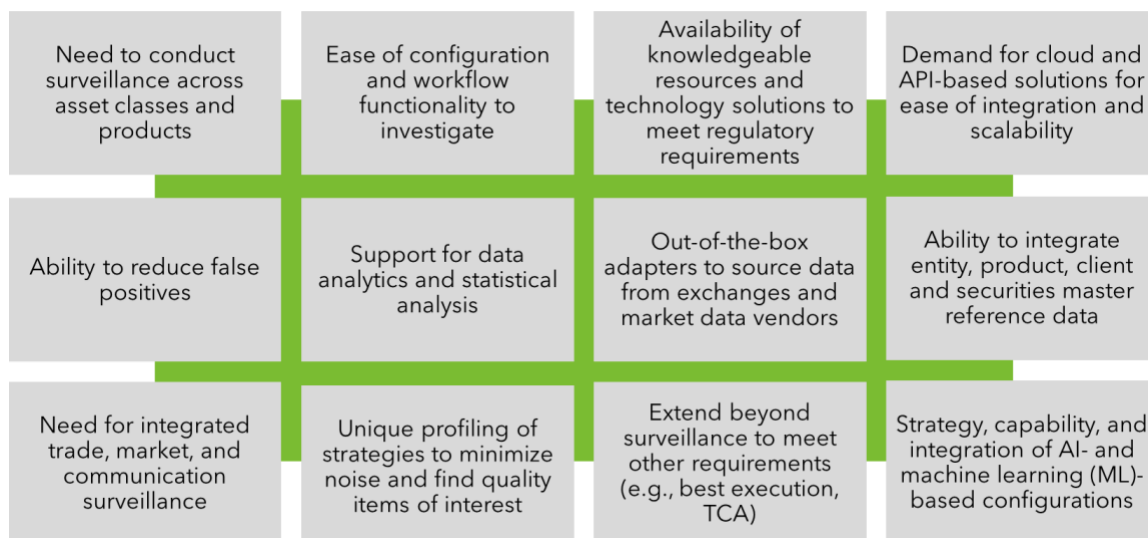**Figure 24: Functionality Required from Trade Surveillance Solutions**

Minimum Requirements	Competitive Differentiators	Next-generation Features
• Support equity, fixed income, and OTC derivatives	• Cross asset class alerts	• Data driven alert configuration
• Configure surveillance model	• Ability to support cryptocurrencies and listed derivatives, and commodities trading	• Risk-based event alert view
• Ability to source real time	• Integrate relevant news feed	• Support crypto assets and alternatives assets
• Integrate with trade booking systems	• API based integration	• AI and machine learning for alert configurations
• Integrate with market drop copy	• Cloud hosted	• AI for unstructured communication
• Support multiple data format	• Dashboard with chat functionality	• Linking communication with trading activity
• Interactive dashboard	• Support alert case management	
• Configurable workflow	• Integration with client entity to configure entity involvement in a trade	
• Look at events over a period	• Integration with securities master to configure digital assets	
• Support global region	• Automate compliance workflow	
• Audit and traceability	• Advanced analytics	
• Help desk support		
• Market replay		
• Integrate news feed		

- **Minimum requirements:** Necessary to compete in the market
- **Competitive differentiators:** Might not be attractive to all potential clients but could mean the difference for firms with specific needs
- **Next-generation features:** Could become standard industry practice or be ignored

Source: Datos Insights Global Study of Market Surveillance Executives, Q2 2025

Evaluating Surveillance Solution

From the buyer's perspective, the following are key factors when evaluating surveillance solutions (Figure 25):

Figure 25: Key Factors in Evaluating Surveillance Solutions

Need to conduct surveillance across asset classes and products	Ease of configuration and workflow functionality to investigate	Availability of knowledgeable resources and technology solutions to meet regulatory requirements	Demand for cloud and API-based solutions for ease of integration and scalability
Ability to reduce false positives	Support for data analytics and statistical analysis	Out-of-the-box adapters to source data from exchanges and market data vendors	Ability to integrate entity, product, client and securities master reference data
Need for integrated trade, market, and communication surveillance	Unique profiling of strategies to minimize noise and find quality items of interest	Extend beyond surveillance to meet other requirements (e.g., best execution, TCA)	Strategy, capability, and integration of AI- and machine learning (ML)-based configurations

Source: Datos Insights Global Study of Market Surveillance Executives, Q2 2025

Conclusion

Developing the next-generation trade and market surveillance platform is no easy feat. For those firms looking to future-proof their surveillance capabilities, Datos Insights recommends considering the following factors:

- **Regional:** Optimize regional surveillance by tailoring systems to meet local regulatory requirements and market dynamics through targeted assessments and localized enhancements.

- **Asset class:** Enhance asset-class-specific oversight by developing integrated frameworks designed to capture the unique nuances across equities, fixed income, derivatives, and emerging asset classes, and expand to cross-asset class alerts.

- **Data quality:** Implement robust data governance practices and leverage data scientists and advanced validation tools to create new insights with accurate and reliable real-time information.

- **Advanced functionality:** Since one size cannot fit all, embrace cross-asset-class alerts, market replay, and advanced analytics.

- **Approach to AI:** Leverage AI for selective models and create new data insights by combining reference data and alerts from e-communication surveillance. Provide transparency into the AI process to compliance.

- **Vendor solutions:** Conduct a comprehensive evaluation of build vs. buy options to balance the benefits of custom in-house solutions against the scalability and cost-effectiveness of vendor platforms.

- **Resourcing:** Strengthen compliance teams by hiring data scientists, training compliance members with data-driven analytical tools, and encouraging cross-department collaboration to bridge existing capacity gaps.

- **Future of surveillance:** Make strategic investments in emerging technologies and long-term innovation roadmaps to continuously evolve surveillance methodologies and secure a competitive market edge.

About Eventus:

Eventus provides state-of-the-art, at-scale trade surveillance software across all lines of defense. Its powerful, award-winning Validus platform is easy to deploy, customize and operate across equities, options, futures, foreign exchange (FX), fixed income and digital asset markets. Validus is proven in the most complex, high-volume, and real time environments of Eventus' rapidly growing client base, including tier-1 banks, broker-dealers, futures commission merchants (FCMs), proprietary trading groups, market centers, buy-side institutions, energy and commodity trading firms, and regulators. Clients rely on the platform, coupled with the firm's responsive support and product development, to overcome their most pressing trade surveillance regulatory challenges.

For more, visit www.eventus.com or contact info@eventus.com

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