



Considerations for your e-communications surveillance program



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Why firms need to reconsider their e-communications surveillance framework

The increase in the number of communication channels and devices at many firms has resulted in more stringent regulations for electronic communications (e-communications) surveillance.

Globally, regulators are now expecting financial institutions to not only retain a multitude of traditional (such as emails) and nontraditional communications (such as social media, voice), but also retrieve and review e-communications, and perform enhanced and better integrated supervision.

The rapid emergence of new technologies like natural language processing (NLP), machine learning, improved voice analytics and evolving leading practices are now forcing firms to reassess their approach to e-communications surveillance.

Call to action

Firms across the industry are seeking opportunities to introduce enhanced program and technology solutions and processes to meet increasing regulatory expectations, and improve surveillance efficiency and effectiveness.

To facilitate these opportunities, firms should consider conducting comprehensive surveillance program assessments across key business and regulatory requirements and vendor capabilities to develop advanced target state solutions.

Recent regulatory fines and regulatory expectations





<p>Record retention</p> <ul style="list-style-type: none"> ▶ The Securities Exchange Act Section 17a-4 and FINRA Rule 3110.09 require retention of business-related electronic communications. ▶ FINRA fined a retail brokerage firm \$2.6m for significant failure in their electronic records and email retention programs. 	<p>Supervision</p> <ul style="list-style-type: none"> ▶ FINRA fined a firm \$9m for failing to retain and review employees e-communications in multiple instances. ▶ Five major banks were fined over \$5b for FX rate manipulation by regulators from the US and UK.
<p>Social</p> <ul style="list-style-type: none"> ▶ FINRA fined a research analyst of an investment banking firm for his Twitter posts concerning equity securities, where he failed to disclose his ownership of the securities. 	<p>Voice</p> <ul style="list-style-type: none"> ▶ MiFID II Regulation will make mobile conversation recording mandatory. ▶ Dodd-Frank Act broadened CFTC Regulation (23.201-203) to record pre-trade, trade and post-trade voice communication for swap transactions.

Industry challenges	Emerging trends to address challenges
Inefficient business rule optimization	<ul style="list-style-type: none"> ▶ Optimization of lexicon policies and applying enhanced metadata rules based on context to reduce noise and improve the quality of alerts ▶ Incorporation of behavioral analytics such as risk-weighting, and network and pattern risk analysis
Dated solutions and methodologies	<ul style="list-style-type: none"> ▶ Improved contextual enrichment by connecting e-communications with various sources of data (e.g., orders, trades, P&L, risk profiles)
Fragmented surveillance programs	<ul style="list-style-type: none"> ▶ Increased interest in integrating trade and e-communications surveillance to enable a holistic view of their employees' activities ▶ Emergence of private, cloud-based solutions to facilitate integration of technology platforms across various surveillance programs.
Inability to address diverse communication channels	<ul style="list-style-type: none"> ▶ Adoption of cross-channel, open platforms that can integrate and ingest multiple sources of structured and unstructured data ▶ Exploration of emerging technologies such as natural language processing (NLP), machine learning and processes, and implementation of vendor pilot programs
Operating model inefficiencies	<ul style="list-style-type: none"> ▶ Interest in developing an enterprise-wide e-communications surveillance framework and implementing standardized policies and procedures ▶ Standardized, automated solutions to enable appropriate retention and surveillance of users

How EY can assist



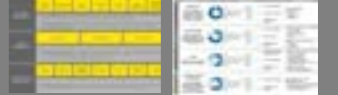

Requirements development

Firms across the industry are seeking opportunities to introduce enhanced program and technology solutions and processes to meet increasing regulatory expectations, and improve surveillance efficiency and effectiveness. To facilitate these opportunities, we assist firms in conducting comprehensive surveillance program assessments across key business and regulatory requirements and develop requirements to achieve the desired target state.

Current state assessment	Gap analysis	Target operating model	Future state definition
<ul style="list-style-type: none"> Assess impact and mapping of supervision and surveillance requirements against firm's current programs and processes Assist in determining who should monitor and how to enable consistent coverage of required employees Review policies, procedures, attestation processes in place regarding use and monitoring of electronic communications 	<ul style="list-style-type: none"> Define and prioritize the key risks across asset classes, jurisdictions, lines of business and regulatory drivers Perform a scenario coverage assessment across firm's governance framework, geographic reach, business focus areas and policy framework to determine the key surveillance requirements Gap current state observations/findings against identified requirements 	<ul style="list-style-type: none"> Develop a future state model based on the firm's goals, current state considerations and identified improvement opportunities Identify and define new processes and system components that will be needed to support the future state model Define the governance model and roles and responsibilities (across key stakeholders) needed to support the future state model 	<ul style="list-style-type: none"> Key alert optimization: This includes the ability to optimize alert generation using availability of alerting mechanisms based on lexicons, machine learning, natural language processing and other advanced technologies. Future state definition: This includes the ability to ingest various channels of communications and structured/unstructured data, user entitlements, workflows and case management along with associated technology.
			

Vendor selection and proof of concept (POC) services


The e-communications surveillance vendor landscape is currently fragmented with a wide range of focused solutions and unique approaches. Our team brings extensive knowledge of e-communications regulations, vendors, industry trends, leading practices, and emerging technologies and processes.

Vendor short list	Vendor assessment	POC readiness	POC execution
<ul style="list-style-type: none"> Identify a short list of vendors based on the current vendor landscape, EY's industry knowledge, regulatory expectations and firm's requirements pertaining to electronic communications surveillance Define detailed evaluation criteria, collect and collate vendor RFP responses from the vendors based on capability as per requirements 	<ul style="list-style-type: none"> Conduct a preliminary qualitative and quantitative assessment using a weighted scorecard of RFP responses to create a vendor shortlist Conduct vendor demos to assess their product capability and Q&A sessions Finalize the scoring based on vendor demos to short list the "top" vendors 	<ul style="list-style-type: none"> Define POC success criteria, and execution plan, including timelines, and resource considerations Define business and data requirements and use cases for POC execution and evaluation Create comprehensive evaluation framework for POCs aligned with business, technology, compliance and regulatory expectations 	<ul style="list-style-type: none"> Assist with program management and business analysis of data dependencies covering structured and unstructured data Perform standard alert triage, and assist with model tuning and requirements refinement across the vendors Evaluate vendor performance on quantitative and qualitative measures
			

How EY can assist





Solution implementation services

We have experience supporting all aspects of technology implementations including business and functional analysis; data analysis, feasibility and impact analysis; testing; validation; and strategic architecture and bring the various challenges and leading practices across various phases of the solution implementation life cycle.

Business and functional requirements	Road map and product rollout plan	Implementation and testing support	Rules and UI optimization
<ul style="list-style-type: none"> ▶ Gather and document business requirements based on regulatory landscape, industry leading practices and firm's requirements ▶ Conduct deep dive sessions across various focus areas and detail out the functional requirements ▶ Conduct workshops with vendors to prioritize and socialize the requirements and reassess based on product/solution capabilities 	<ul style="list-style-type: none"> ▶ Develop an implementation strategy across all business lines and use cases ▶ Create detailed program plan including timelines outlining all the activities that must be completed ▶ Conduct resource planning and deliver resource estimates for transition and rollout ▶ Identify and define work streams based on business, data and technology requirements 	<ul style="list-style-type: none"> ▶ Work with vendors and internal technology teams to implement the use cases and integrate various components ▶ Work with QA team to assist with QA testing and managing defects and identifying enhancements ▶ Work with users and assist in user acceptance testing ▶ Define communication plan, document user training materials and conduct user training workshops 	<ul style="list-style-type: none"> ▶ Work with vendors and internal technology teams to implement the use cases. ▶ Review alerts generated for each use case and identify opportunities for optimization across source data quality, business rules, metadata rules and refine NLP-based engines using training and constant optimization based on a well-established model governance
			

Alert optimization and managed services

Due to time, budget and technology limitations, firms often lack formal processes to optimize alerts, resulting in high amounts of false positives. We assist our clients in improving business rules and integrating industry-leading techniques, processes and technology to improve the quality of surveillance alerts.

Understanding volume and velocity of data	Lexicon and business rules optimization	Predictive analytics	Managed service for alert reviews
<ul style="list-style-type: none"> ▶ Collect and manage data capture process, the data volume and velocity of data, and the quality of data ▶ Make sure all relevant communication channels are being captured ▶ Identify and tag key metadata elements that will help in analysis of various patterns, behaviors and statistics for decision-making and monitoring purposes 	<ul style="list-style-type: none"> ▶ Review, standardize and optimize existing lexicons for both quality and completeness ▶ Utilize optimization techniques such as frequency of words, correlation, topic modeling and other statistical approaches to identify the effectiveness of lexicon and drive greater efficiency 	<ul style="list-style-type: none"> ▶ Review existing rules to identify and refine patterns (e.g., excluding blast emails, known disclaimers) ▶ Develop rules that provide business context, such as employee or message risk-weightings ▶ Combine metadata profiling with predictive coding and cluster techniques to identify frequency of communications, who talks to whom, and what 	<ul style="list-style-type: none"> ▶ Establish well-defined central review teams as part of a managed service to perform alert triage across e-communications, voice and trade thereby creating a consolidated service and deliver efficient, effective and cost-optimized ways to perform surveillance reviews
			

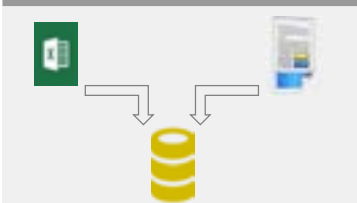
Lexicon and business rule optimization

A key challenge faced by financial institutions is how to define lexicons (key words) to specifically target communications that are potential risks. Key word-based searches combined with metadata-driven rules are highly dependent on the quality of the lexicon, lexicon phrases and set of word clusters used. Due to expanding channels of communication, and increased sophistication of market manipulation or other high-risk trader behaviors, and expanding business landscape across various regions, the firms are forced to continuously expand their lexicon and rule libraries. This results in firms having dated policies for alert generation and business rule optimization over time. Due to time, budget and technology limitations, firms often lack formal processes to optimize alerts, resulting in high amounts of false positives. The consequences of high numbers of false positives generated by lexicon-based surveillance tools is an increase in the risk of missing out on true alerts, in addition to increased effort and size of alert triage and escalation teams.

EY's approach

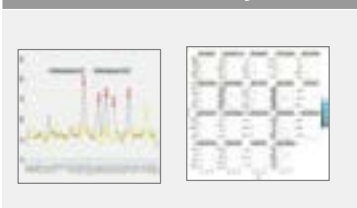
We assist our clients in improving business rules and integrating industry-leading techniques, processes and technology to improve the quality of surveillance alerts. We leverage data analytics and advanced technology approaches using machine learning and other statistical approaches to optimize lexicons and also to drive review efficiency. We also gather and derive insights from the various metrics during the process from the relevant metadata of the communications such as participants (senders, receivers), strength of relationship, channels and timings of communication, that help in refining the business rules to optimize the quality and volume of alerts.

Data aggregation



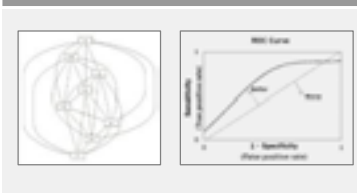
- ▶ Review the current lexicons, policies and rules for a chosen sample population
- ▶ Output of the review is used as part of the model input for future iterations
- ▶ Review the existing lexicons for both quality and completeness across various risk areas, products or asset classes and the like

Data mining



- ▶ Drive insight using the combination of communications, lexicons and policies using some of the following techniques:
 - ▶ **Association rule learning** to identify relationships with metadata attributes
 - ▶ **Clustering** to group the data into similar patterns
 - ▶ **Classification** to group data into different classes based on lines of business, asset class, regions, etc.

Lexicon optimization



- ▶ Measure the effectiveness of search strategies using approaches like "receiver-operating characteristics (ROC) curves" based on lexicon relevancy, and risk-rank weights appropriately
- ▶ Utilize optimization techniques such as frequency of words, correlation, topic modeling and other statistical approaches to identify the effectiveness of lexicon, and identify contextual relations

Machine learning



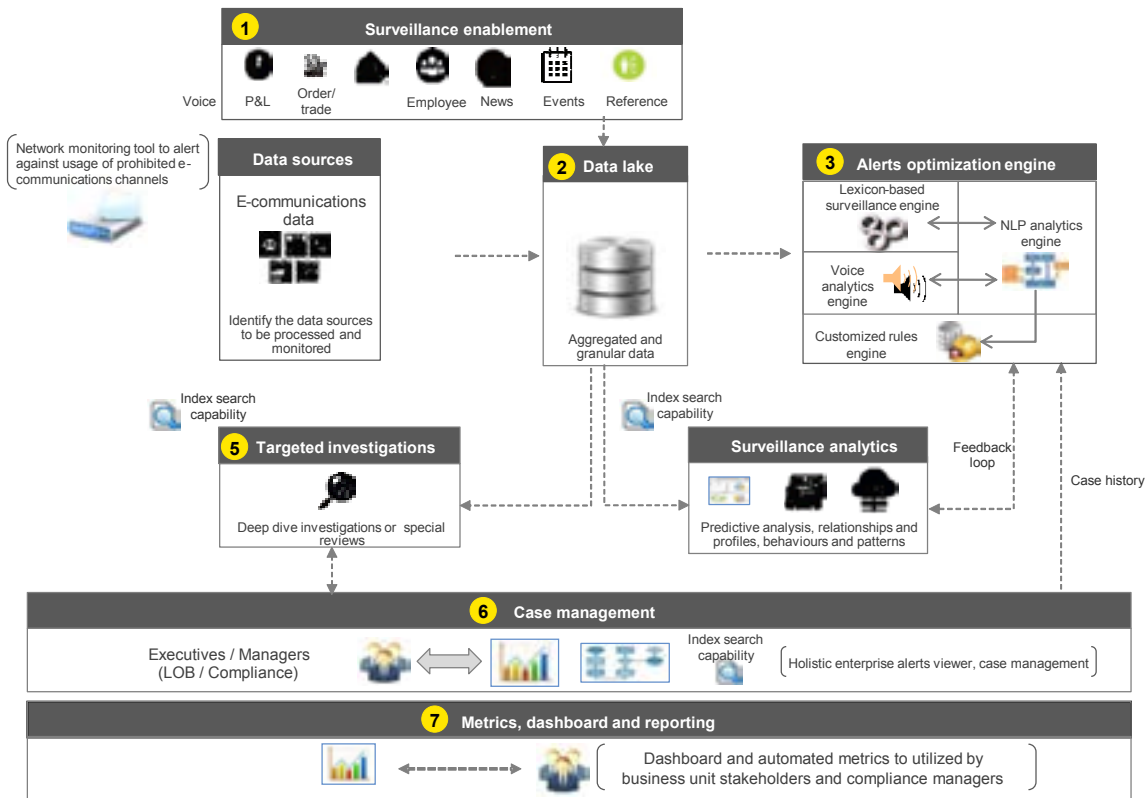
- ▶ Develop rules that provide business context, and employ machine learning techniques to identify word-associations for the relevant lexicons.
- ▶ Combine metadata profiling with predictive coding, trend analysis and cluster techniques to identify frequency of communications, who talks to whom, and what

Target operating model definition across people, process and technology

As the regulatory environment continues to change, many industry participants are re-evaluating whether their current surveillance operating models are sufficient. Many firms are choosing to explore new models to manage the ever-changing risks.

EY's approach

While firms differ in size, complexity and challenges, we propose the following conceptual solution that can be tailored to fit unique needs of our clients.



- 1 Dynamic surveillance enablement to provide holistic view
- 2 Next-gen retention, archival and eDiscovery functionalities
- 3 NLP and customized rules engines can enable noise reduction
- 4 Analytical tools and statistical approaches to enable testing of lexicon effectiveness

- 5 A cross-channel, integrated surveillance process can enable a targeted investigations solution
- 6 A centralized case management tool with integrated and customized views
- 7 A robust, automated and centralized reporting solution that integrates and calculates metrics from various sources

EY accelerators and enablers

Leading practices and regulatory insights



- ▶ Insights and experience around industry norms, regulatory expectations and emerging trends

Surveillance behavior inventory



- ▶ EY's surveillance inventory contains an extensive listing of surveillance lexicons on various patterns and market misconduct behaviors.

Surveillance assessment methodology



- ▶ EY surveillance assessment methodology takes into account various aspects to identify existing gap and define future state.

Additional information

For additional information on how we can assist with your electronic communication surveillance program, please contact a member of our team:



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