

Using analytics in banks  
Smarter continuous monitoring



With banks facing heightened regulatory and public scrutiny in many countries, using advanced analytics to help identify potential wrongdoing sooner may be a strategic and operational imperative.

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# Analytics – the new frontier of monitoring

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With banks facing heightened regulatory and public scrutiny in many countries, using advanced analytics to help identify potential wrongdoing sooner may be a strategic and operational imperative.

Banks have had continuous monitoring capabilities for years, both for protection of their customers — credit card security monitoring, for example — and for compliance with a variety of laws and regulations. This article discusses how contemporary data analytics can help banks enhance their continuous monitoring to help detect potential wrongdoing more quickly and efficiently, providing greater ability to take remedial action before whistleblowers and regulators spring into action.

Legislation such as the U.S. Dodd-Frank Wall Street Reform and Consumer Protection Act (“Dodd-Frank” or the “Act”) provides new antifraud authority to regulators and creates potentially huge financial incentives to whistleblowers. Section 753 of the Act expands the U.S. Commodity Futures Trading Commission’s (“CFTC”) reach to prohibit manipulative and fraudulent behaviors. It lowers the standard for “scienter” or intent to recklessness for fraudulent manipulations<sup>1</sup>, making it easier to bring charges.

In addition, the whistleblowing provision in Section 922 of the Act awards 10 to 30 percent of monetary sanctions to those who provide original information to the Securities and Exchange Commission (“SEC”) that results in the recovery of more than \$1 million in a securities law enforcement action.<sup>2</sup> The information can apply to any type of securities law violation, including insider trading, fraudulent financial reporting, and violations of the Foreign Corrupt Practices Act (FCPA).<sup>3</sup>

Given the potential multimillion-dollar awards, banks are likely to see a rise in fraud allegations. In fact, from October 1, 2011 through September 30, 2012, the SEC received over 3,000 whistleblower tips — an average of eight tips per day. This represents an increase of one tip per day in comparison with the previous report.<sup>4</sup> Although the first annual report covers only August 12, 2011 through September 30, 2011 and may not extend over a period long enough to identify a trend, banks should be prepared to deal with the consequences of more frequent whistleblower allegations.

### A risk-based approach

Analytics has the potential to help banks refine the way they perform the sort of monitoring that will allow them to detect and identify potential fraud prior to the launch of a formal investigation by regulators. Banks should leverage the results of risk assessments to target their analytics efforts and fine-tune their monitoring systems for continuous improvement. They should then reshape their fraud detection efforts using Advanced Analytics and related tools, software and applications to obtain more efficient oversight. These steps can not only help enhance fraud deterrence, but also show regulators an enterprise-wide commitment to enforcing an effective anti-fraud strategy (see Figure 1).

Banks should consider using a risk-based approach for conducting fraud monitoring tests, factoring in the nature of violations (for example, fraudulent reporting, anti-corruption violations, or insider trading). Since specific risks will vary by bank, risk assessments can help identify key tests and analytics techniques that can improve the effectiveness of continuous monitoring systems. Banks should explicitly define these techniques in their fraud mitigation plans and outline the main business functions at risk. This approach can help better allocate resources to high-risk departments and focus continuous monitoring on specific areas of analytic testing.

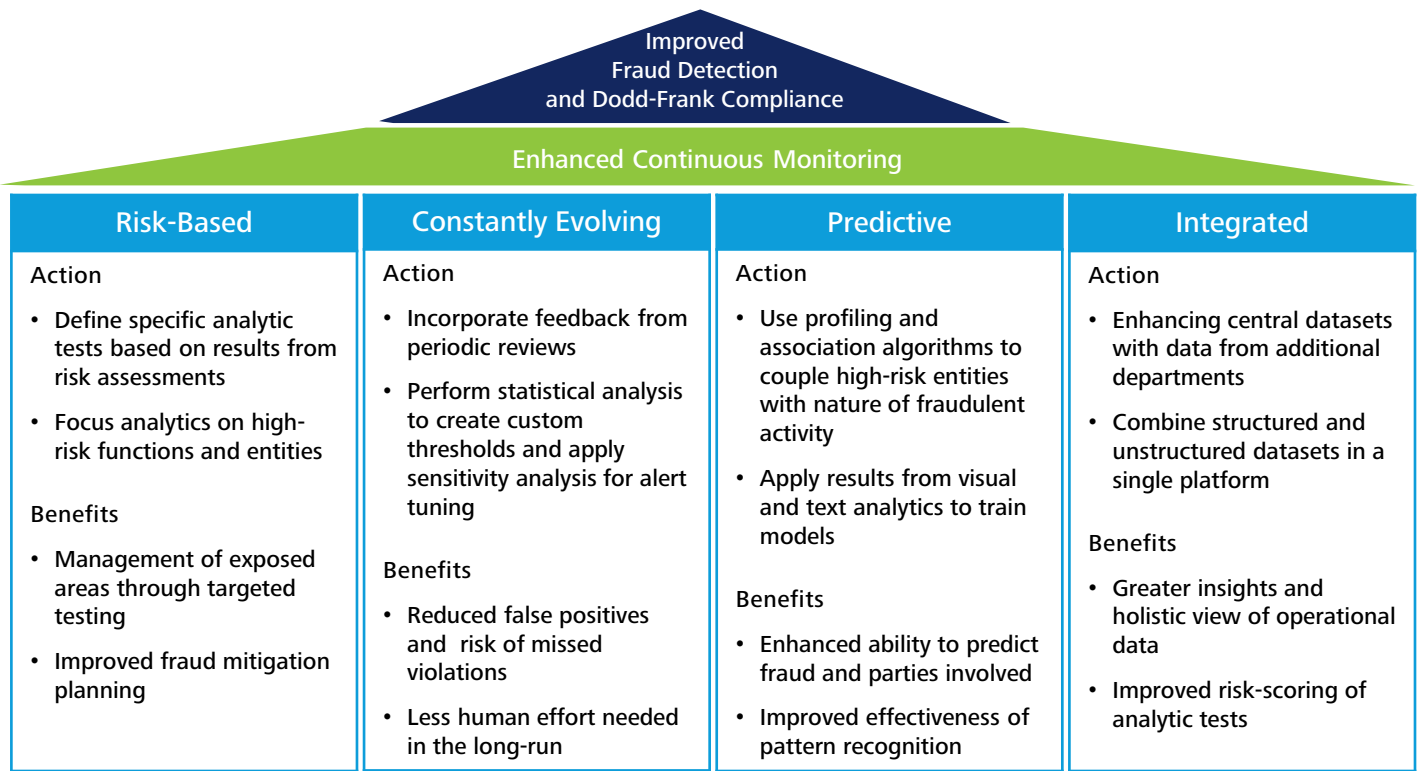


Figure 1: Main elements of an analytics strategy for improved fraud detection

### A feedback loop to reduce false alarms

One operational challenge of traditional transaction monitoring systems with predefined thresholds is the number of “false positives” — transactions that are flagged as suspicious but which turn out to be in compliance. Following up and investigating such false alarms can be a time-consuming and hence costly task.<sup>5</sup> However, by asking specialists to perform periodic reviews of test results and incorporating their feedback into the monitoring systems, those systems can learn to detect true anomalies more efficiently, with lower levels of false alarms (see Figure 2).

In addition, banks can use data segmentation coupled with statistical analysis to identify characteristics specific to each peer group and create custom thresholds. For example, high net worth customers tend to be associated with large transaction amounts and may therefore require different parameters than lower income clients. Banks can then perform a sensitivity analysis to help determine whether threshold levels should be increased if too many false alerts are generated or decreased if suspicious activity is being missed<sup>6</sup>, a process known as alert tuning.

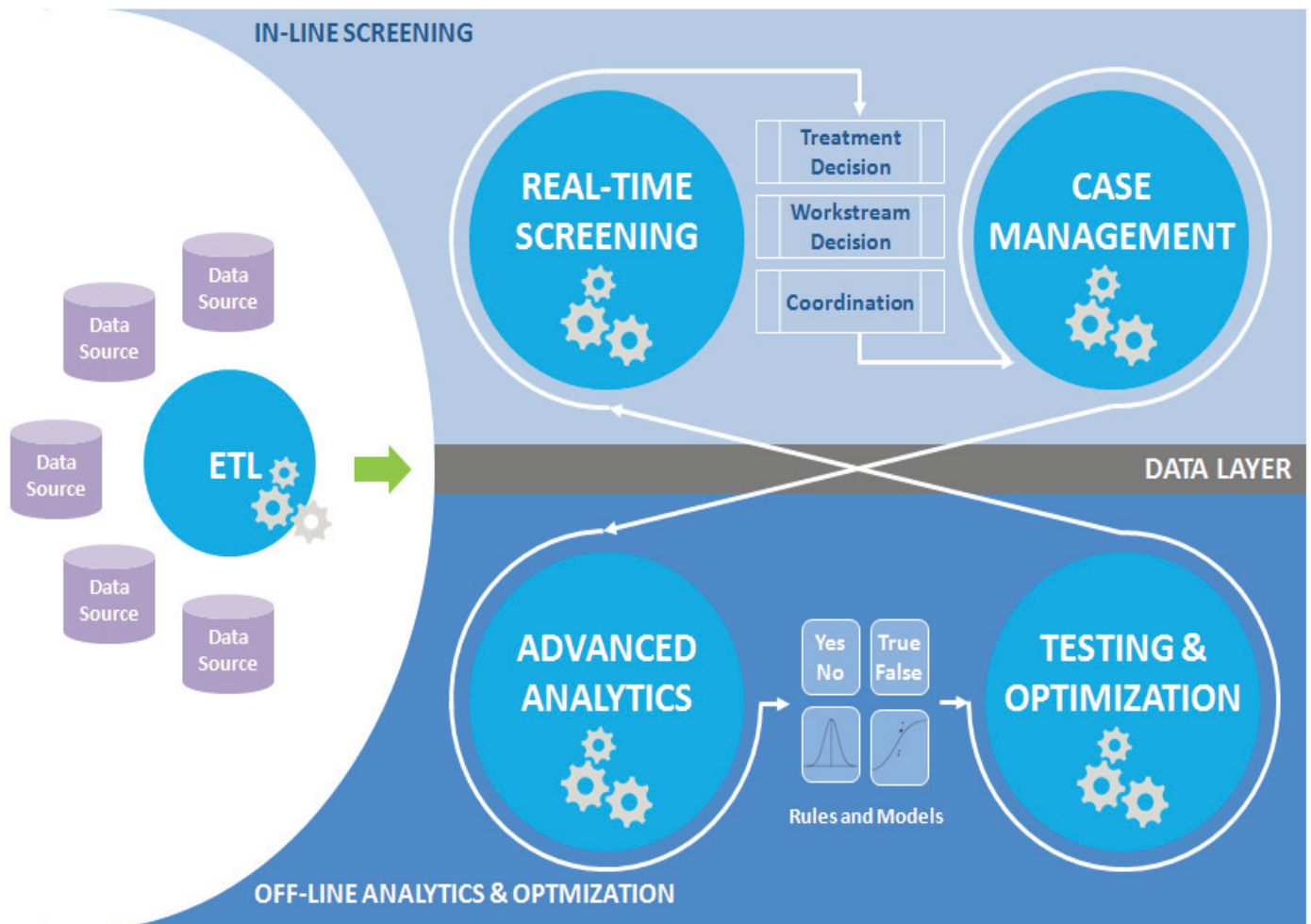


Figure 2: A constantly evolving continuous monitoring platform

During this phase, the system “learns” from the feedback provided by retraining its predictive models and adjusting risk scores accordingly. This approach can help reduce the number of false positives and capture missing violations. To support reviews, a case management tool can help specialists generate reports and manage the investigation process. Hence, while considerable human effort may be required at the initial learning stage, less investigation time may be needed later on. Banks may see more benefits to this approach over the long run. In fact, a self-adjusting monitoring system can be particularly useful for small banks or departments where full-time staff is limited.

In one instance, Deloitte assisted a global bank in the design and implementation of an anti-money laundering system to continuously monitor more than several hundred billion transactions annually in real-time environments. This exceeded the capacity and capabilities of commercially available monitoring products. Furthermore, disparate legacy systems added to the complexity, requiring new transaction monitoring tools, techniques and analytics to monitor, detect, investigate and report unusual or potentially suspicious transactions to regulatory authorities. The continuous monitoring system involved creating, implementing and fine-tuning detection scenarios, tools and training for its investigative, management and executive teams.

### **Regulators are using data analytics too**

Today’s regulators are already beginning to use proprietary risk analytics to identify inconsistent investment returns, fraudulent valuations, and improper use of assets.<sup>7</sup> While many banks may already be using analytics to uncover fraudulent manipulations, they can likely benefit by expanding their capabilities in this area to implement a fraud detection and deterrence strategy with higher standards.

Advanced analytics can help banks revamp their existing monitoring systems by better predicting the probability of fraud that may occur. For example, banks can identify common indicators of fraud. They may find that transactions to third parties, tied to officials in countries with a high corruption index, typically pose an anti-corruption risk. Banks can then deploy tests looking for unapproved gifts and commissions in such transactions. Using these indicators, banks can tune their rule-sets and focus on high risk areas.



# Incorporating unstructured data and text analytics

In addition to transaction-based monitoring, banks should consider incorporating unstructured data such as e-mails, counterparty contracts and other text-based documents. They may build a central platform that combines structured transaction data with unstructured datasets to improve risk-scoring. Link analysis can then be used to identify relationships between different datasets. For example, consider a payment ranked with a low risk score by a transaction-based monitoring system. If a related e-mail references this payment as part of an apparent fraud scheme, the transaction's risk score would need to be increased. Furthermore, visual analytics can be particularly effective for linking structured and unstructured datasets and identifying indirect relationships that involve several intermediaries. Running analytics on integrated datasets can therefore help banks isolate suspicious activity that would be difficult to uncover by studying scattered information independently.

To help manage the complexity of unstructured datasets, banks can also apply text analytics techniques. Such techniques generally go well beyond standard keyword-based queries and can provide additional insights into the document populations. Consider a past investigation that may have revealed documents used during a fraud scheme. Text analytics can help detect patterns (i.e., keywords and their combinations) in these documents that could be indicative of fraud. In addition, semantic modeling can help evaluate the "where," "when," and "who," and fit them into a conceptual framework it identifies as either indicative of fraud or within the scope of usual activities.<sup>8</sup> A continuous monitoring system can then apply this framework and use revealed patterns to detect other similar documents.

In one instance, Deloitte's Analytics team helped a client use text analytics to review millions of litigation-related documents, with limited resources, to identify those likely to be subject to legal privileges. A model was developed to segment and score documents for accuracy according to the specifications that the client was looking for. The solution accommodated the client's preferred data processing tool and provided simple and visual scoring reports. Applying text analytics in this way helped the client gain valuable insights from millions of documents, achieve substantial cost savings compared to the traditional approach, and have greater confidence in its document production.



# Conclusion and recommended actions

Analytics can help reshape the way banks conduct fraud tests and monitor their operations in response to Dodd-Frank. In fact, without analytics, the process of uncovering fraudulent manipulations may not be as accurate and can take more time and effort given the large volume of data generated by most banks.

### Actions we recommend

Our recommendations to specific banking clients will depend upon the risks they face and the state of their continuous monitoring process and technology. Some actions we commonly recommend are:

1. Review your company’s fraud risk assessment results from an analytics perspective and identify targeted tests that can be implemented to address high-risk areas. Ask yourself these questions: do existing tests address specific risks identified during the assessment? What new analytic tests can be applied to gain insights on transactions of particular interest and what existing tests can be eliminated? Can they be modified to pinpoint anomalies specific to high-risk areas? Do you have the ability to expand or adjust testing based on any anomalies identified?
2. Evaluate the accuracy and effectiveness of your monitoring systems. Perform periodic reviews and ask yourself these questions: are many false positives generated? Are potential violations being missed? Consider using statistical analysis to perform alert tuning and incorporate the feedback of forensic professionals on a regular basis. This can help achieve a constantly evolving process that can “learn”, is capable of handling exceptions and better adapts to a changing environment.
3. Benchmark the analytics procedures used in your current monitoring system against the latest advanced analytics techniques and technology available on the market. Ask yourself these questions: what gaps exist with the solutions available? What techniques can be best leveraged to predict fraud occurrence? Consider using predictive modeling, data visualization and text analytics to help increase accuracy and speed while reducing costs.

4. Assess how integrated your data is, across originating sources and departments. Consider combining structured and unstructured data to help obtain a more holistic view of your operations. Leverage existing data warehouses and consolidate datasets into your monitoring systems on an ongoing basis. Consider applying link analysis to connect data points and build a better picture of your financial activity across the bank.

Using a more targeted approach to real-time testing and leveraging integrated datasets, banks can apply advanced analytics to help improve the effectiveness of their continuous monitoring efforts. Such enhancements can strengthen banks’ ability to manage their fraud risks and reduce their exposure to penalties under constantly evolving regulations.

### Deloitte Forensic Center

This article is published as part of *ForThoughts*, the Deloitte Forensic Center’s newsletter series edited by Toby Bishop, the Director of the Deloitte Forensic Center and a Director of Deloitte Financial Advisory Services LLP. *ForThoughts* highlights trends and issues in fraud, corruption and other complex business issues.

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