The value of analytics is widely recognized as an important tool for uncovering fraud, waste, abuse, and potential corruption, or identifying signs of potential problems. But for some companies, the costs, time, and resources required to develop analytics capabilities, manage an analytics infrastructure, and review volumes of results can exceed what they can or want to commit.

Traditional approaches have involved sampling and testing for known patterns of behavior or focusing on perceived areas of risk, such as duplicate payments. Resulting output is often full of “noise” or false positives, which means analysts still need to sift through rows and rows of transactions to identify accurate “hits.” Additionally, technology continually changes, so keeping abreast of the latest tools and techniques requires a significant time commitment and training. As a result, many organizations are left wondering where to begin.

Deloitte offers a way for companies across industries to assess their fraud and corruption exposures, as well as target entities, business processes, and transactions with potentially higher risk factors, without incurring the cost and complexity of building an in-house analytics capability: the Deloitte Analytics Platform.
Not your same old risk-based analytics

Many organizations still take a risk-based sampling or transactional testing approach that relies purely on the concept of "test failures" to detecting fraud or corruption. These approaches may result in missed transactions, or they may simply return too many results for effective review.

With the Deloitte Analytics Platform, rather than simply running a series of tests, the Platform leverages a library of indicators (effectively, data attributes) generated for each transaction, business process, or entity, since one or more indicators may exist for each transaction. The library of indicators is both flexible and robust, facilitating customization based on geography, industry, risk profiles, or current issues.

The Deloitte Analytics Platform then employs a proprietary risk engine that uses predefined rules for combining and measuring indicators and profiles to assign several types of risk scores. Risk scores may then be compared across multiple profiles to:

• Determine the leading model(s) and help prioritize transaction and/or entity reviews.
• Rank entities or transactions based on potential risk.
• Focus investigative efforts in areas of higher-potential risk.

The risk engine may also accept input from other data sources to assemble increasingly sophisticated or enhanced models. A built-in reference library allows for seamless, repeatable access to third-party data sources (e.g., Politically Exposed Persons lists, Sanction lists, demographic information, etc.) which can be used to identify additional indicators or attributes, further enhancing the risk profile.

An overview of the platform

The Deloitte Analytics Platform concept and construction combines Deloitte engagement experience, significant research, and existing proprietary tools (third-party and Deloitte-developed) focused on anti-fraud and anti-corruption efforts. The web-based, hosted solution offers advanced data analytics technologies and approaches that advisors, investigators, and appropriate client personnel will find powerful, yet intuitive, in their efforts to target potential high-risk entities, transactions, or processes. The infrastructure permits hosted or local, appliance-based solutions allowing for flexibility when dealing with potential global data issues.

Advanced analytics

Many data scientists are migrating attention from purely laboratory focus to operational and industry environments. Advanced techniques — such as predictive analytics, social network analysis, and geospatial analytics — are integrated within the platform, providing access to sophisticated tools and capabilities designed to stay ahead of fraudsters.

Visualization tools

One challenge of traditional fraud or corruption identification tools has been the production of lengthy lists of transactions for review. The Deloitte Analytics Platform aggregates raw data, the results of our risk-scoring engine, and other available information, to provide visual data representations. Visualizing data in this way, one can discern patterns, trends, anomalies, and other aspects of the data that may not be readily apparent through traditional analysis of a spreadsheet’s rows and columns.
Data enrichment

For many organizations, simply relying on their own data may not be enough to combat sophisticated fraudsters or detect suspicious events or behaviors. The Deloitte Analytics Platform also enables data enrichment using third-party data sources, such as:

- **Geocoding** — assigns longitude, latitude, and regional demographic information to addresses so locations can be mapped and analyzed.
- **Address validation** — helps specify address types, such as valid mailing addresses, prisons, or commercial mail receiving agencies.
- **Social security number validation** — helps determine whether a social security number has been issued, is valid for the date of birth associated with it, or has death benefits associated with it.

Beyond structured data

The very nature of data has evolved rapidly. Spreadsheets and structured accounting data have given way to complex, unstructured data sets. The Deloitte Analytics Platform integrates several advanced text analytic capabilities that can be used to profile unstructured text within the transactional data, such as:

- **Text matching** — utilizes token and character based algorithms to rapidly compare character strings and find similarities which can help identify duplicate entity names, related parties, and unexpected relationships such as matching addresses.
- **Text analytics** — utilize text categorization to analyze and then visualize unstructured data such as expense descriptions, journal entry descriptions or comment fields.

Text analytics showing concept clusters from expense descriptions

Map showing concentration of vendors by risk and location (also global)

**Case management**

A structured environment for managing the related review, follow up, workflow, and documentation are critical to creating efficient and effective processes in a coordinated fight against fraud, waste, abuse, misuse and corruption. The Deloitte Analytics Platform provides customizable Web-based interfaces for managing the analysis, review, documentation, and tracking of workflow related to a project. Of particular note is the ability to review transactions and mark items as actual issues or false positives — a critical input that may be looped back for refinement of the Platform’s risk and predictive engines.
An array of benefits
In an era of increased regulatory compliance and fraud exposure, the amount of data collected and available is on the rise. The Deloitte Analytics Platform can help companies understand their fraud and corruption exposures, incidents, and controls in this constantly changing fraud landscape — and potentially address issues before they become high-profile problems.

Additional benefits may include:
• Effectively targeting specific areas of potential risk rather than using broad, standard testing and sampling methodologies.
• Freeing investigative teams and internal audit departments to focus on transactions with high likelihood of problems rather than expending resources to conduct analytics.
• Leveraging a hosted solution to defer infrastructure investment and free limited IT resources to evaluate potential problem areas, map analytics strategy, and pursue other higher-value activities.
• Having the flexibility to perform a one-time, slice-in-time assessment or series of ongoing analyses to meet a company’s compliance strategy.
• Deploying on a continuous or scheduled basis may help prevent the typical pay-and-chase model and begin to shift the focus to early detection.

Indicator diagnostics

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