

Procurement Fraud Analytics

Combat procurement fraud to prevent financial and reputation losses

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No markets and industries are immune from procurement fraud, yet the problem is further compounded by the sheer complexities in detecting fraud within the procurement cycle - ranging from personal motivations of employees seeking financial gains, to collusions among vendors within the marketplace.

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With the procurement processes still relying on manual checks at times, it is imperative that your organisation takes on a more systematic and proactive approach to detect both known and unknown strains of procurement fraud.

NCS' Procurement Fraud Analytics is a cost-effective tool to detect and automatically alert organisations of suspected activities or behaviours of a fraudulent nature. This helps stop such fraudulent activities before they advance further into the procurement cycle to avoid significant financial or reputational losses. It is designed to combine and score data points, using a hybrid analytical approach comprising powerful techniques and algorithms:



BUSINESS RULES
VALIDATION
(DETECTING KNOWN PATTERNS)



ANOMALY DETECTION
ENGINE
(DISCOVERING UNKNOWN PATTERNS)



SOCIAL NETWORK
ANALYSIS
(DISCOVERY OF ASSOCIATIONS OVER TIME)

Once alerted, finance managers or internal auditors could launch a swift investigation into the suspected activity or behaviour. At any one time, they could also access a consolidated dashboard view highlighting key insights of interest - such as the top high-risk vendors or fraud types - hence conferring the organisations a significant advantage over procurement fraud.

Challenges

- Common red flags that might go undetected within the procurement cycle, such as split purchases, border values, price deviations, duplicate pays and rounds values
- Limitations of traditional business intelligence tools in detecting fraud
- Reputational damage results in a loss of confidence amongst stakeholders such as investors, the public, customers and suppliers, which further aggravates the magnitude of monetary loss

Solution

NCS' Procurement Fraud Analytics

Benefits

- Automatic and systematic approach leveraging multiple algorithms to identify high-risk transactions with precision and coverage
- Checking all transactions against a knowledge base of procurement fraud analytics to combat well-known fraud patterns
- Rapid screening of procurement records allows more thorough checks to single out potential transactions for further action
- Freeing up human concentration to devote more efforts to detect unorthodox fraud schemes that would evade conventional checks

How it works

Our hybrid analytical approach outlined below detects and scores all data points at both entity and transaction levels, and any suspected activities or behaviours crossing a pre-defined threshold would be automatically flagged out and alerted to internal auditors or financial managers for further investigation.

At any one time, a consolidated dashboard visualisation of key insights of interest could be accessed as well to provide the management team an enterprise view of suspected fraud activities within the organisation.

Features and Benefits

	FEATURES	BENEFITS
FOR FINANCE MANAGERS AND INTERNAL AUDITORS	Secure single sign-on to safeguard sensitive information pertaining to procurement data.	Seamless yet reinforced access to ensure that sensitive procurement data is only accessible by those with the rights to do so.
	Upload all procurement information from the current finance module into the procurement fraud analytics portal.	Ensure that all procurement data has been uploaded solely for analytical purposes.
	Able to configure the weightage assigned to a requester or an individual transaction.	Allow for quick adaptation to the latest fraud scenarios, as well as evolving industry regulations and business needs.
	Be alerted when the indicator threshold for a particular transaction reach the userdefined threshold via e-mail or mobile.	Allow for swift, timely investigative action to be taken.
	Be reported on the overall trends from all transactional data gathered, with fields such as "Top 20 High-Risk Vendors".	Support management decisions with a detailed overview on each potential procurement fraud activity.
	Observe a detailed breakdown of the fraud indicators.	Comprehensive access all the various risk factors at a single view to aid further investigation.

Dashboard View

"A comprehensive view of suspected fraud activities and behaviours, such as the top 20 high-risk vendors as well as various fraud indicators detected after analysis of the purchase orders."



Analytical Techniques	Indicators
Business Rules Validation For detection of known fraud schemes/patterns	
Border Value	Query based on standard deviation from the procurement limit
Split Purchase Orders (POs)	Semantic clustering i.e. clustering of similar items within a short period of time
Price Deviation	Query price differences i.e. comparing the current price to previous pricings within a certain time frame
Duplicate Pay	Query for transactions with the same monetary value or PO number
Round Values	Query for round values
Suspicious requestor vendor relationship	Query the transactions between the requesters and vendors and flag out the anomalies
Anomaly Detection Engine For discovery of unknown fraud schemes/pattern	
Historical Anomaly Detection	Sieve out sudden, drastic deviations from historical patterns
Peer Grouping	Compare one's behaviour to the normative behaviours as observed in a similar group
Profiling	Profile requester's behavioural patterns and match them against those of known fraudsters
Social Network Analysis For discovery of association or relationship	
Social Network Analysis	Discover interesting relationships among different entities (requesters, vendors, and transactions).

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