ANALYTICAL PROCESS FOR ANOMALY DETECTION IN FORENSICS

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Abstract

According to the ACFE's 2014 Report to the Nations on Occupational Fraud and Abuse, proactive data monitoring and analysis is among the most effective anti-fraud controls. Organizations which undertake proactive data analysis techniques experience frauds that are 60% less costly and 50% shorter than organizations that do not screen and analyse data for signs of fraud. Traditional methods of data analysis have long been used to detect employee fraud in corporations. They require complex and time-consuming investigations that deal with different domains of knowledge like financial, economics, business practices and law. In this paper, we take a case of procurement division of a company in media distribution and attempted to apply our model of 'anomaly' detection using rules based algorithms. By 'anomaly', we mean transactions which seem to be outliers or different from the normal routine of transactions. This paper attempts to identify 'anomalous' transactions in the procurement division of an organisation. The objective is to define an analytical process to map and provide a trajectory of anomaly detection in forensics accounting. The main steps in forensic analytics are (a) data collection, (b) data preparation, (c) data analysis, and (d) reporting. For example, in this paper, we will use analytics to review an employee s' purchasing card activity to assess whether any of the purchases were diverted for personal use. Likewise, we will apply rules based algorithms to identify the invoicing activity for a vendor to identify fictitious vendors. An example of a rule to detect anomalous transactions are based on accounting oversight. We cite one such rule here- 'PO and GRN are created by the same person. Creator of the PO colludes with the vendor and creates a fake GRN resulting in excess payment to the vendor. Subsequently he might leave/ quit the organization before the periodic physical verification'. Likewise several rules are applied on datasets and analytical queries and analyses are run exhaustively run. We find that this kind of analysis would help organisation reduce frauds going unnoticed. The statistical models build based on the data that is available inside the organisation helps them to reduce the cost of frauds and the risks associated with it.