

A General Framework for Measuring the Internal Fraud Risk of an Enterprise Resource Planning System

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Abstract : Internal corporate fraud, which is fraud carried out by internal stakeholders of a company, affects the well-being of the organisation just like its external counterpart. Even if such an act is carried out for the short-term benefit of a corporation, the act is ultimately harmful to the entity in the long run. Internal fraud is often carried out by relying upon aberrations from usual business processes. Business processes are the lifeblood of a company in modern managerial context. Such processes are developed and fine-tuned over time as a corporation grows through its life stages. Modern corporations have embraced technological innovations into their business processes, and Enterprise Resource Planning (ERP) systems being at the heart of such business processes is a testimony to that. Since ERP systems record a huge amount of data in their event logs, the logs are a treasure trove for anyone trying to detect any sort of fraudulent activities hidden within the day-to-day business operations and processes. This research utilises the ERP systems in place within corporations to assess the likelihood of prospective internal fraud through developing a framework for measuring the risks of fraud through Process Mining techniques and hence finds risky designs and loose ends within these business processes. This framework helps not only in identifying existing cases of fraud in the records of the event log, but also signals the overall riskiness of certain business processes, and hence draws attention for carrying out a redesign of such processes to reduce the chance of future internal fraud while improving internal control within the organisation. The research adds value by applying the concepts of Process Mining into the analysis of data from modern day applications of business process records, which is the ERP event logs, and develops a framework that should be useful to internal stakeholders for strengthening internal control as well as provide external auditors with a tool of use in case of suspicion. The research proves its usefulness through a few case studies conducted with respect to big corporations with complex business processes and an ERP in place.

Keywords : enterprise resource planning, fraud risk framework, internal corporate fraud, process mining

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