



AI-based Internal Control Framework Analytics

The KPMG Spider Algorithm – AI Applications in Enterprise Risk Management

KPMG Lighthouse Switzerland

The KPMG Spider Algorithm

The KPMG Spider Algorithm is an innovative product that uses advanced AI techniques to assist clients in rationalizing and strengthening the effectiveness of their internal control frameworks.

The KPMG Spider Algorithm answers the following

what-if scenario: “What if there was a way to use AI to run an analysis of a client’s control landscape and, given few key assumptions (one being that controls are only one of the factors leading to a financial loss), we could show the client how and where to reduce financial losses and reduce the cost of controls?”

The What

The KPMG Spider Algorithm was developed using the Python programming language.

The algorithm uses Natural Language Processing (NLP) in combination with mathematical models (classification models), as well as statistical techniques (stochastic global optimization algorithm).

The algorithm can work alone, as SaaS or as a feature embedded into the company’s Governance Risk & Compliance (GRC) platform.

The Who

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The How

In order to address the what-if scenario, the algorithm delivers three levels of analysis:

- Level 1** A set of health check descriptive statistics on the control landscape composition as well as exceptions on completeness and accuracy
- Level 2** AI-based quality tests on the control documentation and attributes and the computation of scores indicating the level of quality of individual controls. Scores are then consolidated by business process, risk taxonomy and business division.
- Level 3** AI-based prediction of reductions in total potential financial losses and in of cost of controls (i.e. the minimum number of controls required per business process on the computation of scores in Level 2.

The Why

The KPMG Spider Algorithm delivers the following key benefits

- 1 Lower number of duplicate and redundant controls
- 2 Faster and more comprehensive review of a control landscape (i.e. not based on sampling)
- 3 Reduced likelihood of operational risk incidents due to better documented controls
- 4 Lower operational costs due to modern automation technology
- 5 Rationalization of the control landscape leading to lower cost of controls