



Data Analytics and Process Mining Within Internal Audit

ING, headquartered in the Netherlands, is a global financial institution with strong European foundations that offers retail and wholesale banking services in over 40 countries. As one of Europe's top ten banks, it has over 55,000 employees and more than 39 million customers. Internally it has ambitions to become a data-driven organization.

The Internal Audit Function - Corporate Audit Services (CAS) - at ING consists of more than 400 individuals across 35 teams in over 20 countries. This function covers a wide variety of topics, locations, and processes - all of which need to be audited. Specifically, over 2,500 auditable entities are defined by CAS, whereby each one has an average audit cycle of almost three years. CAS aims to use data analytics in at least 60% of the audits performed each year.

Company

Headquartered in The Netherlands, ING is a global financial institution that offers retail and wholesale banking services to customers in over 40 countries. ING has over 55,000 employees and more than 39 million customers.

- Financial Services
- Audit
- Process Mining

Making Data Analytics Indispensable in Every Audit

Internal audit covers many different topics. Sometimes it's also necessary to carry out multiple audits per topic in various locations. These often have the same types of controls and control tests, which means from a data analytics perspective that different tests for different topics may occasionally be required. It can also mean that the same tests may be used and re-used for different topics and different data sources.

The complexity lies therefore not in the tooling or use of advanced models, but rather in the wide range of topics with multiple and varying data sources. The biggest challenge is finding a way to handle all different data types and data sources while creating efficiencies. And at the same time ensuring consistency across all applications.

The ambition: make data analytics an indispensable part of every audit. The CAS approach is for all staff to become proficient in applying analytics to their audits. An expert team performs advanced analytics and provides support and training. The approach, both from an audit as well as from a staff perspective, requires a data analytics tool that is user friendly, with low (or no) code, supports reusability and sharing, and is flexible and scalable. Because KNIME ticks these boxes, it became the tool of choice for the CAS team at ING.

KNIME Analytics Platform was first made available in 2017. Since 2020, KNIME Server has been used not just for the additional computational power and storage, but also for Guided Analytics, which has made working with data and doing data analytics even easier.

Process Mining with KNIME Server and KNIME Data Apps

Process mining, which is used to analyze process flows based on event log data, is currently a trending data topic. In many current business processes, IT applications create log files, which register who is doing what and when for every transaction or trade. An event log consists of three important elements: a case ID, the activity itself, and the timestamp. It's usually enriched with additional data such as user IDs and departments. It then visualizes the process while it's taking place – also known as the 'as-is process'. In audit, the main use case is process discovery. The as-is process is benchmarked against the should-be process, which enables auditors to identify non-compliance quickly.

The solution at ING consists of a workflow, which is built into KNIME Analytics Platform and deployed via KNIME Server as a branded web-based Data App that users access via the KNIME WebPortal. The user opens the WebPortal, selects the process mining solution, and follows the predetermined steps. These steps include uploading event log data, assigning columns, and conducting the analysis. The easy-to-follow interface offers the right amount of complexity for auditors to conduct their own data analysis anywhere, anytime. The interaction points are all pre-determined by the KNIME workflow, which is running in the background. The workflow consists of many KNIME components, which bundle up the workflow functionality into logical, reusable steps.

Results

ING has managed to integrate data analytics into the everyday work of their auditors, without a lot of heavy lifting, which has gone a long way in helping achieve the vision of being data-driven. More and more users who previously didn't dive into the data are now able to generate insights independently and faster than before. Because KNIME workflows are reusable and shareable, it's helped not only to standardize processes at ING but also to generate efficiencies. Whilst these efficiencies do come after investing significant amounts of time into creating reusable solutions, it's already paying off. In some cases reducing the work of individual auditors from three days down to fifteen minutes.