How KLM Reduced Compliance Time from Months to Hours with KNIME and GenAI

Challenges:

KLM needs to stay compliant with the latest airline regulations, but regulatory bodies all deliver regulation updates in a mixture of inconsistent parsable and non-parsable file formats.

High risk and associated costs of non-compliance (up to $15M per incident) and weeks-long cycle times for getting new regulations into systems.

Complex parsing of regulatory documents (e.g., source dates, valid-from dates), made this a time-consuming manual process.

Solution:

Implemented the KNIME Analytics Platform integrated with generative AI functionalities.

Automated data extraction and interpretation from complex regulatory texts.

Standardized processes using low-code workflows, drastically reducing manual effort.

Results:

Freed up 3 full-time employees (FTEs) from manual processing tasks.

Reduced compliance update cycle times from weeks to hours.

Saved 4 man-hours per compliance review.

Significantly improved data accuracy and internal team satisfaction.

Challenges: Slow Manual Compliance Process in a Highly Regulated Industry

KLM Royal Dutch Airlines needs to comply with continuously updating aviation regulations across all the geographies it operates in.

What's more, every regulatory body publishes their updates in different formats, some of which are parsable, and some of which are not, making it difficult to quickly get the latest rules and regulations into IT systems.

The risks associated with non-compliance for airlines are severe, including fines of up to $15M per incident, fleet groundings, and operational restrictions.

"The cycle time was in the order of a few weeks. It can even take months. You cannot have such a slack in proving compliance."

Ranbir Sinha, Software Engineering Leader at KLM

Regulatory compliance was a time-consuming manual process whereby:

- Teams had to manually download PDFs, extract dates (e.g., source date, valid-from date), and upload structured files — a time-consuming process prone to human error.

- Teams had to grapple with varying legislation formats (XML, PDF, unstructured text) and inconsistent API responses, which made automation difficult.

"Every step in the manual compliance process has a challenge—and each challenge opens up room for error."

Ranbir Sinha, Software Engineering Leader at KLM

Solution: Using KNIME and GenAI to Digitize and Automate Regulatory Compliance

KLM used KNIME to overhaul its compliance process, using the nodes in the KNIME AI extension to create a visual end-to-end workflow to automate the process of collecting the latest regulation updates.

"The end goal is a system where our business asks a question and gets the right answer—no more digging through legislation."

Ranbir Sinha, Software Engineering Leader at KLM

1. From Code to Low-Code:
- Replaced complex Python-based ETL pipelines with KNIME's visual workflows.
- Leveraged KNIME Labs Nodes (OpenAI) and a variety of other nodes to parse legislation text.

2. GenAI-Powered Digitization:
- Used GenAI models to interpret regulatory text and extract key dates (when the regulation was passed, and when the regulation comes into force).
- Addressed AI "hallucinations" by cross-referencing outputs with verified sources and subject matter experts.

3 full-time employees freed up entirely from manual compliance tasks.

Cycle time reduced from weeks or even months down to just hours

Saved 4 man-hours per compliance review

"KNIME makes development easy and fast, [and] makes it easier for us to communicate to the business...And most importantly, the cycle time is reduced quite a lot, from a matter of a few weeks or months to a matter of a few hours."
Ranbir Sinha, Software Engineering Leader at KLM

Results: Faster, More Accurate Compliance with Reduced Costs

With KNIME, KLM achieved measurable results:

- **Labor Savings:** Eliminated 3 FTEs previously dedicated to manual tasks.

- **Speed:** Cycle time dropped from weeks to hours.

- **Reduced risk:** Faster cycle time for logging regulatory updates, means KLM have more time to ensure compliance, which reduces risk of non-compliance.

- **Efficiency:** Saved 4 man-hours per compliance review.

- **Improved Accuracy:** A dramatic reduction in human errors enhanced internal trust and satisfaction.

Learn more about how **KNIME** can help you automate complex processes, boost efficiency, and improve accuracy in your organization. Or **schedule a call with our team to dig in deeper**.