# Augmenting workflows with AI (and vice versa): two practical use cases

DataHop Singapore

10 December 2024

Open for Innovation
KNIME

# Are you innovating with data & AI?

**26%**

of organizations are reporting that they're creating tangible value from data & AI.[1]

**57%**

of leaders report a data and AI literacy skill gap among employees.[2]

**42%**

report inaccurate & slow decision-making, due to poor data skills.[2]

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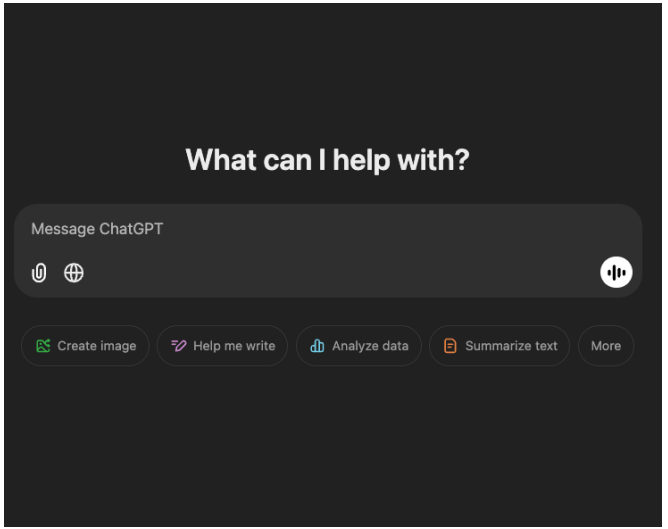
[1] BCG's paper "Where's the value in AI?" | [2] DataCamp's Data & AI Literacy Report

# Why can’t I just use ChatGPT in the browser ?

DATA

AI

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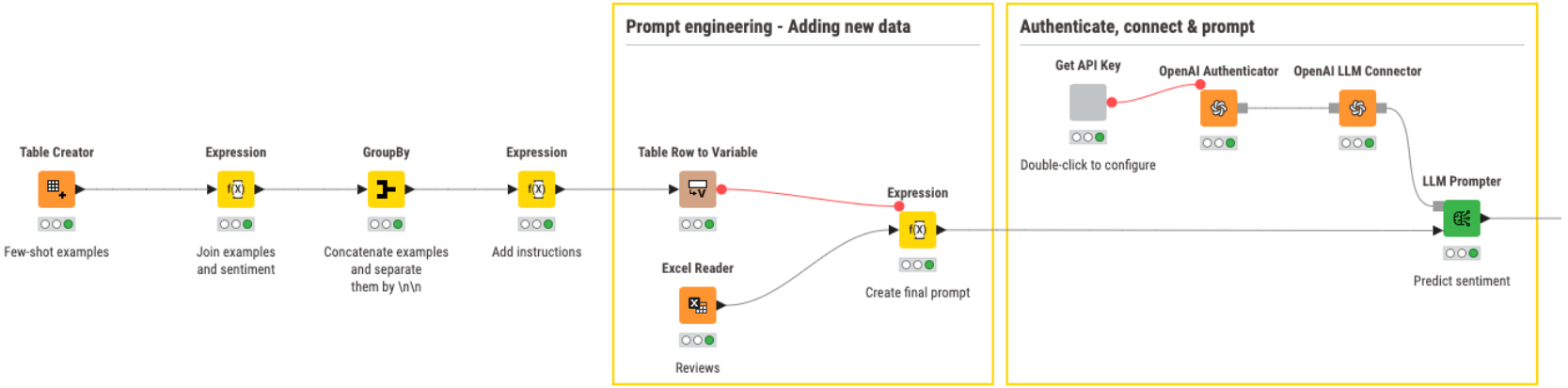
# Workflows

DATA

AI

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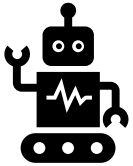
# 3 advantages

Of combining workflows and AI

Accessibility and transparency

Guardrails



Automation

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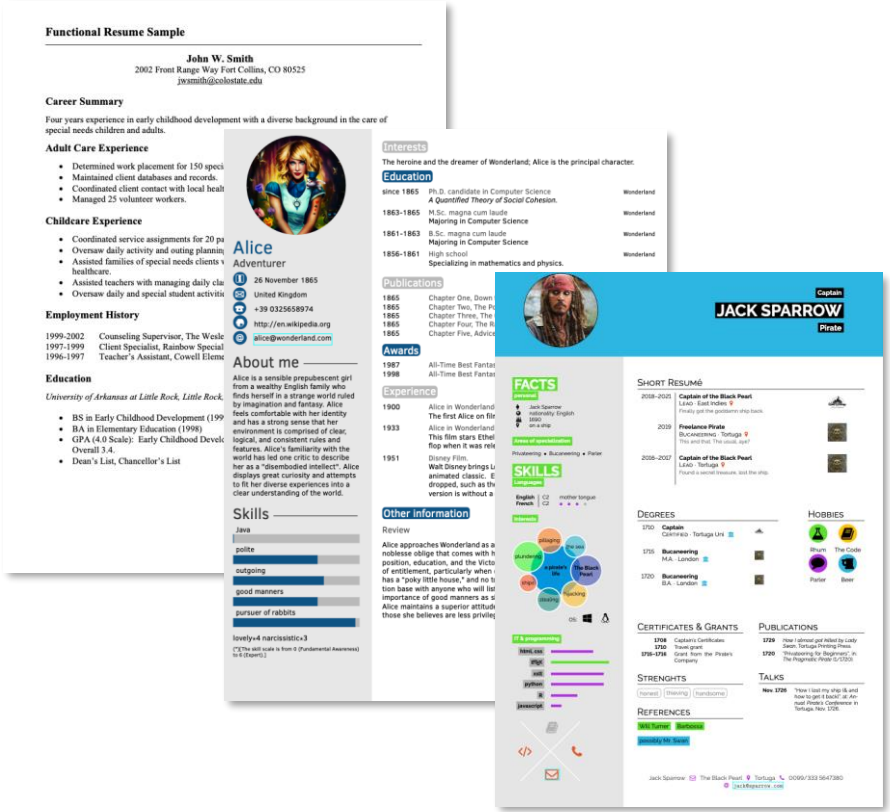
# Use case 1: CV Summarization

# HR Department: CV Summarizer

- Pain points
  - Time-consuming screening process
  - Inaccuracies or bias in manual screening
  - Applications unrelated to job requirements

- Requirements
  - Reliability
  - Privacy Standard
  - Accessibility

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# Data App

## CV Summarizer with GenAI

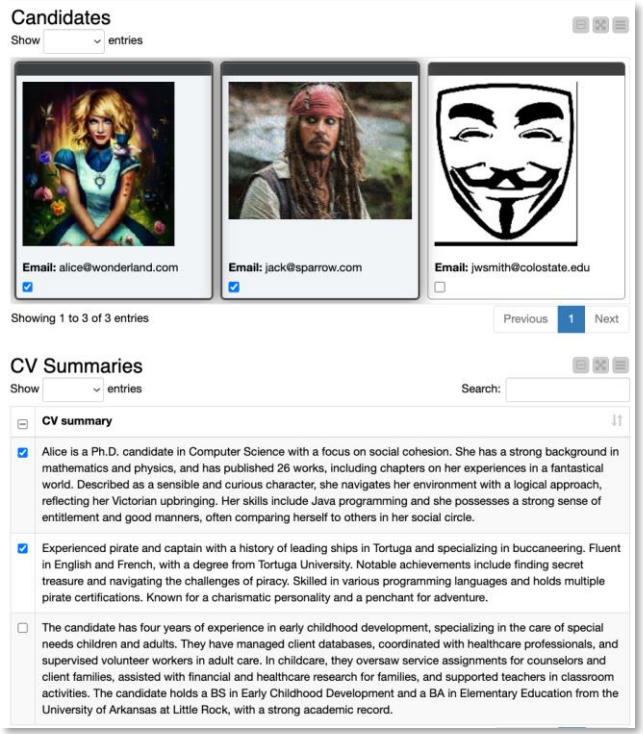
Welcome to the Data App!

This data app is intended to help HR Departments summarize CVs of job applicants leveraging the power of GenAI.

**Important:** AI-system are not infallible. Always double-check the generated content.

**Upload CVs (.zip)**

Select file CVs.zip

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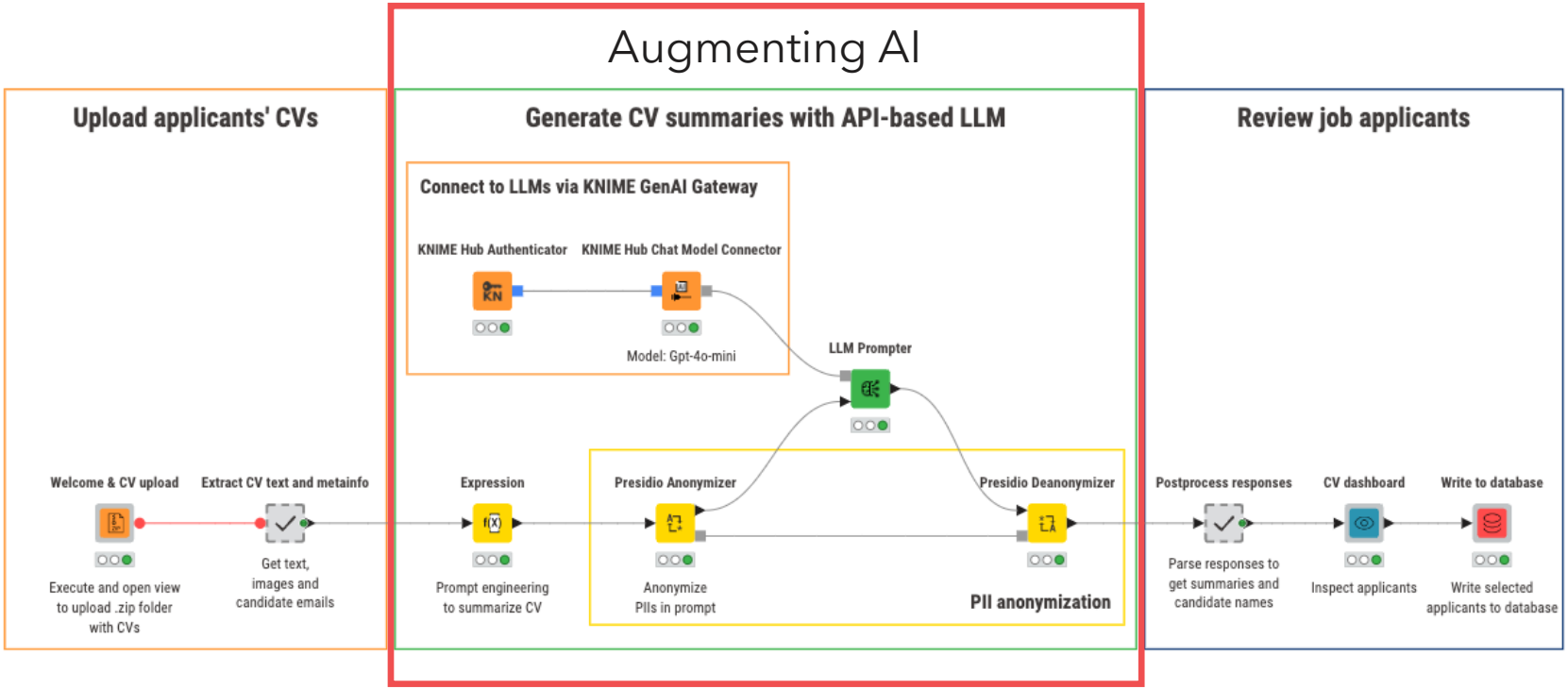
# Workflow

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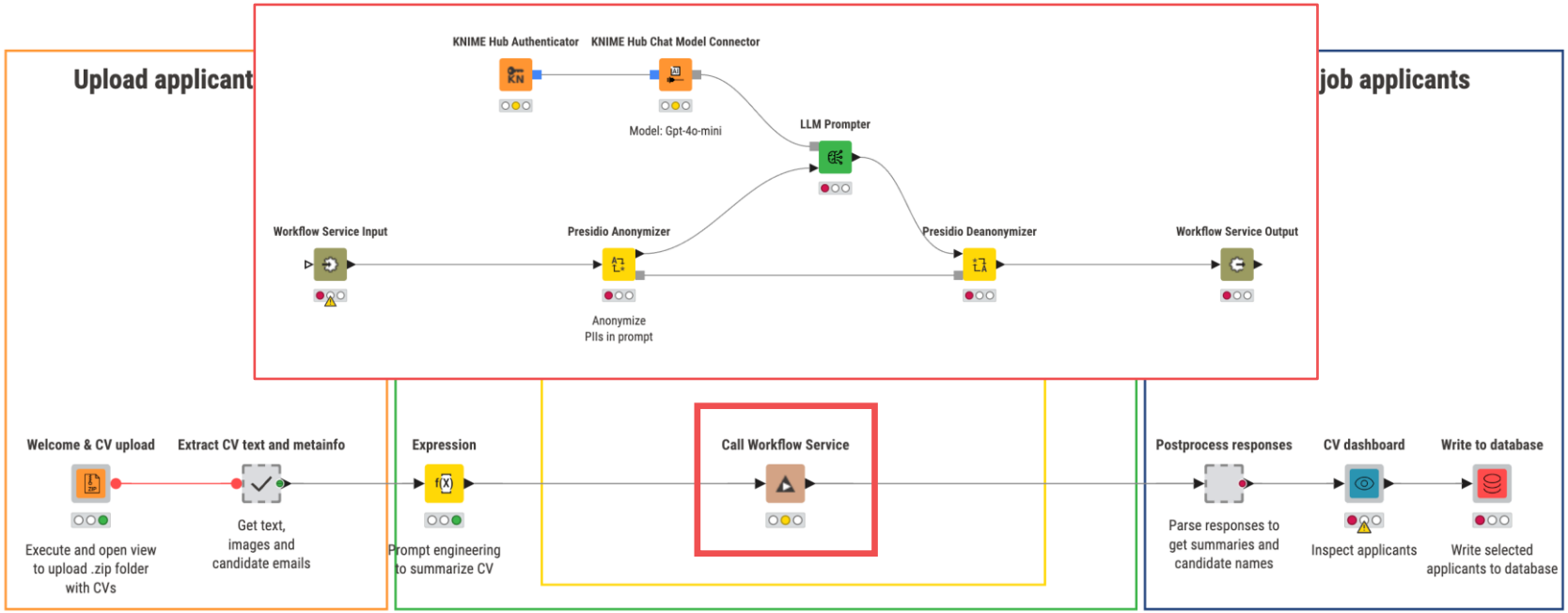
# Reusability through Agents

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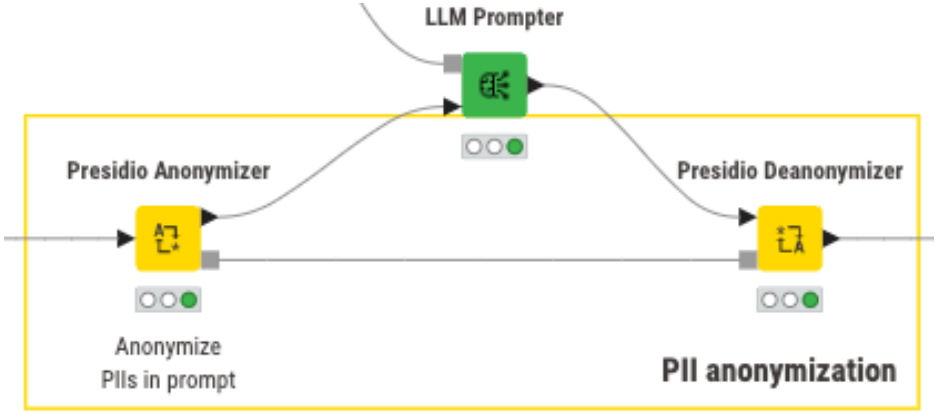
# Highlights

- Read and parse various pdf files
- **Augmenting AI**
  - **Data anonymization**
- **Secure & governed access**
  - **Agents / Workflow Service**
- Store results
- Data App for ease of use

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# Use case 2: RFI Chatbot

# Customer Care Department: RFI

- Pain point
  - Time-consuming process
  - Many stakeholders involved for various topics (Functionalities, security, legal, ...)
  - Bias, errors and inconsistencies
  - Information is scattered and potentially outdated

- Requirements
  - Consistency
  - Option to correct results
  - Update information regularly
  - Traceability of edits
  - Secure management of customer documents

Questions….

- Is KNIME open-source?
- Which machine learning algorithms are available in KNIME?
- What are the SLAs for critical incidents?

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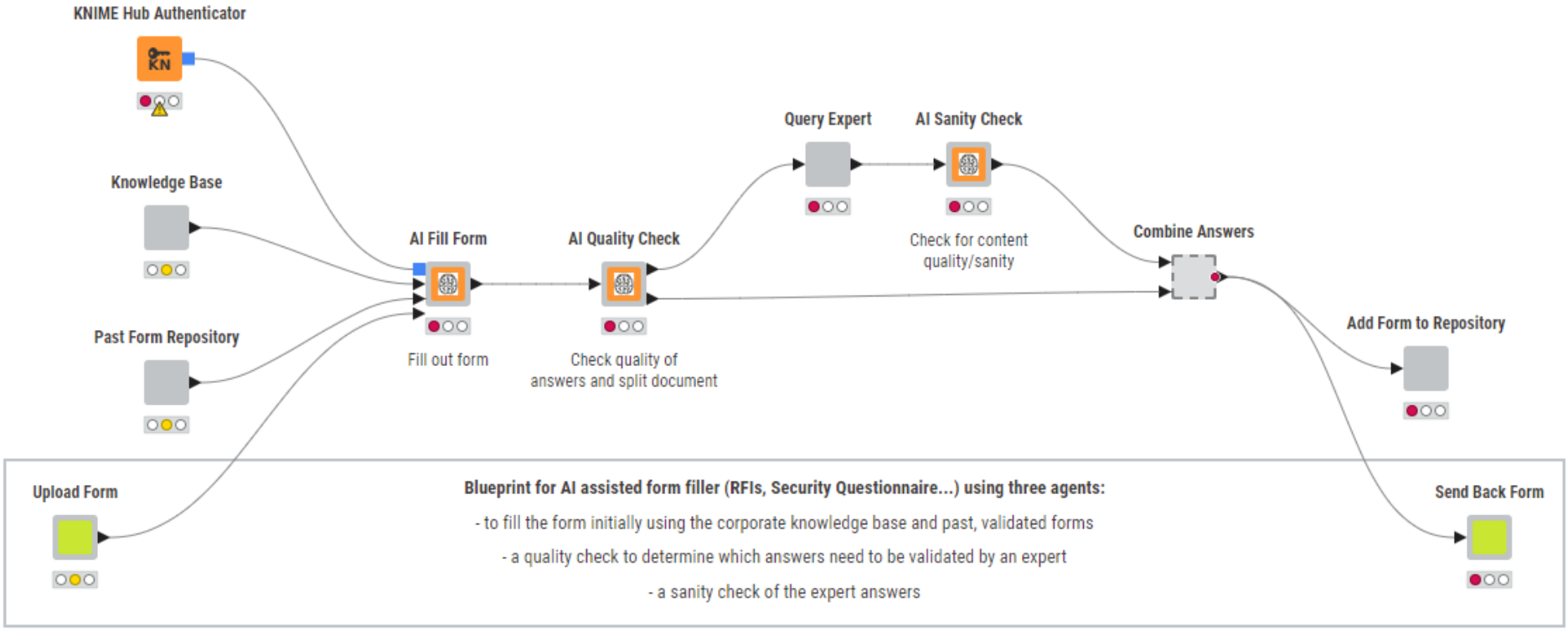
# Intelligent Data Apps: Questionnaire Assistant (RFI, …)

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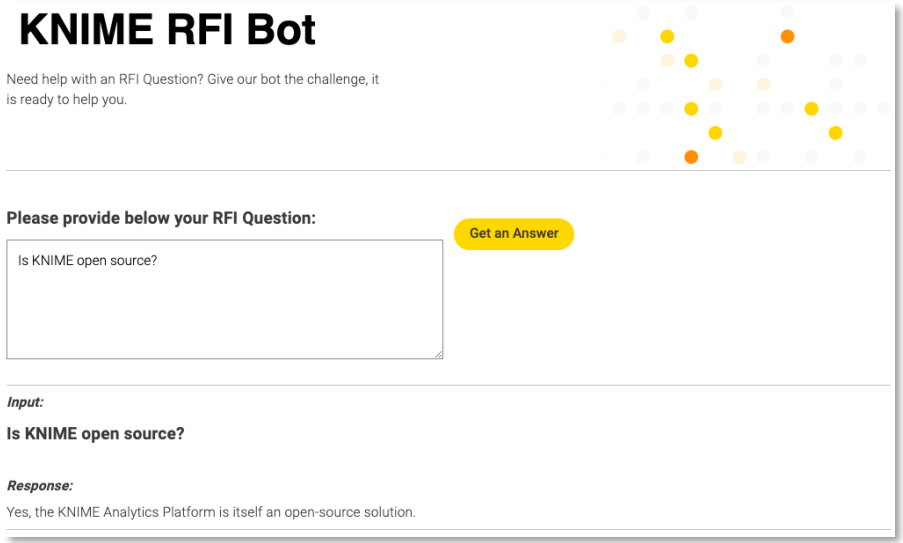
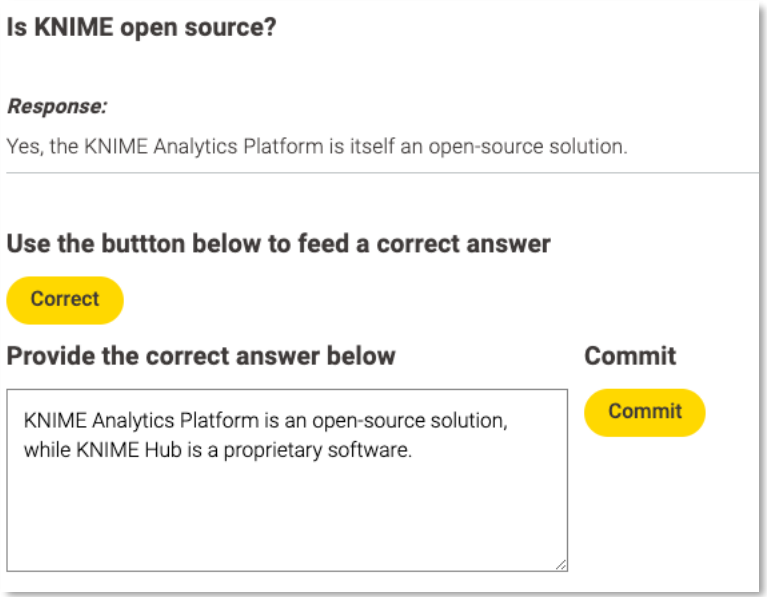
# Data App

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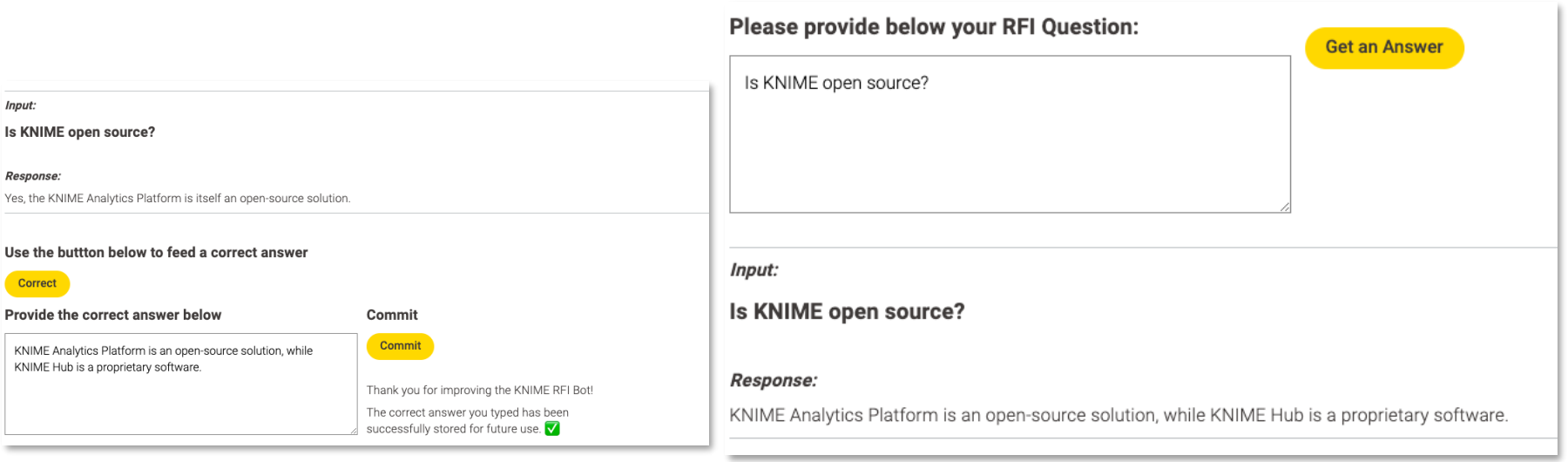
# Workflows + AI + Human

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# Highlights

- Intelligent data app with human in the loop
- Improving and maintaining answers using RAGs
  - Updating responses
  - Adding new responses
  - Keep track of interactions
- Secure & governed process using agents

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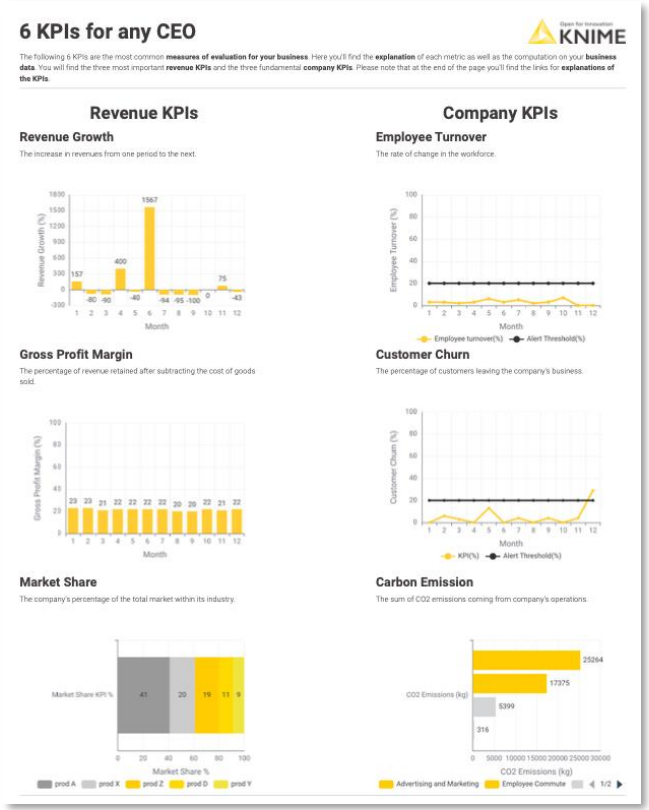
# Bonus use case: KPI Interpreter

# Management Department: KPI Interpreter

- Pain point
  - Several KPIs
  - Quick action needed
- Requirements
  - Orchestration (collect, report, interpret)
  - Local models
  - Regular execution

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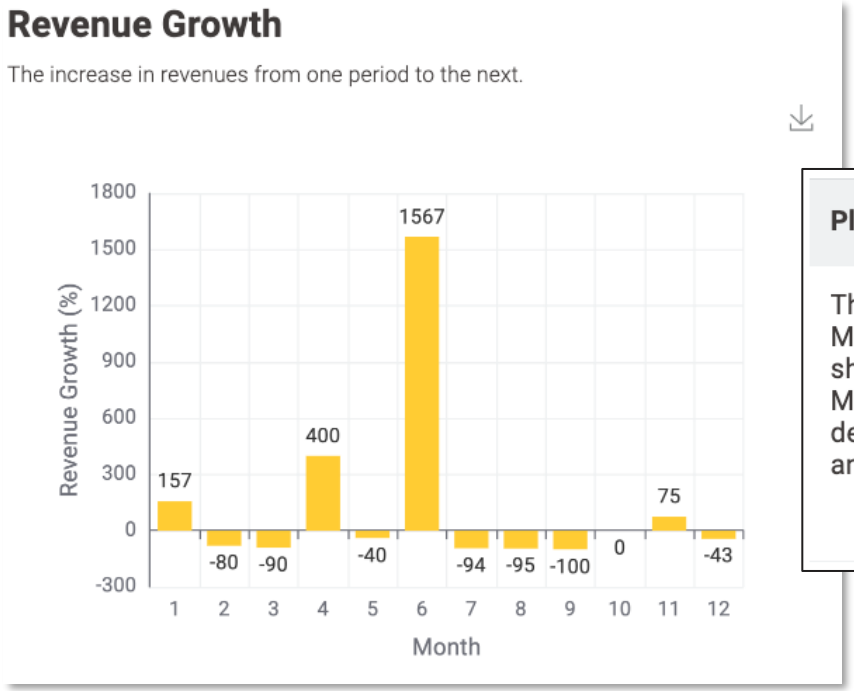
# KPI Interpreter




**Plot interpretation & recommendation**

The graph shows rapid revenue growth, peaking at 1567% in Month 6, but declining thereafter. Key observations include a sharp increase between Months 3-5 and a sudden drop after Month 6. Recommendations: investigate causes for the decline, identify strategies to maintain or increase growth, and diversify revenue streams.

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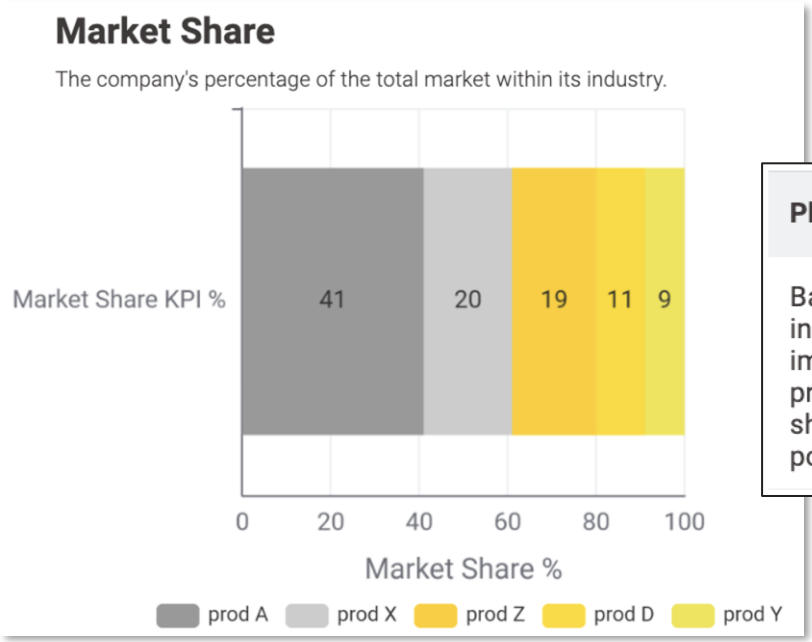
# KPI Interpreter




**Plot interpretation & recommendation**

Based on the KPI graph, we recommend continuing to invest in Prod A to maintain its competitive edge and focus on improving and expanding Prod X to increase its market presence. The remaining products have relatively low market shares, suggesting a reassessment of their viability or potential discontinuation may be necessary.

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# Workflow orchestration

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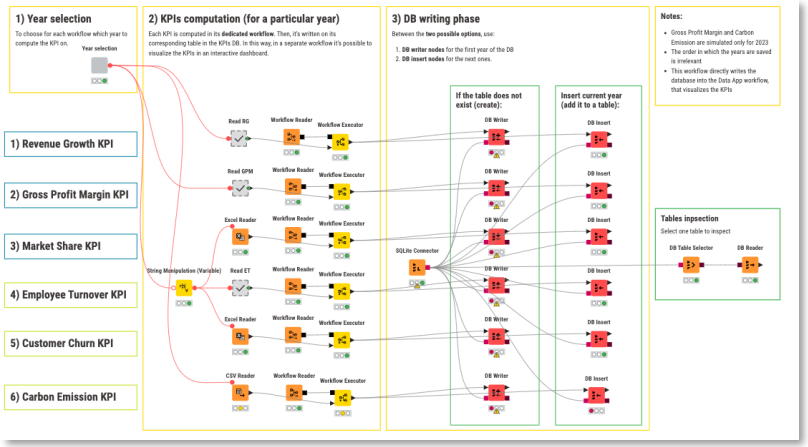
# Data lake creation




- Access various data sources
- Collect in data lake

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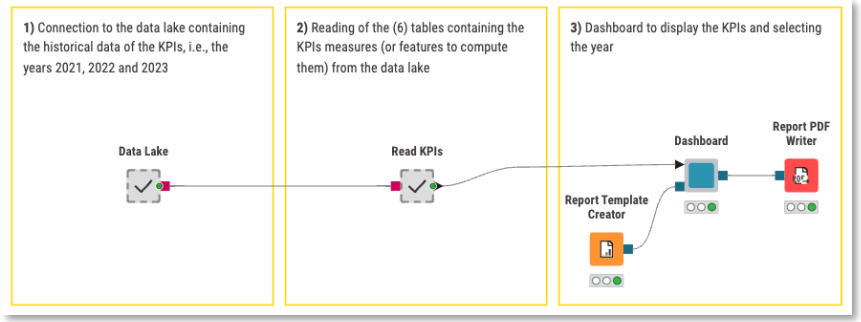
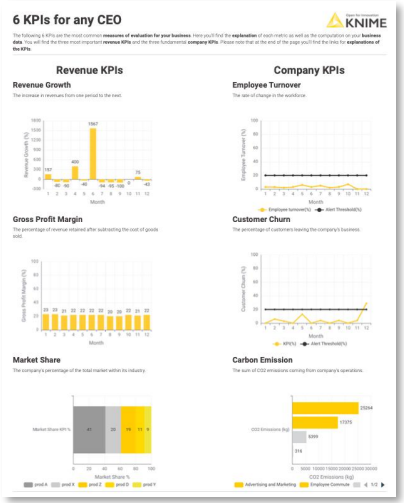
# Report generation




- **Schedule** execution
- Read latest data from data lake
- Generate a report



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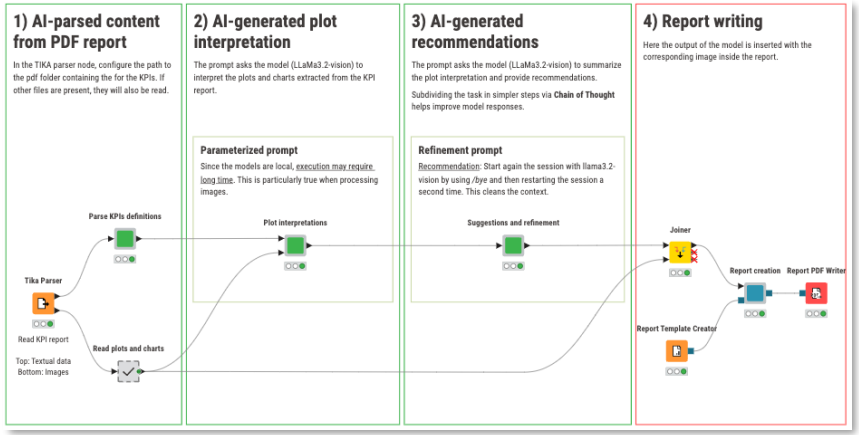
# Report interpretation




- **Trigger** execution if a new report is detected
- Parse pdf report
- Interpret with LLMs
- Refine and add suggestions with another LLMs. All in same environment

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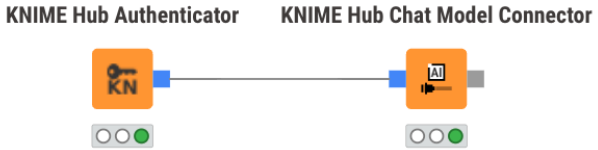
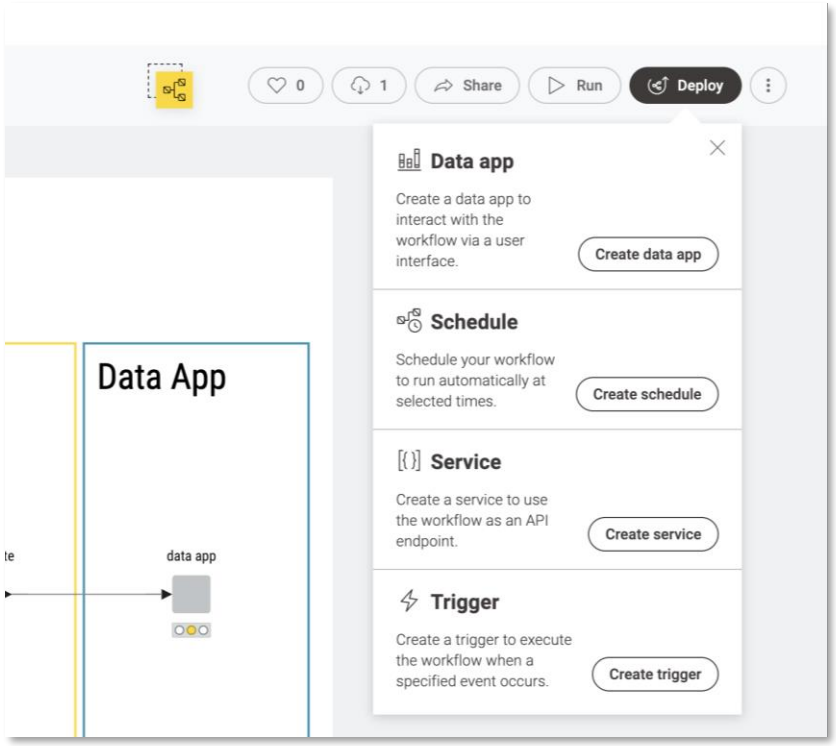
# Highlights

KNIME Business Hub

- Orchestration
  - Schedule
  - Trigger
- Routing control
  - GenAI gateway
  - Local model

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# Recap

| | | Accessibility and Transparency | Guardrails | Automation |
|---|---|---|---|---|
| **CV Summarization** | | Data app | Anonymization | Store data in DB |
| **RFI Chatbot** | | Traceability | Human in the loop | Vector store management |
| **KPI Interpreter (+data lake + report generator)** | | Report | Routing control (GenAI gateway) Local models | Workflow orchestration |

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# Thank you

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