

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

DataHop Singapore

10 December 2024

Are you innovating with data & AI?

26%

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

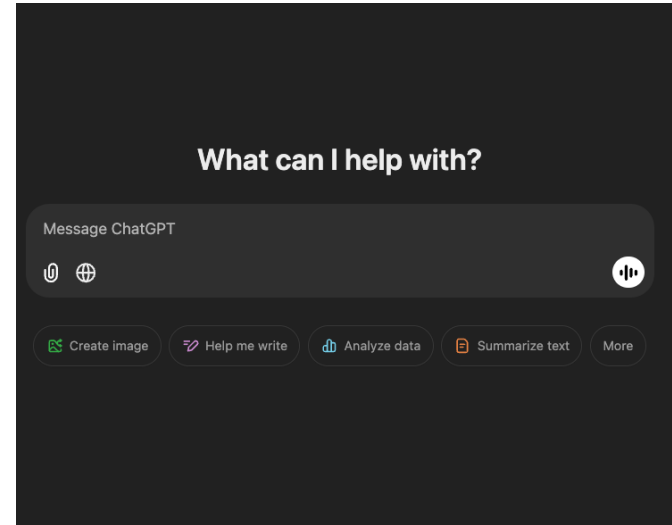
57%

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

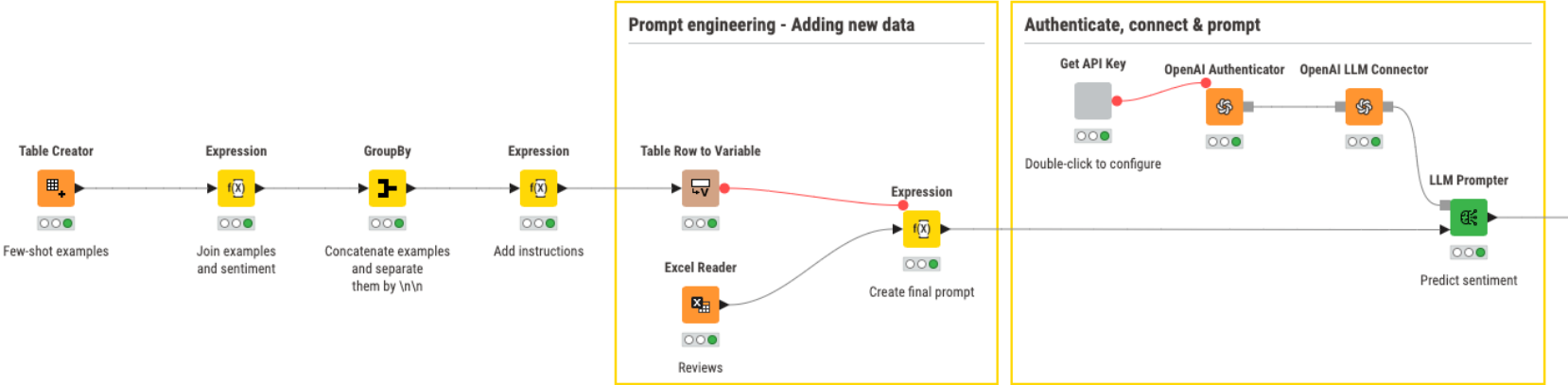
42%

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

Why can't I just use ChatGPT in the browser ?



Workflows



3 advantages

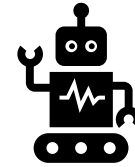
Of combining workflows and AI



Accessibility and
transparency



Guardrails



Automation

Abstract geometric lines in the top right corner, consisting of several overlapping, thin white lines forming a complex, angular shape against the yellow background.

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

The collage displays several resume and CV samples:

- Functional Resume Sample:** For John W. Smith, a 2002 graduate of Front Range Way Fort Collins, CO. It includes sections for Career Summary, Adult Care Experience, Childcare Experience, Employment History, and Education.
- Alice:** A character profile for Alice, an adventurer born in 1865. It includes an 'About me' section, 'Skills' (Java, polite, outgoing, good manners, pursuer of rabbits), and 'Other information'.
- Jack Sparrow:** A resume for Captain Jack Sparrow, featuring a 'Short Summary', 'Degrees' (Bachelor's in Tortuga Law), 'Hobbies' (Poker, The Code, Beer), 'Certificates & Grants', 'Publications', 'Strengths', and 'References'.
- Captain of the Black Pearl:** A resume for the Captain of the Black Pearl, featuring a 'Short Summary', 'Degrees' (Bachelor's in Tortuga Law), 'Hobbies' (Poker, Beer), 'Certificates & Grants', 'Publications', 'Strengths', and 'References'.

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

The screenshot displays a web application interface with two main sections: 'Candidates' and 'CV Summaries'.

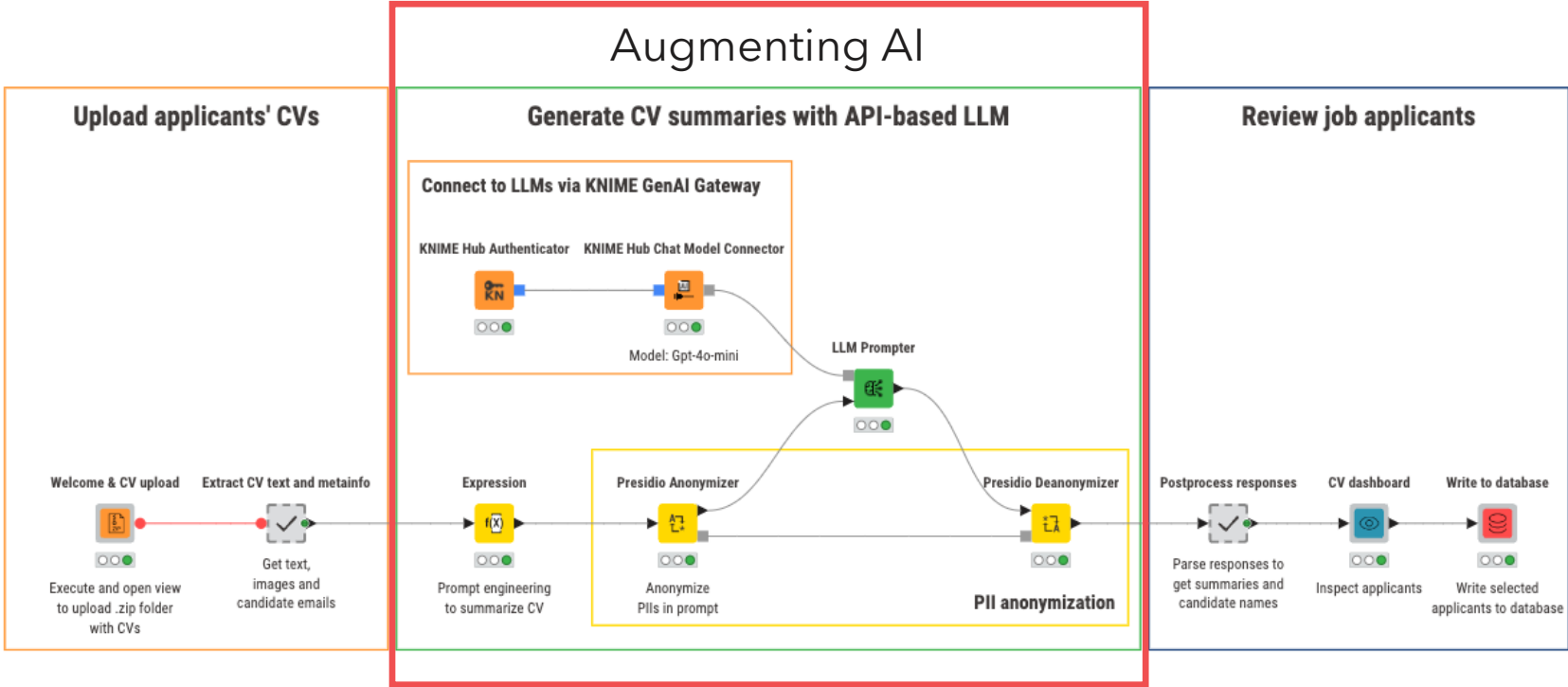
Candidates Section:

- Header: 'Candidates' with a 'Show' dropdown menu set to 'entries'.
- Three candidate cards are shown in a row:
 - Card 1: Features an image of Alice from 'Alice's Adventures in Wonderland'. Below the image is the email 'Email: alice@wonderland.com' and a blue checkmark icon.
 - Card 2: Features an image of Jack Sparrow. Below the image is the email 'Email: jack@sparrow.com' and a blue checkmark icon.
 - Card 3: Features a Guy Fawkes mask. Below the image is the email 'Email: jwsmith@colostate.edu' and an unchecked checkbox.
- Below the cards, it says 'Showing 1 to 3 of 3 entries' and has 'Previous', '1', and 'Next' navigation buttons.

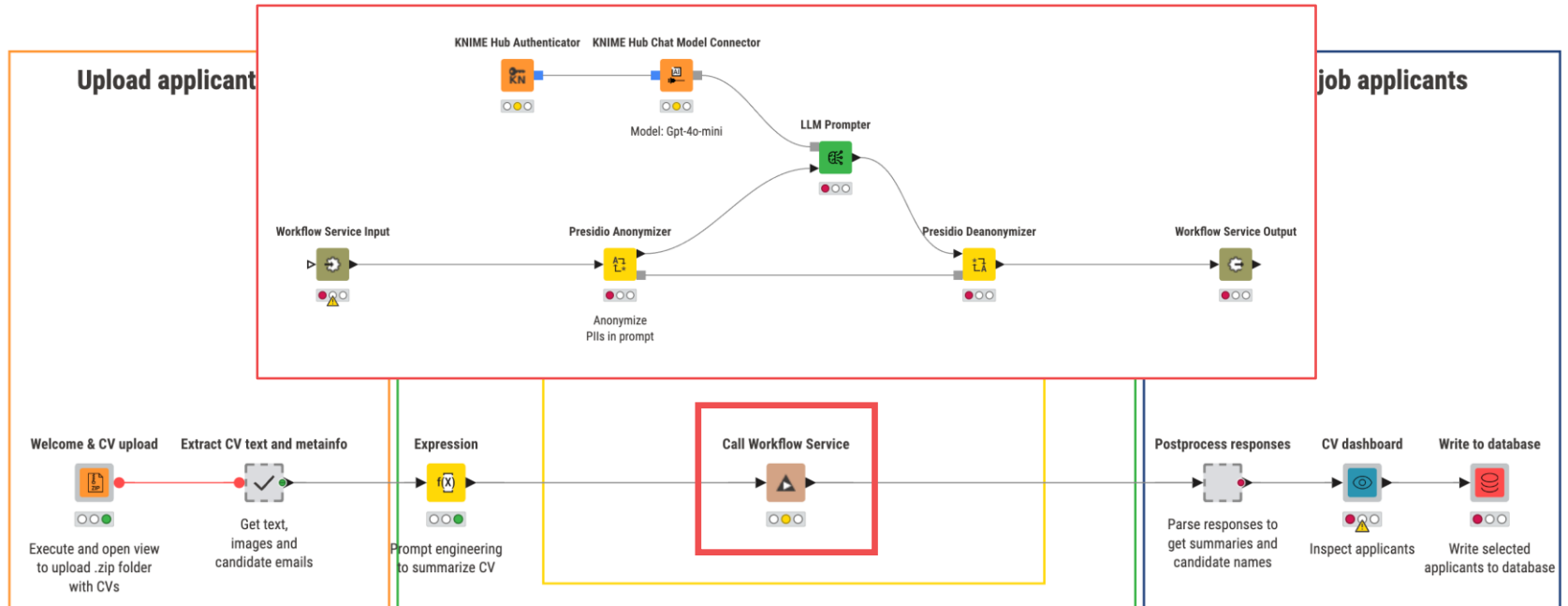
CV Summaries Section:

- Header: 'CV Summaries' with a 'Show' dropdown menu set to 'entries' and a search bar.
- A list of three CV summaries is displayed, each with a checkbox and a title 'CV summary':
 - Summary 1 (checked): 'Alice is a Ph.D. candidate in Computer Science with a focus on social cohesion. She has a strong background in mathematics and physics, and has published 26 works, including chapters on her experiences in a fantastical world. Described as a sensible and curious character, she navigates her environment with a logical approach, reflecting her Victorian upbringing. Her skills include Java programming and she possesses a strong sense of entitlement and good manners, often comparing herself to others in her social circle.'
 - Summary 2 (checked): 'Experienced pirate and captain with a history of leading ships in Tortuga and specializing in buccaneering. Fluent in English and French, with a degree from Tortuga University. Notable achievements include finding secret treasure and navigating the challenges of piracy. Skilled in various programming languages and holds multiple pirate certifications. Known for a charismatic personality and a penchant for adventure.'
 - Summary 3 (unchecked): 'The candidate has four years of experience in early childhood development, specializing in the care of special needs children and adults. They have managed client databases, coordinated with healthcare professionals, and supervised volunteer workers in adult care. In childcare, they oversaw service assignments for counselors and client families, assisted with financial and healthcare research for families, and supported teachers in classroom activities. The candidate holds a BS in Early Childhood Development and a BA in Elementary Education from the University of Arkansas at Little Rock, with a strong academic record.'

Workflow

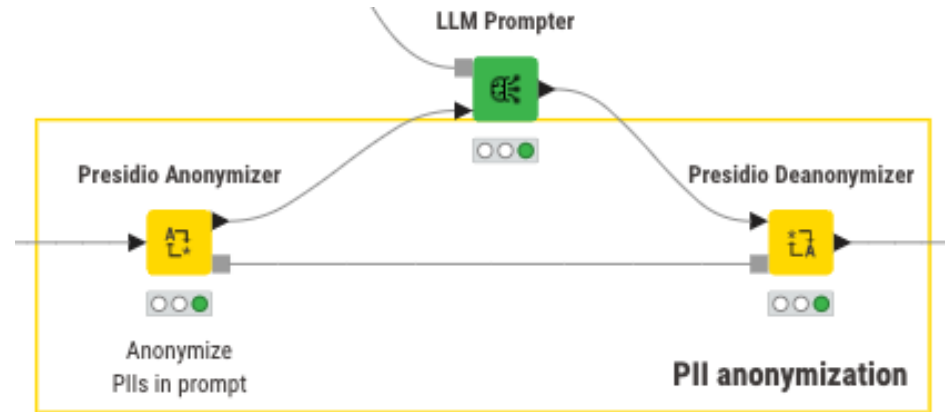


Reusability through Agents



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



A series of overlapping, thin white lines forming abstract geometric shapes, primarily triangles and quadrilaterals, located in the top right corner of the slide.

Use case 2: RFI Chatbot

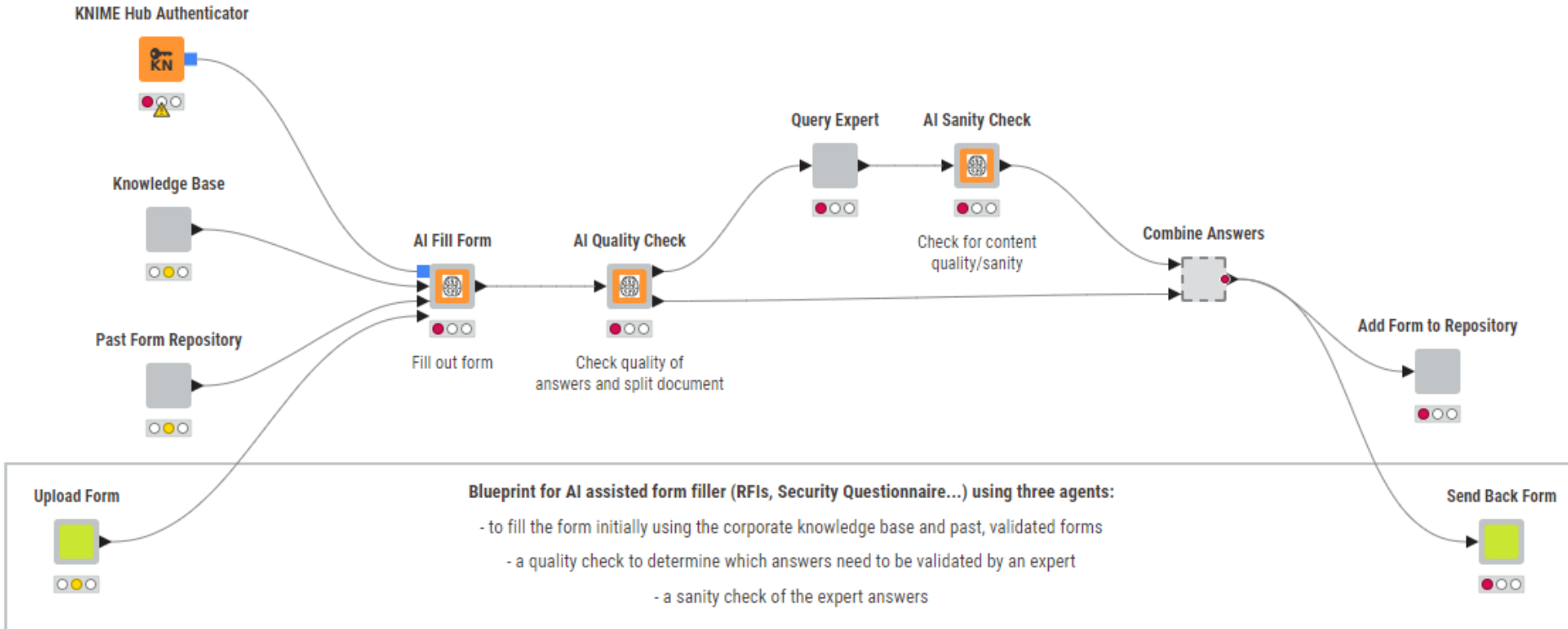
Customer Care Department: RFI

- 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?

Intelligent Data Apps: Questionnaire Assistant (RFI, ...)



Data App

KNIME RFI Bot

Need help with an RFI Question? Give our bot the challenge, it is ready to help you.



Please provide below your RFI Question:

Is KNIME open source?

Get an Answer

Input:

Is KNIME open source?

Response:

Yes, the KNIME Analytics Platform is itself an open-source solution.

Is KNIME open source?

Response:

Yes, the KNIME Analytics Platform is itself an open-source solution.

Use the button below to feed a correct answer

Correct

Provide the correct answer below

Commit

KNIME Analytics Platform is an open-source solution, while KNIME Hub is a proprietary software.

Commit

Workflows + AI + Human

Input:

Is KNIME open source?

Response:

Yes, the KNIME Analytics Platform is itself an open-source solution.

Use the button below to feed a correct answer

Correct


Provide the correct answer below

KNIME Analytics Platform is an open-source solution, while KNIME Hub is a proprietary software.

Commit

Commit

Thank you for improving the KNIME RFI Bot!

The correct answer you typed has been successfully stored for future use. 

Please provide below your RFI Question:

Get an Answer

Is KNIME open source?

Input:

Is KNIME open source?

Response:

KNIME Analytics Platform is an open-source solution, while KNIME Hub is a proprietary software.

Highlights

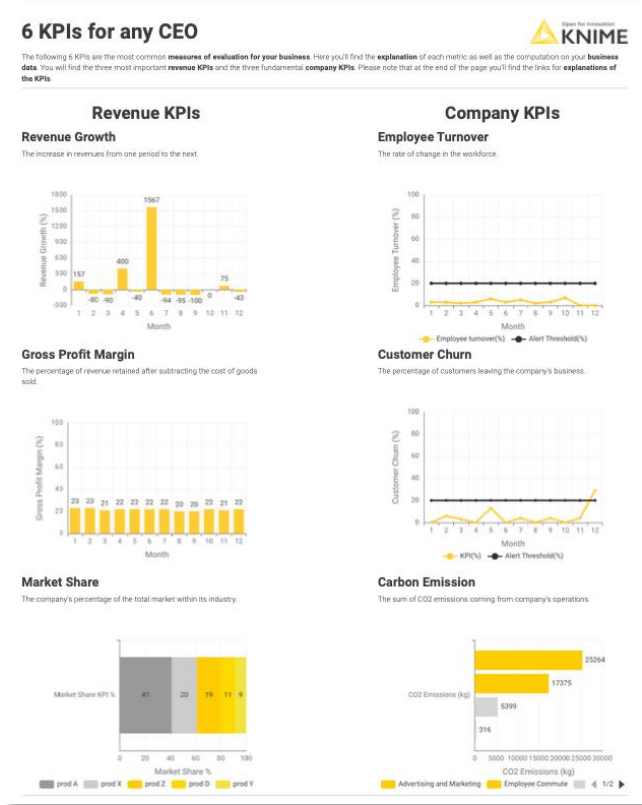
- Intelligent data app with human in the loop
- Improving and maintaining answers using RAGs
 - Updating responses
 - Adding new responses
 - Keep track of interactions
- Secure & governed process using agents

A series of overlapping, thin white lines forming abstract geometric shapes, primarily triangles and quadrilaterals, located in the top right corner of the slide.

Bonus use case: KPI Interpreter

Management Department: KPI Interpreter

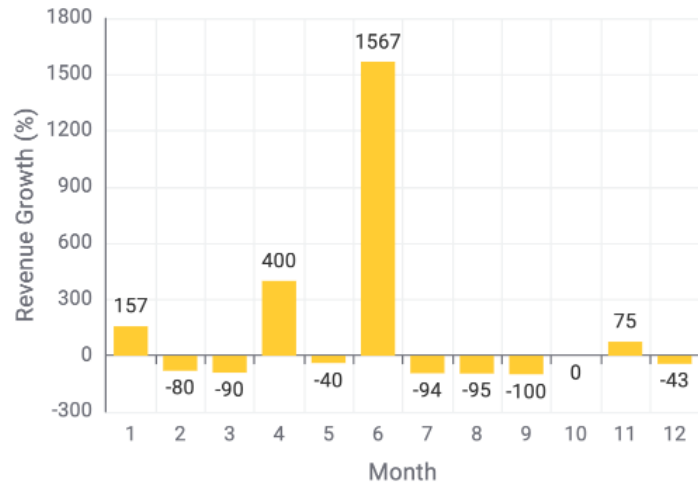
- Pain point
 - Several KPIs
 - Quick action needed
- Requirements
 - Orchestration (collect, report, interpret)
 - Local models
 - Regular execution



KPI Interpreter

Revenue Growth

The increase in revenues from one period to the next.



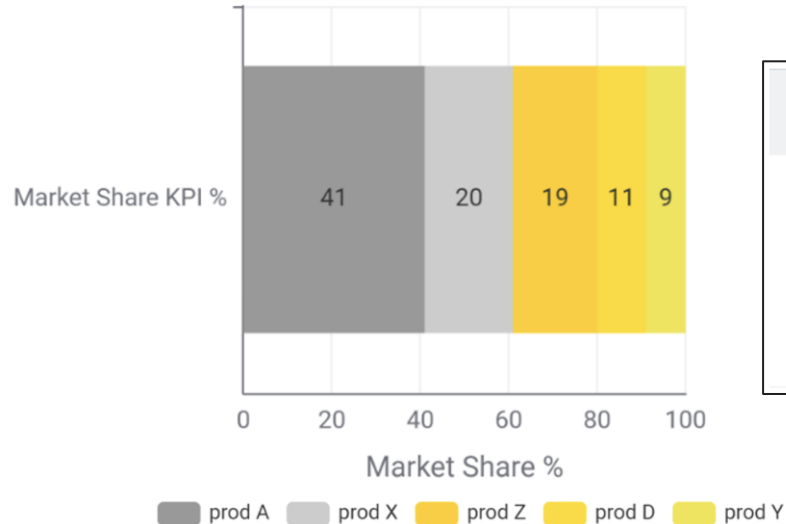
Plot interpretation & recommendation

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.

KPI Interpreter

Market Share

The company's percentage of the total market within its industry.



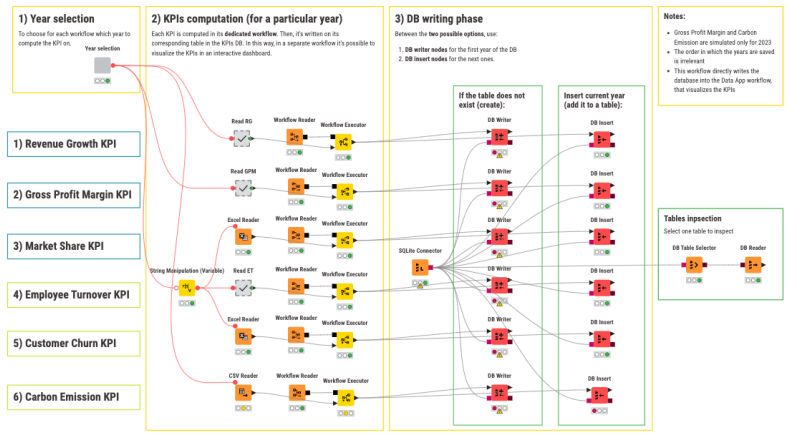
Plot interpretation & recommendation

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.

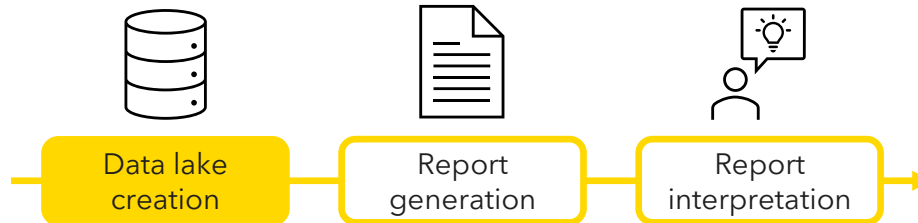
Workflow orchestration



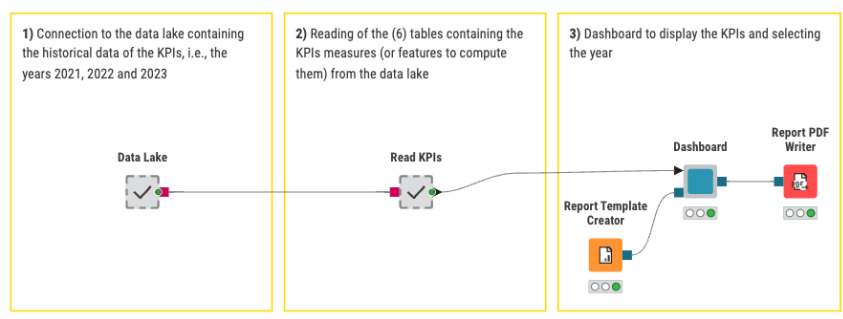
Data lake creation



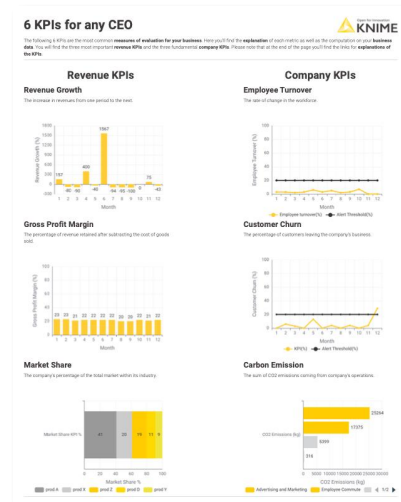
- Access various data sources
- Collect in data lake



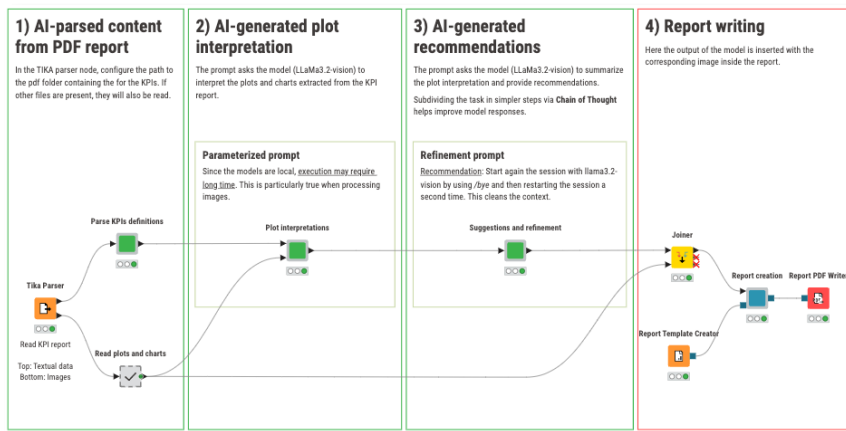
Report generation



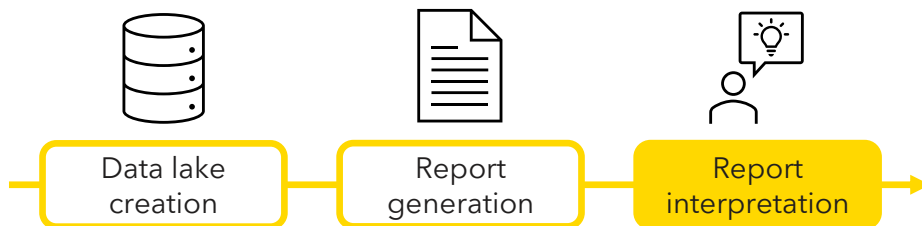
- **Schedule** execution
- Read latest data from data lake
- Generate a report



Report interpretation



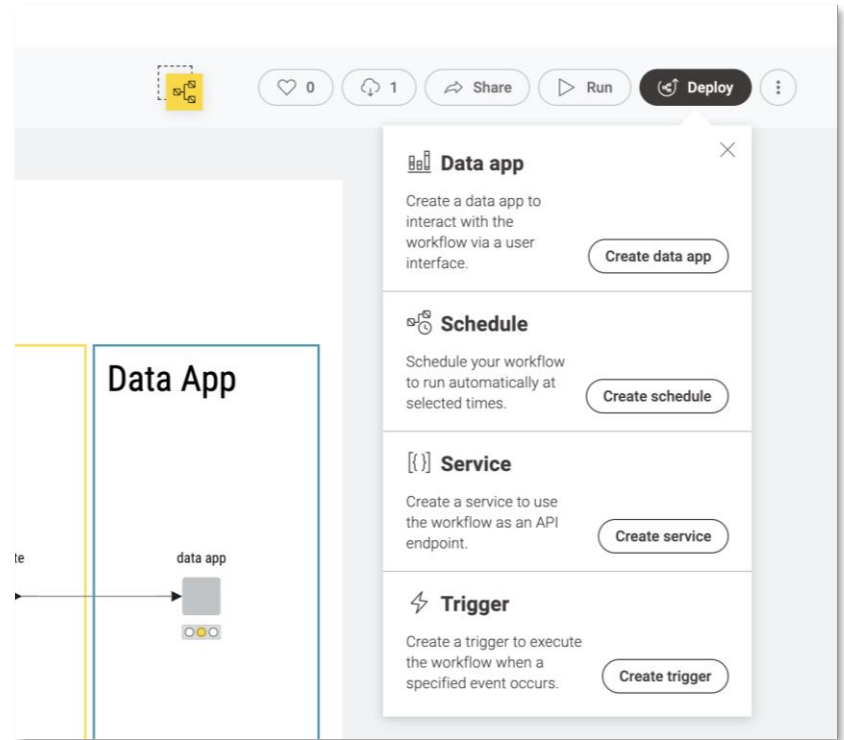
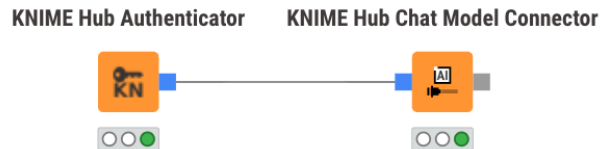
- **Trigger** execution if a new report is detected
- Parse pdf report
- Interpret with LLMs
- Refine and add suggestions with another LLMs. All in same environment





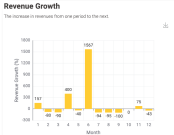
Highlights

KNIME Business Hub

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



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

Thank you