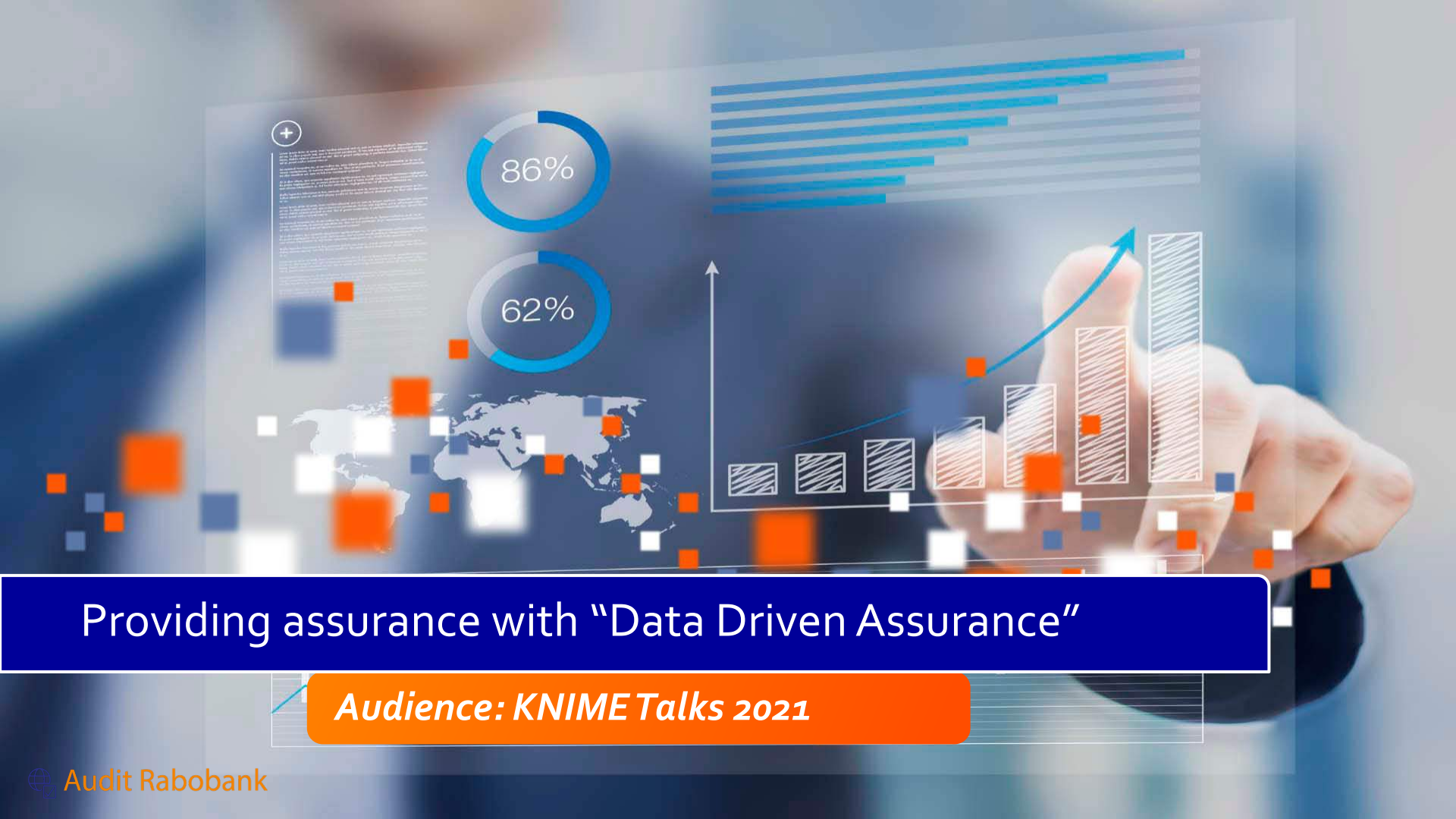


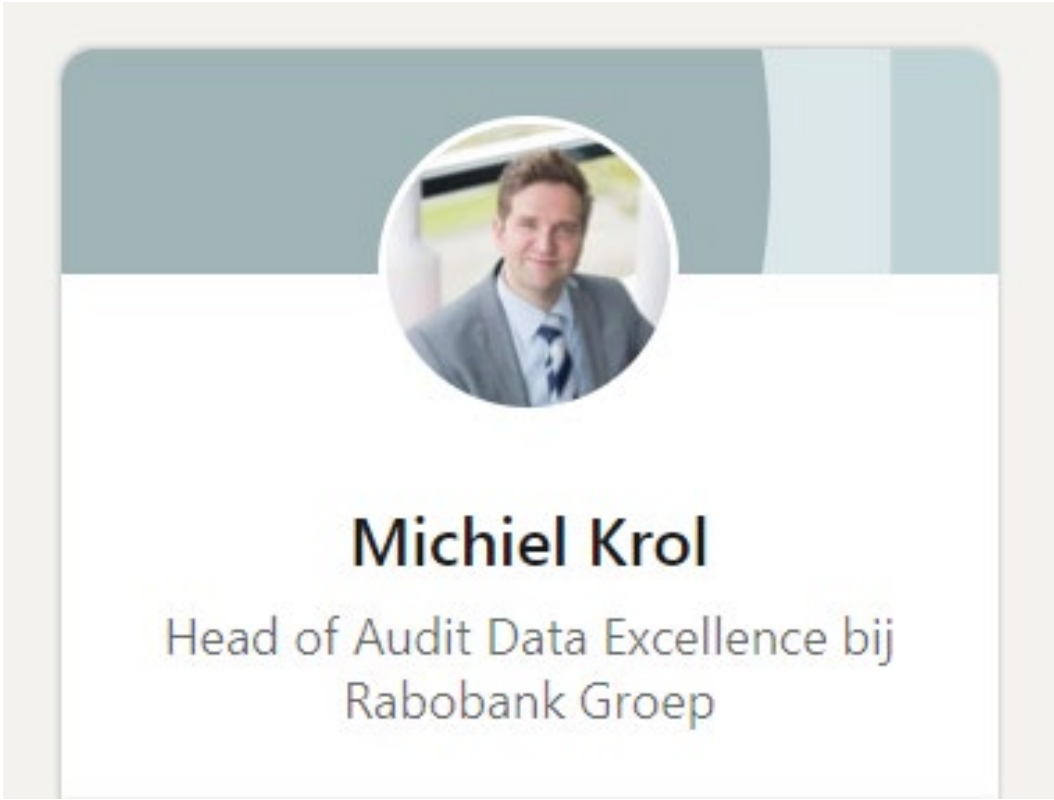
Providing assurance with "Data Driven Assurance"

Audience: KNIME Talks 2021

Audit Rabobank

Thanks for having me…

Who am I?



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GENERALI

PA

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TILBURG UNIVERSITY

Digital world drives need for NextGen Audit

The digital world is changing rapidly and is becoming more an more data driven

This also has a profound impact the Audit profession, on Audit services and on auditors

EFFICIENT	EFFECTIVE	COMPLIANT
-10/20% HOURS	ASSURANCE LEVELS UP IN *TWO* IN *THREE* AUDITS	DATASETS READILY AVAILABLE FOR Q&A

Audit Rabobank has set three ambitious data driven targets

DDA is 90% smart business intelligence and 10% advanced analytics applied in the audit cycle

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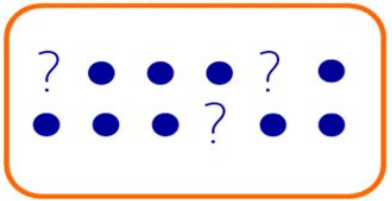
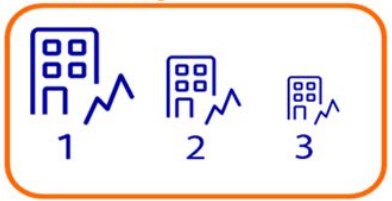
How often? How much?
Descriptives & Dashboarding

Is this complete and correct?
Data quality profiling & Reconciliation



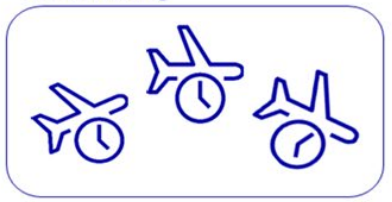
How does this compare?
Benchmarking



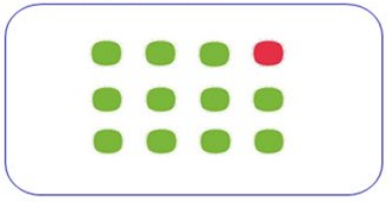
Is this logical?
Business rules & Smart Stitching

How does this change?
Trend analysis

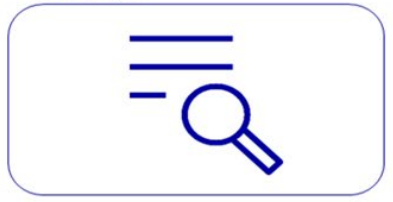
What steps, who, how long?
Process mining



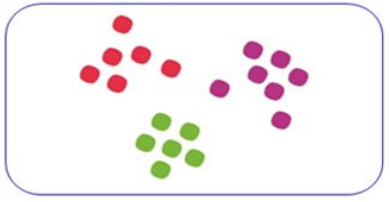
Is this weird?
Anomaly detection



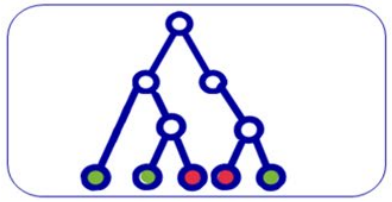
What do the words reveal?
Text analysis



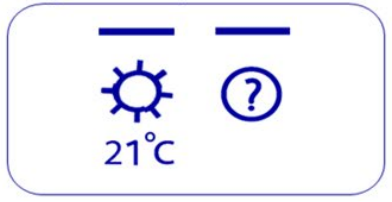
How is this organized? (1)
Clustering analysis



How is this organized? (2)
Decision tree



How much? How many?
Regression analysis



Is this A or B?
Classification

It is a Target Operating Model rather than only a team of specialists

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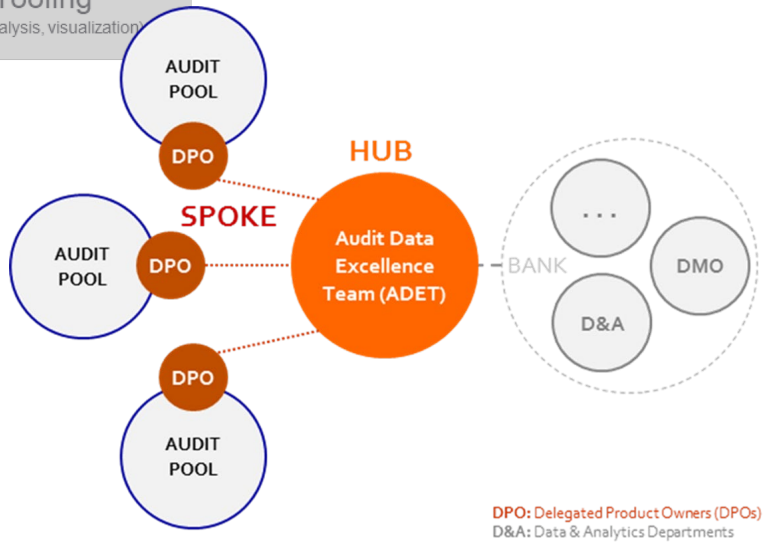
ORGANISATION	PEOPLE	DATA	TECHNOLOGY
Operating Model	Staffing	Data Acquisition	Architecture *(e.g. Data Lake, Data Lab, Data Factory)*
Innovation Cycle	Learning & Development	Data Governance & Operations	Tooling (e.g. analysis, visualization)
Ways of working	Data Driven Culture		



DPO: Delegated Product Owners (DPOs)
D&A: Data & Analytics Departments
DMO: Data Management Office

Start small… scale fast

Test the value

We identified and delivered the first 7 showcases to test the value of data in audit

7
cases

2017

Build the operating model

We implemented a hub & spoke model and trained 300 auditors to become data driven

13
cases

2018

Data Driven Assurance

35
cases
per yr

2019

57
cases
per yr

2020

No change without challenges

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LEARNINGS:

- Tone at the top, strategic change
- Auditor analysts drive scale up
- Carrot and the stick
- Integrated in Audit Procedures
- Benefit realization
- Data approval process

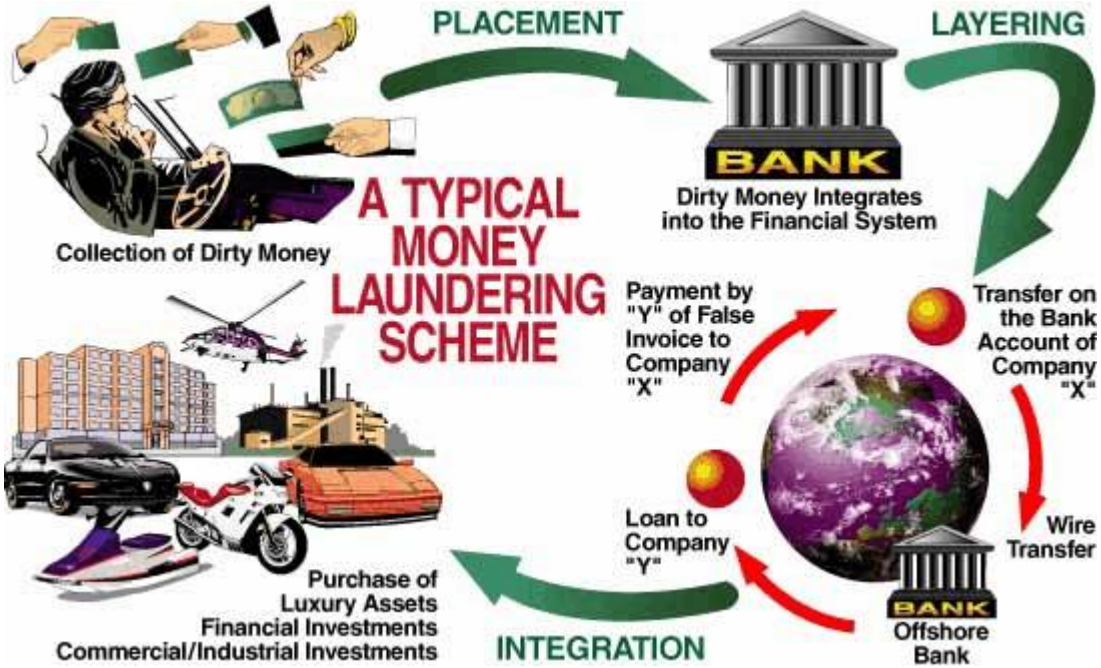
CHALLENGES:

- Conservatives
- Top-down hypotheses
- Next maturity Lab environment
- More positive assurance

USE CASE

Anomaly Detection: Unknown Patterns in Anti-Money Laundering

What is AML?



Source: UNODC

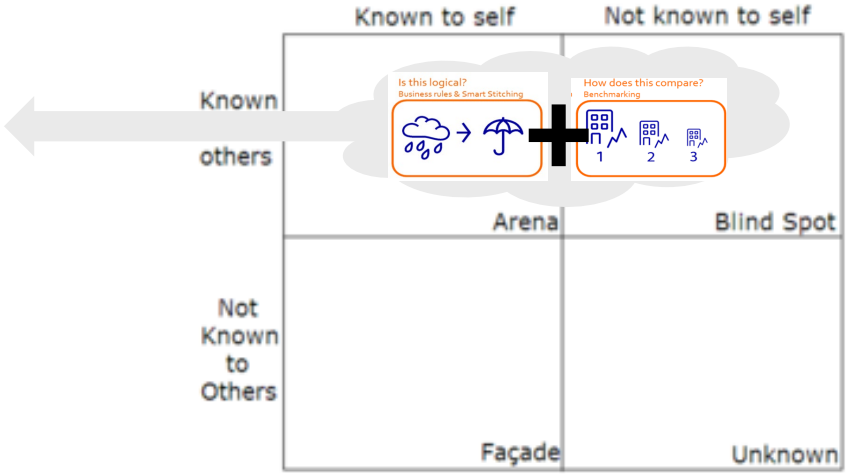
Known versus unknown patterns

Hypothesis A

Hypothesis B

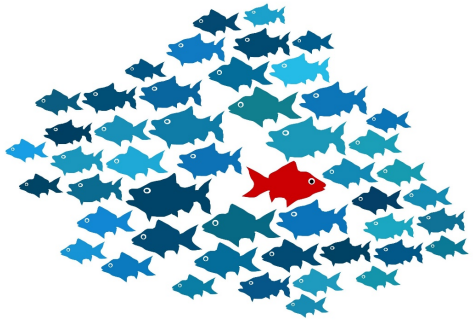
Hypothesis C

Set of defined business rules



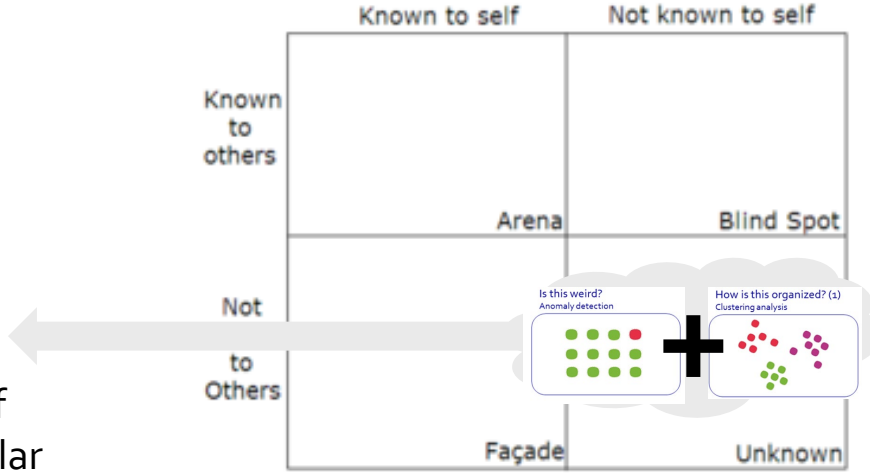
Johari window (1955)

Known versus unknown patterns



What are the clients that show different behavior than others?

What are clusters of clients that show similar behavior?



Johari window (1955)

KNIME for non-techies

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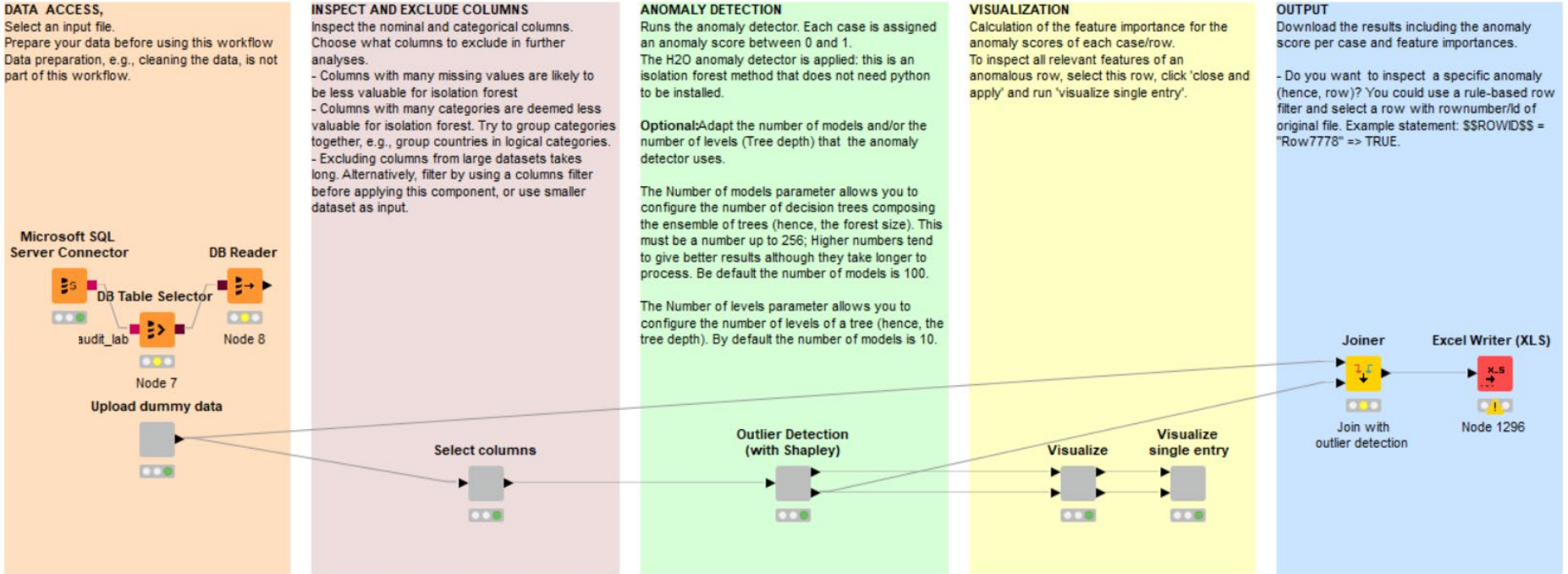

Under-the-hood…

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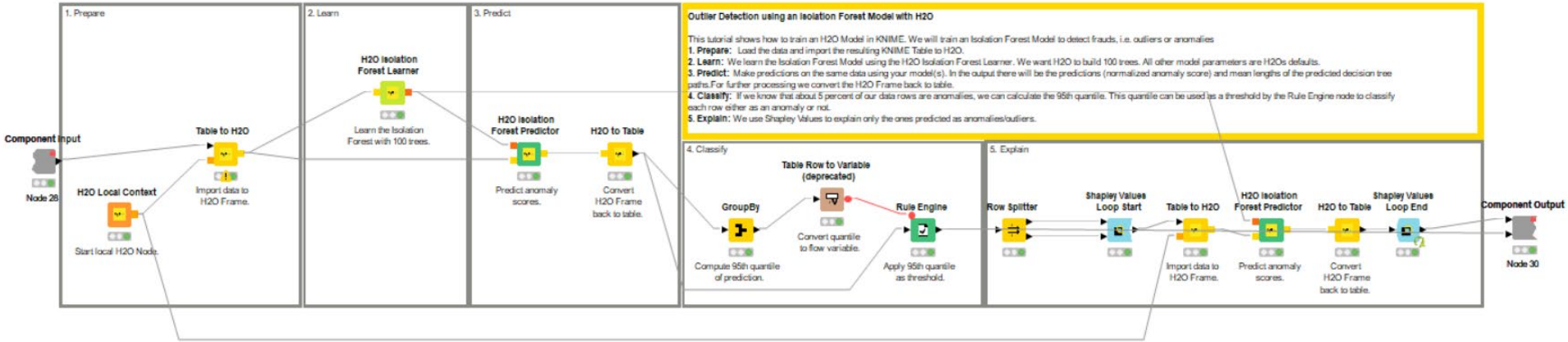

The art of anomaly detection

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Points to take into account

- Start small (<n variables)
- Understand the detected anomalies
- Garbage in, garbage out! Quality of the input…
- Very very important which features you import in the model
- You can have groups with the same anomaly scores → identify clusters
- Spot data quality issues

Thanks for listening, be involved!