



Venue: Factory of the Future
Elbfabrik, Magdeburg, Germany

UNESCO UNEVOC Centre Magdeburg

Expert Meeting on AI and TVET

Be at the forefront of AI-driven education and training



AI and knowledge transfer

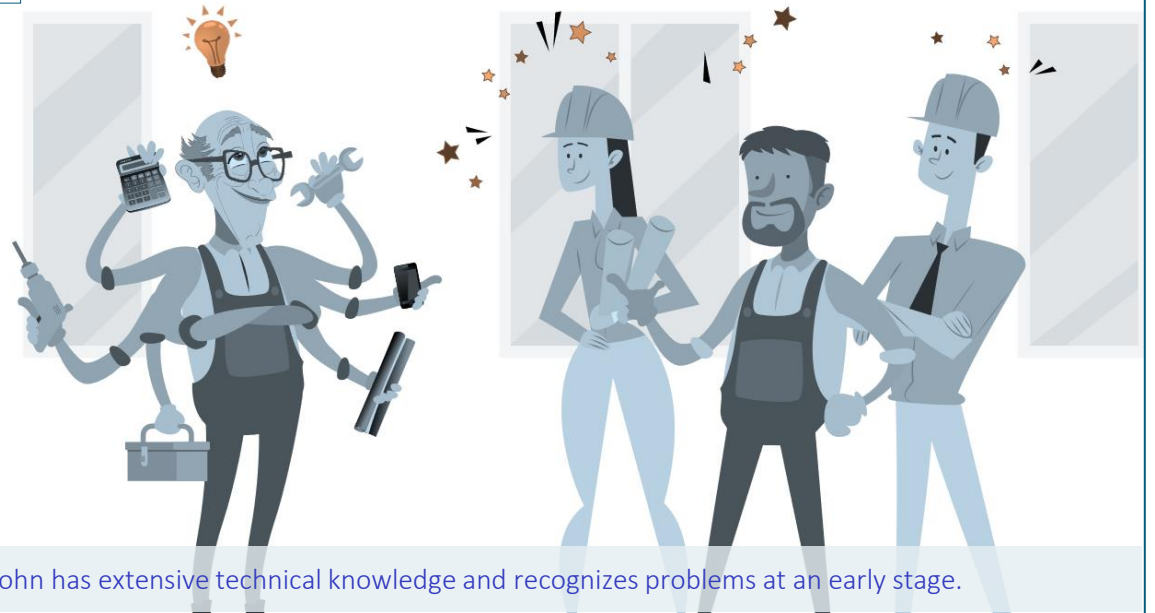
Prof. Tina Haase
Magdeburg, February 18, 2025

1



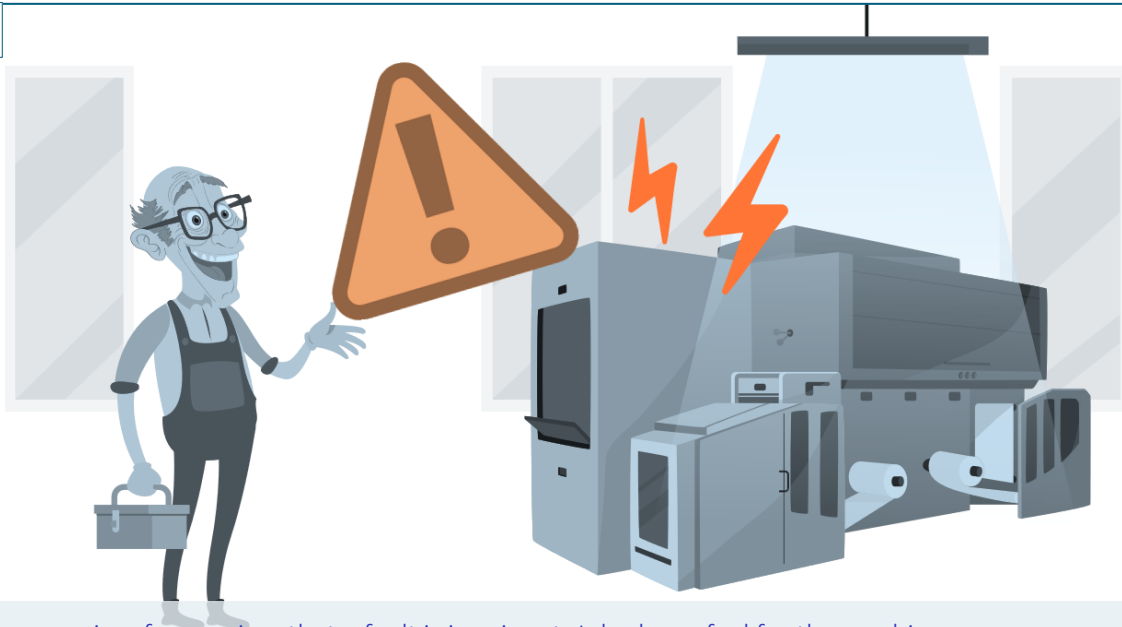
John: experienced technician with more than 20 years of experience in maintenance.

2



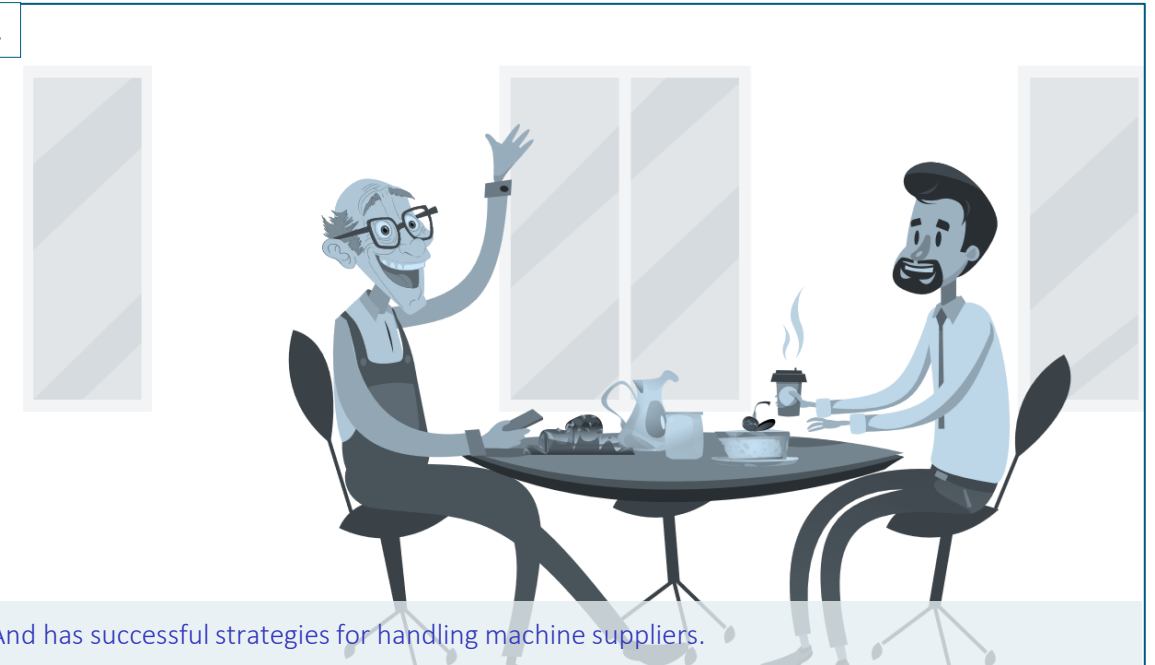
John has extensive technical knowledge and recognizes problems at an early stage.

3



He recognizes from noises that a fault is imminent. John has a feel for the machine.

4



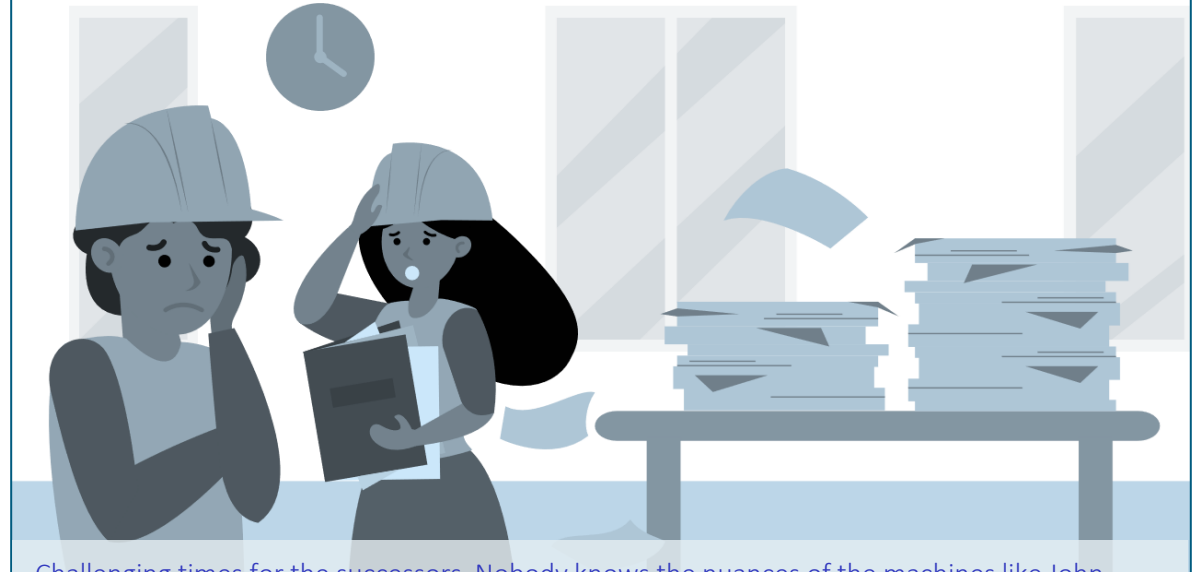
And has successful strategies for handling machine suppliers.

5



John is going into well-deserved retirement. What does this mean for his colleagues?

6



Challenging times for the successors. Nobody knows the nuances of the machines like John.

7



Machine failure - long downtimes - rising costs - contractual penalty

8



How did John do it? It looked so simple. There's nothing in the manual...

Agenda

01

What knowledge is relevant?

...

02

How do we get the knowledge ...

... from the expert?

... into a database?

... into vocational and advanced training?

03

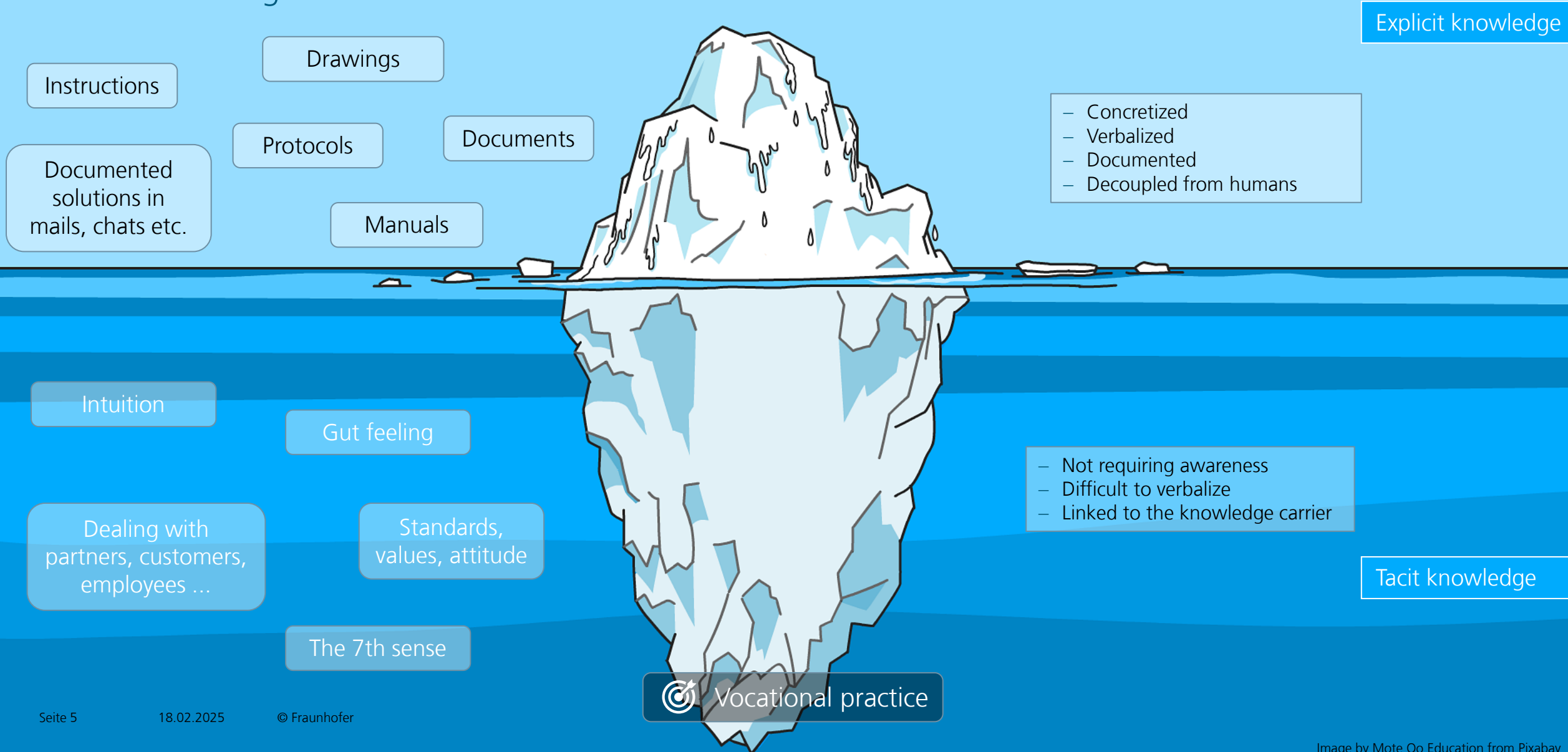
New technologies – new research questions

...



Types of knowledge

Which knowledge is to be transferred?

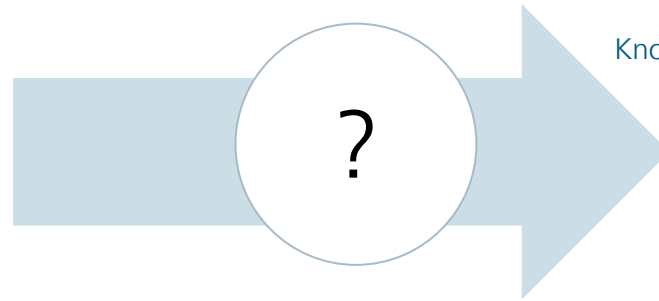


The main question

How is the knowledge transferred to training and further education?



Expert
Knowledge provider



Novice
Knowledge taker
Learner



Novice
Knowledge taker
Learner



Novice
Knowledge taker
Learner



Novice
Knowledge taker
Learner



Novice
Knowledge taker
Learner



Novice
Knowledge taker
Learner

The process

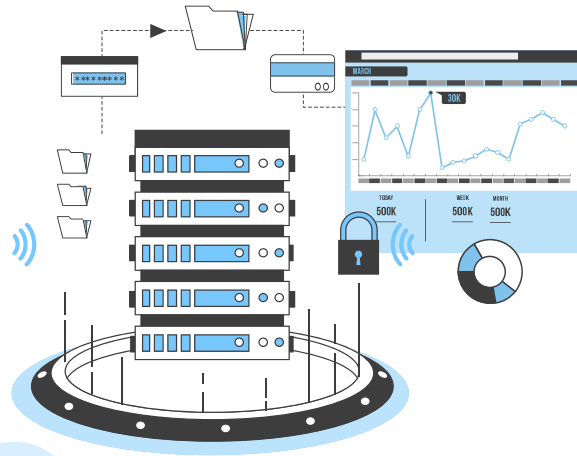
From the expert ... to a knowledge base ... to vocational training



01

Narrative methods

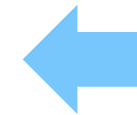
- Stories
- Critical Incidents
- Human-to-human
- E.g. triad interviews, storytelling



02

Database (partially) structured

- Audio / transcripts of the narratives
- Documents and other explicit knowledge



03

Access to knowledge

- User-adaptive processing
- Valid content
- How can the implicit character be ensured?

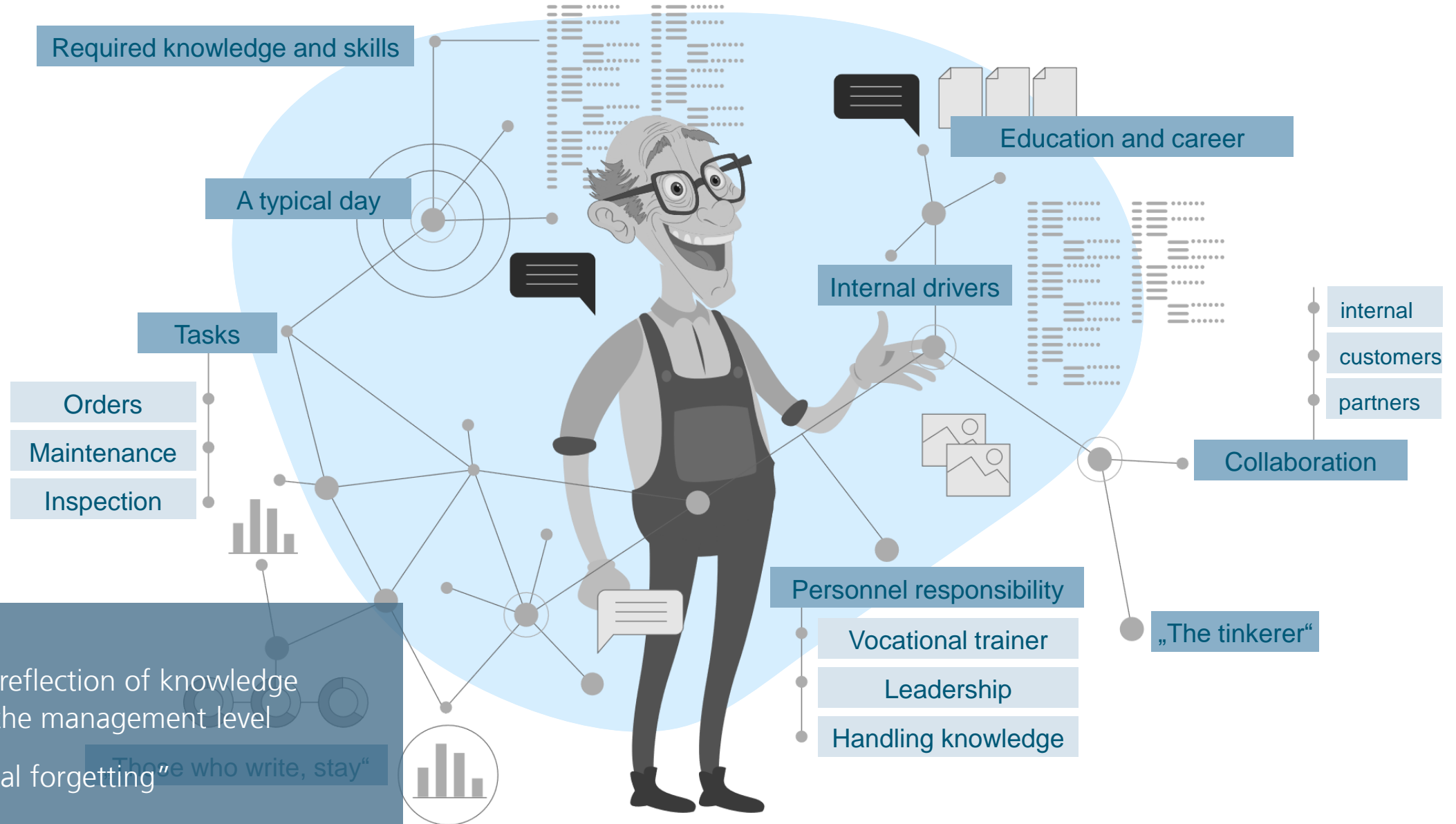
01

Human-to-human exchange



How to get the knowledge from the expert

Step 1: Identify relevant knowledge



✓ Selection and reflection of knowledge content with the management level

✓ "Organizational forgetting" **"Those who write, stay"**

How to get the knowledge from the expert?

Human-to-human exchange – Dialogue spaces are without alternative?!

Step 2: Gathering experiential knowledge

Triad interview



The potential of AI

Chances

AI assists the moderator:

- ✓ reveal contradictions,
- ✓ suggest guiding questions,
- ✓ visualize sensor data

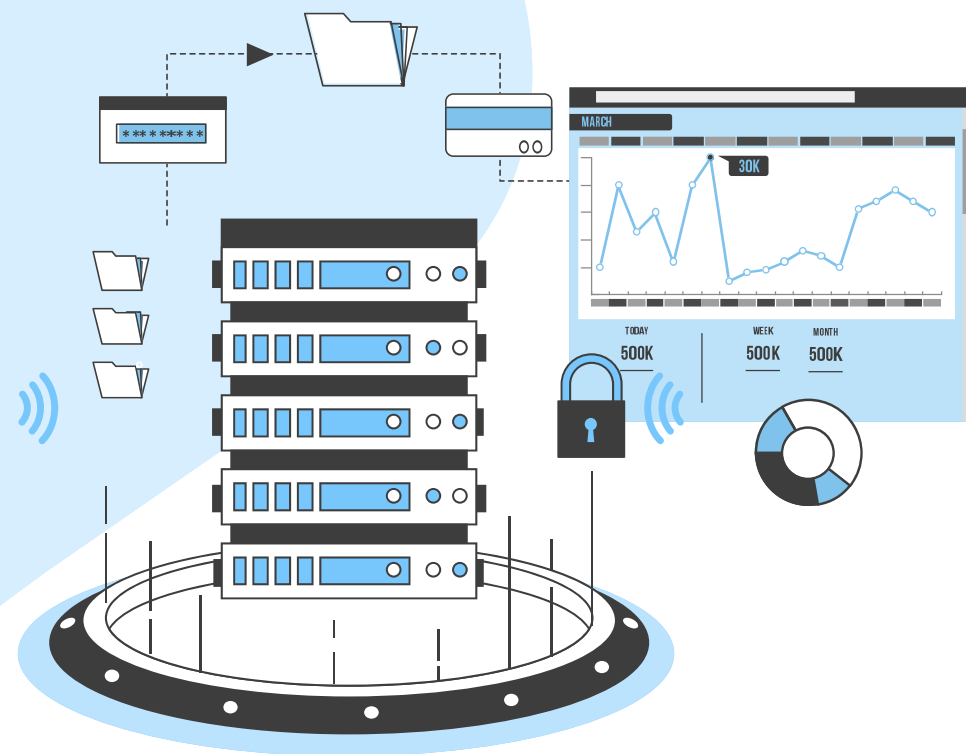
Risks

We need to ensure appreciative inquiry

➔ Research question: can the moderator be replaced by a chatbot?

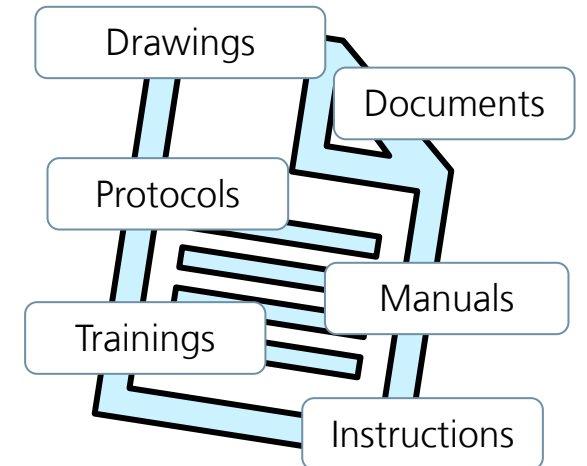
02

From the expert to
the database



How to process data using AI?

Documentation und processing of knowledge



03

The correct
information in the
working situation



How does the knowledge reach the learner?

Intelligent access to knowledge

- ✓ How often has the learner already successfully performed the activity?
- ✓ In which role and function is the knowledge required?
- ✓ What type of learner requires the knowledge?



Gefördert durch:



aufgrund eines Beschlusses
des Deutschen Bundestages

AI-Storytelling

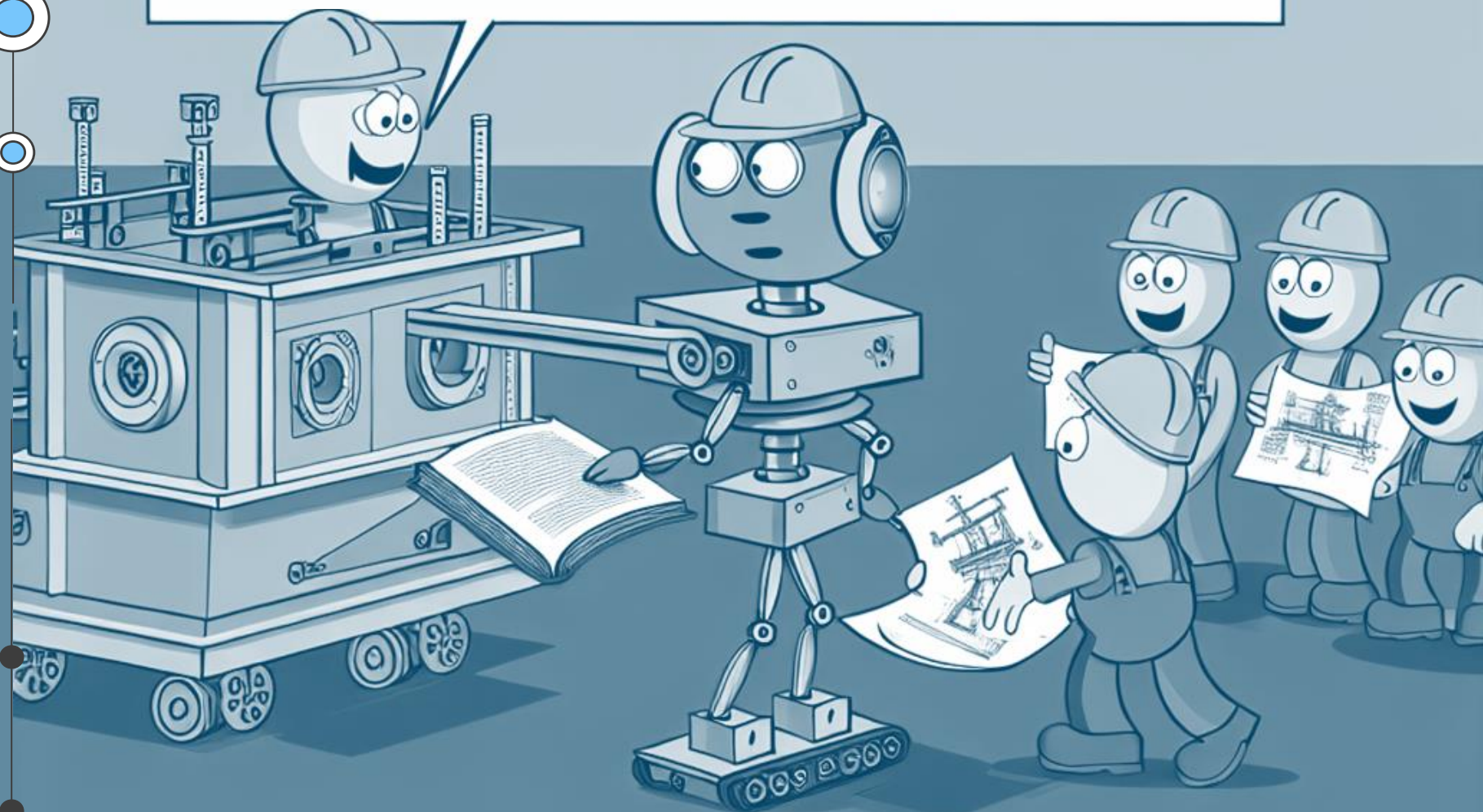
KI-gestützter Wissenstransfer
zur Bekämpfung des Fachkräftemangels

AI-supported knowledge transfer to address the shortage
of skilled workers

✓ Acquire expert knowledge as it arises

✓ Avoid bias and hallucination

Questions?





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