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A participatory work study model for AI-supported workplace learning in Finnish SMEs

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SMEs are interested in AI - limited adoption

1

Specialized knowledge and development resources are limited in smaller firms (Oldemeyer et al., 2025)

2

Finding use cases that create real value in daily work is a recognized challenge (Oldemeyer et al., 2025)

3

Access is not enough: AI capabilities must be integrated into the firm's own work processes (Arroyabe et al., 2024)

Digital competence develops in the **work setting** where the technology is used (Audrin et al., 2024). **AI adoption is** therefore a process of **workplace learning.**

Research question and starting points

RQ: How can participatory work study be used to develop a process model for AI-supported workplace learning in SMEs?

Participatory work study

Employees take part in identifying problems and in designing and implementing solutions (Burgess-Limerick, 2018; Hansen et al., 2024)

Workplace learning

AI competence develops through practical experimentation within the work community (Karhapää et al., 2024; Arístegui Monge et al., 2026)

Plan-Do-Check-Act

A cyclical structure for defining targets, testing changes, evaluating them and establishing new practice (Kurniawanti et al., 2025)

Study design: multi-case action research

Recruitment

Webinar series with 106 participants; 9 SMEs volunteered for a company-specific process

Data

- Workplace observation, 1—3 days per company
- Semi-structured interviews
- Process and digital capability assessments
- Field notes, tool-use documentation, pilot indicators

Analysis

Cross-case thematic analysis, phase measurements, end of project survey analysis

Case	Industry	Size
1	Retail and e-commerce	Micro
2	Industrial design	5 employees
3	Passenger transport	approx. 250
4	Road transport and logistics	approx. 80
5	Public transport	approx. 120
6	Roofing and renovation	45
7	Renovation	40
8	Animal services	Micro
9	Forestry services	4

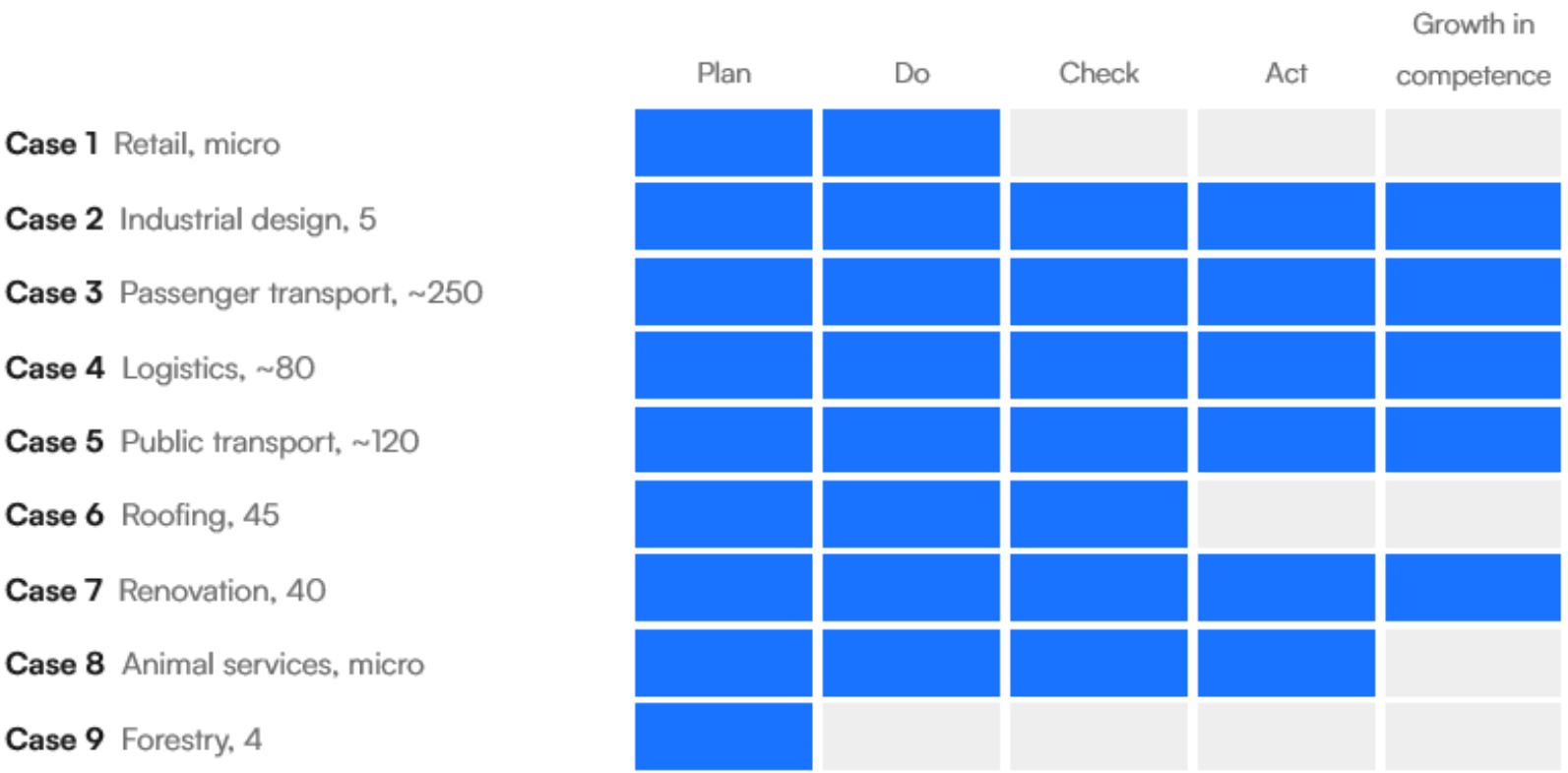
The intervention model

Work study combined with the PDCA cycle

- Engagement of staff and management in every phase
- Cases could return to an earlier phase when the target was redefined
- End state: growth in competence that carries over to later development



Finding 1: Progress distribution



- 5 of 9 cases reached growth in competence
- No clear pattern by company size or sector
- Stalls: a broad or shifting target, lack of time, internal changes

Finding 2: Work study clarified the actual need

Case 1, retail and e-commerce

Initial request

Search engine optimization and social media support

After observation and interviews

Consolidating and analyzing sales reports

AI needs identified across the cases

- Communication
- Internal information retrieval
- Shift planning
- Proposal documents
- Reporting
- Marketing
- Measurement

Common link: repetitive tasks and data flows

!

The need defined on paper and the problem experienced in daily work are often different things

Finding 3: Commitment and ownership supported progress

A clearly defined development target

Work analysis, feedback and pilots could be tied to one concrete problem

Time for joint work

The organization set aside time for work study, workshops and feedback

A person or small team as owner

Someone kept the effort visible in daily operations and evaluated the results

Personal motivation observations

Strongest where individuals had started experimenting before the formal process (end-of-project survey)

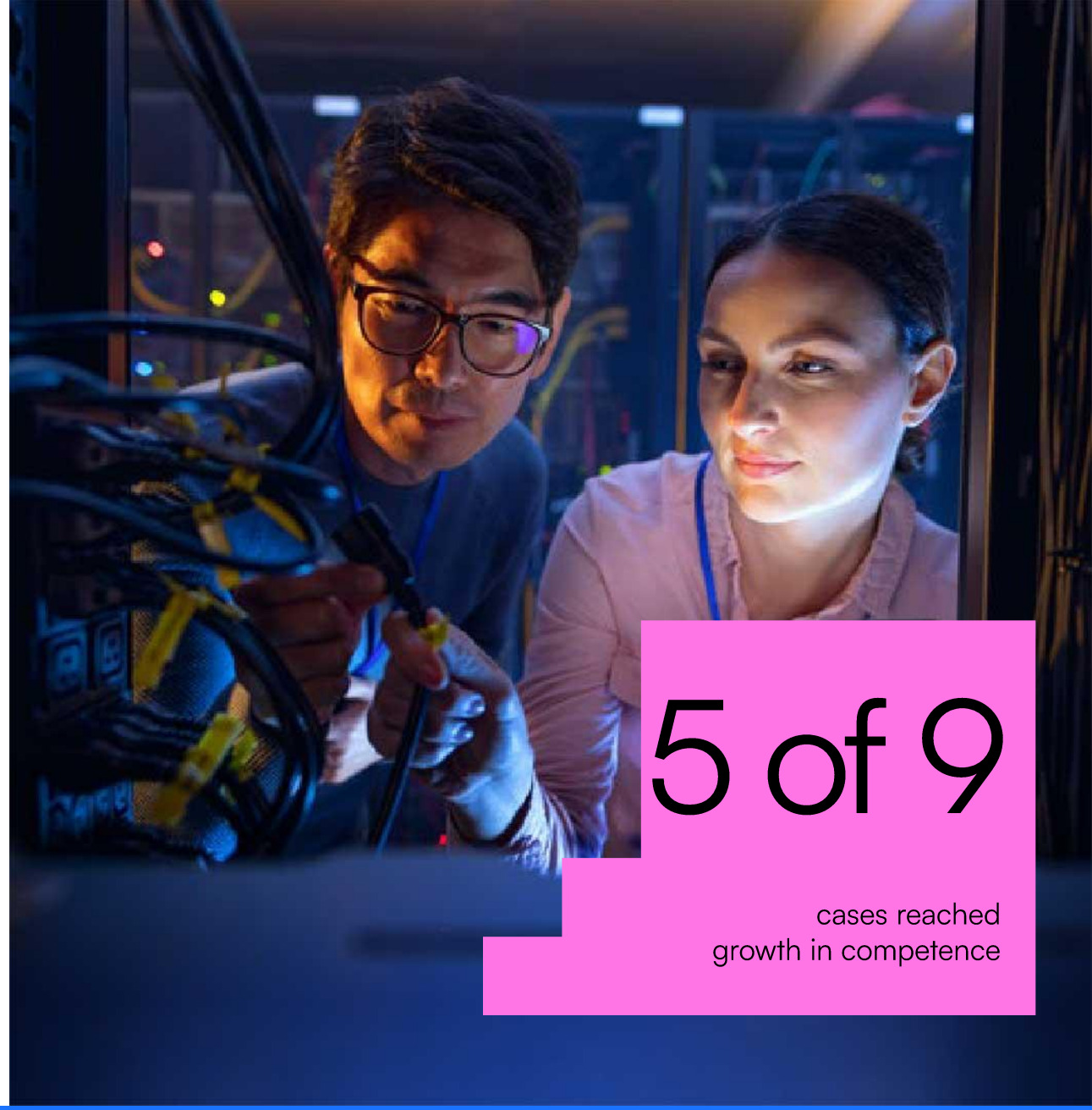
Discussion and limitations

Contribution

- AI adoption is sociotechnical change: technology and work practices change together (Makarius et al., 2020)
- Progress is not linear; problem definitions change and existing practices surface (Pachidi et al., 2021)
- Analyzing the work before choosing a tool lowers the risk of starting from a technical solution (Parker & Grote, 2022)

Limitations

- Only nine voluntary SMEs: no generalization
- Process stage is descriptive, no causality
- No independent pre- and post-measurement of skills
- External acceptance and technical constraints not recorded consistently



Conclusions

1

The model helped SMEs move **from a general interest** in AI to **concrete** development **targets** tied to their own work

2

Work study located the actual need and **made AI use** that was already under way **visible**

3

Progress depended on a **clear target and willingness** to work together, more than on company size or sector

4

Next: a **larger dataset** and **more precise indicators** of work, skills and productivity are needed

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Tack!

Q&A

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