THE FIRST BRIDGES 5.0 MASTERCLASS: Friday, 12th December *2025*

# How to build a human-centric workplace

# Lowlands Sociotechnical Job Quality Design

## Dr Peter Oeij / TNO, Netherlands

# Content of my chat

- 1.What is a human-centric workplace?

- 2.Start from employee demands ('job satisfaction') or customer demands (procurement satisfaction')?

- 3.Take away message: LowLand Sociotechnical Job Quality Design (LLST-JQD) serves both demands

# 1.WHAT IS A HUMAN-CENTRIC WORKPLACE?

"… a human-centric approach in industry puts core human needs and interests at the heart of the production process.

Rather than asking what we can do with new technology, we ask what the technology can do for us.

Rather than asking the industry worker to adapt his or her skills to the needs of rapidly evolving technology, we want to use technology to adapt the production process to the needs of the worker, e.g. to guide and train him/her.

It also means making sure the use of new technologies does not impinge on workers' fundamental rights, such as the right to privacy, autonomy and human dignity."

Industry 5.0

Towards a sustainable, human-centric and resilient European industry

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Research and Innovation

# Human-centricity

- Core human needs: autonomy, competence, relatedness (self-determination theory)

- Human interests:  job satisfaction and economic well-being, but also individual preferences for specific tasks and environments (SMART work design model)

- Augmenting and supporting technology, adaptation to the human

- Recognize workers' fundamental rights

# Workplace

- The heart of the production process: the place or work station where people carry out their work, where their tasks are executed, which is in their job (a set of tasks and activities that result in a certain output)

- Job quality: the characteristics of tasks allocated to a job

Sources:
Breque et al., 2021
Oeij, Dhondt & Vaas, 2025
Parker et al., 2025

# Human-centricity workplace

- High Job quality

- \> fulfils human needs

- \> fulfils human interests

- \> free of technological threats

- \> free of impingement of rights

- \> free of occupational health and safety risks and performance (productivity) risks

› **2.START FROM EMPLOYEE DEMANDS ('JOB SATISFACTION') OR CUSTOMER DEMANDS ('PROCUREMENT SATISFACTION')?**

# Job satisfaction

- Refers to the level of contentment employees feel with their jobs, significantly impacting their overall well-being and productivity

- How persons experience work characteristics

- Advantage: easy to measure

- Disadvantages:

- > individual evaluations of similar work characteristics may differ

- > satisfaction evaluations tend to adapt to the situation (70% rule)

- > dissatisfaction points to issues with work characteristics but do not tell what exactly needs to be changed

- > improving job satisfaction tends to lead to individualise problems which are often organisational instead of personal, and tend to combat symptoms not causes of issues

- Thus: design a job of high job quality

Source:
Oeij, Dhondt & Vaas, 2025

# Customer satisfaction is linked to employee satisfaction

- Why and how?

- > Design of production process > efficiency, effectiveness, flexibility, quality, innovativeness > customer gets good products at competing prices

- > Design of the management / control structure > division of labour that requires minimised coordination needs, technology must augment the worker > less bureaucracy and technological determinism

- > Design of jobs > 'simple organisations with complex jobs', instead of 'complex organisations with simple jobs' > 'active jobs' enables job satisfaction
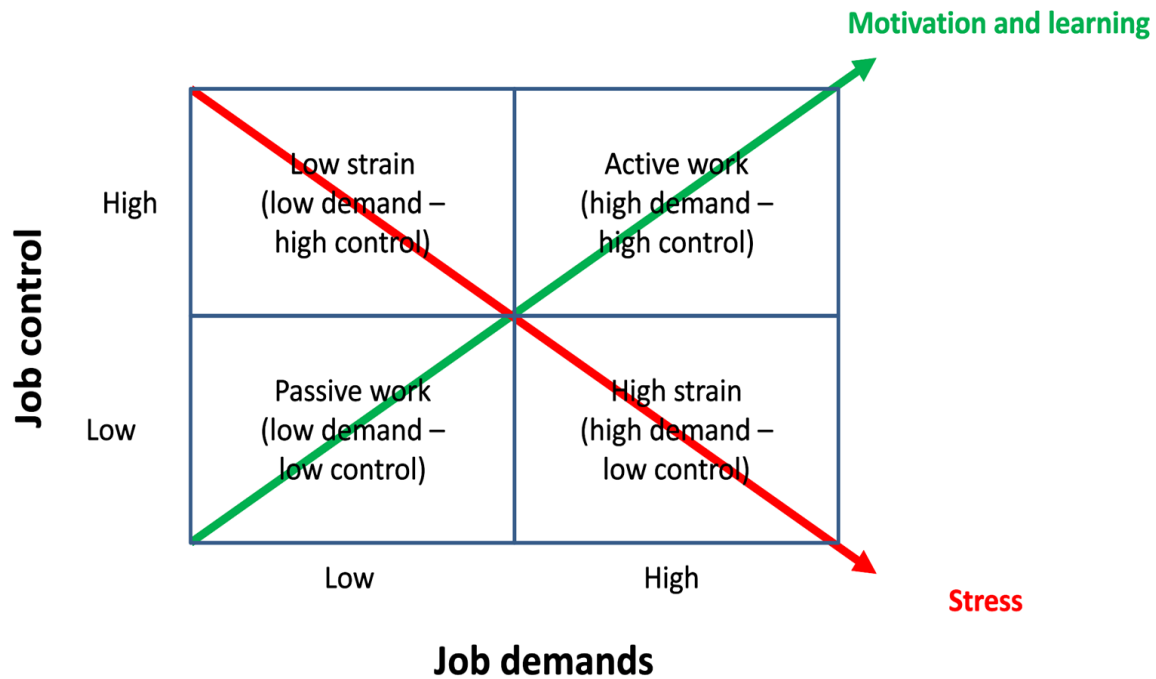
Sources:
De Sitter et al., 1997
Kuipers et al., 2020

Figure: Job demands-control model (JD-C model) (Karasek & Theorell, 1990: 32)

**Active Jobs / Active Work:**

-high demands > learning opportunities, productivity, innovative capability

-high control > limited health and safety risks

**LowLands Sociotechnical Job Quality Design:**
-limit the division of labour and coordination need, avoid risks and control problems at the level of jobs
-all job keepers will benefit from the job design, regardless their individual job preferences

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# 4.CONCLUDING REMARKS
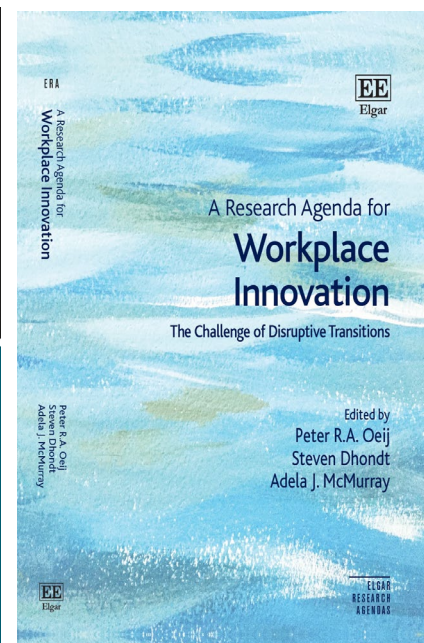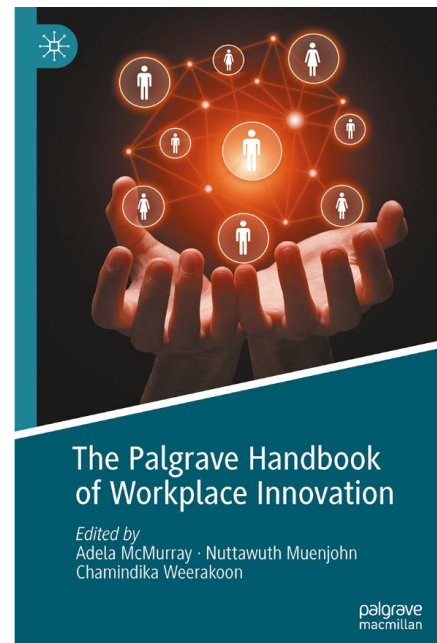
# Take away message

- LLST-JQD integrates customer demands & employee demands which fits with human-centricity, and Industry5.0 goals


- Relation LowLands Sociotechnical Job Quality Design and Workplace Innovation (WPI)?
  - >WPI is based on LLST thinking

  - >Job Quality and Human-centricity are key elements

  - >LLST has strict design rules, WPI has not, but follows LLST

  - Thus: WPI is also helpful to build human-centric workplaces

# THANK YOU FOR YOUR ATTENTION!

Further reading…

Peter Oeij

[peter.oeij@tno.nl]

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**WORKPLACE INNOVATION**

**WORKPLACE INNOVATION**

**bridges 5.0**

Bridges5.0 is a EU research project on digitalisation, Industry5.0 and workforce skills

https://bridges5-0.eu/

SEISMEC is a EU demonstration and research project on human - centricity in sociotechnical contexts

https://seismec.eu

**SEISMEC**
PILOTING THE SHIFT TO HUMAN-CENTRIC INDUSTRY

Ralf Kopp
Bernd Dworschak
Roman Senderek
(eds.)

**Workplace Innovation and Leadership**

WORKPLACE INNOVATION

EHP

**Your Guide to Workplace Innovation**

European Workplace Innovation Network
EUWIN

Authors: Peter Tottardill, Steven Dhondt and Sylvie Boermans

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**The Palgrave Handbook of Workplace Innovation**

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**Workplace Innovation**

Theory, Research and Practice

Springer

**European Journal of Workplace Innovation**

Volume 7, Issue 1, April 2022

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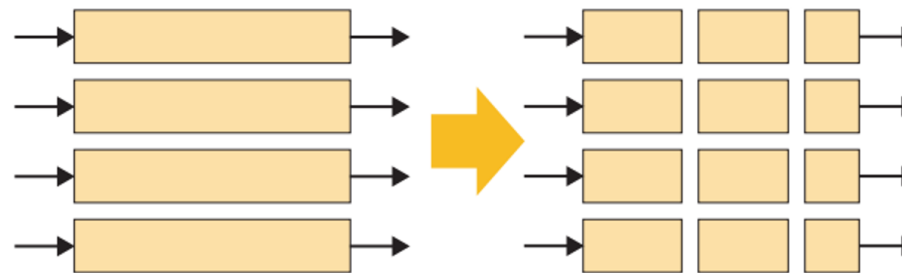# Extra slide as appendix: General sociotechnical design rules

**1. Reduce input variation by parallelisation**

**Production structure design**
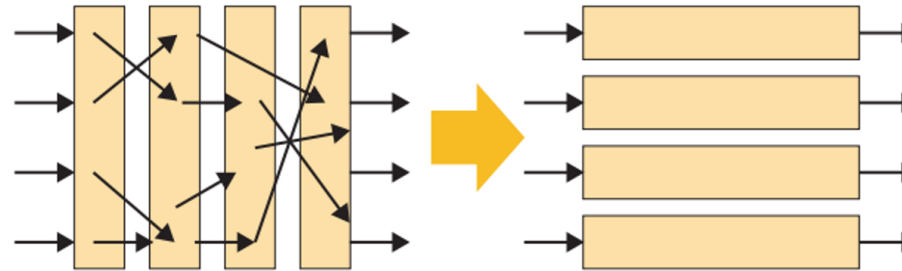
Parallel (homogeneous) order streams can be markets (groups of customers), type of products ('families'), regions

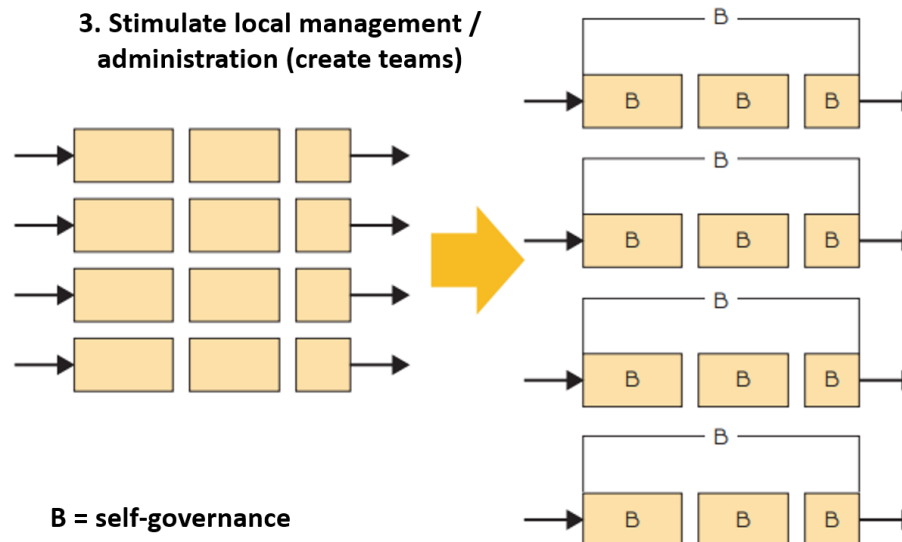**2. Reduce process complexity by segmentation**

Segments are sets of tasks to be allocated to task groups / teams, who can act independently

**3. Stimulate local management / administration (create teams)**

**Management structure design**

Task groups can be allocated managing tasks (control capacity, decision latitude) to minimise division of labour and maximise decentralised administration (self-governance)

**B = self-governance**

Source: Kuipers et al., 2020: 205-207.