

# THE FUTURE OF WORK AND SKILLS

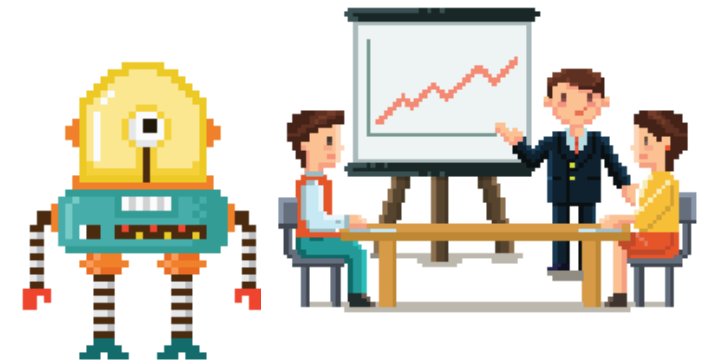
***Joakim Wernberg***

*Associate professor in Technology and Society, Head of SoeTech, Lund University  
Research Director, Digitalisation and Tech Policy, Swedish Entrepreneurship Forum*



# AGENDA

- WHAT AI IS (AND ISN'T)
- AI AND WORK
- FUTURE SKILL NEEDS



# FIRST: WHAT AI IS NOT

- AI is **not separate from digitalisation**  
Compute, data-generating networks, and software  
(General Purpose Technology)
- AI is not one thing, but **an umbrella term (in motion)**  
(Machine learning)
- Impact of AI does not **depend on the supply-side only**
- AI is **≠ human intelligence**  
(Intelligence not one-dimensional)

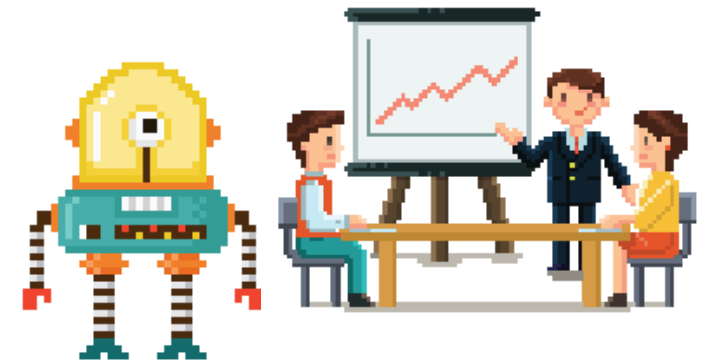


# PINNING AI DOWN

- Attempt:

*Machines that can perform tasks  
which usually require human intelligence*

- But AI and humans conduct *different* work performing the *same* task  
(AI ≠ human intelligence)



# PINNING AI DOWN

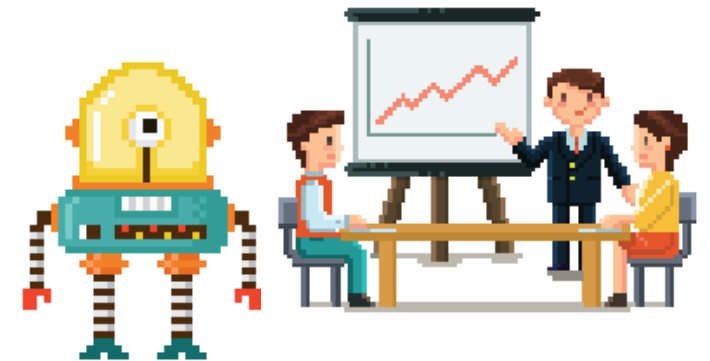
- Attempt #1

*Machines that can perform tasks which usually require human intelligence*

- But AI and humans conduct *different* work performing the *same* task (AI not = human intelligence)

- Attempt #2

*Machines that conduct analytical work*



# SEPARATING THREE TYPES OF AI

## Narrow AI

AI today

”Smart” within narrow domain

## AGI

(Artificial General Intelligence)

Goal of current AI-development

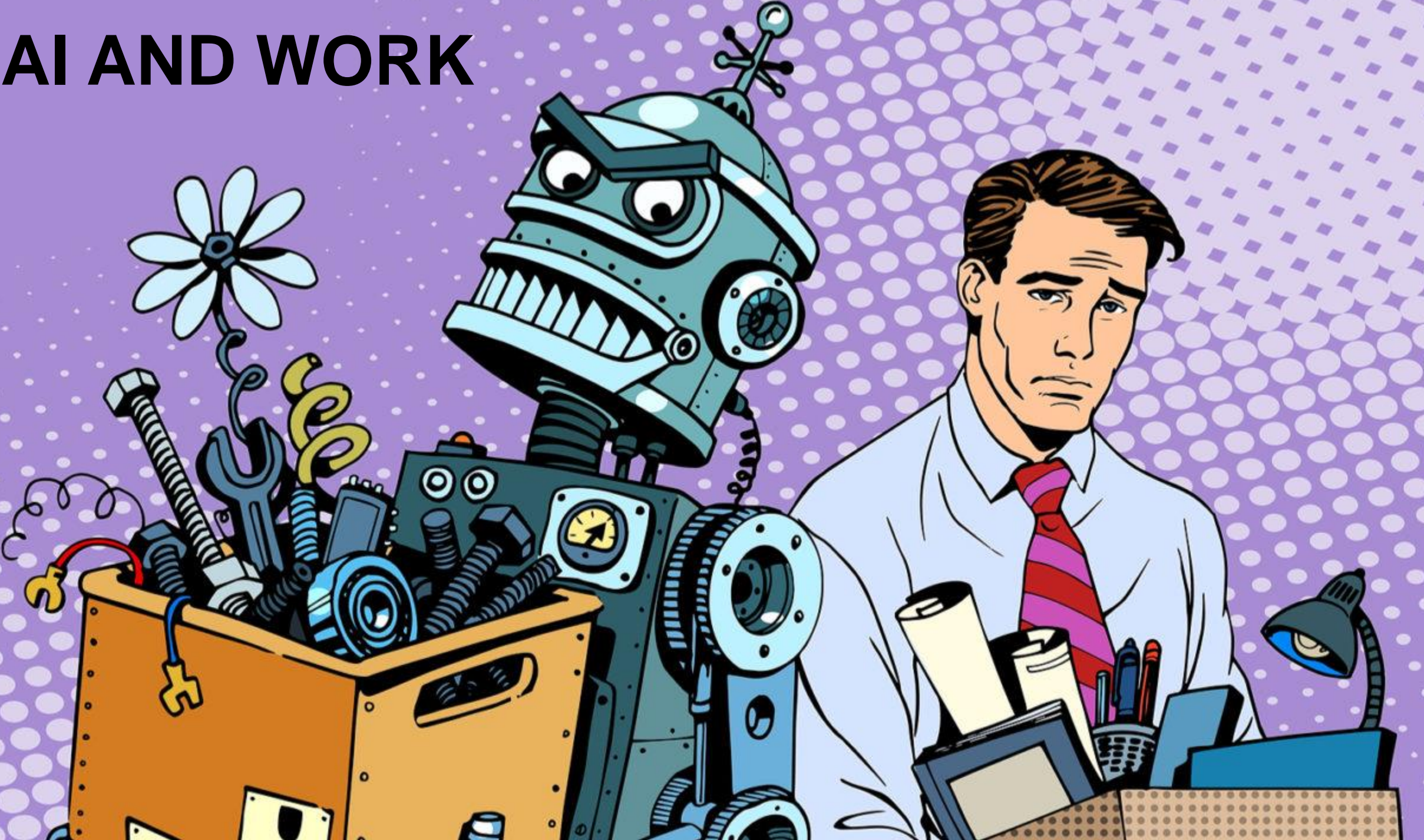
Can be generalised from one task to others without reconfiguration

## Superintelligence

Vision

Generalised to all types of tasks, improves itself and has agency comparable to a human

# AI AND WORK



# AI AND WORK

- Jobs destroyed << work reorganised

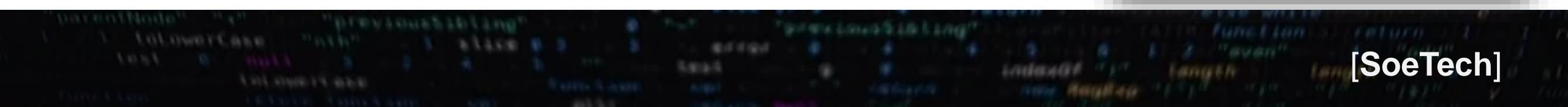
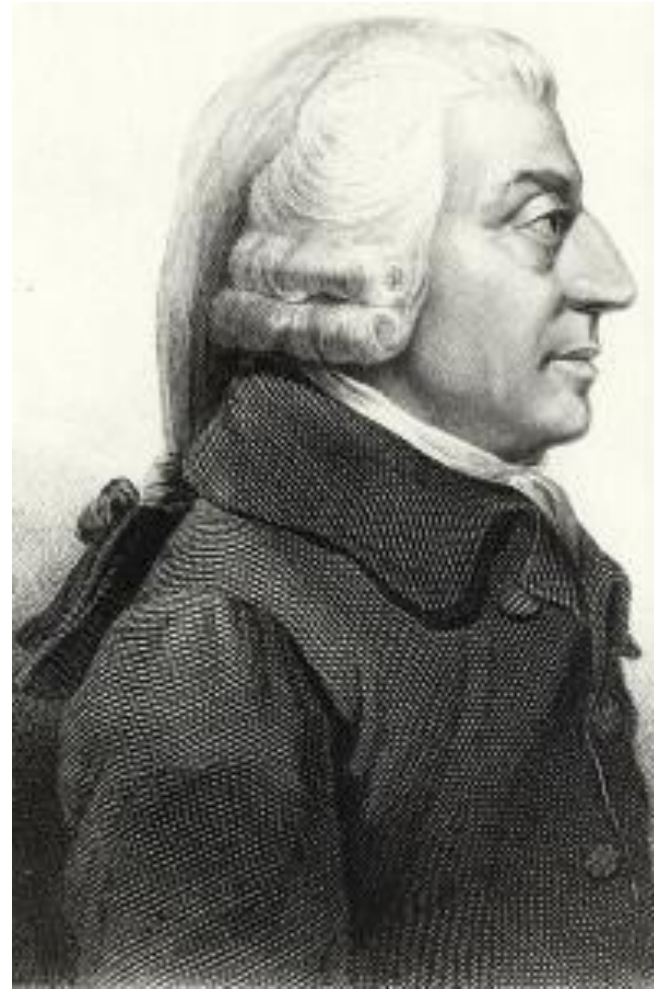
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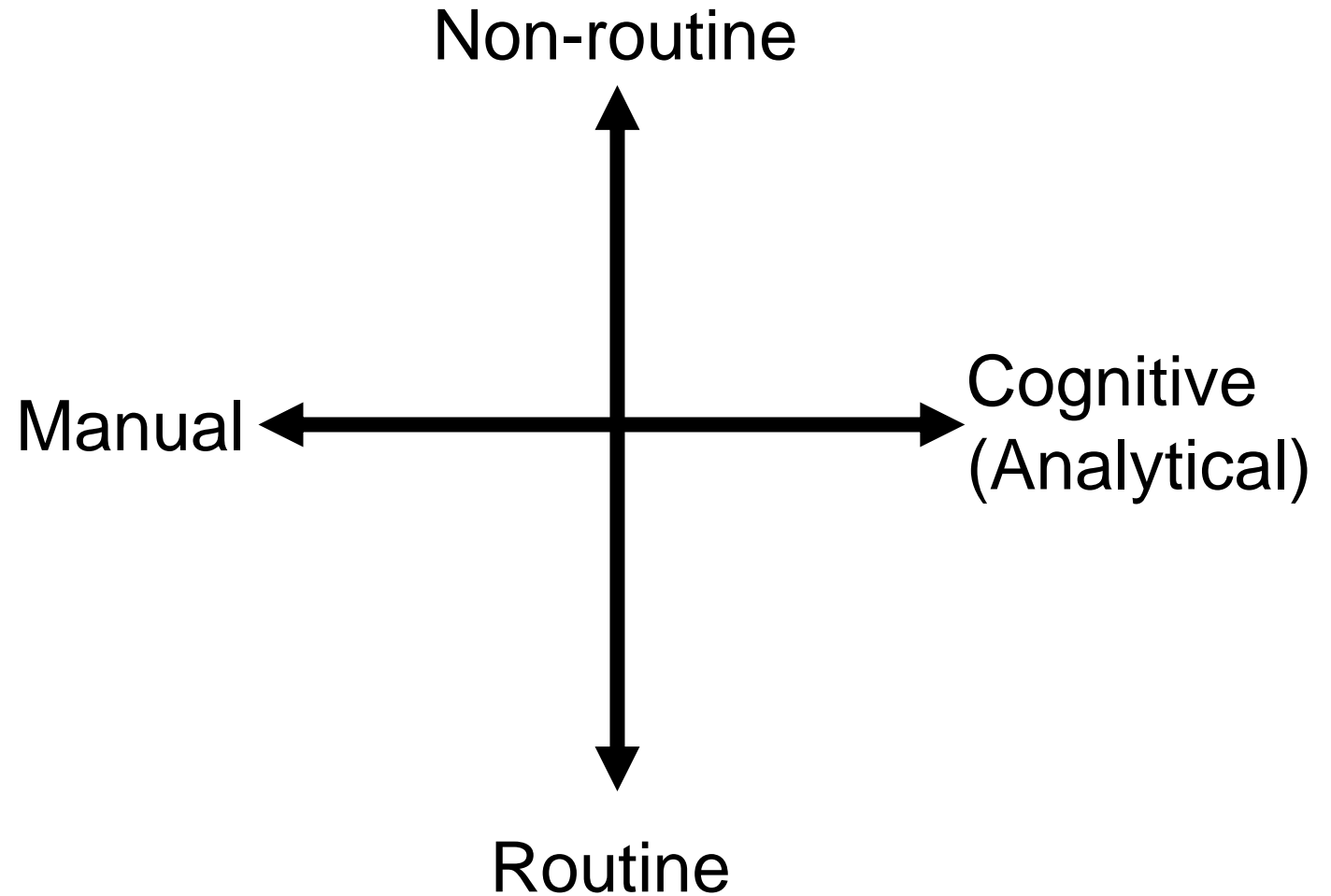
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# AI AND WORK

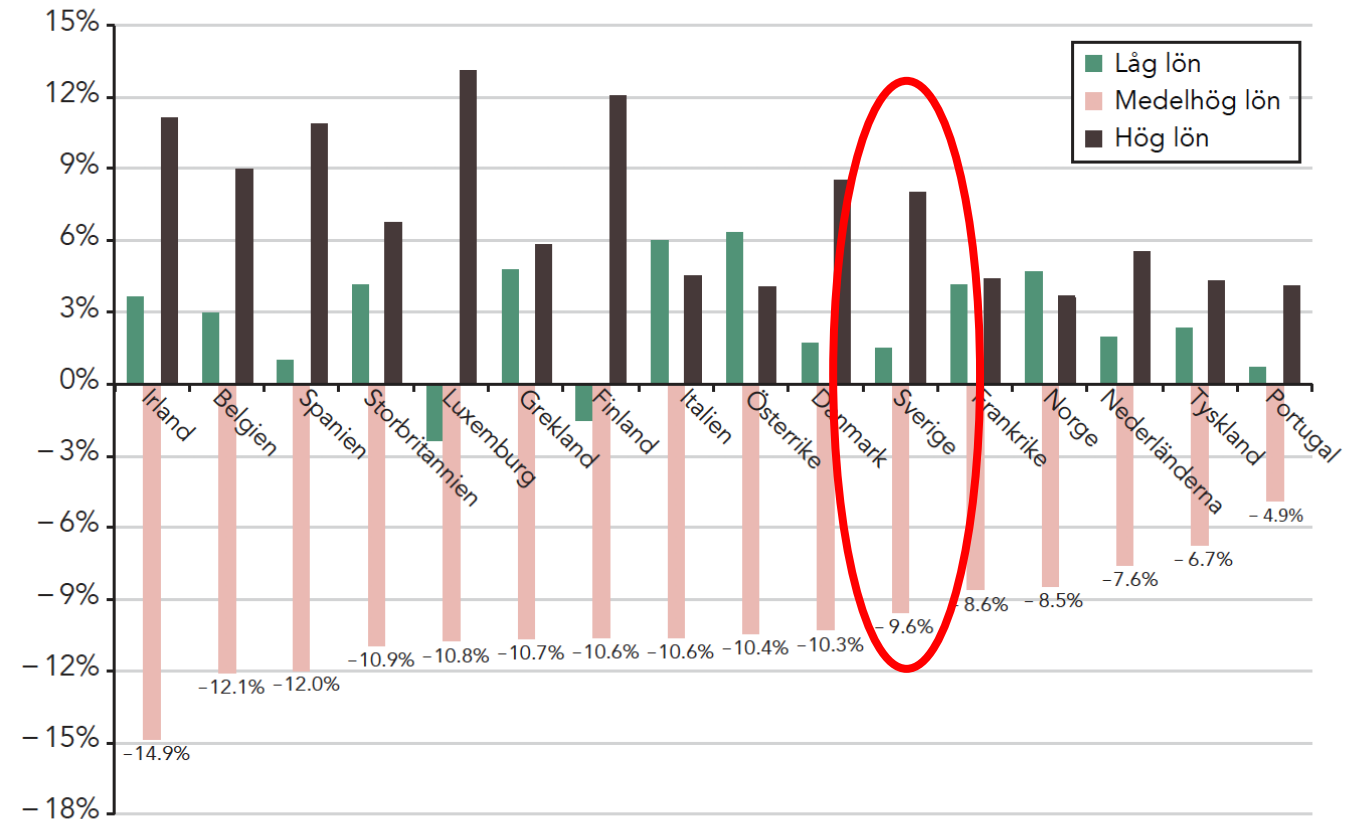
- Jobs destroyed << **work reorganised**
- **Routinisation** hypothesis



# AI AND WORK

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- **Routinisation** hypothesis
- **Job polarisation**

Figur 2: Jobbpolarisering i Europa



Källa: Autor, 2015.

# AI AND WORK

- Jobs destroyed << **work reorganised**
- **Routinisation** hypothesis
- **Job polarisation**
- Comparative advantages: **Centaur**s



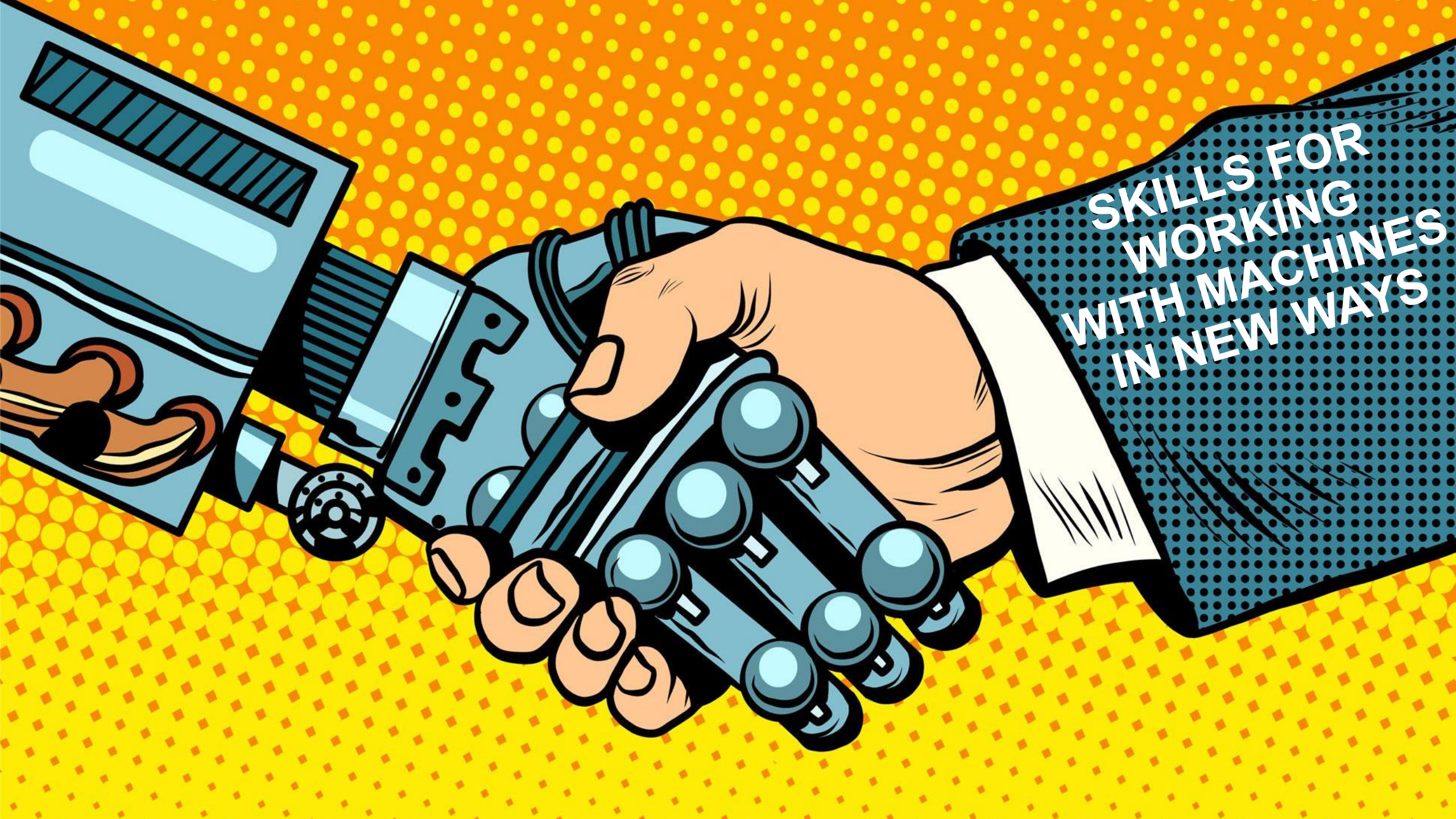
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# AI AND WORK

- Jobs destroyed << **work reorganised**
- **Routinisation** hypothesis
- **Job polarisation**
- Comparative advantages: **Centaur**s
- Not just technology **adoption**, but organisational **adaptation**

Figur 4 – Fråga: Hur har ditt företag agerat för att dra nytta av digitaliseringen i din bransch?

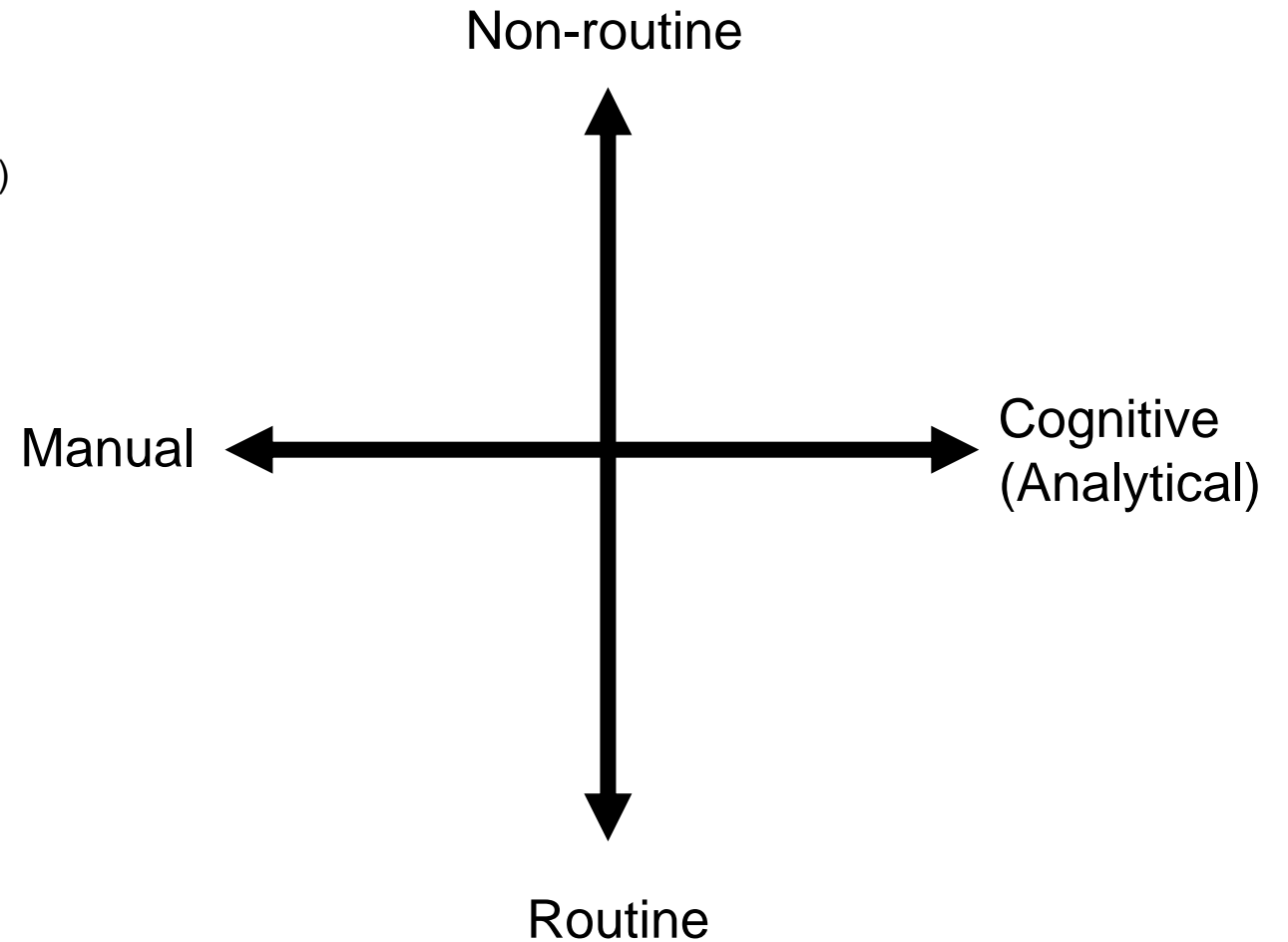




SKILLS FOR  
WORKING  
WITH MACHINES  
IN NEW WAYS

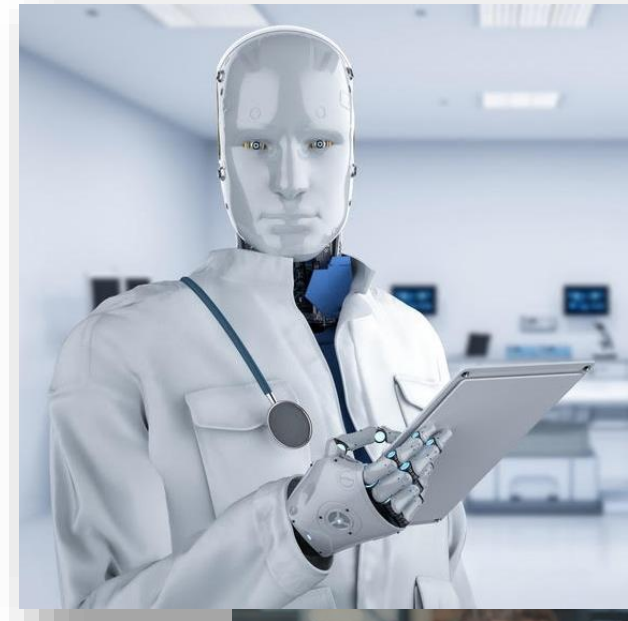
# FUTURE SKILLS DEMAND AND SUPPLY

- Cognitive demand increases (on the margin)  
From knowledge to (lifelong) learning



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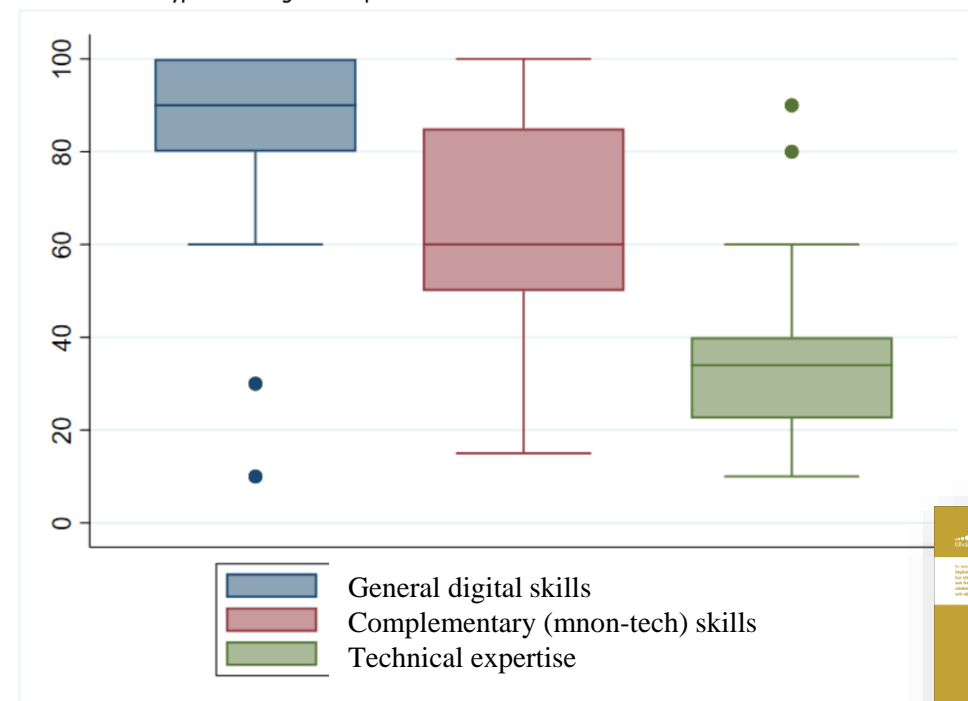




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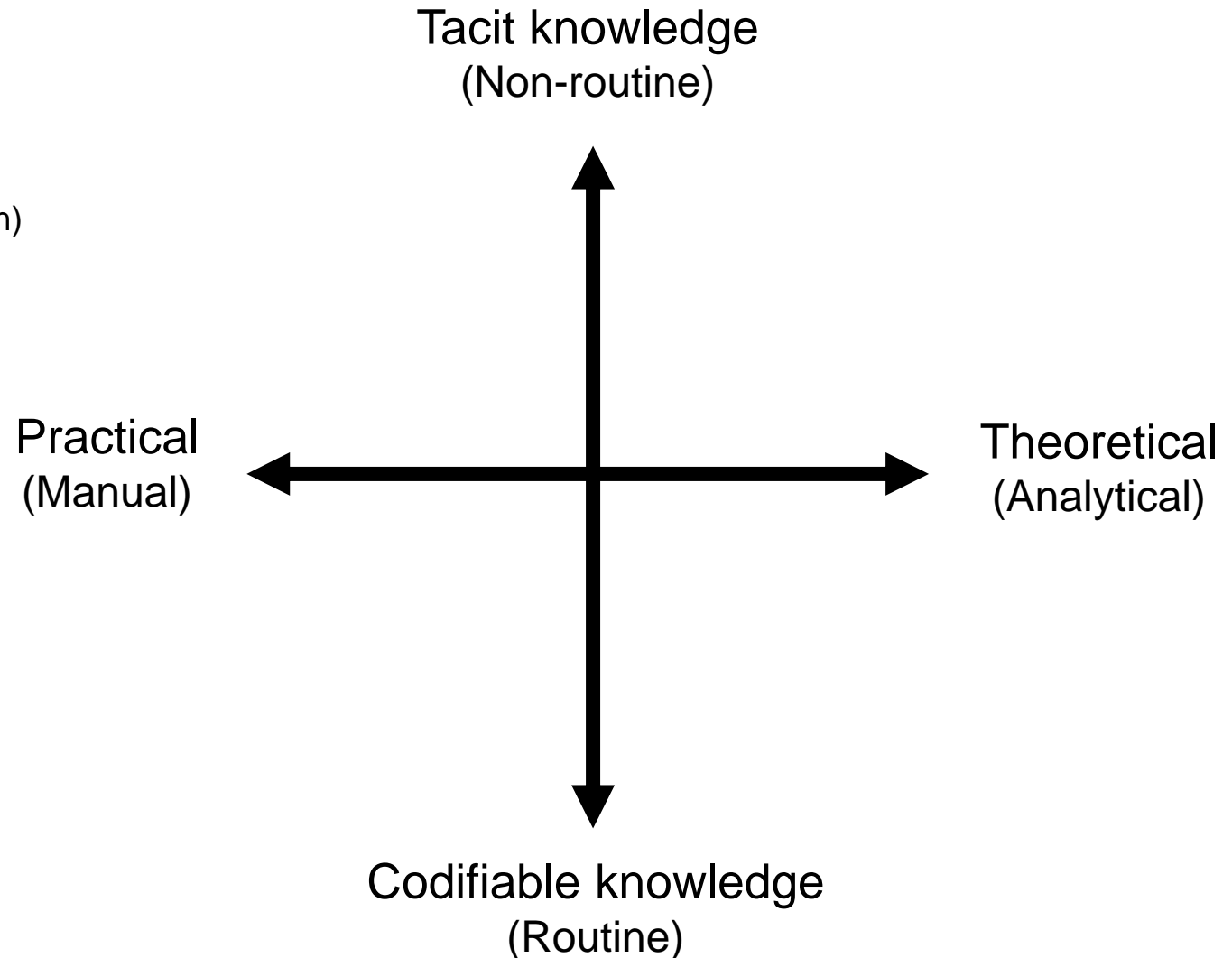
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From knowledge to (lifelong) learning
- Expert professions challenged:
- Three skill categories:
  - Technical expertise
  - General (user) skills
  - Complementary (non-tech) skills

Figur 10 Experternas bedömning av hur stor andel av näringslivets framtida kompetensbehov som kommer att kräva de tre typerna av digital kompetens



# FUTURE SKILLS DEMAND AND SUPPLY

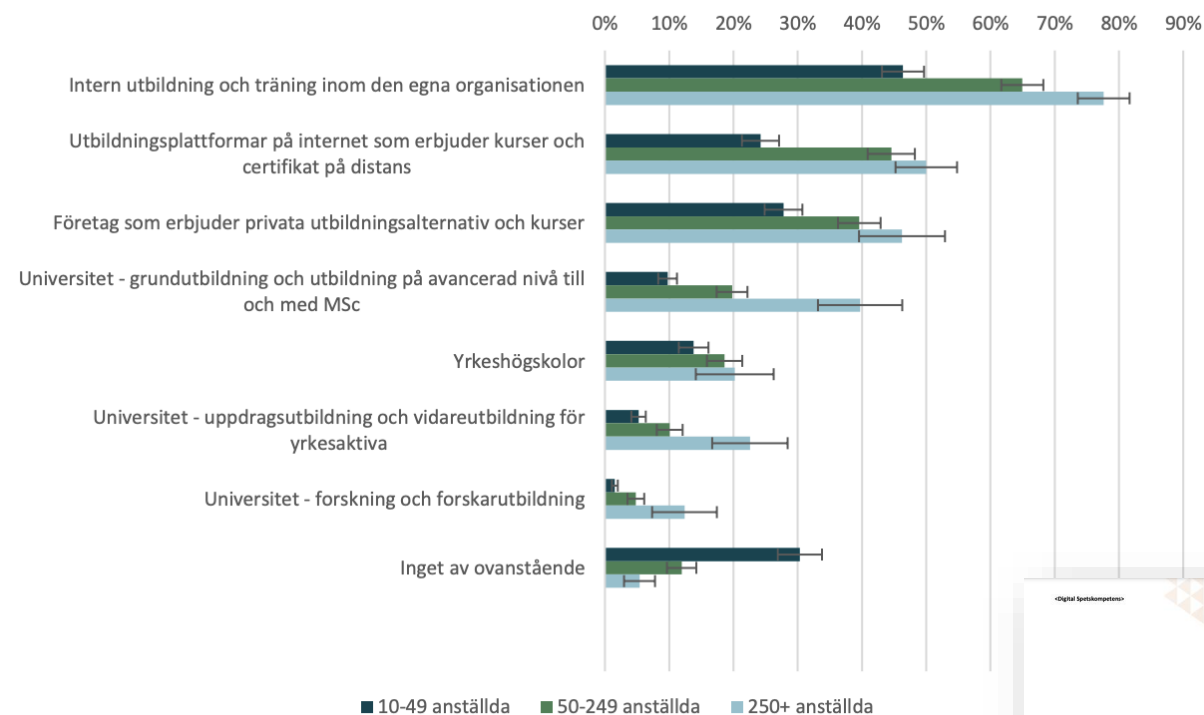
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- Challenge to educational system
  - Skill bias / task bias
  - New actors and wider ecosystem



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Figur 42 – Prioritering av kompetensutvecklingsaktörer uppdelat på företagsstorlek



# SUMMARY

- Shift from artificial intelligence to **cognitive/analytical work**
- Jobs destroyed << **Work reorganised**
- Difference between technology **adoption** (known cost) and organisational **adaption** (unknown cost)
- Lower share of routine-based work      life-long learning
- Technical expertise – **General (user) skills** – Complementary (non-tech) skills
- Challenge to educational system, **more of the same no enough**



# FURTHER READING: (SHAMELESS SELF-PROMOTION)



# FURTHER LISTENING

(SHAMELESS SELF-PROMOTION IN SWEDISH ONLY)



## Bergh & Wernberg

Funderingar om teknik, ekonomi och framtid

Funderingar kring samtid och framtid med välfärdsvetaren och ekonomen Andreas Bergh och Joakim Wernberg som forskar om digitalisering och växelverkan mellan teknik och ekonomi. Andreas Bergh är verksam vid Institutet för ...More >

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**THANK YOU FOR YOUR ATTENTION!**

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