

# Career implications of digital technology



leading to 2 research strategies

*EAWOP Small Group Meeting on Workforce Employability and Sustainability*

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# Context

- Lecturer HRM / researcher  
@Avans University of Applied Sciences
- PhD @Tilburg University  
supervisors Wilthagen, Freese & Van der Zouwen
- My perspective = the influence of digital technology on sustainable employment within organisations



# Digital technology\* & employment at macro level - Theory



## (1) Skill is key

(Acemoglu 2002, Autor, Levy & Murnane 2003)

## (2) Task level

(Goos & Manning 2007, Autor & Dorn 2013)

## (3) Organisational choice

(Pot 2012, Dekker & Van der Veen 2017).

\*

DT: Mobile Internet, Automation of knowledge work, Internet of Things, Cloud, Advanced Robotics, Autonomous and near-autonomous vehicles, 3D-Printing (McKinsey 2013)

# Digital technology & employment at macro level - Quantitative picture



## Global

- “About **47%** of US employment is at risk.”  
(Frey & Osborne, 2013)
- “Overall, we find that, on average across the 21 OECD countries, **9%** of jobs are automatable.”  
(Arntz, Gregory & Zierahn, 2016)

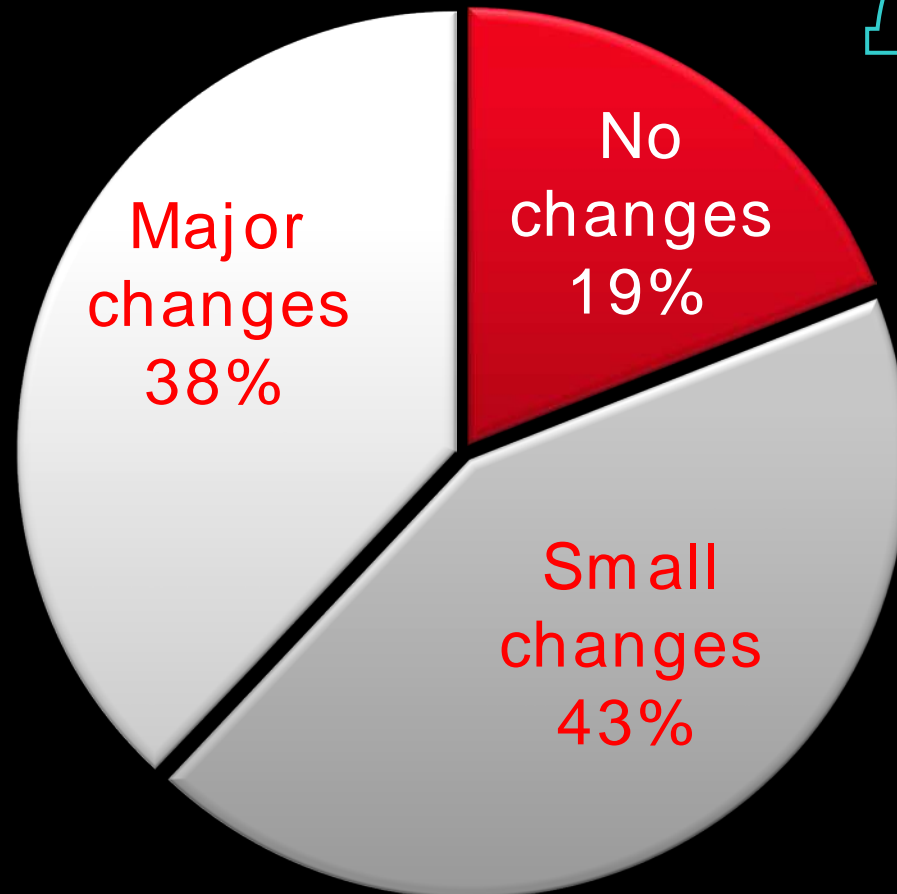
## NL: change = relatively slow > mild quantitative effect

- limited robotization -
- non routine jobs are not easily automated -
- new jobs are also being created +  
(WRR, 2015; Rathenau Institute, 2015; Erken & Smid, 2016)

# Digital technology & employment at macro level - Quantitative picture



(1) The extent to which technological changes at work affect the content of work (self reported, NL)

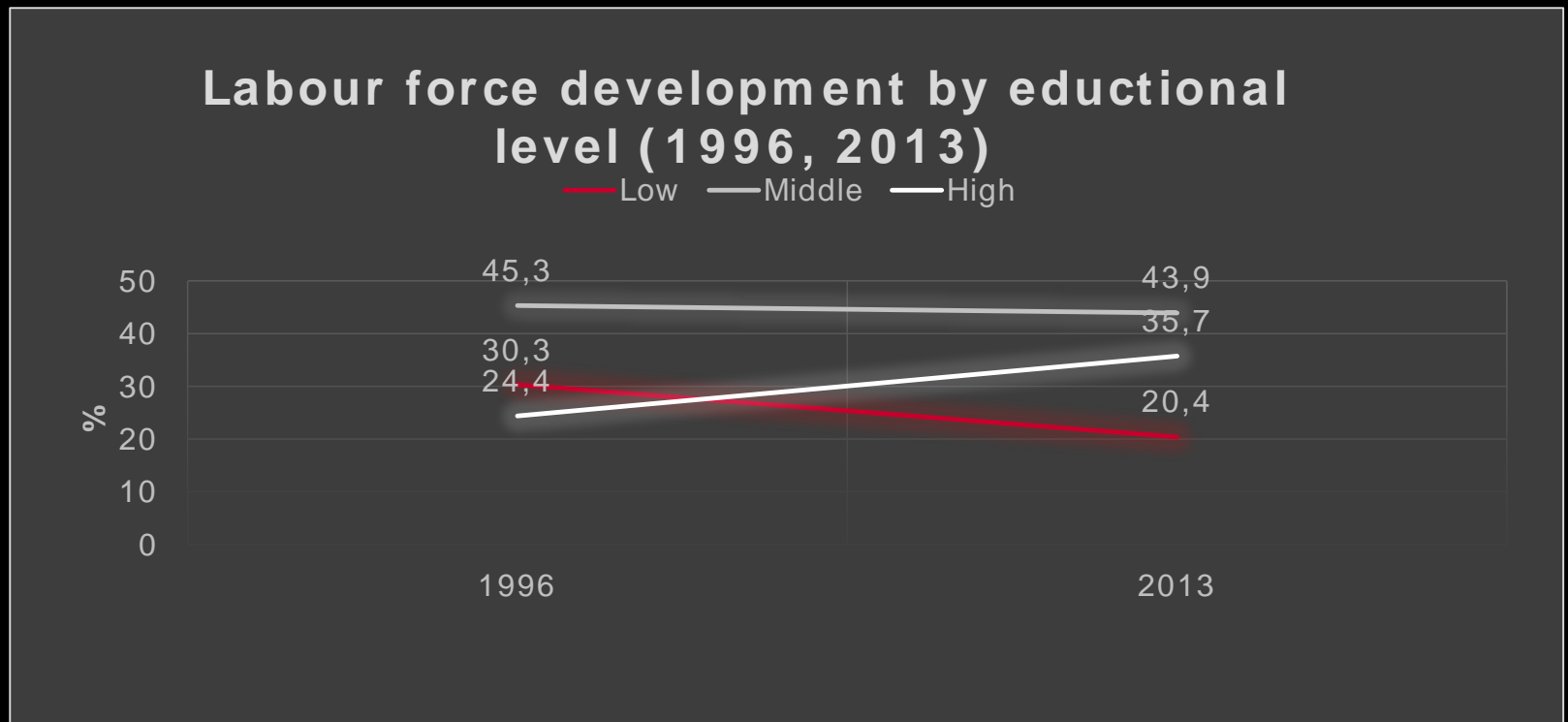


Based on ROA, 2018

# Digital technology & employment at macro level - Quantitative picture



## (2) Development of skill/educational levels in NL



Based on Dekker & Van der Veen, 2017

# Digital technology & employment at macro level - Quantitative picture



## (3) Development of employment related to digital technology in NL

*“It is technology that is associated with the weaker positions of the low-skilled and the middle segment of the labour market (Dekker & Van der Veen, 2017. p. 74)”*

### Unemployment risk related to digital technology (1996-2011)

<i>Low</i>	<i>Middle</i>	<i>High</i>
-/- 0.13	-/- 0.71*	+/+ 0.74*

\*  $p < .05$

Based on Dekker & Van der Veen, 2017

## Consequently...

- Workers report that digital technology is changing their work content
- The proportion of low-skilled work is decreasing
- Technology is associated with weaker labour market positions of the low- and medium-skilled



How to promote employability and build a sustainable workforce in a digital economy?



# Digital technology / Employability



If digital technology *by replacing or changing tasks* is changing possibilities in work\*

for continuous development of competences (Van der Heijde & Van der Heijden 2006),

for the growth of capabilities (Van der Klink et al. 2016),

and hindering individual's ability to function in current and future work (Fleuren et al. 2016), then

*[hypothesis]*

digital technology is affecting employability

\* Digital technology can also be an enabler, e.g. creating job possibilities for disabled or unemployed workers

# Research into the relationship between Digital Tech & Employability



What has happened to employment within organisations as a result of digital technology?

- type of technology, sector, firm size, educational level?
- choices at organizational level promoting or hampering **sustainable employment** and **employability**
- the role of HR and other parties

# Research strategy 1

Secondary analysis of quantitative data  
(national level)



*[hypothesis]*

digital technology has affected the labour market  
position and employment relationship  
of lower and medium skilled workers.

# Research strategy 2

Qualitative analysis/ Cases studies  
(organisational level)



Digital technology (skill, task, organizational choice) influences possibilities for sustainable employment and employability within the organisation.

What patterns can be seen? Which actors are involved?

# work in progress

