

Artificial Intelligence & OSH

UnionLearning

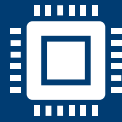
BERASTEGUI Pierre

20 September 2023

etui.
european trade union institute

AI: a few definitions

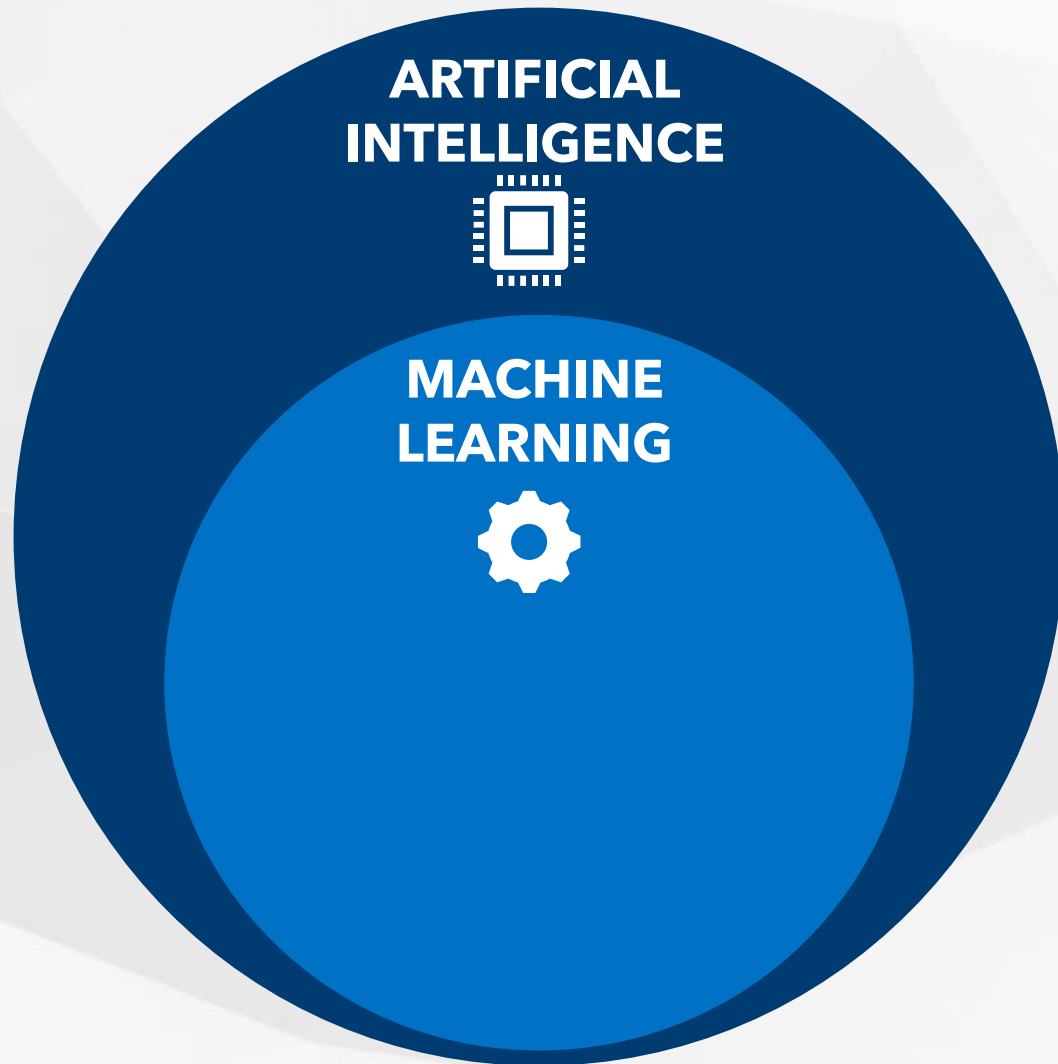
ARTIFICIAL
INTELLIGENCE



1950s **ARTIFICIAL INTELLIGENCE**

Use of computers and technology to simulate intelligent behaviour and critical thinking comparable to a human being

AI: a few definitions



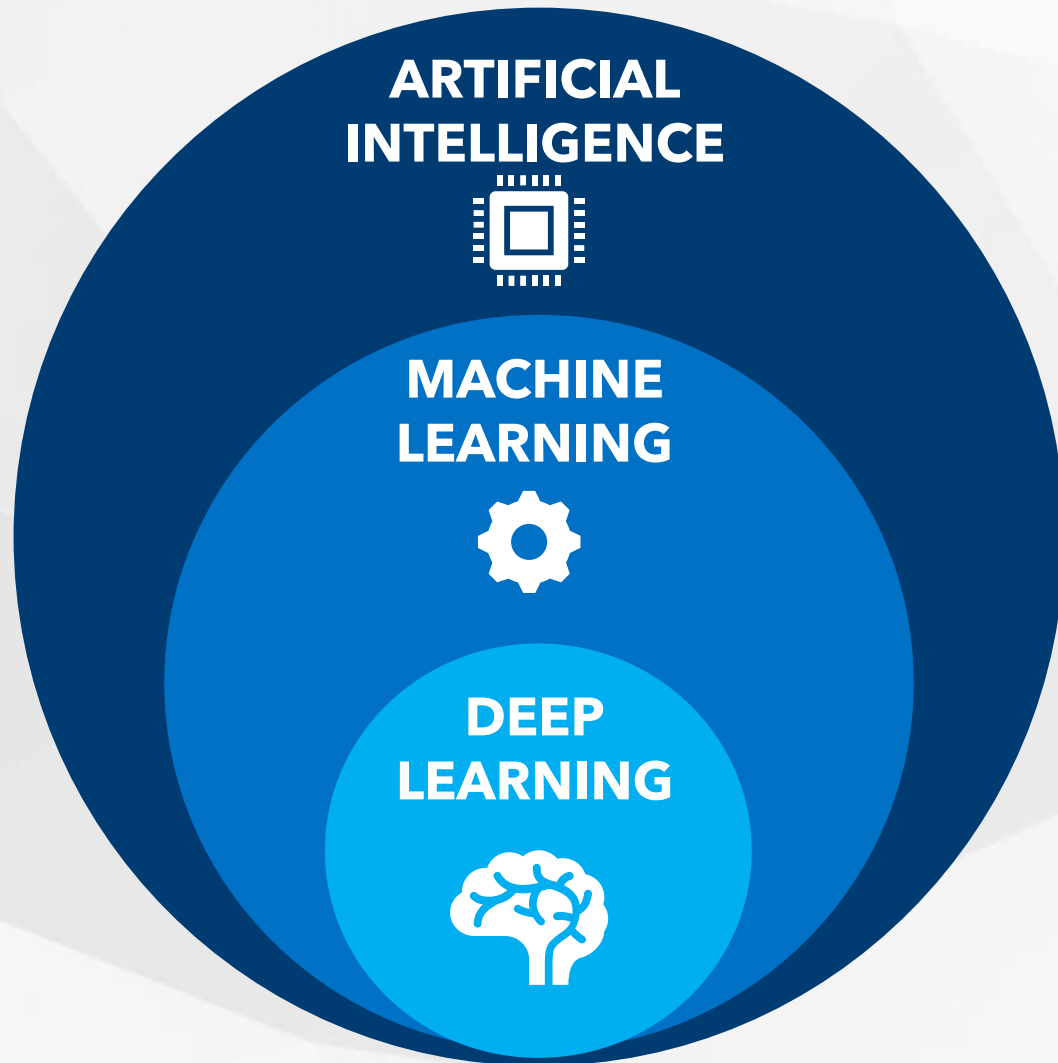
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1980s **MACHINE LEARNING**

Creates algorithm that can learn from data and make decisions based on patterns observed

AI: a few definitions



1950s

ARTIFICIAL INTELLIGENCE

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1980s

MACHINE LEARNING

Creates algorithm that can learn from data and make decisions based on patterns observed

2010s

DEEP LEARNING

Uses an artificial neural network to reach accurate conclusions without human intervention

Deep learning is everywhere

Natural Language Processing

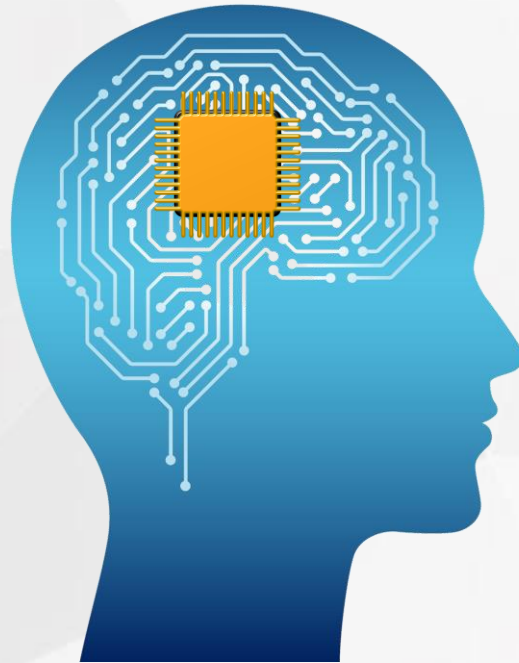
Pixel Restoration

Translation

Visual Recognition

Fraud Detection

Election Predictions



Cyber-threat detection

Virtual Assistants

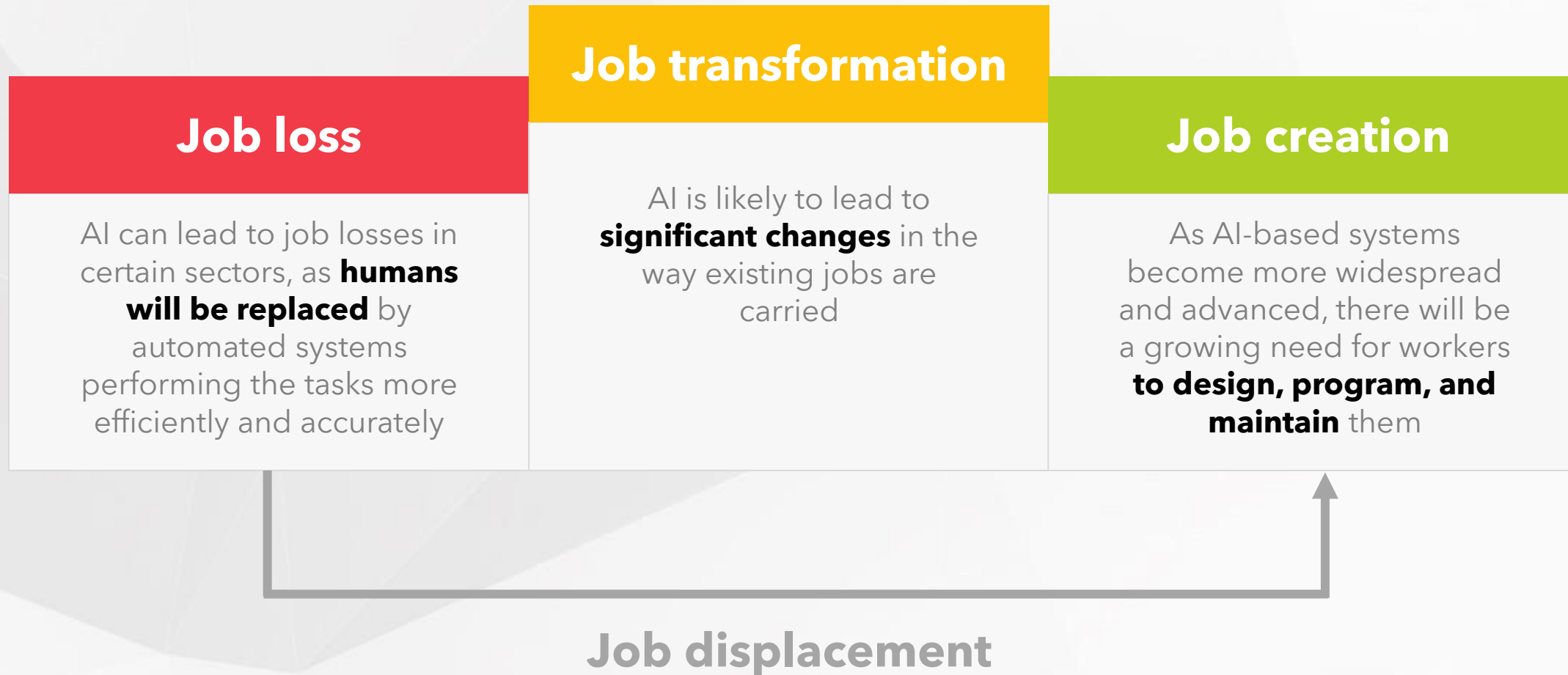
Image Colouring

Self-Driving Cars

Chatbots

Video recommendations

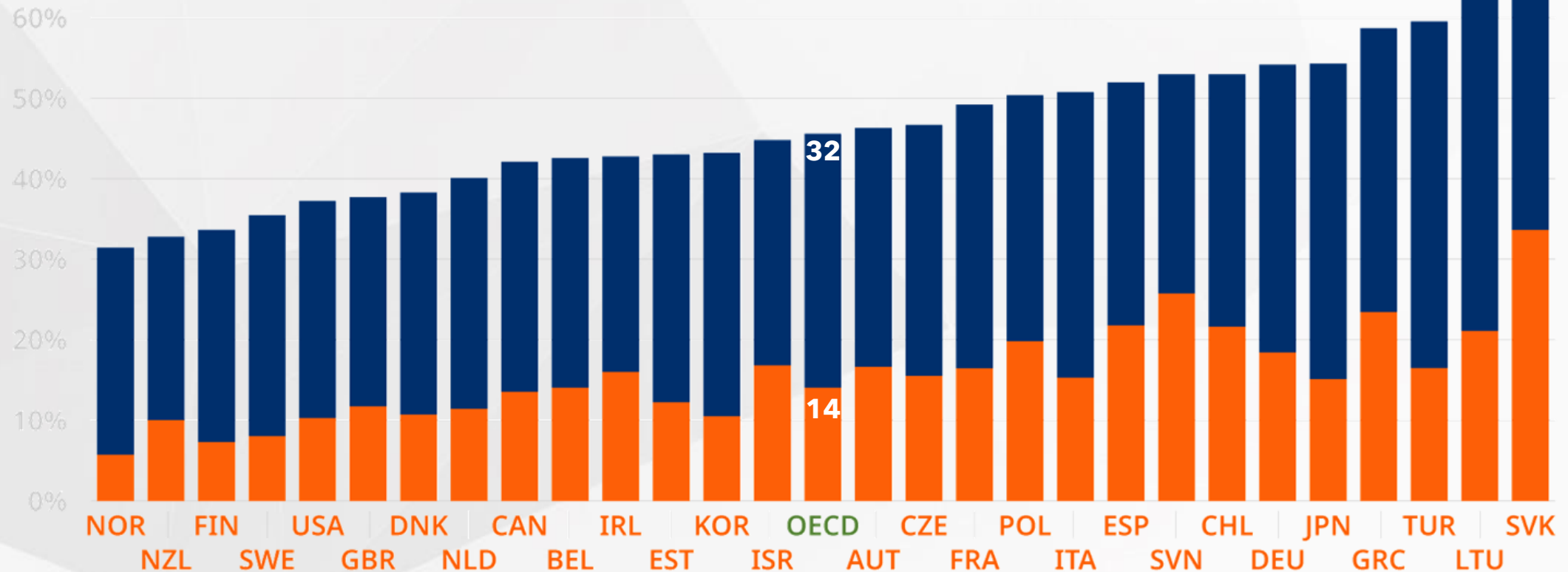
Impact on the labour market



Impact on the labour market

Large shares of jobs are at risk of automation or significant change

■ high risk of automation ■ significant risk of change



The dominant narrative



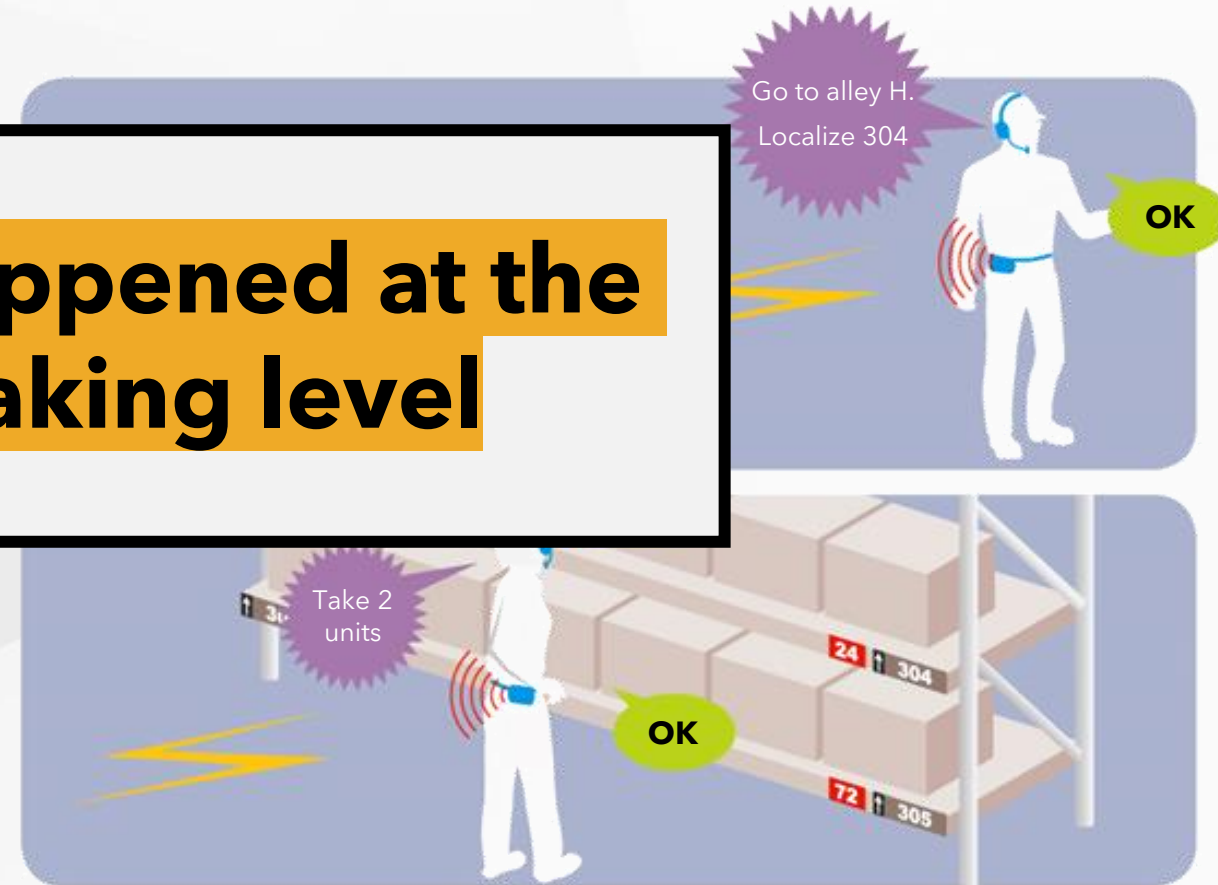
AI IS FRAMED AS A RESOURCE FOR WORKERS

Case study: Amazon

The implementation of Pick-By-Voice

- 1) The operator receives a message with information and a location number
- 2) The operator moves to the zone by reading the location number
- 3) The system sends a message of quantity/weight that has to be picked
- 4) The operator loads goods and confirms loaded quantity and weight.

Automation happened at the decision-making level

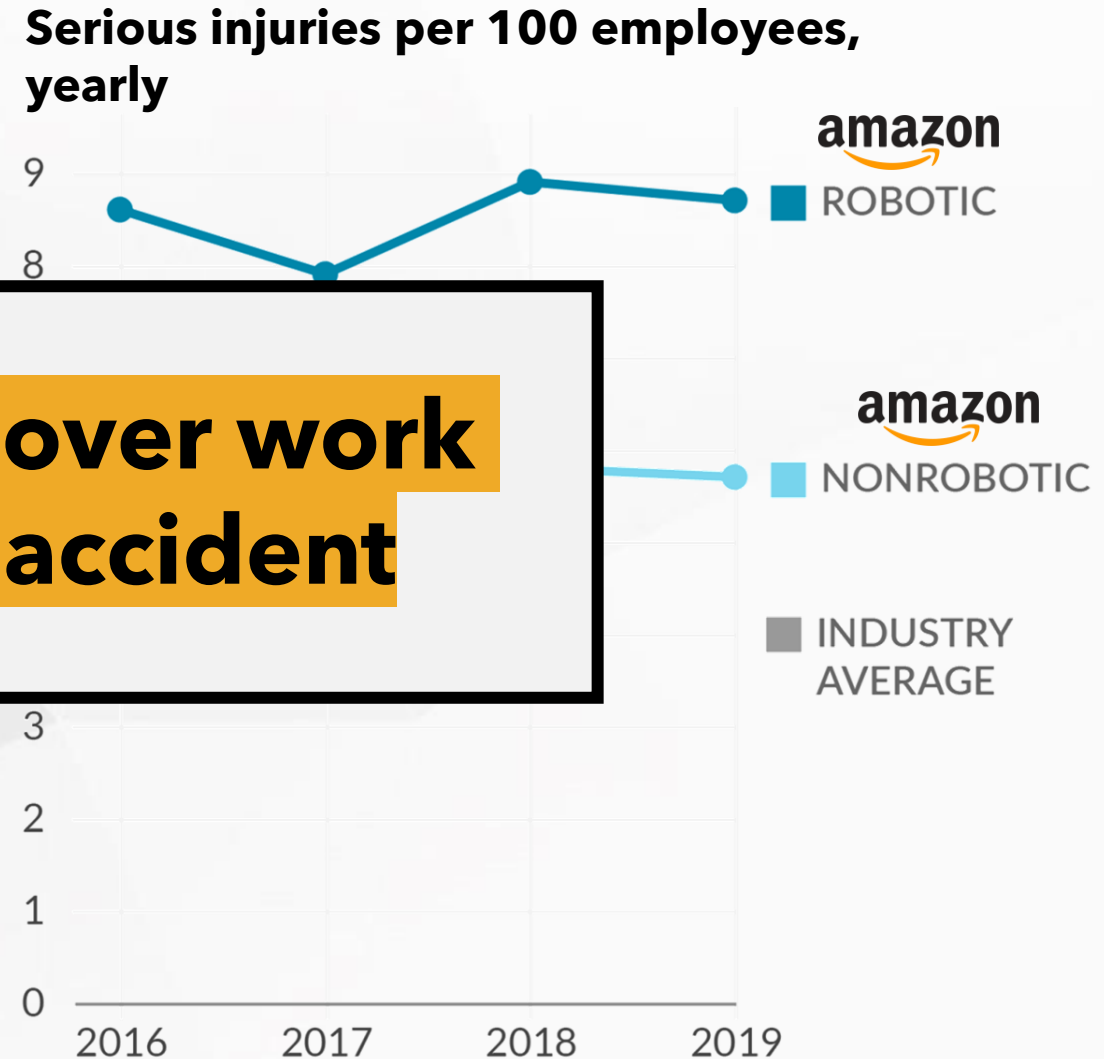


Case study: Amazon

A mounting injury crisis

- The Center for Investigative Reporting revealed a mounting injury crisis at Amazon warehouses, with a 50% increase in serious injuries at robotic facilities.
- In 2019, Amazon reported **14,000** serious injuries, a 50% increase from 2018.
- The rate of serious injuries was more than **50% higher at warehouses with robots** than ones without.
- The overall rate of 7.7 serious injuries per 100 employees was nearly **double the most recent industry average**.

Reduced control over work results in more accidents



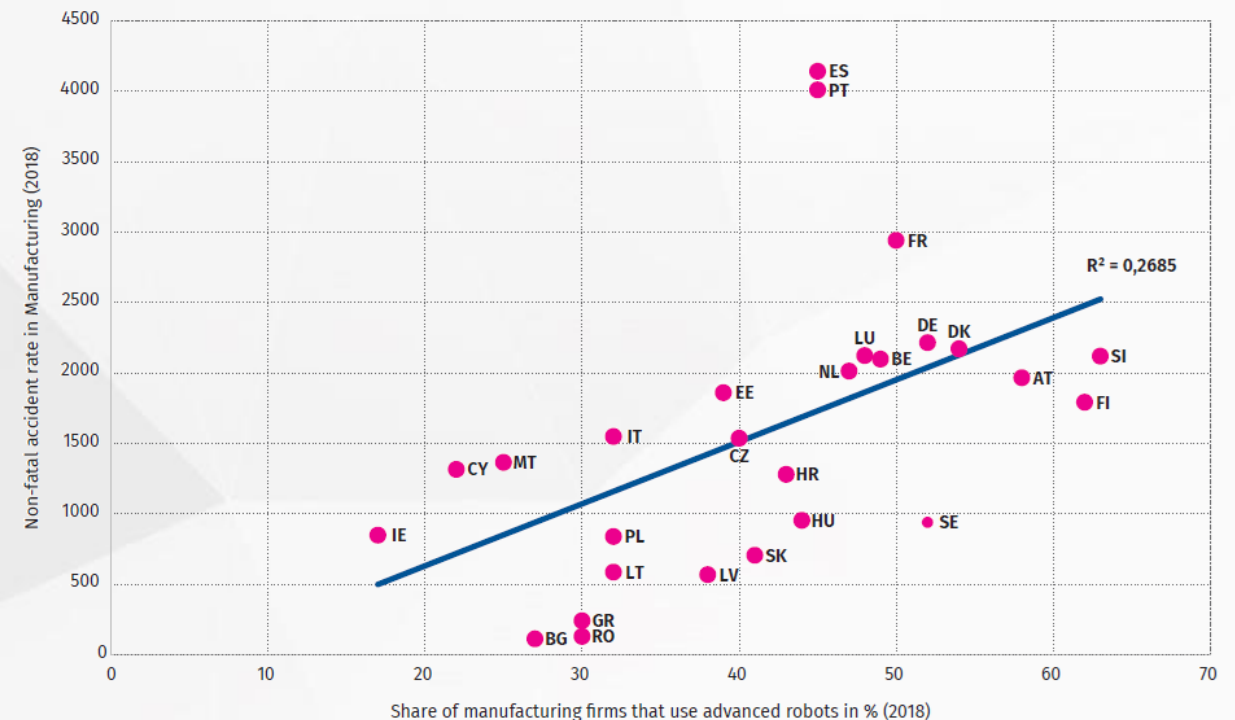
Source: Center for Investigative Reporting

What does research say?

Evidence from EU-wide surveys

- Eurostat (hsw_n2_01) and European Investment Bank (Investment Survey 2019/20).
- Share of manufacturing firms using advanced robots against non-fatal incident rate in manufacturing in 2018, by country

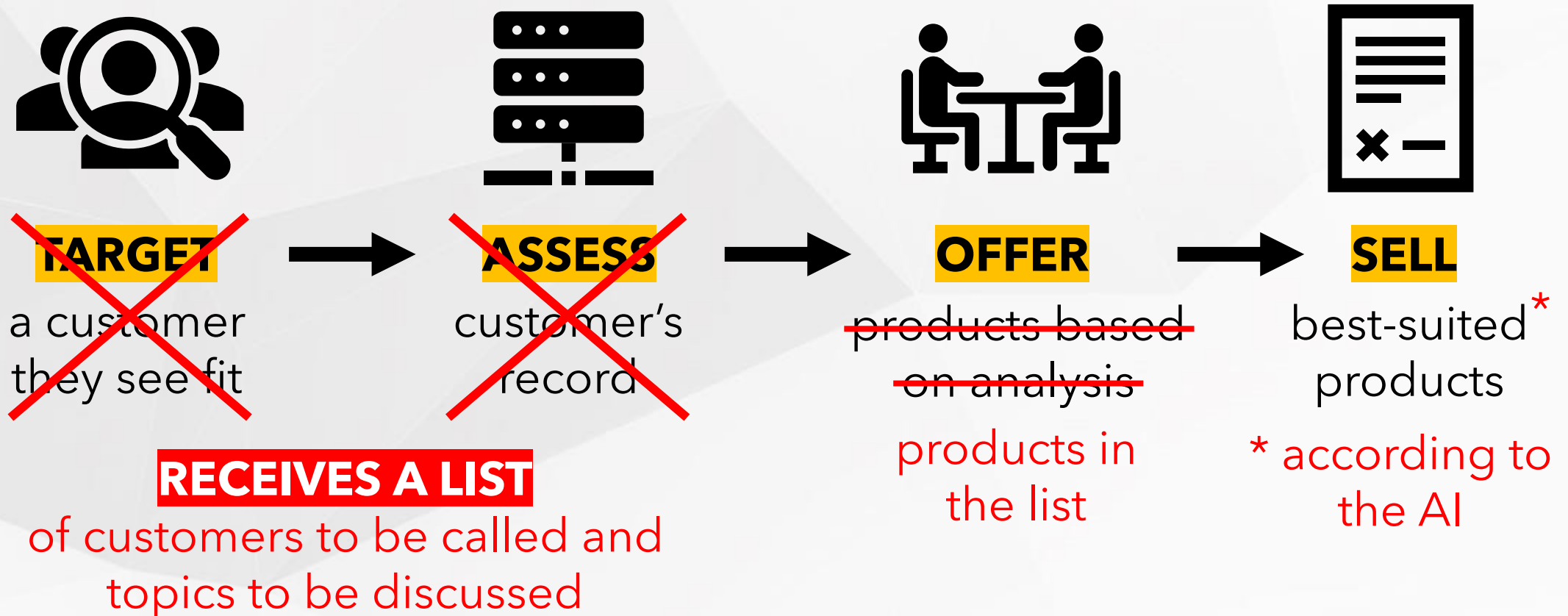
Incident rates tend to be higher in countries with a higher use of advanced robots



Source: ETUI Benchmarking Working Europe 2023

Case study: BankCo

Introduction of machine learning algorithms to prepare **customer-targeting lists and proposals**





“

The work is standardized by the way everything is controlled today; the work is **more standardized than before.**

”

HEAD OF THE AGENCY

39M



“

We are seen on all indicators. Our managers also have indicators. **Everything is quantified.** We no longer know where to turn.

”

ASSISTANT HEAD OF THE AGENCY



“

They introduced a processing rate for scheduled appointments; how many should be processed within a time frame.

”

ASSISTANT HEAD OF THE AGENCY



“

All this monitoring gives the impression that the list is **not in our interests.**

”

ASSISTANT HEAD OF THE AGENCY

49F



“

When you see the list prescription, there is a script to contact the customer, so that **you cannot get out of its way.**

”

HEAD OF THE AGENCY

32M

A win-win scenario?



Or a growing imbalance?



Job demands

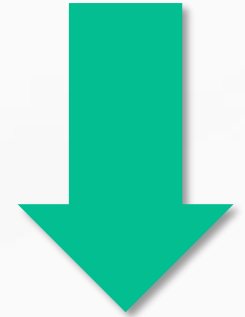
Higher levels of physical
and mental effort



OSH

- ▲ Work-related stress
- ▲ Risk of injuries

Job control



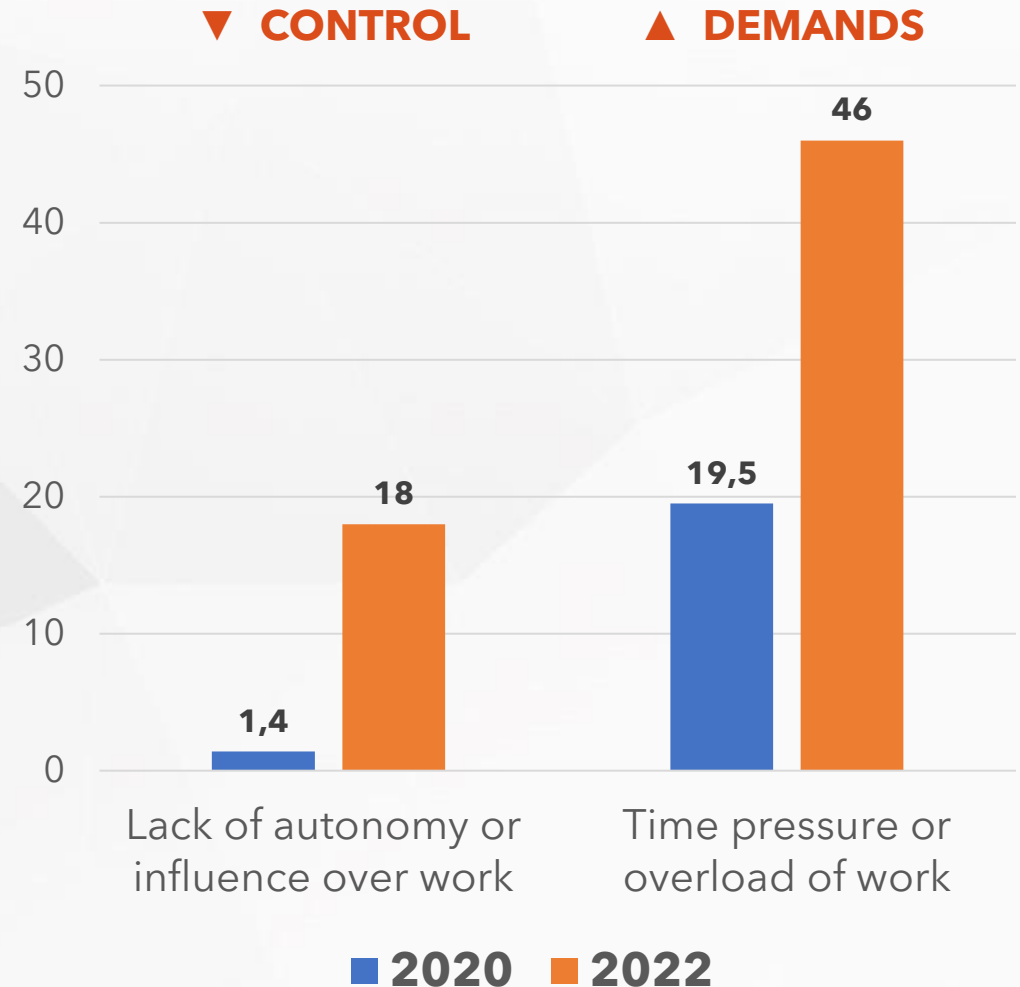
Less influence on how
work is performed

Or a growing imbalance?

Evidence from EU-wide surveys

- EU Labour Force Survey 2020 and EU-OSHA Flash Eurobarometer 2022
- Share of EU workers exposed to low levels of control and high levels of demands

**An unprecedented deterioration
in psychosocial working
conditions**

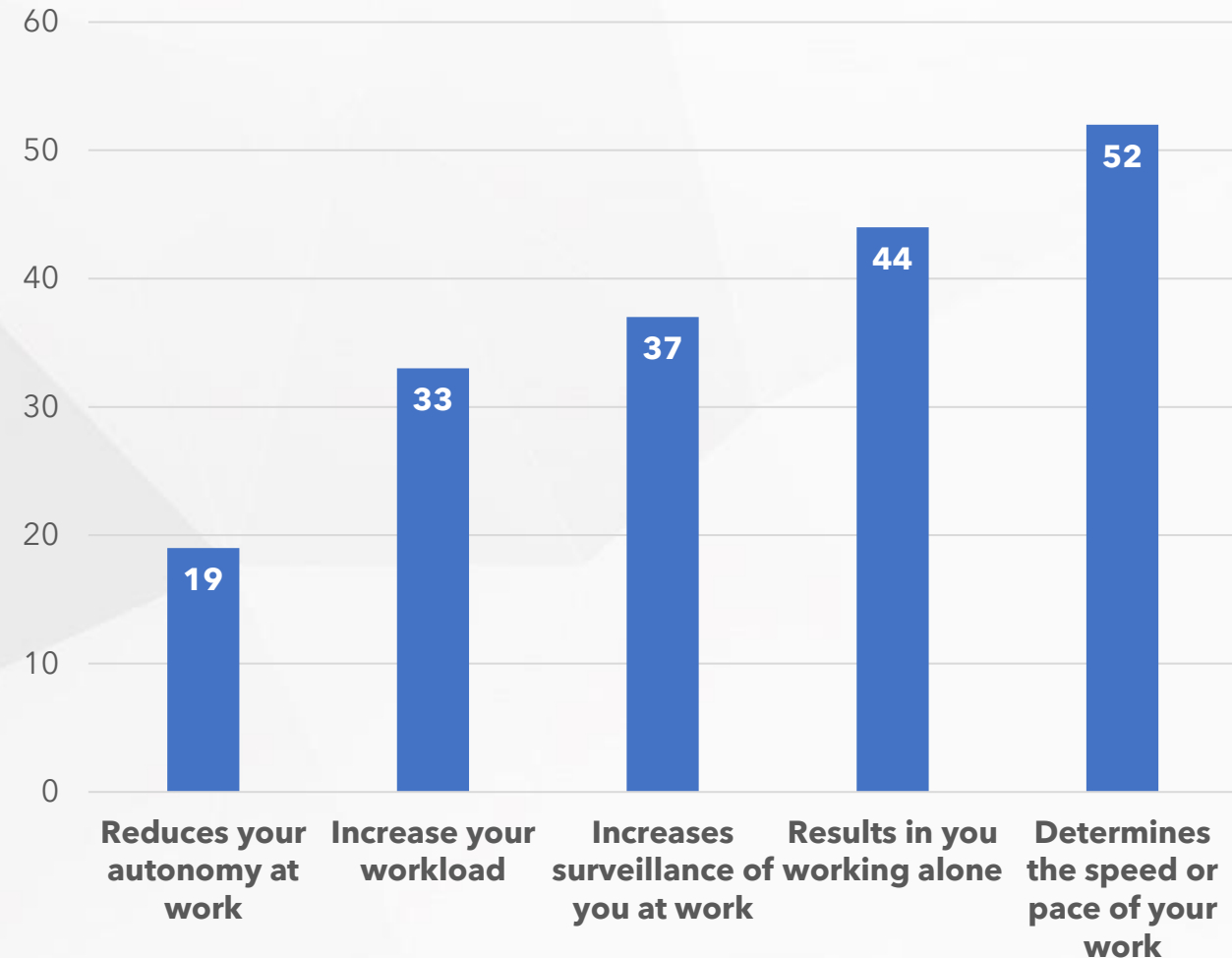


Or a growing imbalance?

Evidence from EU-wide surveys

- EU-OSHA Flash Eurobarometer 2022
- Share of EU workers saying the use of digital technologies in their workplace...

The use of digital technologies is frequently associated with reduced control and heightened demands



Tipping the scale

Prescriptive use cases



*With automation happening
at the decision-making level*



Supportive use cases



*With automation happening
at the process level*

Thank you for your attention