The Role of Social Dialogue in Enabling the Twin Transition – EU-OSHA's campaign on digitalisation

Accelerating sustainability in telecoms, Connect Europe & UNI Europa

Final Conference 4 June 2025

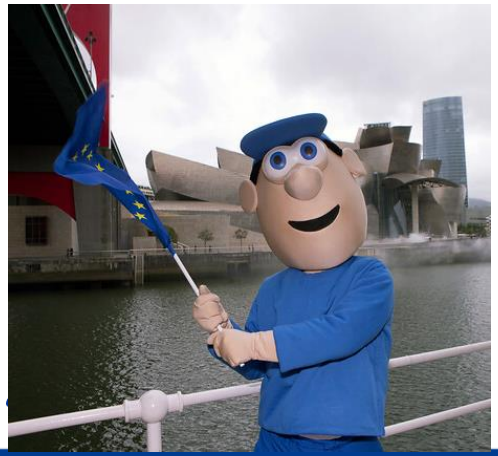
date

European Agency for Safety and Health at Work

Healthy Workplaces

European Agency for Safety and Health at Work (EU-OSHA)

- **A body of the EU**
- **Established in 1996 in Bilbao, Spain**
- **EU-OSHA is committed to making Europe a safer, healthier and more productive place to work, by promoting a culture of risk prevention to improve working conditions in Europe.**
- **Tripartite Board bringing together:**
  - governments, employers' and workers' organisations
  - the European Commission



Threefold mission

1. **Research** to support evidence-based policy making
2. **Guidance and tools** to assist in prevention of risks at work
3. **Networking and awareness-raising** to foster a prevention culture

Our work

- **EU-OSHA: “We work to make European workplaces safer, healthier and more productive — for the benefit of businesses, employees and governments.”**

Research projects

European Agency for Safety and Health at Work

Healthy Workplaces

NAPO

Surveys

OiRA Online Interactive Risk Assessment

ESENER

Campaigns

OSH WIKI Networking knowledge

Foresight

E-tools / guides

https://healthy-workplaces.eu

Healthy Workplaces Campain (HWC) 2023-25
“Safe and healthy work in the digital age”

- **Five priority areas**
  1. Digital platform work (February – May 2024)
  2. Automation of tasks (June – September 2024)
  3. Remote and hybrid work (October 2024 – January 2025)
  4. Worker management through AI/algorithms (February – May 2025)
  5. Smart digital systems for OSH monitoring (June – September 2025)

- **Campaign summit 2-3 December 2025, Bilbao (Spain)**

The future: Europe's Green and Digital Transition

The Just Transition Mechanism: making sure no one is left behind

(Binh Nguyen/Canary Media)

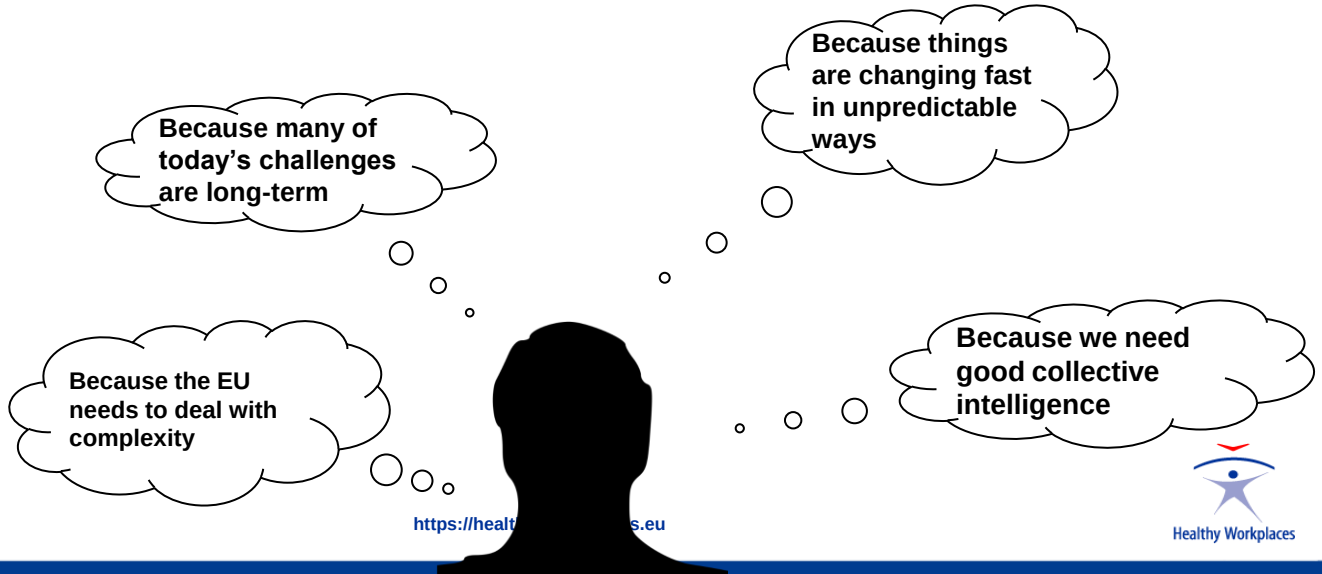
https://healthy

coal
ill

Anticipating change

EU-OSHA Foresight activities:

- Foresight studies since 2008
- Future of Work (FOW) articles.

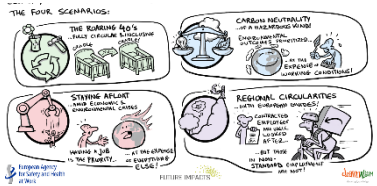


EU-OSHA's Foresight activity

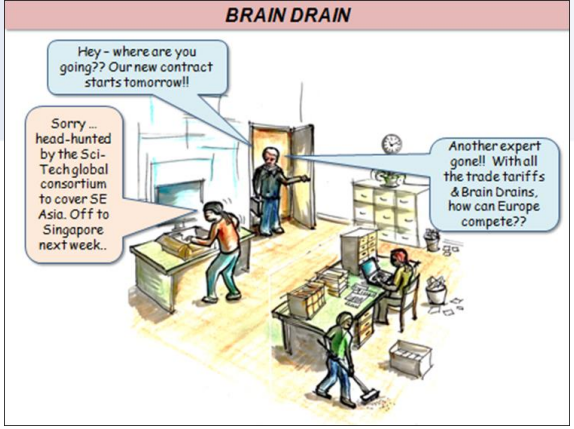
- **2002 – 2006: 4 Expert forecasts**
  - On emerging physical, chemical, biological and psychosocial risks
  - Based on Delphi surveys

based on scenario-building

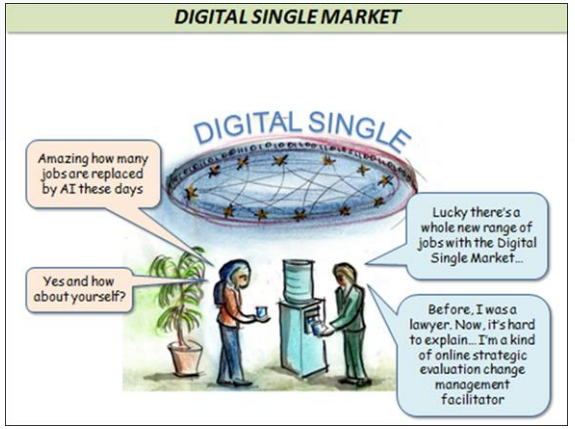
- **Since 2008: Foresight cycles**
  - Impact of new technologies on the safety & health of workers in **"green jobs" in 2020**;
  - Impact **of ICT/digitalisation** on the safety & health of workers **in 2025**,
  - In 2020 on **Circular economy (CE)** and its effect on OSH **in 2040**.
  - In 2024 EU-OSHA initiates a 4th foresight cycle on **OSH implications of climate change related developments and crises**.



https://osha.europa.eu/en/emerging-risks



Governance & public attitudes



High/Supportive

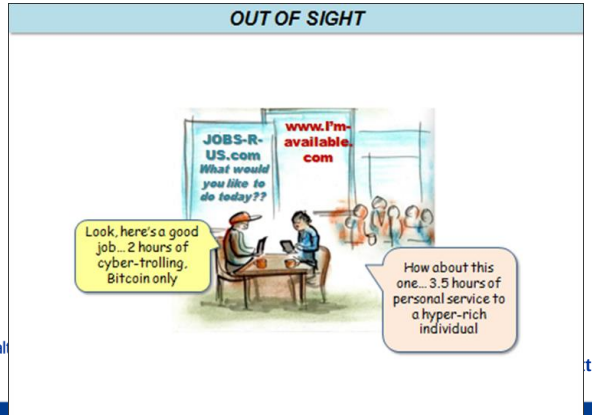
Economic growth & technology innovation

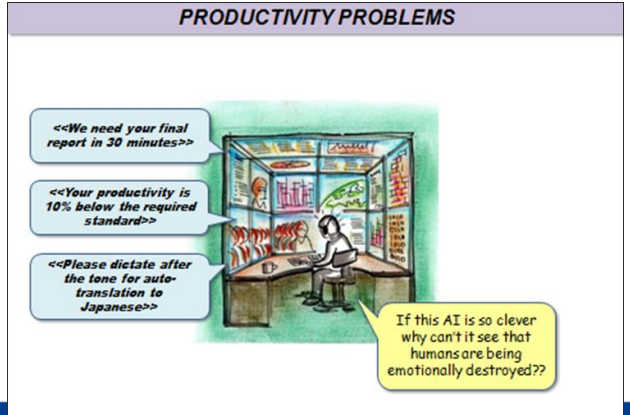
Low

High

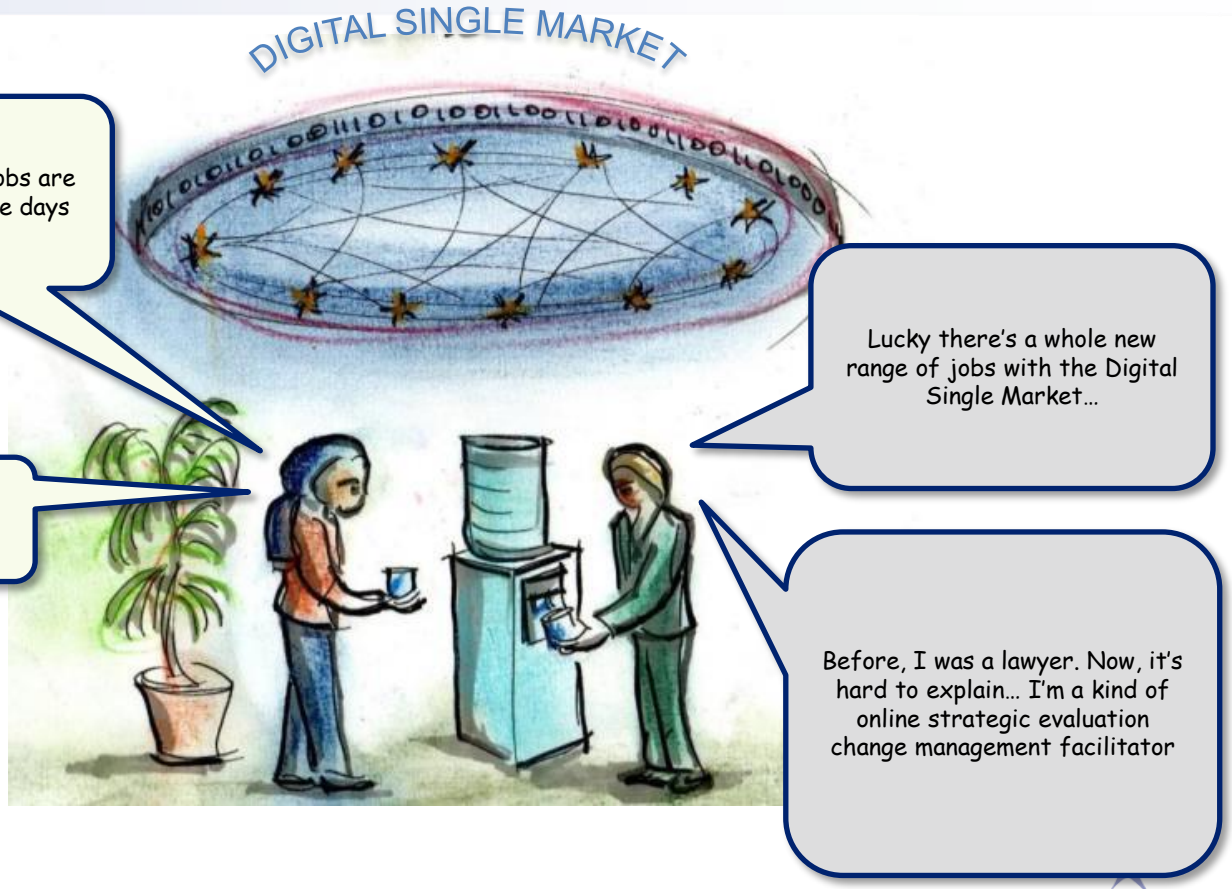
Scenario 1 Evolution	Scenario 2 Transformation
Scenario 4 Fragmentation	Scenario 3 Exploitation

Low/ Resistive

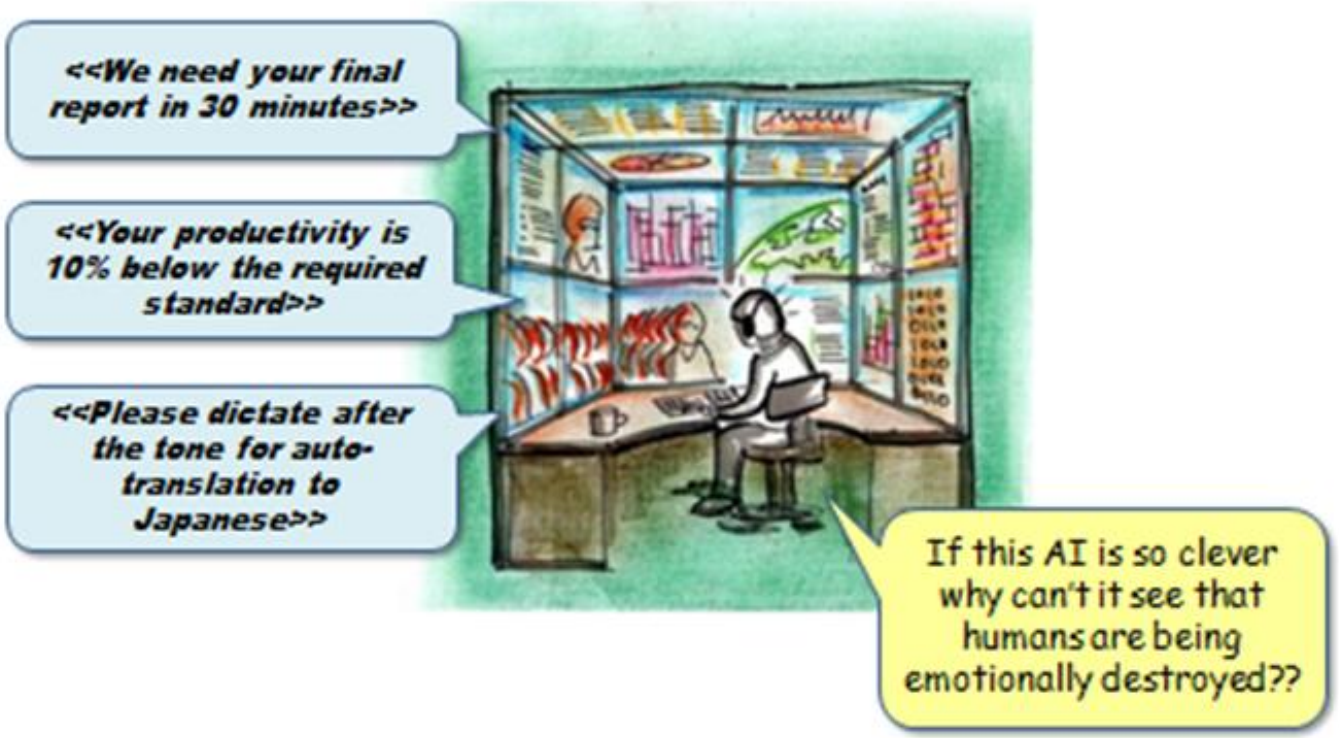




DIGITAL SINGLE MARKET



PRODUCTIVITY PROBLEMS



EU-OSHA's foresight: OSH aspects common to all scenarios

- Changing work patterns,
- Loss of and changes to jobs
- Increasing numbers of self-employed and online platform workers
- Change to employer/employee relationship
- Increasing use of wearable ICT and smart PPE
- Ergonomic risks by online work
- Automation, robotics, AI and new HMIs will remove people from dangerous environments
- Work related stress

The difference is the pace of change, how widespread or fragmented this is across sectors and how well these changes are managed.

Cited in ’18 on “Potential impact on OSH..”

From an OSH regulatory perspective there is a perfect storm whereby there are rapid changes in the nature of work, business structures and technology that have the potential to undermine existing mechanisms for managing and regulating OSH.

What are the implications for OSH? Do we have to redefine OSH management?

There are opportunities.

But there are also concerns that all this could cause a ‘race to the bottom’ in employment standards...

From foresight findings to research priority setting and awareness raising campaign

Healthy Workplaces Campaign 2023-25

SAFE AND HEALTHY WORK IN THE DIGITAL AGE

European Agency for Safety and Health at Work

European Agency for Safety and Health at Work

Healthy Workplaces

Safety and health at work is everyone's concern. It's good for you. It's good for business.

Healthy Workplaces Campaign 2023-25
Safe and healthy work in the digital age

Ensuring effective prevention in the digital world of work

European Agency for Safety and Health at Work

Healthy Workplaces

Safety and health at work is everyone's concern. It's good for you. It's good for business.

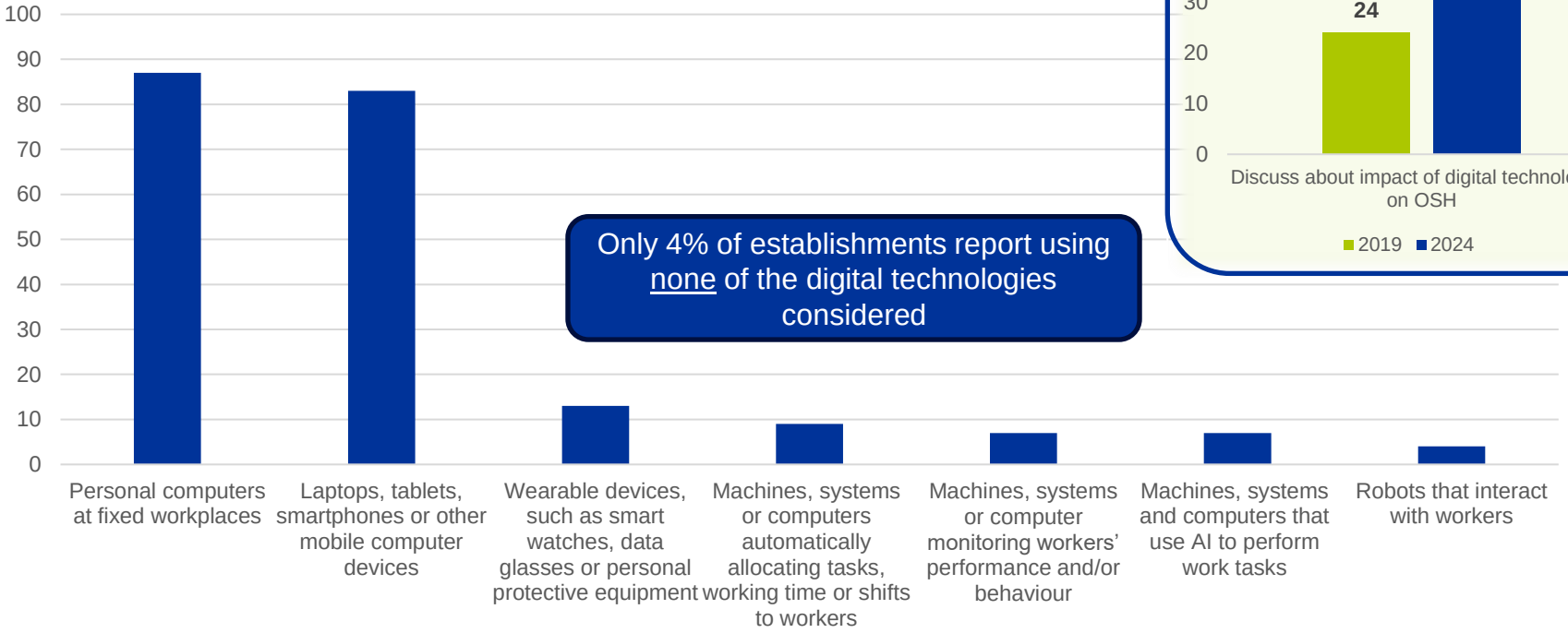
Campaign objectives

The campaign aims to:

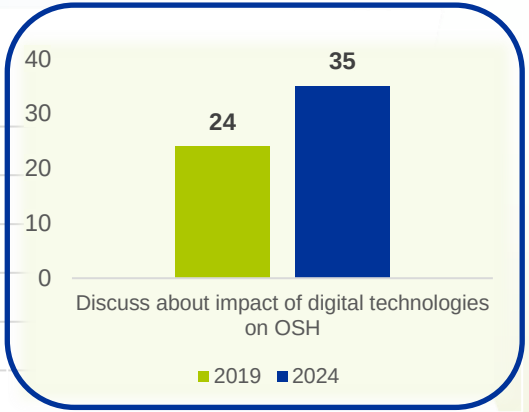
- Raise **awareness** of digitalisation and its OSH implications
- Increase **knowledge** about the safe and productive use of digital technologies across all sectors
- Inform about **emerging risks and opportunities**
- Promote **risk assessment** and the healthy and safe management of digital transformation of work
- Facilitate the **exchange of information and good practices**

Use of digital technologies in establishments in the EU (%)

ESENER 2024 (EU-27)



Only 4% of establishments report using none of the digital technologies considered

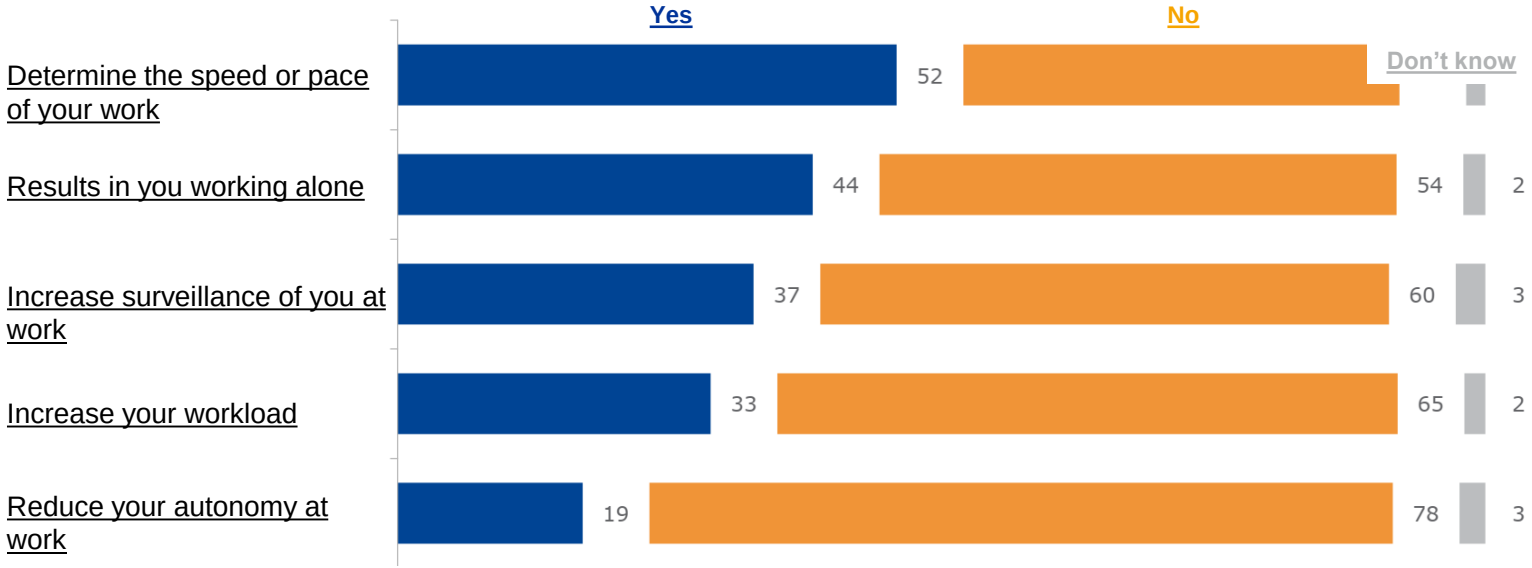


Base: all establishments.

Facts and figures – use of digital technologies

EU-OSHA, OSH Pulse 2022

Would you say that the use of digital technologies in your workplace… ?



Base: all respondents, EU27 (n=25 683)

Facts and figures – Psychosocial risks

EU-OSHA, ESENER 2019

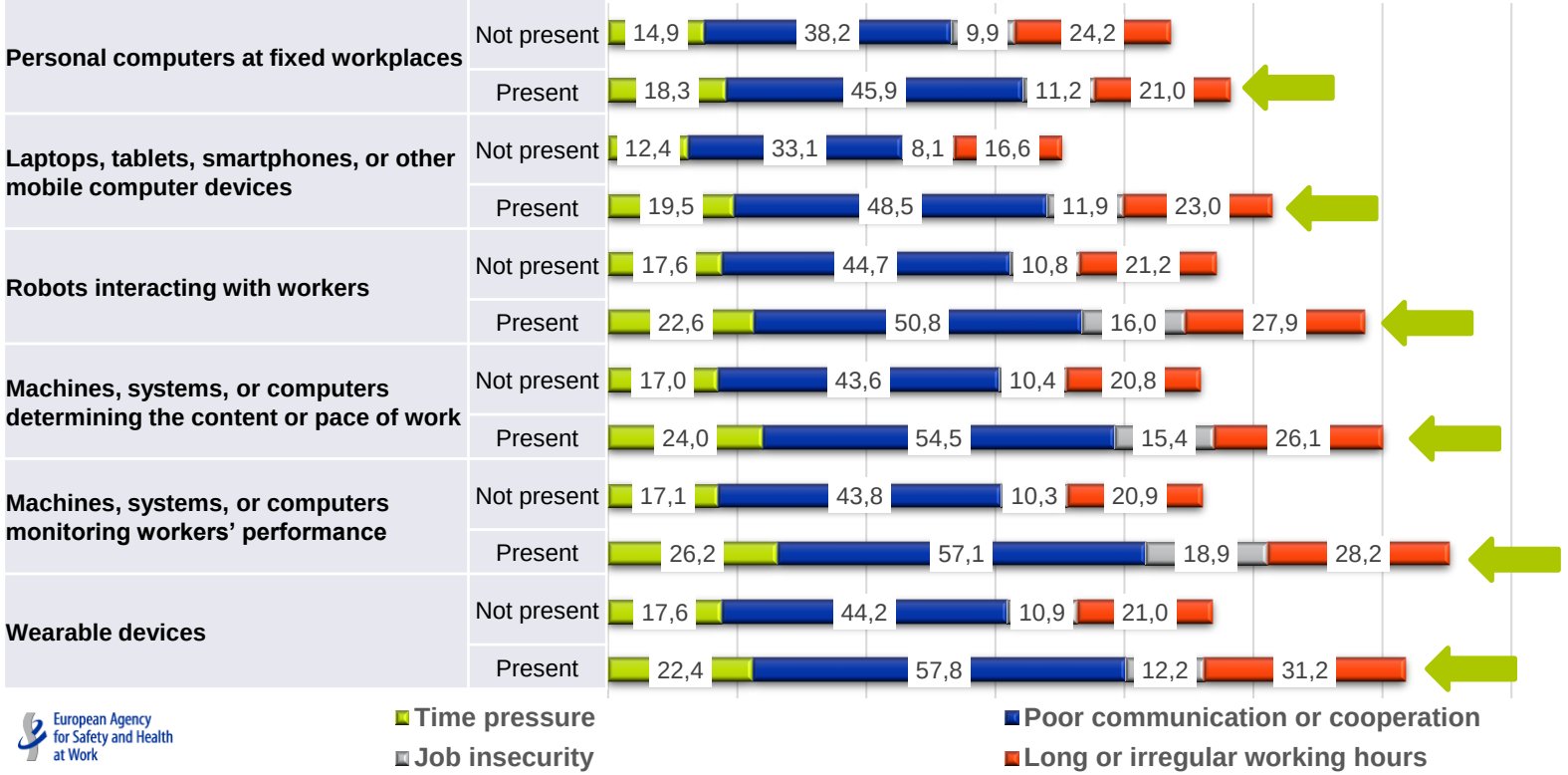
Psychosocial risks most commonly associated with digital technologies:

- time pressure
- long/irregular working hours
- poor communication/cooperation
- job insecurity

Facts and figures: digital technologies & psychosocial risks

EU-OSHA, ESENER 2019

Workplaces reporting psychosocial risks by presence of digital technology, EU27

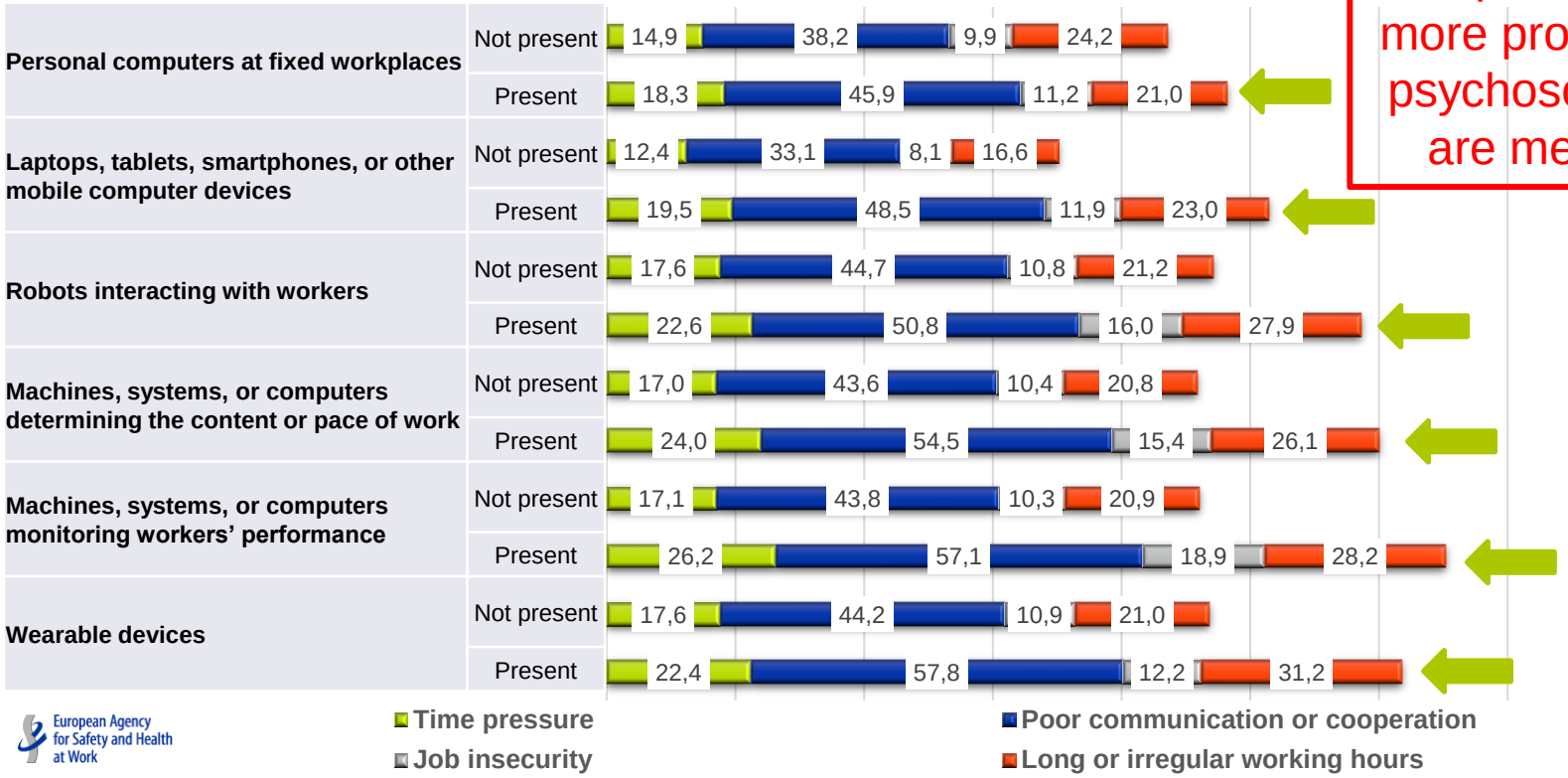


European Agency for Safety and Health at Work

Facts and figures: digital technologies & psychosocial risks

EU-OSHA, ESENER 2019

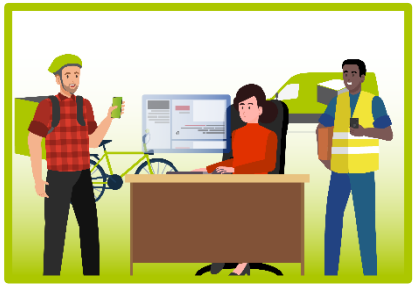
Workplaces reporting psychosocial risks by presence of digital technology, EU27



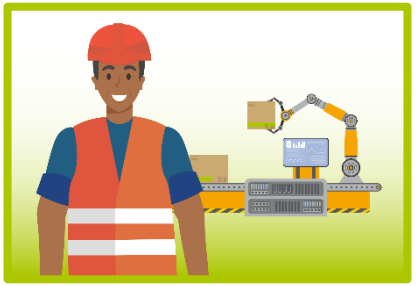
Where technology is present, it is more probable that psychosocial risks are mentioned

European Agency for Safety and Health at Work

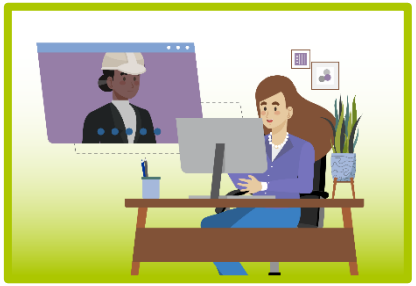
Priority areas



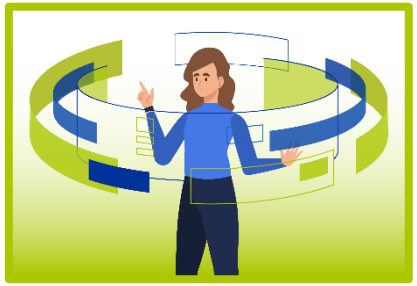
Digital platform work



Automation of tasks



Remote and hybrid work



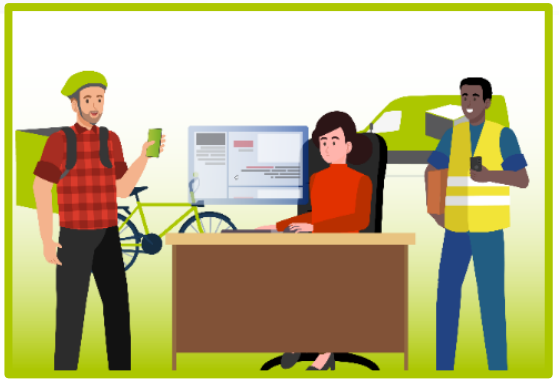
Worker management through AI

Smart digital systems

Priority areas – Digital platform work

OPPORTUNITIES

- Worker autonomy
- Flexible working hours
- Improved access to the labour market for disadvantaged workers



RISKS AND CHALLENGES

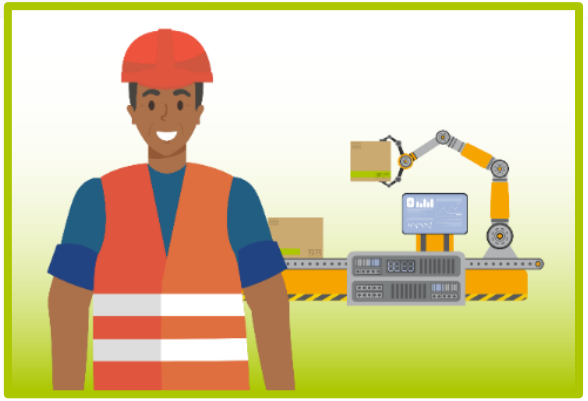
- Professional isolation
- Long/irregular working hours
- Algorithmic management
- Digital monitoring/surveillance
- Limited OSH regulations

"Digital platform work frequently involves jobs in occupations and sectors that are at high risk and associated with poorer working conditions."

Priority areas – Automation of tasks

OPPORTUNITIES

- Automation of high-risk or repetitive work tasks
- Increased time for worker learning/creativity
- Reduced exposure to hazardous environments



RISKS AND CHALLENGES

- Loss of human situation awareness
- Over-reliance
- Possible loss of specific skills of workers

"Using digital technologies for automation processes comes with a number of opportunities, but also potential risks and challenges, such as the loss of human situation awareness, over-reliance, or possible loss of specific skills of workers."

Priority areas – Remote and hybrid work

OPPORTUNITIES

- Increased autonomy and flexibility
- Better work-life balance
- Improved motivation and productivity
- Reduced commute time
- Safety from high-risk environments

RISKS AND CHALLENGES

- Isolation and lone working
- Work intensification
- Long/irregular working hours
- Conflicts between private and working life
- Inadequate equipment

"Remote work must be included in the employer's mandatory risk assessment."

Priority areas – Worker management through AI

OPPORTUNITIES

- Improved scheduling and task allocation
- Optimised work organisation
- Information to identify OSH issues

RISKS AND CHALLENGES

- Reduced worker autonomy and control
- Increased pressure to work faster
- Invasion of privacy

"It is essential to build trust in these systems by informing, consulting and allowing workers to participate in their design and implementation."

Worker management is as old as work is … BUT nowadays…

Digital technologies

Personal computers

Laptops & Mobile devices

GPS

Cameras

Wearable devices

Other sensory devices

In all jobs using ICT

Both in and outside the workplace

Large amount of real-time data collected

Time spent per task

Content of calls or emails

Keyboard clicks

Screenshots

Websites visited

Social media

Movements

Locations

Worker ratings

Vital signs

Indicators of stress and fatigue

Micro-facial expressions

Tone of voice

Workplace

Etc.

Processed by Artificial Intelligence (AI) / algorithms

Providing diagnostic, prescriptive or predictive insight

To make automated or semi-automated decisions

AI-based Worker Management (AIWM) to improve:

Productivity and efficiency

Management of work (task allocation, shift scheduling, etc.)

Worker performance (directing how to work, controlling performance, nudging/penalising)

HR management, incl. performance appraisals, career development, talent management

Worker engagement

Health and safety monitoring, prevention and training

Worker well-being

Potential benefits of AIWM for OSH

- Better allocation of tasks and workload to workers
- Risk monitoring and alerting to various psychosocial risks
- Personalised digital counselling for workers
- Data to support workplace risk assessment
- Input into OSH training programmes

So far OSH improvements through AIWM remain limited in practice

OSH risks and challenges associated with AIWM

- Constant monitoring and direction of workers
- Reduced worker autonomy and job control
- Increased performance pressure/time pressure/ work intensity
- Isolation and feeling of loneliness
- Reduced interactions with managers and peers
- Reduced intervention in decision-making
- Lack of transparency and Information imbalance
- Reduced/no opportunities for feedback/negotiation
- Privacy/data protection issues

Psychosocial risks need specific attention

Priority areas – Smart digital systems

OPPORTUNITIES

- Monitor (real-time) risks, support risk assessment, help prevent and minimise harm to workers
- Digital counselling for workers
- Informed decision-making
- Input to design OSH trainings
- Support targeted OSH inspections

RISKS AND CHALLENGES

- Data inaccuracies or misinterpretation
- Overreliance on technology
- Risk of “delegating” the workplace risk assessment to technology
- Use of data a different purpose/surveillance
- Overwhelming (OSH) managers with data

These new systems use digital technologies to collect and analyse data or signals in order to identify and assess OSH risks, thereby preventing or minimising harm and promoting OSH.”

Wearables, sensors, smart systems with real-time assessment, generating warnings, for example:

- **Smartphone apps** that are used for nudging workers towards a healthier behaviour
- **Smart glasses**, or **drones** in the construction and the mining industries, to effectively reach and monitor dangerous areas of work site avoiding to put humans in danger.
- **E-textile technologies** able to interact with workers, with sensors that may be embedded in **hardhats or safety glasses**
- **Smart watches** that enable the gathering of physiological, emotional data of people via IoT
- **VR/AR tools** used for training, as an interface providing monitoring data.
- **Wearable devices** that can identify levels of gases, toxins, noise levels and high-risk temperatures
- **Smartphone apps** to allow easy reporting and/or task assistance in the event of accidents at work.

Smart digital systems: proactive versus reactive

Proactive OSH monitoring systems

Reactive OSH monitoring systems

© EU-OSHA, Drawnalism

Smart Digital Tools for monitoring workers' OSH: risks/challenges

Practical limitations

Technology malfunctioning

e.g., batteries exploding or sensors not working

Sensor accuracy

How reliable are sensors in facilities with multiple environmental factors?

Hardware hindering movement

Wearing exoskeletons or PPE' s

OSH monitoring systems' technological limitations

e.g., infrared-cameras

OSH monitoring systems' net effects

e.g., impact of redistribution of weight through exoskeletons for other parts of the body

Psycho social /physical harm

Work intensification

Workplaces as electronic sweatshops?

Work alienation

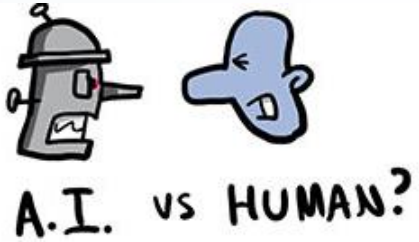
Quantity vs. quality

Work as a social place

Invasion of privacy

Loss of ownership

Overwhelming OSH managers with data and expectations



Data considerations

Data privacy, security and Data accuracy

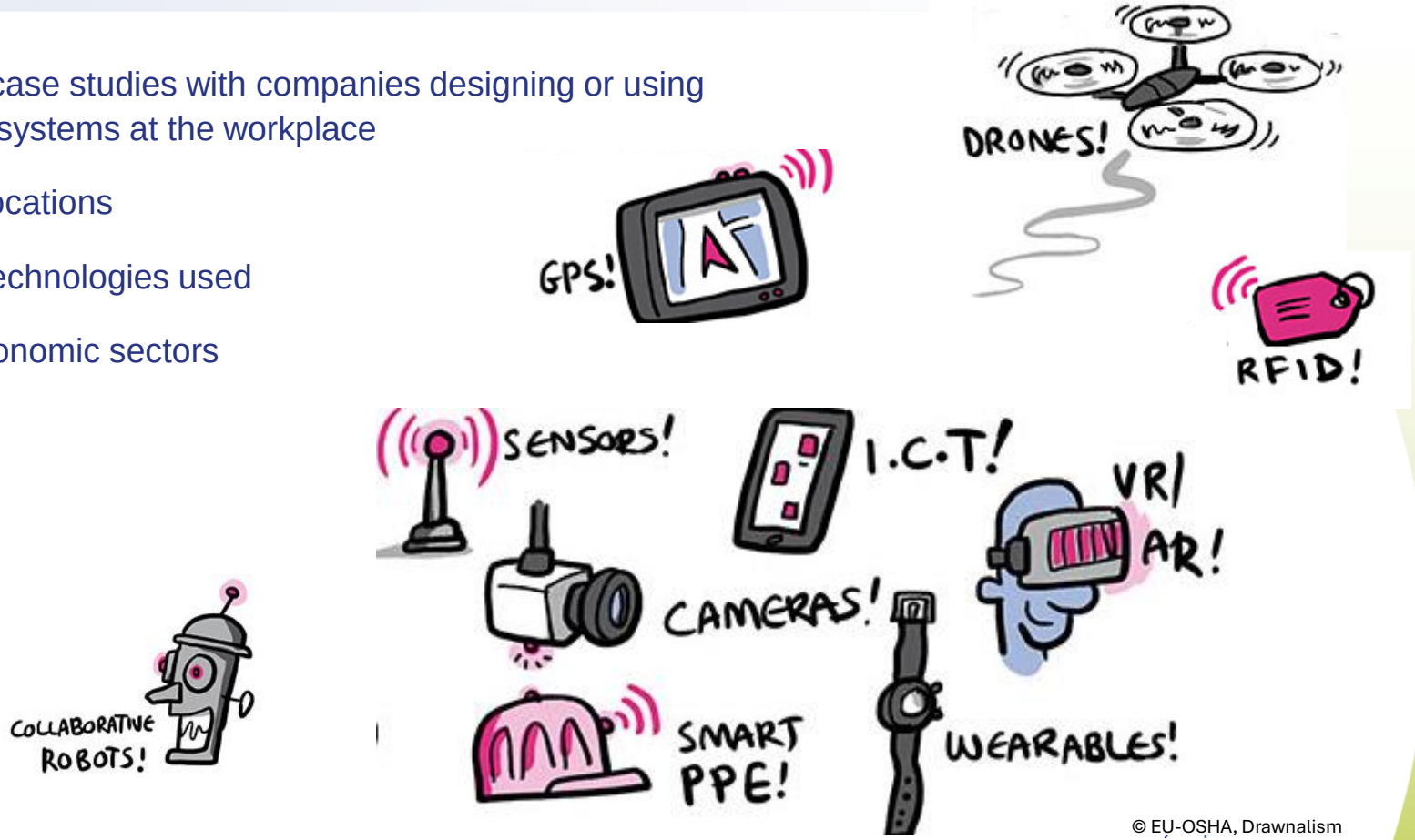
Data interpretation and (mis)use

Napo.. In technostress

https://healthy-workplaces.osha.europa.eu/en/tools-and-publications/napo-films

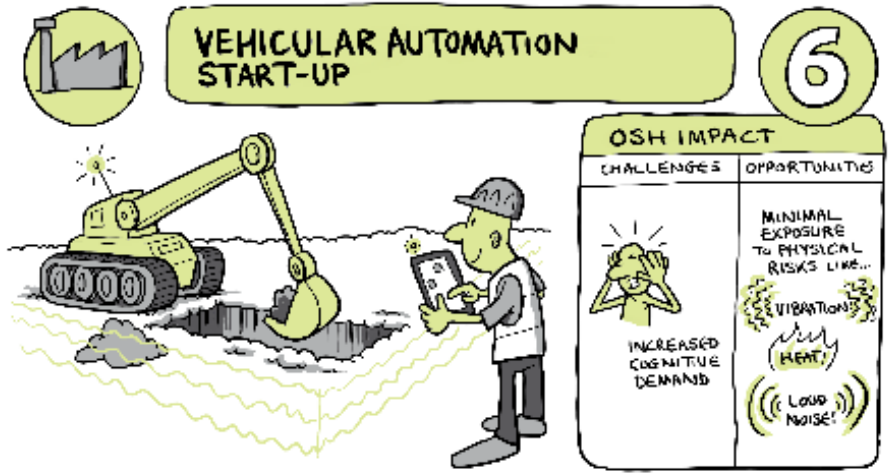
Smart digital tools for monitoring workers' OSH: case studies

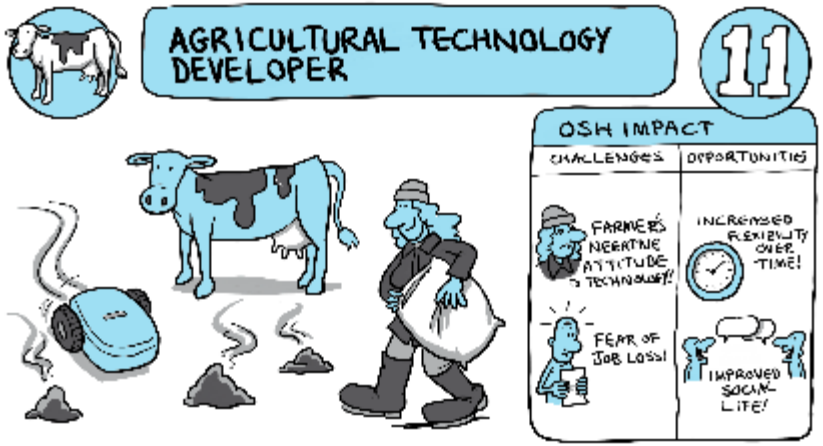
- 9 in-depth case studies with companies designing or using monitoring systems at the workplace
- Variety of locations
- Variety of technologies used
- Multiple economic sectors



© EU-OSHA, Drawnalism

39 case studies available on EU-OSHA´s website

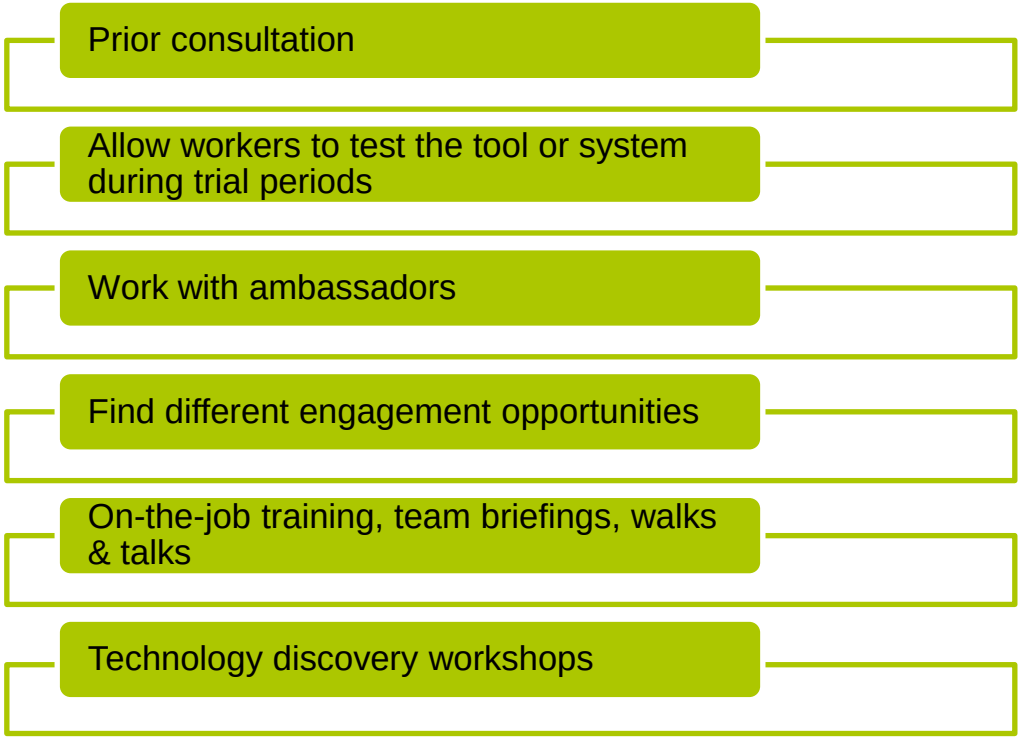




Smart digital tools – key takeaways

- Smart digital tools can improve workplace safety & health in an innovative proactive way
- **Transparent** use of technology is essential
- Distinguishing between **performance measurement and OSH monitoring** helps maintain and build workers' **trust**
- **Worker engagement and involvement** in the entire process of smart digital tool onboarding is important
- Smart digital systems **must complement other OSH measures**
- **Legislation, labour inspections, and research** must evolve to keep pace with smart digital systems
- Technologies like wearables promote **inclusion** and diversity

Learnings: worker Involvement



Focus on data management: privacy by design

- **Anonymisation**

- **Data minimisation**

- **Compliance**

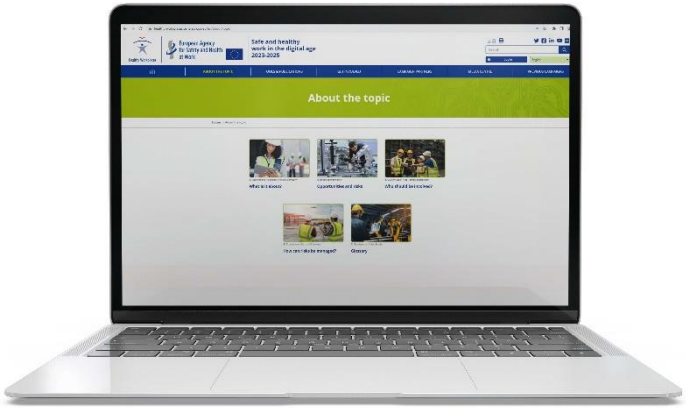
- **Storage and cybersecurity**

On some occasions: privacy by choice; restricting data access to designated persons

Risk prevention

- **Human-centred approach**
- **Equal access to information of all stakeholders**
- **Worker consultation/participation in the development, implementation and use of digital technologies and systems**
- **Transparency about the way a digital tool operates**
- **Holistic approach to evaluating the impact of digital technologies and systems on OSH**

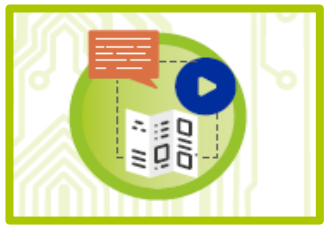
Resources



Consult all publications on the topic:

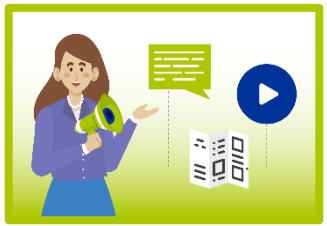
https://healthy-workplaces.osha.europa.eu/en/about-topic/priority-area/smart-digital-systems

Campaign resources



Publications

Campaign materials



Campaign toolkit

Social media kit

Napo films

OSHwiki

Case studies

Legislation and regulations

Infographics

EU-OSHA publications

- **OSH overview Digitalisation and OSH (2021-2023):** **https://osha.europa.eu/en/themes/digitalisation-work**

- **Campaign Safe and healthy work (2023- 2025)** **www.healthy-workplaces.eu**

- **Foresight study on Circular economy** **https://osha.europa.eu/en/emerging-risks/circular-economy**

Thank you!

starren@osha.europa.eu

Copyright

© European Agency for Safety and Health at Work, 2025

Reproduction is authorised provided the source is acknowledged.

For reproduction or use of any photo under any other copyright than EU-OSHA, permission must be sought directly from the copyright holder.

The images in the ‘promotion milestones’ slides, excluding the HWC visuals, are used under extended license of ‘Adobe Stock’ purchased by EU-OSHA, therefore may not be reproduced in any form.

Neither the European Agency for Safety and Health at Work nor any person acting on behalf of the agency is responsible for the use that might be made of the following information.