New forms of worker management and impact on occupational safety and health (OSH)

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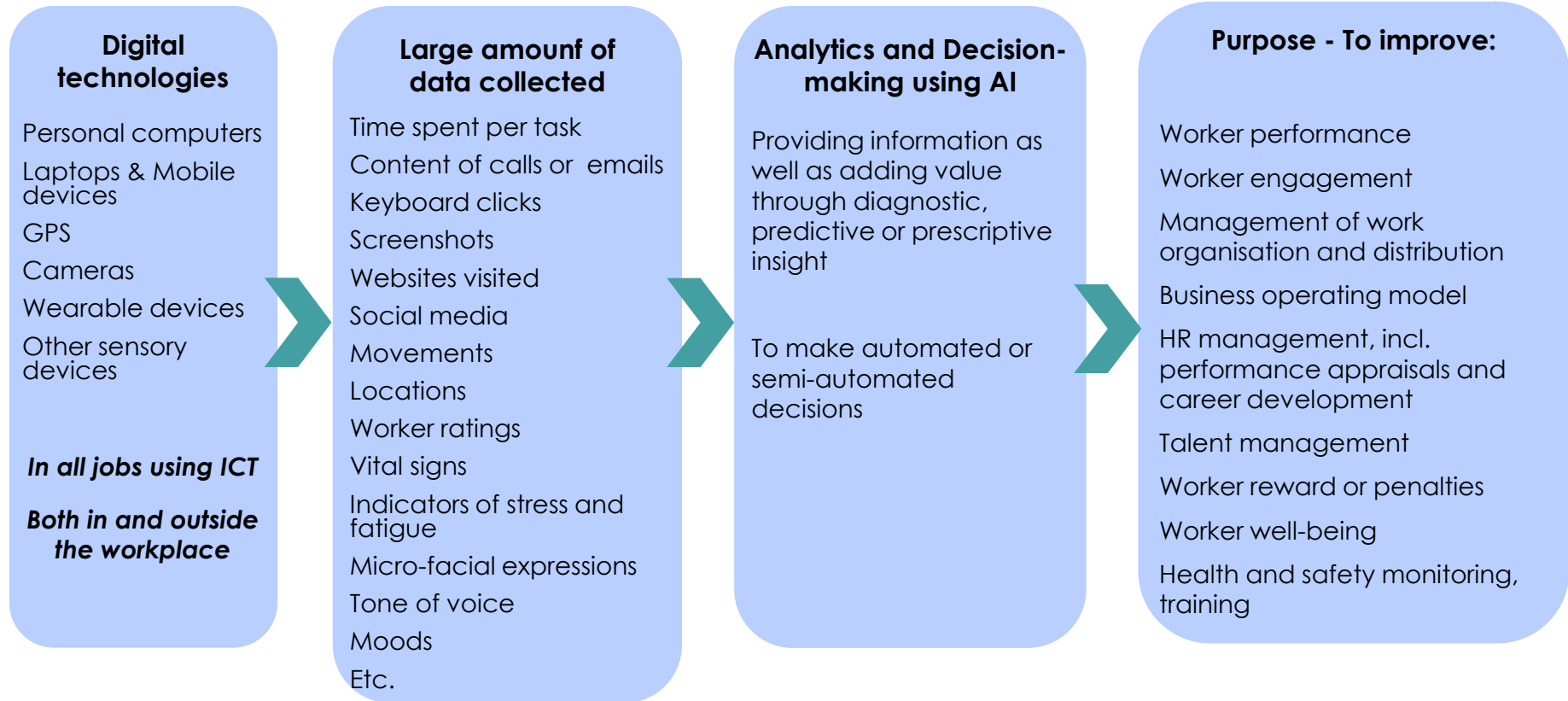
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Overview of policies, research and practices on:

- **Advanced robotics & AI-based systems for the automation of tasks and OSH**
  - Automation of <u>physical and cognitive tasks</u>, changed job contents and designs, and impact on OSH
    - incl. <u>smart cobots</u> and <u>AI-systems automating cognitive</u> tasks (e.g. "softwares" using machine learning, natural language processing, knowledge-based systems to assist medical diagnosis, legal case)

- **New forms of worker management through AI-based systems and OSH**
  - Algorithmic management, people analytics, gamification

- **OSH and digital platform work**
  - Up-date of EU-OSHA 2017 report and in-depth description of policies/initiatives
  - Incl. <u>web-based</u> platforms and applications ("<u>apps</u>"), manual tasks performed off-line and cognitive tasks online
  - 4 case examples: Parcel delivery; Handy work; Remote programmers; Online content reviewers

- **Digital systems for the monitoring and improvement of OSH**
  - Wearables - smart glasses, watches, smart PPEs, drones

- **Telework and remote work and OSH**

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

  https://osha.europa.eu/en/emerging-risks/developments-ict-and-digitalisation-work

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Workers' monitoring is as old as work itself… BUT…

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 amounf of 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

Moods

Etc.

Analytics and Decision-making using AI

Providing information as well as adding value through diagnostic, predictive or prescriptive insight

To make automated or semi-automated decisions

Purpose - To improve:

Worker performance

Worker engagement

Management of work organisation and distribution

Business operating model

HR management, incl. performance appraisals and career development

Talent management

Worker reward or penalties

Worker well-being

Health and safety monitoring, training

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Source: adapted from Visionary Analytics

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Challenges for OSH

Work organisation & psychosocial risks

- **Excessive micro-management**
- **Reduced job control and autonomy**
- **Increased work intensity**
- **Cognitive overload vs underload**
- **Performance pressure**
- **Competitiveness, individualisation**
- **Lack of social support from peers/managers**
- **Unable to take breaks when needed**
- **Unstable work schedules, permanent availability, blurring work/life**

- **Job insecurity**
- **Privacy invasion**
- **Lack of transparency in decisions, black box**

Workplace OSH management

- **Challenges for the workplace risk assessment**
- **Information imbalance between employers and workers and their representatives**

Regulation and its enforcement
- **Opaque, complex systems**

Impact on mental health, MSDs, cardiovascular diseases, incidents, accidents

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Potential opportunities for OSH

- **Use of data monitoring to reduce hazardous exposures, incl. psychosocial risks, harassment & violence**

- **More accurate and timely risk analysis and decision support**

- **Real-time tailored advice to individual workers**

- **Advanced workplace risk assessment**

- **Evidence-based prevention & interventions**

- **Risk-based, targeted OSH inspections**

- **Evidence-based policy-making**

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% of establishments reporting: Using digital technologies & Discussing their impact on OSH (ESENER-3, 2019)

Only 6 % use none of these technologies.
Only 24% discuss their potential impacts on OSH.

Base: all establishments in the EU27_2020.

■ Use ■ Discussing potential impacts

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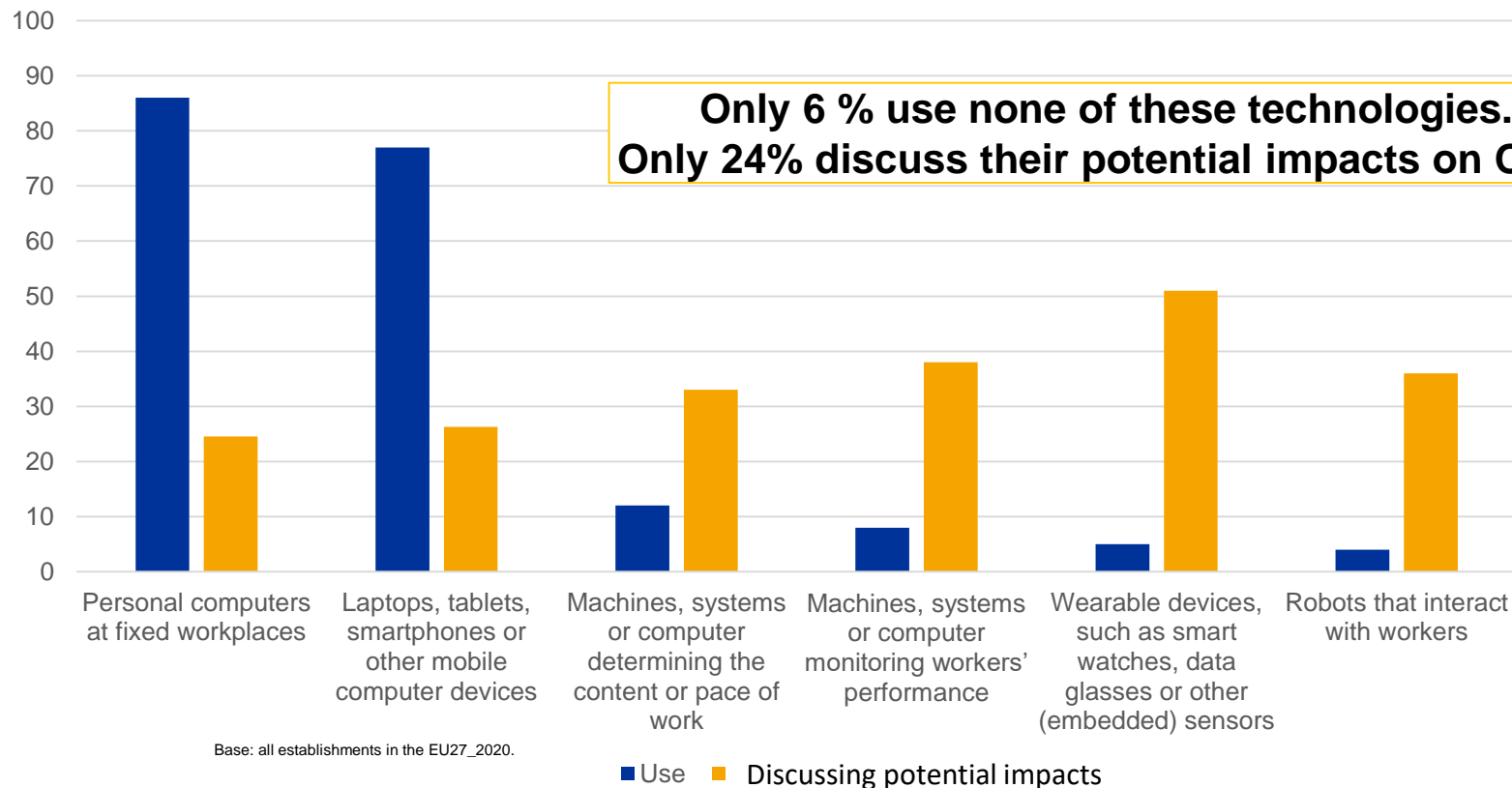
Digitalisation and impacts on OSH discussed (ESENER-3, 2019)

Impact on worker health and safety discussed	% establishments (EU27_2020)
Need for continuous training to keep skills updated	77%
Prolonged sitting	65%
More flexibility for employees in terms of place of work and working time	63%
Increased work intensity or time pressure	58%
Repetitive movements	58%
Information overload	52%
Blurring boundaries between work and private life	47%
Fear of job loss	21%

New forms of worker monitoring and management systems

- **71 % of international companies consider people analytics a high priority (Deloitte, 2017)**

- **Demand for worker monitoring software increased by 87% in April 2020 compared to pre-pandemic (Top10VPN, 2020)**

- **Mixed perception:**

  - **4 out of 5 senior executives would not be comfortable with an intelligent machine managing them (Pega and Marketforce).**

  - **25% workers feel monitoring has more benefits than downsides, 38% disagree, 35% are uncertain (TUC report)**

  - **Many workers not aware of their rights or feel unable to challenge employers' use of surveillance**

  - **What data are collected, used, for which purpose, who has access?**

Organizational analytics – 'helping organizations understand how their teams interact in order to increase performance' (Humanyze)

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Initiatives relevant to OSH in the Member States

- **MS have a national strategy on AI but OSH or worker management systems are not mentioned**
- **Most discussions and policies address ethics, Data Protection and data governance, worker consultation and co-governance**
- **MS have OSH strategies, some including digitalisation, AI, robotics, online platform work**
- **The COVID-19 crisis is giving rise to discussions on monitoring and managing but mainly focussing on remote workers/teleworkers**

EXAMPLES OF INITIATIVES IN THE MEMBER STATES (consultation of EU-OSHA's national Focal Points):

- **National OSH strategy**

PL: National Programme "Improvement of safety and working conditions" (2019) includes new forms of management and psychosocial hazards related to Industry 4.0 and AI

- **National Labour Inspectorate**

IT: The National Labour Inspectorate (INL) published operational guidelines on the installation and use of tools and softwares supporting operational activity in call centres. They acknowledge that such tools are not necessary to "perform the work activity" and can enhance employers' monitoring and control over workers. The use of such tools should be for a legitimate purpose only and subject to an agreement with workers' representatives.

- **Data Protection authorities**

FR: The national Data Protection Authority (CNIL) published several recommendations, opinions and guidance in respect to various forms of worker monitoring. These include video surveillance, recording of and listening to telephone conversations, access control to the work premises and monitoring of working hours, GPS tracking, monitoring of employees' computers and the use of ICT tools for the recruitment and management of employees

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Examples of initiatives relevant to OSH in the Member States

▪ Ombudsman

PL: The Ombudsman questioned the legality of a programme in a bank where sensors counted the smiles of employees during conversations with customers to motivate employees to smile more and make customers more satisfied. The Ombudsman pointed out that monitoring and rewarding employees for smiling is an intrusion into individuals' privacy and dignity in particular as it aims at influencing employees' behaviour. The bank explained that the programme was voluntary. The Ombudsman asked the Labour Inspectorate to investigate the issue. The practice was not found to violate the Labour Code.

▪ Trade Unions

PL: The Trade Unions advocate the introduction of anti-discrimination and control mechanisms for the use of algorithms in worker management and to provide national labour inspectorate with necessary instruments to control automated decision-making processes in labour relations

DE: The German Confederation of Trade Unions (DGB) published a concept paper 'AI for Good Work' that proposes a guiding framework for the introduction of AI in businesses. It outlines a 6-step-process to the deployment of trustworthy AI in workplaces:
- **Step 1 requires to define objectives, risks and limitations of the AI application**
- **Step 2 requires to consider the obligations of the AI providers and developers in relation to transparency**
- **Step 3 calls to ensure the process transparency for data usage and data processing**
- **Step 4 requires to assess the consequences of AI applications in workplaces in particular with regards to physical and mental hazards for workers**
- **Step 5 concerns the level of automation of decisions and responsibility of using AI in the workplace**
- **Step 6 requires tests and controls to be performed regularly on AI systems, taking into account the experiences of workers and their representatives.**

The DGB proposes an amendment of the regulatory framework for the reliable use of AI that among others, should ensure the binding nature of the impact assessment and evaluation of AI applications including impact on workload and mental health

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How can we ensure safe, healthy and productive new ways of working?

- **User-centered Prevention-through-design** approach - OSH to be considered from the beginning

- Proper consideration in the **workplace Risk Assessment** of new forms of worker management

- The workplace **Risk Assessment should not be "delegated" to technology**

- **Humans** (workers and managers) should remain **in command**
  - Technology and AI to support but not replace human control and decisions

- **Data minimisation**: The need to collect worker data should be balanced against the rights of workers to privacy and their safety and health

- **Transparency, workers' participation and equal access** of workers and employers to information

- **Information and training** to ALL stakeholders, including designers, managers, workers and their representatives

- **Need to raise awareness** at the research, policy and practice levels about the impact of new forms of management on OSH, in particular on **mental health**

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

Thank you for your attention!

- **Brochure "Digitalisation and OSH"** available [here](in 19 languages)

- **Policy brief "Impact of AI on OSH"** available [here](soon in several languages)

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