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

Brussels, 13-14 June 2022
Workshop 3: OSH & Digitalization (Javier Larrañeta, PESI)

Exchange of good practices in OSH
Healthy Workplaces Campaign Partner event

Brussels, 13-14 June 2022
Workshop 3: OSH & Digitalization (Javier Larrañeta, PESI)
Digitalization & OSH: a strategic vision and a proposed systemic approach

Index

1. Vision on KET, Industry 5.0 and OSH
2. Strategic vision on Digitalization and OSH
3. A systemic approach:
   1. Digitalization at OSH Service Units (corporate and value-chains: SME, subcontractors)
   2. Management of New Risks derived from Digitalization processes in Companies
   3. OSH Professionals’ participation in the design of Digitalization processes (Health & Safety by design)
1. ETPIS- PESI 2020 Vision (since 2007)

« Innovation and technology development (R&D+i) based on a global and integrating vision on Industrial Safety and Risk management» (OSH + Safety 4.0 + Security)

Four (4) deployment areas:

- Safety (processes, installations)
- Occupational Safety & Health
- Environmental Safety (SHE) (+ climate change affection on infrastructures)
- Corporate Security and Resilience based on the CIP European Directive (plants, transport infrastructures & utility networks)
PESI Vision on Digitalization OSH, industrial Safety and Risk Governance: Worker as the central point of the Digital transformation

+ UN-SDO and EU Societal Challenges
Key Enabling Technologies (KET) for Industry 4.0

Industry 4.0 is the vision of the industrial production of the future.

Source: BCG.
Industry 4.0 (ICT + KET): global characteristics

- **CONNECTED**
  - Cooperation and networking
  - System integration

- **AUTOMATED**
  - Repeatability and reliability
  - Increased productivity and efficiency

- **SUSTAINABLE**
  - Environmental
  - Cost-effective

- **FLEXIBLE**
  - Reconfiguration capability
  - Processes and systems integration

- **SOCIAL**
  - Spaces shared by people and machines
  - Social responsibility

- **SMART**
  - Environmentally sensitive systems
  - Rational use of resources
  - Preventive and predictive
## Industry 4.0 and Industrial Safety issues and requirements

<table>
<thead>
<tr>
<th>INDUSTRY 4.0</th>
<th>TECHNOLOGIES AND INDUSTRIAL SAFETY</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONNECTED</td>
<td>IoT, Cloud, BigData: Process information Integration</td>
</tr>
<tr>
<td>AUTOMATED</td>
<td>Robots (automated plants, RPAS-Drones…)</td>
</tr>
<tr>
<td>FLEXIBLE</td>
<td>Additive manufacturing (3D printing)</td>
</tr>
<tr>
<td>SMART</td>
<td>CPS (Cyber Physical Systems)</td>
</tr>
<tr>
<td>SOCIAL</td>
<td>Human-centered design, OSH</td>
</tr>
<tr>
<td>SUSTAINABLE</td>
<td>Environment-friendly, Resilient</td>
</tr>
</tbody>
</table>
European Commission (2021): focus on People/Worker -> Industry 5.0

Industry 5.0 ...

- Human-centric: promotes talents, diversity and empowerment
- Resilient: is agile and resilient with flexible and adaptable technologies
- Sustainable: leads action on sustainability and respects planetary boundaries

www.healthy-workplaces.eu
Smart & safe working environments (S2WE) under Industry 5.0

Digital Factories (Industry 5.0): PPE (Wearables), Safety systems, Monitoring (Sensors, IoT, Big data, AI), O&M (Robotics, VR/AR), Cybersec, Interoperability (emergencies)
2. OSH and Digitalization (our proposal to EU-OSHA)

Main issues and challenges (PESI strategic vision)

- **Digitalization at OSH Service Units** (digitalization of Information Systems/procedures & protocols, gender/age, evaluation, training…)

- **OSH communication and Workers interaction** (improve communication, needs, Web APPs and mobile devices…)

- **OSH forecast and information models** (Accidents prediction, new KPI based on Big data and Artificial Intelligence…)

- **New Risks from Digitalization processes in Companies** (different environments: office, plants, services; new workers risks: aged workers, lack of KET training, psycho-social disseases…)

- **OSH specialists participation in Digitalization processes** (include safety and OSH issues by design)
3. OSH and Digitalization: Systemic approach

Area 1. Digitalization at OSH Service Units

Area 2. Management of New Risks derived from Digitalization processes inside Companies

Area 3. OSH professionals’ participation in the Digitalization processes (whole lifecycle)
Area 1. Digitalization at OSH Service Units (1)

• **Main objectives for OSH Digitalization**
  − Corporate priorities and *Safety Culture* in the Organization,
  − Other issues: UN-SDG and EU Societal Challenges (Sustainability, Equality, Wellbeing…-)
  − deployment plans, benefits and evaluation, investment (ROI)

• **Digitalization of OSH Information Systems/ Procedures**
  embedding new challenges to afford:
  − personalization: gender, age, culture…(and privacy),
  − new areas (safe mobility…),
  − improve awareness & training,
  − better evaluation (KPI) and legal compliance
  − OSH support from tractor companies to their whole value chain (subcontracting, SME mainly)

• **Consultancy and OSH digital Services** (selection criteria).
  − Support to SME from OSH Consultancy firms.
Area 1. Digitalization at OSH Service Units (2)

• Improve OSH internal communication and Workers interaction
  - improve communication and personalization (workers needs evaluation, KET tools –AI, BD,…-),
  - Tech-based means: Web/social networks, APPs, mobile devices
  - extend OSH principles and Safety culture to the whole value chain (SME, subcontractors, logistics…)

• OSH forecast and advanced information models (accidents prediction, new KPI…), based on Big data, Cloud computing and Artificial Intelligence; simulation and Risk Management for safer working places using KET-based tools (digital tweens, VR/AR virtual & augmented reality, etc.).
Area 2. Management of New Risks derived from Digitalization processes inside Companies

• Evaluation in different working environments / sectors: office, Health, education, production plants, storages, transport & logistics, construction, agriculture, fisheries & forestry, off-site operations, maintenance and services;
  − Workers profiles
  − New Working organizations
  − Technologies and digital processes
  − Digital tweens (KET) for Risk assessment

• New Risks for Workers due to the introduction of Technologies and digitalized process (aged workers, lack of ICT-KET knowledge and training, psychosocial challenges and diseases…): action plan, evaluation and improvement plan.
Area 2. Management of New Risks derived from Digitalization processes inside Companies (2)

- **New Skills (hard/soft) needed by Workers** to face the digital/smart working environments and processes: training plan (individuals and teams)

- **Global awareness and Training** supported on new pedagogy techniques and technologies (e-learning, serious gaming, virtual reality / augmented reality, artificial intelligence…).

Workshops  on-site Training/eLearning  Exercises  Grouping dinamization
Area 3. OSH professionals’ participation in the Digitalization processes (whole lifecycle)

• **Main objectives:** include Safety and OSH issues by design, avoid new risks (digital tweens for safety assessment), improve working conditions, better coordination with O&M (Operational Safety), etc.

• **Role of Personnel Area & OSH Dept.** and Technicians in Digitalization strategies

• **Education and Training of OSH practitioners** in new technologies (ICT, KET, Industry 5.0…) and Digitalization (general and sectoral approach)

• **Active participation in Digitalization** (all steps: definition, deployment, evaluation, improvements…)

• **Other** aspects to be considered (Company strategies)
Thank you so much for your attention:

Questions or comments?

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