
Digitalization and occupational health prevention in the network economy: old and new challenges

Daniele Di Nunzio*^{†1}, Elisa Errico*², Raffaella Cagliano³, Filomena Canterino³, Claudio Arlati⁴, Fabio Boccuni⁵, and Giualiana Buresti⁵

¹Fondazione Di Vittorio – Italy

²Fondazione Di Vittorio – Italy

³Politecnico di Milano – Italy

⁴Innovazione Apprendimento Lavoro-IAL – Italy

⁵INAIL – Italy

Abstract

Digitalization processes have had a growing impact on work, reshaping organizational structures and contributing to the spread of the network-economy (Castells 2002) with new and old challenges to protect workers' health and safety.

In this context, the Italian Workers Compensation Authority (INAIL) promoted a research project, coordinated by Politecnico di Milano, with Fondazione Di Vittorio, Sapienza University of Rome, Innovazione Apprendimento Lavoro (IAL), with the involvement of the trade unions CGIL, CISL, UIL (Cagliano et al. 2024).

General goal of the project is to analyse the impacts of digitalization and technological innovation on the organizational processes and quality of work, with the aim to improve occupational health and safety (OHS) prevention systems. The research project adopted several methodologies with a transdisciplinary approach: literature reviews, in-depth interviews, eight case studies, workshops with key actors of the prevention system.

This paper focus the attention on the comparative analysis of the eight case studies. Field-work involved various sectors (manufacturing, agriculture industry, logistic centre, delivery, ICT) and professions (high and low skilled profession, blue and white collars) and digital technologies (from Industry 4.0 to the platform economy).

Impacts of digitalization are ambivalent: on the one hand, it may reduce workers' autonomy and discretion, increasing work intensification and psycho-physical fatigue; on the other hand, it may enrich job roles, autonomy and prevention procedures.

The opportunities for direct workers' participation and representation appear to be the key factor in steering digital innovation to improve job quality.

Conflicts, protests and mobilization occurred where the new forms of works overcame the institutional logics of protections systems in a disruptive way, while, on the contrary, the

*Speaker

[†]Corresponding author: d.dinunzio@fdv.cgil.it

gradual introduction of innovations, in a context of consolidated labour relations and participative prevention procedures, helped to cope with the risks.

Workers and trade unions have a key role to affirm the fundamental rights as well to favourite the emergence of new risks and, so, to connect the technical digitalization with the prevention systems.

At general level, the analysis of the relation between digitalization and OHS protections show a clear risk of segmentation of the value chain, resulting in a lack of coordination in prevention and representation systems among the various companies involved (at the group, site, or supply chain level). Network economy needs prevention systems based on strong opportunities of collaborations, interactions, exchanges, between several actors inside and outside the companies, considering the value chain as well as the territorial level.

Keywords: occupational health and safety, digitalization, platform economy, trade unions