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PANEL D)
ACTIVE LABOR MARKET POLICIES

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**Active Labour Market Policies for Digital Economy:
Skills Development and Workforce Preparation**

Work is undergoing technological and organizational upgrading and innovation driven by digitization. It's extremely relevant to equip people to stay ahead of organizational and technological change. To prepare the workforce for tomorrow, the attention has to be drawn on educational and reskilling programs and on changing schooling processes.

The paper is structured as follows. The *first* paragraph a) gives a short definition of the digitization and b) discusses its effects on the employment. The second paragraph is focused on c) the skills requested by the digital economy and d) the policies to enable workers to stay on the digital labour market.

a) It's not simple to give a definition of the digitization, because there are several definitions. Broadly speaking digitization is a set of technological and organizational innovations based on devices communicating with each other along the value chain, involving industrial production and also design, management, logistics, distribution, after-sales services.

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b) Concerning the effects of the digitization on the employment, there are diverging estimates on the occupational perspectives. Spath et al. (2013) observe that digitization is a chance to increase occupation. Other authors think that it will cause unemployment, because many repetitive tasks will be made by machines (Frey, Osborne 2012, 38). Other arguments consider the loss of old and the gain of new digital jobs, at the moment not still known.

c) Regarding the digital skills, the scientific debate points out two different trends (Ittermann *et al.*, 2015). The first outlines a *skill upgrading* (Hirsch-Kreinsen et al., 2015), the second a *polarization* between high- and low-skilled occupations. Also the middle-skilled occupations are at risk to be substituted by some forms of automation.

. More complex and interactive machines need higher skilled workers with a developed critical mind. The digital worker will be a system operator and he/she will be asked to develop:

- *technical abilities* (to be competent in using working tools);
- *high-order cognitive abilities*, to manage complex situations, to find and solve problems.
- *socio-emotional* (soft or non-cognitive) *skills*. They will be important because the coming digital workplace will be less hierarchical and more horizontal and the digital worker should interact with other colleagues directly and properly.

d) When focusing on the policies to enable workers to stay on the digital labour market it is appropriate to distinguish between measures and methods.

Among the *measures* the lifelong learning is a pivotal issues. It's a policy measure to increase the labour force participation rates and aims at reskilling older workers as well as at making the young people fit for the coming digital economy. Evidences show that workers with good qualification and professional experience and who frequently use computer at the workplace are ready to spend time and energy in upskilling training (CEDEFOP 2006).

Among the *methods* to train and develop the digital skills of adult workers, one should consider massive open online courses (MOOCs), virtual laboratories and simulation games. Considering young generations, STEM education should be improved in the school, particularly among girls (OECD 2015b).

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