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With respect to public interventions, there are some general areas on which to focus. The first is the role the State could take in facilitating the economic transition towards a 4.0 productive system. Studies on this topic tend to see these structural changes not so much as an industrial “revolution”, but more as a progressive and dynamic evolution; there is, therefore, a great scope for public support. This role can be expressed in different lines of: first, the diffusion of the knowledge on the 4.0 industry and its consequences; the promotion of the necessary material and legal conditions; finally, active interventions in which the public sector itself promotes innovation, directly or indirectly. Examples of the latter could be increasing digitalisation in the sectors of considerable social utility (healthcare, assistance, transports, education and training, etc.).

The dissemination of technical and operational information on the nature and potential of the Industry 4.0 should be achieved in cooperation with social partners. One of the possible instruments is the creation of a suitable physical and digital platform. However, this tool cannot be designed only as a means of sensibilisation, given the several roles it can play. On the one hand, the platform can promote reliable knowledge on issues concerning technologies and 4.0 processes. On the other, through such platforms many other options are possible: dissemination of scientific research, monitoring and valuation of ongoing 4.0 processes, confrontation and collaboration between social partners. The latter should be included in the management and realisation of the platform’s purposes.

The diffusion of knowledge and the creation of fertile environments for the implementation of smart production must be designed also targeting small and medium-sized enterprises. In many countries, they represent the vast majority of businesses and employees. However, they are usually less likely and able to access information and invest in new technologies. Digital culture of SMEs, industrial and other, becomes therefore fundamental for the digital transition 4.0 to truly reach a national scale. Nonetheless, it must be supported by specific actions of a more operational nature. Development of digitalization in SMEs must be supported by systematic actions aiming at

strengthening this type of enterprises (access to credit, continuous training, growth capital strengthening, etc.).

Direct public intervention, from a systemic point of view, must be realised firstly investing in infrastructures¹. This means implementing and extending national plans for broadband access and fast connections. However, it also implies greater efforts in terms of public research and development resources, with which to finance or directly implement innovation projects. A third type of systemic intervention needed is the elimination or reduction of the *digital divide*.

The creation of economic and social environments favorable to innovation goes hand in hand with the dissemination of research institutes, scientific-industrial parks and clusters. These combine business, academic and public entities into institutions capable of developing and spreading innovations, as well as good practices. This approach has already been followed by several countries in contexts not related to Industry 4.0, and some scientific studies on the impact of this approach have already been produced.

Finally, there are several necessary interventions for which the public sector must be the main actor of innovation. It must take the lead in many areas, among which are planning and coordination, as well as implementation. Planning is essential to speed up the digital transition and maximize the results by making the overall economic system's effort efficient. Given the scarcity of public and private resources that can be committed to support the transition, sectoral plans of digital development are needed. Through these, the commitment of economic actors could be focused on those sectors that already play a key role for the economy. These plans are also complemented by the development of *capabilities*: infrastructures, knowledge and know-how of economic actors, adequate resources (workers, structures and research centers). The state can, in all these respects, have different approaches: *partner*, *lender* or simply *facilitator*. Which to choose is a matter of case by case considerations. Digital development plans must also provide for appropriate monitoring tools, such as appropriate systems of statistical indicators, impact analysis, defined objectives- On the basis of these, the ongoing processes of implementation could be modified and improved².

The public sector can also take care of making financial resources available for the digital transition. There are of course several possibilities, in some cases already included in current national plans for Industry 4.0: tax incentive for investments in innovative technologies, favorable credit schemes or guarantee mechanisms for loans linked to companies' technological upgrade. All fiscal and financial measures in favor of start-ups and innovative realities also fall under this category.

Digital skills and training

As previously mentioned, the digital transition can only be achieved in the presence of adequate conditions. These include infrastructures (defined in a broad sense) and resources. The needed resources are both financial and related to the digital skills of people. In this sense the *digital divide*, which is still an important and worrisome feature of many countries, is a very serious obstacle. Overcoming it and, more generally, renewing education systems are fundamental both to facilitate the digital transition and to ensure that the process is *sustainable*. Forecasts made so far by scientific papers show industrial evolution probably won't lead to the "end of work", but rather to a structural transformation of the economy. Millions of jobs will be replaced by others in different economic

¹ *Digitalisation for equality, participation and cooperation in industry: More and better industrial jobs in the digital age*, IndustriAll 2015. *Digitalisation: finding the balance*, CESI 2016. *Digitalisation and the digital economy*, TUAC OECD 2017. *Industry 4.0 and digital transformation: Where to go*, European Economic and Social Committee 2016.

² *Digitization for Economic Growth and Job Creation: Regional and Industry Perspectives*, Sabbagh et al., The Global Information Technology Report 2013.

sectors and with different requirements. There will therefore be a need for strong interventions aimed at two distinct objectives. The first one is ensuring the upgrading of current workers' skills during the transition, so that they are not excluded from the new productive reality. In the long term, instead, the challenge will be to create an adequate training system. This must be able of providing the economic system with the human capital it needs and the workers the greatest possible chances in terms of employability. In this context, continuing education becomes an essential and structural element of people's working life and enterprises' life cycle.

Re-skilling and *up-skilling* of current workers in shrinking sectors are likely to be complex and require several coordinated interventions. On the one hand there is the obvious need to ensure, as far as possible, that businesses do not renew staff who no longer have the skills necessary to operate in new production processes but instead retrain them. According to views expressed on this matter, a large part of the current staff will be more than capable of operating in the context of Industry 4.0, once adequately trained³. Efficient and constructive industrial relations, particularly at firm-level, are therefore of crucial importance. However, reskilling processes are not likely to be implemented without public support; the latter should be given through tax incentives, dedicated financial funds and most importantly planning and coordination. Public tertiary education institutions could be involved as well, providing general training courses in the digital field and other areas.

Anticipation and forecasting of the likely evolution of demanded occupations are crucial for governing such processes. Various analyses⁴ highlight the need for a process of preventive analysis of future changes in the skills required from workers. This could be more effectively accomplished through collaboration among social partners. Indeed, important synergies could arise through the design of a national or even international *Skills Agenda*.

However, some sectors (like manufacturing) will see their workforce steadily shrink, regardless of systemic public interventions. Therefore, the latter must be aimed also at ensuring a safety net for people who will lose their jobs. Maximising the efficiency of public and private employment agencies becomes a priority. These agencies must make professional and digital training their core service, unlike what is happening today in different countries. To deal with *skills* mismatch, active labour market policy systems should take immediately involve people looking for work in training plans, without waiting for them to become long term unemployed. The debate on the possibility that countries ensure a minimum level of subsistence through guaranteed minimum income schemes is also more actual than ever.

As for the sustainability of the training system in the long term, there are several lines of action to follow. The formal education system must be renewed to transmit, from the early years of schooling, the ability to live in and relate to a strongly digitalised context. Various analyses and proposals support the idea of including so-called *e-culture* from primary education⁵.

It is generally accepted that a strong focus on the duality of the education system will be needed. As far as technical training is concerned, the focus must be on multidisciplinary fields, as it has recently been the case for mechatronics. IT, mechanical and electrical skills will become much more complementary for workers, who will have to use all of them in their jobs. In addition, technical and vocational training courses will have to be more closely related to productive realities and operational. Technical and professional training should be provided also at higher levels, through

³ *Man and Machine in Industry 4.0*, Boston Consulting Group 2015.

⁴ *Industry 4.0 and digital transformation: Where to go*, European Economic and Social Committee 2016, *Digitalisation and the digital economy*, TUAC OECD 2017.

⁵ *Digitalisation: finding the balance*, CESI 2016. *Digitalisation and the digital economy*, TUAC OECD 2017.

non-university tertiary education programmes enabling to train high-profile technicians. University education will have to be renewed as well, focusing on scientific programmes and providing increasingly more IT skills, regardless of the chosen field of education⁶.

An extremely important aspect is the disappearance of clear boundaries between formal education and the world of work. Work-related learning should not only become the norm in formal education, but also be perceived as a fundamental and indispensable component of personal training. Clearly, education personnel should be reinforced and there should be guarantees of involving students only in truly educational working activities. According to a survey recently conducted by the Unione degli Studenti involving around 15.000 students who had participated in working-related activities, 57% of them carried out activities unrelated to their studies and 40% thought their rights had been denied. Learning periods in companies should therefore not simply bring students closer to the world of work, but fully complement training in institutions. They should provide opportunities to learn and practice not only technical skills, but also the so-called *soft skills*. The latter become fundamental in a context in which workers operate in increasingly cooperative environments, with higher levels of autonomy and responsibility.

Legal evolution

The diffusion of digital technologies and production processes create a strong need for *ad hoc* legal intervention. The risk of legal vacuums indeed has serious consequences not only for the implementation and spread of the innovations, but also on the conditions of workers involved in the digital transition. Therefore, it is necessary to ensure a legal context that is both adequate and designed to anticipate the challenges of ongoing deep economic and social change.

The leading principle for the legislator should be the balance of flexibility and ability to shape the innovation process. It would not be desirable that laws on digital markets simply recognised *ex post* changes already realised in a condition of legal vacuum⁷.

Intellectual property rights must be regulated to avoid the risk of digital and technological monopolies. This would also foster the spread of innovations in the economic system. Furthermore, new technologies should be adopted by firms according to legal, technical and ethical standards, and only after having cautiously evaluated technical and workers-related risks⁸. The technological upgrade of industrial capital should moreover be carried out following precise environmental sustainability regulations.

Virtually all analyses of Industry 4.0 published insofar highlight that the use of great quantities of data will be fundamental for the new industrial models. Big data use is already common to design development and market strategies in large firms; however, as Industry 4.0 spreads it will become more accessible and pervasive, and involve a greater number of processes. These developments make the definition of clear rules on personal data protection a necessity, especially those of workers. Precise limits must be set to the collection, elaboration and commercialisation of data, ensuring the protection of people's and workers' rights. Sensitive data confidentiality must be guaranteed, just as workers' right to access information on the nature and means of collection of the data. The legislator and collective bargaining will have to set limits to the possibility for firms to

⁶ Gebhardt, Grimm e Neugebauer, *Developments 4.0: Prospects on future requirements and impacts on work and vocational education*, The Journal of Technical Education (2), 2015. *Man and Machine in Industry 4.0*, Boston Consulting Group 2015.

⁷ *Digitalisation and the digital economy*, TUAC OECD 2017.

⁸ *Digitalisation for equality, participation and cooperation in industry: More and better industrial jobs in the digital age*, IndustriAll 2015.

monitor workers' activities, as smart factories could technically allow for almost limitless supervision. Information on the methods of supervision should furthermore be guaranteed to the workers.

In the last years already, the rapid evolution of production systems has generated many atypical job relations. Moreover, the current trends lead to suppose that others will appear as instruments to cope with rapidly changing economic contexts. Lawmakers face therefore the essential task of avoiding that these new forms of work are left in a *limbo*, leaving important uncertainty with respect to workers' rights. The worst possibility would be indeed a race to the bottom. This requires precise and extensive data on these new job relations, not always captured by national and European statistical offices. Secondly, a clear legal setting is needed; given the current integration of European markets, it should be agreed upon at the EU level. Lawmakers should also recognise the likelihood of future continuous changes in work relations. Industrial relations and monitoring capabilities should therefore be fostered, as instruments to adapt the legal context to new economic systems. Parliaments will need to distinguish between those forms of work that need to be addressed through specific interventions, and those that can be dealt with in a wide reform of the self-employed rights. Eurofound suggests that one of the latter could be the case of *portfolio work*. There is usually a lack of regulation on some of these new forms of work, as the *employee* and *job sharing*, and the *interim management*; others, instead, seem to impose on workers an extreme flexibility, as the *crowd working* and occasional jobs. Precise interventions are therefore needed to ensure workers' protection. New regulations and expanded monitoring will indeed be fundamental for a sustainable evolution of the labour market⁹.

Telework is another issue that must be regulated coherently. It can benefit substantially both employees and employers through increased flexibility, time and commutation savings, better work life balance and reduced stress. It could also be a fundamental instrument to foster labour market participation of some social groups, as the elderly, disabled persons or parents with young children. However, it could raise serious issues if left unregulated. First, the legislator must identify the existing different types of telework: home-based work, mobile work or simply work occasionally carried out from remote through the ICT. Each of these requires a specific focus. Furthermore, it should discourage telework activities aimed to supplement, and not substitute, usual working time. Regulation should, moreover, ensure that all worked hours are retributed, even if performed away from the usual workplace. Enhanced flexibility should also be limited to ensure appropriate rest periods and the respect of workers' private life. Workers safety poses a great challenge to telework regulation as well¹⁰. These and other issues must be dealt with by trade unions and employers associations through collective bargaining, at least in their general terms. In this framework, or by means of legislation as in France with Article 55 of the Loi du Travail, the legal system must recognise some sort of *right to disconnect*.

Work organisation

Economic analyses on Industry 4.0 carried out insofar suggest that extreme production flexibility will be a major feature of the new industrial system. Machines interconnection, robotics and artificial intelligence, virtual prototyping and big data will allow for much more direct links between products and consumers' preferences. The true value added of Industry 4.0 would therefore be the more extensive customisation of production processes; this, in turn, would entail efficiency and

⁹ *New forms of employment*, Eurofound 2015.

¹⁰ *Working anytime, anywhere: the effects on the world of work*, Eurofound e l'International Labour Office (2017).

probably sustainability gains. According to this type of conclusions, the industrial transition would lead from low price mass production towards an *on-demand* high value-added production system.

Collaborative manufacturing

The work organisation model deemed optimal to reach the above efficiency and flexibility gains is called *collaborative manufacturing*. Similar concepts, however, have been presented under different names. Under this system, firms intensively use skilled and versatile labourers, who can adapt to frequent changes in the production processes. Because of the latter, workers are deeply involved in production management and in problem-solving activities, and thus acquire greater autonomy. Incentives to productivity coexist with vast investments in on-the-job training, career opportunities, collaborative environments and adequate protection. The latter is not to be intended only in contractual terms, but more importantly as the possibility of being reassigned to different tasks in case of need. This possibility is open exactly because of the investments in personnel training. In exchange, workers take greater responsibilities in leading everyday activities and problem-solving processes. Moreover, they put more effort than what contractually agreed, and accept higher levels of flexibility of pay and work organisation.

*Workers autonomy and horizontal organisation*¹¹

Collaborative manufacturing implies greater work flexibility, more decentralised decision and planning processes, more integrated production systems and greater use of transversal skills and abilities. Flexibility will entail rotation of tasks, and therefore requires from workers versatility and multidisciplinary technical skills. Manufacturing workers will take on more responsibility, especially in the framework of autonomous teams; they will deal with manual tasks, but also progressively more with planning and monitoring operations. Production volatility entails higher levels of workers involvement and centrality in production processes. Closer collaboration between management and production personnel requires therefore decision responsibilities to be more widespread.

Cyber Physical Systems (CPS) are strongly linked to this point. CPS are work environments or methods in which workers operate in collaboration with artificial intelligences. These human-machine systems have been used to theorise some scenarios, usually distinguished in *human-based* and *machine-based*. Under the former, workers retain control of the production process, heavily assisted and complemented by the artificial intelligences. Under the latter, instead, the machine is the centre of the system and is simply monitored and repaired by workers. Clearly, the former type of system is more desirable from the worker's point of view: work pleasantness, workers' opinion of their job, career and employment opportunities would certainly be enhanced. Furthermore, it would better suited to the needs of collaborative manufacturing, as described above.

An interesting proposal has been made on these premises, i.e. that of *socio-technical systems*. These are systems integrating organisational, technical and human aspects of production processes and recognising their high levels of interdependence. Under such systems, firms should design processes that keep the workers at the centre of production, despite a substantial assistance from technologies. They should also allow them to participate to all production phases and therefore acquire greater autonomy and lifelong learning opportunities. Features of Industry 4.0 production systems should include: vast possibilities of monitoring and control, the use of intelligent assistance

¹¹ *Lavoro e relazioni industriali in Industry 4.0: Posizione del problema e prime interpretazioni*, Francesco Seghezzi, Bollettino Adapt 1/2016.

systems, tasks flexibility and learning opportunities, together with forms of self-management and decentralised organisation¹².

These features make the revision of the actual occupations classification system necessary, particularly with respect to job statuses.

*Work organisation flexibility*¹³

Less standardised production systems require greater flexibility of place and hours of work, as traditional cycles of production and usual working schedules disappear. Working time must adapt to better fit productivity objectives, although considering the risk of excessive flexibility on workers' condition, safety and health. This is particularly important if flexibility is unilaterally imposed by firms.

Furthermore, situations in which the constraint of the traditional workplace is removed are likely to occur more often. Even in the manufacturing sector, new technologies, remote control systems and the growing importance of planning activities will allow to work away from the usual workplace. This could likely cause the spread of *telework*: workers will not be bound to a specific location, but will be able to perform at least part of their duties from home, while commuting or in other places.

Greater flexibility of production should also entail a constructive social dialogue on the nature of work contracts. Based on the foreseeable structural features of future productive systems, the European Economic and Social Committee¹⁴ suggest analysing deeply the flexicurity option and further developing it. Greater flexibility of labour demand should therefore coexist with a more active role of the State in assuring workers against unemployment risks and "smoothing" transitions between jobs. This would reduce costs for firms during low demand spells, ensure a safety net for workers and allow for more dynamism in the labour markets. However, this implies putting many resources in active labour market policies and developing greater operational capacities of the public sector in training and providing services to the unemployed. As of today, these are often lacking. Therefore, Industry 4.0 contractual solutions must at the same time be flexible and ensure that firms invest in workers' qualification, training and employability. The latter would, in this way, better equipped to face transition periods.

The role of trade unions

Industrial relations

Industrial relations are greatly diverse at the European level, even with respect only to the countries participating to our project. These differences concern firstly collective bargaining processes and the role of firm-level agreements. For instance, in some countries the former are substituted for or their role is carried out by national laws. This being noted, our wish is to see the scope of collective bargaining, in its many forms, extended. Its distinctive features should be: on one hand greater attention to workers' right protection and inclusion, given the strong and partly uncontrolled evolution of production processes; on the other, the aim of rebuilding production and value chains.

¹² *The Digitization of Manufacturing and its Societal Challenges A Framework for the Future of Industrial Labor*, Dregger et al., 2016.

¹³ *Lavoro e relazioni industriali in Industry 4.0: Posizione del problema e prime interpretazioni*, Francesco Seghezzi, Bollettino Adapt 1/2016.

¹⁴ *Industry 4.0 and digital transformation: Where to go*, European Economic and Social Committee 2016.

An important issue to be discussed through industrial relations is how to redistribute to workers part of the income generated by productivity increases. Promotion of wage raises, reduction of the existing wage differentials among countries and gender gaps, the fight against underpaid work – often affecting mostly youth – are all important steps to take in this direction. Furthermore, they are all in line with a recent resolution of the European Trade Union Confederation executive committee on a “Common strategy for raises of low and minimum wages” (Malta, 15-16/03/2017).

Wage raises would benefit the entire economy, just as new productivity enhancing investments. Collective bargaining and rights should be at the heart of the debate and a common objective to all EU countries.

According to some studies¹⁵, since 1997 productivity has grown more than salaries. Recent interventions from the governments of Italy and other countries, shifting incentives on firm-level agreements, do not seem adequate. Collective bargaining remains fundamental for wage growth, which is anyhow to be pursued by countries. Reports from the European Commission suggest to Italy and other member countries to extend the coverage of collective agreements; moreover, they request further investments in R&D, infrastructures and workers training¹⁶.

Digitalisation will foster the demand for flexible and customised solutions to firms’ everyday reality. Thus, a greater scope of firm-level agreement would be beneficial to all social partners. Nonetheless, it would entail many serious risks, especially with respect to the protection of workers’ rights. Decentralisation of the collective bargaining should therefore be carried out through a coordinated process; countries should ensure that limits to firm-level autonomy are precisely defined by national, regional or sectorial agreements. Broader-level bargaining should set mandatory standards, with respect to the rights and protection of workers, to limit firms’ autonomy to negotiate working conditions¹⁷. In this framework, the issue of ensuring the application of workers’ rights even in small firms becomes fundamental.

Participation, collective bargaining and variable pay

A need for more collaborative collective bargaining environments, whose main principle would be co-determination, is likely to emerge. The reason is that human capital will become increasingly more important in firms, whether they are innovative or not. Entrepreneurs have started to acknowledge the necessity of increasing workers involvement in the development of the firm. Codetermination could be fostered through the expansion of information and consultation of trade unions and employees’ representatives, and their systematic inclusion in decision processes related to technological upgrades. It is important that workers’ and trade union involvement concerns also the issues of business development and industrial strategy.

In such a context, good firm performances become more and more an objective common to management and workers. This happens also because of more widespread forms pay based also on workers’ and/or firms’ productivity. However, workers inclusion cannot be limited to wage

¹⁵ Fadda S., Produttività, contrattazione e patto sociale. «Quaderni di Rassegna Sindacale» n. 2, 2013, Tridico, P., Riforme del mercato del lavoro, occupazione e produttività: un confronto tra l’Italia e l’Europa, 2014 <http://host.uniroma3.it/centri/jeanmonnet/pdf/Contributo%20Tridico%20Sindacalismo%20n.28.pdf> .

¹⁶ Si veda ad esempio il rapporto Italia 2017, https://ec.europa.eu/info/sites/info/files/2017-european-semester-country-report-italy-it_1.pdf.

¹⁷ *Lavoro e relazioni industriali in Industry 4.0: Posizione del problema e prime interpretazioni*, Francesco Seghezzi, Bollettino Adapt 1/2016.

incentives and profit-sharing instruments. To reach an effective cooperative bargaining, structural instruments of participation to the management of production are needed. Studies of trade union experiences highlight some possibilities, such as employees-supervisors and employees-management meetings, firm surveys and suggestions/feedback schemes available to workers.

The role of workers

As it has been highlighted, the 4.0 production model will be much more flexible than the current one with respect to products, processes, demand cycles and technology adopted. These features will strongly influence the management of production, tasks rotation and skills diversity. Workers will also face important risks in technologically improved enterprises. On the one hand, a polarisation between skilled and unskilled occupations is likely to happen. This implies a growing risk of being assigned to lower level tasks, particularly for low-skilled workers and if there is no adequate training strategy. Setting appropriate rules through which ensure at the same time sufficient dynamism and workers protection becomes, thus, an important need. Furthermore, reinforcing team work seems one of the possible solutions, as it is more adaptable to day-to-day production needs, especially as workers' competences become more diverse. Therefore, there is a need for compromises that would satisfy all parts with respect to workers' autonomy and tasks complementarity and rotation.

Workplace and time schedules

Changes in the economic and productive system, as well as the limited impact that national and EU regulations have on them, require policymakers and social partners to seriously consider redistribution of working hours to increase employment. While acknowledging the complexity of the issue, especially in period of low and stagnant wages, we do deem the introduction of measures aimed to reduce working hours and increase total employment a necessity. Such a policy would have to be designed to suit particularly the needs of low-skilled workers.

As already noted above, working time settings may have to be reconsidered, perhaps allowing for more diverse solutions. However, it certainly is a delicate matter. Collective and firm-level bargaining must distinguish clearly between working time *at the workplace* and in other places. Some analyses suggest changing the nature of retribution, from hourly pay to salaries more extensively related to production objectives. Furthermore, higher working time flexibility could be achieved through greater firm-level autonomy in this respect, clearly with precise limits. Other solutions could be to consider not daily hours but weekly or monthly averages; alternatively, forms of "time banks" could be introduced. Under the latter setting, workers could exchange additional working hours for longer resting periods when suitable. Many of the above approaches do not fully respect workers' rights: there clearly are risks for health and safety, work life balance and even lower productivity, because of longer working times. Our view is, therefore, that these matters should be dealt with carefully through collective bargaining.

Training

In high tech firms, training opportunities and continuous skills upgrading are likely to be the central element of industrial relations. They certainly are necessary to labour market sustainability in a context of high demand volatility. As working conditions become unstable because of less linearity in production cycles, workers need to acquire and renew *on the job* those skills that would maximise their chances of wage and employment stability. The updating of competences should therefore be the focus of the dialogue between social partners. This dialogue will have, moreover, the fundamental task of ensuring the *re-skilling* of actual manufacturing workers. This process goes far

beyond the above updating of working knowledge. Social partners could cooperate on several instruments. Firstly, technical standards for new technologies would help making the required training as uniform as possible and avoiding rapid obsolescence of knowledge. Furthermore, especially during the re-skilling of the actual workforce, firms, trade unions and if possible also formal education institutions, should cooperate to identify those likely to be demanded in the future. This would allow to anticipate the needs and design coherent training and education programmes. On the job activities should represent a fundamental part of training, and the professional paid training should become more widespread. The objective should be to institute a true right to training for all workers.

Further issues

Many other matters will have to be dealt with through industrial relations. The latter will have to keep pace, through monitoring, with technological evolutions and ensure adequate working conditions. The first of these issues is certainly work safety. Automation, on the one hand, will help avoid tiresome and dangerous tasks, and could benefit ergonomically those workers who will be assisted by machines. On the other, nonetheless, adopting systems based on artificial intelligences will require to cautiously consider potential risks for workers. Another delicate matter is workers' privacy: employees will indeed operate through technologies whose value added will most often rely on the capability of collecting and analysing data. Social bargaining will therefore play a role of support for lawmakers in designing laws on work privacy. This role will be the more fundamental the more rapid will be the evolution of industries. Finally, social partners will face the task of designing the legal framework for new forms of work, that have been increasingly appearing in the last years. New and common standards will be needed to redefine the concepts of dependent work and self-employment, and institute adequate forms of social and contractual protection for both.

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