1. Introduction

Industrial and technological revolutions have historically resulted in the growth of economies and productivity, as well as the creation of new jobs. Despite short-term challenges resulting from the replacement of manual labour and the need to upscale skills and competencies, the pace of transformation allowed enough time for education and training to catch up, and to equip low and mid-skilled workers with the new skills and competencies to function productively. At the same time, population growth accelerated at a relatively consistent rate across the affected economies.

Today, many studies show that technology is replacing middle-level skills that were once considered uniquely human. Technology is being adopted at an exponential rate. This trend is placing the world of work in a state of flux as a result of digitalisation, the digital economy and widespread technological change. These processes, coupled with profound changes in the way we work, ongoing globalisation, demographic changes, as well as new ways of organising the production of goods and delivery of services, provide a myriad of opportunities to society whilst at the same time presenting considerable challenges.

With the new and affordable capabilities made possible by automation, a significant number of new job opportunities and new markets will be created. At the same time existing jobs or tasks could disappear or be re-designed. These changes in capabilities and skills needs and the transformation in the organisation of work will better cater to the needs of individuals, and companies. They will also provide for more work opportunities, accommodate better work-life balance and provide easier access to income opportunities wherever they arise. But they also pose challenges with regard to future forms of employment, polarisation of skills, the adequacy of existing legal and institutional frameworks, or social protection frameworks, among others.

To better understand the opportunities, the challenges and the extent of transformation in the future of work, this IOE brief focusses on three areas:

1. Job creation and job transformations: implications for the labour market
2. Technological changes: implications for skills
3. Changes in business models: implications for ways of working

It finally emphasizes a few areas of challenges and opportunities related to the future of work and where policy questions need to be evaluated and responded to in order to address properly the future of work and make a future of work that works for everybody.

2. Job creation and job transformations and fluctuations

The new trends mentioned above have direct implications for the labour market.

A. Job creation versus job transformations

The new technological revolution is characterised by a faster rate of change and greater volatility than its predecessors. These changes and continuous transformation are expected to engender significant churns to the global workforce, creating new kinds of jobs and changing or replacing old ones. When referring to job creation and job transformation it is worth noting, as explained below, that the concept of employment is changing and it is likely that more “work” will be created and done outside traditional employment structures. Therefore when referring to job transformation or job creation it is important to abandon the classical mindset which identify “jobs” with a classical employment contract and focus more on tasks and work.
There is as yet insufficient data on whether the new technologies will ultimately create more jobs than they destroy, or instead move the world to a different, lower-employment equilibrium. However, some economic literature finds that while there is some substitution of automation for human labour, complementary jobs are often created and new work roles emerge to develop and support the new technology¹. There certainly will be new jobs (high and lower skilled), but concentrated in certain regions/urbanizations.

However, it is also the case that productivity and economic growth have been decelerating in a majority of countries; notably in advanced economies. This slowdown dates back to around 2000². While this may partly reflect measurement issues³, a common set of unsettling trends lie behind the aggregate economic and productivity slowdown: the slow diffusion of productivity growth across firms within industries, the decline in the growth rate of investment in knowledge-based capital and the reduction in the pace of creation of new business and hence job creation. This is why other sources, including the World Economic Forum (2016), report that current trends could lead to a net employment impact of job loss amounting to 5.1 million over 2015 and 2020. This is a result of a total loss of 7.1 million occupations of which two thirds are concentrated in routine white collar office functions and a total gain of two million jobs in Science, Technology, Engineering and Mathematics (STEM) – related domains⁴. In addition, data from the United States confirms that STEM skills will represent 14 out of the 35 fastest growing skills by 2022. A gain of (at least) 5 million lower level jobs in especially the service sectors, is foreseen to be created.

B. Are these trends global?

Despite the reported trends, the impact of change on the labour market is not uniform across regions, let alone countries. There are predictions of significant differences across advanced and developing counties by 2020⁵. A potential global shortage of about 38 million to 40 million high-skilled workers is expected, with 16 to 18 million of such shortage originating from the advanced economies. On the other hand, a potential surplus of 90 million to 95 million low-skilled workers is to be expected with a majority (58 million) in developing and emerging economies. In addition, a potential shortage of 45 million middle-skilled individuals in developing countries is also projected⁶.

For advanced economies, these imbalances could lead to more long-term and structural joblessness as more youths may lack the appropriate employable skills, while many older workers leave the labour market upon retirement. In developing economies, an inadequate supply of highly skilled workforce could slow a nation’s developing into higher value-added industries and hinder the productivity gains. In general, the polarisation of incomes between high and low-skilled individuals could become more pronounced, leading to frustration among those with middle-level skills, widespread perceptions of unfairness and social tensions⁷. If

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³ IOE factsheet on measuring productivity 2015
⁵ McKinsey Global Institute, 2012, “The world at work: Jobs, pay and skills for 3.5 billion people”.
⁶ These potential imbalances were projected using current patterns in demographics and in the demand and supply of labour. In this analysis, educational attainment was used as a proxy for skills. While this is a useful proxy, the quality of formal education varies across countries and training apprenticeship can be more important than formal education in occupations. In addition, current demographic and labour demand and supply trends do not account for any shocks that could occur during the projected period. Thus, these projections need to be interpreted with caution.
policy action is efficient and pro-actively addressed towards bridging the skills gap, it is more likely that the outcome could be positive, both in developing and developed countries.

The impact of globalisation and automation could also result in a loss of the competitive cost advantage currently offered by low-wage, developing countries.

C. Improved efficiency of the labour market

Access to advanced digital processes is bringing more efficiency to the labour market by contributing to better matching of employers’ needs with individuals’ skills. For instance, there have been affirmations of the growing importance of the internet as a job search channel, which allows an enterprise to have access to the global talent pool. Technology also allows enterprises that continue facing recruitment challenges in their own labour market to seek out talented individuals outside of their countries. For example, while over 50 per cent of American companies use digital channels, only 20 per cent of individuals recruited via Upwork are based in the United States. This reinforces the ability of companies to reach out to global talents. In addition, the use of (new ways of intermediation or ‘digital intermediation’) through digital platforms has also allowed individuals to access new markets using their skills in responding to the demands of particular clients worldwide.

D. Profound demographic changes

Globally, the number of elderly people is expected to more than double by 2050, growing from 841 million people in 2013 to more than 2 billion. The ageing population is already a reality for advanced economies where it is creating serious strains on social security schemes. With a large proportion of workers reaching retirement, the size of the working-age population is reduced and the old-age dependency ratio, which is the ratio of older dependents (people older than 64) to the working-age population (those aged between 15 and 64), grows. Many countries have already started to undertake important structural reforms in pensions schemes, and there is no doubt that demographic trends in many developed countries will lead to increased pension and health care costs.

In general, developing countries can respond to the strains of ageing populations in advanced economies, as they have a surplus of young people. Young people can be a positive force for development when well equipped with up-to-date knowledge and relevant skills. The limitation of many developing countries lies, however, in the fact that not all of them can count on adequate human capital investment, nor do they have adequate health or educational systems in place, which curbs the ability of young people to reach their full productive potential. While advanced economies can tap into the dividend of youth bulges in the developing countries, there is a clear need to further improve labour mobility and better optimise supply and demand in skills needed across borders.

3. Technological changes and new skills

Technological developments have always replaced manual tasks and changed jobs. There is no doubt that technology and innovation go hand in hand with economic growth, resulting in wealth accumulation and allowing for reinvestment in research and development and further innovation-led productivity. In addition, technological progress in services may create job

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8 In a survey conducted by Citi GPS, 70 per cent of Citi clients believe that automation and the developments in 3D printing will encourage companies to move their manufacturing process closer to home — with North America gaining the biggest advantage from this development and China having the most to lose. Global Perspectives & Solutions, (in collaboration with the Oxford Martin School), January 2016, http://www.oxfordmartin.ox.ac.uk/downloads/reports/Citi_GPS_Technology_Work_2.pdf
opportunities in developing countries through outsourcing from developed countries. But there is no doubt either that the trend has intensified in recent years and can be expected to increase in the short term. The question is how society can properly absorb, in the middle and long term, the impact of technological change, especially in relation to the automation of work.

A. Future automation: more exposed jobs

Recent literature and company practices show that more and more time-intensive routine tasks and jobs are being automatized.

This is not just affecting activities that traditionally have been subject to digitalisation in the manufacturing sector, but also a diverse and wide range of jobs in other subsectors. For example, research in 2014 (Oxford University) found that jobs in transportation, logistics, as well as office and administrative support, are at “high risk” of automation. Occupations within the service industry are also highly vulnerable to automation, despite recent job growth in this sector. Activities such as insurance underwriters and telemarketers, for example, could be highly affected. This trend has intensified exponentially in recent years, with estimates suggesting that close to 47 per cent of total US jobs are at risk of automation.

Nevertheless, other sources actually stipulate that a relatively lower percentage of jobs (9% in OECD countries) will be automatized.

On some occasions, a specific job will not necessarily disappear but many aspects of it will be automated, therefore requiring fewer workers. Jobs will be divided more and more into tasks. This could be the case, for example, for activities such as legal discovery (computerisation of law), handling documents or medical diagnosis.

B. Sectors and skills in demand

Considering the job growth in the service sector, we can expect automation to impact activities differently: the growth of the online marketplace for physical goods is already overtaken by the growth of online services, which could be an even bigger and more powerful development than the one that took place on physical goods.

Many jobs in the health and social care sector are estimated to grow by almost 30 per cent in the U.S.A. (and 62% of the new STEM jobs will be within the health sector) and probably in many developed economies in the coming decade. Profiles that will be more in demand include industrial organisation psychologists, genetic counsellors, physicians’ assistants, and occupational or physical therapists.

Without doubt, the declining cost of data storage and the increase in processing speeds will make data scientists, database administrators, IT security administrators highly demanded occupations. It is already challenging in many labour markets to find qualified expertise in these areas.

Any prediction of future skills needs cannot afford to underestimate the impact of developments in robotics, genetics, nanotechnology and 3D printing, which are already representing challenges in terms of skills sourcing. Closely related are STEM skills, which will be

11 http://www.futuretech.ox.ac.uk/news-release-oxford-martin-school-study-shows-nearly-half-us-jobs-could-be-risk-computerisation
14 Watson, the robot that is able to do diagnosis to patients on the basis of a database of all radiographies taken in an hospital and all pathologies registered with the radiography.
increasingly in demand. At the same time, at least a basic level of programming is becoming a horizontal skill required for many traditional activities.

The energy and green sector will lead to a growing number of jobs, also interlinked with IT competences: specialists in predictive analytical software will be increasingly required for managing and monitoring energy consumption. Areas closely related to the green economy are civil and petroleum engineering which will also grow in the coming decade. Research also highlights tasks and jobs requiring emotional and personal skills, such as persuasiveness, creativity, strategic approaches, analytical capacity, communication skills, innovative thinking, flexibility and social skills (New Division in Labour: How computers are changing employment and the job market, Richard Murnane, Harvard professor). Such skills have been shown to contribute to job creation, for example the OECD demonstrated that young innovative firms that possess such soft skills have been responsible for almost half of the jobs created in OECD Member states.

4. Changes in business models and ways of working

New business models are developing using technology that taps into the “human cloud”. Work is increasingly digitalised17. This is having direct consequences in companies, the workplace and the workforce.

A. Changes in companies

Companies are increasingly orienting themselves towards the provision of services rather than only products. Multinationals with high market shares are now investing in service provisions as part of their product delivery. Manufacturing and services are growing increasingly interdependent, resulting in the “servitisation” of manufacturing. Service is more often the “competitive point of difference” in the marketplace.

In addition, the establishment of the on-demand economy continues to compel companies to focus on their core competencies and to outsource in a cost-effective manner all other activities, bundling activities in shared service centres. As mentioned before, routine activities previously outsourced to other companies, are now redirected to individuals or to computers. It is therefore easier for new businesses to enter the market at lower costs, thus creating competition for established companies.

New and innovative companies have the luxury of “operating globally without being big” as their operations are no longer subject, to the extent they were in the past, to barriers such as capital or assets. In addition, start-up costs are decreasing, even though companies need to put in place an infrastructure for the processing of electronic data. Due to the increased fragmentation of production functions and on-demand production, professional management of (global) supply chains is a key driver of success for many companies. As a result, the availability of appropriate services for business is a pre-condition to ensure enterprise development, to assess the feasibility of projects, boost innovation capacity, strengthen expansion opportunities (and create jobs) and facilitate the day-to-day operations of companies.

Exporting companies today operate “multi domestic” strategies rather than export strategies, where they establish themselves inside their target markets rather than selling to them remotely. Companies may establish “centres of excellence” as resources for themselves and others for particular services or functions (e.g. engineering, biology).

17 The rise of the gig economy, however, still represents a low percentage of the entire workforce. Just a 1%
In addition, access to a pool of resources worldwide, especially in terms of talent, has led to an **intensification of competition across countries for talent**. Digital platforms, while connecting individuals all over the world with work opportunities, also connect companies with job seekers and with clients and consumers. Individuals who are part of the “human cloud” allow companies to access a pool of talented and “start-up” minded individuals previously unavailable and often at lower cost.

**B. Changes in the ways we work**

1) **Global talent competition and new forms of work**

All kinds of talent are being sourced globally and borders “disappear”. New IT platforms such as Upwork or Taskrabbit are enabling on-line work around the globe, creating some competition between workers. Upwork connects freelancers all over the world with jobs in a variety of fields. More opportunities appear, especially for the young unemployed and more facilities are provided for consumers and companies to find an appropriate service at a lower price. These new (digital) forms of intermediation will enhance the efficiency of the labour market but could challenge the traditional concept of work.

More autonomous, output/result, project-oriented based tasks and jobs are growing, allowing people to craft their own career with less fixed structures and divisions and constantly changing teams and networks\(^\text{18}\). New forms of work are appearing (crowdworking, teleworking, pooling of workers, portfolio work, etc.) and a job-for-life is no longer the reality for many\(^\text{19}\). And workers develop their reputation based on client satisfaction. Part-time workers will increase, as many providers of services will be working as a complement to another job. But it also requires a new set of skills: how to efficiently network, how to reinforce reputation or how to identify the best customers.

This trend also raises **institutional and regulatory challenges**: applicable labour, tax and corporate regulation, as well as issues around job security and social protection schemes. Challenges also relate to the absence of a universal classification of skills that would allow the verification with some degree of accuracy of the real competences of an individual.

2) **Working time and remote work**

Workplace flexibility, both in terms of **working time and location**, is the most obvious characteristic of the new world of work. The definition of ‘the workplace’ now includes anywhere an individual performs his duties. For many, work is no longer a place to go but a task to perform. A dispersed, distributed and remote workforce, combining different forms of work relationships, working conditions and locations is increasing. What is certain is that the traditional 9-to-5 workday is becoming less usual as more and more members of the workforce perform remotely (home working, crowd working or remote location). In addition, new working arrangements have led to work being done across borders.

**Flexibility** makes life easier for many individuals with family responsibilities or those needing a better work-life balance. Working time will likely be less used as a monitoring tool of workers’ productivity and the separation between private and working time may become difficult. Rather than work-life balance, one can speak of “work-life blend” due to the increasing porosity between one’s private and professional life.

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\(^{18}\) Self-employed and independent workers in some sectors, specially white collar service and STEM jobs are growing in number (even though they are actually decreasing in other sectors, such as agriculture or retail)

\(^{19}\) It is estimated that less than 20% of the working population has a full-time open-ended contract according to the World Employment and Social Outlook, International Labour Office, 2015.
3) Individual productivity

New technologies will also enable companies to better evaluate individual productivity using available data, allowing them to compensate individuals in line with their performance. This could increase productivity and the capacity of companies to distinguish between the more and the less productive employee.

Challenges to human resources management may arise, especially in monitoring and recording individuals’ performance. To address these challenges, enterprises and national institutions have already developed policies and tools ensuring the privacy of individuals is protected.

In terms of productivity, a role is also played by customers, who increasingly influence business success and workers’ employability. Customer ratings or customer engagement (accessing and reading a newspaper article, for example) play an increasing role; digitalisation allows measuring workers’ performances and determining their added value to the company.

4) Worker Autonomy

Flexibility goes hand in hand with autonomy and empowerment (specially in higher skilled jobs), as these foster creativity, motivation, sense of responsibility, ownership and an entrepreneurial approach. Social bonds between worker and company are decreasing: the old culture of loyalty that once characterised the employment relationship has given way to a more detached, mutual self-interest culture that is often more transient. The working environment will need to be less hierarchical with a free flow of ideas and the possibility to have more direct access to management.

Decision making is speeding up: better data availability and networking of logistics mean decisions will be more often made at different levels, increasing the relative value of roles rather than relying solely on hierarchical positions. Workers are requested to perform and deliver more, but they request more in exchange in order to be retained.

Individuals will increasingly need to take more care of their own development and training, and hence of their own employability (even though reinforcing the employability of individuals should continue to be a shared responsibility between society, employers and workers). They will need to develop their own reputation, based on client satisfaction; to acquire skills that enable them to network efficiently; improve their performance and identify their best customers. Workers are no longer focused on one career, but on different career paths, sometimes in more than one country or industry.

New technologies and social networks are also enabling new sources of information for people applying for a job: the character, quality and effort of a person’s social connections are increasingly key.

5. Challenges and opportunities: policy questions

The above could constitute the basis for reflection on the opportunities and risks before us. Employers’ and business organisations need to start anticipating the policy implications related to the Future of Work.

In order to frame the discussion, it is important that Employers’ and business organisations focus on the different policies that will be affected and how the people and the institutions within which they operate are going to adapt in order to serve their needs and concerns. This Chapter is split into three sections namely people, institutions and work environment where the section on people looks at how individuals/workers need to change in a new world of work; institutions look at how institutions (which include governments, employers, unions, and other civil society groups) need to adapt and finally work environment considers how the
workplace will evolve and how human resource policies need to adapt in that context. The Chapter elaborates on the specific challenges based on the following policy questions, as described in the table. It also starts reflecting on possible answers for some of them. But these are not solutions set in stone, rather they are presented to be discussed and reflected on, keeping in mind the different country contexts and circumstances.

<table>
<thead>
<tr>
<th>Employment patterns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Challenges and opportunities:</td>
</tr>
<tr>
<td>- New technologies bringing a faster and more transparent and efficient matching between supply and demand for work</td>
</tr>
<tr>
<td>- Increasing diversity of forms of work and more work opportunities and freedom of choice, especially in developing countries and for individuals generally excluded from the labour market such as women or youths, decline of traditional employment relationships</td>
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<tr>
<td>- Higher rate of transitions within a worker’s career: moving across different statuses and work, resulting in more opportunities and different income flows (invokes the concept of employment versus job security)</td>
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<tr>
<td>- Increased business agility via management of supply chain management (companies more reactive to economic fluctuations). Access to market easier for entrepreneurs and lower capital needed to start business</td>
</tr>
<tr>
<td>- Uncertainty about future net job losses and persistent unemployment in some regions, even though lost work will be at least partly replaced by new, jobs, tasks and forms of work</td>
</tr>
<tr>
<td>- Demographic pressures: intense population ageing in some regions and countries, and large youth in others, needing in the short term adequate skills</td>
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<tr>
<td>- Informality(^\text{20}) in work relations could be increased by some new digital platforms</td>
</tr>
</tbody>
</table>

| Questions: |
| i. How to ensure that individuals are adequately prepared for a future in which their job content and the skills required will constantly change? |
| ii. What kind of support mechanisms need to be in place to facilitate transitions between jobs and in-and-out of work? Who should be responsible for this – employers? Individuals? The State? |
| iii. How to channel and boost the opportunities brought by new IT apps so that a growing number of individuals are able to access different work opportunities? |
| iv. How to ensure that informality does not increase? |

\(^\text{20}\) Informality understood as lack of compliance of existing regulation applicable to a specific work relation, whatever form these work relations have
## Skills and Global Talent Competition

### Challenges and opportunities:

- Access to global talent pool results in new income opportunities as well as new talent possibilities for companies
- More and more people enjoy higher levels of education resulting in a possible mismatch of skills which could be addressed through adequate education and mobility.
- Skills shortages, mainly of Highly Qualified Workers, different depending on the regions and context
- Intensive need to update constantly skills and competences
- Job polarisation: apparent growth in demand for low- and high-skilled workers at the expense of middle-skilled

### Questions:

i. How to provide workers with the soft, creativeness and innovation skills which will help to compensate the decreasing demand on routine jobs which will be automatized and mitigate job polarisation? More generally, how to assure that employers and workers assume new attitudes towards lifelong learning? how to get more students to STEM education?

ii. How can global employers better compete in the global war for talent? How to allow a level playing field for all individuals and companies across the globe?

ii. Vis-à-vis the global talent competition, is there any need to assure a more widespread (international) recognition of skills and competences?

## Labour regulations and Institutions

### Challenges and opportunities:

- Labour and employment laws/institutions will need to apply to a new workforce and workplace
- Increased risk of litigation for business (classification of an worker?)
- Less possibilities to control and implement existing national regulations on virtual work communities
- Uncertainty around the definition of workplace and working time (remote & dispersed workers)
- On-line platforms and fundamental principles and rights at work (trade unions’ claims of modern forms of slavery)?
- Wider diversity in employment relationships will provide more possibilities for job creation and growth.
- More flexibility in employment relationships which will be helpful to further accommodate individuals’ and employers’ needs.

### Questions:

i. Is the regulatory framework on labour contracts adapted to deal with the new forms of work? Is the regulatory framework on labour contracts flexible enough to facilitate business and job creation rather than simply obstructing the use of new forms of employment?
ii. Is the existing international regime on applicable law sufficient to deal with mobile and dispersed workers?

iii. Do existing regulations on working time fit the new scenario? What are the (legal and other) challenges when monitoring workers’ productivity?

### Social Protection

#### Challenges and Opportunities:
- Rise of portfolio workers having several sources of incomes (more security in terms of incomes stability) and less dependent on only one employer
- Workers assuming more autonomy and responsibility of their own careers and income security (pensions, benefits, credit and housing loans, paid leave) due to the rise of new forms of work
- Increasing transitions across jobs and in and out of work which could impacts individuals as their right and access to social protection schemes are not always portable
- Population ageing in some regions and country with immediate sustainability challenges of existing social protection schemes
- Emerging social protection schemes also with sustainability needs, linked to a large young population with poverty risks

#### Questions:

i. How can individuals be more efficiently encouraged through adequate incentives to undertake greater responsibility in their insurance schemes throughout their careers? Is there any need to adapt social protection and benefits beyond the classical employment contract? Is there any room of manoeuvre to improve the portability of social protection rights?

ii. How to assure the sustainability of existing and new social protection systems at the same time that income inequalities are efficiently tackled?

### Social Dialogue and Industrial Relations

#### Challenges:
- An increase workforce under a contract relation which is different from an employment relationship could challenge collective forms of representation
- A disperse workforce also raise issues related to the representation of workers
- The role for social dialogue and employers’ and workers’ organisations could consequently not be the same
- More opportunities for workers and employers to interact through new and innovative channels.
- Employees enjoying powerful online tools to communicate collectively
Questions:

i. Will there be any pressure to channel differently the representation of a disperse workforce? Will there be any pressure/real need to set up new forms of workers’ “protection” and representation (regardless of the form of employment)?

ii. Will the social dialogue change in its nature (representative Employers’ and Workers’ organizations) and functions (beyond the traditional collective bargaining or social dialogue)?

<table>
<thead>
<tr>
<th>Human Resources policies</th>
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<tbody>
<tr>
<td>Opportunities and challenges:</td>
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<tr>
<td>- Clear improvement of work-life balance</td>
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<tr>
<td>- New technologies and on-line talent platforms will bring work to people instead of people having to migrate to access work</td>
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<tr>
<td>- Innovation and new technologies leading to higher productivity, reinforcing companies’ competitiveness</td>
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<tr>
<td>- More collaborative working environment with more autonomy for workers</td>
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<tr>
<td>- New technologies/forms of work will have positive impact on climate change: teleworking (less commuting), 3D printing (less transportation)</td>
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<tr>
<td>- Access to a broader range of skills and talents pool</td>
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<tr>
<td>- People find it easier and faster to find a client compared to finding an employer</td>
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<tr>
<td>- Challenges in managing, monitoring, control and evaluation of a nomadic and dispersed workforce</td>
</tr>
<tr>
<td>- Working time more difficult to evaluate (teleworking, blurring between private and work life)</td>
</tr>
</tbody>
</table>

Questions:

i. Are companies already tackling human resources challenges in managing, monitoring, control and evaluation of a nomadic and dispersed workforce? To what extent working time will continue being a human resources tool to measure and monitor productivity?

5.1. People

Getting and keeping a good job has always been one of the most important lifelong objectives for the vast majority of people across diverse geographies, cultures and demographics worldwide. A job allows individuals to participate in society, contribute to their community and generate income to support themselves and their dependents. In addition, for many people jobs are an important part of self-identity. While the number of jobs in the economy seem to be on the decline, the future does promise loads of work. Work may not always resemble jobs in the way in which they are organised and done, rather they may be more like tasks. Work may fulfil some aspects of a job like benefits providing one with income to meet his/her basic necessities, and leave out other elements such as adequate social protection. Thus, it is important for individuals to adapt themselves to a future where job mobility will increase substantially and find other ways to meet needs and expectations towards a comfortable life.
A. Employment patterns

**How to ensure that individuals are adequately prepared for a future in which there will no longer be one permanent job for life?**

As described before, new, flexible and diverse forms of work increase in volume. For instance, a constellation of internet-enabled companies matches available workers with quick jobs, most prominently including Uber (for transportation), Seamless (for meal deliveries), “Helpling” (for house cleaners), and TaskRabbit (for reliable help). In addition, online markets like Craigslist and eBay have made it easier for people to take on small independent projects. Although the on-demand economy is still far from being a major part of the employment picture, the number of workers in this economy has grown intensively in many countries.\(^{21}\)

On-demand apps also spread the work around by carving up jobs into smaller pieces of work, which allows more people to compete for them. However, these new arrangements challenge the existing definitions of employer and employee. If the future involves a declining number of standard jobs, individuals need to change their mind-sets and adapt to these changes by seeking out various work opportunities instead. This trend is bringing new opportunities but could also lead to higher levels of uncertainty and unevenness into an individual’s working life.

Those that are versatile and adaptable in this future are bound to be rewarded. At the same time, individuals will increasingly need to pay more attention to their own development and training, and hence for their own employability. Many workers could no longer be focused on one career but on different career paths, sometimes in more than one country or industry. Nevertheless, reinforcing the employability of individuals should continue to be a shared responsibility between society, employers and workers. Public institutions will need to be much more ambitious and clearly intensify their efforts to provide better access to lifelong training and educational possibilities. This will be key to assure the update of competencies and smooth transitions when changing jobs. This also includes appropriate access to online or digital training which is becoming a more accessible and complementary tool to provide an update of skills and competencies. Therefore, the first question that needs to be answered is how to ensure that individuals are adequately prepared for a future in terms of attitudes towards work. How should policy makers and society start preparing individuals in their careers so that they can better adapt to a coming reality where individuals will be more rapidly changing jobs and tasks?

**What kind of support mechanisms need to be in place to facilitate transitions between different forms of work and in-and-out of work? Who should be responsible for this – employers? Individuals? The State?**

For many, particularly those with high-level skills, the changes offer a wide variety of job opportunities with higher wages and longer term career paths worldwide. For others, these changes would mean perhaps more risk of losing their jobs. This can have knock-on impacts for firm productivity and economic output, poverty and individuals’ personal well-being, social mobility and the overall strength of the national economy.

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\(^{21}\) By 50 per cent since 2010 in the United States, according to the Bureau of Labour Statistics.
As individuals transition from having more jobs to having more work in one’s society, one emerging need could be **more public or private support to make this transition as smooth and the least painful as possible**. Social protection and other public and private schemes could need to develop further a much more supportive function for those changing jobs, freelancers or self-employees among others. But the emerging or developing of these systems would need financial resources and these decisions will need to be decided in view of the sustainability of the existing systems, as well as of the economy as a whole. Individual responsibility could also play a more important role and the development private schemes will need to be considered as a relevant option.

At the same time, there will be a need for much more targeted and efficient labour market re-activation programmes (or “back to work” programmes) to ensure that those really needing support are able to better respond to the new demands for work. Measuring the impact of existing active policy programs will be more crucial than ever.

**How to channel and boost the opportunities brought by new IT apps so that a growing number of individuals are able to access different forms of work opportunities?**

One mean of empowering the individuals is to provide up-to-date information about demand and supply for labour and specific skill sets. **Big data analytics offer the potential to model workforce deployment for the whole economy in a cost effective and timely manner.** Furthermore, by **modelling career pathways and outcomes over time**, there is potential to identify factors most consistently associated with successful career transitions in response to technological advancements such as training investments, financial resources, access to technology and most importantly, the characteristics, for instance, education level, industry sector, geographic location, age, which moderate the effect of these factors. However, to inform individual career choices in the fast-changing digital economy, **more real-time and fine-grained modelling, drawing upon holistic and dynamic data, will be required.**

Since older, unskilled workers appear to be already experiencing disruption (due to the shift away from manufacturing and into service delivery) it may be useful to focus initially on labour market transitions within this population by **identifying those resources and initiatives that have had more impact and success in helping these workers transition to alternative long-term and meaningful work.**

To inform investment decisions on capital, education and redeployment of workers in a continually changing environment, **it is essential to count on good measuring and data.** Much of the value delivered by the digital economy is not captured by traditional measures such as GDP. For example, the **value of having access to work opportunities online** is not yet captured in official labour market statistics, which makes it difficult to capture the value of technology in providing individuals with access to work. More needs to be done in terms of data collection in order to **better understand how we are progressing in the digital economy so as to better leverage the benefits of technological progress** to seek out new avenues of income. Social media, open government data, sensor technology and the growth of the internet do provide new measures and analytics to enlighten our understanding of the digital economy and society. However, there will be ethical and regulatory (privacy) issues to resolve before the potential of big data can be realized.
How to ensure that informality does not increase due to the growing diversity of work forms?

These challenges over fair competition and regulation would need to be addressed, particularly in the context of the new digital economy, where information regarding work opportunities is easily available from all corners of the world. While mobility of workers is easy when an individual is working online, there are other regulatory matters that arise related to, among others, data privacy, safety of workers or jurisdiction when it comes to paying income taxes. In addition, it is important to create a favourable business climate that allows firms to leverage digital technologies to compete and innovate in a fair level playing field worldwide.

The first step to addressing these challenges is to collect appropriate labour market statistics that provide policy makers with information on the recent developments. In addition, there is a need to come up with appropriate objective descriptions of new forms of work, so that they can be easily identified. The information gathered through labour market statistics can help to better understand these new developments and to come up with suitable levels of institutional or regulatory action, if needed so as to enable a vibrant business climate and to allow individuals to adapt and transition from employers to workers and entrepreneurs.

The lack of such important and relevant information will result in having these forms of work go undetected and by consequence leading to a thriving informal economy, which does not contribute to the country’s economy and development. Informality can also be further tackled through the use of private and public employment services that seek to address the information gaps in the labour market.

B. Skills and Global Talent Competition

How to provide workers with the soft, creativeness and innovation skills which will help to compensate the decreasing demand on routine jobs which will be automatized and mitigate job polarisation? More generally, how to assure that employers and workers assume new attitudes towards lifelong learning? how to get more students to STEM education?

It is clear that skills will be one of the most critical factors shaping workforce outcomes in the future. As explained earlier, the current youth unemployment crisis which combines unemployment and skill shortage can be viewed as a sign that educational systems and training providers in many countries are far from providing new workforce entrants with skill sets that are sought after in the current labour market. Beyond this, positive attitudes towards upgrading one’s skills or upskilling can undoubtedly make a difference.

While, as explained above, STEM skills will certainly be in demand, current concerns about the participation in STEM might require some efforts from decision makers and educators to make STEM subjects attractive to current and future students, especially females, and integrate them in a wider curriculum for all levels of education. Aside from core STEM knowledge and skills, the rise of an aged population in some countries means that the healthcare and elderly care sectors could become large employers. Job polarization between high and low skilled workers cannot be easily mitigated through the mere reinforcement of the technical STEM skills and the health care services; they require also an adoption of a set of creative and interrelational competences, that is, ‘soft’ skills.
The development of ‘soft’ skills in students and in individuals is far from being on the agenda of education and training providers today and the development quality and integration of educational and training programs on communication, innovation, teamwork, good presentations skills, creativeness, among others, will be extremely important for the future of individuals. In addition, continued and growing investment in qualitative training and education is necessary to keep up with the rate of change brought about by development in digital technology.

How we educate is important, but it is also important that individuals also adopt positive attitudes towards learning. Individuals who need to re-skill or who are making important educational investments need to understand where there the demand for workers is, the type of skills required for these jobs and the income earning potential associated with these jobs. And as mentioned before, attitudes towards lifelong learning would be key. A much more targeted learning, with a proper assessment of its impact, will be also important in order to secure the productive and well-paid jobs of the future.

To achieve this, it is clear that the educational sector will need to work in a much closer collaboration with businesses to ensure educational programmes are developed in accordance with future individual skills’ needs. These connections while being present in many countries, are far from optimal and need to be strengthened in a more ambitious manner, especially in developing countries.

Dedicated educational institutions may not have sufficient resources to meet the future need for re-skilling and training. The demand for lifelong learning may lead to a renewed focus on workplace learning (notably apprenticeships). At the same time, digital technology will provide in the short term much more channels for affordable and efficient online training, allowing more workers to efficiently update their competences and improve their skills.

How can global employers better compete in the global war for talent? How to allow a level playing field for all individuals and companies across the globe?

The nature of work will continue, to a certain extent, shifting towards a demand for higher skills, and business will be more globally competing for talented individuals due to the possibilities that digitalization provides. Individuals will have access to much more opportunities beyond the borders of their countries of origin. These possibilities will also continue coming through the means of geographical mobility. In any case, it is very likely that countries which succeed in offering the best terms and conditions to high-skilled individuals will emerge winners in tomorrow’s economy. Of course, each country will have to assess its own skill needs but, as commented before, this will need to be undertaken in view of a more global skills market.

Leveraging the possibilities of digital technology would be a way to facilitate access to global talent as well as more opportunities to individuals. More households in developing countries already own a mobile phone with access to internet, allowing them to access online platforms in search of work. As the number of internet users has more than tripled in a decade, this means that businesses and individuals alike are becoming more and more connected. But improving access to internet and to new digital tools will become crucially important as a way to provide new income opportunities. In many areas of the world this access is still very limited.
IT skills will also be an enormous driver of success in the labour market. Policy makers will have to take further care that the new generations and the occupied population are provided with appropriate IT skills (beyond IT literacy, IT security administrators, basic levels of programming, data scientists, database administrators, etc) as this will provide more opportunities to individuals in a global market.

The digital economy also requires a strong ‘analog’ foundation consisting of regulations that create a vibrant business climate and let firms leverage digital technologies to compete and innovate;

Therefore, while digital technologies are no shortcut to development, they can be an enabler and an accelerator. Online business registries ease market entry for new and innovative firms. Well-designed IT training schemes covering several areas will help enormously individuals upgrade their skills and access to global opportunities outside their national contexts. The need to close the digital dividends across countries has never been greater.

Maximizing the potential of the female workforce would be a driver for success in many geographical contexts. Their human capital and knowledge could improve the economy’s output, productivity and knowledge base. Women also are more likely to have more highly developed ‘soft’ skills, making them an important talent pool to address skills mismatch.

Vis-à-vis the global talent competition, is there any need to assure a more widespread (international) recognition of skills and competences?

As described before, challenges also relate to the absence of a universal classification of skills that would allow the verification with some degree of accuracy of the real competences of an individual in a global talent market. Having a particular set of skills recognized across the world can further facilitate not just mobility but access to new opportunities for both, business and individuals. Such schemes have already been put in place in some regions and countries such as the ASEAN countries which use the Mutual Recognition Agreements (MRAs) to facilitate a ‘freer’ movement of skilled labour. To date, MRAs in the ASEAN completed for engineers, nurses, surveying service providers, architects, accounting service providers, medical practitioners, dental practitioners and tourism professionals. At European level intensive efforts have also been undertaken on this ground during the last decades even though recognition of skills remains mainly a domestic competence of EU countries.

One of the main reasons for this recognition remaining within the scope of domestic policies, is the complexity of the educational systems. While this is a good way in which individuals can be allowed to transition across countries physically but also virtually, current challenges surrounding currently formulated MRAs need to be addressed, so that the new generation of MRAs can better facilitate such transitions.

Other challenge lies in negotiating mutual recognition which is a complex and time consuming process in light of the wide disparities in terms of development levels, educational and professional standards and the role of national professional bodies. Extending these systems to all professions requires a significant investment of time and commitment from the relevant actors. Thirdly, while facilitating the mobility of skilled workers, this recognition does not automatically allow market access. The permission to work is not an automatic outcome, but requires the official approval of working visas which are subject to domestic rules and regulations, even if the individual is working in the distance. In addition, such agreements may also be varied to include skills sets that are transferable across professions,
on top of being transferable across countries. At the end of the day, how such agreements will be formulated and concluded will largely depend on policymakers and business contribution in these processes can go a long way in addressing these current challenges. Emergence of further private global recognition schemes could also be a possibility that should not be ruled out either.

Equally important and not addressed (yet) are the validation systems of non formal learning, which is becoming more and more relevant in a scenario of global talent competition. Many countries have developed their own systems even if only at regional level (REFERENCE TO EU), some efforts have been undertaken. Nevertheless, most initiatives remain as mainly domestic.

5.2. Institutions

With the change in the employment relationship model of full-time open ended contracts, which accounts nowadays only to the 20% of the working population\(^2\) (with workers in the informal economy included in this measurement), there could a need to reflect on the existing regulations to respond and accommodate new forms of work arrangements.

**A. Labour Regulations and Institutions**

| Is the regulatory framework on labour contracts sufficient to deal with the new forms of work? | Is the regulatory framework on labour contracts flexible enough to facilitate business and job creation rather than simply obstructing the use of new forms of employment? |

As explained above, technological change coupled with a human cloud with different skill-sets and the ability to work at different costs from various countries could become a real revolution for the employment relationship. The classic dichotomy of an employee and a self-employed person and the basic concept of employment could be threatened in some contexts, especially in activities linked to the so-called gig-economy. **Definitions of employment could get blurred in some fields of activities** and could affect both employees and employers due to increasing legal uncertainty.

In fact, litigation on the classification of workers in the gig-economy is already undergoing in some European and US Courts and could also affect other jurisdictions both in developing and developed countries. Companies in the gig-economy are sometimes adding specific clauses for agreement from the users, that try to discharge the company from responsibility (including financially) in case of subsequent reclassification of the employment relationship. Given this legal uncertainty other companies\(^2\), have decided to reclassify their workers as employees\(^2\).

Other countries have been offering alternatives to the dichotomy of employee/self-employed, such as an intermediate category of “worker”, who would benefit from part of the traditional employees’ rights: in some case this has created even further confusion among users, practitioners and the Courts. Furthermore, the question is even more complex, as individuals providing services in the gig-economy are task-oriented driven and often offer services to

\(^2\)ILO Figures, 2015 World Employment and Social Outlook

\(^3\)Such as Alfred, Instacart, Munchery

individuals/employers who are also constantly changing. **Doubts remain on how to consider those individuals as dependent workers or part of a third category.**

In any case, the basic notion of “legal or organizational subordination” that characterize many legal definitions of the “employee” could be of less and less actuality for some of the new workers, who are requested to innovate and exercise their tasks with further autonomy. Therefore, a **reflection on the employment relationship closer to reality could be needed** in order to identify answers that help preserving job opportunities and, at the same time, avoid legal uncertainty, especially in the gig-economy.

Closely linked to this reflection is another element to be taken into consideration: **the excessive regulatory burdens, including Employment Protection Legislation (EPL), and other administrative regulations** which could be preventing to release all potentialities that the new realities of work provide, in terms of new incomes and job opportunities. The existing debate on regulatory burdens which restrict employment and economic growth would need to be updated on the basis of the new forms of employment.

In that sense, while the controversy on the use of new digital platforms is continuing in some countries of the European Union, in other regions, like in Latin America, similar platforms are well settled and offer new job opportunities. **A policy consisting of merely prohibiting new models of business to operate because of an outdated regulation (not just labour regulation but also tax, corporate, competition regulation, etc) could be a halt to innovation and to new job opportunities.**

Nevertheless, many public institutions and decision makers are already anticipating the reality. **In Italy, by instance, a new proposal, the Sharing Economy Act, has recently been presented to the Parliament.** The idea is to create a framework for digital platforms and similar, as well as a register of platforms which will be under the supervision of the Antitrust and Consumers’ Protection Agency. In order to get registered, the platforms will have to present a clear “business policy” on sales conditions and data protection policy. However, the distinction between platforms and real businesses is not entirely clear and can create additional challenges. At the same time, a threshold of 10,000 Euros profit per year would be fixed: below this limit, the earnings would be considered as linked to the new “sharing economy” and will get a lower taxation rate (10%) and above this limit, earnings are submitted to the normal taxation for self-employed or employees. Thus, the Government is expected to receive tax payments for 150 million to 3 billion before 2025. The sharing economy can, self-evidently, bring some important benefits even to public institutions, who can invest these taxes into the development of active labour market policies, among others. However, there is a main obstacle, that relates to the complexity of the extreme diversity in digital platforms: is such a one-size-fits all regulation appropriate for the sharing economy? **In any case, there will not be one international universal solution: each country, according to its regulatory context and tradition as well as to the specificities of its own labour market, will need anticipate the coming reality and assess whether the existing national regulation is or is not adequate.**

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Is the existing international regime on applicable law sufficient to deal with mobile workers?

The described scenario of a disperse and mobile workforce raises questions in terms of applicable law on many work-related areas, (such as working conditions, health and safety, social security regulation, as well as on data protection). Individuals working on distance using digital means are growingly doing it from different jurisdictions. There is a need to recognise that the definition of mobility is changing as it includes the classical people moving to jobs (migration) but also jobs moving to people (outsourcing, shared service centres, etc), and more and more tasks moving (via new ways of digital intermediation) to people anywhere.

It is not just that an increasing number of individuals is operating from different countries but that a single individual could be changing constantly the country where he/she is providing an online service. It is not a future scenario, this phenomenon is already growing in an intense manner, affecting both, developed and developing countries (for instance: accountants working from remote far-distant countries, teleworkers working a substantial part of their working time in a second resident country, mobile workers working for different employers and changing the country where they provide their service). These specific situations did already appear in the past, but the trend is intensively widening and getting more complex. International private law provides already solutions of applicable law, such as those related to the jurisdiction where the service is provided or those referring to the employer’s permanent address or the worker’s residence. These solutions could be to some extent not entirely satisfactory and it could be pertinent to reflect on the adequacy of existing tools provided by both, national and international private law to anticipate, if finally, necessary, future challenges. This question, of course, is closely related to the consideration of whether the individuals of the so-called sharing or collaborative economy can be considered as “dependent” employees, as much of this remote workforce is using digital platforms.

Do existing regulations on working time fit with the new scenario? What about teleworking?

Mobility of workers and the increasing use of flexible working time arrangements raise questions also on working time regulations. Measuring working time is less and less looked at as a monitoring tool for productivity from a human resources perspective. As mentioned above, it is also becoming quite challenging to differentiate in many contexts between private life and working time. Mobile and teleworkers are working from many diverse locations and their own working time arrangements are more and more inserted within their own autonomy to organize their work. It is not the working time that defines the workload, but the result, the accomplishment of the task. In these contexts, existing complex protective working time regulation, as defined at national regional or international level, could become obsolete and rigid.

At the same time, another challenge related to working time could appear from a health and safety perspective due to the permanent connection to work using online devices. But probably this poses questions that are already being tackled more efficiently from a managerial human resources perspective than from a regulatory one. Some proposed legal “solutions” to create an “obligation to disconnect” are more theoretical than practical as they are surely
difficult to implement and monitor from a mere technical perspective, especially for new generations\textsuperscript{26}.

Also in relation with working time, autonomy of workers raises another regulatory question: whether labour regulations need to adapt to a context of \textit{teleworking}. Teleworking has developed intensively during the last decade, mainly in developed economies, and in practice has not raised substantial regulatory challenges, even though has already been object of some regulatory initiatives in some countries, mainly European. Also joint and collective agreements\textsuperscript{27} have provided some frameworks. Again, human resources policies and codes of conduct are already adapting themselves to this trend. It is important that policy makers understand the value of telework as a driver of change, increasing individual productivity and retaining and motivating employees. It is not certain that further regulatory action is really needed as it could instead add more complexity and act as a deterrence to develop it further.

**What are the (legal and other) challenges when monitoring workers’ productivity?**

As explained in the previous section, human resources monitoring practices on workers’ productivity are being developed intensively thanks to new IT tools. Legal provisions on data protection in many countries already provide individuals with a right to access personal data. But conflicts of interest regarding the quality and quantity of data that an employer can collect could (and are) emerging (medical tests, productivity data, among others). This is also related to the right of the employee to access these data or request its deletion. The \textit{legal framework applicable to data collection on the workplace could also be subject to further questioning due to the growing amount of data that business will be handling. This debate would need to be anticipated.}

Beyond this, as referred previously, from a mere human resources perspective, \textit{monitoring productivity} by means of more sophisticated tools will lead surely to an improvement of the overall workplace productivity thanks to a better follow up and award-compensation of individual productivity. But there are some growing allegations of this trend further adding stress on workers and demotivation, creating a feeling of being permanently under control, under a sort of “Professional Big Brother”. There are also claims that attention on physical health and safety risks will move towards more focus on mental risks. These allegations are not yet consistent with evidence as much of these potential challenges are being mostly channelled through smart human resources policies which try to assure that monitoring do not interfere with privacy or do not create a climate of constant surveillance. But preparation is needed to counter-argue, if necessary, the need for new regulatory approaches on this area.

**B. Social Protection**

\textit{How can individuals be more efficiently encouraged through adequate incentives to undertake greater responsibility in their insurance schemes throughout their careers? Is there any need to adapt social protection and benefits beyond the classical employment contract? Is there any room of manoeuvre to improve the portability of social protection rights}

\textsuperscript{26} Some collective agreements refer to this “right to disconnect” and even to “obligation to disconnect” during holidays. Impacts of Digitalisation on the Regulation of Working Conditions, keynote paper by Professor Jean-Emmanuel Ray, Paris, 2015.

\textsuperscript{27} The European Framework Agreement on Telework (2002)
As mentioned before, it is likely that the new scenario will consist of a portfolio of workers having several sources of incomes (which in practical terms could mean more security in terms of income stability) and less dependent on only one employer. But individuals would need to assume more autonomy and responsibility of their own careers and income security (pensions, benefits, credit and housing loans, paid leave) due to the rise of new forms of work. This will also mean increasing transitions across jobs and being more often in and out of work, all of which could impact individuals as regard to their right and access to social protection schemes. To some extent it is important that individuals are not totally ignored or lost in this process and not left to face alone the consequences of these new trends.

Policy makers will need to efficiently encourage individuals to undertake greater responsibility in their insurance schemes throughout their careers. It is very likely that social protection schemes, private and public will need to adapt to a growing number of self-employees willing to be covered. Classical social protection schemes and benefits could need to develop further to cover this new reality without questioning the sustainability and nor creating additional unnecessary cost for business either.

At the same time, as explained below, the ageing of population in some regions and countries is already posing immediate sustainability challenges of existing social protection schemes. This issue has already been discussed intensively in many developed countries in recent years and it is not exactly a completely new challenge, but it will undoubtedly affect the future of work. In other areas of the world emerging social protection schemes will also have to deal with sustainability needs, linked to a large young population with poverty risks. Each country will need to seek for its own sustainable model but the development of the so-called third pillars will play a growing role in many systems.

The need for further portability of social protection contributions, will also have to be tackled due to the increase number of individuals changing jobs and tasks within and outside a single border. Excessive regulatory and institutional barriers for cross-border portability will need to be removed in a more ambitious manner. The future pensions of many individuals will much more depend on this portability.

**How to assure the sustainability of existing and new social protection systems at the same time that income inequalities are efficiently tackled?**

The sustainability of the social protection systems is already a threat in many countries, due, among other factors, to demographic trends, increase of life expectancy and the growing aging population. Immediate action is already needed and is already the cause of passionate controversies and political debate, not just in developed countries but also in some emerging economies with aging populations. Systems experiencing sustainability risks will need to identify and implement their own policy-mix to tackle them. But the sooner this action is taken the less traumatic it will be.

Discussions on how developing countries build further and develop their own social protection schemes are not minor either. They are also linked to the overall ambitious objective of the Agenda 2030 to reduce by half poverty in the world. The ILO “social protection floor” concept could be useful as it deals really with the fundamental needs of individuals, but caution should be put in place to learn lessons from past experiences, especially in developed countries with too generous social protection schemes. Practical exchanges with other successful and less successful experiences as well as accurate technical assistance based on these lessons would need to be assured before such schemes are built or developed. It is also
critically important to bear in mind the limited fiscal space in developing economies before any ambitious approach in the development of such schemes becomes counterproductive for growth and unsustainable in the middle term. Informality and promoting transitions towards formality will also require realistic and practical approaches which would attract and not deter individuals in informality from using them.

5.3. **Work environment**

The broad definition of ‘the workplace’ includes anywhere an individual performs his duties. For many, work is no longer a place to go but a task to perform. The rise of a dispersed, distributed and remote workforce, combining different forms of work relationships, working conditions and locations is increasingly becoming the norm. As commented, institutions and regulations surrounding the workplace will need to adapt in order to cater to the demands of not only enterprises but also the individuals that these enterprises engage with. But social dialogue and industrial relations as well as human resources policies will also need to anticipate the new scenario.

### A. Human Resources

**Are companies already tackling human resources challenges in managing, monitoring, control and evaluation of a nomadic and dispersed workforce? To what extent working time will continue being a human resources tool to measure and monitor productivity?**

As mentioned, from a Human Resources perspective new forms of intermediation will enhance better matching and efficiency in the recruiting process\(^{28}\). At the same time, one of the main features of the changes in the world of work is the workplace flexibility in terms of working time and location. **This is a great opportunity for both employers and workers, with advantages in terms of work-life balance, reduced stress related to commuting, increased productivity and a push towards more autonomy and creativity at work.** On the side for the employer, the benefits range from having a more motivated workforce to an increase in business competitiveness. This is important as in many countries millennials generations could be more difficult to attract and retain. They are more ready to change their employment several times in their lives compared to their parents.

There are already a set of more or less consolidated human resources tools that tend to place the individual at the heart of the employment relationship. Since more than a decade, the organization of many companies has been moving from **hierarchical structures towards much more collaborative, and participatory organizations** where the employee tends to be more involved in a growing number of decisions.

Nevertheless, at the same time many challenges from a human resources policies are emerging. Perhaps one of the most relevant ones is the way companies will handle productivity measurement. It was already explained how new technologies will allow companies to **better evaluate individual productivity using available data.** This will also provide them the opportunities to compensate individuals more in line with their own performance and could increase the capacity of companies to distinguish between the more and the less productive employee.

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\(^{28}\) New forms of outsourcing of the recruitment process (RPO) are also supporting this trend
But challenges on human resources management may arise, especially in terms of respecting privacy and stimulating a collaborative work environment. Nevertheless, a “big-brother” scenario where the individual is permanently surveilled is yet far from reality in most workplaces. It can be affirmed that both, companies and public institutions are already anticipating this reality and respect for data protection and privacy is becoming a developed practice and legal requirement of human resources management on many fields (from medical and genetic tests to personal access to internet using work devices, etc).

Having affirmed this, it is also important to bear in mind that in the short term the amount of information that Employers will be gathering related to individual or employees’ behaviours will increase enormously, and it will not be always evident to distinguish in an unambiguous manner between legitimate information really relevant for the purposes of measuring productivity and information which should strictly remain in the private sphere of the individual. A very cautious and anticipatory human resources policy will be needed to avoid unintended legal consequences for companies. Public authorities will also have a role to play strengthening the necessary certainty but without preventing companies from taking advantage of the new possibilities that the IT tools offer to stimulate individual productivity.

In terms of productivity, it is also relevant to anticipate the increasing role played by customers themselves, who increasingly influence business success and workers’ employability. Customer ratings or customer engagement (accessing and reading a newspaper article, for example) play an increasing role; digitalisation allows measuring workers’ performances and determining their added value to the company.

Another challenge has to do with changes in working time patterns. Beyond the legal challenges commented below, human resources managers are also coping with the difficulties of monitoring a disperse workforce. On one side, working in distance will help to attract and retain talent worldwide but, on the other side, not all works or jobs are compatible with low physical presence at the workplace. Physical presence during most of the working time will yet be a feature for many (if not most) jobs and in many cases it will be the result of a worker’s option. How an employer manage can simultaneously both realities, will not always be easy. Problems are arising from different compensation packages, working time patterns, health and safety policies, promotion paths, training possibilities. Again, the need to well anticipate them and to prepare and justify different policies will be needed.

B. Social Dialogue and Industrial Relations

Will there be any pressure to channel differently the representation of a disperse workforce? Will there be any pressure/real need to set up new forms of workers’ “protection” and representation (regardless of the form of employment) or not.

Some International trade unions organizations and some academics fear that the future scenario of work will weaken collective labour relations and collective rights. According to them, the emerging of types of work that do not take the form of dependent employment (more tasks with different employers, versus a single dependent employment relationship), the intense diversification of contracts and employment relationships, the increasing number of workers teleworking or distance working, among other factors, will not provide individuals with the same possibilities of collectively grouping to defend their rights and working conditions. The bargaining power of workers, according to these sources, will diminish and this will
negatively affect job quality. In some cases, it is even claimed that modern forms of forced labour will appear.

**Whether these trends are real or mere fearful speculation remains to be seen, but by now it is far from reality.** The new scenario will surely be characterised by an increased remote workforce. But online tools are already the most used tool to communicate in many work environments and workers start to use them also as a way to present and defend their views, even collectively. Social media (with all the risks that it entails) are also growingly been used for this purpose.

The question is whether the traditional collective channels used for the purpose of workers’ representation (that is, company trade unions representation or company workers’ representatives), will also be affected by this reality. It is right now too speculative to foretell with certainty that these channels will disappear or even that they will be seriously damaged. Furthermore, workers’ representation at the workplace are **already adapting to the more spontaneous and virtual way of interaction among workers**, as a way to gain ownership in their representative role.

Even more, **the use by employees of the powerful online tools to communicate collective has already been raising not minor challenges from a managerial human resources perspective.** Virtual platforms, social media, and other growingly extended IT tools strengthen the capacity of the workforce to bring their views collectively before one or several employers.

A different and somehow more classical challenge is **whether workers will start to prefer less trade union activism**, and opt for other kind of representation or interaction at company level, and how these alternatives will strengthen due to having access to more direct communication tools with managers in business. It is also relevant for this reflection to bear in mind that right now the overwhelming majority of workers are not associated with a union.

Finally, a closely related question which would need further reflection could be **what new forms of association or collective action will appear in the future**, different from trade unions or workers’ representations, among individuals that are not formally speaking “dependent” workers but that work for several employers providing a service under different forms of contracts. In fact, some associations are already appearing to defend interests and rights of digital workers or individuals. Furthermore, **other means of communication** and interaction providing these individuals with new ways to express their satisfaction, dissatisfaction, claims or proposals will appear regardless of the form of employment.

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**Will the social dialogue change in its nature (representative Employers’ and Workers’ organizations) and functions (beyond the traditional collective bargaining or social dialogue)?**

Social dialogue is diverse per nature and is already changing due to several circumstances, among them, the economic and financial crisis in several countries. Therefore it is difficult to refer to social dialogue trends in a general manner.

However, it is very likely that among the **new themes that social dialogue** (and collective bargaining) will need to discuss and anticipate are those related to the new reality of work. Just to provide some examples, this could imply that social partners (and Governments) have the courage to assume that dependent employment as such is changing, that working time patterns could no longer be useful in many contexts and that the way workers channel their representation could be different.
The role of Employers and business organizations could also be as affected as the concept of dependent employment will be. Business and employer’s organizations will probably need to be more service-oriented organizations, perhaps enlarging the scope of their membership to the new kind of business.

At the same time, beyond the legal representation granted by public authorities, its capacity of influence will be more and more based on the specific services provided to their members and by its capacity to be backed by them). Individual guidance to members, anticipatory lobby services, authoritative answers and practical contributions based on daily company challenges will probably count more than ever. The new reputational challenges for business in the world of work will also need an approach which, on one hand, helps its members present business before society in a much more responsible manner, vis a vis of the undeniable global social challenges. But, at the same time, it will need to provide to the public and policy discussion a real practical perspective based on business needs.

It is also important to bear in mind that in a more global scenario the growing phenomena of online campaigns from global trade unions is gaining weight, especially as a powerful tool to put pressure on those multinationals which are more exposed to global reputational risks linked to fundamental principles and rights at work. Businesses will need to anticipate further, better argue and better communicate to counter-act efficiently these campaigns. This trend is also leading to pressure from these global unions towards a kind of global “social” dialogue with interlocutors whose perspective could not always be in coincidence with local employers and trade unions.

6. Conclusion
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