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# LKDF FORUM 2021

DIGITAL SKILLS FOR AN INCLUSIVE FUTURE



SESSIONS  
BACKGROUND  
PAPERS

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## Session 1 – How can we anticipate skill needs?

**Organizers:** SkillLab; SkillsFuture Singapore; JobKred

**Speakers:** Simon Schmid (SkillLab), Michael Fung (SkillsFuture Singapore), Gary Gan (JobKred)

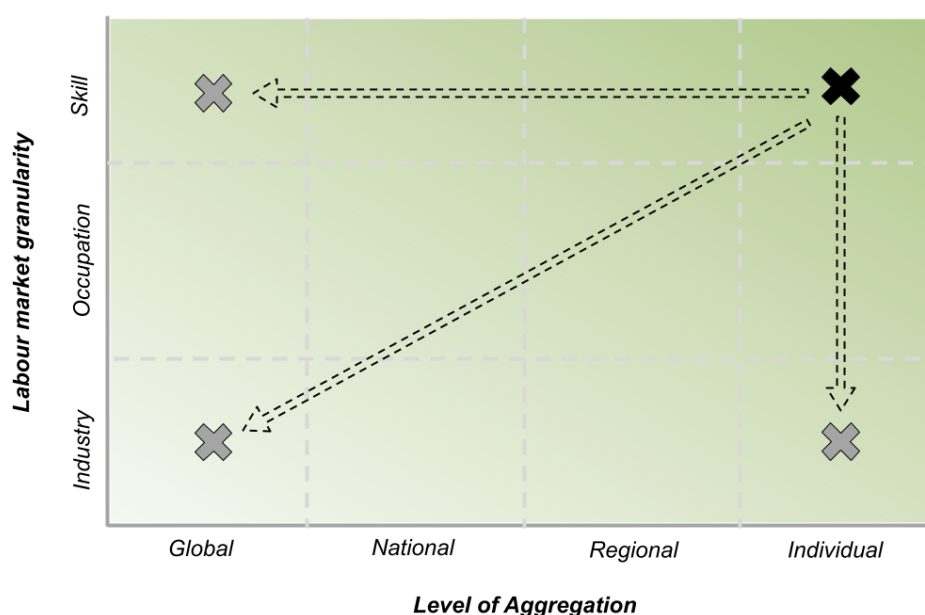
### Background Paper

#### Leveraging big data and AI for skills anticipation

Mismatches between the available skill supply and those demanded by the labour market are high on the policy agenda, both for developed and developing countries. Technological innovation, extended careers, globalizations and demographic change are rapidly changing the skills demand, turning the task of identifying skills needs into the pursuit of a fast-moving target that is hard, if not impossible, to hit.

Qualitative analysis, such as establishment skill surveys, and quantitative approaches, relying on industry and occupation proxies, are the traditional tools to establish skill needs and availability. However, skill surveys are cumbersome, expensive and take time, while quantitative approaches relying on assumptions regarding skills within occupations and industries are likely to be imprecise. Technological innovation, namely, the use of AI and big data may offer solutions, and reasonable replacements for both quantitative and qualitative approaches.

Using AI-based applications for skill profiling can replace establishment of skills surveys, allowing for the efficient collection of data around the skills necessary and available within the labour market. Relying on an approach that focuses on the individual has many benefits. Observing the skill profiles of individuals provides insights into the skills used in certain occupations as well as the skills that would be “released” if certain occupations experience a decline in demand. Thus, a focus on the individual allows for the aggregation of data and provides a real-world picture of the requirements of certain occupations and industries across the individual, the regional, the national and the global level. This can be especially useful for determining the skill needs of emerging occupations or a change in the combination of skills needed to perform an existing occupation.



Big data and the use of AI are also key when leveraging existing sources of information, such as online job vacancies boards, which can make the use of quantitative sources more precise by going beyond the labour market granularity level of occupation or industry. In the short and medium-term, assuming that all available job openings are listed and properly annotated on an online job vacancy board, collecting and analyzing vacancies and identifying trends, emerging occupations and shifting skill needs within occupations is extremely powerful. Doing so is only possible by relying on the computing power of big data and AI, especially to ensure the proper annotation and mapping of vacancies. As countries and industries are faced with emerging skills needs and skills mismatches, potential solutions can only come from relying on the language of skills, communicating across stakeholders' groups and putting skills at the forefront of active labor market policies, up-skilling, re-skilling and labour market information systems.

Beyond labour market information and the design of curricula and upskilling pathways, focusing on the needs of the job seeker and those at risk of unemployment is essential. The provision of career guidance and orientation helps people understand their own skill profile and their place in the labour market.

For SkillLab, the granular skill profiles of users provide rich data and insights, expressed in the standardized language of ESCO. We use big data and AI to organize ESCO taxonomy and help users create their skill profile. Skilllab uses an assessment engine that intelligently adapts to the answers of users. Given the dataset of 13.485 skills, a survey process or manual use of the database would be impossible. The use of AI enables users to navigate a database that describes all relevant skills in the labor market. In parsing online job vacancies, we can rely on our award-winning algorithm to ensure that job vacancies are properly annotated and that the right skills are identified. SkillLab focuses on people first. Our progressive web application is optimized for mobile, but can be used on any device. It has been designed and tested with human-centered design and usability as the guiding principles. Employment intermediaries can rely on their clients to use SkillLab independently. By making it easy for people to fill in and update their skill profile, people can document their career continuously. This enables a holistic approach to account for multiple transitions in the labour market and during individual careers and encourages lifelong learning and up and reskilling.

### Collaboration with WFP: EMPACT

In SkillLab's work with the World Food Program, EMPACT, the WFP uses best practices to prepare students for the future of work. EMPACT connects beneficiaries to work opportunities available online. The curriculum for beneficiaries is designed in collaboration with local and remote employers and training and TVET providers to ensure that learned skills are relevant and in-demand. The curriculum includes classes in software development such as Javascript and Vue.js, English language training, as well as workshops in soft skills like business communication and resume writing. The program is currently delivered in Kenya, Iraq, Turkey, Lebanon and, starting September, Colombia. In some countries, especially Kenya and Turkey expertise regarding in-demand jobs is already present. In other countries, communication with participating employers regarding their immediate and short-term skill needs is key. SkillLab helps EMPACT to understand the skill profiles, as well as the wishes and career goals of their beneficiaries. EMPACT uses these profiles to, together with the training and TVET providers, create the shortest desired pathway for the beneficiaries. Understanding the starting point is also fundamental to understand the impact of programs. As the future of work evolves rapidly, and the global pandemic re-emphasizes the importance of IT literacy, EMPACT will continue creating new employment pathways for young refugees and youth from host communities in the technology sector.



## Session 2 - How can businesses innovate inclusively?

**Organizers:** Digital SME Alliance, Federal Association of IT SMEs of Germany, HeHe Limited, Fab Lab Barcelona & Fab City Foundation

**Speakers:** Sebastiano Toffaletti(DIGITAL SME Alliance), Geraldine Schmitz (Federal Association of IT SMEs of Germany), Clarisse Iribagiza (HeHe Limited), Tomas Diez (Fab Lab Barcelona)

### Background paper

#### Summary

Inclusivity is both a requirement for a just future and provides a decisive boost to sustainable development efforts by mobilising and including underrepresented demographics in the economy.

From a business perspective, inclusion can mean many things. Hiring more women and representatives of minority groups is an important first step. But inclusivity can also mean seeing trading partners from different geographies as equals. All too often in development discourses, power imbalances between so-called industrialised nations and so-called developing nations are upheld or even exacerbated. But innovation emerges from Africa, Latin America and South-East Asia as much as from Europe and the United States, and one of the most important steps towards more inclusivity is taking innovation emanating from “developing” countries seriously.

#### Background

##### *Inclusivity as eye-level cooperation*

Classical academic research into inclusive innovation has largely focused on defining “the poor” as the target demographic to be included into innovation processes (cf. Agola 2016). The approach to inclusive innovation that underpins the work that will be presented in this panel is diverging from this focus. The traditional concept of development inherently includes a semantic power imbalance and evolutionism (Esteve 2009). Rather than working within the framework of “classic development”, the Access to International Partnerships in IT project (AIPi) between BITMi and the ICT Chamber Rwanda is an eye-level initiative. Its main goal is to “put Rwanda on the map” for ICT innovators in Germany.

In other words, the first and most fundamental notion of innovation-enabling inclusivity is to recognise Rwandan businesses as a partner for outsourcing operations, trade, and innovation projects, that German SMEs can see eye-to-eye to. Including Rwanda into the cognitive horizon of a European ICT business that seeks to outsource certain parts of their operation benefits both sides: German companies can find high-quality business partners at affordable prices, and the emerging Rwandan ICT economy expands their sales perimeter. Vice versa, by entering into partnerships with businesses in Kigali, Ruhengeri, or Gisenyi, German SMEs can establish a foothold in East Africa and gain access to new markets to sell their own products. Another added benefit, especially in outsourcing operations, is the lack of time difference between Rwanda and Central Europe.

Instead of working with excessive overhead, the role of BITMi and the ICT Chamber Rwanda is primarily to connect Rwandan and German businesses, and in some cases serve in a facilitating or mediating capacity.

In this vein, the panel question “How can businesses innovate inclusively?” can be answered partially as follows: “Businesses can innovate inclusively by expanding their horizon and search perimeter for outsourcing, trade, collaboration, and innovation projects to areas that are not traditionally associated with innovation, like e.g. African countries.”

### *Including disadvantaged demographics*

Another crucial aspect of inclusivity in ICT-related (and other) innovation processes lies in the participation of disadvantaged groups. In the context of the AIPI project, efforts aim at including women, young people, and individuals from areas outside the capital Kigali. Project coordinators aim at full gender parity in their processes. In addition, the project works primarily with people well below the age of 30.

Including individuals from rural areas and smaller Rwandan cities contributes to decentralised innovation and the empowerment of rural communities, many of which are predominantly agrarian. Instead of focusing on the infrastructurally well-developed capital city only, smaller towns are understood as sources of innovation with motivated and creative individuals as the basis of a strong work force.

This focus on stakeholders in Kigali and beyond also employed by Rwandan ICT businesses, represented in this panel by entrepreneur Clarisse Iribagiza. Her logistics SME Hehe Limited is not only a female-led, innovative digital company but also features a skills development academy with a strong focus on female and rural-community empowerment. The academy boasts a 69% female enrolment rate and is kicking off a programme to upskill individuals from agricultural communities this month.

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## Session 3 - How can digitalization help achieve inclusivity in education?

**Organizations:** International Training Centre of the ILO (ITCILO), International Telecommunication Union (ITU), International Trade Centre (ITC), Festo Didactic, Generation Connect

**Speakers:** Stefano Merante (ITCILO), Vanessa Gray (ITU), Raphaël Dard (ITC), Simone Schmid (Festo Didactic), Canice James (Generation Connect), Enrique Castro (Generation Connect), Daniel Kalemi (Generation Connect), Emmanuella Ablé (Generation Connect)

### Background Paper

In these difficult times, we have seen that young people have adapted to new ways of learning (it is now commonplace to learn virtually or in a blended format), and will need to continue doing so if they want to keep up with the fast-paced society we live in and be equipped with the necessary skills for the jobs of tomorrow. So, how do we ensure that new educational technologies are appropriate for a varied range of youth around the world as they emerge? What can we do to ensure that no young person is left behind? What role can governments, the business sector, and international organizations play in promoting high-quality online education and possibilities for youth? And how can digital technologies raise the interest of youth in green skills, and equip them with the skills and education for a sustainable future, to support green technology development and a transition to a green circular economy?

Around 1.8 billion young people between the ages of 10 and 24 live in the world today, with nearly 90% of them residing in developing countries. In Africa, where the population is 1.2 billion, 41% of the population is under the age of 15, while another 19% is between the ages of 15 and 24. Youth, particularly girls and young women, are disproportionately affected by poverty and unemployment in many developed and developing countries. Just imagine that if these 1.8 billion young people were given the necessary skills to become productive and involved members of society, they would be able to make a significant contribution to positive socioeconomic growth and the attainment of the SDGs. Investments in quality employment and entrepreneurial possibilities, however, fall short of the hopes of young people and the rising pool of young job searchers (ITU 2020).

Youth and children who have grown up with access to information and communication technology (ICTs) are nowadays called “digital natives”. As they were early users of ICTs, they are particularly positioned to leverage the power of digital technology in new and imaginative ways. However, in order to fully benefit from ICTs' revolutionary capacity, youth must be equipped with a variety of digital skills and have affordable access to connectivity. The reality is that the majority of them lack the necessary digital skills to fill employment openings or do not have access to the internet. It is therefore important that youth are equipped with the skills and opportunities to develop their vision of a connected future in order to participate effectively in society. The ITU Generation Connect is the overarching initiative of the ITU Youth Strategy with the goal of engaging global youth and encouraging their participation as equal partners alongside today's digital change leaders, equipping young people with the skills and opportunities to advance their vision of a connected future. This initiative intends to enhance and have a real influence on the lives of young people all over the globe, as well as assure meaningful participation of youth as critical stakeholders in the execution of the 2030 Agenda for Sustainable Development at the United Nations. It aspires to be Fit4Purpose and to bridge the digital divide between young people (ITU 2020).

During the pandemic, when remote and online learning became the new normal, connectivity became more important than ever. Many young people were able to continue their education thanks to digital technologies, but for numerous disadvantaged groups, teachers, and families, it has proven

to be a barrier leaving them unable to continue working and studying during the lockdown due to a lack of equipment, connectivity, and skills. Not only has this raised the likelihood of poverty and disadvantage, but it has also exacerbated educational and training disparities (European Union, 2020).

More than a year ago, COVID-19 shut down schools around the world and created major interruptions in students' education. The World Bank estimates that the closure of schools has left 1.6 billion children and youth out of school. Despite the fact that many countries have implemented distance education initiatives to ensure learning continuity, the decrease in in-person instruction time has signaled possible learning losses. On one hand, the pandemic produced a global learning disruption on a scale and intensity never seen before; on the other hand, it demonstrated the great possibilities for educational innovation and change. We see that as a result of modern technologies the conventional educational system is rapidly being replaced by a digital and virtual system. As a result of COVID-19-related school closures, governments around the world have mobilized remote learning alternatives to preserve educational continuity. Many governments responded quickly, offering a variety of remote learning options to reach children and young people during this time. These remote learning modalities included everything from paper-based take-home materials to broadcast media like television and radio, as well as digital online and e-learning platforms (UNESCO, UNICEF, the World Bank and OECD, 2021).

We have also noticed that digital online and e-learning platforms have significantly grown over the past year and have become more centric in people's lives, slowly revolutionising technical education and training. Technology, in this regard, is a powerful and engaging tool for collaborative and creative learning. It allows learning to take place outside of the classroom, or office, allowing for greater flexibility in terms of location and schedule. Learning can take place entirely online or in a blended manner, at a time, place, and pace that suits the individual learner's needs (European Union, 2020). As schools reopened to students following the first stage of the pandemic, many moved to a combination of physical and virtual learning. And many of these remote learning systems were able to assist students not only in formal education but also in informal learning as a tool to re-skill and upskill themselves. To meet the rising demand of e-learning companies like Festo Didactics have been working on developing youth-oriented e-learning systems. Festo Didactics for example launched the Bionics4Education e-learning programme targeted to secondary school kids, which is generating a lot of interest among children and adolescents in STEM fields, especially women, already from an early age (Festo Didactics, 2018).

While the evidence on the effectiveness of remote learning is still limited, it is clear that simply providing remote learning is insufficient to encourage participation and engagement, and that effective remote learning necessitates the development and implementation of context-specific high- and low-tech strategies, as well as a supportive environment to reduce the risk of learning loss (UNESCO, UNICEF, the World Bank and OECD, 2021).

As a result of technological advancements such as artificial intelligence, automation, and robots, new employment opportunities will be created, but individuals who lose their jobs as a result of this shift may be the least prepared to take advantage of the new opportunities. Today's skills will not be compatible with tomorrow's jobs, and freshly acquired talents may become obsolete rapidly. As we adopt sustainable practices and clean technologies, we will create millions of jobs, but other jobs will be lost as countries reduce their carbon- and resource-intensive industries. ITC is therefore calling for a human-centred agenda for the future of work that would drive growth, equity and sustainability for present and future generations by increasing investment in people's capabilities, in the institutions of work and in decent and sustainable work (ILO, 2019). This is why ITC-ILO launched the initiative "The Future of Work", which aims to cultivate a global dialogue, support capacity-building activities and promote training courses on modern issues, such as jobs and social justice in the 21st century, new technologies, shifting skill sets, decent jobs for youth by using online training courses, face-to-face

workshops, tailor-made events, Massive Open Online Courses (MOOCs), microlearning, virtual reality experiences, gamification and storytelling. This initiative aims to understand the meaning of work, how the changing nature of work is reshaping societies, and how to ensure decent and sustainable work opportunities for all (ITC-ILO, 2019).

In the area of e-solutions, also ITC has developed an e-learning programme and platform, the SME Trade Academy, which offers practical offline and online courses, workshops and learning material to support skills development for small and medium-sized enterprises (SMEs) in both the public and private sectors with specific relevance to e-commerce and digital economy. This programme has been specifically designed to help SMEs, especially in least developed countries, overcome the barriers when trying to trade goods and services via digital channels.

Our changing society does not only necessitate digital skills but also strong green skills that can help a smooth transition into a greener and digital economy. It is therefore critical to engage young people in reskilling and upskilling activities, also through self-learning, to develop and acquire the market-relevant skills that will support them transition from school to the labour market. Increasing digital and green skills at all levels contributes to increased growth and innovation as well as the creation of a more equitable, cohesive, sustainable, and inclusive society. Digital literacy and digital skills can help people of all ages become more resilient, participate more fully in democratic life, and stay safe and secure online. In the future of work, equipping workers and job seekers with digital and green skills will be vital for economic recovery and to support the twin digital and green transition of society, public services and all parts of the economy. Aside from technical skills, the digital economy necessitates complementing abilities such as adaptability, communication, and teamwork, problem-solving, critical thinking, creativity, entrepreneurship, and a willingness to learn (European Union, 2020).

Digital technologies will also be critical in achieving climate neutrality by 2050. They are important enablers for the green economic transformation, including the transition to a circular economy and decarbonization of energy, transportation, construction, agriculture, and other businesses and sectors. Simultaneously, it is critical to reduce digital products, climate and environmental footprints, as well as to support a shift toward sustainable behavior in both their production and use (European Union, 2020).

As the world is recovering from the COVID pandemic, we have an opportunity to place green and digital initiatives at the top of our agendas. In addition to that, as we move toward a more digital and green society, we must guarantee that no one is left behind by providing inclusive and sustainable educational environments, particularly for disadvantaged and underrepresented groups in education, training, and on the job market. Reaching net zero by 2050 will necessitate the rapid adoption of existing technologies as well as the development of new ones. For a net zero energy workforce, skills and digital data analytics will be required. One of the most common ways that digital technologies can help increase sustainability in various sectors is by introducing traceability and predictability through a smartening process, which is especially important in the area of e-waste management. Concerns about turning digital, such as the ICT sector's carbon footprint, e-waste, cyber-attacks, and unequal access to digital infrastructure, must also be addressed (ITU 2020).

Young people worldwide are the future generation who will work to make the planet a greener, cleaner, and more sustainable place to live. It is therefore critical and it makes sense to invest in digital and green-minded education for the next generation of leaders. (ITU 2020).

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## Session 4 - How can we serve a changing workforce with diverse needs?

**Organizers:** University of Johannesburg, Enablecode, University of Pernambuco, Nanjing Tech University, World Bank Group

**Speakers:** Tshilidzi Marwala (University of Johannesburg), Colin Blackwell (Enablecode), Fernando Buarque (University of Pernambuco), Jianming Gong (Nanjing Tech University), Namita Datta, tbc (World Bank Group)

### Background Paper

#### Understanding the diverse needs of a changing workforce: new pathways and vistas

There is consensus that there is a need for extensive discussions on how to address the ever-changing workforce and to explore the different pathways to close the gap. According to the World Economic Forum (WEF) Future of Jobs report, “Developing and enhancing human skills and capabilities through education, learning and meaningful work are key drivers of economic success, of individual well-being and societal cohesion.” Identified areas take into account the rapid disruptions of technology, the effects of the pandemic on the future of work and the impact on society and economy. The intention underpinning this session is to a) gain a deeper sense of the impact of the disruptions b) to explore multiple avenues to address the identified gaps c) ensure that solutions proposed contribute to equitable access and participation of all d) to identify opportunities, barriers and alternative pathways to address the diverse range of needs.

The COVID-19 pandemic has been a catalyst for unprecedented social and economic change since its discovery in late 2019. It has disrupted travel, communications and economic activity, and thrown lives and livelihoods into uncertainty and danger. New innovations, prospects and opportunities have emerged alongside these challenges, and together they present the possibility of a complex new era in human development – one where the race for digital and technological innovation must occur alongside the arrest of ecological decline and expansion of social protections for those most at risk of redundancy, economic precarity and impoverishment (International Labour Organisation, 2020, 2021; Karr, Loh & San Andreas, 2020; WEF, 2020).

The economic impact of the COVID-19 pandemic has most acutely been felt in the sphere of un/employment and the rapid digitalisation and digitisation of processes and operations (ILO, 2021; WEF, 2020). Our awareness of the Fourth Industrial Revolution (4IR) currently underway has meant that these changes were, to some extent, inevitable, but the speed and breadth at which they needed to occur as a result of the pandemic could not be anticipated.

During relatively stable economic periods, global unemployment sits at around 5%. Historically this has doubled during recessions to 10%, though with obvious variation between countries based on their specific economic profiles. In its survey of 35 countries, the International Monetary Fund (IMF) estimated that 97.3 million people, or 15% of the available workforce, would be at risk of furlough or redundancy as a result of the uncertainty generated by the pandemic (WEF, 2020). This can be attributed to a number of factors: the effect of ‘lockdowns’ in closing non-essential businesses and activities, and restricting movement; the pivot to remote work and learning for those industries able to do so; the closure of businesses requiring physical labour, such as the manufacturing industry; and the permanent closure of small and medium enterprises, which lack the financial safety nets that would enable them to withstand several months of reduced or no income (WEF, 2020). This does not even begin to account for the direct impact of the pandemic itself, in terms of the number of workers

affected by illness, both in the short and long term; those who have lost their lives; and those who have found themselves with increased caregiving responsibilities for loved ones.

The industries most affected by the pandemic include manufacturing, retail, tourism, hospitality and the arts, which largely rely on physical labour and contact between staff and clients. Where businesses have not closed entirely, rendering workers jobless, they have relied on furlough, 'zero-hour' contracts, and an overall reduction of working hours across the board. This has created a dual problem of un- and underemployment (ILO, 2021). The ILO forecasts that the shortfall in working hours is equivalent to '140 million full-time jobs in the first quarter and 127 million full-time jobs in the second quarter' (ILO, 2021:12) of 2020, and an overall reduction in global labour income of 5.3% or US\$1.3 trillion. The gains of the decade following the Great Recession of 2008 have been halted or even reversed, and the slow and uneven pace of vaccination against COVID-19 has stymied attempts to 're-open' and begin the process of economic and social recovery.

Statistics from the US are illuminative of a wider global challenge. About 2.6 million jobs were displaced between 2007 and 2018, the decade following the Great Recession (WEF, 2020). In 2020, unemployment in the country peaked at 14.7%, and since then has dropped to 10% - the rate of unemployment between 2007 and 2009 in the aftermath of the financial crash. As the *Future of Jobs 2020* report states: 'In two months the COVID-19 pandemic has destroyed more jobs [in the USA] than the Great Recession did in two years.' South Africa has experienced its own unemployment crisis as a result of the pandemic, with recent reports by Bloomberg that, at 34.6%, the country now has the highest unemployment rate in the world (Bloomberg, 2021). The country's *Quarterly Labour Force Survey 2018* presented an unemployment rate of 27.1% (Statistics South Africa, 2018). Neither of these figures capture the expanded definition which includes discouraged job seekers, suggesting that the real unemployment rate may be much higher. Youth and women are most at risk of job insecurity and job losses, a phenomenon experienced by countries around the world with deep implications for equity (WEF, 2020).

Reports by the WEF (2020) and ILO (2020, 2021) indicate that a slow and tentative recovery is underway, though with warnings that there may be a 'jobless recovery' in many parts of the world. One reason for this is the acceleration of automation processes in industries that occurred in response to the demands of social distancing and lockdown (WEF, 2020). These have displaced jobs and rendered others redundant.

The WEF has identified a number of planned strategies that businesses have used or will be using to cope with the impact of the pandemic. The most popular strategies include accelerated digitisation of work processes, automation of operations, and increased flexibility for remote work (WEF, 2020). There is also enhanced recognition of the need to upskill and reskill workers to cope with new technologies and digitised processes, and employers have been looking to accelerate the up/reskilling process and the implementation of necessary programmes to do so (WEF, 2020). The least popular strategies include reductions or increases in workforce, whether temporary or permanent. A 'new normal' is not only imminent but has already taken shape.

This raises questions both for the absorption of displaced workers and the entry of new workers into the labour force. While globally countries have begun the process of recovery, unemployment remains a critical issue, and in key economies such as China, the USA and the European Union, hiring rates declined during the pandemic and have only just begun to recover and somewhat stabilise (WEF, 2020). This has the potential for long-term impact and is 'is likely to entrench labour market scarring, lead to an overall reduction in employment and entrench worker displacement' (WEF, 2020:16).

The pandemic has seen some expansion of social protection measures in different countries, which for workers has ranged from paid furlough to employee relief schemes and top-up grants (WEF, 2020; Lucio et al, 2021). However, the scope of these interventions varies based on individual country profiles, employer and charitable contributions, and the breadth of need (Gerard et al, 2021). This

has been one way of addressing the socio-economic crisis produced by the pandemic but requires more long-term and coordinated planning. If we are to accept that the 4IR is underway and will continue to displace workers as automation and digitalisation increases, there is increased need for more robust social protection that can ameliorate the impact of widespread unemployment (WEF, 2020). While new roles, opportunities and industries emerge, the WEF cautions that we are under pressure to bridge the gap between skills, automation and jobs now, before we face a global challenge of chronic unemployment. It is expected that in this new normal, there will be parity in time worked between humans and machines, with human labour being directed towards ‘managing, advising, decision-making, reasoning, communicating and interacting’ (WEF, 2020:28).

The pandemic has also resulted in the establishment of three ‘categories’ of worker: essential workers, remote workers and displaced workers. These categories are important to bear in mind when thinking through future-oriented solutions, as they provide some indication of the challenges that need to be addressed.

Essential workers broadly belong to sectors including medical services and care work, agriculture and some manufacturing (e.g. medical supplies), essential retail workers (e.g. supermarkets), delivery services and security. These workers were at enhanced risk of virus exposure during the pandemic and faced some of major workplace-related challenges as a result, including illness, injury, reduced or increased working hours, and reductions in pay for hours worked (WEF, 2020). Many of their roles could not be automated, in whole or in part. Remote workers were those able to engage in their work offsite, whether from home or other locations. Displaced workers were largely drawn from the sectors mentioned earlier, including non-essential retail, manufacturing, hospitality and tourism. Job losses in these sectors have continued, with automation replacing some roles in e.g. banking and finance, retail (such as self-service checkouts) and mechanised production.

The WEF has identified a ‘theoretical share’ projection of remote positions based on country income status. In this projection, remote work will account for 38% of work in high-income countries, 25% in upper- and 17% in lower-middle income countries, and 13% in low-income countries (WEF, 2020). This presents a mammoth challenge to future job prospects in countries heavily reliant on manufacturing, resource extraction and the informal sector. The *Future of Jobs 2020* report suggests that while 85 million jobs could be displaced by 2025 due to the change in division of labour, 97 million new jobs could emerge in the same time period in the 26 economies included in the survey (WEF, 2020). It goes without saying that the spread, scope and level of specialisation of these roles in different economies will not be uniform.

Lucio et al (2021) also argue that there is a serious need to develop strong relationships between labour and industry to support the diversification of work opportunities and offset some of the concerns around the ‘gig economy’. The ILO (2021) reports that about 2 billion people were informally employed in 2019, with these workers being three times more likely to lose their livelihoods as a result of the pandemic. Highly-skilled and/or -experienced workers were more likely to find themselves in sectors shielded from the economic impact of the pandemic, while low-skilled workers were more likely to experience greater job precarity and financial insecurity (ILO, 2021). These challenges cut across geographical divides – between global North and South, as well as urban and rural – as well as age and gender. Thus, with projections that gig, contract and work-on-demand arrangements will become more prevalent, more coordinated policy-making and development is required to support workers in finding meaningful employment that can sustain livelihoods, while also developing wraparound social supports that can offset changes in the nature of work. The WEF projects an increased demand for ‘green economy jobs, roles at the forefront of the data and AI economy, as well as new roles in engineering, cloud computing and product development’ (WEF, 2020:30).

Both the WEF and ILO emphasise the enhanced role of the public sector in constructing the new normal of the future. These include interventions that introduce transferable skills to public

education systems, such as coding, robotics and enhanced IT skills; rethinking the nature and structure of higher, vocational and technical education to respond to the needs of a changing job market; and tailoring industrial, labour and welfare policies to the specific needs of country contexts. In this way, policy-makers will need to consider the informal economy – still an important contributor of livelihoods, goods and services in many parts of the world – as well as the landscape of social inequality that constrains meaningful participation in the job market. The future of work will increasingly involve agile ecosystems offering online gig employment, such as process outsourcing and machine learning data entry. Therefore, solutions for women, young people, and the disabled should feature prominently for how these would target vulnerable members of society for greater support, particularly when considering the challenges posed by the defeminisation of the labour force and its subsequent impact on poverty and food insecurity (ILO, 2021).

Disabled persons are looking towards remote working for long-term, sustainable income; however, there is no easy way for someone looking for work to be recommended training that will have measurable impact on his/her long-term job performance and career goals. Enablecode in cooperation with Amazon is using a big data AI approach to create a way to ingest performance data and provide recommendations on training and jobs to disadvantaged workers and show the impact of those recommendations on employability and income. The end result can statistically demonstrate precisely which training will result in additional employment and for whom. The AI uses this to customise training programs for disadvantaged individuals and persuades them to do them. The new AI algorithm target is increased income for vulnerable people. From a social impact perspective, creating employment for disadvantaged people through this program brings benefits not only to the them but also to complex ecosystems with a multiplicity of stakeholders from government, charity, private sector and academia.

The demand for upskilling and reskilling has taken centre stage during the pandemic, with people pivoting to new roles through online courses and qualifications, especially in the fields of coding, content creation and marketing (WEF, 2020). Online learning has presented new opportunities for people to learn transferable skills and improve their employment prospects as traditional jobs fall away. ‘Skills gaps’ have been identified as one of the major barriers to the adoption of new technologies in a variety of industries, with an emphasis on workers being able to problem-solve, engage in critical thinking, self-manage, and be able to effectively use technology (WEF, 2020).

The ILO (2021) has identified four principles for a ‘human-centred recovery’ from the pandemic. These include:

1. ‘Promot[ing] broad-based economic growth and the creation of productive employment through investment in sectors that can be a source of decent jobs and that support a just transition, gender equality and vibrant labour markets’ (ILO, 2021:15)
2. ‘Support household incomes and labour market transitions, particularly for those most affected by the crisis, through active labour market policies, public employment services and publicly provided, high-quality care services’ (ILO, 2021:15)
3. ‘Strengthen the institutional foundations of inclusive, sustainable and resilient economic growth and development by enhancing social protection systems, promoting formalization, and ensuring that all workers, irrespective of their contractual arrangements, have the right to freedom of association and collective bargaining, enjoy safe and healthy working conditions and receive adequate minimum wages’ (ILO, 2021:15)
4. ‘Engage in social dialogue to develop and ensure effective implementation of human-centred recovery strategies’ (ILO, 2021:15)

The WEF supports a similar approach to addressing the issue of labour in the aftermath of the pandemic. One suggestion involves the ‘automatic triggering’ of an identified package of social protection schemes or cash stimulus programmes in times of economic hardship that can prevent



the lag between crisis and decision-making (WEF, 2020). This would require novel policy-making, financial management, and strong public institutions that can snap into gear when needed. The *Report* also suggests strengthening cross-cutting policy-making through, for example, tethering unemployment benefits to government upskilling/reskilling programmes, funding online learning, and offering subsidies or tax benefits to companies that engage in reskilling and upskilling of their employees (WEF, 2020). Creating new pacts with organised labour can support the immediate uptake of workers who have participated in new reskilling and upskilling initiatives, signalling the value of new approaches to education and training, and absorbing reskilled workers back into the economy (WEF, 2020; Lucio et al, 2021).

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## Session 5 - How can we increase the effectiveness of models for skilling, reskilling, and upskilling the workforce with a focus on digital skills?

**Organizations:** International Finance Cooperation (IFC), Microsoft, Bolgatanga Technical University, Central University

**Speakers:** Amy Refaat Abdel-Razek (IFC), Tania Lozanski (IFC), Dina Nicholas (IFC), Wanjira Kamwere (Microsoft), Peter Osei Boamah (Bolgatanga Technical University), Harold Wilson (Central University)

*The session is based on the World Bank Group/IFC report (2021): [“Demand for Digital Skills in Sub-Saharan Africa. Key Findings from a Five-Country Study: Côte d’Ivoire, Kenya, Mozambique, Nigeria, and Rwanda”](#).*

### Background Paper

How can we increase the effectiveness of models for skilling, reskilling, and upskilling the workforce with a focus on digital skills?

The effects of technological change, the COVID pandemic and globalization are providing new opportunities for the global workforce as standard working modalities are rapidly transformed. Yet these processes are in parallel driving skills divide, between workers who can leverage their skills to advantage in the new economy, and those who have not acquired the same toolkit and who find it increasingly challenging to participate in the modern world of work. This divide has been exacerbated by the recent drive for digitalization across all sectors due to the pandemic, and hence stronger demand for digital skills in particular.

Skills mismatches are a growing challenge for businesses, educational institutions, and governments. Both the size of the gap and the potential impact of solutions is compelling. McKinsey research shows that nearly half (43%) of companies claim they cannot find the skills they need in the workforce. PWC (2021) estimates that Sub-Saharan Africa and Latin America could see over 7% additional GDP by 2030 by investing in upskilling, as regions characterized by a high proportion of youth, relatively high inequality, and underdeveloped business and consumer services could see the greatest gains. Recent research by the IFC and the World Bank on the market demand for digital skills shows that there will be 230 million “digital jobs” in Sub-Saharan Africa by 2030. Interestingly, the research is clear that the bulk of demand for digital skills is driven by occupations outside ICT specialties, as enterprises adopt digital technologies and solutions. It is also clear that businesses, educational institutions, and governments must work together in new ways to upgrade the overall ecosystem for skilling, reskilling and upskilling the workforce.

How to provide necessary skills to individuals, to enable access to good jobs with fair pay and decent working conditions to a larger share of the global workforce?

Skills development and lifelong learning are key to accessing decent work and to enabling smooth transitions of labor markets in times of rapid change. Assessments of skills required for the new economy, by the World Economic Forum amongst others, show a need for subject-matter expertise combined with interpersonal or ‘core’ skills: digital skills and literacy for effective use of technology; communication and adaptability for collaboration; creativity and critical thinking for complex problem-solving; dependability and initiative-taking for results.

Yet in many countries education and training systems show a disconnect between processes for skills development and the needs of economies and societies. This disconnect is documented (ILO 2021) as a core challenge that prevents students and workers from obtaining the skills they need in a rapidly changing economic context, where technical skills are consistently updated through changing job requirements. The research shows that many skills systems continue to be constrained by rigid administrative requirements that are used to determine curriculum and qualifications, processes are often centralized and continue to focus on fixed sets of skills or on input considerations such as time spent in studies.

To help education systems adapt to changing jobs and skills needs, regulators can support mechanisms that ensure regular review of curriculum and updating of qualifications, acceptance of modular curriculum (micro credentials), and the development and recognition of flexible learning pathways including more opportunities for lifelong learning. This will help more students and workers receive training and qualifications that allow them to be relevant in today's job market.

In addition, more systematic approaches and strategic diagnostics to inform planning of national and sectoral skills strategies (ILO 2021) are needed at the level of policy makers. Skills needs assessments, when done on a regular basis and in close cooperation with sector skills councils, industry, and educational institutions, are an important component of a broader labor market information system. Their results should inform the design of competency and occupational standards and curricula and underpin budget allocations for education and training programs including apprenticeships, skilling, and reskilling.

#### How to close the gap between skills development and fast-evolving business needs?

There is agreement that skills delivery programs should be built to be more responsive to labor market requirements. There should be more integration between education and training sectors, flexible learning pathways and opportunities for lifelong learning. Furthermore, teaching methods should be updated to better develop both technical and socio-economic skills, while including basic digital skills at the core of learning, alongside numeracy and literacy.

For educational institutions, data is a critical starting point to increasing program relevance and improving placement outcomes for students. IFC's Vitae ([www.vitaeready.org](http://www.vitaeready.org)) employability database shows that many higher educational institutions and regulatory systems lack effective mechanisms to track the placement outcomes of students. Some that do track outcomes do so in aggregated form (eg at the level of credential or faculty) which makes it difficult to incorporate data into decision-making processes. That said, IFC is seeing a greater focus on tracking placement results and developing measurable KPIs for student employability from higher education institutions in developing markets. Placement data can be a powerful tool to stimulate change, especially when combined with active inclusion of industry representatives into curriculum review processes at the program level.

#### How can policy makers help training providers to deliver relevant digital skills to the population?

Regulatory frameworks should encourage public and private partnerships (PPPs) in digital skills provision. In many cases, regulations are inexistent or outdated and may restrict the delivery of digital skills programs that may be readily available on the market. Regulations around sourcing hardware, software, content, and talent from private organizations can be reformed to have successful PPPs. For instance, thanks to improved PPP regulatory frameworks in African countries, private sector companies like Microsoft, Google, Samsung, Cisco and Dell have in recent years partnered with local government institutions at different levels to support the supply of ancillary services to schools, including the establishment of labs, training of selected groups of users, scholarships for talented youth, curriculum development, etc.

Initiatives such as part government ownership, grants and facilitating space for impact investments could also promote public-private partnerships in the delivery of digital and other skills. Partnerships between government and private sector could be valuable across the value chain – in education delivery, learning system management, infrastructure development, teacher training services, etc. An example of an innovative PPP at scale is the Government of India’s National Skills Development Corporation (NSDC). NSDC is a PPP between the Ministry of Skill Development & Entrepreneurship (MSDE) that holds 49% of the share capital of NSDC, while the private sector has the balance 51% of the share capital. NSDC aims to promote skill development by catalyzing creation of large, quality, and for-profit vocational institutions, and creating an enabling environment through quality assurance, information systems and train the trainer academies either directly or through partnerships. Recently NSDC partnered with the British Asia Trust to come up with a first of its kind “Skill India Impact Bond”(SIB), an innovative outcome based financing instrument to encourage private sector funding and transform skilling. The SIB will be focused on translating skilling into large-scale paid employment, especially for women.

It is equally important to recognise online/blended and distance learning models as an effective delivery modality for digital skills. Existing regulations based on traditional learning modalities can pose impediments to the growth of online/blended and long-distance learning, which is an increasingly used delivery mechanism for digital skills acquisition. Outdated and restrictive regulations such as limiting the amount of virtual content that can be integrated into face-to-face programs to advance toward effective “hybrid” environments, harsh licensing rules, quotas and intellectual property laws related to e-learning content disincentivize private sector providers from creating content that can be used across devices and platforms, thereby reducing the accessibility of online/blended digital skills programs.

The onset of the COVID-19 pandemic has emphasized the need for policy reform in the online/blended learning space as a majority of training platforms moved to a virtual format. A few countries have pursued actions to make policy more conducive for online learning. For example, in light of the COVID-19 pandemic, the Indian government has allowed top 100 universities to start online courses automatically without any additional licenses (World Bank Group, 2020). Another example is the Moroccan government, that is taking active initiative to pilot virtual universities (blended learning) with two public universities under its digital transformation strategy. Even before the COVID 19 pandemic, Brazil had considerably eased its regulations over time for higher education institutions, progressively expanding the percentage of online content allowed in face-to-face program while establishing favorable regulations to expand the number of distance learning centers (“polos”) by eliminating accreditation requirements at the individual level and allowing it at the institutional level, while linking polos expansion approvals to quality criteria.

Finally, a number of regulators are already allowing alternative credentialing. As the private sector expands into less regulated education markets (such as bootcamps), there are increasingly diverse offerings of alternative credentials such as micro-masters and nanodegrees. Government regulatory reform can play a critical role in establishing a favorable attitude toward these new types of credentials, as well as enabling the mainstreaming of these credentials by traditional education providers, such as universities. Specific frameworks that acknowledge the particularities of these types of providers will be needed. For example, the Government of Morocco is partnering with leading platforms to offer short online courses, thereby establishing benchmarks for quality control (IFC, 2020). Another example is the latest National Education Policy in India that recognizes online degree programs offering emphasis on adoption of microcredit courses/MOOCs.

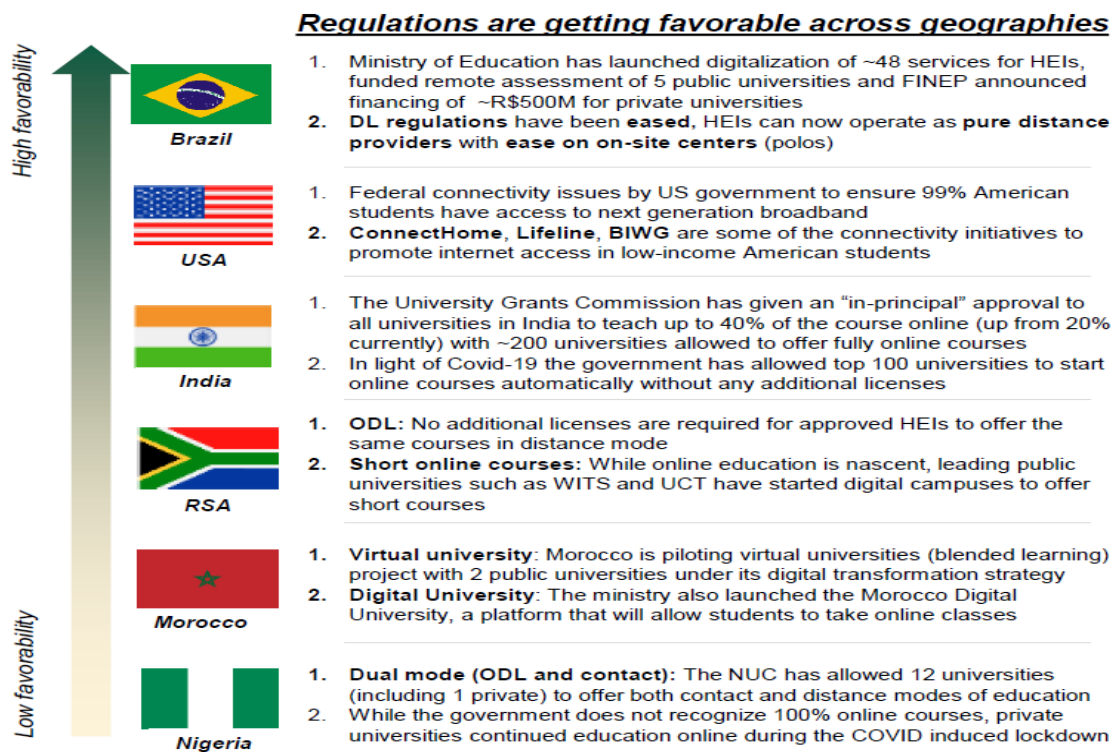


CHART: Methods introduced to open up markets for digital skills provision

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## Session 6 – How can we motivate people to learn new skills?

**Organizations:** European Training Foundation (ETF), PSA Peugeot-Citroën, Tab Gıda, EVN Macedonia, United Nations Industrial Development Organization (UNIDO)

**Speakers:** Daniela Chiti (PSA Peugeot-Citroën), Ayşe Erdem (Tab Gıda), Aneta Petrovska-Rusomarovski (EVN Macedonia), Farrukh Alimdjnov (UNIDO), Didier Gelibert (European Training Foundation), Manuela Prina (European Training Foundation)

### Background Paper

#### Background / Introduction

##### *A worldwide need for new skills in a context of change*

The world faces deep changes of different kinds: technological, economical, societal, legal, demographic, climatic. These important developments take place in a context of growing inequalities, migratory movements and disruptions due to the impact of the Covid-19 pandemic. The green and digital transitions create on the one-side disruptions of business models, and at the same time new opportunities for countries, individuals and businesses. Transitions also create risks for those who are not ready to adapt. Taking into account all these changes, the need for new skills is wide and deep as never before

##### *Technological evolutions*

Technological innovation, as factor in improving the level of productivity, efficiency and therefore impacting on cost reduction, is an imperative and a feature in all sectors and countries of the world. Technological innovation is key in progressing towards sustainability and meeting the challenge of competitiveness. Technological developments embrace all types of enterprises, large, SMEs and microenterprises. If they are not directly generating new technologies, they need, use and implement them. However, technology has not yet had a ripple effect in some sectors and the cost of investment remains a significant barrier for many small players.

New technologies can affect the world of work in developing economies in three ways:

i) automation and robotization; ii) connectivity; and iii) innovation (Christiaensen, 2017 ).

Among all technological developments, the digital transition appears to be a major challenge. Digitalisation is using IT solutions to improve the work process by rationalizing, simplifying, accelerating it. In a nutshell, it is about using the technology for streamlining, replacing or changing the nature of human task. This also means changing the business model. Digitalization is impacting the companies' value chain, is changing almost all industries and has a profound effect on the production and service sectors. It redefines the dialog / relations the SMEs have with their clients.

Policy Makers and stakeholders are aware of the importance of digitalisation. Several initiatives have been identified in the mapping carried out by European Training Foundation (ETF) in the beginning of 2021. In the Western Balkans close to 80% of managers in the region stress that digital skills are key for the future, a majority of companies undertake measures to improve the digital skills of their employees . In the Kyrgyz Republic the government created a non-tax regime for IT companies hoping to promote development of more human capital. Israel has taken actions to help SMEs adopt new work processes, speed up digitalisation and find new markets. Uzbekistan launched the first IT Park in the summer of 2019.

The European Commission presented last March 2021, a vision for Europe's digital transformation by 2030. The EU's digital ambitions for the next decade is reflected in the digital compass which two of

the four cardinal directions are skills and business: i) a digitally skilled population and highly skilled digital professionals and ii) the digital transformation of businesses.

Digitalisation is a game changer for wealth distribution among economic actors as well as across regions and is no longer an option.

Digitalisation has a double effect on skills: the change of technologies requires new skills and it impacts the process of acquiring new skills (e-learning).

### *Societal and climate changes*

Concomitantly with the digital revolution, another major change must be considered: the climate change and environmental deterioration that are a worldwide threat. To overcome the climate challenges, the EU set a strategy for Europe and a dedicated roadmap for making the EU's economy sustainable: the European Green Deal (EGD) . It aims to turn climate and environmental challenges into opportunities.

On 14 July 2021, the European Commission adopted a set of proposals to make the EU's climate, energy, transport and taxation policies fit for reducing net greenhouse gas emissions by at least 55% by 2030.

The European Green Deal drives all internal EU policies including the New European Skills agenda, the VET recommendation, the Osnabruck Declaration and the Council resolution on a strategic framework for European cooperation in education and training (2021-2030).

The environmental/climatic situation is exerting strong pressure on companies. Social inequalities require greater business involvement on inclusive growth. The societal changes need new business models for companies.

In the agro-food sector, for instance, changing consumer preferences and changing market access requirements have spurred innovation in product development, quality, production processes, marketing and sales. A number of agro-food firms reported shifts in the lifestyles and preferences of consumers in both domestic and international markets, especially new demands for higher quality and specialised products (e.g., organic and provenance-based), which has opened new market opportunities and stimulated innovation in product development and diversification . In Turkey, grain and pulse processor Yayla Agro and honey producer Balpalmark noted increased interest in their products as a result of rising health awareness and interest among consumers, both domestically and internationally.

There are many opportunities and challenges to the circular transition from a social as well as business point of view. The shift to circular economy is a change of paradigm leading to growth and employment without compromising the environment. A transition towards a circular economy answers to both societal and climate changes.

Considering the increase of social inequality and discrepancy between actors, circular economy has a great potential to solve social issues by i) creating employment as mentioned in the EC circular economy action plan up to 700,000 jobs could be create in the EU by 2030 ii) promoting social equity by offering access to product and through shared economy, iii) offering business opportunities to companies.

### *Context*

The impact of the COVID-19 pandemic has widened existing inequalities, including the digital and the gender divides, it has also served to accelerate structural and operational changes across diverse economic sectors with far-reaching implications for the future of work. A survey conducted by McKinsey revealed that the COVID-19 pandemic has significantly accelerated the pace of adoption of digital transformation technologies.

Although at different rhythms, these changes affect all countries through global value chains, investment practices, new business models and production processes that modify labour market dynamics, labour relations, workplaces and the very nature of work. They also affect the way people manage their careers and their lives, how they interact with others and contribute to their communities.

### *Looking for skills – new skills*

The transition to a green, digitalized and inclusive economy requires a workforce with the right competences. Skills are an important entry point to build resilience, support innovation, and create inclusive economic opportunities for the future. A skilled workforce is a driver of innovation, and a prerequisite for the development and adoption of new technology. Further, adapting employees skills and roles to new ways of working, and new market realities, in the aftermath of the Covid-19 pandemic will be crucial to building operating-model resilience.

If they are to achieve a people-centered and inclusive transition, countries need to focus on re-skilling and up-skilling their citizens and preparing young people to make the best of emerging opportunities. In exposing large numbers of people to precariousness, unemployment, and loss of income, and forcing many to seek new careers, the Covid-19 pandemic has injected a new sense of urgency.

Among the indicators for measuring a company performance, employee development is a key driver and contributes significantly to the competitiveness of the company. The development of an enterprise cannot be dissociated from the skills development of employees. Is the staff ready to ensure the strategy development of the business? Are they operational? Is the addition of the specific skills of each employee providing resources to the strategic objectives of the company? Does the skills development strategy allow the emergence and development of organizational mechanisms favouring the participation and training of employees in the workplace or mechanisms for valuing skills acquired at work?

There are many reasons for people to train, to update their skills, to re-qualify. Learning new skills should be a real motivation lever for employees: keeping their job, progressing in the hierarchy, broaden their field of interest; preserve their competitiveness and their prospects for success. However, despite the obviousness there is still resistance.

As opportunities arise, also obstacles to training do exist; these should be identified in view to motivate people. i) Willingness/readiness barriers relate to the psychological realities of people as well as their beliefs and values with respect to learning, ii) Situational/ contextual obstacles refer to the factors which, linked to the life situations of individuals, can block participation, iii) Institutional obstacles refer to the policies, rules and modalities of training activities depending on the organizations, companies and institutions that offer them, iv) Information barriers relate to the lack of information about the existence of training services and activities.

Skills development can take place through various means, through professional training, but also conferences, coaching, professional forums, trade fairs, formal or informal events as well as in all situations conducive to the exchange of good practices.

There are experiences, strategies developed, concrete solutions that have been implemented. The webinar will make it possible to share these solutions, to be inspired by them and potentially in a second step to innovate.