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Lavoro e tecnologie dell'informazione e comunicazione durante il COVID-19

Work and information and communication technologies during COVID-19

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1. INTRODUCTION

The idea of developing this thesis was born by reading the Giancarlo Vilella's article, Prof. of the University of Milan and the Polytechnic University of Marche, entitled "Tecnologie del lavoro e dell'informazione, Note a margine del governo di fiducia Draghi"[1]. In this article there is an interesting reflection on the evolution of work in Italy and in Europe thanks to Information and Communication Technologies (ICT), in particular during the period of coronavirus.

In agreement with the supervisor, this thesis is based on legislation and documentation, that is, I deliberately concentrated on the analysis of the institution's texts and documents.

Obviously, the European Union is the main actor as well as the leitmotif of this work, so much so that each chapter explores a different aspect of the enormous work that the Union has done and that it wants to do in the following years in terms of improvement and evolution of work through ICT, with the aim of becoming a world leader in the technological field, achieving the so-called "European digital sovereignty".

In detail, the work was structured into 5 chapters:

[1] https://ceridap.eu/lavoro-e-tecnologie-informatiche-note-a-margine-della-fiducia-al-governo-draghi/.

The first chapter analyzed the European context from a work reorganization point of view following the global coronavirus pandemic. Specifically, employment data was analyzed, the concept of workplace reorganization was deepened, the psychological repercussions of the virus on workers were analyzed, and a look at future economic trends in Europe was taken.

The second chapter focuses on the European initiatives implemented to deal with the economic crisis, such as the Next Generation EU, the EU solidarity fund, the SURE, the Youth Employment Initiative and Support, and the European social fund and European Social Fund Plus.

The third chapter of the thesis focuses on how technologies and ICTs have forever changed the world of work. In particular, the issue of the substitutability of technology, industry 4.0, and possible future scenarios, that is, if technology, in addition to protecting work from catastrophic events such as that of the pandemic, is able to create new jobs are addressed.

The fourth chapter deals with the aim of European digital sovereignty and what Europe has launched to implement this strategy: the European digital agenda, the digital single market, and Shaping Europe's digital future.

Finally, in the last chapter there is an all-Italian case in which the concepts of teleworking and smart working are treated.

2. COVID EUROPEAN PANORAMA AND THE WORLD OF WORK

Before going into the specifics of ICT technologies and how these have greatly helped the world of work, especially in this period of global pandemic, an analysis of the European context and how this has profoundly changed is a must, especially from the point of view of work organization after these difficult years.

For two years now, we have been informed on a daily basis about the effects this virus has had on our lives, mainly from a health and economic point of view. It is clear that we are experiencing the greatest health and economic crisis since the Second World War. The impact this virus has had on our lives has been so strong that we have been forced to drastically change our habits, so much so that what we called normality now seems like a distant nostalgic memory.

2.1 Some data about the employment

Since the start of the Covid-19 pandemic, there have been a total of 103,201,340 confirmed infections, leading to the deaths of 2,237,636 people[2]. Among the most affected areas are Latin America (601,256 deaths) and Europe (747,887 deaths), followed by the United States / Canada (464,204 deaths) and Asia (241,391 deaths). Populations in 120 countries have been subjected to lockdowns to control the virus and prevent health systems from being overwhelmed. This triggered an economic crisis with dire societal consequences, affecting the lives and livelihoods of most of the global population: 500 million people are at risk of falling into poverty. Governments have had to balance health security imperatives against the economic fallout and rising societal anxieties, while relying on digital infrastructure in unprecedented ways.

Furthermore, what we have been able to notice is that if the virus is by its nature "democratic", affecting individuals regardless of factors such as income, origin or status, the repercussions are not uniform. Some segments of the population and some countries are more affected by the economic and social effects of the pandemic than others. In particular, also from Eurofound data[3], it seems that the

[2]Data from the World Health Organization (WHO), updated in February 2021.
[3]See about it Eurofound (2020), Living, working and COVID-19, COVID-19 series, Publications Office of the European Union, Luxembourg.

southern European area, including France, is the most affected by the crisis, while the Scandinavian bloc and the Benelux are facing more adequately the change in progress, recording a more mitigated impact both on the employment front and on that of the well-being of people. This is probably due to multiple factors including a greater and more efficient digital infrastructure, a more widespread habit of managing remote working methods, a more equitable division of family care tasks between genders, and a more generous and efficient welfare system. By the way, smart working has become a very widespread tool to contain the spread of Coronavirus and, at the same time, guarantee global and European economic stability. However, the complexities that emerged in carrying out smart working activities, in a context of physical and social distancing in which people find themselves confined to their homes, entail further stress for workers. This situation is likely to favor employees over service sector workers, which means that not everyone will benefit equally from these changes in the future, indeed, if a part of the employed in the service sector can work remotely through smart working, the more peripheral segments of the labor market suffer or will suffer significant losses from an economic point of view. Self-employed workers will be among the most penalized by the epidemic: many of the workers with VAT numbers in the entertainment, culture, tourism and sport sectors report the cancellation or suspension of events, initiatives, cycles, commissions of any kind. Indeed, lockdown measures to limit physical contact in an effort to stop the pandemic have

led to unprecedented job closures around the world. All this had obvious repercussions: according to Eurofound, only in April 2020, 5% of European workers lost their jobs, while 23% temporarily suspended their work. It is above all the under 35s who are the most affected by the crisis, losing their jobs or experiencing an interruption of work. Moreover, according to preliminary estimates by the International Labor Organization (ILO)[4], the economic and employment crisis caused by COVID-19 could increase unemployment worldwide by nearly 25 million. Based on the possible scenarios outlined by the ILO, estimates indicate an increase in global unemployment ranging from 5.3 to 24.7 million. This would add up to the 188 million unemployed worldwide in 2019. The ILO estimates that between 8.8 and 35 million more people will be in working poverty around the world.

[4]https://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/documents/briefingnote/wcms_767028.pdf?page=27
ILO Monitor: COVID-19 and the world of work. Seventh edition. Updated estimates and analysis.

2.2 Reorganization of workplace

On the other hand, the lockdown also allowed us to explore hobbies and interests that we may never have had before. Despite being enormously disruptive and painful, crises invariably also fuel the emergence of great common goals, solidarity, creativity and experimentation with novelty. The difficulty in finding simple consumer products, or the inability to shop in stores, or perhaps just the fact that many of us had more time available, developed creativity and resourcefulness that we could hardly have discovered. One of the main pushes towards these personal and family changes has been the activation of smart working for many workers and for others the temporary suspension of work due to the closure of companies and workplaces, such as shops and restaurants. The people who could continue to benefit from the extra time they have at home will be those whose working lifestyle has changed irreversibly. All this has inevitably contributed to changing the internal organization of workplaces as well. Firms that previously used hot-desking, or the random assignment of workstations, will probably have to reconsider their organization. Crowded offices with multiple people using the same desk space could be virus transmission outbreaks. Many companies may also need to stagger their work shifts so that offices and factories don't get too crowded and workers can keep their distance safely. These choices could lead to a reduction in traffic during peak hours, with the reduction of travel to and from the workplace of many people

traveling at the same time. Several cities have designed routes to encourage people to walk or cycle to work, and street space has been modified, at least temporarily, by increasing bike paths and widening sidewalks. There also seems to be a greater interest in electric vehicles, such as bicycles, scooters and more generally in vehicles that allow you to move easily around the city with zero emissions. All of this would bring significant benefits to the environment and greener travel would also have a significant impact on our health. The situation we are likely to see continue after the pandemic will be that of many employees who continue to work from home. Research[5] has shown that such a system worked during the lockdown and this evidence will force many executives to no longer appeal to the traditional arguments against applying for permits to work from home. This condition could in turn lead to a change in the expectations and culture of the workplace, where employees are evaluated based on the achievement in terms of effectiveness and efficiency of the objectives assigned to them and not on how many hours they sit behind their desk in the office. Flexible working hours are therefore likely to become much more common, and it is possible for many people to close the traditional and consolidated office hours season 9.00-17.00. What we might see emerge in the long run is a more dynamic approach to work, combining office hours

[5]Telework in the EU before and after the COVID-19: where we were, where we head to. The European Commission's science and knowledge services. (2020).

where needed (for group meetings for example) with remote work for activities that can be done individually. Many companies may decide to completely forgo office rental costs and allow all of their employees to work remotely by meeting a few times a year. Workers will no longer be forced to live close to their workplace, but will be able to choose the home that best suits their needs and desires.

2.3 Psychological repercussions

A phenomenon that has instead had less space than the others on the front page, but which has probably had repercussions as profound as the health and economic ones are the psychological repercussions that Covid has had on our minds. Yet the latter is probably the terrain on which the most radical changes are taking place. Maybe we don't like talking about it because we don't like these changes, or they make us suffer, or they increase our disorientation and anguish. The most obvious change, probably, is the increase in uncertainty, which does not simply mean that we don't know what the world will be like in a year, or even a month, but that we live in a state of perennial, endless suspension. In essence, Covid paralyzes us existentially and by this we do not only mean the difficulty of planning for the future, but also concerns the more subtle changes in our lives, but potentially even more destructive. The most important thing is the fact that the social world into which Covid has thrown us is a world in which it is not unreasonable to think that the other can be a danger to us and we can be a danger to the other. The reality is that in each of us the perception of others has changed. Alongside that trauma, which also forces parents and children, grandparents and grandchildren, and brothers and sisters to perceive each other as dangerous, there is another drama, which is the fact that very rarely two people have the same degree of risk aversion, and even more rarely do they have the same ideas about what is really risky and what is not. There have

always been differences in risk aversion, Covid or non-Covid, but what's new, and far from normal, is that individual risk thresholds are completely misaligned. There are those who think that Covid is a mortal danger and those who think that it is little more than a flu. There are those who wear the mask even outdoors without anyone near, and those who crowd the buses, on the street or in the disco. There are those who think that the transmission of the virus occurs only by interacting with others and those who fear transmission through surfaces or through the air. There are those who stop thinking that Covid is a danger, because thinking about it would ruin their holidays, only to return to fear it when taking Covid seriously involves only the boredom of undergoing a tampon.

2.4 Climate change

Behind the health crisis and the economic difficulties caused by the coronavirus pandemic lies an even more serious global crisis: climate change. Could our global lockdown experience help the environmental cause or will we get back to work as usual as quickly as possible? Many city dwellers noticed an improvement in their urban environment, with cleaner, more fragrant air, quieter and safer streets, and more enterprising wildlife, which offered an example of what a more environmentally sustainable world could look like. Satellite surveys revealed a decline in atmospheric levels of nitrogen dioxide, a major air pollutant released from the combustion of fossil fuels, in cities and industrial centers across Europe and Asia, due to a substantial reduction in road traffic and a decrease in industrial pollution. So, in addition to slowing the transmission of the coronavirus, the lockdown and the consequent reduction in air pollution have likely saved the lives of tens or hundreds of thousands of people. National governments have taken drastic measures to freeze people's activities and suspend entire sectors of the economy in order to control the spread of the pandemic. These interventions highlighted the decisive role of the state, which is quickly mobilized when it realizes it has to act decisively to protect its citizens. This type of national collective effort has usually only been seen in wartime, when the entire workforce and industrial base are remodeled and adapted with the goal of defeating an external enemy. But,

in reality, what is needed these days to counter the threat posed by both the coronavirus pandemic and climate change is a kind of anti-war economy, which reduces industrial production and energy spending. To address and manage the coronavirus pandemic and climate change, national governments need to engage in decisive and coordinated action internationally. Both issues require short-term sacrifices to mitigate possible far more serious future consequences. The economic factor should not be the dominant focus guiding the decision-making process, but a crucial element, among many, to be considered. For the pandemic it was relatively easy to convince public opinion of the existence of an evident and present danger, and therefore to accept the necessary interventions for personal, family and collective safety. As for the problem of climate change, the process is more gradual and there is a less evident and direct link with the disease and death of people. It is important to reflect on what the Covid-19 pandemic has taught us in terms of protecting personal, social and environmental well-being and not to forget the lesson for the future that awaits us.

2.5 European trends

Looking ahead, there are expectations that a robust recovery will occur in the second half of 2021, particularly in view of the latest developments regarding vaccine approvals. However, there is also much uncertainty together with risks that could dampen or derail the recovery.

Indeed, due to delays and fewer deliveries, mass vaccination campaigns in the European Union are experiencing significant slowdowns, making it more difficult to achieve the very ambitious targets set by governments. After the approval of the first vaccines, it was assumed that around 70 percent of the vaccinated population would be reached by next autumn, around 300 million European citizens. The logistical problems should gradually resolve over the course of the year, not only thanks to the upgrading of the plants that are currently under great stress, but also following the authorization of other vaccines that will increase their supply. In any case, individual countries will have to manage unprecedented mass vaccinations quickly, investing enormous resources. Europe, for its part, through the budget for the period 2021-2027[6], will allocate the largest package of incentive measures ever financed by the EU: a total allocation of 1,800 billion euros is foreseen for the

[6]I refer to "EU budget: European Commission welcomes agreement on €1.8 trillion package to help build greener, more digital and more resilient Europe", https://ec.europa.eu/commission/presscorner/detail/en/ip_20_2073.

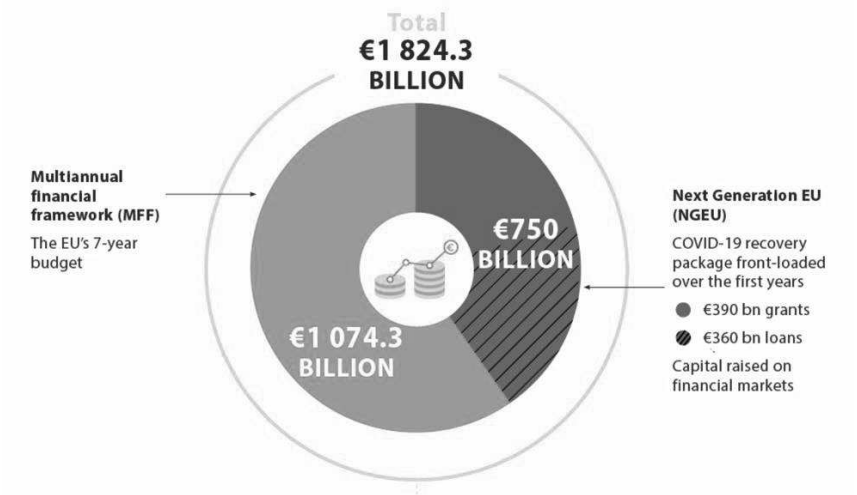
reconstruction after the Euro pandemic COVID-19. In light of the health crisis that has radically changed the international scenario, the new European strategy provides for the strengthening of flexibility mechanisms aimed at guaranteeing the possibility of coping with unforeseen needs that could arise in the future. The goal is to create a greener, digital and resilient Europe, suitable to face possible new challenges. The financial framework is completed by the new 750 billion euro interim recovery instrument NextGenerationEU[7] which will allow the Commission to raise funds on the capital market. NextGenerationEU will help repair the economic and social damage caused by the pandemic by supporting the recovery process. The package will integrate the resources allocated for 1: Single Market, Innovation and Digital Agenda (€ 10.6 billion), 2: Cohesion, resilience and values (with € 721.9 billion) and 3: Natural resources and environment (€ 17,5 billion). The new agreement (approved on 10 November 2020, following the negotiations between the Council, the European Parliament and the Member States) provides that over 50% of the amount will be donated to support modernization through:

1. Research and innovation through the Horizon Europe program
2. Equitable Climate and Digital Transitions, through the Just Transition Fund and the Digital Europe Program

[7]See detailed descriptions on the European Commission website, https://ec.europa.eu/info/strategy/recovery-plan-europe_en.

3. Preparedness, recovery and resilience through the rescUE mechanism for recovery and resilience and the new EU4Health health program

Traditional policies will also be financed, such as cohesion policy and the common agricultural policy, the fight against climate change to which 30% of European funds will be reserved (the highest percentage ever for the EU budget) and the protection of biodiversity and gender equality.



In short, the European panorama that we used to see has been completely distorted from many points of view. For Europe, 2021 will be a pivotal year to look forward and create a new normality. It is not 100% sure that we will be able to leave the pandemic behind us along with 2020, but theoretically the vast majority of Europeans should be vaccinated by 2021 and this should allow us to establish a new economic and social normality.

3. EUROPEAN INITIATIVES TO DEAL WITH THE ECONOMIC CRISIS

The coronavirus (COVID-19) has dealt a severe blow to Europe, causing a generalized collapse of economic activity and employment, and prompting unprecedented expansive fiscal and monetary policy responses. While the initial shock was similar on a global and European level, the pandemic affected different countries differently, for reasons including, among other things, differences in the timing and modes of transmission of the virus geographically, in the demographic profile of the population, in the international and intra-national distribution of certain pathologies at the moment in which the infection began, in the quality of the air, in the urban density. Clearly, the ongoing asymmetries go far beyond the health shock. At the policy level, European countries are equipped differently to respond to a shock of this nature and scale. Furthermore, when the coronavirus began to spread, each country was in a phase of the economic cycle that was not perfectly aligned, benefiting, also for this reason, of variable fiscal and monetary space for maneuver.

How has the EU moved in this context? Europe had to consider various factors and possible scenarios before making any decision:

Is it better, from an economic efficiency point of view, to support the financial efforts of individual countries in facing the health and economic crisis, putting

“fresh” resources in common for a joint stimulus, for example by issuing EU debt? Or is it preferable to simply use credit, moreover already mobilizable pre-crisis, such as that made possible by the activation of the European Stability Mechanism (ESM)?

The risks and returns of the various European actors generated by these different solutions may differ in principle, depending on the economic effects of the crisis on each country and on the potential spillovers between the various economies. It is precisely this possibility that has generated a debate within the Union that is as heated as it has been protracted since the beginning of the pandemic, splitting the member countries into two groups: those opposed to mutualisation of tax risks and therefore to the issuance of European debt; and others, convinced of the net economic benefits for the region (as well as national ones) of a coordinated response also in terms of financing anti-crisis measures at European level. In some cases, there may be the possibility that, faced with an economic response financed with EU debt, some states feel incentivized to engage in excessively risky behavior. The classic example is that of a country that feels motivated to "squander" common resources by counting on the fact that the costs associated with a possible negative outcome of its actions risk falling on the European Union itself. It could be a country that spends common resources ineffectively in combating COVID and the economic crisis it causes, or that even, knowingly, derails part of the resources on consumption and investments not linked to the crisis and/or with low multiplicative

energy. Fears in some fora about the risks posed by this phenomenon, known in economics as "moral hazard", seem to have played a central role in the European debate on whether or not to launch the Recovery Fund (or "Next Generation EU") for counteract the effects of the coronavirus and allow countries that will use it to restart their economy by investing in a number of priority sectors for Europe such as ecological transition and innovation, education and health.

To date, the European Union's response to this unprecedented crisis has been both aggressive and rapid, and the agreements proposed through the creation of the Recovery Fund, in the face of moderate administrative costs, combine a sharing of fiscal risk with a conditionality mechanism elaborate enough spending to foster a pan-European post-COVID development and growth model. This mechanism, in turn, closely approximates the concept of fiscal delegation to Brussels because it is a way of ensuring that the expenditure made possible by mobilizing common resources is well directed everywhere and aimed at a sustainable and equitable recovery. It is difficult to predict precisely whether the European strategy will be successful, but it is logical to expect that the final result will directly depend on the social, environmental and economic performance of the spending rules chosen by the Union and on how well each country will be able to translate these rules on its national territory in terms of a balanced and lasting recovery. Specifically, the European Union has not been left to look helpless at this dramatic situation, but many initiatives have been taken to address and avoid the economic recession and

encourage the recovery of growth. These initiatives, some of which were already undertaken before the advent of Covid, have now become more concrete than ever in this global pandemic situation.

Obviously, not all the initiatives undertaken by the European Union to address the current situation have been explored in this chapter, but, for logical reasons, the focus has fallen on those that have the most important impact on the world of work.

3.1 Next Generation EU

Next Generation EU, also known as the Recovery Fund, is a € 750 billion interim recovery facility that will allow the Commission to raise funds on the capital market. This tool will help repair the immediate economic and social damage caused by the coronavirus pandemic, to create a greener, digital, and more resilient post-COVID-19 Europe fit for present and future challenges.

NGEU constitutes a large portion of the Community financial envelope starting from 2021, in addition to the Multiannual Financial Framework (MFF)[8], or the "ordinary" budget of the European Union. The European Council approved the establishment of NGEU during the European summit on 21 July 2020, the scene of a long and painful negotiation between the representatives of the member states on the architecture of the European funds of this seven-year period. From 21 July onwards, the Financial Framework for the period 2021-2027 and NGEU have evolved hand in hand in the debate and decisions of the EU institutions. After a phase of impasse, in mid-December the Council finally approved the “package” of regulations relating to the NGEU and the new Financial Framework, followed by the European Parliament. The timing is still indicative, in any case, the national plans will be negotiated with the EU authorities. Indeed, in order to access the grant

[8] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020R2093&from=EN.

aid, which will not have to be paid back, member states must prepare national recovery plans making certain pledges based on explicit national recovery and resilience plans for 2021-2023[9]. NGEU expects that 70% of the funds will have to be made available by the end of 2022, the remaining 30% by the end of 2023 (commitment of funds) and that the use of the funds (actual payments) may continue until the end of 2026.

The best way to clarify the structure of NGEU is to summarize all its components in a small diagram, associating them with the respective financial endowment. The 750 billion euro endowment is made up of 360 billion in loans and 390 billion in non-repayable funds, specifically, divided as follows:

- Recovery and resilience facility (RRF) € 672.5 billion of which:
    - Subsidized loans to Member States € 360.0 billion
    - Non-repayable grants for Member States € 312.5 billion
- Other non-repayable grants € 77.5 billion of which:
    - ReactEU initiative € 47.5 billion
    - Horizon Europe € 5.0 billion
    - InvestEU Fund € 5.6 billion
    - Rural development € 7.5 billion

[9] As stated in a statement from the EU Council meeting which signed off the agreement, "These will need to be consistent with the country-specific recommendations and contribute to green and digital transitions. More specifically, the plans are required to boost growth and jobs and reinforce the economic and social resilience of EU countries." See https://www.consilium.europa.eu/en/meetings/european-council/2020/07/17-21/.

- Just transition fund € 10.0 billion
- RescEU € 1.9 billion.

This composition implies, among other things, a preponderant weight of the Recovery and Resilience Facility on the total resources of NGEU, which in fact absorbs about 90% of the funds, and a very important role of the Member States, which are responsible for managing most of the NGEU funds.

In conclusion, the guidelines provided at EU level, which all Member States must follow, and which constitute a common thread that will bind the whole European Union are:

- four fundamental principles aimed at ensuring sustainable growth:

1) Green transition: each plan must include at least 37% of expenditure on the environment and the fight against climate change;

2) Digital transition and productivity: each plan must include 20% of spending for the digital sector;

3) Equity: each plan must include measures for equal opportunities, inclusive education, fair working conditions and adequate social protection;

4) Macroeconomic stability: each plan will have to preserve fiscal sustainability in the medium term, aiming at strengthening investments and the quality of public finances.

- seven common challenges (or flagship initiatives) indicated as priorities in the strategic document of the European Commission, namely:

1) Power up - anticipate the spread of clean technologies and the development and use of renewable energy;

2) Renovate - improving the energy and resource efficiency of public and private buildings;

3) Recharge and refuel - promoting clean technologies to accelerate the use of sustainable, accessible and intelligent transport systems;

4) Connect - increasing access to fast broadband services for citizens and businesses;

5) Modernize - modernize, make the main digital public services accessible to all and more interoperable at EU level;

6) Scale-up - increase European industrial data cloud capabilities and the ability to develop the most powerful, cutting-edge and sustainable processors useful for the digital transition of the EU;

7) Reskill and upskill - promoting large investments in the requalification and updating of skills useful for the green and digital transition.

- a realistic calendar, considering:

1) the limits imposed for the commitment of funds (70% of funds committed by the end of 2022, 100% of funds committed by the end of 2023, 100% of payments made by the end of 2026);

2) that in the event of non-compliance with the "roadmap" (in terms of commitment/disbursement of funds, but also of achievement of the targets set by

the indicators of each National Recovery and Resilience Plan) access to funds may be suspended. An Economic and Financial Committee will support the European Commission in analyzing the achievement of the targets (intermediate and final) and any suspension will be subject to the approval of the European Council. This is the so-called "emergency brake" hotly requested by some countries to avoid improper or ineffective use of funds.

3.2 EU Solidarity fund

The EU Solidarity Fund was set up to respond to major natural disasters and express European solidarity to disaster-stricken regions within Europe. The Fund was created as a reaction to the severe floods in Central Europe in the summer of 2002. Since then, it has provided over € 5.5 billion for interventions in 87 disaster events in 23 Member States and 1 accession country. Italy is by far the biggest beneficiary of the Fund with almost 2.8 billion received so far[10].

In response to the Covid-19 pandemic and the urgent need to address the resulting health crisis, the scope of the European Union Solidarity Fund (EUSF) has been extended to cover major health emergencies. Funding from the EUSF will complement the efforts of the affected countries. It will cover part of the public expenditure intended to rapidly assist people affected by a serious public health emergency caused by Covid-19, including medical assistance, and to protect citizens against related risks, including by preventing, monitoring or controlling the spread of the disease and by combating serious public health risks or mitigating their impact. As part of the Coronavirus Response Investment Initiative (CRII), the EU Solidarity Fund's scope has been broadened to include major health emergencies. In particular, it will provide financial aid of up to €800 million to the

[10] Data from https://cohesiondata.ec.europa.eu/stories/s/An-overview-of-the-EU-Solidarity-Fund-2002-2019/qpif-qzyn/.

worst affected countries in this extraordinary situation, alleviating the burden of the immediate response measures, including assistance to the population, medical assistance and equipment, support to vulnerable groups, and measures to contain the spreading of the disease, strengthening preparedness and communication.

The European Union Solidarity Fund will finance part of the public expenditure, calculated as follows: 2.5% of the total amount of public expenditure below € 1.5 billion at 2011 prices, or 0.3 of its GNI, plus 6% of the total amount of public expenditure that exceeds the same threshold. At the request of a Member State or a country involved in accession negotiations with the European Union, assistance from this fund can be mobilized when a major natural disaster occurs with serious repercussions on living conditions, natural environment or on the economy.

These general principles apply:

In the event of a major disaster, there is only one single eligibility criterion - damage in excess of a threshold, specific for each country. The EUSF can also intervene for smaller event, the so-called “extraordinary regional disasters” where the majority of the population of a region is affected, and if it is deemed that the disaster will have serious and lasting effects on its economic stability and living conditions.

The aim of the Fund is to complement the efforts of the States concerned and to cover a share of their public expenditure in order to help the beneficiary State to carry out the following essential emergency operations, depending on the type of disaster:

- immediate restoration to working order of infrastructure and plant in the fields of energy, water and waste water, telecommunications, transport, health and education providing temporary accommodation and funding rescue services to meet the immediate needs of the population concerned;

- immediate securing of preventive infrastructures and measures of immediate protection of the cultural heritage;

- immediate cleaning up of disaster-stricken areas, including natural zones.

Hence, payments from the Fund are in principle limited to finance measures alleviating non-insurable damages and shall be recovered if the cost of repairing the damage is subsequently met by a third party.

The maximum aid amount for a given disaster may not exceed two thirds of the annual allocation of the Fund in a given year.

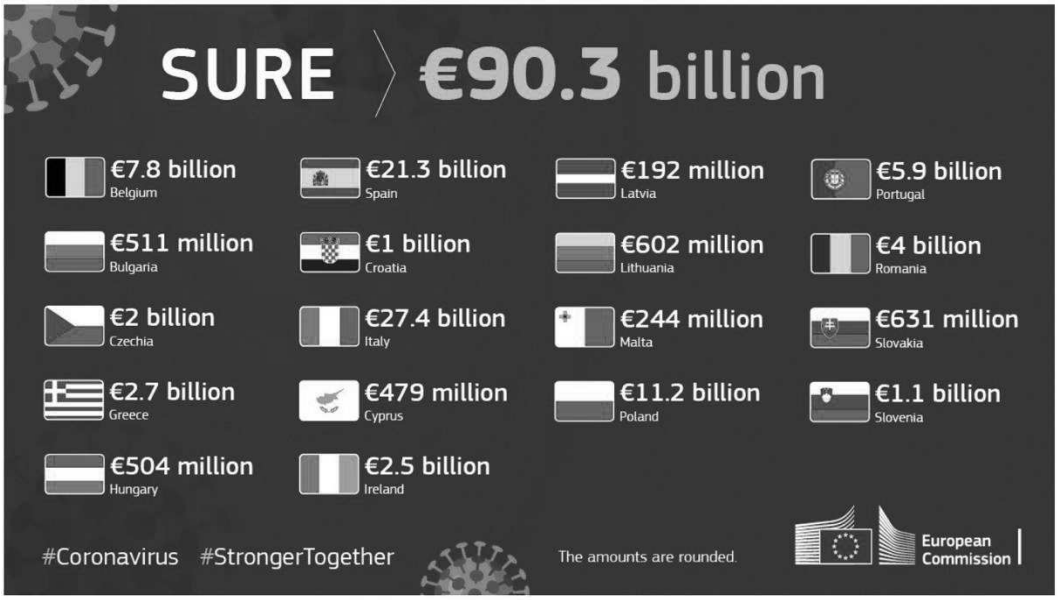
3.3 SURE

The temporary Support to mitigate Unemployment Risks in an Emergency (SURE) instrument acts as a second line of defense to fund working time reduction programs and similar measures, helping Member States protect jobs and, in so doing, protect employees and self-employed from unemployment risks and loss of income.

Loans granted under the SURE facility are based on a voluntary system of guarantees from the Member States. The contribution of each Member State to the total amount of guarantees corresponds to its relative share in the EU's total gross national income, based on the EU budget for 2020.

The establishment of SURE is a further tangible expression of Union solidarity, thanks to which Member States agree to support each other across the Union by making additional financial resources available in the form of loans. The Council has already approved total financial support of € 87.9 billion for 17 member states. In addition, on 16 November the Commission proposed financial support of € 2.5 billion to Ireland, which will have to be approved by the Council. The latest Commission proposal brings total financial support under the SURE facility to € 90.3 billion. € 31 billion have already been disbursed to Italy, Spain, Poland,

Greece, Croatia, Lithuania, Cyprus, Slovenia, Malta and Latvia.



Financial support is provided in the form of loans granted by the EU to Member States on favorable terms. The loans will help Member States cope with the sudden increases in public spending dictated by the need to take measures to maintain employment in the context of the pandemic-related crisis. Specifically, they will help cover the costs directly related to the financing of national working time reduction schemes and other similar measures, in particular targeting the self-employed, introduced in response to the coronavirus pandemic. As a complementary instrument, SURE could also finance certain health measures, in particular in the workplace, aimed at ensuring a safe resumption of normal economic activities.

By avoiding redundancies, working time reduction programs can prevent a temporary shock from having more serious and lasting negative impacts on the economy and labor market in Member States. They thus contribute to supporting household incomes and preserving the productive capacity and human capital of businesses and the economy as a whole.

Ailing companies are forced to suspend or temporarily reduce their activities and employee working hours due to the coronavirus pandemic. Likewise, the self-employed lose their income. Thus, Member States decide to activate programs to reduce working hours to avoid redundancies and help self-employed workers, leading to a sudden increase in public spending, and therefore they request financial assistance from the Commission through SURE to help them finance this expenditure.

At this point, the Commission consults the Member State to assess the terms of the loan, based on an assessment of the increase in public expenditure. Following this consultation, if valid reasons are found, it submits a proposal for a decision to the Council for the granting of the financial contribution. Once approved, the assistance will take the form of an EU loan to the Member State on favorable terms.

3.4 Youth Employment Initiative and Support

The Youth Employment Initiative (YEI) is one of the main EU financial resources to support the implementation of Youth Guarantee[11] schemes. Under the Youth Guarantee, Member States should put in place measures to ensure that young people up to the age of 25 receive a good quality offer of employment, continued education, an apprenticeship or a traineeship within four months of leaving school or becoming unemployed.

In February 2013, the European Council decided to create a Youth Employment Initiative to strengthen financial support from existing EU funds. In particular, the Youth Employment Initiative exclusively supports young people aged between 15 and 24 years old who are not in education, employment or training (NEETs), including the long-term unemployed or those not registered as job-seekers. It was launched to provide support to young people living in regions where youth unemployment was higher than 25% in 2012.

It ensures that in parts of Europe where the challenges are most acute, young people can receive targeted support.

The total budget of the Youth Employment Initiative is €8.8 billion for the period 2014-2020. The initial budget was €6.4 billion; however, in September 2016, given

[11] See detailed descriptions on the European Commission website, https://ec.europa.eu/social/main.jsp?catId=1079&langId=en.

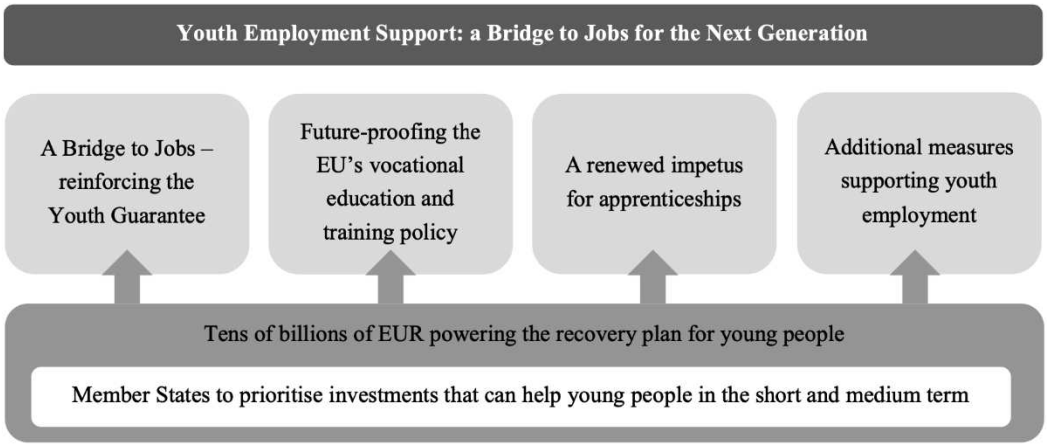
the still high levels of youth unemployment, the Commission proposed to increase this budget. €2.4 billion was added for eligible Member States for the period 2017-2020. Of the total budget, €4.4 billion comes from a dedicated Youth Employment budget line, which is complemented by €4.4 billion more from ESF national allocations.

The COVID-19 pandemic emphasized the need to stay on this road and accelerate with speed. Though a health crisis first and foremost, the pandemic's impact has spiraled the EU into a deep recession. Rising claims for unemployment benefits foreshadow new challenges. Unemployment will rise among all age groups, but youth have already been struck disproportionally[12]: over one in six young people have stopped working since the onset of the crisis. Many were working in hard-hit sectors such as accommodation, food, arts, entertainment, wholesale and retail. Others are now trying to enter the labor market when such sectors are no longer hiring.

During the aftermath of the global 2008 financial crisis, youth unemployment went up from 16.0% in 2008 to a peak of 24.4% in 2013. The figures went down dramatically since, with record lows of 14.9%, just before the COVID-19 pandemic

[12] ILO (2020), Preventing exclusion from the labour market: Tackling the COVID-19 youth employment crisis

hit. If we want to build back better from the new economic downturn triggered by the COVID-19 pandemic, we will have to step up our youth employment support. The 2020 Youth Employment Support package is built around four strands that together provide a bridge to jobs for the next generation:



- The EU created the Youth Guarantee in 2013 and has since built bridges to the labour market for some 24 million young people. The Commission's proposal for a Council Recommendation on a Bridge to Jobs reinforces the Youth Guarantee and steps up the outreach to vulnerable young people across the EU, now covering people aged 15 - 29. The Recommendation keeps the pledge that if you sign up to the Youth Guarantee, you will receive an offer of employment, education, apprenticeship or training within four months. Bridge to Jobs will be more inclusive to avoid any forms of discrimination, with a wider outreach to more vulnerable

groups, such as youth of racial and ethnic minorities, young people with disabilities, or young people living in some rural, remote or disadvantaged urban areas. It will link in with the needs of companies, providing the skills required, in particular those for the green and digital transitions, and short preparatory courses and it will provide tailored counselling, guidance and mentoring.

- The Commission's proposal for a Council Recommendation on vocational education and training aims to make systems more modern, attractive, flexible and fit for the digital and green economy. More agile, learner-centred vocational education and training will prepare young people for their first jobs and gives more adults opportunities to enhance or change their careers. It will help vocational education and training providers to become centres of vocational excellence, while supporting diversity and inclusiveness.

- A renewed impetus for apprenticeships will benefit both employers and young people, adding a skilled labour force to a wide range of sectors. The European Alliance for Apprenticeships has made available more than 900,000 opportunities. The renewed Alliance will promote national coalitions, support SMEs and reinforce the involvement of social partners: trade unions and employers' organisations. The goal is to sustain the apprenticeship offers now, as apprentices we train now will be highly skilled workers in a few years' time.

- Additional measures to support youth employment include employment and start-up incentives in the short term, and capacity building, young entrepreneur networks and inter-company training centres in the medium term.

The Commission urges Member States to step up youth employment support by making use of the significant funding available under NextGenerationEU and the long-term EU budget. At least €22 billion should be spent on youth employment support.

3.5 European social fund and European Social Fund Plus

The European Social Fund (ESF), established with the Treaty of Rome in 1957, represents the main financial instrument through which the Union supports and promotes employment, helps citizens to find better jobs, promotes the development of education and training and ensures fairer job opportunities for everyone, especially the most vulnerable.

The fundamental objective of the ESF continues to be to increase the employment rate, but over the years this objective has had to adapt to the various challenges that lie ahead. For example, the ESF, in its early years, focused on the migration of workers within European borders, while it subsequently moved on to tackling unemployment among young people and the low-skilled. For the period 2014-2020, on the other hand, greater emphasis was placed on tools to combat youth unemployment, on the promotion of active aging, on support for social innovation and disadvantaged groups (women, young people, over 50, immigrants and the disabled). Today, therefore, the ESF allows Member States to implement active labor market policies for the benefit of all social classes. The Fund supports workers through the financing of actions aimed at responding to the need for flexibility that guarantee, through the strategies applied to continuous training, mobility and adaptation to changes in the labor market, also job and income security.

It is the European Commission, together with the Member States, that establishes, after agreeing on themes and budgets to be used in the seven-year programming cycle, the priorities of the ESF and the methods of allocating its resources. Among these priorities we find the promotion of the adaptability of workers and enterprises, thanks to the development, respectively, of new skills and new working methods. Others, on the other hand, concern improving access to employment as they are aimed at helping young people in the transition from school to work or at training the low-skilled unemployed to improve their employment prospects. Vocational training and lifelong learning, which enable citizens to gain new skills, form a significant part of many ESF projects.

To concretely support the operational programs, the European Union then takes care of distributing ESF funding to the Member States and regions: therefore, the ESF is defined and implemented in partnership by the European Commission and national and regional authorities. The level of ESF funding and the types of projects funded vary from one region to another depending on their relative wealth. European regions are divided into three funding categories based on regional GDP per capita compared with the EU average (27 Member States). The European Social Fund, therefore, does not operate in a "labor office" style and does not publish job offers, but funds tens of thousands of local, regional and national employment projects across Europe, starting with small projects managed by local charities to

help disabled people find suitable work up to national projects to promote vocational training for the entire population.

Furthermore, should be noted a new political agreement reached between the European Parliament and the Council on the new European Social Fund Plus (ESF+), the main EU instrument dedicated to investing in people and building a more social and inclusive Europe. The European Social Fund Plus brings together the existing European Social Fund with the EU Program for Employment and Social Innovation (EaSI), the Youth Employment Initiative (YEI) and the Fund for Aid to the Most Deprived (FEAD). It will be the main financial instrument for implementing the European Pillar of Social Rights. It has been adjusted to ensure that resources are appropriately allocated to the social dimension of the EU and to the employment policies of the Member States, so that our societies and economies have what they need in the new reality that will emerge from the coronavirus crisis. In particular, the new program will support Member States in achieving high levels of employment, equal opportunities, equal social protection, fairer working conditions and a skilled and resilient workforce, ready for the transition to a green and digital economy. In addition, the Fund will focus on fighting poverty and increasing investment in young people, particularly affected by the crisis following the outbreak of the pandemic.

With a total budget of 88 billion euros at 2018 prices, the European Social Fund Plus aims to:

- Formulate more ambitious obligations for investment in youth employment, including in support of the implementation of the Youth Guarantee. Member States where the percentage of people aged 15 to 29 who do not have a job or are not in education or training is above the Union average should allocate at least 15% of the ESF + resources allocated to them to targeted actions and structural reforms to support young people (compared to 10% in the original ESF + proposal).

- Do not leave any children behind after the coronavirus crisis. The modified ESF + proposal introduces the obligation for Member States to allocate at least 5% of the ESF + resources allocated to them to measures against child poverty.

- Contribute to the Fund's green and digital economy, in line with the Commission's communications on the European Green Deal and on building a strong social Europe for just transitions. The ESF + will strengthen investments from the Just Transition Fund to help individuals develop the skills needed for an inclusive and climate-neutral society.

- Introduce a real response mechanism to future crises that allows for the adoption of temporary measures for the use of funds in response to exceptional and unusual circumstances. The mechanism can be activated quickly should further shocks hit the Union in the coming years. Indeed, the Commission would have the possibility of introducing temporary measures to help address these exceptional and unusual circumstances.

4. HOW TECHNOLOGY AND ICT CHANGED THE WORLD OF WORK

The world of work is changing in response to technological progress, globalization and ageing populations. In addition, new organizational business models and evolving worker preferences are contributing to the emergence of new forms of work. Despite widespread anxiety about potential job destruction driven by technological change and globalization, a sharp decline in overall employment seems unlikely.

Over the previous decades roughly two thirds of Europe's economic growth are estimated to have been driven by innovation. Additionally, according to data from the 2020 European Innovation Scoreboard, the performance of the EU innovation system, measured as the weighted average of the performance of the innovation systems of all 27 Member States, continues to grow, improving by 8.9 percentage points between 2012 and 2019[13]. Accordingly, investments in research and innovations are expected to generate up to 100,000 new research and innovation jobs between 2021 and 2027.

These data show us that, while certain jobs and tasks probably are disappearing, others are emerging and employment has been growing. As these transformations

[13] 2020 European Innovation Scoreboard. https://ec.europa.eu/docsroom/documents/42981.

occur, a key challenge lies in managing the transition of workers in declining industries and regions towards new job opportunities. There are also concerns about job quality. While diversity in employment contracts can provide welcome flexibility for many firms and workers, important challenges remain in ensuring the quality of non-standard work. Moreover, labor market disparities could increase further unless determined policy action is taken to ensure a more equal sharing of the costs of structural adjustment in the world of work. While there are risks, there are also many opportunities – and the future of work is not set in stone. With the right policies and institutions, the future of work can be one of more and better jobs for all.

Thus, we have arrived at the central question of this work: are ICT technologies capable not only of defending work but also of creating it?

4.1 Technology and substitutability

The rapid progress we are experiencing is only historically the last technological revolution in order of time in human history, but analyzing the historical and economic contexts, in reality, today's challenge is very different from the one that took place between the first industrial revolution and much of the twentieth century. During the nineteenth and part of the twentieth century, technological developments have maintained as a common thread the characteristic of being largely "deskilling", that is, they replaced skills by simplifying tasks. So, simplifying it, in about a century we had gone from a production totally based on the human workforce to one based on the collaboration between man and machine. Indeed, with the advent of the first machines in the nineteenth century, the goal became to create consumer goods by simplifying their production, which becomes the sum of a series of repetitive steps that can be performed by workers, placed inside a mechanized production line, without any technical-specific skills or knowledge (the classic case study is the Ford Motor Company).

On the contrary, the main difference of today's challenge is that new technologies proceed according to a contrary logic. Contemporary innovations require fewer, but highly qualified workers, not only for the design, programming and construction (physical or otherwise) of machines or software, but also for the use of this technology in the workplace. Using technology, progress allows us to delegate the

production of goods and services to machines to free our time from executive, repetitive and trivial tasks. In this verse, from the development of the first microprocessors to today, humanity has made an unprecedented technological leap and the resulting employment and social phenomena are the counterpart of technological success. The concern behind these technologies is that they are not able to produce such an effect that the economic growth connected to their introduction can create new employment sectors that allow the reabsorbing of the workforce replaced by machines in the classical productive fabric. This phenomenon is called jobless growth, which occurs when the economy grows but employment remains stagnant or decreases.

To really understand if the substitutability of the workforce can be a threat to employment, we need to understand and analyze the real object at risk of automation. The substitutability of the workforce is the phenomenon whereby workers are replaced by machines (meaning by machines: robots, software and any type of physical or digital technological tool). The phenomenon also takes the name of technological displacement or technological unemployment, because the replacement of people with technology causes complex social and economic effects. In reality, what is potentially replaceable by machines are not professions per se but tasks. These latter are transferable from humans to machines, therefore, to be precise, technology does not directly affect the worker as he is employed in a certain profession, but rather the components of certain occupations, reducing the

execution time and the amount of workforce required to carry it out. Tasks are transferable to the extent that they can be codified in computer software and performed by machines. In particular, repetitive and routine tasks fall into this condition. In this context, the distinction between tasks and skills allows us to disaggregate employment into what is exposed and what can actually make a worker able to remain within the labor market: the term task means a unit of work activity that produces output (goods and services); on the other hand, skill is a worker's endowment of capabilities for performing various tasks.

Some scholars[14] in this regard have proposed a hypothesis, namely the routinization hypothesis, according to which the effect of technology on employment leads to the exclusion of employees who perform routine tasks compared to those who perform non-routine tasks. Each occupation is made up of a routine component, more subject to innovation, and a non-routine component, which makes it less exposed to technologies. The effect of technology varies across the skill distribution depending the main tasks characterizing different jobs. In particular, ICT is seen as complementing high-skill workers who perform the types of complex cognitive tasks typically found in managerial and professional occupations and therefore. They find in the technological tools a complement to face their employment and increase productivity and efficiency. On the other hand, middle-skill clerical and

[14] Acemoglu, Daron & Autor, David, Skills, Tasks and Technologies: Implications for Employment and Earnings, Handbook of Labor Economics, Elsevier, 2011, pp. 1043-1096.

production jobs are typically characterized by routine tasks and therefore easier to automate given current technological capabilities, and for this reason the market now tends to expel them. Finally, low-skill jobs tend to involve non-routine manual tasks, which cannot be replaced by technology today, that, for example, require more manual dexterity and hand-eye-co-ordination, more difficult to automate on a large scale[15]. In short, what we are witnessing is a polarization of the labor market, a phenomenon that first hit the Anglo-Saxon countries but now also characterizes European ones.

[15] OECD, OECD Employment Outlook 2017, OECD Publishing, Paris, 2017, pag. 87.

4.2 Industry 4.0: digitalization and automation

Digitalization raises important opportunities and challenges for European labor markets. It is occurring at a rapid pace across the EU, with developments such as robotization and artificial intelligence leading to a fourth industrial revolution (industry 4.0). The term Industry 4.0 commonly identifies the technological transformation that is affecting all domains of the economy: production, consumption, transport and communications. This transformation is driven by the intertwining of digitalization, that is the introduction of devices and processes capable of transmitting and processing huge masses of data with a speed that was previously unthinkable, and automation, that is the availability of machines capable of performing tasks, at medium-high complexity, hitherto the prerogative of human beings only.

Regarding specifically the digital economy, it is expanding by more than 10% each year, significantly faster than the economy as a whole[16]. In the EU, the demand for digital technology professionals has grown by 4% annually over the last 10 years, 40% of European businesses cannot find appropriate candidates to fill their positions and the European Commission estimates that there will be a shortage of

[16] World Economic Forum. (2014). Delivering Digital Infrastructure Advancing the Internet Economy. http://www3.weforum.org/docs/WEF_TC_DeliveringDigitalInfrastructure_InternetEconomy_Report_2014.pdf.

756,000 ICT professionals by 2020[17]. The Commission also highlights that 90% of jobs currently require some kind of digital skills, while almost half (44%) of the EU workforce has low basic digital skills, of which 22% has no digital skills at all[18]. The average digital skill use varies across EU Member States. For example, it is only 12% in Romania (41.8% on average across the EU, in 2016 and 2017). As a result, the EU suffers from a digital skills gap, with the latter group at greater risk of unemployment, poverty and social exclusion; and a mismatch between labour demand and supply.

As regards the effects of the transition to Industry 4.0, these are characterized by a dual nature: on the one hand, great opportunities associated with the creation of new wealth and greater well-being, through productivity gains; to the satisfaction of new needs, through the introduction of new products; and the greater efficiency of production processes, thanks to the implementation of process innovations. On the other hand, every "technological leap" constitutes a challenge to the social sustainability of the economic system. In particular, the market power enjoyed by economic agents who first benefit from new technologies and the destruction of jobs associated with the introduction of new processes, as well as the qualitative

[17] European Commission (2016). New Skills Agenda for Europe. Employment, Social Affairs & Inclusion. https://eurlex.europa.eu/legalcontent/EN/TXT/PDF/?uri=CELEX:52016DC0381&from=EN.

[18] European Commission. (2018). Digital Education Action Plan. January 17, 2018. https://ec.europa.eu/education/education-in-the-eu/digital-education-action-plan_en.

changes that work performance can undergo, constitute forces of potential destabilization of the system linked to the advent of Industry 4.0.

In fact, the main concerns are the negative effects that digitalization and automation can have on the quantity and quality of employment[19]. By the way, one of the most widespread fears in this period is that the human being becomes superfluous and is replaced by stronger and more intelligent machines. History teaches us that we have been progressing rapidly for 200 years now: the internal combustion engine, electricity, airplanes, television and computers are all inventions that have had drastic effects on society. If technological change were to make human beings truly superfluous, we should all be unemployed after 200 years, but fortunately this is not the case. It is true, however, that work has changed a lot over the past 200 years. Just to make an example, in Italy in 1861 70% of the active population worked in the agricultural sector, today it is just 3%[20]. 67% of Italians therefore had to find a new job, turning into engineers, architects, promoters, managers, teachers, researchers, etc. all non-existent or unavailable jobs in 1861. We can therefore conclude that, even if innovation makes some jobs obsolete, it creates new ones with the same speed. Innovation has created as many jobs as it has replaced, indeed,

[19] for further information:
DE STEFANO V., The Rise of the 'Just-in-Time Workforce': On-Demand Work, Crowd Work and Labour Protection in the 'Gig-Economy', Geneve, ILO, 2016 (ILO Working paper - Conditions of Work and Employment Series, 71); and, MEDA D., The future of work: the meaning and value of work in Europe, ILO, 2016 (ILO Research paper, 18).

[20] Source Istat.

many more. If we consider that the world population is now 7.7 billion, compared to the billion at the beginning of the nineteenth century, the absolute number of jobs has in fact grown enormously. It is our own story, therefore, that tells us not to worry: we have been innovating for a long time and there have never been so many people employed.

In this regard, some scholars[21] suggest that concerns be debunked and that we should look at technological changes taking place with optimism. What is underestimated is the compensatory capacity of technological innovations: in the face of something that is destroyed, that is a job or, in some cases, an entire industrial sector, there is something that is created, greater wealth with the same factors of production, therefore greater demand and employment, or new activities that require new skills.

It is also important to remember that the productivity improvements obtained through technological innovation usually translate not only into an increase in production but also in other types of investment: in greater research and development, in better communication, advertising, distribution, quality of service to the customer and so on, transferring resources to other productive sectors (research, professional services, transport and logistics, software, design, etc.) and also generating new jobs in these sectors. Much of the productivity gains achieved

[21] AUTOR D., Why are there still so many jobs? The history and future of workplace automation, "The Journal of Economic Perspectives", n.3, 2015, pp. 3-30

by industry in recent decades have had effects of this kind: that is, the creation of more jobs in services than were created (or destroyed) in the industry itself. The empirical evidence shows us that, in fact, there is no positive correlation between productivity growth and the increase in unemployment, nor between the increase in technological innovation and unemployment[22]. To give a concrete example of a European country, in the forty years between 1970 and 2009, years of profound technological and economic transformation, Italian industry lost about one million jobs, agriculture another million, but services have created about five million, with a clear overall positive balance[23]. In summary, most scholars, economists, demographers and other observers agree that technological innovation in and of itself (net, therefore, of the deepest economic crises and cycles) has never resulted in the average-long-term negative employment consequences, nor do they believe it could lead to them in the future.

[22] As highlighted in the article by Blanchard and Solow based on over one hundred years of data on the US and French economies, (http://economics.mit.edu/files/1909) net of the period of the Great Depression, there is no correlation significant between the two phenomena.
[23] Istat, "L'Italia in 150 anni", 2011.

4.3 Possible future scenarios

And what about the future? The common thought is that the development of artificial intelligence and the progressive automation of work activities will involve both the creation of new jobs and the replacement of old occupations, the relationship between the jobs created and those replaced will determine whether the final effect of technological development on employment will be positive, negative or nil. If the jobs generated directly or indirectly by technological progress cannot compensate for the number of workers replaced, policy makers will have to deal with major problems of unemployment and wealth distribution.

Predicting which jobs will be created in the future is extremely difficult, as these depend on technological solutions that do not yet exist and on the multiple ways in which the latter can complement or replace existing jobs. To form a smart guess as to what these new jobs might be, the White House Council of Economic Advisers (CEA) synthesized and extended current research aimed at identifying jobs that would be created directly by the development of artificial intelligence.

Furthermore, the CEA believes that artificial intelligence will also lead to substantial indirect job creation. Indeed, rising productivity and wages will generate an increase in consumption that would support additional jobs throughout the economy, from high-quality artisanal production to restaurants and retail.

The CEA has identified four categories of jobs that could experience direct growth due to progress in AI:

The current limitations of robot dexterity and the creative intelligence constraints of artificial intelligence technologies mean that employment requires manual skills, creativity, social interactions, intelligence and general knowledge. A first category of jobs that will experience an increase in demand are those that need some kind of interaction, in fact it is very likely that human beings will need to interact with technologies that exploit artificial intelligence throughout the process of completing a task. Many industry professionals refer to a wide range of artificial intelligence technologies as "Augmented Intelligence" (AI), emphasizing the role of technology as supporting and expanding the productivity of individuals rather than as a replacement for human labor. Therefore, with a future vision of technical complementation, the demand for work will increase more in sectors where humans integrate automation technologies into their jobs. For example, an AI technology could diagnose some cancers or other diseases earlier than a human doctor, but a doctor will always be needed to interact with patients in order to understand and translate their symptoms, inform them of available treatment options, and guide them through treatment plans.

Especially in the early stages of artificial intelligence, jobs in the development sector will be crucial and will cover multiple sectors and skill levels. Intuitively, there may be a great need for highly skilled software developers and engineers to

deploy these new solutions globally. Furthermore, artificial intelligence is able to "learn" only through the data that is made available to it. Therefore, it is likely that there will be a greater demand for jobs in the creation, collection and management of relevant data to be included in artificial intelligence training processes. Applications of AI can range from highly specialized tasks, such as cancer recognition on radiographs, to low-specialized tasks, such as text recognition in images.

Another category of jobs that will grow will be that of supervisory jobs. This category includes all roles related to AI monitoring, licensing and repair. For example, after the automated vehicle development phase, it will likely still be necessary to register and test vehicles, as well as train humans to "drive" in order to ensure road traffic safety and control. Automated driving, which is expected to become widespread, will require a large number of regular repairs and maintenance, which in this way can expand the demand for mechanical and technical work. Real-time supervision will also be required in exceptional or high-level cases, especially those involving morality, ethics and social intelligence that AI may lack. This could take the form of quality control of AI recommendations.

Human input will therefore be needed to respond to changes in the environment in which we live, the technological innovation surrounding artificial intelligence will likely change the characteristics of the environment and infrastructure. In the case of self-driving vehicles, for example, radical changes in road design and traffic laws

may be required, which are currently designed with the safety and convenience of human drivers in mind. The advent of automated vehicles (AV) will result in a greater demand for urban planners and civil engineers to create a new road model in which the landscape of everyday travel is built and used. Paradigm shifts in adjacent industries, such as cybersecurity - which require, for example, new methods of detecting fraudulent transactions and messages - may also require new jobs and more employment.

5 EUROPEAN DIGITAL SOVEREIGNTY

The continuous technological advances, which proceed at an exponential rate, and the resulting social and economic repercussions, day after day, reveal the need for new approaches to technological governance, at a national and even more European level. It is therefore no coincidence that among the main objectives of the European Commission led by Ursula von der Leyen is to accelerate the digitalization of the European continent, modeling it according to European needs and principles.

In reality, this is a rather broad goal: information and communication technologies, in fact, constitute a vast and heterogeneous set of technological tools with almost unlimited purposes. Having to deal with the US self-regulatory approach and the Chinese leadership model, the European Union is openly seeking a third way to digital, the "European way". The European approach, in the words of numerous EU officials, should aim at consolidating European digital - or technological - sovereignty, a term that is certainly captivating but often ambiguous in its content. To better understand what digital sovereignty means, we can quote the words of the EU Commissioner for the Internal Market, Thierry Breton, who states that digital sovereignty "is based on three inseparable pillars: computing power, control of our data, secure connectivity"[24]. The word that catches the eye is probably control,

[24] https://ec.europa.eu/commission/commissioners/2019-2024/breton/announcements/europe-keys-sovereignty_en.

indeed, digital sovereignty has as its main objectives that of controlling technological development based on its own objectives and autonomously managing the security and privacy of citizens. In the field of digital and technological policies, the impressive speed of digital transformation and the sudden spread of new technologies have left political actors little room to regulate their diffusion and development. Furthermore, the concrete effects of many digital innovations took years, if not decades, to materialize: few could imagine, during the first years of the spread of social media and the expansion of digital platforms, the profound social repercussions that have instead manifested themselves today, from online disinformation, to the misuse of personal data. Europe has therefore found itself for a long time unable to significantly influence the work of the technological giants, penalized moreover by the fragmentation of the internal digital market and by the territorial imbalances between different states. As also admitted by Ursula von der Leyen herself, in the field of personal data "Europe has been too slow and now depends on others"[25]. For the Brussels institutions, however, the recent wave of innovation in the field of AI and in general the extensive use of data in different sectors of society constitute opportunities that Europe cannot miss. A change of program is obviously necessary, in order not to be limited to being a passive subject of technological innovation and to play a convinced proactive role.

[25] https://ec.europa.eu/commission/presscorner/detail/en/SPEECH_20_1655.

Conceived in this way, it is clear that digital sovereignty can be inserted within the broader objective of pursuing European strategic autonomy. As the recent Covid-19 pandemic has also helped to highlight, Europe must carefully assess the risks deriving from excessive dependence on third countries, especially in the sectors considered to be more strategic, such as those relating to raw materials, infrastructure, safety and technology.

However, the cardinal principle that supports the digital sovereignty approach translates into the idea that technological and digital innovations must consider European values and principles, as well as the social impact they generate. This idea of technological progress aims above all to protect the fundamental rights of European citizens, in particular the right to privacy and the protection of personal data. At the same time, part of the emphasis is also placed on the need to unlock European innovation potential, in order to make Europe one of the leading global players in the field of technologies.

5.1 European digital agenda

Among the seven flagship initiatives of the Europe 2020 strategy there is the European Digital Agenda launched in 2010, which aims to establish the key role of Information and Communication Technologies to achieve the "smart, sustainable and inclusive" growth objectives that Europe has set for 2020.

The Covid-19 pandemic crisis undermined years of economic and social progress and highlighted the structural weaknesses of the European economy. Today Europe must first aim to get back on its feet. To ensure a sustainable future, we need to look beyond the short term right now; in the face of an aging population and global competition, we have three options: work harder, longer or smarter. We will probably have to do all three, but the third option is the only one that guarantees European citizens a better lifestyle. To this end, the Digital Agenda contains proposals for actions that need to be taken urgently to get Europe back on the path of smart, sustainable and inclusive growth. These proposals will define the scenario of the transformations that the economy and society, increasingly digitalized, will bring in the long term. The agenda aims to chart the way to make the most of the social and economic potential of ICT, in particular the internet, which constitutes the essential support of socio-economic activities, whether it be for creating business relationships, working, playing, communicating or express yourself freely. Achieving the objectives contained in the agenda will stimulate innovation and

economic growth and improve the daily life of citizens and businesses. With greater uptake and more effective use of digital technologies, Europe will be able to address the main challenges it faces and offer its citizens a better quality of life, for example in the form of better healthcare, safer and more efficient transport, a cleaner environment, new communication possibilities and easier access to public services and cultural content.

The ICT sector directly generates 5% of European GDP and represents a market value of € 660 billion per year, but contributes significantly more to overall productivity growth (20% derives directly from the ICT sector and the 30% from investments in ICT)[26]. This is due to the considerable dynamism and innovation inherent in the sector and the influence that ICT has on the transformation of the way other sectors operate. At the same time, the social impact of ICT has become significant: for example, the fact that over 250 million people in Europe use the internet every day and that virtually all European citizens have a mobile phone has changed our lifestyle. The development of high-speed networks today has the same revolutionary impact that the development of electricity and transport networks had a century ago. Thanks to the evolution taking place in the consumer electronics sector, the boundaries between different digital devices are disappearing. Services converge and move from the physical to the digital world, universally accessible on

[26]https://www.ecb.europa.eu/pub/economicbulletin/articles/2021/html/ecb.ebart202008_03~da0f5f792a.en.html.

any device, such as smartphones, tablets, computers, digital radios or high-definition televisions. The enormous potential of ICT can be exploited through a virtuous circle of activities that function properly. First, interesting content and services need to be made available in an interoperable and borderless internet environment. This stimulates the demand for higher speed and capacity, which in turn creates investment opportunities in faster networks. The creation and adoption of faster networks in turn paves the way for innovative services that take advantage of faster speeds. This flow of business can largely be self-sustaining, but it requires a business climate that favors investment and entrepreneurship. Although the power of ICT to bring about transformations is evident, to exploit it some important problems need to be solved: even if many European citizens are adopting digital lifestyles based on technologies that define themselves as "global" and without borders, they can only accept a market unique, conceived before the internet, is still severely incomplete online. The benefits that people could derive from the use of digital technologies, as citizens, consumers or workers, are limited by concerns about privacy and security and by the lack of internet access, usability, adequate capacity or accessibility for all. European citizens are disappointed by the inability to deliver better public services promised by ICT and fear that, as the internet has accelerated global competition in terms of investment, jobs and economic influence, Europe has not equipped itself with the necessary tools to develop in this growing sector of the economy.

The European Commission has identified seven main obstacles that seriously undermine the efforts made to exploit ICT, highlight the need for a unified response at the European level and show that Europe is lagging behind its industrialized partners:

1. Fragmentation of digital markets

Europe is still a patchwork of national online markets and some problems, although solvable, are preventing citizens from reaping the benefits of a digital single market. Commercial and cultural content and services must be able to cross borders, which is possible by removing regulatory barriers and facilitating electronic billing and payments, resolving disputes and building consumer confidence. More can and must be done within the existing regulatory framework to create a single market in the telecommunications sector.

2. Lack of interoperability

Europe is still not reaping the full benefits of interoperability. Weaknesses in standard setting, public procurement and coordination between public administrations prevent the digital services and devices used by European citizens from working together as they should. The digital agenda can only be effective if its different components and applications are interoperable and are based on common standards and open platforms.

3. Increase in cybercrime and risk of a decline in trust in networks

European citizens will not engage in more complex online activities unless they feel they can fully rely on their networks for themselves and their children. Europe must therefore address the emergence of new forms of crime ("cybercrime") ranging from child abuse to identity theft to cyber attacks and develop response mechanisms. At the same time, the multiplication of databases and new technologies that allow to control individuals remotely raise new problems related to the protection of the Europeans' fundamental rights as regards personal data and cprivacy. Nowadays, Internet is such an important information infrastructure, both for individuals and for the European economy in general, that our computer systems and networks must be resilient and protected from threats of all kinds.

4. Lack of investment in networks

More needs to be done to ensure the installation and adoption of broadband for all, at ever-increasing speeds, through both fixed and wireless technologies, and to facilitate investments in new, open and competitive, ultra-high-speed internet networks that they will be the arteries of the economy of the future. We need to focus our action on providing incentives to encourage private investment, complemented by targeted public investment, without creating new network monopolies and improving the allocation of spectrum bands.

5. Insufficient commitment to research and innovation

In Europe, investment continues to be insufficient, commitment is fragmented, the creativity of SMEs is underused and the intellectual advantage of research does not translate into a competitive advantage for market-based innovations. We need to leverage the talent of researchers to create an innovation climate where European companies of all sizes operating in the ICT sector can develop excellent products that generate demand. It is therefore necessary to address the sub-optimal nature of current research and innovation efforts by finding more private investments and ensuring better coordination and concentration of resources, "lighter and faster" access of digital SMEs to EU research funds and joint infrastructures common research and innovation poles; finally, standards and open platforms must be developed for new services and applications.

6. Lack of digital literacy and computer skills

Europe suffers from a growing shortage of ICT skills and digital illiteracy. These shortcomings exclude many citizens from the digital society and economy and limit the strong multiplier effect on productivity gains that would result from the adoption of ICT. This situation calls for a coordinated response, the initiative of which lies with the Member States and other stakeholders.

7. Missed opportunities in responding to society's problems

By harnessing the full potential of ICT, Europe could much more effectively address some of the most pressing problems for the community, such as climate

change and other pressures on the environment, aging population and rising healthcare costs, development of more efficient public services and the integration of people with disabilities and the digitization of Europe's cultural heritage to make it available to current and future generations.

In conclusion, the Digital Agenda requires a high and continuous commitment both at EU and Member State level. It cannot be successful without substantial input from other stakeholders, including young "children of the digital age". This agenda is a snapshot of existing and foreseeable problems and opportunities and will evolve in the light of experience and rapid changes in technologies and society.

5.2 Digital single market

The Digital Single Market (DSM) is a strategy adopted by the Juncker European Commission on 6 May 2015. The Commission, in fact, having realized the importance of digital technologies and the internet, has decided to commit itself to innovate the European single market, making it suitable for the digital age. Until then, both companies and consumers faced barriers in the use of online tools and services, which prevented not only citizens, but also governments, from being able to fully benefit from digitalization. The objective set by the Juncker Commission is, therefore, to create a Digital Single Market in which the free movement of goods, people, services, capital and data is guaranteed, and in which citizens and businesses can have transparent and fair access to goods and online services, regardless of their nationality and where they reside.

The objectives expressly stated by the European Commission are many:

- Promote e-commerce in the European Union by eliminating geo-blocking and making cross-border deliveries cheaper and more efficient;
- Modernize copyright rules in the EU to adapt them to the digital age;
- Increase the EU's ability to respond to cyber-attacks by strengthening ENISA, the European cybersecurity agency[27];

[27] https://www.enisa.europa.eu/about-enisa.

- Take advantage of the potential of the European Data Economy by creating rules for the free flow of non-personal data between Member States;

- Ensure the best possible Internet connection for all European citizens, so that everyone can be part of the digital economy, that is, guaranteeing the so-called "connectivity for a European gigabit society";

- Adapt ePrivacy rules to the new digital environment;

- Helping large and small businesses, researchers, citizens and public authorities to make the most of new technologies by ensuring that everyone has the necessary digital skills and by funding EU research in health and high-performance computing.

In order to achieve these objectives, the Commission has based the Digital Single Market strategy on 3 pillars:

- Improving access to digital goods and services, that is, ensuring better access, for both consumers and companies, to European online goods and services. This is done by removing the barriers to ecommerce;

- Create an environment where digital networks and services can thrive, thanks to fast, secure and reliable infrastructures. The key elements are cybersecurity, data protection, as well as the transparency of online platforms;

- Digital as an engine for growth, so that every European citizen can enjoy the benefits.

The Commission has estimated that the creation of the Digital Single Market will contribute positively to the European economy in the amount of € 415 billion per year, open the doors to hundreds of thousands of new jobs, creating opportunities for new start-ups. and enabling companies to grow and innovate in a market of over 500 million people[28].

Achieving the goals that make full use of the strengths of the DSM can only happen if, alongside the EU's own initiatives, investments are made in digital skills and infrastructures both at state and EU level and by the private sector. The completion of the digital single market also requires a clear and stable legal framework to stimulate innovation and address market fragmentation. For this reason, the creation of the DSM takes place through the legislative interventions of the European Union: there are a total of 29 legislative proposals that make up the framework for the digitalization of the single market, and not all of them have been implemented.

But six years after the adoption of the digital single market, to what extent has the strategy been implemented?

The Commission has published the results of the Digital Economy and Society Index (DESI) for 2018, with which the Union monitors the performance of Member States in terms of digital connectivity, digital skills, online activities and the digitization of businesses and public services. The index reveals that, although the

[28] European Commission, Digital single market, Bringing down barriers to unlock online opportunities.

digitization of the EU is on the rise, the progress made so far is not enough to keep pace with world leaders and reduce the gap between member states. From this result, the Commission understood that the completion of the digital single market strategy and the increase in investments in the digitalization of the economy and society are even more urgent. Looking at the DESI data, Denmark, Sweden, Finland and the Netherlands are the countries with the best scores and are among the world leaders in the field of digitalization, followed by Luxembourg, Ireland, United Kingdom, Belgium and Estonia. Ireland, Cyprus and Spain have recorded the greatest progress in recent years, while Italy is in a poor fourth to last place, ahead of only Bulgaria, Greece and Romania.

This denotes how, although European countries are progressing, the disparities are still considerable and the road to achieve the full implementation of the Digital Single Market is not short.

5.3 Shaping Europe's digital future

On 19 February 2020, the European Commission presented a proposal to promote and support the EU's digital transition: "Shaping Europe's digital future".

The objective of this initiative, and more generally of the European institutions, is to guarantee digital sovereignty for the EU, through the development of digital technologies and infrastructures, networks and capacities to reduce dependence on the supply of technologies from non-European countries and catch up on the delay that still separates it from competitors such as the United States and China. The importance of the strategy is even more evident in light of the current coronavirus crisis: digital tools are widely used to monitor the spread of the virus, assist in research and development of vaccines and treatments, and ensure that Europeans stay connected and safe online. Moreover, the emergency has highlighted the strategic importance of telecommunications networks and ultra-fast connections to the network, making the massive use of smart working and distance learning necessary.

The European Investment Bank recently noted, in its 2018-2019 investment report[29], that the potential revenues from the adoption of digital technologies are substantial and the costs associated with non-adoption at an early stage, and

[29] https://www.eib.org/attachments/efs/economic_investment_report_2018_key_findings_it.pdf.

therefore with the loss of "benefits of the pioneer", are enormous. Europe cannot simply give up on digitalization, and therefore it might as well participate in this process as a protagonist to influence the process itself. In the same report he highlighted that the European Union is losing ground in the most innovative sectors with spending on research and development that is not keeping pace with international competition, also due to the low volume of business investments. According to the same report, the EU's amount on R&D investments of 2% of GDP have been reached by China and do not reach the levels of the United States (2.8%). The digital economy appears to be driven by the United States and China which alone account for 75% of all patents related to blockchain technologies, 50% of global spending on the Internet of Things and over 75% of the world market for cloud public computing. The US and China also hold 90% of the market capitalization value of the world's 70 largest digital platforms compared with a 4% share of Europe. According to the European Investment Bank, the delay of European companies in the use of new technologies continues. The gap between the European Union and the United States in the adoption of tools such as 3D printing, advanced robotics, routine automation and digital content, particularly affects companies operating in the service sector. The EIB underlines that digitalization is accompanied by greater productivity and efficiency of production processes and increases in sales of around 10%, but European companies are suffering from the presence of barriers such as the prevalence of small businesses

and the fragmentation of the market, in addition to the characteristics of the financial system.

After analyzing the situation, the European Commission indicates the initiatives it deems necessary to support technological development in the coming years[30]. Three are the areas of intervention identified:

- Improving the lives of citizens putting technology at the service of people:

To this end, the Commission announces some key actions like the "digitalization of the public administration" throughout Europe. According to the report's estimates, the digitalization of the public administration could make possible the recovery of 35 billion, between savings and higher revenues and bring benefits to companies for 25 billion. In particular, the report highlights the potential contribution to the recovery of tax evasion, estimated at 5 billion per year with an increase of 20-30% in electronic payments, and a further 10 billion per year assuming that all companies adopt the substitute conservation of fiscal documents, while businesses could save 23 billion annually thanks to the digitalization of interface processes between PA and businesses.

Furthermore, the European Commission intends to accelerate "investments in Gigabit connectivity", through a revision of the Directive 2014/61/EU on the reduction of broadband costs, an updated action plan for 5G and 6G and a new

[30] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0067&from=IT.

policy program in the field of radio spectrum. According to the Commission, 5G corridors for connected and automated mobility will be created (2021-2030). The Commission also confirms the objective of making available to all European citizens by 2025, even in peripheral and rural areas, an Internet connectivity based on ultra-fast broadband, at least 100 Mbps that can be upgraded to Gigabit speed.

A particular initiative in this regard is that of "WiFi4EU" which aims to provide citizens and visitors with high quality internet access throughout the EU via free Wi-Fi hotspots in public spaces such as parks, squares, public offices, libraries and health centers. The vouchers financed by the European Commission through the initiative will be used to support municipalities that will install Wi-Fi hotspots in these centers of public life, using the services of Wi-Fi installation companies.

- Offer competitiveness to the business world:

The second goal of the digital transition is to support the growth of a single market in which companies of all sizes can compete on equal terms, strengthen productivity and competitiveness worldwide and in which consumer protection is guaranteed. To achieve this, the Commission commits to deepen the adequacy of EU competition law for the digital age and to assess, as part of the digital services law package, rules that make these markets contestable for innovators, companies and new market entrants. Furthermore, the EU intends to propose a package of proposals for a new industrial strategy that promotes the transition to a clean, circular and digital economy of industries and SMEs, together with the

development of a regulatory framework for secure digital finance and an integrated market payment system that allows payment services and solutions between economic operators of different EU Member States.

- Building a safe and reliable digital environment:

The third objective of communication is to guarantee the reliability and security of online interactions according to the principle that what is illegal offline must also be online. Hence the emphasis on combating the sale of illicit, dangerous or counterfeit goods and the dissemination of illegal content or unreliable or opaque information. To this end, the Commission intends to increase the responsibility of online platforms also with regard to content and information services by revising the rules for the internal market for digital services. An action plan for media and audiovisuals will be presented to promote quality content and ensure pluralism of online information. The Commission believes that citizens and consumers, who access many online services via an authentication process, should be in control of their data and identity. Indeed, it intends to ensure reliable digital identities for European citizens by extending the eIDAS regulation (Electronic Identification, Authentication and Trust Services Regulation) to the private sector, which has introduced a standardized framework for the acceptance of electronic signatures and identities.

6. SMART WORKING IN ITALY[31]

In Italy, as in the rest of the world, life has been completely turned upside down by the pandemic. Now that it seems to see the light at the bottom of this terrible tunnel that has forever marked our lives, we can draw the conclusions of our behaviors.

The history of Italy teaches us that we are resilient people who, despite thousand difficulties, always find a way to get back on their feet. Also this time we have managed to adapt to a new and painful reality that has forced us to stay away to protect ourselves from the threat of the coronavirus. For a warm people like the Italian one, used to showing their affection by being close to their loved ones, it was a really difficult period not only from an economic and health point of view, but also from a psychological one.

However, this pandemic allowed Italy to develop some sectors that had been left behind for one reason or another. Technology has made it possible to carry out some tasks remotely, precisely from home, protecting thousands of jobs that would otherwise have been lost. The term smart working, very widespread in Italy, known in Europe as teleworking, has become a trend in this period of global pandemic.

[31] Ringrazio il prof. A. Di Stasi, professore di diritto del lavoro all'Università politecnica delle marche, per aver segnalato l'importanza di questo aspetto e avermi suggerito d'inserire questo capitolo.

Telework is a way to work independently of the geographic location of the office or business. With telework the worker will not necessarily be requested to go to an office every morning: his job, thanks to the Internet, can be anywhere. People can return to work from home, just as they did in ancient times, reducing stress and pollution and achieving a better work-life balance.

Smart Working, a new version of telework, is an innovative workflow based on a strong element of flexibility in terms of hours and location of job, which applies to companies with flexible organizational models. Working at office or outside can be alternated according to the needs of the production. Smart working does not require special enabling technologies that are not already in the hands of the worker, such as laptops, tablets, smartphone.

In Italy, a law has recently been approved to encourage companies to adopt smart working overcoming the impasse on telework by creating new rules with lightweight characteristics and obligations (for the worker and the employer). In the public sector, instead, it was recently issued a government directive for civil servants, intended to stimulate a deep cultural change in the concept of work: the shift from "stamping the time-card" to work for goals, where the worker have large freedom to self-organize job as long as they meet the goals set at the due dates. The innovative part of the directive is to configure smart working as an organizational tool and not as a contractual type, with the aim of making it workable by all employees who carry out tasks that are compatible with smart working.

The European Commission, on the other hand, that focuses heavily on smart working "plans to close half of its 50 office buildings across Brussels within the next 10 years. The aim is to allow home working beyond the pandemic and, according to Administration Commissioner Johannes Hahn, lessen the Commission's climate footprint.

Hahn said this "long-term building policy until 2030" was seeking to make the Commission "more green" by reducing building emissions, and "more digital" by keeping home working as a standard practice. "Like all public and private organizations, we are now looking at the most useful balance between office and home working for the longer term … it's the new norm," Hahn told reporters.

"More than 90 percent of our staff is very much in favor of having two to three days per week of teleworking," Hahn added, pointing out that "our office surfaces will be adapted to the generalized use of teleworking".[32]

In the book E-Democracy written by prof. Vilella is approached well this discourse, it is even said that the "work in the digital age must change its meaning, because, first of all, nowadays, with information technologies, it is possible to work remotely; therefore, the conception of the workplace must change. We are no longer in an ivory tower; the environment is now made up of a creative collaboration. We no longer need a desk, a chair or an office to be able to carry out our business, to be

[32] https://www.politico.eu/newsletter/brussels-playbook/politico-brussels-playbook-theres-no-place-like-home-divorce-goes-public-summit-season/.

able to communicate with colleagues, to be able to access the documents we need. It will also be necessary to change the idea of space and working time and that of the contract, because the place and hours of work to be carried out are indicated on the latter. There is no longer a clear separation between private life and work, the two spheres are merging: we must therefore find the right balance"[33].

The Covid-19 health emergency has not only exalted, but also multiplied the importance of these aspects. In particular, the experience of teleworking or smart working during the health emergency has strengthened the positive approach to this method, so that many companies and administrations have launched projects for its regulated and "normal" use. A recent study[34], rather oriented to the practical and operational consequences, has made clear the specificities of this approach, underlining that smart working is much more than teleworking: the first principle is in fact that work takes place in the most effective places and moments in relationship to needs. Evidently this implies a great willingness to flexibility, including the possibility of choosing the best times and places to work. This flexibility, the study tells us, must however be managed in behaviors and methods, in order to completely eliminate mediocre performance: workloads, monitoring, reporting, communication, not to mention the necessary adaptation of digital infrastructures. Finally, the study reminds us, the quality of the teams involved is

[33] G, Vilella, E-Democracy, Dove ci porta la democrazia digitale, Pendragon, 2020.
[34] R. D'Apolito e A. Fratini, Smart Working facile (e non solo), FineAdvisors, 2020.

crucial, due to the related risks that must be overcome, such as difficulties in managing time, loss of team spirit and isolation.

7. CONCLUSIONS

The objective of this thesis, through a purely descriptive analysis, is to analyze those recent aspects of the European Union that have influenced to improve the world of work despite a catastrophic event such as that of the global pandemic. Obviously, to do so many textbooks, articles and websites have been analyzed, all listed in the bibliography, but the article "Tecnologie del lavoro e dell'informazione, Note a margine del governo di fiducia Draghi" and then the book "E-Democracy, Dove ci porta la democrazia digitale (2020)", both by Prof. Vilella, are worthy of note because they are the pillars of the entire work.

By virtue of the above, the conclusion that we European citizens can draw is that we are certainly in good hands. In fact, Europe has not only shown readiness in the action to contain the health and economic damage caused by covid-19, but above all it has very clear ideas regarding the strategy of the future: a path has been chosen that aims not only at technological development but also to an increasingly marked eco-sustainability.

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